Fulton County Employees Retirement System

Actuarial Valuation and Review as of January 1, 2024

Segal

Segal

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May 16, 2024

Board of Trustees
Fulton County Employees Retirement System
141 Pryor Street, Suite 7001
Atlanta, GA 30303

Dear Board of Trustees Members:

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

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board of Trustees to assist in administering the Retirement System. The census information and financial information on which our calculations were based was prepared by the staff of Fulton County. That assistance is gratefully acknowledged.

We hereby certify that the Fulton County Employees Retirement System has been funded in conformity with the minimum funding standards specified in Code Section 47-20-10 of the Official Code of Georgia Annotated, known as the Public Retirement Systems Standards Law. This certification covers the 2023 fiscal year of the Plan.

Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results.

The measurements shown in this actuarial valuation may not be applicable for other purposes. 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; and changes in plan provisions or applicable law.

The actuarial calculations were directed under my supervision. 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. To the best of my knowledge, the information supplied in this actuarial valuation is complete and accurate, except as noted in *Section 4*. The assumptions used in this actuarial valuation were selected by the Board based upon my analysis and recommendations. In my opinion, the assumptions are reasonable and take into account the experience of the Plan and reasonable expectations. In addition, in my opinion, the combined effect of these assumptions is expected to have no significant bias.

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

Sincerely,

Segal

Malichi S. Waterman, FCA, MAAA, EA
Vice President and Consulting Actuary

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Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present a valuation of the Fulton County Employees Retirement System as of January 1, 2024. 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 contribution requirements presented in this report are based on:

- The benefit provisions of the Retirement System, as administered by the Board;
- The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of December 31, 2023 provided by the County;
- The assets of the Plan as of December 31, 2023, provided by the County;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. and
- The funding policy adopted by the Board.

The majority of the assumptions and methods used to value the System were approved by the Pension Board in 2023, based on the experience study for the five-year period ending December 31, 2021.

Valuation highlights

1. 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 funding policy adopted by the Board meets this standard.
2. Actual contributions made during the year ending December 31, 2023 of $65.7 million were 106.9% of the actuarially determined contribution (ADC). In the prior year, actual contributions were 115.3% of the prior year ADC.
3. Georgia Code Section 47-20-10(b) allows a Plan to be in compliance with the minimum funding standards under Georgia law if the sponsor makes contributions equal to or greater than the annual required contribution (ARC) under Governmental Accounting Standards Board (GASB) Statements No. 25 and No. 27 as in effect on June 15, 2013. The lowest ARC allowable is based on a 30-year level percent-of-pay amortization of the Plan's unfunded actuarial liability. The County is making annual contributions in excess of this amount, and therefore the Plan is in compliance with Georgia law.
4. Additionally, the Georgia law allows sponsors to offset future required contributions with accumulated contributions in excess of the minimum (i.e., credit balance). The County currently has a credit balance of $30.6 million. It should be understood that the contributions that contributed to this balance are already recognized in the System's assets, and drawing upon the credit balance to cover a portion of County contribution requirements has the impact of increasing future actuarially determined contributions.
5. The Board approved the following change in actuarial assumptions:
   - Investment Return: Lowered from 6.80% to 6.70%

   As a result of this assumption change, the net employer normal cost increased by $0.03 million and the actuarial accrued liability increased by $17.1 million. The total impact was an increase in the actuarially determined contribution of $1.6 million.
6. The actuarial experience gain for the year was $7.2 million, or 0.38% of actuarial accrued liability. This includes a gain of 0.98% from investment returns, and net losses of 0.60% from all other sources.
7. The rate of return on the market value of assets was 17.28% for the 2023 plan year. The return on the actuarial value of assets was 8.08% for the same period due to the recognition of prior years' investment gains and losses. As noted above, this resulted in an actuarial gain when measured against the assumed rate of return of 6.80%. The actuarial investment gain decreased the employer contribution by $1.9 million. Given the low fixed income interest rate environment, target asset allocation and expectations of future investment returns for various classes, we advise the Board to continue to monitor actual and anticipated investment returns relative to the assumed long-term rate of return on investments. As noted previously, the Trustees lowered the assumption to 6.70% with this valuation.
8. As requested by County Staff, the actuarially determined contribution has been allocated to various County Funds and to DFACS. The allocation schedule is provided on page 9 in this report.

9. The Retirement System was closed to new entrants in 1999, and the covered active employee group is declining. There are 77 actives remaining as of the valuation date. There are 3,016 annuitants, and monthly benefit payments totaled $153.3 million in 2023. Due to cost-of-living adjustments and new retirements, benefit payments are projected to grow to $156.7 million by 2030. Thereafter, total benefits are projected to decline as the number of individuals in pay status decreases. A ten-year benefit projection is provided in Exhibit G of Section 3.

Changes from prior valuation

10. The funded ratio (the ratio of the actuarial value of assets to actuarial accrued liability) is 79.5%, compared to the prior year funded ratio of 78.1%. This ratio is one measure of funding status, and its history is a measure of funding progress. Using the market value of assets, the funded ratio is 76.5%, compared to 69.5% as of the prior valuation date. These measurements are not necessarily appropriate for assessing the sufficiency of System assets to cover the estimated cost of settling the System's benefit obligation or the need for or the amount of future contributions.
11. The actuarially determined contribution for the upcoming year is $62.3 million, an increase of $0.8 million from last year. Most of this increase is due to the change in the investment return assumption.
12. The unfunded actuarial accrued liability is $389.1 million, which is a decrease of $27.8 million since the prior valuation.

Risk

13. It is important to note that this actuarial valuation is based on plan assets as of December 31, 2023. 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 December 31, 2023 due to COVID-19. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.
14. Since the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions. Segal has not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the System's future financial condition, but has included a brief discussion of some risks that may affect the System in Section 2. A more detailed assessment would provide the Board with a better understanding of the inherent risks. This could be important because retired participants account for most of the System's liabilities, leaving limited options for reducing costs in the event of adverse experience.

GASB

15. This report constitutes an actuarial valuation for the purpose of determining the ADC under the Plan's funding policy. The information contained in Section 5 provides the accounting information for GASB Statements No. 67 and No. 68, for inclusion in the plan and employer's financial statements as of December 31, 2023.
16. The Net Pension Liability (NPL) is equal to the difference between the Total Pension Liability (TPL) and the Plan's fiduciary net position (equal to the market value of assets). The NPL as of December 31, 2022 is $447.3 million.

Summary of key valuation results

Valuation Result	Current	Prior
Contributions for fiscal year beginning	**January 1, 2024**	**January 1, 2023**
• Actuarially determined employer contributions	$62,339,898	$61,500,464
• Actual employer contributions	—	65,725,000
• Georgia credit balance, with adjustment for timing	31,556,119	25,509,352
Actuarial accrued liability for plan year beginning	**January 1, 2024**	**January 1, 2023**
• Retired participants and beneficiaries	$1,841,723,102	1,836,263,072
• Inactive vested participants	2,913,362	2,941,816
• Active participants	56,291,469	61,415,122
• Total	1,900,927,933	1,900,620,010
• Normal cost including administrative expenses	1,985,483	2,001,989
Assets for plan year beginning January 1		
• Market value of assets (MVA)	$1,453,658,000	$1,321,228,000
• Actuarial value of assets (AVA)	1,511,804,295	1,483,715,571
• Actuarial value of assets as a percentage of market value of assets	104.00%	112.30%
Funded status for plan year beginning January 1		
• Unfunded actuarial accrued liability on market value of assets	$447,269,933	$579,392,010
• Funded percentage on MVA basis	76.47%	69.52%
• Unfunded actuarial accrued liability on actuarial value of assets	$389,123,638	$416,904,439
• Funded percentage on AVA basis	79.53%	78.06%

Section 1: Actuarial Valuation Summary

Valuation Result	Current	Prior
Key assumptions		
• Net investment return	6.70%	6.80%
• Inflation rate	2.50%	2.50%
GASB information		
• Discount rate	6.70%	6.80%
• Total Pension Liability	$1,900,927,933	$1,900,620,010
• Plan Fiduciary Net Position	1,453,658,000	1,321,228,000
• Net Pension Liability	447,269,933	579,392,010
• Plan Fiduciary Net Position as a percentage of Total Pension Liability	76.47%	69.52%
• Pension expense		37,953,859
Demographic data for plan year beginning January 1		
• Number of retired participants and beneficiaries	3,016	3,066
• Number of inactive vested participants	17	18
• Number of active participants	77	90
• Total payroll	$6,314,620	$7,176,761
• Average payroll	$82,008	$79,742

Actuarially determined employer contribution allocated by fund

Fulton County Fund	Fund Number	Percentage of Total Liability	Actuarially Determined Employer Contribution (ADEC)[1]
General	100 & 210	69.64%	$43,414,556
Airport	200	0.21%	131,613
Water & Sewer	201 & 203	3.11%	1,939,248
Old SSD	300	6.05%	3,773,171
South Fulton District	301 & 307	9.49%	5,916,119
Emergency 911	340	0.51%	316,101
Fulton Employee Retirement	415	0.14%	85,918
Restricted Assets	441	0.10%	64,696
Grants	461	0.30%	185,090
Risk Management	725	0.04%	22,434
Grants - Health & Wellness	818 & 310	5.62%	3,501,819
Comm Dev Block Grants	865	0.02%	12,074
DFACS	DFACS	4.78%	2,977,059
Total		100.00%	62,339,898

[1] Each Fund's normal cost was calculated independently. The administrative expenses and the amortization of the unfunded liability were allocated based on the actuarial accrued liability of each Fund as a percentage of the System's total, and then added to normal cost to determine an ADEC. Allocating the cost in this manner ensures that the funded percentage for each Fund equals the funded percentage for the System as a whole.

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:

Input Item	Description
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 County. 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 County. 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

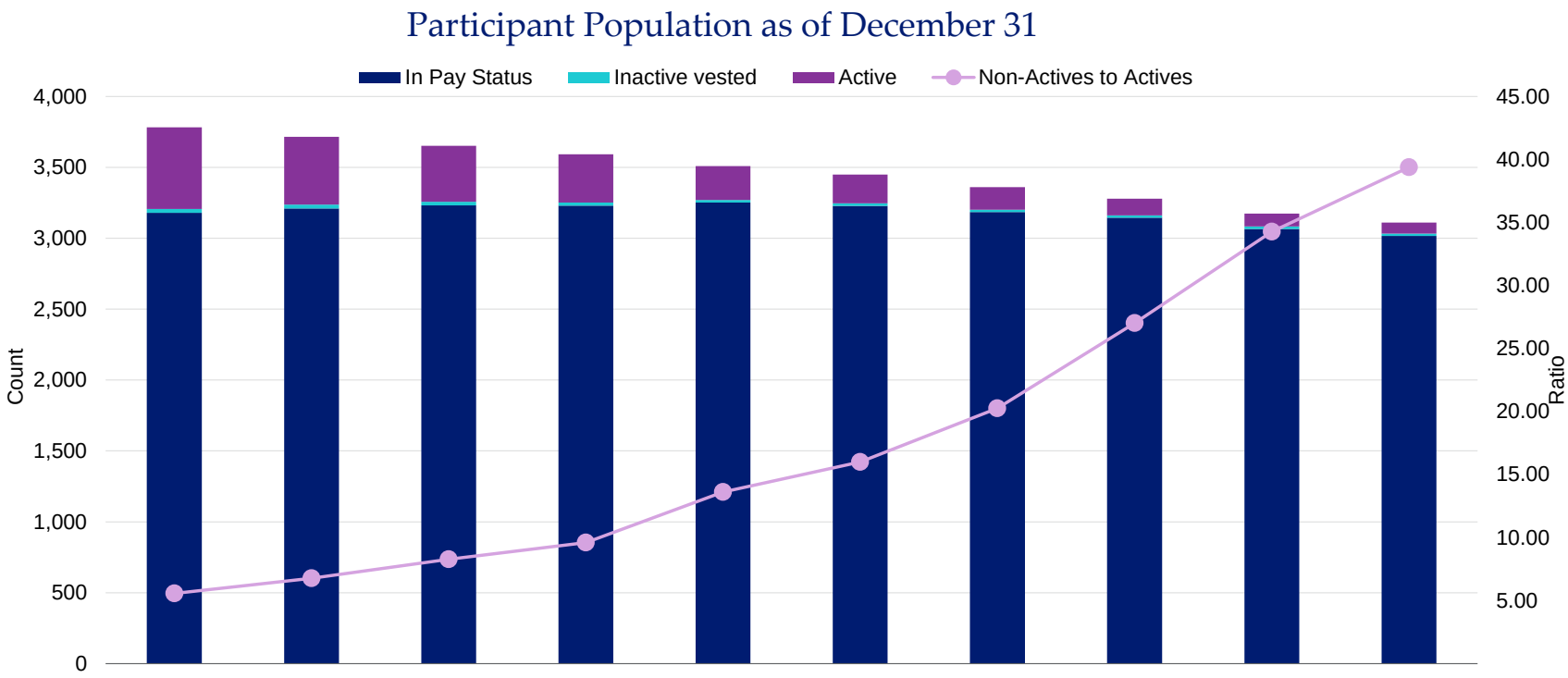
The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the County. 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 County 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 County 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 County 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

Participant information



Legend	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
In Pay Status	3,179	3,210	3,232	3,230	3,252	3,229	3,185	3,145	3,066	3,016
Inactive Vested*	27	27	26	23	18	18	17	17	18	17
Active	576	478	394	339	240	203	158	117	90	77
Ratio	5.57	6.77	8.27	9.60	13.63	16.00	20.27	27.03	34.27	39.39

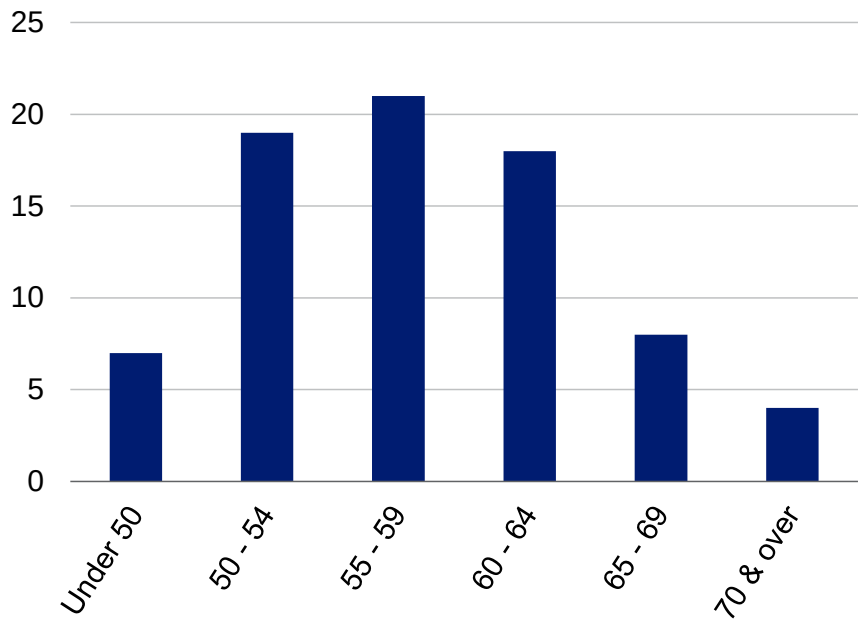
* Excluding terminated participants due a refund of employee contributions.

Active participants

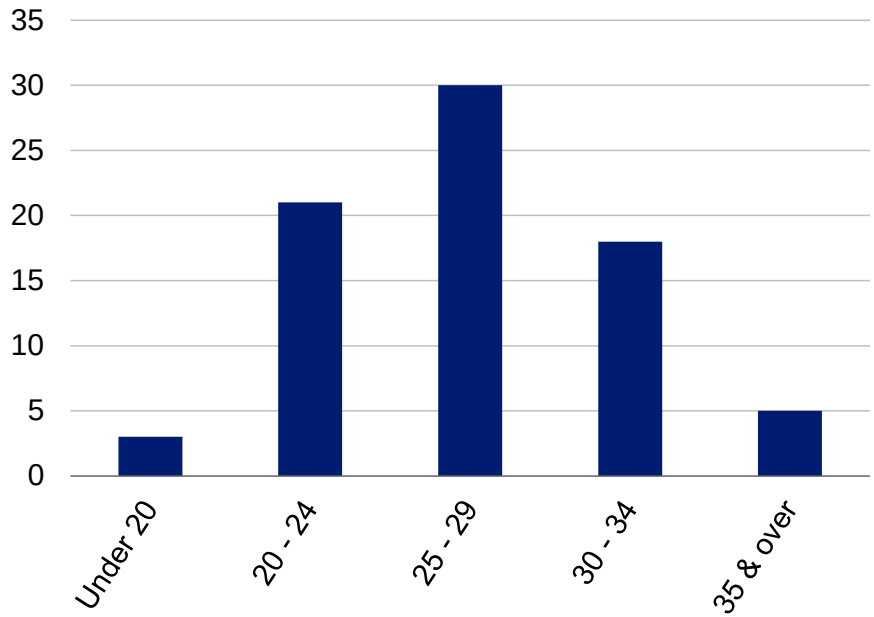
As of December 31,	2023	2022	Change
Active participants	77	90	-14.4%
Average age	58.4	57.3	1.1
Average years of service	27.3	26.9	0.4
Average compensation	$82,008	$79,742	2.8%

Distribution of Active Participants as of December 31, 2023

Actives by Age



Actives by Years of Service

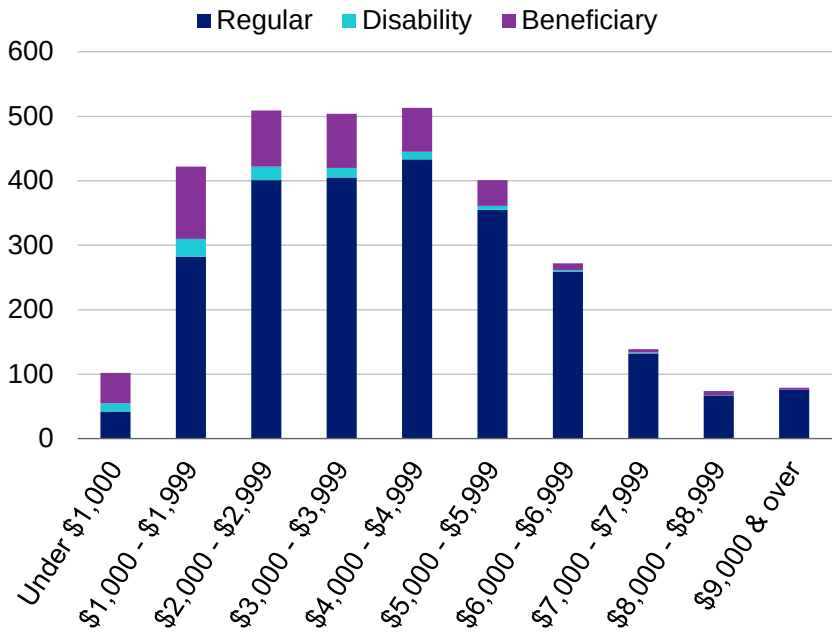


Retired participants and beneficiaries

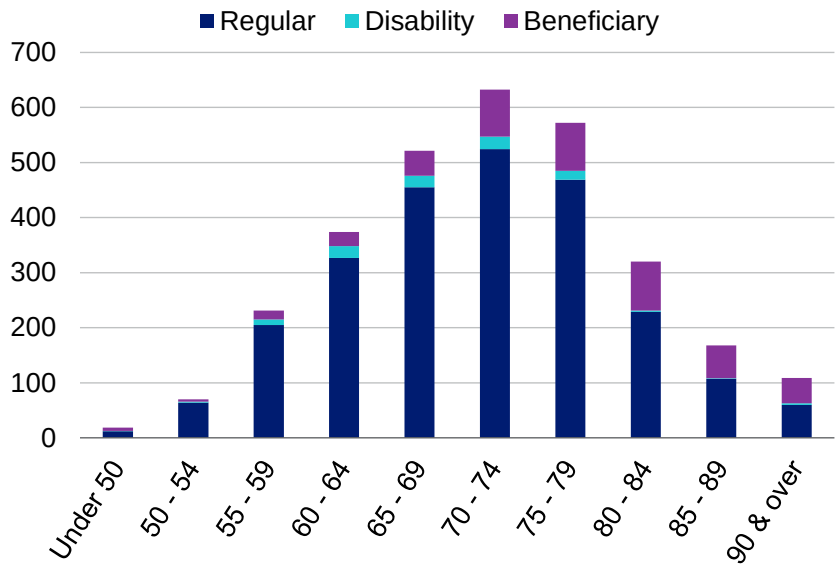
As of December 31,	2023	2022	Change
Retired participants	2,552	2,608	-2.1%
Beneficiaries	464	458	1.3%
Average age	71.8	71.1	0.7
Average amount	$4,164	$4,040	3.1%
Total monthly amount	12,557,230	12,385,372	1.4%

Distribution of Retired Participants and Beneficiaries as of December 31, 2023

By Type and Monthly Amount



By Type and Age



Historical plan population

Participant Data Statistics: 2014– 2023

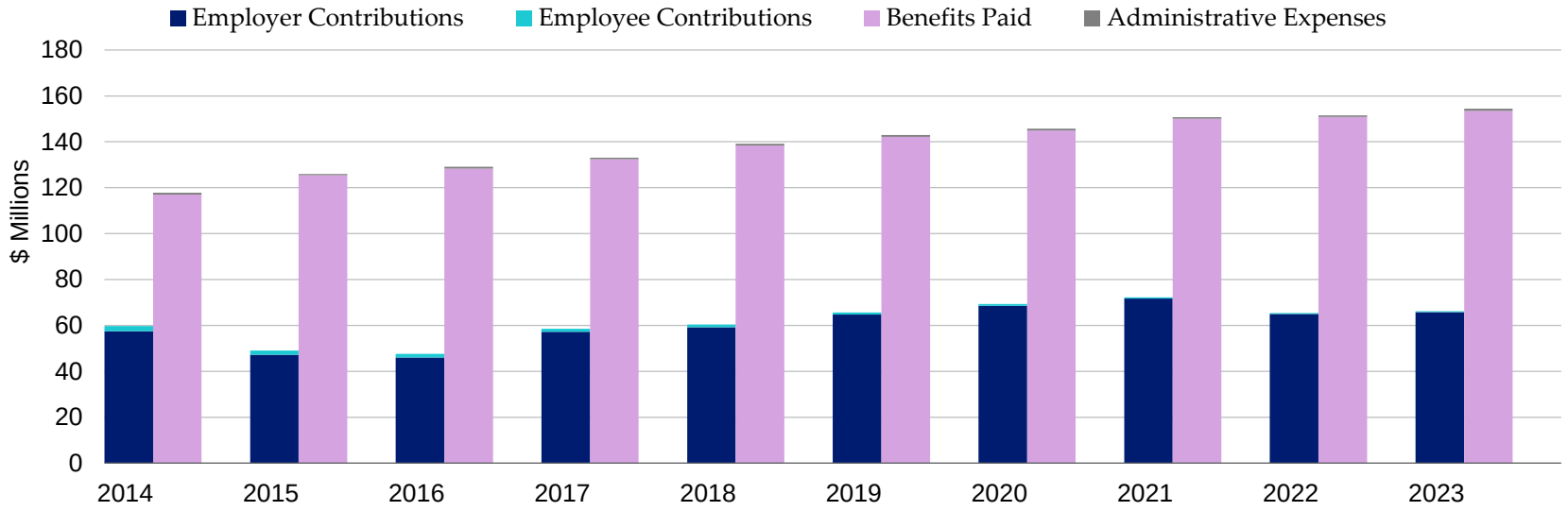
Active Participants versus Retired Participants and Beneficiaries

Year Ended December 31	Active Participants Count	Active Participants Average Age	Active Participants Average Service	Retired Participants and Beneficiaries Count	Retired Participants and Beneficiaries Average Age	Retired Participants and Beneficiaries Average Monthly Amount
2014	576	52.6	22.0	3,179	67.6	$3,107
2015	478	52.9	22.5	3,210	68.0	3,208
2016	394	53.4	23.3	3,232	68.3	3,303
2017	339	54.3	24.0	3,230	68.8	3,431
2018	240	55.4	24.5	3,252	69.0	3,524
2019	203	55.9	25.5	3,229	69.7	3,627
2020	158	56.1	26.1	3,185	70.2	3,777
2021	117	56.6	26.9	3,145	70.6	3,897
2022	90	57.3	26.9	3,066	71.1	4,040
2023	77	58.4	27.3	3,016	71.8	4,164

Financial information

Retirement plan funding anticipates that, over the long term, both contributions (less administrative expenses) and investment earnings (less investment fees) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components.

Comparison of Contributions Made with Benefits and Expenses Paid
for Years Ended December 31



Section 2: Actuarial Valuation Results

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

Determination of Actuarial Value of Assets for Year Ended December 31, 2023

	Step	Original Amount*	Percent Deferred†	Unrecognized Amount‡	Amount
1.	Market value of assets, December 31, 2023				$1,453,658,000
2.	Calculation of unrecognized return				
a.	Year ended December 31, 2023	$133,789,432	80%	$107,031,546	
b.	Year ended December 31, 2022	-368,508,586	60%	-221,105,151	
c.	Year ended December 31, 2021	88,515,180	40%	35,406,072	
d.	Year ended December 31, 2020	102,606,188	20%	20,521,238	
e.	Year ended December 31, 2019	190,838,569	0%	0	
f.	Total unrecognized return				-$58,146,295
3.	Preliminary actuarial value: (1) - (2f)				1,511,804,295
4.	Adjustment to be within 20% corridor				0
5.	**Final actuarial value of assets as of December 31, 2023: (3) + (4)**				**$1,511,804,295**
6.	Actuarial value as a percentage of market value: (5) ÷ (1)				104.0%
7.	Amount deferred for future recognition: (1) - (5)				-$58,146,295

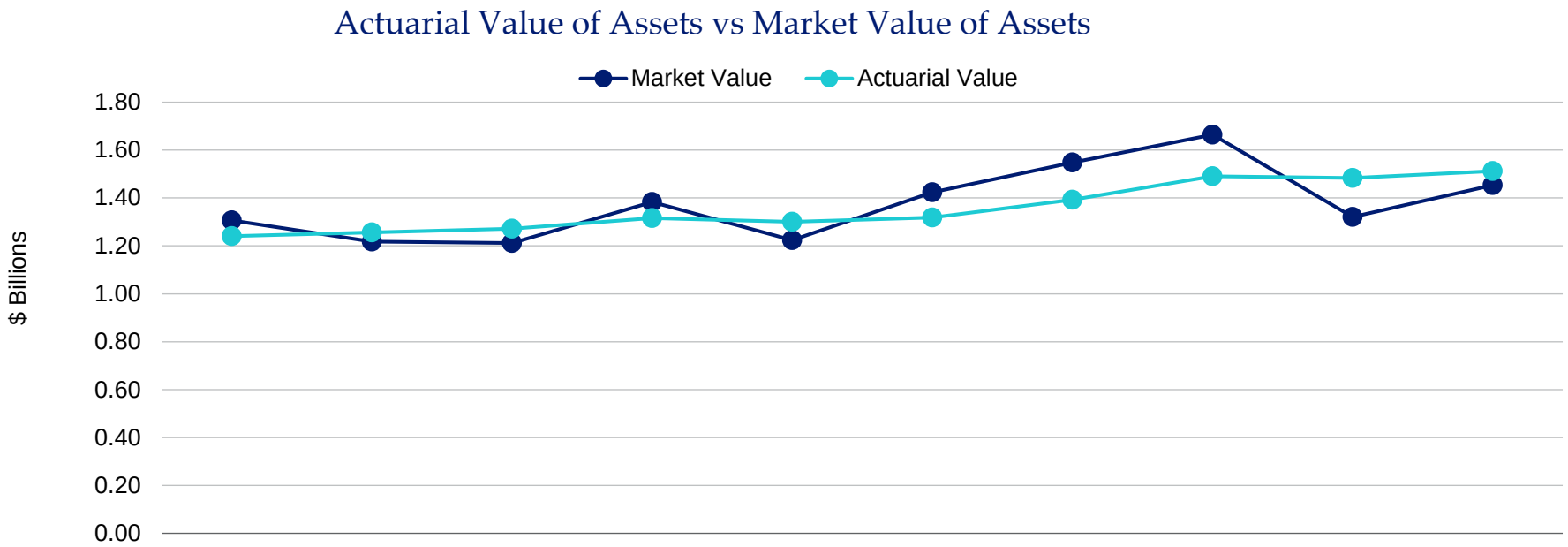
* Total return minus expected return on a market value basis.

† Percent deferred applies to the current valuation year.

‡ Recognition at 20% per year over five years. Deferred return as of December 31, 2023 recognized in each of the next four years:

a. Amount recognized on December 31, 2024	-8,719,557
b. Amount recognized on December 31, 2025	-29,240,795
c. Amount recognized on December 31, 2026	-46,943,831
d. Amount recognized on December 31, 2027	26,757,887

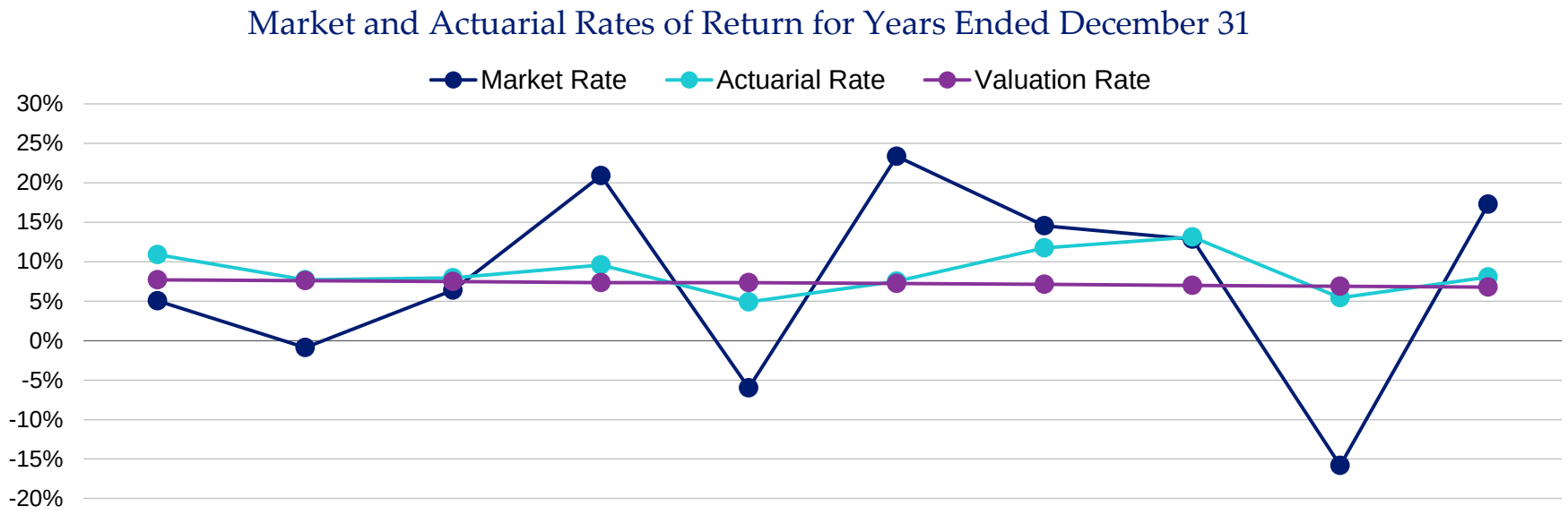
Asset history for years ended December 31



Legend	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Actuarial value*	$1.24	$1.26	$1.27	$1.32	$1.30	$1.32	$1.39	$1.49	$1.48	$1.51
Market value*	1.31	1.22	1.21	1.38	1.22	1.42	1.55	1.66	1.32	1.45
Ratio	0.95	1.03	1.05	0.95	1.06	0.93	0.90	0.90	1.12	1.04

* In $ billions

Historical investment returns



Legend	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Market rate	5.05%	-0.88%	6.40%	20.91%	-6.00%	23.36%	14.56%	12.87%	-15.83%	17.28%
Actuarial rate	10.92%	7.71%	7.97%	9.59%	4.92%	7.54%	11.76%	13.13%	5.43%	8.08%
Assumed rate	7.80%	7.70%	7.60%	7.50%	7.35%	7.25%	7.15%	7.00%	6.90%	6.80%

Average Rates of Return	Actuarial Value	Market Value
Most recent five-year average return:	9.12%	9.12%
Most recent ten-year average return:	8.67%	7.04%

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

Actuarial Experience for Year Ended December 31, 2023

	Assumption	Amount
1.	Gain/(loss) from investments*	$18,399,001
2.	Gain/(loss) from administrative expenses	-101,007
3.	Net gain/(loss) from other experience	-11,100,722
4.	**Net experience gain/(loss): 1 + 2 + 3**	**$7,197,272**

* Details on next page

Investment experience

Actuarial planning is long term. The obligations of a pension plan are expected to continue for the lifetime of all its participants.

The assumed long-term rate of return of 6.70% considers past experience, the asset allocation policy of the Board and future expectations. For the year ended December 31, 2023, the assumed rate of return was 6.80%.

Investment Experience

	Investment	YE 2023 Market Value	YE 2023 Actuarial Value
1.	Net investment income	$220,634,000	$116,292,724
2.	Average value of assets	1,277,126,000	1,439,613,571
3.	Rate of return: **1 ÷ 2**	17.28%	8.08%
4.	Assumed rate of return	6.80%	6.80%
5.	Expected investment income: **2 x 4**	86,844,568	97,893,723
6.	Investment gain/(loss): **1 – 5**	$133,789,432	$18,399,001

Non-investment experience

Administrative expenses

Administrative expenses for the year ended December 31, 2023 totaled $821,000, as compared to the assumption of $700,000. This resulted in an experience loss of $101,007 for the year, when adjusted for timing. The assumed administrative expenses are the prior year actual amount rounded to the nearest $50,000; the assumption was increased to $800,000 for the current year.

Other experience

There are other differences 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
- Retirement experience (earlier or later than projected)
- The number of disability retirements (more or fewer than projected)
- Salary increases (greater or smaller than projected)

The net loss from this other experience for the year ended December 31, 2023 amounted to $11,100,722, which is 0.6% of the actuarial accrued liability. This loss is primarily related to mortality experience among retired participants.

Actuarial assumptions

The Board approved the following change in actuarial assumptions:

- Investment Return: Lowered from 6.80% to 6.70%

  As a result of this assumption change, the net employer normal cost increased by $0.03 million and the actuarial accrued liability increased by $17.1 million. The total impact was an increase in the actuarially determined contribution of $1.6 million.

Plan provisions

- There were no changes in plan provisions since the prior valuation.

Unfunded actuarial accrued liability

Development of Unfunded Actuarial Accrued Liability for Year Ended December 31, 2023

	Unfunded Actuarial Accrued Liability	Change	Amount
1.	Unfunded actuarial accrued liability at beginning of year		$416,904,439
2.	Normal cost at beginning of year		2,001,989
3.	Actual contributions		-66,152,000
4.	Interest on 1, 2 & 3		26,448,388
5.	**Expected unfunded actuarial accrued liability**		**$379,202,816**
6.	Changes due to:		
	a. Net experience gain	-$7,197,272	
	b. Assumptions	17,118,094	
	Total changes		**$9,920,822**
7.	Unfunded actuarial accrued liability at end of year		$389,123,638

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 January 1, 2024, the actuarially determined contribution is $62,339,898.

The Board sets the methodology used to calculate the actuarially determined contribution, and the Trustees have opted to amortize the changes that occur each year over closed 15-year periods. As of January 1, 2018, the remaining outstanding bases were replaced with a single 15-year closed level dollar amortization. New bases are established each year to recognize experience gains and losses, plan changes, assumption changes, and method changes. A credit balance of $31.6 million creates a buffer for differences between the budget and recommended contribution.

The contribution requirement as of January 1, 2024 is based on the data previously described, 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

	Contribution	2024 Amount	2023 Amount
1.	Total normal cost	$1,185,483	$1,301,989
2.	Administrative expenses	800,000	700,000
3.	Expected employee contributions	-354,815	-405,691
4.	**Employer normal cost: (1) + (2) + (3)**	**$1,630,668**	**$1,596,298**
5.	Actuarial accrued liability	$1,900,927,933	$1,900,620,010
6.	Actuarial value of assets	1,511,804,295	1,483,715,571
7.	**Unfunded actuarial accrued liability: (5) - (6)**	**$389,123,638**	**$416,904,439**
8.	Payment on unfunded actuarial accrued liability	58,730,752	57,924,746
9.	Adjustment for timing*	1,978,478	1,979,420
10.	**Actuarially determined contribution: (4) + (10) + (11)**	**$62,339,898**	**$61,500,464**

*Contributions are assumed to be made in the middle of each month.

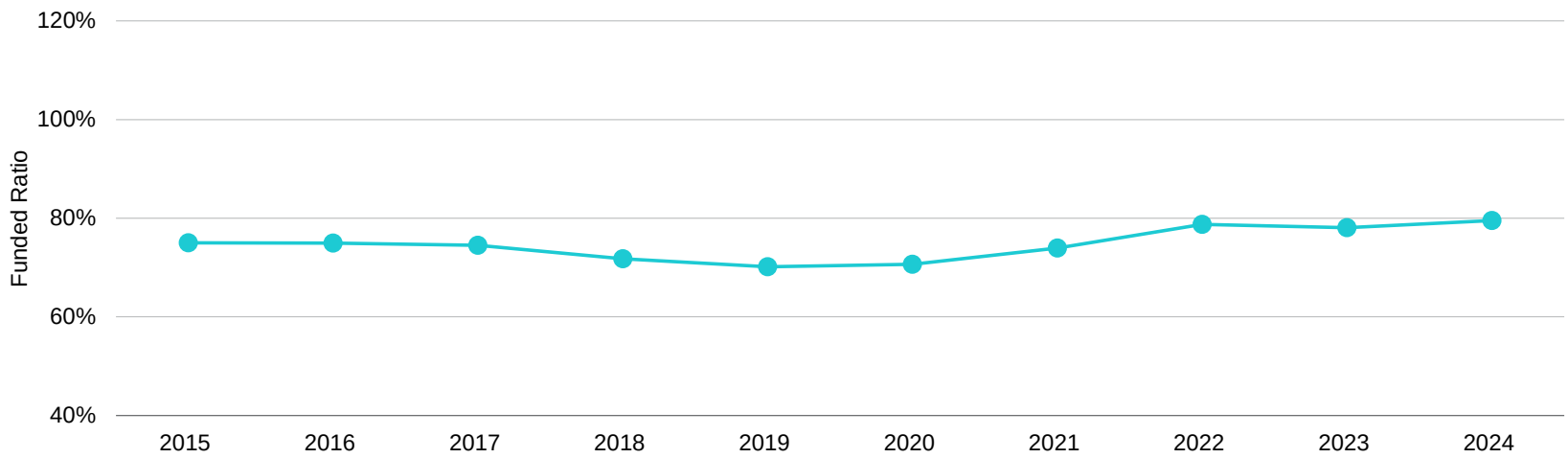
Reconciliation of actuarially determined contribution

Reconciliation of Actuarially Determined Contribution from January 1, 2023 to January 1, 2024

	Step	Amount
1.	Actuarially determined contribution as of January 1, 2023	$61,500,464
2.	Effect of change in administrative expense assumption	103,278
3.	Effect of change in other actuarial assumptions	1,589,593
4.	Effect of investment (gain)/loss	-1,929,777
5.	Effect of other gains and losses on accrued liability	1,174,892
6.	Net effect of other changes, including composition and number of participants	-98,552
7.	**Total change**	**$839,434**
8.	**Actuarially determined contribution as of** January 1, 2024	**$62,339,898**

Schedule of funding progress through December 31, 2023

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) – (a)	Funded Ratio (a) / (b)	Covered Compensation (c)	UAAL as a Percentage of Covered Compensation [(b) – (a)] / (c)
01/01/2015	$1,240,742,474	$1,654,412,161	$413,669,687	75.00%	$32,828,504	1,260.09%
01/01/2016	1,256,554,200	1,677,001,812	420,447,612	74.93%	27,819,954	1,511.32%
01/01/2017	1,271,984,035	1,706,578,512	434,594,477	74.53%	23,391,200	1,857.94%
01/01/2018	1,315,952,327	1,833,170,386	517,218,059	71.79%	20,373,597	2,538.67%
01/01/2019	1,299,897,798	1,852,863,195	552,965,397	70.16%	14,845,291	3,724.85%
01/01/2020	1,317,765,335	1,865,253,623	547,488,288	70.65%	12,955,754	4,225.83%
01/01/2021	1,391,978,693	1,881,914,157	489,935,464	73.97%	9,864,659	4,966.57%
01/01/2022	1,491,220,910	1,893,045,684	401,824,774	78.77%	8,034,013	5,001.54%
01/01/2023	1,483,715,571	1,900,620,010	416,904,439	78.06%	7,176,761	5,809.09%
01/01/2024	1,511,804,295	1,900,927,933	389,123,638	79.53%	6,314,620	6,162.27%



History of employer contributions

History of Employer Contributions: 2015– 2024

Year Ended December 31	Actuarially Determined Employer Contribution (ADEC)	Actual Employer Contribution	Percent Contributed
2015	$48,586,172	$47,230,000	97.21%
2016	50,493,163	45,977,000	91.06%
2017	52,988,357	57,228,000	108.00%
2018	59,745,750	59,203,000	99.09%
2019	64,772,780	64,777,800	100.01%
2020	66,232,644	68,578,000	103.54%
2021	62,358,165	71,686,000	114.96%
2022	56,324,598	64,968,000	115.35%
2023	61,500,464	65,725,000	106.87%
2024	62,339,898	- -	- -

Low-Default-Risk Obligation Measure (LDROM)

In December 2021, the Actuarial Standards Board issued a revision of Actuarial Standard of Practice No. 4 (ASOP 4) *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*. One of the revisions to ASOP 4 requires the disclosure of a Low-Default-Risk Obligation Measure (LDROM) when performing a funding valuation. The LDROM presented in this report is calculated using the same methodology and assumptions used to determine the Actuarial Accrued Liability (AAL) used for funding, except for the discount rate. The LDROM is required to be calculated using "a discount rate…derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future."

The LDROM is a calculation assuming a plan's assets are invested in an all-bond portfolio, generally lowering expected long-term investment returns. The discount rate selected and used for this purpose is the Bond Buyer General Obligation 20-year Municipal Bond Index Rate, published at the end of each week. The last published rate in December of the measurement period, by The Bond Buyer (www.bondbuyer.com), is 3.26% for use effective December 31, 2023. This is the rate used to determine the discount rate for valuing reported public pension plan liabilities in accordance with Governmental Accounting Standards when plan assets are projected to be insufficient to make projected benefit payments, and the 20-year period reasonably approximates the duration of plan liabilities. The LDROM is not used to determine a plan's funded status or Actuarially Determined Contribution. The plan's expected return on assets, currently 6.70%, is used for these calculations.

As of December 31, 2023, the LDROM for the system is $2,711,020,468. The difference between the plan's AAL of $1,900,927,933 and the LDROM can be thought of as the increase in the AAL if the entire portfolio were invested in low-default-risk securities. Alternatively, this difference could also be viewed as representing the expected savings from investing in the plan's diversified portfolio compared to investing only in low-default-risk securities.

ASOP 4 requires commentary to help the intended user understand the significance of the LDROM with respect to the funded status of the plan, plan contributions, and the security of participant benefits. In general, if plan assets were invested exclusively in low-default-risk securities, the funded status would be lower and the Actuarially Determined Contribution would be higher. While investing in a portfolio with low-default-risk securities may be more likely to reduce investment volatility and the volatility of employer contributions, it also may be more likely to result in higher employer contributions or lower benefits.

Risk

The actuarial valuation results are dependent on a single set of assumptions; however, there is a risk that emerging results may differ significantly as actual experience proves to be different from the current assumptions.

We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Plan's future financial condition but have included a brief discussion of some risks that may affect the Plan.

- Economic and Other Related Risks. Potential implications for the Plan due to the following economic effects (that were not reflected as of the valuation date) include:
  - Volatile financial markets and investment returns lower than assumed
  - High inflationary environment impacting salary increases and COLAs
  - Lingering direct and indirect effects of the COVID-19 pandemic
- Investment Risk (the risk that returns will be different than expected)

  If the actual return on market value for the prior plan year were 1% different (either higher or lower), the unfunded actuarial liability would change by 3.28%, or about $12.8 million, disregarding the asset smoothing method.

  Since the Plan's assets are much larger than contributions, investment performance may create volatility in the actuarially determined contribution requirements. For example, for the prior plan year, if the actual return on market value were 1% different, the actuarially determined contribution would increase or decrease by $1.3 million once the difference is fully recognized in the actuarial value of assets.

  The market value rate of return over the last 16 years has ranged from a low of -23.79% to a high of 23.36%.
- 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.
- Contribution Risk (the risk that actual contributions will be different from actuarially determined contribution)

  The Plan's funding policy requires payment of the actuarially determined contribution. As long as this policy is adhered to, contribution risk is negligible.

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

  Examples of this risk include:

  – Actual retirements occurring earlier or later than assumed. The value of retirement plan benefits is sensitive to the rate of benefit accruals and any early retirement subsidies that apply.

  – More or less active participant turnover than assumed.

  Due to the small number of active participants, demographic risks other than mortality are no longer a driver of Plan costs.

- There are external factors including legislative or financial reporting changes that could impact the Plan's funding and disclosure requirements. While we do not assume any changes in such external factors, it is important to understand that they could have significant consequences for the Plan.

Maturity Measures

Due to cost-of-living adjustments and new retirements, benefit payments are projected to grow to $156.2 million by 2030. Thereafter, total benefits are projected to decline as the number of individuals in pay status decreases.

As pension plans mature, the cash needed to fulfill benefit obligations will change with the makeup of the covered population. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities.

Currently the Plan has a non-active to active participant ratio of 39.39.

For the prior year, benefits paid were $87.4 million more than contributions received. Plans with high levels of negative cash flows may have a need for a larger allocation to income generating assets, which can create a drag on investment return.

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 December 31

Type	2024	2023
Actuarial accrued liability (AAL)		
Active member contributions	$9,811,954	$10,993,668
Retirees and beneficiaries	1,841,723,102	1,836,263,072
Active and inactive members (employer-financed)	49,392,877	53,363,270
Total	**$1,900,927,933**	**$1,900,620,010**
Actuarial value of assets	1,511,804,295	1,483,715,571
Cumulative portion of AAL covered		
Active member contributions	100.00%	100.00%
Retirees and beneficiaries	81.55%	80.20%
Active and inactive members (employer-financed)	0.00%	0.00%

State minimum requirements

Georgia Code Section 47-20-10(b) allows a Plan to be in compliance the minimum funding standards if the sponsor makes contributions equal to or greater than the annual required contribution (ARC) under Governmental Accounting Standards Board (GASB) Statements No. 25 and No. 27 as in effect on June 15, 2013. The lowest ARC allowable is based on a 30-year level percent-of-pay amortization of the Plan's unfunded actuarial liability. The County is making annual contributions in excess of this amount, based on 15-year level dollar amortizations, and therefore the Plan is in compliance with Georgia law.

Section 3: Supplemental Information

Exhibit A: Table of plan demographics

Category	Year Ended December 31, 2023	Year Ended December 31, 2022	Change From Prior Year
Active participants in valuation:			
• Number	77	90	-14.4%
• Average age	58.4	57.3	1.1
• Average years of service	27.3	26.9	0.4
• Total payroll	$6,314,620	$7,176,761	-12.0%
• Average compensation	$82,008	$79,742	2.8%
• Account balances	9,811,954	10,993,668	-10.7%
Inactive participants	17	18	-5.6%
Retired participants:			
• Number in pay status	2,452	2,504	-2.1%
• Average age	70.9	70.2	0.7
• Average monthly benefit	$4,429	$4,291	3.2%
Disabled participants:			
• Number in pay status	100	104	-3.8%
• Average age	68.7	68.4	0.3
• Average monthly benefit	$2,765	$2,670	3.6%
Beneficiaries:			
• Number in pay status	464	458	1.3%
• Average age	77.0	76.3	0.7
• Average monthly benefit	$3,065	$2,976	3.0%

Exhibit B: Participants in active service as of December 31, 2023 by age, years of service, and average compensation*

Years of Service

Age	Total	Under 20	20-24	25-29	30-34	35 & over
Under 50	7	0	6	1	0	0
50 - 54	19	1	6	9	3	0
55 - 59	21	1	5	11	4	0
60 - 64	18	1	4	6	5	2
65 - 69	8	0	0	3	3	2
70 & over	4	0	0	0	3	1
Total	**77**	**3**	**21**	**30**	**18**	**5**

* Compensation is annualized for those hired during the prior plan year

Exhibit C: Reconciliation of participant data

	Active Participants	Inactive Vested Participants	Disableds	Retired Participants	Beneficiaries	Total
Number as of January 1, 2023	**90**	**18**	**104**	**2,504**	**458**	**3,174**
Terminations	0	0	0	0	0	0
Retirements	-14	-1	N/A	15	N/A	0
New disabilities	0	0	0	N/A	N/A	0
Return to work	2	0	0	-2	N/A	0
New beneficiaries	0	0	0	0	24	24
Deaths	-1	0	-4	-72	-16	-93
Lump sum cash-outs	0	0	0	0	0	0
Data adjustments	0	0	0	7	-2	5
DC Plan Transfer	0	0	0	0	0	0
Number as of January 1, 2024	**77**	**17**	**100**	**2,452**	**464**	**3,110**

Exhibit D: Summary statement of income and expenses on a market value basis

Year Ended December 31, 2023 versus Year Ended December 31, 2022

Item	Income and Expenses	Assets as of YE 2023	Income and Expenses	Assets as of YE 2022
Net assets at market value at the beginning of the year		**$1,321,228,000**		**$1,664,070,000**
Contribution and other income:				
Employer contributions	$65,725,000		$64,968,000	
Employee contributions	427,000		394,000	
Total contribution income		$66,152,000		$65,362,000
Investment income:				
Investment income	$224,716,000		-$252,281,000	
Less investment fees	-4,082,000		-4,380,000	
Net investment income		$220,634,000		-$256,661,000
Total income available for benefits		$286,786,000		-$191,299,000
Less benefit payments and administrative expenses:				
Administrative expenses	-$821,000		-$721,000	
Benefit payments	-153,261,000		-150,463,000	
Refunds of contributions	0		-28,000	
Transfers to DC Plan	-274,000		-331,000	
Net benefit payments and administrative expenses		-$154,356,000		-$151,543,000
Change in market value of assets		**$132,430,000**		**-$342,842,000**
Net assets at market value at the end of the year		**$1,453,658,000**		**$1,321,228,000**

Exhibit E: Summary statement of plan assets

Year Ended December 31, 2023 versus Year Ended December 31, 2022

Item	Investments	Assets as of YE 2023	Investments	Assets as of YE 2022
Cash and accounts receivable				
Cash equivalents		$108,820,000		$26,374,000
Total accounts receivable		16,639,000		16,460,000
Investments:				
Domestic equity	$637,918,000		$584,671,000	
International equity	372,986,000		321,729,000	
Domestic fixed income	228,119,000		216,363,000	
International fixed income	0		65,555,000	
Mortgage-backed securities/real estate	19,242,000		14,773,000	
Bank loans	77,514,000		82,442,000	
Total investments at market value		1,335,779,000		1,285,533,000
Total assets		**1,461,238,000**		**1,328,367,000**
Total accounts payable		-7,580,000		-7,139,000
Net assets at market value		**$1,453,658,000**		**$1,321,228,000**
Net assets at actuarial value		**$1,511,804,295**		**$1,483,715,571**

Exhibit F: Table of amortization bases

Type	Date Established	Initial Period	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
Initial liability	01/01/2018	15	$413,296,938	$42,042,931	9.00	$296,038,854
Actuarial experience gain	01/01/2018	15	-5,216,165	-530,618	9.00	-3,736,265
Change in assumptions	01/01/2018	15	112,434,921	11,437,524	9.00	80,535,572
Actuarial experience loss	01/01/2019	15	37,633,237	3,819,755	10.00	29,027,083
Change in assumptions	01/01/2019	15	17,674,462	1,793,949	10.00	13,632,579
Actuarial experience loss	01/01/2020	15	915,500	92,750	11.00	753,319
Change in assumptions	01/01/2020	15	17,553,347	1,778,346	11.00	14,443,770
Actuarial experience gain	01/01/2021	15	-54,667,307	-5,530,088	12.00	-47,625,221
Change in assumptions	01/01/2021	15	26,158,143	2,646,130	12.00	22,788,527
Actuarial experience gain	01/01/2022	15	-68,128,677	-6,884,965	13.00	-62,455,206
Change in Assumptions	01/01/2022	15	17,469,051	1,765,392	13.00	16,014,301
Actuarial experience loss	01/01/2023	15	30,072,567	3,037,086	14.00	28,857,282
Change in assumptions	01/01/2023	15	22,387,565	2,260,963	14.00	21,482,845
Actuarial experience gain	01/01/2024	15	-7,197,272	-726,630	15.00	-7,197,272
Change in Assumptions	01/01/2024	15	17,118,094	1,728,227	15.00	17,118,094
Total				**$58,730,752**		**$419,678,262**

* Level percentage of payroll

Exhibit F-1– Development of Credit Balance

1. Credit balance as of January 1, 2023	$24,688,322
2. County contributions with interest	67,749,099
3. Employee contributions with interest	440,150
4. Normal cost	-1,301,989
5. Administrative expenses	-700,000
6. Net amortization payments	-57,924,746
7. Interest at 6.80%	-2,396,212
8. Credit balance as of January 1, 2024	$30,554,624
9. 2024 credit balance adjusted for contribution timing	$31,556,119

Exhibit G: Benefit Payment Projection

Segal has determined the anticipated benefits to be paid from the Plan over the next ten years. This projection is provided to help the Pension Board assess the future liquidity needs of the System, and to help determine whether the Plan should plan to sell assets to pay participants' benefits or to restructure the debt and equity allocations.

This is a mature and closed fund, and thus it is expected that the contributions paid into the Plan each year will not be sufficient to pay all of the annual benefit requirements and expenses. Investment income is required to make up the difference. The Board needs to ensure that interest and dividend income, along with maturing fixed income investments and the sale of equity investments, are at a sufficient level to provide existing and emerging benefit payments to participants and beneficiaries. This matter should be considered by the investment managers in designing their strategies.

The projection is shown below. The assumptions for retirement and mortality are the same rates shown in Section 4 of the report.

Projected Benefit Payments, 2024 - 2033

Year Ended December 31	Number of Benefit Recipients	Benefits to Active Participants	Benefits to Non-Active Participants	Total Benefits Projected
2024	3,046	$1,240,443	$149,363,339	$150,603,782
2025	3,003	1,969,511	150,628,616	152,598,127
2026	2,952	2,553,673	151,608,286	154,161,958
2027	2,895	3,169,921	152,291,491	155,461,412
2028	2,831	3,572,709	152,662,465	156,235,174
2029	2,763	3,962,081	152,703,039	156,665,120
2030	2,688	4,256,734	152,394,088	156,650,822
2031	2,611	4,537,754	151,716,110	156,253,864
2032	2,528	4,768,930	150,650,271	155,419,201
2033	2,442	4,985,983	149,179,491	154,165,473

Section 4: Actuarial Valuation Basis

Exhibit 1: Actuarial assumptions, methods and models

Rationale for assumptions

The information and analysis used in selecting each demographic assumption that has a significant effect on this actuarial valuation is shown in the Review of Actuarial Experience for the Five-Year Period from January 1, 2017 to December 31, 2021. Changes from the prior year are listed at the end of this exhibit.

Net investment return

6.70%

The net investment return assumption was chosen by the Pension Board Investment Committee. The Committee received input from the actuary, including a long-term range estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the actuarial analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes as provided by NEPC, as well as the Plan's target asset allocation.

Salary increases

Non-Public Safety Rates		Public Safety Rates	
Age	Rate (%)	Age	Rate (%)
40-44	3.0%	40-44	6.0%
45-49	3.0%	45-49	5.0%
50 and older	3.0%	50-54	4.0%
		55 and older	3.0%

Mortality rates

Pre-retirement	Pri-2012 Employee Blue Collar Amount-weighted Mortality Tables, sex-distinct, projected generationally with Scale MP-2020 from 2012
Healthy annuitants:	Pri-2012 Healthy Retiree Blue Collar Amount-weighted Mortality Tables times 105% for Males (No adjustment for Females), projected generationally with Scale MP-2020 from 2012
Disabled annuitants:	Pri-2012 Disabled Retiree Amount-weighted Mortality Tables, sex-distinct, projected generationally with Scale MP-2020 from 2012

The tables above, with adjustments as shown, reasonably reflect the mortality experience of the System as of the measurement date. The mortality tables are generationally projected to reflect future mortality improvement.

Annuitant mortality rates

	Rate (%)*			
	Healthy		Disabled	
Age	Male	Female	Male	Female
55	0.64	0.49	2.09	1.47
60	0.93	0.71	2.41	1.80
65	1.36	1.08	2.93	2.09
70	2.05	1.64	3.76	2.58
75	3.22	2.62	5.34	3.66
80	5.72	4.35	8.24	5.76
85	9.66	7.49	12.89	9.49
90	16.54	13.05	19.59	15.67

* Mortality rates shown for base table.

Termination rates before retirement

	Rate (%)				
	Mortality[1]		Disability		Withdrawal
Age	Male	Female	Non-Public Safety	Public Safety	All Lives
40	0.12	0.07	0.00	0.00	0.00
45	0.13	0.09	0.00	0.00	0.00
50	0.17	0.12	0.00	0.00	0.00
55	0.27	0.20	0.00	0.00	0.00
60	0.45	0.32	0.00	0.00	0.00

[1]Mortality rates shown for base table

Retirement rates

Rates for Unreduced Pension			
Non-Public Safety		Public Safety	
Age	Retirement Probability (%)	Age	Retirement Probability (%)
First eligibility through eligibility + 20 years	20.00	First eligibility through eligibility + 10 years	50.00
First eligibility + 20-25 years	30.00	First eligibility + 10-15 years	20.00
Thereafter	100.00	First eligibility + 15-20 years	50.00
		Thereafter	100.00

Rates for Reduced Pension			
Non-Public Safety		Public Safety	
Age	Retirement Probability (%)	Age	Retirement Probability (%)
40-44	0.00	40-44	20.00
45-49	10.00	45-49	20.00
50-54	15.00	50-54	30.00
55-59	15.00	55-59	30.00

Description of Weighted average retirement age

Age 62, determined as follows: The weighted average retirement age for each participant is calculated as the sum of the product of each potential current or future retirement age times the probability of surviving from current age to that age and then retiring at that age, assuming no other decrements. The overall weighted retirement age is the average of the individual retirement ages based on all the active participants included in the January 1, 2024 actuarial valuation.

Retirement rates for inactive vested participants

Earliest unreduced retirement age

Unknown data for participants

Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.

Family composition

70% of males and 40% of females are assumed to be married. None are assumed to have dependent children. Males are assumed to be three years older than their spouses. Females are assumed to be two years younger than their spouses.

Benefit election

All participants are assumed to take an annuity. No participants are assumed to transfer to the County's defined contribution plan.

Final average earnings and years of service loads

A single load of 8.2% is applied to compute benefits due to 27th pay periods, unused vacation time, and unused sick leave

Interest on Employee Contributions

4.0%.

Administrative Expenses

Prior year actual amount rounded to the nearest $50,000 ($800,000 for 2024)

Actuarial value of assets

Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.

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 and are allocated by salary.

Models

Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Justification for change in actuarial assumptions

The following change in assumptions is reflected in this valuation, based on the Trustees' input:

- The net investment return was lowered from 6.80% to 6.70%

Exhibit 2: 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

January 1 through December 31

Plan status

Closed to new entrants as of July 1, 1999

Normal retirement

Age and Service Requirement	Earlier of age 65 with 10 years of Service, age 60 with 15 years of Service, age 55 with 30 years of Service, or 10 years of service and the sum of age and service equals 79 or more For elected officials or department heads, if termination is the result of resignation, failure to be re-elected, or abolishment of office, age 55 with 10 years of service
Amount	1991 Plan - 2.00% of Final Average Compensation times years of Creditable Service. Enhanced Plan - 2.25% of Final Average Compensation times years of Creditable Service for the first five years, plus 2.50% of Final Average Compensation per year of Credited Service in excess of five years. The maximum benefit is 75% of Final Average Compensation. The minimum benefit is $460 per month.
Final Average Compensation	The average of the Participant's earnings during the three years of employment that produce the highest average. For elected officials and department heads, Final Average Compensation is not less than the average earnings during the 12 months prior to termination.

Early retirement

Age Requirement	None
Service Requirement	15 years of Credited Service
Amount	Normal pension accrued, reduced 0.5% for the first 60 months and 0.25% for the remaining months preceding employee's normal retirement date. The benefit of a Peace Officer with 25 years will be reduced by 0.25% for each month that commencement precedes age 55. The minimum benefit is $300 per month.

Disability

Age Requirement	None
Service Requirement	10 years of Credited Service or disabled in the line of duty
Amount	Normal pension accrued (For Peace Officers, the benefit assumes 35 years of service.)

Vesting

Age Requirement	None
Service Requirement	10 years of Credited Service
Amount	Normal pension accrued

Death Benefit

A percentage of the amount the Participant either a) was receiving at death, b) would have received had he retired with a normal retirement benefit at death, or c) would have received as a vested pension benefit had he survived to age 65.

75% for the Enhanced Plan, 1991 Plan, and 1982 Plan (If the beneficiary has not attained age 60 and is more than five years younger than the participant, the beneficiary's death benefit payments are reduced by 1/12 of two percent per month for each month that such beneficiary is more than five years younger than the participant.)

50% for other Plans

A beneficiary of a Peace Officer who dies in the line of duty receives the amount of compensation that the deceased would have received from the employer for one year from the date of death. After the first year, 75% of the greater of the participant's salary at death or the salary paid to a six-year police officer.

Interest on contributions

Employee contributions are credited with an annual interest rate of 4%

Cost of Living adjustment

3% per year for the Enhanced, 1991 and 1992 Plans if CPI is greater than zero

Contribution rates

Enhanced Plan - 6% of pay
1991 and 1982 Plans – 5% of pay
Other Plans – 0% to 4% of pay

Changes in plan provisions

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

Section 5: GASB Information

General information about the pension plan

Plan description

Plan membership. At December 31, 2023, pension plan membership consisted of the following:

Membership	Amount
Retired participants or beneficiaries currently receiving benefits	3,016
Vested terminated members entitled to but not yet receiving benefits[1]	17
Active members	77
Total	**3,110**

The System was closed to new entrants in 1999.

Contributions: The Plan is subject to minimum funding standards of the Public Retirement Systems Standards Law (Georgia Code Section 47-20-10). The System establishes an actuarially determined contribution as recommended by an independent actuary. The actuarially determined contribution is the estimated amount necessary to finance the costs of benefits earned by employees during the year, plus an additional amount to finance any unfunded accrued liability.

Benefits provided: See Section 4, Exhibit II for a summary of plan provisions.

[1] Excludes terminated members due a refund of contributions

Exhibit 1 – Net Pension Liability

Components of the Net Pension Liability	Current	Prior
Reporting date for employer under GASB 68	December 31, 2023	December 31, 2022
Measurement date	December 31, 2023	December 31, 2022
Total Pension Liability	$1,900,927,933	$1,900,620,010
Plan Fiduciary Net Position	1,453,658,000	1,321,228,000
Net Pension Liability	447,269,933	579,392,010
Plan Fiduciary Net Position as a percentage of the Total Pension Liability*	76.47%	69.52%

Actuarial assumptions. The TPL as of December 31, 2023, which was determined based on the results of an actuarial valuation as of December 31, 2023, used the following actuarial assumptions, applied to all periods included in the measurement:

Assumption Type	Assumption
Wage inflation	2.50%
Salary increases	3.00% to 6.00%
Net investment rate of return	6.70%, net of pension plan investment expense, including inflation (previously, 6.80%)

Pre-retirement mortality is based on to the Pri-2012 Blue Collar Amount-weighted Employee Mortality Table. Post-retirement mortality for non-disabled lives is based on the Pri-2012 Blue Collar Amount-weighted Healthy Annuitant Mortality Table, times 105% for males with no adjustment for females. Mortality for disabled lives is based on the Pri-2012 Disabled Retiree Amount-weighted Mortality Table, set forward four years for males and unadjusted for females. All tables are projected generationally from 2012 with Scale MP-2020.

The actuarial assumptions used in the December 31, 2023 valuation were based on the results of an experience study for the period January 1, 2017 to December 31, 2021

Detailed information regarding all actuarial assumptions can be found in Section 4, Exhibit I.

* These funded percentages are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for or the amount of future contributions.

Determination of discount rate and investment rates of return

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adding expected inflation. The target allocation (approved by the Board) and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the table below.

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
U.S. Large Cap Equity	31.50%	6.90%
U.S. Small/Mid Cap Equity	14.00%	7.70%
International Large Cap Equity	12.50%	6.50%
International Small Cap Equity	5.00%	7.80%
Emerging Market Equity	5.00%	9.40%
Domestic Fixed Income	20.00%	5.30%
Bank Loans	5.00%	6.80%
Asset Allocator (60/40 Eq/Fl Tgt)	7.00%	6.40%
Total	**100.00%**	

Discount rate. The discount rate used to measure the total pension liability was 6.70%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the pension Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability. For the prior year, the discount rate was 6.80%.

Discount rate sensitivity

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 6.70%, as well as what the net pension liability would be if it were calculated using a discount rate that is one-percentage-point lower (5.70%) or one-percentage-point higher (7.70%) than the current rate:

Item	1% Decrease (5.70%)	Current Discount Rate (6.70%)	1% Increase (7.70%)
Retirement System's Net Pension Liability as of December 31, 2023	$634,818,828	$447,269,933	$287,697,721

Exhibit 2: Schedule of changes in Net Pension Liability

Components of the Net Pension Liability	Current	Prior
Reporting and Measurement Dates		
Reporting date for employer under GASB 68	December 31, 2023	December 31, 2022
Measurement date and reporting date for the Plan under GASB 67	December 31, 2023	December 31, 2022
Total Pension Liability		
Service cost	$1,301,989	$1,499,481
Interest	124,110,506	125,520,257
Change of benefit terms	0	0
Differences between expected and actual experience	11,312,334	8,989,023
Changes of assumptions	17,118,094	22,387,565
Benefit payments, including refunds of member contributions	-153,535,000	-150,822,000
Net change in Total Pension Liability	**$307,923**	**$7,574,326**
Total Pension Liability — beginning	1,900,620,010	1,893,045,684
Total Pension Liability — ending	**$1,900,927,933**	**$1,900,620,010**
Plan Fiduciary Net Position		
Contributions — employer	$65,725,000	$64,968,000
Contributions — employee	427,000	394,000
Net investment income	220,634,000	-256,661,000
Benefit payments, including refunds of member contributions	-153,535,000	-150,822,000
Administrative expense	-821,000	-721,000
Other	0	0
Net change in Plan Fiduciary Net Position	**$132,430,000**	**-$342,842,000**
Plan Fiduciary Net Position — beginning	1,321,228,000	1,664,070,000
Plan Fiduciary Net Position — ending	**$1,453,658,000**	**$1,321,228,000**

Section 5: GASB Information

Components of the Net Pension Liability	Current	Prior
Net Pension Liability		
Net Pension Liability – ending	$447,269,933	$579,392,010
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	76.47%	69.52%
Covered payroll*	$6,314,620	$7,176,761
Plan Net Pension Liability as percentage of covered payroll	7,083.09%	8,073.17%

Notes to Schedule:

Benefit changes: There have been no changes in benefit provisions since GASB67 implementation

Change of Assumptions: As of December 31, 2023, the assumed discount rate was changed from 6.80% to 6.70%.

As of December 31, 2022, the following assumptions changed:

- Healthy Annuitant Mortality: Changed to the Pri-2012 Healthy Retiree Blue Collar Amount-weighted Mortality Table times 105% for Males (No adjustment for Females), projected generationally with Scale MP-2020 from 2012
- Disabled Mortality: Changed to Pri-2012 Disabled Retiree Amount-weighted Mortality Table, projected generationally with Scale MP-2020 from 2012
- Pre-Retirement Mortality: Changed to Pri-2012 Employee Blue Collar Amount-weighted Mortality Table, projected generationally with Scale MP-2020 from 2012
- Investment Return: Lowered from 6.90% to 6.80%
- Inflation Rate: Increased from 2.00% to 2.50%
- Active Withdrawal and Active Disability rate assumptions were removed
- Retirement rates were adjusted slightly to better reflect recent experience
- The spousal age difference assumption was changed for female participants, from three years younger than their male spouses to two years younger than male spouses
- The salary scale for non-public safety participants was changed to 3.0% for all years
- The liability loads for unused vacation, 27th pay periods and unused vacation time were combined into a single 8.2% load

* Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of the retirement benefits are included.

Exhibit 3: Schedule of employer contributions

Year Ended December 31	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency / (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2014	$55,255,317	$57,529,000	-$2,273,683	$32,828,504	175.24%
2015	48,586,172	47,230,000	1,356,172	27,819,954	169.77%
2016	50,493,163	45,977,000	4,516,163	23,391,200	196.56%
2017	52,988,352	57,228,000	-4,239,648	20,373,597	280.89%
2018	59,745,750	59,203,000	542,750	14,845,291	398.80%
2019	64,772,780	64,777,000	-4,220	12,955,754	499.99%
2020	66,232,644	68,578,000	-2,345,356	9,864,659	695.19%
2021	62,358,165	71,686,000	-9,327,835	8,034,013	892.28%
2022	56,324,598	64,968,000	-8,643,402	7,176,761	905.26%
2023	61,500,464	65,725,000	-4,224,536	6,314,620	1,040.84%

See accompanying notes to this schedule on next page.

Methods and assumptions used to determine "actuarial determined contribution" for the year ended December 31, 2023:

Valuation date

Actuarially determined contribution is calculated using a January valuation date as of the beginning of the fiscal year in which contributions are reported

Actuarial cost method

Entry age

Amortization method

Level dollar, closed period

Remaining amortization period

Remaining amortization period varies for the bases, with an average effective period of 10 years.

Asset valuation method

Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.

Investment rate of return

6.70%, including inflation, net of pension plan investment expense

Inflation rate

2.50%

Projected salary increases

3.00% - 6.00%

Retirement rates

Separate retirement rates for public safety employees and non-public safety employees. Rates for reduced retirement run from age 40 to age 59. Rates for unreduced retirement begin at first eligibility, and extend to age 65 for public safety and to age 70 for other employees. A full table is available in Section 4.

Mortality:

Pre-retirement: Pri-2012 Employee Blue Collar Amount-weighted Mortality Tables, sex-distinct, projected generationally with Scale MP-2020 from 2012

Healthy annuitant: Pri-2012 Healthy Retiree Blue Collar Amount-weighted Mortality Tables times 105% for Males (No adjustment for Females), projected generationally with Scale MP-2020 from 2012

Disabled: Pri-2012 Disabled Retiree Amount-weighted Mortality Tables, sex-distinct, projected generationally with Scale MP-2020 from 2012

Exhibit 4 – Pension expense

Components of pension expense	Current	Prior
Reporting date for employer under GASB 68	December 31, 2023	December 31, 2022
Measurement date	December 31, 2023	December 31, 2022
Service cost	$1,301,989	$1,499,481
Interest	124,110,506	125,520,257
Current-period benefit changes	0	0
Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	11,312,334	8,989,023
Expensed portion of current-period changes of assumptions	17,118,094	22,387,565
Member contributions	-427,000	-394,000
Projected earnings on pension plan investments	-86,844,568	-111,847,586
Expensed portion of current-period differences between actual and projected earnings on pension plan investments	-26,757,888	73,701,718
Administrative expense	821,000	721,000
Recognition of beginning of year deferred outflows of resources as pension expense	73,701,717	35,862,195
Recognition of beginning of year deferred inflows of resources as pension expense	-76,382,325	-76,382,325
Pension expense	**$37,953,859**	**$80,057,328**

Deferred outflows of resources and deferred inflows of resources

Deferred outflows and inflows	Current	Prior
Reporting and Measurement Dates		
Reporting date for employer under GASB 68	December 31, 2023	December 31, 2022
Measurement date	December 31, 2023	December 31, 2022
Deferred outflows of resources		
Changes in proportion and differences between employer's contributions and proportionate share of contributions*	$0	$0
Changes of assumptions	0	0
Net difference between projected and actual earnings on pension plan investments	58,148,226	162,499,162
Difference between expected and actual experience in the Total Pension Liability	0	0
Total deferred outflows of resources	**$58,148,226**	**$162,499,162**
Deferred inflows of resources		
Changes in proportion and differences between employer's contributions and proportionate share of contributions*	$0	$0
Changes of assumptions	0	0
Net difference between projected and actual earnings on pension plan investments	0	0
Difference between expected and actual experience in the Total Pension Liability	0	0
Total deferred inflows of resources	**$0**	**$0**
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 December 31:		
2023	N/A	-$2,680,608
2024	$8,721,486	35,479,372
2025	29,240,795	55,998,681
2026	46,943,831	73,701,717
2027	-26,757,886	0
Thereafter	0	0

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

Section 5: GASB Information

The average of the expected service lives of all employees is determined by:

- Calculating each active employee's expected remaining service life as the present value of $1 per year of future service at 0% interest.
- Setting the remaining service life to zero for each nonactive or retired member.
- Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.

For 2023, the average of the expected remaining service lives of all employees that are provided with pensions by the Retirement System (active and inactive employees) is one year, and therefore assumption changes and the difference between actual and expected experience are recognized immediately. The difference between projected and actual earnings on investments is recognized over five years.

Schedule of recognition of change in total Net Pension Liability

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience on Total Pension Liability

Reporting Date for Employer under GASB 68 Year Ended December 31	Differences between Expected and Actual Experience	Recognition Period (Years)	2022	2023	2024	2025	2026	2027	2028	Thereafter
2023	$11,312,334	1.00	N/A	$11,312,334	$0	$0	$0	$0	$0	$0
Total			**N/A**	**$11,312,334**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Assumption Changes

Reporting Date for Employer under GASB 68 Year Ended December 31	Assumption Changes	Recognition Period (Years)	2022	2023	2024	2025	2026	2027	2028	Thereafter
2023	$17,118,094	1.00	N/A	$17,118,094	$0	$0	$0	$0	$0	$0
Total			**N/A**	**$17,118,094**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Projected and Actual Earnings on Pension Plan Investments

Reporting Date for Employer under GASB 68 Year Ended December 31	Differences between Projected and Actual Earnings	Recognition Period (Years)	2022	2023	2024	2025	2026	2027	2028	Thereafter
2017	-$157,468,025	5.00	$0	$0	$0	$0	$0	$0	$0	$0
2018	179,310,977	5.00	35,862,195	0	0	0	0	0	0	0
2019	-190,799,901	5.00	-38,159,980	-38,159,980	0	0	0	0	0	0
2020	-102,596,545	5.00	-20,519,309	-20,519,309	-20,519,309	0	0	0	0	0
2021	-88,515,180	5.00	-17,703,036	-17,703,036	-17,703,036	-17,703,036	0	0	0	0
2022	368,508,586	5.00	73,701,718	73,701,717	73,701,717	73,701,717	73,701,717	0	0	0
2023	-133,789,432	5.00	N/A	-26,757,888	-26,757,886	-26,757,886	-26,757,886	-26,757,886	0	0
Total*			**N/A**	**-$29,438,496**	**$8,721,486**	**$29,240,795**	**$46,943,831**	**-$26,757,886**	**$0**	**$0**

* Net increase (decrease) in pension expense

Total Increase (Decrease) in Pension Expense

Reporting Date for Employer under GASB 68 Year Ended December 31	Total Increase (Decrease) in Pension Expense	Recognition Period (Years)	2022	2023	2024	2025	2026	2027	2028	Thereafter
2017	-$157,468,025		$0	$0	$0	$0	$0	$0	$0	$0
2018	179,310,977		35,862,195	0	0	0	0	0	0	0
2019	-190,799,901		-38,159,980	-38,159,980	0	0	0	0	0	0
2020	-102,596,545		-20,519,309	-20,519,309	-20,519,309	0	0	0	0	0
2021	-88,515,180		-17,703,036	-17,703,036	-17,703,036	-17,703,036	0	0	0	0
2022	399,885,174		105,078,306	73,701,717	73,701,717	73,701,717	73,701,717	0	0	0
2023	-105,359,004		N/A	1,672,540	-26,757,886	-26,757,886	-26,757,886	-26,757,886	0	0
Total*			**N/A**	**-$1,008,068**	**$8,721,486**	**$29,240,795**	**$46,943,831**	**-$26,757,886**	**$0**	**$0**

* Net increase (decrease) in pension expense

Schedule of reconciliation of Net Pension Liability

Item	Current	Prior
Reporting and Measurement Dates		
Reporting Date for Employer under GASB 68	December 31, 2023	December 31, 2022
Measurement Date and Reporting Date for Plan under GASB 67	December 31, 2023	December 31, 2022
Net Pension Liability		
Beginning Net Pension Liability	$579,392,010	$228,975,684
Pension expense	37,953,859	80,057,328
Employer contributions	-65,725,000	-64,968,000
New net deferred inflows/outflows	-107,031,544	294,806,868
Recognition of prior deferred inflows/outflows	2,680,608	40,520,130
Ending Net Pension Liability	**$447,269,933**	**$579,392,010**

Appendix A: Definition of Pension Terms

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

Term	Definition
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	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

Term	Definition
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	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	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.
Assumptions or actuarial assumptions	The estimates upon which the cost of the Plan is calculated, including: **Investment return** — the rate of investment yield that the Plan will earn over the long-term future; **Mortality rates** — the rate or probability of death at a given age for employees and retirees; **Retirement rates** — the rate or probability of retirement at a given age or service; **Disability rates** — the rate or probability of disability retirement at a given age; **Withdrawal rates** — the rate or probability at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; **Salary increase rates** — the rates of salary increase due to inflation, real wage growth and merit and promotion increases.

Appendix A: Definition of Pension Terms

Term	Definition
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.
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.

Appendix A: Definition of Pension Terms

Term	Definition
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.