

City of Atlanta General Employees' Pension Fund

Actuarial Valuation and Review as of July 1, 2021



This report has been prepared at the request of the Board of Trustees to assist in administering the Pension Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Trustees 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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July 15, 2022

Board Members
City of Atlanta General Employees' Pension Fund
Atlanta, Georgia

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of July 1, 2021. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for the fiscal year ending June 30, 2023.

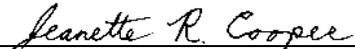
This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Pension Fund. The census information on which our calculations were based was prepared by Strategic Benefits Advisors and financial information was provided by KPMG. That assistance is gratefully acknowledged.

The actuarial calculations were directed under the supervision of Jeanette R. Cooper, FSA, FCA, MAAA, Enrolled Actuary with the assistance of Ben Kirkland and Jody Martin. Ms. Cooper is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of her knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in her opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Fund.

We hereby certify that the City of Atlanta General Employees' Pension Fund 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 2021 fiscal year of the Fund.

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

Sincerely,
Segal



Jeanette R. Cooper, FSA, FCA, MAAA, EA
Vice President and Consulting Actuary

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Section 1: Actuarial Valuation Summary

Purpose and basis

This report was prepared by Segal to present a valuation of the City of Atlanta General Employees' Pension Fund as of July 1, 2021. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. 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 Fund assets to cover the estimated cost of settling the Fund'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 Pension Plan, as administered by the Board;
- The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of June 30, 2021, provided by Strategic Benefits Advisors;
- The assets of the Fund as of June 30, 2021, provided by KPMG;
- 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 City.

Certain disclosure information required by GASB Statements No 67 and 68 as of June 30, 2022 and June 30, 2021 for the Fund was provided in separate reports.

Section 1: Actuarial Valuation Summary

Valuation highlights

1. The July 1, 2021 valuation is used to determine the recommended, or actuarially determined contribution (ADC) for the fiscal year period July 1, 2022 to June 30, 2023 (FY'23). The recommended contribution is adjusted for interest to the middle of the fiscal period and satisfies the minimum funding standards under Georgia law Code Section 47-20-10.
2. The plan receives employee contributions of 8% of base salary for employees hired after August 31, 2011 and Hybrid Participants, and 12% or 13% of base salary for employees hired before September 1, 2011. The City contributes the recommended contribution amount which is net of employee contributions. The recommended contribution amount is composed of the employer normal cost including administrative expenses and a payment to amortize the Unfunded Actuarial Accrued Liability (UAAL) over 20 years. The recommended contribution is actuarially determined as a level percentage of payroll and will increase 3.00% annually if all assumptions are met.
3. The following actuarial assumptions and methods were approved by the Board on May 2, 2022, following the completion of an experience study for the period July 1, 2014 through June 30, 2019. The study was limited to a review of all demographic assumptions excluding mortality assumptions. Effective with this valuation, the following assumptions were changed:
 - The gender-neutral, service-based withdrawal assumption was modified to reflect an amount-weighted set of rates rather than a headcount-weighted set of rates.
 - The sex-distinct ordinary disability rates were lowered to approximately 70% of the existing age-based rates. The distinction for occupational disability of 10% of ordinary disability rates was removed.
 - The retirement rates for participants with 30 or more years of service at retirement were increased for ages 50 to 61 with slight reductions in the rates for ages 65 and over. Minor adjustments also were made to the retirement rates for participants with less than 30 years of service at retirement at ages 62 to 67.
 - The spousal age assumption was modified for female participants only to assume male spouses are two years older.
 - The percent married assumption for participants hired prior to September 1, 2011 was changed from 75% to an assumption based on the active participant contribution rate provided with the valuation data. No modifications were made to the assumption that all participants hired after August 31, 2011 are not married.
 - The assumption that 75% of terminated participants hired prior to September 1, 2011 will take a refund of contributions was decreased to 60%; there was no change in the 100% assumption for terminated participants hired after August 31, 2011.
 - A load of 0.50% on retirement benefits for unused sick leave pay was introduced for participants hired prior to September 1, 2011 only.

Section 1: Actuarial Valuation Summary

- An assumption of 0.25 years of additional service for unused sick leave at retirement for use in the calculation of retirement benefits was also introduced for participants hired prior to September 1, 2011. No adjustment was introduced for participants hired after August 31, 2011.
- The vacation pay load on retirement benefits for participants hired prior to September 1, 2011 was increased from 4.00% to 4.50% and a vacation pay load on retirement benefits of 1.50% for participants hired after August 31, 2011 was introduced.

As a result of the assumption changes, the actuarial accrued liability increased by \$8.4 million, or 0.4%, the employer normal cost increased by \$1.7 million, and the ADC increased by \$2.4 million, or 1.24% of projected payroll.

4. 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 City meets this standard.
5. The City's recommended contribution for FY '23 is \$48.3 million, or 24.72% of projected payroll. This amount is a decrease of about \$3.4 million from the prior valuation's cost and is mainly attributable to favorable investment returns, partially offset by the impact of the new assumptions. See *Section 2: Reconciliation of ADC* for additional details.
6. Actual contributions made during the fiscal year ending June 30, 2021 were \$48,764,000, 100% of the actuarially determined contribution (ADC). In the prior fiscal year, actual contributions were \$48,219,000, 100% of the prior year ADC.
7. The total contributions made during the fiscal year ending June 30, 2021 were not sufficient to cover the normal cost plus interest on the UAAL, thereby increasing the UAAL by \$1.6 million.
8. The funded ratio (the ratio of the actuarial value of assets to actuarial accrued liability) is 72.45%, compared to the prior year funded ratio of 68.03%. 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 84.39%, compared to 67.06% as of the prior valuation date. These measurements are not necessarily appropriate for assessing the sufficiency of Fund assets to cover the estimated cost of settling the Fund's benefit obligation or the need for or the amount of future contributions.
9. The unfunded actuarial accrued liability is \$545.9 million, which is a decrease of \$82.3 million since the prior valuation.
10. The net experience gain from sources other than investment experience was 1.0% of the actuarial accrued liability prior to reflection of assumption changes. Most of this gain is attributable to mortality greater than expected. This experience may be an outlier due to the COVID-19 pandemic.
11. The rate of return on the market value of assets was 32.67% for the July 1, 2020 to June 30, 2021 plan year. The return on the actuarial value of assets was 12.58% for the same period due to the recognition of prior years' investment gains and losses. This resulted in an actuarial gain of \$72.8 when measured against the assumed rate of return of 7.00%. Given the low fixed income interest rate environment, target asset allocation and expectations of future investment returns for various classes, we advise the

Section 1: Actuarial Valuation Summary

Board to continue to monitor actual and anticipated investment returns relative to the assumed long-term rate of return on investments of 7.00%.

12. The actuarial value of assets is 85.85% of the market value of assets. The investment experience in the past years has only been partially recognized in the actuarial value of assets. As the deferred net gain of \$236.6 is recognized in future years, the cost of the Fund is likely to decrease unless the net gain is offset by future experience.
13. There have been no changes in plan provisions since the last valuation.
14. The disclosure information required for compliance with GASB Statement No. 67, *Financial Reporting for Pension Plans* for the fiscal year ended June 30, 2021, was released to the City's Finance Department on November 16, 2021. Information required for compliance with GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, for the fiscal year ended June 30, 2022, based on a June 30, 2021 measurement date was released to the City's Finance Department on April 29, 2022.
15. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2021. 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. Segal is available to prepare projections of potential outcomes upon request.
16. 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. We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Fund's future financial condition but have included a brief discussion of some risks that may affect the Fund in Section 2.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

Fiscal Year		2022	2021
Contributions for fiscal year beginning July 1:	• Actuarially determined contributions	\$48,330,445	\$51,750,478
	• Actuarially determined contributions as a percent of projected payroll	24.72%	25.12%
Plan Year		2021	2020
Actuarial accrued liability for plan year beginning July 1:	• Retired participants and beneficiaries	\$1,421,485,585	\$1,408,411,977
	• Inactive vested participants	17,459,342	16,050,574
	• Active participants	537,556,314	537,250,857
	• Inactive participants due a refund of employee contributions	4,985,574	3,511,454
	• Total	1,981,486,815	1,965,224,862
	• Normal cost including administrative expenses	26,099,033	26,024,941
Assets for plan year beginning July 1:	• Market value of assets (MVA)	\$1,672,138,000	\$1,317,795,000
	• Actuarial value of assets (AVA)	1,435,548,631	1,336,954,199
	• Actuarial value of assets as a percentage of market value of assets	85.85%	101.45%
Funded status for plan year beginning July 1:	• Unfunded actuarial accrued liability on market value of assets	\$309,348,815	\$647,429,862
	• Funded percentage on MVA basis	84.39%	67.06%
	• Unfunded actuarial accrued liability on actuarial value of assets	\$545,938,184	\$628,270,663
	• Funded percentage on AVA basis	72.45%	68.03%
	• Amortization period on an AVA basis	20 years	21 years
Key assumptions	• Net investment return	7.00%	7.00%
	• Inflation rate	2.25%	2.25%
	• Payroll increase	3.00%	3.00%
Demographic data for plan year beginning July 1:	• Number of retired participants and beneficiaries ¹	3,970	3,986
	• Number of inactive vested participants	160	148
	• Number of active participants	3,757	3,936
	• Number of inactive participants due a refund of employee contributions	1,116	792
	• Covered payroll	\$189,816,699	\$200,004,950
	• Average payroll	50,523	50,814
	• Projected payroll	\$195,511,200	\$206,005,099

¹Includes suspended pensioners.

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 of benefits	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 data	An actuarial valuation for a plan is based on data provided to the actuary by the plan administrator. 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.
Assets	The valuation is based on the market value of assets as of the valuation date, as provided by KPMG. The City uses 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 projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results that does not mean that the previous assumptions were unreasonable.
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.

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 Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. 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.

Actuarial results in this report are not rounded, but that does not imply precision.

If the Board 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's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.

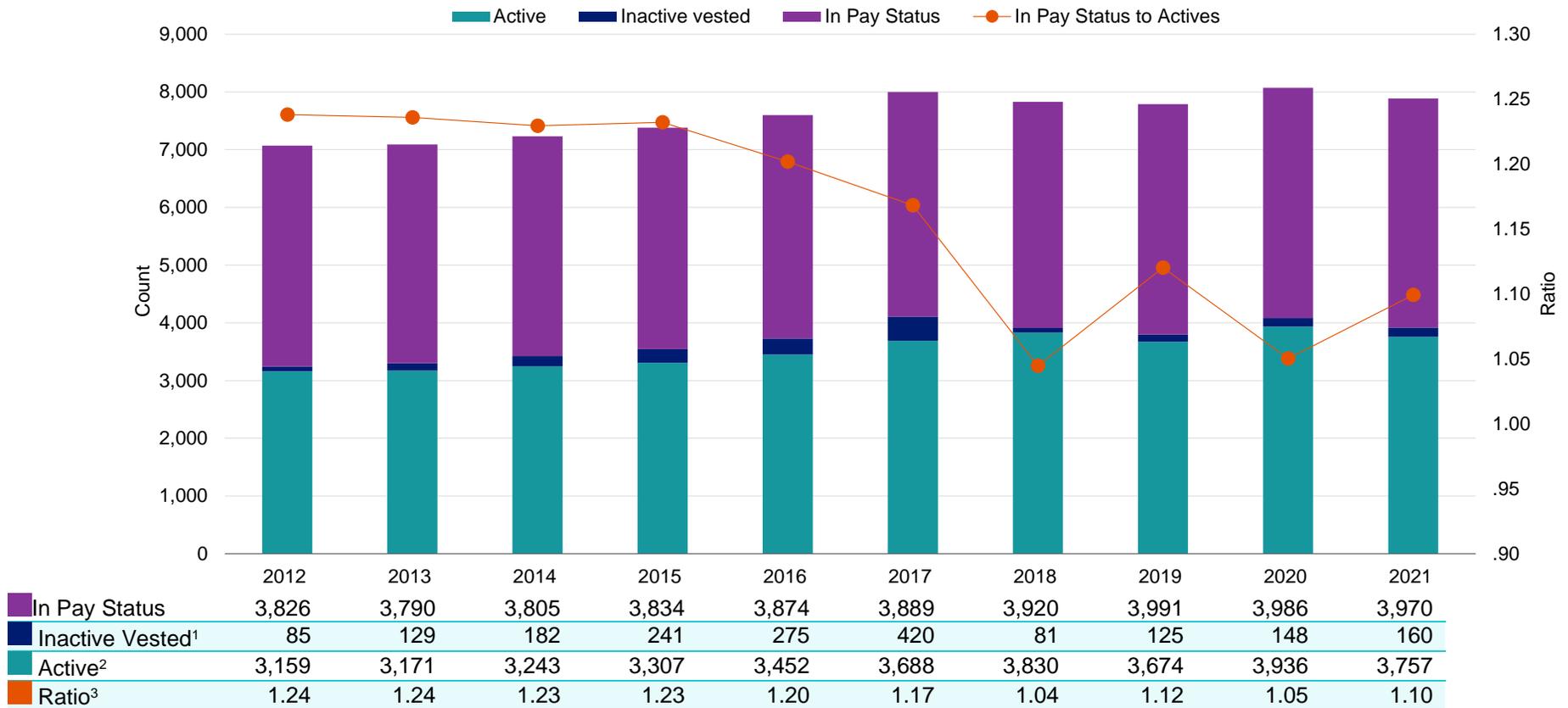
As Segal has no discretionary authority with respect to the management or assets of the Fund, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Fund.

Section 2: Actuarial Valuation Results

Participant data

This section presents a summary of significant statistical data on covered participants.

Participant Population: 2012 – 2021



More detailed information for this valuation year and the preceding valuation can be found in *Section 3, Exhibits A, B, and C.*

¹Includes terminated participants due a refund of employee contributions through 2017. Beginning in 2018, excludes terminated participants due a refund of employee contributions

²Excludes participants receiving Workers' Compensation benefits.

³Represents ratio of in pay status and inactive vested participants to active participants.

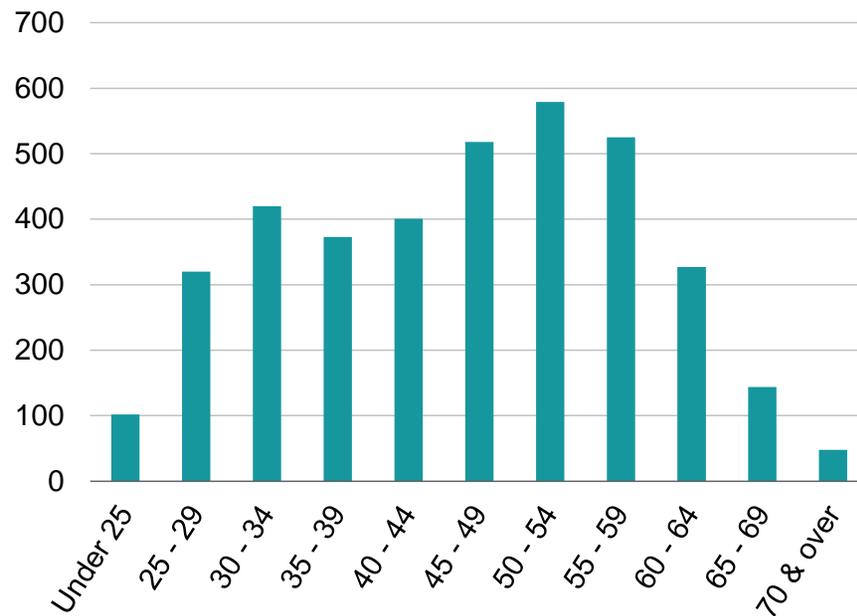
Section 2: Actuarial Valuation Results

Active participants

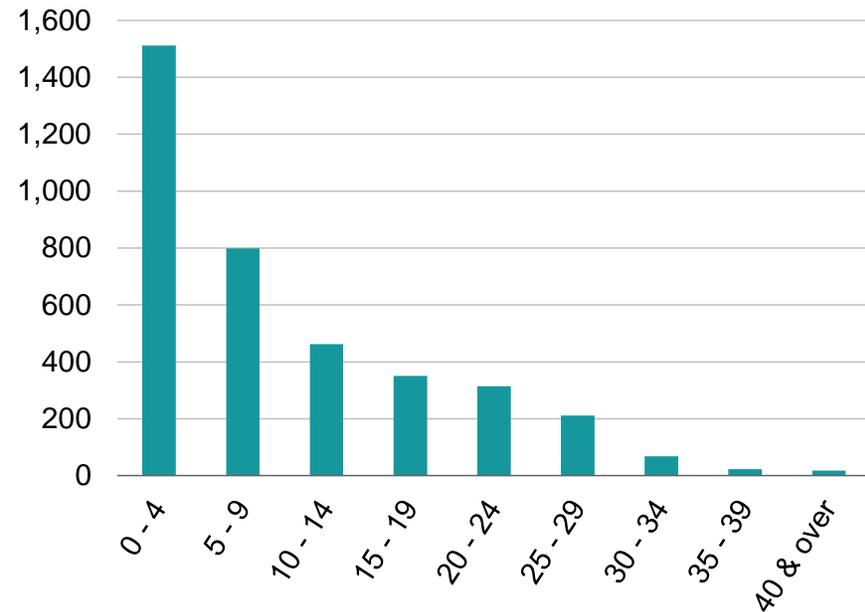
As of June 30,	2021	2020	Change
Active participants	3,757	3,936	-4.5%
Average age	46.5	45.8	0.7
Average years of service	10.1	9.6	0.5
Average compensation	\$50,523	\$50,814	-0.6%

Distribution of Active Participants as of June 30, 2021

Actives by Age



Actives by Years of Service



Section 2: Actuarial Valuation Results

Inactive participants

In this year's valuation, there were 160 participants with a vested right to a deferred or immediate vested benefit.

In addition, there were 1,116 participants entitled to a return of their employee contributions. This is an increase of over 40% from the prior year's count.

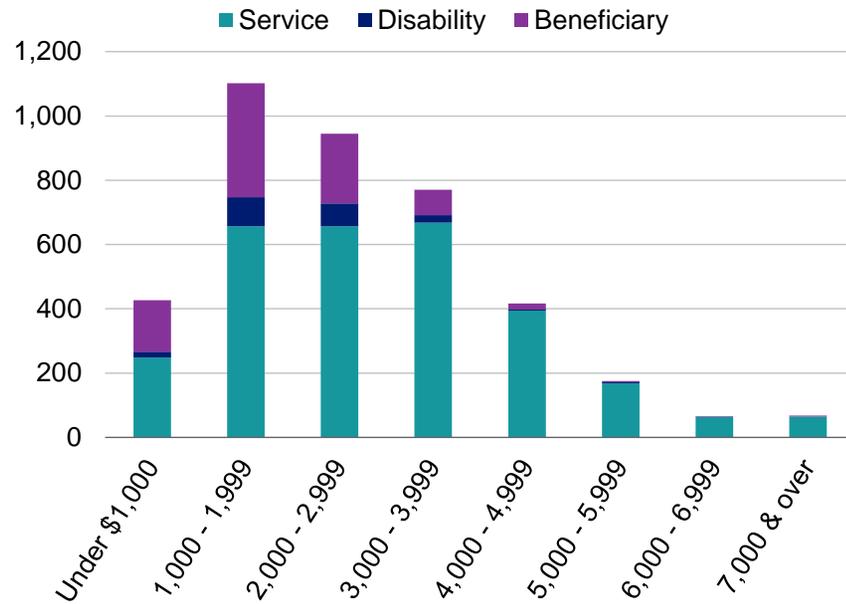
Section 2: Actuarial Valuation Results

Retired participants and beneficiaries

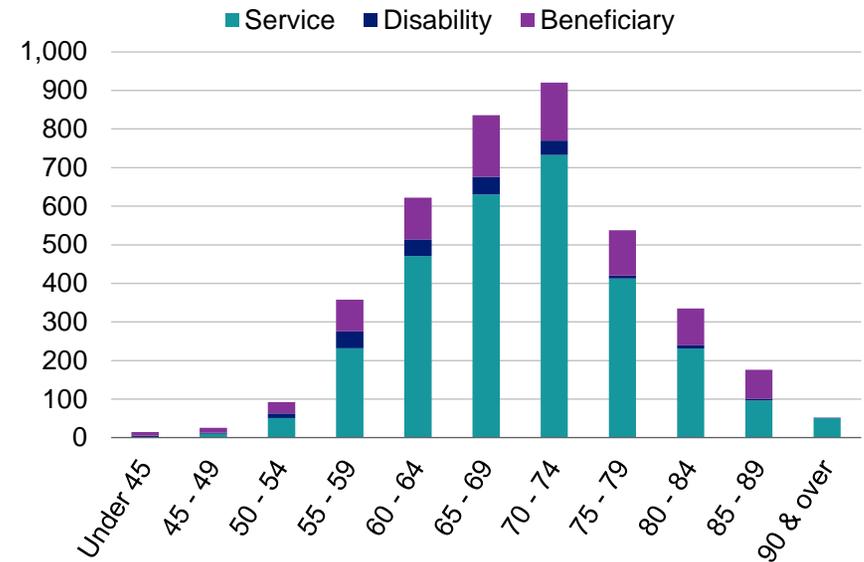
As of June 30,	2021	2020	Change
Retirees	3,129	3,204	-2.3%
Beneficiaries	841	782	7.5%
Average age	70.9	70.7	0.0
Average amount	\$2,720	\$2,675	1.7%
Total monthly amount	\$10,796,983	\$10,663,125	1.3%

Distribution of Retired Participants and Beneficiaries as of June 30, 2021

by Type and Monthly Amount



by Type and Age



Section 2: Actuarial Valuation Results

Historical plan population

Participant Data Statistics: 2012 – 2021

Year Ended June 30	Active Participants			Retired Participants and Beneficiaries		
	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2012	3,159	47.2	12.5	3,826	67.7	\$2,210
2013	3,171	47.3	12.5	3,790	68.0	2,293
2014	3,243	47.4	12.4	3,805	68.3	2,342
2015	3,307	47.3	12.0	3,834	68.7	2,387
2016	3,452	46.8	11.2	3,874	69.3	2,417
2017	3,688	46.4	10.7	3,889	69.8	2,455
2018	3,830	46.3	10.4	3,920	70.1	2,525
2019	3,674	46.3	10.3	3,991	70.4	2,598
2020	3,936	45.8	9.6	3,986	70.7	2,675
2021	3,757	46.5	10.1	3,970	70.9	2,720

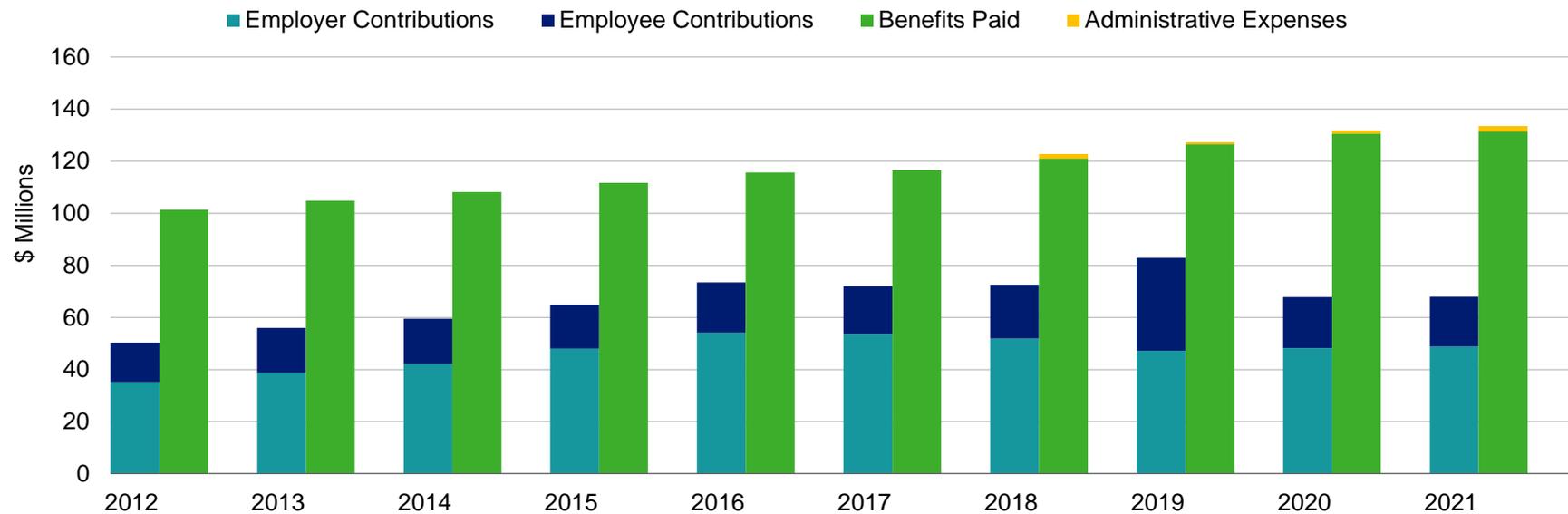
Section 2: Actuarial Valuation Results

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.

Additional financial information, including a summary of transactions for the valuation year, is presented in *Section 3, Exhibits D, E and F*.

Comparison of Contributions Made with Benefits and Expenses Paid
for Years Ended June 30, 2012 – 2021¹



¹Prior to 2018 investment earnings were net of investment fees and administrative expenses.

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 June 30, 2021

1	Market value of assets, June 30, 2021				\$1,672,138,000
2	Calculation of unrecognized return	Original Amount¹	Percent Deferred²	Unrecognized Amount³	
	(a) Year ended June 30, 2021	\$329,889,850	80%	\$263,911,880	
	(b) Year ended June 30, 2020	-46,742,145	60%	-28,045,287	
	(c) Year ended June 30, 2019	-15,375,919	40%	-6,150,368	
	(d) Year ended June 30, 2018	34,365,719	20%	6,873,144	
	(e) Year ended June 30, 2017	68,568,900	0%	0	
	(f) Total unrecognized return				\$236,589,369
3	Preliminary actuarial value: (1) - (2f)				1,435,548,631
4	Adjustment to be within 20% corridor				0
5	Final actuarial value of assets as of June 30, 2021: (3) + (4)				<u>1,435,548,631</u>
6	Actuarial value as a percentage of market value: (5) ÷ (1)				85.85%
7	Amount deferred for future recognition: (1) - (5)⁴				\$236,589,369

¹Total return minus expected return on a market value basis

²Percent deferred applies to the current valuation year

³Recognition at 20% per year over five years

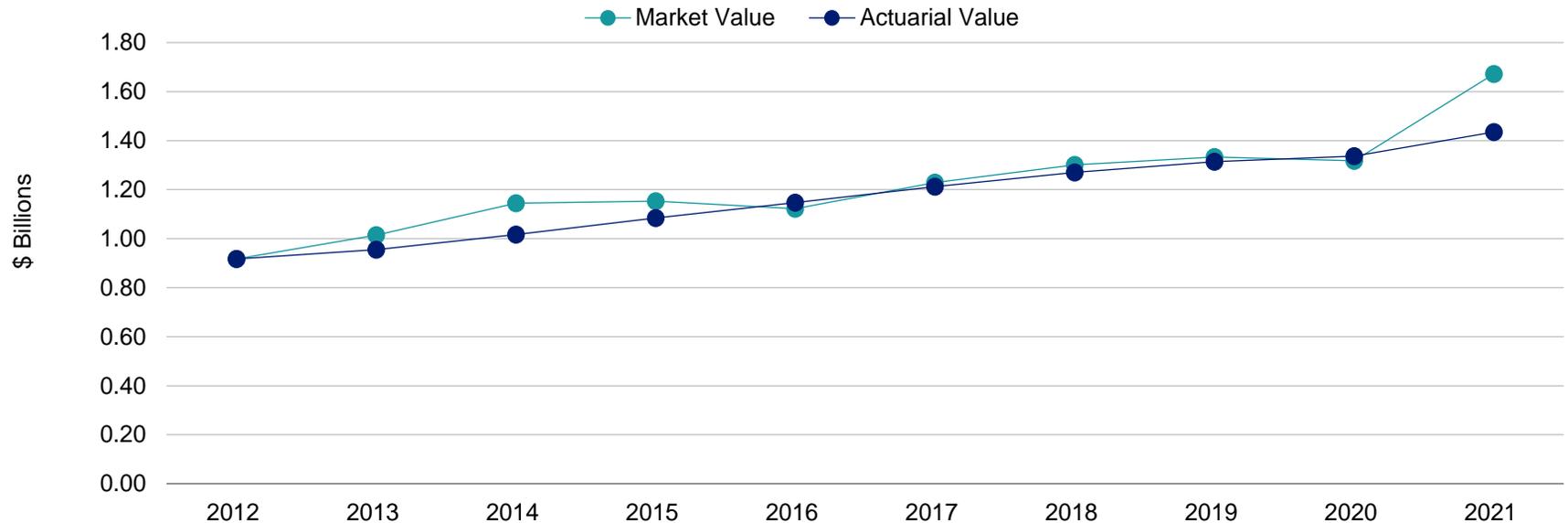
⁴Deferred return as of June 30, 2021 recognized in each of the next four years:

(a) Amount recognized on June 30, 2022	\$60,427,501
(b) Amount recognized on June 30, 2023	53,554,357
(c) Amount recognized on June 30, 2024	56,629,541
(d) Amount recognized on June 30, 2025	65,977,970

Section 2: Actuarial Valuation Results

Both the actuarial value and market value of assets are representations of the Fund's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Fund's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

Market Value of Assets vs. Actuarial Value of Assets



Market Value ¹	\$0.92	\$1.01	\$1.15	\$1.15	\$1.12	\$1.23	\$1.30	\$1.33	\$1.32	\$1.67
Actuarial Value ¹	0.92	0.95	1.02	1.08	1.15	1.21	1.27	1.31	1.34	1.44

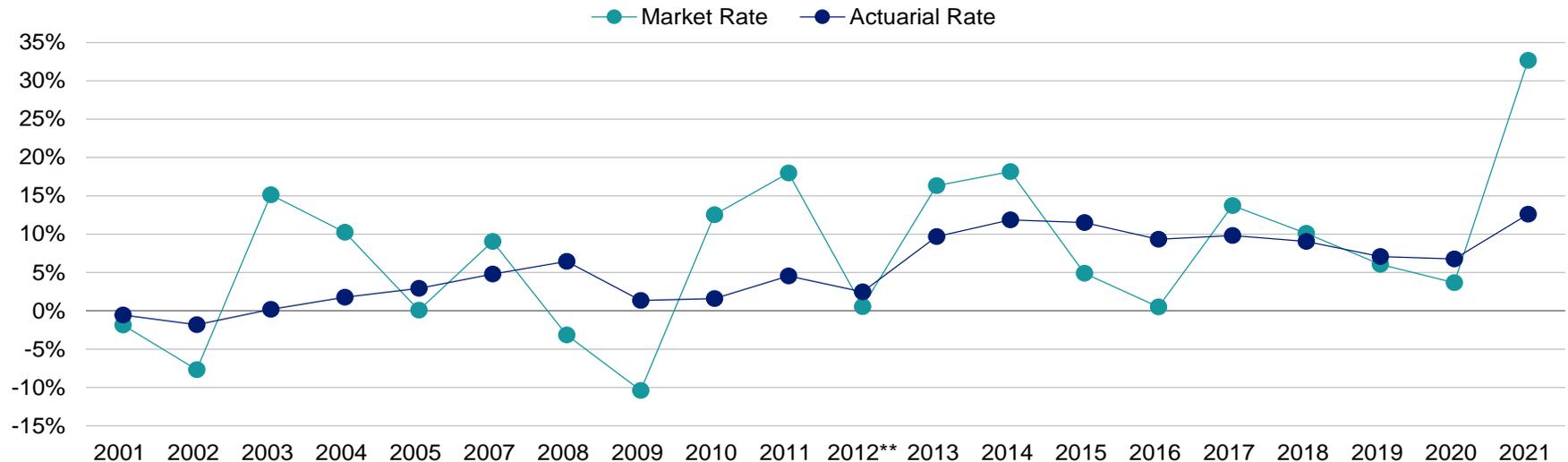
Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the actual market value investment return for the last 20 years, including averages over select time periods.

¹In \$ billions

Section 2: Actuarial Valuation Results

As described earlier in this section, the actuarial asset valuation method gradually recognizes fluctuations in the market value rate of return. The goal of this is to stabilize the actuarial rate of return and to produce more level pension plan costs.

Market and Actuarial Rates of Return for Years* Ended June 30, 2001 - 2021



	2001	2002	2003	2004	2005	2007	2008	2009	2010	2011	2012**	2013	2014	2015	2016	2017	2018	2019	2020	2021
Market rate	-1.9%	-7.7%	15.1%	10.2%	0.1%	9.1%	-3.1%	-10.4%	12.5%	18.0%	0.5%	16.3%	18.1%	4.9%	0.5%	13.7%	10.1%	6.0%	3.7%	32.7%
Actuarial rate	-0.6%	-1.8%	0.2%	1.8%	2.9%	4.8%	6.4%	1.4%	1.6%	4.6%	2.5%	9.7%	11.8%	11.5%	9.3%	9.8%	9.0%	7.1%	6.8%	12.6%
Assumed rate	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	7.5%	7.5%	7.5%	7.5%	7.25%	7.25%	7.25%	7.25%	7.0%

*Prior to 2007, financial information was based on 12-month periods ending December 31.

**Actuarial value rate of return before method change.

Average Rates of Return	Actuarial Value	Market Value
Most recent five-year average return:	9.06%	13.25%
Most recent ten-year average return:	9.09%	10.74%
Most recent fifteen-year average return:	7.54%	9.16%
Twenty-year average return:	6.22%	8.05%

Section 2: Actuarial Valuation Results

Actuarial experience

To calculate any actuarially determined contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), any contribution requirement will decrease from the previous year. On the other hand, any contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience. If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total gain is \$92,291,705, which includes \$72,800,138 from investment gains on the smoothed actuarial value of assets, and \$19,491,567 in gains from all other sources. The net experience variation from individual sources other than investments was 1.0% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

Actuarial Experience for Year Ended June 30, 2021

1	Net gain from investments ¹	\$72,800,138
2	Net loss from administrative expenses	-790,312
3	Net gain from other experience	20,281,879
4	Net experience gain: 1 + 2 + 3	\$92,291,705

¹Details on next page

Section 2: Actuarial Valuation Results

Investment experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Fund's investment policy. The rate of return on the market value of assets was 32.67% for the year ended June 30, 2021.

For valuation purposes, the assumed rate of return on the actuarial value of assets is 7.00%. The actual rate of return on an actuarial basis for the 2020-2021 plan year was 12.58%. Since the actual return for the year was greater than the assumed return, the Fund experienced an actuarial gain during the year ended June 30, 2021 with regard to its investments.

Investment Experience

		Year Ended June 30, 2021	
		Market Value	Actuarial Value
1	Net investment income	\$419,843,000	\$164,094,432
2	Average value of assets	1,285,045,000	1,304,204,199
3	Rate of return: 1 ÷ 2	32.67%	12.58%
4	Assumed rate of return	7.00%	7.00%
5	Expected investment income: 2 x 4	89,953,150	91,294,294
6	Actuarial gain/(loss): 1 - 5	<u>\$329,889,850</u>	<u>\$72,800,138</u>

Section 2: Actuarial Valuation Results

Non-investment experience

Administrative expenses

- Administrative expenses for the year ended June 30, 2021 totaled \$2,091,000, as compared to the assumption of \$1,282,836 as of the beginning of the year. This resulted in a loss of \$790,312 for the year. Because it is expected that these expenses will continue to increase, the actuarial assumption includes an annual 2.25% inflationary increase.

Mortality experience

- Mortality experience (more or fewer than expected deaths) yields actuarial gains or losses.
- Recent mortality experience was provided in the 2014-2019 experience study with new assumptions approved by the Board in April 2021. During this period, overall annuitant deaths were close to expected on a headcount basis. On an amount-weighted basis, annuitant deaths were lower than expected for retirees and slightly higher than expected for spouses. The experience from this plan was combined with the experience from the School Board plan to have sufficient credibility for both plans. Separate tables were developed for employees and terminated vested participants, retirees and spouses of living retirees, disabled annuitants and contingent beneficiaries.
- Over the 2020-2021 plan year, there were more deaths than expected on both a headcount-weighted and amount-weighted basis. This experience may be an outlier due to the COVID-19 pandemic.

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:

- 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), and
- inflationary cost-of-living adjustments higher or lower than anticipated.

The net gain from this other experience for the year ended June 30, 2021 amounted to \$20,281,879, which is 1.0% of the actuarial accrued liability. The mortality experience was the main reason for this year's demographic gain.

Section 2: Actuarial Valuation Results

Actuarial assumptions

An Actuarial Experience Review, covering the period July 1, 2014 through June 30, 2019, was completed in April 2022. The assumptions under the study were limited to demographic assumptions other than mortality assumptions. As a result of that study, the following assumptions were proposed by the actuary, approved by the Board and reflected with this valuation:

- The gender-neutral, service-based withdrawal assumption was modified to reflect an amount-weighted set of rates rather than a headcount-weighted set of rates.
- The sex-distinct ordinary disability rates were lowered to approximately 70% of the existing age-based rates. The distinction for occupational disability of 10% of ordinary disability rates was removed.
- The retirement rates for participants with 30 or more years of service at retirement were increased for ages 50 to 61 with slight reductions in the rates for ages 65 and over. Minor adjustments also were made to the retirement rates for participants with less than 30 years of service at retirement at ages 62 to 67.
- The spousal age assumption was modified for female participants only to assume male spouses are two years older.
- The percent married assumption for participants hired prior to September 1, 2011 was changed from 75% to an assumption based on the active participant contribution rate provided with the valuation data. No modifications were made to the assumption that all participants hired after August 31, 2011 are not married.
- The assumption that 75% of terminated participants hired prior to September 1, 2011 will take a refund of contributions was decreased to 60%; there was no change in the 100% assumption for terminated participants hired after August 31, 2011.
- A load of 0.50% on retirement benefits for unused sick leave pay was introduced for participants hired prior to September 1, 2011 only.
- An assumption of 0.25 years of additional service for unused sick leave at retirement for use in the calculation of retirement benefits was also introduced for participants hired prior to September 1, 2011. No adjustment was introduced for participants hired after August 31, 2011.
- The vacation pay load on retirement benefits for participants hired prior to September 1, 2011 was increased from 4.00% to 4.50% and a vacation pay load on retirement benefits of 1.50% for participants hired after August 31, 2011 was introduced.

As a result of the assumption changes, the actuarial accrued liability increased by \$8.4 million, or 0.4%, the employer normal cost increased by \$1.7 million, and the ADC increased by \$2.4 million, or 1.24% of projected payroll.

Details on actuarial assumptions and methods are in Section 4, Exhibit I.

Section 2: Actuarial Valuation Results

Plan provisions

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

A summary of plan provisions is in Section 4, Exhibit II.

Section 2: Actuarial Valuation Results

Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2021

1	Unfunded actuarial accrued liability at beginning of year	\$628,270,663
2	Normal cost at beginning of year, including administrative expenses	26,024,941
3	Total contributions	-67,897,000
4	Interest on 1, 2 & 3	43,424,298
5	Expected unfunded actuarial accrued liability	\$629,822,902
6	Changes due to:	
	(a) Experience gains and losses	-92,291,705
	(b) Assumptions	<u>8,406,987</u>
	Total changes	<u>-\$83,884,718</u>
7	Unfunded actuarial accrued liability at end of year	<u>\$545,938,184</u>

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 July 1, 2021, the actuarially determined contribution is \$48,330,445, or 24.72% of payroll.

The Board sets the methodology used to calculate the actuarially determined contribution based on a closed level percent of payroll amortization period of 30 years, established with the July 1, 2010 valuation. As of July 1, 2020, the amortization schedule was reset to 21 years to match the Police Officers' and Firefighters' Funds. As of July 1, 2021, there are 20 years remaining on this schedule.

The contribution requirement for the 2021-2022 fiscal year 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 for Fiscal Year Beginning July 1

	2022		2021	
	Amount	% of Projected Payroll	Amount	% of Projected Payroll
1 Total normal cost	\$24,787,333	12.68%	\$24,742,105	12.01%
2 Administrative expenses	1,311,700	0.67%	1,282,836	0.62%
3 Expected employee contributions	<u>-19,008,575</u>	<u>-9.72%</u>	<u>-20,100,808</u>	<u>-9.75%</u>
4 Employer normal cost: (1) + (2) + (3)	\$7,090,458	3.63%	\$5,924,133	2.88%
5 Actuarial accrued liability	\$1,981,486,815		\$1,965,224,862	
6 Actuarial value of assets	<u>1,435,548,631</u>		<u>1,336,954,199</u>	
7 Unfunded actuarial accrued liability: (5) - (6)	\$545,938,184		\$628,270,663	
8 Payment on projected unfunded actuarial accrued liability	38,271,488	19.57%	42,647,784	20.70%
9 Adjustment for timing ¹	2,968,499	1.52%	3,178,561	1.54%
10 Actuarially determined contribution: (8) + (9) + (11)	<u>\$48,330,445</u>	<u>24.72%</u>	<u>\$51,750,478</u>	<u>25.12%</u>
11 Projected payroll	\$195,511,200		\$206,005,099	

¹Actuarially determined contributions are assumed to be paid at the middle of every year. Calculated as $\{[(4) + (8)] \times [1.07^{0.50}] \times 1.03\} - (4) - (8)$.

Section 2: Actuarial Valuation Results

Reconciliation of actuarially determined contribution

The chart below details the changes in the actuarially determined contribution from the prior valuation to the current year's valuation.

Reconciliation of Actuarially Determined Contribution for Fiscal Year Ending 2022 to 2023

	Amount
1 Actuarially Determined Contribution as of July 1, 2021	\$51,750,478
2 Effect of investment gain	-5,437,424
3 Effect of changes in actuarial assumptions	2,431,711
4 Effect of other gains and losses on accrued liability	-1,455,820
5 Effect of expected change in amortization payment due to payroll growth	1,363,160
6 Effect of contributions less than actuarially determined contribution	239,487
7 Effect of scheduled change in assumed administrative expense assumption	30,752
8 Net effect of other changes, including composition and number of participants	-591,899
9 Total change	-\$3,420,033
10 Actuarially Determined Contribution as of July 1, 2022	\$48,330,445

Section 2: Actuarial Valuation Results

History of employer contributions

A history of the most recent years of contributions is shown below.

History of Employer Contributions: 2013 – 2022

Fiscal Year Ended June 30	Actuarially Determined Employer Contribution (ADC ¹)	Actual Employer Contribution	Percent Contributed
2013	\$38,688,054	\$38,694,000	100.02%
2014	42,145,284	42,145,000	100.00%
2015	47,969,283	48,015,000	100.10%
2016	54,235,740	54,236,000	100.00%
2017	53,815,973	53,817,000	100.00%
2018	51,902,994	51,903,000	100.00%
2019	47,220,491	47,220,000	100.00%
2020	48,218,811	48,219,000	100.00%
2021	48,763,497	48,764,000	100.00%
2022	51,750,478	--	--

¹Prior to GASB67/68, this amount was the Annual Required Contribution (ARC).

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 Fund. Upon request, a more detailed assessment can be provided to enable a better understanding of the risks inherent in the Fund. This assessment may include scenario testing, sensitivity testing, stress testing and stochastic modeling.

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

Since the Fund's assets are much larger than contributions, investment performance may create volatility in contribution requirements.

The market value rate of return over the last 20 years has ranged from a low of -10.39% in 2009 to a high of 32.67% in 2021.

- 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 City's funding policy requires payment of the actuarially determined contribution; as long as this policy is adhered to, contribution risk is negligible.

As part of the funding policy, if the valuation results calculated under the actuarial assumptions and methods in effect at the time of the 2011 Pension Reform would result in the Actual Required Contribution (ARC) exceeding 35% of total payroll (the "cap"), a Cost Recovery Plan would be implemented to reduce the ARC to no more than 35%. A Cost Recovery Plan can include increasing the City or employee contributions, modifying pension benefits, or using alternative funding sources. To date a Cost Recovery Plan has not needed to be implemented.

- 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.

Section 2: Actuarial Valuation Results

While it is difficult to quantify the impact of potential experience, for your Fund, each 1% change in the actuarial cost factors would result in a change in this year's recommended contribution of \$1.7 million, or 0.89% of projected payroll.

- Actual Experience Over the Last Ten years and Implications for the Future

Past experience can help demonstrate the sensitivity of key results to the Plan's actual experience. Over the past ten years:

The investment gain/(loss) on a market value basis for a year has ranged from a loss of \$79,572,275 in 2016 to a gain of \$329,889,850 in 2021.

The investment gain(loss) on an actuarial value basis has ranged from a loss of \$46,424,667 in 2012 to a gain of \$40,388,059 in 2014.

The funded percentage on the market value of assets has ranged from a low of 51.02% as of July 1, 2012 to a high of 84.39% as of July 1, 2021.

The funded percentage on the actuarial value of assets has ranged from a low of 51.02% as of July 1, 2012 to a high of 72.45% as of July 1, 2021.

- Maturity Measures

As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Fund's asset allocation is aligned to meet emerging pension liabilities.

Currently the Fund has a non-active to active participant ratio of 1.10. For the prior year benefits paid and administrative expenses were \$65,500,000 more than contributions received. As the Fund matures, more cash will be needed from the investment portfolio to meet benefit payments.

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 June 30

	2021	2020
Actuarial accrued liability (AAL)		
• Active member contributions	\$152,147,032	\$153,168,775
• Retirees and beneficiaries	1,421,485,585	1,408,411,977
• Active and inactive members (employer-financed)	407,854,198	403,644,110
Total	\$1,981,486,815	\$1,965,224,862
Actuarial value of assets	\$1,435,548,631	\$1,336,954,199
Cumulative portion of AAL covered		
• Active member contributions	100.00%	100.00%
• Retirees and beneficiaries	90.29%	84.05%
• Active and inactive members (employer-financed)	0.00%	0.00%

Section 2: Actuarial Valuation Results

Actuarial balance sheet

An overview of the plan's funding is given by an Actuarial Balance Sheet. In this approach, first the amount and timing of all future payments that will be made by the Fund for current participants is determined. Then these payments are discounted at the valuation interest rate to the date of the valuation, thereby determining the present value, referred to as the "liability" of the Fund.

Second, this liability is compared to the assets. The "assets" for this purpose include the net amount of assets already accumulated by the Fund, the present value of future member contributions, the present value of future employer normal cost contributions, and the present value of future employer amortization payments for the unfunded actuarial accrued liability.

Actuarial Balance Sheet

	Year Ended	
	June 30, 2021	June 30, 2020
Liabilities		
• Present value of benefits for retired participants and beneficiaries	\$1,421,485,585	\$1,408,411,977
• Present value of benefits for inactive vested participants	22,444,916	19,562,028
• Present value of benefits for active participants	<u>729,841,963</u>	<u>721,653,853</u>
Total liabilities	\$2,173,772,464	\$2,149,627,858
Assets		
• Total valuation value of assets	\$1,435,548,631	\$1,336,954,199
• Present value of future contributions by members	163,311,014	161,785,666
• Present value of future employer contributions for:		
• Entry age cost	28,974,635	22,617,330
• Unfunded actuarial accrued liability	<u>545,938,184</u>	<u>628,270,663</u>
Total of current and future assets	<u>\$2,173,772,464</u>	<u>\$2,149,627,858</u>

Section 2: Actuarial Valuation Results

Actuarial Present Value of Accumulated Plan Benefits

The actuarial present value of accumulated plan benefits is shown below as of July 1, 2021 and as of July 1, 2020.

Actuarial Present Value of Accumulated Plan Benefits

	Benefit Information Date	
	July 1, 2021	July 1, 2020
Actuarial present value of vested accumulated plan benefits:		
➤ Participants currently receiving payments	\$1,421,485,585	\$1,408,411,977
➤ Other vested benefits	399,365,048	391,287,815
➤ Total vested benefits (PVVB)	1,820,850,633	1,799,699,792
Actuarial present value of non-vested accumulated plan benefits	45,023,037	40,959,293
Total actuarial present value of accumulated plan benefits (PVAB)	\$1,865,873,670	\$1,840,659,085
Actuarial Value of Assets (AVA)	\$1,435,548,631	\$1,336,954,199
Market Value of Assets (MVA)	\$1,672,138,000	\$1,317,795,000
Funded Ratios (PVVB):		
➤ AVA as a percentage of present value of vested accumulated benefits	78.84%	74.29%
➤ MVA as a percentage of present value of vested accumulated benefits	91.83%	73.22%
Funded Ratios (PVAB):		
➤ AVA as a percentage of present value of accumulated benefits	76.94%	72.63%
➤ MVA as a percentage of present value of accumulated benefits	89.62%	71.59%

Note the amounts stated as vested benefits include employee contribution accounts, which are considered 100% vested.

Section 2: Actuarial Valuation Results

The factors that affected the change in the actuarial present value of accumulated plan benefits from the preceding to the current benefit information date are as follows:

Factors	Change in Actuarial Present Value of Accumulated Plan Benefits
Benefits accumulated, net experience gain or loss, changes in data	\$23,577,902
Benefits paid	-131,361,000
Interest	124,248,501
Change in assumptions	<u>8,749,182</u>
Total	<u>\$25,214,585</u>

Section 2: Actuarial Valuation Results

State minimum requirements

Under Georgia minimum funding requirements, the liability may be amortized as a percent of payroll, rather than a fixed dollar amount. In general, with fixed dollar amortization, actual experience close to the assumptions will result in a total contribution requirement (the normal cost plus the payment on the unfunded actuarial liability) that decreases over time as a percentage of payroll. With percentage of payroll amortization, given expected experience, the total contribution requirement should remain level as a percentage of payroll.

Prior to the 2005 valuation, the Plan had adopted the policy of amortizing the unfunded actuarial liability as a level percentage of payroll over a closed 40-year period from January 1, 1979. At January 1, 2005, the amortization was reset to a closed 20-year period. Effective July 1, 2008, the amortization period was changed to an open 30-year period and effective July 1, 2010, the amortization period was changed to a closed 30-year period. Effective with the July 1, 2020 valuation, the amortization period was reset to a closed 21-year period to be consistent with the Police Officers' and Firefighters' Funds. The contributions determined under this method continue to meet the Georgia minimum funding requirements by virtue of Georgia Code Section 47-20-10(b).

Section 3: Supplemental Information

Exhibit A: Table of Plan Demographics

Category	Year Ended June 30		Change From Prior Year
	2021	2020	
Active participants in valuation:			
• Number	3,757	3,936	-4.5%
• Average age	46.5	45.8	0.7
• Average years of service	10.1	9.6	0.5
• Projected total payroll	\$189,816,699	\$200,004,950	-5.1%
• Projected average payroll	50,523	50,814	-0.6%
• Account balances	152,147,032	153,168,775	-0.7%
• Total active vested participants	2,245	2,102	6.8%
Inactive vested participants	160	148	8.1%
Inactive nonvested participants due a refund	1,116	792	40.9%
Retired participants:			
• Number in pay status	2,911	2,975	-2.2%
• Average age	70.1	70.0	0.1
• Average monthly benefit	\$3,012	\$2,947	2.2%
• Number in suspended status	10	9	11.1%
Disabled participants:			
• Number in pay status	208	220	-5.5%
• Average age	64.8	64.4	0.4
• Average monthly benefit	\$2,061	\$2,013	2.4%
Beneficiaries:			
• Number in pay status	841	782	7.5%
• Average age	75.4	75.4	0.0
• Average monthly benefit	\$1,886	\$1,839	2.6%

Section 3: Supplemental Information

Exhibit B: Participants in Active Service as of June 30, 2021 by Age, Years of Service, and Average Payroll

Age	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	102	101	1	--	--	--	--	--	--	--
	\$38,661	\$38,697	\$35,000	--	--	--	--	--	--	--
25 - 29	320	282	38	--	--	--	--	--	--	--
	41,754	41,459	43,942	--	--	--	--	--	--	--
30 - 34	420	287	119	13	1	--	--	--	--	--
	44,030	41,612	48,743	\$54,489	\$41,126	--	--	--	--	--
35 - 39	373	180	116	51	24	2	--	--	--	--
	47,608	43,070	49,545	56,402	53,365	\$50,291	--	--	--	--
40 - 44	401	170	88	84	45	14	--	--	--	--
	50,190	43,087	50,524	57,301	60,534	58,417	--	--	--	--
45 - 49	518	161	120	82	58	72	25	--	--	--
	53,117	45,176	50,146	56,937	63,437	59,203	\$64,517	--	--	--
50 - 54	579	155	114	87	68	72	68	15	--	--
	54,627	43,803	49,790	59,699	63,094	63,972	61,727	\$58,397	--	--
55 - 59	525	103	110	65	68	80	70	25	4	--
	53,335	45,679	46,529	54,274	60,350	54,353	63,736	61,482	\$49,772	--
60 - 64	327	47	65	54	56	49	29	16	9	2
	55,522	40,926	49,815	52,842	61,692	63,783	65,699	61,542	55,965	\$83,500
65 - 69	144	20	25	18	20	20	15	10	7	9
	56,414	39,989	46,631	59,044	63,628	59,093	52,063	64,619	68,187	81,821
70 & over	48	6	3	8	10	5	4	2	3	7
	56,505	35,238	59,486	50,551	57,895	78,251	87,398	44,180	55,223	49,157
Total	3,757	1,512	799	462	350	314	211	68	23	18
	\$50,523	\$42,541	\$48,927	\$56,514	\$61,216	\$59,980	\$63,070	\$60,768	\$58,511	\$69,305

Section 3: Supplemental Information

Exhibit C: Reconciliation of Participant Data

	Active Participants	Inactive Vested Participants ¹	Disableds	Retired Participants ²	Beneficiaries	Total
Number as of July 1, 2020	3,936	148	220	2,984	782	8,070
• New participants ³	241	N/A	N/A	N/A	N/A	241
• Terminations – with vested rights	-49	49	N/A	N/A	N/A	0
• Terminations – without vested rights	-160	N/A	N/A	N/A	N/A	-160
• Retirements	-100	-15	N/A	115	N/A	0
• New disabilities	-2	-1	3	N/A	N/A	0
• Return to work	11	-11	0	0	N/A	0
• Deceased	-10	-1	-15	-180	-65	-271
• New beneficiaries	0	0	0	0	127	127
• Lump sum cash-outs	-98	-6	0	0	0	-104
• Rehire	0	0	N/A	0	N/A	0
• Certain period expired	N/A	N/A	0	0	-3	-3
• Data adjustments ⁴	-12	-3	0	2	0	-13
Number as of July 1, 2021	3,757	160	208	2,921	841	7,887

¹Excludes terminated participants with contributions remaining in the plan.

²Includes suspended pensioners.

³14 of the 241 new active participants included in the data for the first time this year have over one year of service.

⁴The following data adjustments were made per the TPA:

Twelve actives and nine inactive vested participants were deemed non-participants;

Seven inactive vested participants were included for the first time with this valuation;

Four inactive vested participants were deemed non-vested;

Three previously terminated participants were included as inactive vested participants with this valuation;

Two healthy retirees were included for the first time with this valuation.

Section 3: Supplemental Information

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

	Year Ended June 30, 2021	Year Ended June 30, 2020
Net assets at market value at the beginning of the year	\$1,317,795,000	\$1,333,862,000
Contribution income:		
• Employer contributions	\$48,764,000	\$48,219,000
• Employee contributions	19,133,000	19,599,000
• Less administrative expenses	<u>-2,091,000</u>	<u>-1,252,000</u>
<i>Net contribution income</i>	<i>\$65,806,000</i>	<i>\$66,566,000</i>
Other income	\$55,000	\$267,000
Investment income:		
• Asset appreciation	\$411,843,000	\$37,841,000
• Investment income	11,727,000	13,467,000
• Less investment fees	<u>-3,727,000</u>	<u>-3,655,000</u>
<i>Net investment income</i>	<i><u>\$419,843,000</u></i>	<i><u>\$47,653,000</u></i>
Total income available for benefits	\$485,704,000	\$114,486,000
Less benefit payments	-\$131,361,000	-\$130,553,000
Change in reserve for future benefits	\$354,343,000	-\$16,067,000
Net assets at market value at the end of the year	\$1,672,138,000	\$1,317,795,000

Section 3: Supplemental Information

Exhibit E: Asset Allocation as of June 30, 2021

	General Employees	School Board	Total
1. Market value of assets as of July 1, 2020	\$1,317,795,000	\$181,808,000	\$1,499,603,000
2. Employer contributions	\$48,764,000	\$58,400,000	\$107,164,000
3. Employee contributions	19,133,000	1,857,000	20,990,000
4. Other income not in yields	<u>55,000</u>	<u>60,000</u>	<u>115,000</u>
5. Total contributions and other income: (2) + (3) + (4)	\$67,952,000	\$60,317,000	\$128,269,000
6. Benefit payments and refunds	-\$131,361,000	-\$48,627,000	-\$179,988,000
7. Administrative expenses	<u>-2,091,000</u>	<u>-426,000</u>	<u>-2,517,000</u>
8. Total benefit payments and expenses: (6) + (7)	-\$133,452,000	-\$49,053,000	-\$182,505,000
9. Net cash flow: (5) + (8)	-\$65,500,000	\$11,264,000	-\$54,236,000
10. Net investment return	419,843,000	44,489,000	464,332,000
11. Market value of assets as of July 1, 2021: (1) + (9) + (10)	\$1,672,138,000	\$237,561,000	\$1,909,699,000

Section 3: Supplemental Information

Exhibit F: Development of the Fund through June 30, 2021

Year Ended June 30	Employer Contributions	Employee Contributions	Net Investment Return ¹	Admin. Expenses	Benefit Payments	Market Value of Assets at Year-End	Actuarial Value of Assets at Year-End	Actuarial Value as a Percent of Market Value
2012	\$35,237,000	\$15,142,000	\$4,967,000	\$0	\$101,375,000	\$917,486,000	\$917,486,000	100.00%
2013	38,694,000	17,322,000	145,776,000	0	104,849,000	1,014,429,000	954,964,648	94.14%
2014	42,145,000	17,366,000	179,568,000	0	108,175,000	1,145,333,000	1,016,486,156	88.75%
2015	48,015,000	16,975,000	55,130,000	0	111,738,000	1,153,715,000	1,084,009,929	93.96%
2016	54,236,000	19,173,000	11,293,000 ²	0	115,631,000	1,122,786,000	1,146,863,597	102.14%
2017	53,817,000	18,243,000	151,110,000	0	116,536,000	1,229,420,000	1,212,852,870	98.65%
2018	51,903,000	20,671,000	121,682,000 ³	1,806,000	120,993,000	1,300,987,000 ⁴	1,269,985,380	97.62%
2019	47,220,000	35,639,000	77,334,000	832,000	126,491,000	1,333,862,000 ⁵	1,314,030,198	98.51%
2020	48,219,000	19,599,000	47,653,000	1,252,000	130,553,000	1,317,795,000 ⁶	1,336,954,199	101.45%
2021	48,764,000	19,133,000	419,843,000	2,091,000	131,361,000	1,672,138,000 ⁷	1,435,548,631	85.85%

¹On a market basis, net of investment fees (and administrative expenses prior to 2018)

²Includes \$5,706,000 asset adjustment

³Includes \$155,000 asset adjustment

⁴Includes an additional \$110,000 in other income not in yields

⁵Includes an additional \$5,000 in other income not in yields

⁶Includes an additional \$267,000 in other income not in yields

⁷Includes an additional \$55,000 in other income not in yields

Section 3: Supplemental Information

Exhibit G: 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):	<p>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:</p> <ul style="list-style-type: none">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, andDiscounted according to an assumed rate (or rates) of return to reflect the time value of money.

Section 3: Supplemental Information

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 periodic required 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.

Section 3: Supplemental Information

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.

Section 3: Supplemental Information

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 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.
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.

Section 4: Actuarial Valuation Basis

Exhibit I: Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions:	The information and analysis used in selecting methods and each economic and mortality assumption that has a significant effect on this actuarial valuation is shown in in the Review of Actuarial Experience for the five-year period ended June 30, 2019 dated March 17, 2021. The information used in selecting each other demographic assumption that has a significant effect on this valuation is shown in the Review of Actuarial Experience for the five-year period ended June 30, 2019 dated April 20, 2022.	
Net Investment Return:	7.00%; the investment return rate is assumed to be net of investment expenses The net investment return assumption was chosen by the Pension Fund's Board of Trustees, with input from the actuary. This assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the 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 Marquette and Segal Marco Advisors, as well as the Fund's target asset allocation.	
Administrative Expenses:	\$1,200,000 per year beginning in 2017, projected annually with 2.25% inflation. As of July 1, 2021, the assumed annual expense is \$1,311,700.	
Salary Increases:	Age	Rate (%)
	Under 25	10.00
	25 - 29	8.50
	30 - 34	7.50
	35 - 39	6.50
	40 - 44	5.75
	45 - 49	5.00
	50 - 54	4.25
	55 - 59	3.75
	60 - 64	3.25
	65 & over	3.00
	Salary increases include an assumed inflation rate of 2.25% and 0.75% productivity.	

Section 4 Actuarial Valuation Basis

Vacation Pay Adjustment:	
<i>Hired prior to September 1, 2011</i>	Retirement benefits are increased by 4.50% to reflect vacation pay
<i>Hired after August 31, 2011</i>	Retirement benefits are increased by 1.50% to reflect vacation pay
Sick Leave Pay Adjustment:	
<i>Hired prior to September 1, 2011</i>	Retirement benefits are increased by 0.50%
<i>Hired after August 31, 2011</i>	No adjustment
Payroll Growth:	3.00%, used to amortize the unfunded actuarial accrued liability as a level percentage of payroll.
Cost-of-Living Adjustments:	
<i>Hired prior to September 1, 2011</i>	2.25%, compounded annually after retirement
<i>Hired after August 31, 2011</i>	1.00%, compounded annually after retirement
Mortality Rates:	
<i>Pre-retirement:</i>	Sex-distinct Pri-2012 Blue Collar Employee Amount-weighted Mortality Table with rates increased by 15%, projected generationally with scale MP-2020
<i>Healthy annuitants and beneficiaries of living retirees:</i>	Sex-distinct Pri-2012 Blue Collar Healthy Retiree Amount-weighted Mortality Table with rates increased by 15%, projected generationally with scale MP-2020
<i>Disabled annuitants:</i>	Sex-distinct Pri-2012 Disabled Retiree Amount-weighted Mortality Table with rates increased by 15%, projected generationally with scale MP-2020
<i>Contingent survivors:</i>	Sex-distinct Pri-2012 Blue Collar Healthy Contingent Survivor Amount-weighted Mortality Table with rates increased by 15%, projected generationally with scale MP-2020
	The underlying tables with the generational projection to the ages of participants as of the measurement date reasonably reflect the mortality experience of the Fund as of the measurement date. These mortality tables were then adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Section 4 Actuarial Valuation Basis

Annuitant Mortality Rates:

Age	Rate (%) ¹					
	Healthy		Disabled		Contingent Survivor	
	Male	Female	Male	Female	Male	Female
55	0.74	0.56	2.50	1.69	1.94	0.95
60	1.07	0.81	2.71	1.97	2.36	1.26
65	1.46	1.24	3.29	2.45	2.98	1.76
70	2.36	1.88	4.53	3.26	3.93	2.51
75	3.83	3.01	6.68	4.64	5.42	3.68
80	6.57	5.00	10.26	7.07	7.80	5.55
85	11.25	8.61	15.77	11.35	11.73	8.83
90	19.02	15.00	23.60	18.53	18.77	15.00

¹Rates shown do not include generational projection.

Mortality and Disability Rates Before Retirement:

Age	Rate (%)			
	Mortality ¹		Disability	
	Male	Female	Male	Female
20	0.08	0.02	0.00	0.00
25	0.07	0.03	0.00	0.00
30	0.07	0.03	0.00	0.00
35	0.08	0.04	0.07	0.07
40	0.10	0.07	0.10	0.10
45	0.13	0.10	0.15	0.15
50	0.20	0.15	0.26	0.23
55	0.32	0.23	0.45	0.38
60	0.51	0.35	0.68	0.47

¹Rates shown do not include generational projection.

Section 4 Actuarial Valuation Basis

Termination Rates Before Retirement (Amount-Weighted):

Years of Service	Rate (%) ³
Less than 1	11.00
1	10.50
2	10.00
3	9.00
4	7.00
5	6.50
6	6.00
7	5.50
8	5.00
9	4.50
10	4.00
11	3.50
12	3.00
13	2.50
14	2.00
15 or more	1.50

³Withdrawal rates do not apply at or beyond the later of eligibility for early retirement or age 55.

Retirement Rates:

Less than 30 Years of Service		30 or More Years of Service	
Age	Rate	Age	Rate
50-52	2%	50-53	60%
53-54	3	54-57	45
55	5	58-59	40
56-57	6	60-61	35
58-59	7	62-69	20
60	20	70	100
61	15		
62-64	10		
65-67	20		
68	15		
69	25		
70	100		

Section 4 Actuarial Valuation Basis

Weighted Average Retirement Age:	Age 61.8, 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 July 1, 2021 actuarial valuation.
Retirement Rates for Inactive Vested Participants:	Age 60 or current age, if later
Additional Accumulated Unused Sick Leave at Retirement:	
<i>Hired prior to September 1, 2011</i>	Additional 0.25 years if service included in total service (prior to application of maximum)
<i>Hired after August 31, 2011</i>	No adjustment
Unknown Data for Participants:	There were no records that were missing both service amounts and dates of hire. For participants with less than one year of benefit service, salaries were annualized.
Percent Married:	
<i>Hired prior to September 1, 2011</i>	Assumption based on active participant contribution rate provided with valuation data.
<i>Hired after August 31, 2011</i>	Assume all participants are not married.
Age of Spouse:	
<i>Male Participants</i>	Assumed to be three years older than their female spouses.
<i>Female Participants</i>	Assumed to be two years younger than their male spouses.
Form of Payment:	Married participants hired prior to September 1, 2011 are assumed to elect a 75% joint and survivor annuity. Unmarried participants hired prior to September 1, 2011 and all participants hired after August 31, 2011 are assumed to elect a life annuity.
Refunds of Employee Contributions for Terminated Vested Participants:	60% of participants hired before September 1, 2011 elect a refund of their employee contribution balances. 100% of participants hired after August 31, 2011 elect a refund of their employee contribution balances.
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 actuarial 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 Actuarial Cost Method. Entry Age is current age minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary.

Section 4 Actuarial Valuation Basis

Justification for Change in Actuarial Assumptions:

An Actuarial Experience Review, analyzing the demographic assumptions (other than mortality) for the period July 1, 2014 through June 30, 2019, was completed. As a result, the following assumption and method changes were proposed by the actuary and subsequently approved by the Board on May 2, 2022. These changes are reflected for the first time in this valuation.

- The gender-neutral, service-based withdrawal assumption was modified to reflect an amount-weighted set of rates rather than a headcount-weighted set of rates.
- The sex-distinct ordinary disability rates were lowered to approximately 70% of the existing age-based rates. The distinction for occupational disability of 10% of ordinary disability rates was removed.
- The retirement rates for participants with 30 or more years of service at retirement were increased for ages 50 to 61 with slight reductions in the rates for ages 65 and over. Minor adjustments also were made to the retirement rates for participants with less than 30 years of service at retirement at ages 62 to 67.
- The spousal age assumption was modified for female participants only to assume male spouses are two years older.
- The percent married assumption for participants hired prior to September 1, 2011 was changed from 75% to an assumption based on the active participant contribution rate provided with the valuation data. No modifications were made to the assumption that all participants hired after August 31, 2011 are not married.
- The assumption that 75% of terminated participants hired prior to September 1, 2011 will take a refund of contributions was decreased to 60%; there was no change in the 100% assumption for terminated participants hired after August 31, 2011.
- A load of 0.50% on retirement benefits for unused sick leave pay was introduced for participants hired prior to September 1, 2011 only.
- An assumption of 0.25 years of additional service of unused sick leave at retirement for use in the calculation of retirement benefits was also introduced for participants hired prior to September 1, 2011. No adjustment was introduced for participants hired after August 31, 2011.
- The vacation pay load on retirement benefits for participants hired prior to September 1, 2011 was increased from 4.00% to 4.50% and a vacation pay load on retirement benefits of 1.50% for participants hired after August 31, 2011 was introduced.

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:	July 1 through June 30
Plan Status:	Ongoing
Normal Pension:	
<i>Eligibility:</i>	A participant may retire at:
<i>Hired before July 1, 2010</i>	<ul style="list-style-type: none"> • (a) age 60 after completing 10 years of service, or • (b) age 65 after completing 5 years of service, or • (c) any age after completing 30 years of service.
<i>Hired between July 1, 2010 and August 31, 2011</i>	<ul style="list-style-type: none"> • (a) age 60 after completing 15 years of service, or • (b) age 60 after completing 5 years of service (vested percentage applies), or • (c) any age after completing 30 years of service.
<i>Hired after August 31, 2011</i>	<ul style="list-style-type: none"> • (a) age 62 after completing 15 years of service, or • (b) age 62 after completing 5 years of service (vested percentage applies), or • (c) any age after completing 30 years of service.
<i>Monthly Amount:</i>	
<i>Hired before July 1, 2010</i>	<ul style="list-style-type: none"> • 2.5% of average monthly salary for each year of service.
<i>Hired between July 1, 2010 and August 31, 2011</i>	<ul style="list-style-type: none"> • 2.0% of average monthly salary for each year of service.
<i>Hired after August 31, 2011</i>	<ul style="list-style-type: none"> • 1.0% of average monthly salary for each year of service.
	<p>This amount cannot be less than \$12 per month for each year of service, capped at 80% of average monthly salary.</p> <p>Participants hired before September 1, 2011 had a one-time option to elect to have benefits earned for service after October 31, 2011 use the same 1% accrual rate, average monthly salary, and COLA as participants hired after August 31, 2011. Benefits for service earned prior to November 1, 2011 follow the plan provisions in their predecessor plan. The participants who made this election are referred to as Hybrid Participants.</p>

Section 4 Actuarial Valuation Basis

Normal Pension, continued:

Average Monthly Salary:

Hired before September 1, 2011

Hired after August 31, 2011

- Average of the highest consecutive 36 months of salary
- Average of the highest consecutive 120 months of salary

Normal Form of Payment:

Hired prior to September 1, 2011

Hired after August 31, 2011

- 75% Joint-and-Survivor (no reduction in benefit for providing survivor coverage)
- Single life annuity

Early Retirement:

Service Requirement

Hired before July 1, 2010

- 10 years of service or Age 60 with five years

*Hired between July 1, 2010
and August 31, 2011*

- 15 years of service or Age 60 with five years

Hired after August 31, 2011

- Age 52 and 15 years of service or
Age 62 and 5 years of service

For Hybrid Participants, early retirement eligibility and reductions under their predecessor plan apply to their entire benefit.

Monthly Amount

Hired before September 1, 2011

- Normal pension monthly amount reduced by $\frac{1}{2}$ of 1% per month for the first 60 months and by $\frac{1}{4}$ of 1% per month for the remaining months by which age at retirement is less than 60. More favorable early retirement adjustments may apply to participants in prior plans.

Hired after August 31, 2011

- Normal pension monthly amount reduced by $\frac{1}{2}$ of 1% per month before age 62.

Section 4 Actuarial Valuation Basis

Disability:

Service Requirement

Monthly Amount Payable until Normal Retirement

Hired before September 1, 2011

Hired after August 31, 2011

Recalculated Monthly Amount Payable at Normal Retirement for Surviving Disabled Participants

Hired before July 1, 2010

Hired between July 1, 2010 and August 31, 2011

Hired after August 31, 2011

All participants

- 5 years of service for non-job-related disability. None for job related disability.
- Greater of 50% of highest consecutive 36 months of salary at disability *and* benefit calculated as 2.50% times service accrued times average of the highest consecutive 36 months of salary at disability; benefit payable immediately
- Greater of 50% of highest consecutive 36 months of salary at disability *and* benefit calculated as 2.00% times service accrued times average of the highest consecutive 36 months of salary at disability; benefit payable immediately
- 2.50% times service (accrued at disability plus imputed through Normal Retirement) times average of the highest consecutive 36 months of salary; benefit payable at age 60
- 2.00% times service (accrued at disability plus imputed through Normal Retirement) times average of the highest consecutive 36 months of salary; benefit payable at age 60
- 1.00% times service (accrued at disability plus imputed through Normal Retirement) times average of the highest consecutive 120 months of salary times vested percentage; benefit payable at age 62
- Benefit amount at Normal Retirement can be less than what participant was receiving during period of disability.
- Benefit amount at Normal Retirement cannot exceed 80% of final average salary.

Section 4 Actuarial Valuation Basis

Vesting:

- An employee who terminates employment may receive a percentage of the accrued benefit payable at normal retirement as determined below:

Completed Years of Service	Percentage Vested ¹	
	Hired before July 1, 2010	Hired after June 30, 2010
Less than 5	0%	0%
5	25	25
6	30	30
7	35	35
8	40	40
9	45	45
10	100	50
11	100	55
12	100	60
13	100	65
14	100	70
15 or more	100	100

¹A participant is always 100% vested in their contributions to the Fund.

Hybrid Participants are subject to the vesting schedule in their predecessor plan.

Termination:

- A participant terminating employment may elect a refund of their own contributions with interest or leave contributions in the fund and receive a monthly benefit to commence at normal retirement date equal to the accrued benefit as of the date of termination. A refund will cause the forfeiture of any other vested accrued benefit from the Fund.

Pre-retirement Death Benefits:

Hired before September 1, 2011

Hired after August 31, 2011

All Participants

- 75% of 2.50% times service accrued times vested percentage times average of the highest consecutive 36 months of salary at death
- 75% of 2.00% times service accrued times vested percentage times average of the highest consecutive 36 months of salary at death
- Benefit prior to application of 75% cannot exceed 80% of final average salary.
- Eligible beneficiaries are the spouse or children under age 23 (18 if not in post-secondary school).
- Beneficiaries can elect to receive a refund of employee contributions in lieu of an annuity benefit.

Death Benefits after Retirement Eligibility:

- If an active participant who is eligible to retire, or a disabled or retired participant dies, 75% of the accrued pension benefit is payable to the beneficiary. Eligible beneficiaries are the spouse or unmarried children under 23 (18 if not in post-secondary school).

Section 4 Actuarial Valuation Basis

Credited Service:	<ul style="list-style-type: none"> Service is credited for employment as a general employee of the City of Atlanta. Additional credit is granted for accumulated sick leave if hired prior to September 1, 2011 and for other prior service as specified in the plan. 														
Participation:	<ul style="list-style-type: none"> All employees of the City of Atlanta, excluding temporary employees, firefighters, police officers, and employees hired after 2001 in job grades 19 and above. Also includes employees hired between 2001 and 2005 in any job grade who elected to transfer from the Defined Contribution plan to this Fund and who agreed to roll over their DC plan balances to this Fund and pay additional contributions as if they had been participants in this Fund from date of hire. 														
Employee Contributions:	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th rowspan="2">Employee</th> <th colspan="2">% of Base Salary</th> </tr> <tr> <th>Participants Hired before September 1, 2011¹</th> <th>Hybrid Participants and Participants Hired after August 31, 2011¹</th> </tr> </thead> <tbody> <tr> <td>Unmarried employees without beneficiaries</td> <td>12%</td> <td>8%</td> </tr> <tr> <td>Unmarried employees with beneficiaries</td> <td>13%</td> <td>8%</td> </tr> <tr> <td>Married employees</td> <td>13%</td> <td>8%</td> </tr> </tbody> </table> <p>¹Excludes employees hired prior to January 1, 1984.</p>	Employee	% of Base Salary		Participants Hired before September 1, 2011 ¹	Hybrid Participants and Participants Hired after August 31, 2011 ¹	Unmarried employees without beneficiaries	12%	8%	Unmarried employees with beneficiaries	13%	8%	Married employees	13%	8%
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Unmarried employees without beneficiaries	12%	8%													
Unmarried employees with beneficiaries	13%	8%													
Married employees	13%	8%													
Interest on Employee Contributions:	<ul style="list-style-type: none"> Employee contributions earn 5% interest each year. 														
Cost of Living Provision:	<p>Benefits for retirees and beneficiaries are adjusted annually on January 1 of each year based on the change in the Consumer Price Index from November 1 through October 31 of the preceding year.</p> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 30%;"><i>Hired before September 1, 2011</i></td> <td> <ul style="list-style-type: none"> Such annual adjustment cannot exceed 3%; also applied to Hybrid Participants' benefits for service prior to November 1, 2011. </td> </tr> <tr> <td style="vertical-align: top;"><i>Hired after August 31, 2011</i></td> <td> <ul style="list-style-type: none"> Such annual adjustment cannot exceed 1%; also applied to Hybrid Participants' benefits for service after October 31, 2011. </td> </tr> </table>	<i>Hired before September 1, 2011</i>	<ul style="list-style-type: none"> Such annual adjustment cannot exceed 3%; also applied to Hybrid Participants' benefits for service prior to November 1, 2011. 	<i>Hired after August 31, 2011</i>	<ul style="list-style-type: none"> Such annual adjustment cannot exceed 1%; also applied to Hybrid Participants' benefits for service after October 31, 2011. 										
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Changes in Plan Provisions:	There have been no changes in plan provisions since the last valuation.														

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