

EMPLOYEES' RETIREMENT SYSTEM OF THE STATE OF HAWAII

REPORT TO BOARD OF TRUSTEES ON THE 99th ANNUAL
ACTUARIAL VALUATION
FOR THE YEAR ENDING JUNE 30, 2024





January 14, 2025

Board of Trustees
Employees' Retirement System of
The State of Hawaii
City Financial Tower
201 Merchant St., Ste. 1400
Honolulu, HI 96813-2980

Dear Trustees:

SUBJECT: ACTUARIAL VALUATION AS OF JUNE 30, 2024

We certify that the information contained in the 2024 actuarial valuation report is accurate and fairly presents the actuarial position of the Employees' Retirement System of the State of Hawaii (ERS) as of June 30, 2024. There have been no adjustments for events which occurred after this date.

All calculations have been made in conformity with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice (ASOP) issued by the Actuarial Standards Board. In our opinion, the results presented comply with the requirements of Hawaii statutes and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and consultants. One or more of them are an Enrolled Actuary and/or a Member of the American Academy of Actuaries. All are experienced in performing valuations for large public retirement systems.

This report was prepared at the request of the Board and is intended for use by ERS and those designated or approved by the Board. This report may be provided to parties other than ERS only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

ACTUARIAL VALUATIONS

The primary purpose of the valuation report is to determine the adequacy of the current employer contribution rate through measuring the resulting funding period, to describe the current financial condition of ERS, and to analyze changes in ERS's condition. In addition, the report provides various summaries of the data. This report may not be appropriate for other purposes. The information required by ERS in connection with Governmental Accounting Standards Board Statement Numbers 67 and 68 (GASB Nos. 67 and 68) will be provided in a separate report.

Valuations are prepared annually, as of June 30th of each year, the last day of ERS's plan year and fiscal year.

FINANCING OBJECTIVES

The employee and employer contribution rates have been set by Law and are intended to provide for the normal costs of ERS and to amortize the unfunded actuarial accrued liability (UAAL) over a reasonable amount of time, which will ensure benefit security and intergenerational equity. The funding period is the number of years until the unfunded actuarial accrued liability (UAAL) is fully amortized. Hawaii Revised Statutes §88-122(e)(1) state that the employer contribution rates are subject to adjustment when the funding period is greater than the maximum funding period. The statutes were modified by the 2024 Hawaii Legislature to decrease the maximum funding period from 30 years to 25 years in 2024. In addition, the maximum funding period will decrease by 1 each year in the future until the maximum funding period reaches 20 years, at which point it will continue to be 20 years for all future years.

PROGRESS TOWARD REALIZATION OF FINANCING OBJECTIVES

The actuarial accrued liability (AAL), the UAAL, and the determination of the resulting funding period illustrate the progress toward the realization of financing objectives. ERS had a liability experience loss which was caused by individual salary increases being more than expected by the assumptions. On the asset side, ERS experienced an actuarial loss as a result of returns in 2023 and 2024 not achieving the assumed 7%. In addition to these changes, ERS currently experiences negative amortization (interest on the UAAL is greater than the contributions towards the elimination of the UAAL). As a result, the UAAL increased (in dollars) based on this actuarial valuation as of June 30, 2024 and ERS's underfunded status as measured by the UAAL is now \$14.01 billion.

The 2017 Legislature passed legislation that made significant changes to the future employer contribution rates. The employer contribution rate for Police and Fire employees increased to 41% and the employer contribution rate for All Other Employees increased to 24%. The funding period assumes that these contribution rates will remain in effect throughout the funding period. Under current law, the contribution rates are expected to stay at these levels until ERS is fully funded. These increases have improved the outlook of ERS. As long as the contributions are made, ERS's funded status should improve and ERS should be able to absorb moderate adverse experience without a need to further increase the contribution rates.

The 2011 Legislature made changes to the benefits and member contribution rates for employees hired after June 30, 2012. Because these changes result in significantly higher contributions towards the unfunded liability in the future than in the current year, we believe it is more appropriate to determine the funding period using an open group projection rather than a static mathematical formula, which would instead assume that all amortization payments in the future will be the same percentage of pay as in the current year.

We have determined that the funding period for paying off the UAAL of ERS (in aggregate) is 22 years. Normally, we would expect the funding period to decrease by one each year if all assumptions are exactly met. Since the prior year's funding period was 23 years, we are at the expected funding period from last year. Given that the System experienced actuarial losses on both its assets and its liabilities, this result may be surprising. However, the UAAL was expected to increase slightly during this portion of the financing process and since the contributions to the System are a fixed percentage of payroll, an increase in the



covered payroll that is larger than assumed implies a larger contribution stream in future years, which means larger payments towards the unfunded liabilities of ERS.

Hence, even though the total unfunded liabilities increased from last year, the end period (fiscal year) over which the unfunded liabilities are to be paid off did not change and the funding period decreased to 22 years. Because this period is less than 25 years, the minimum objectives set in State statute are currently being realized. In addition, when the current contribution rates were passed by the Legislature in 2017, it was expected that the funding period would be 22 years as of the 2024 valuation, thus ERS remains on track to achieve full funding in the same timeframe as originally set by the legislation.

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. The funded status alone is not appropriate for assessing the need for future contributions nor assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations. However, the trend (historical and projected) of the funded ratio is a strong metric to use for assessing the dependability of the current funding policy and its ability to accumulate assets to pay benefits when due. The funded ratio is currently 63.0% compared with the 62.2% funded ratio in the previous valuation. The funded ratio improved due to the sizeable contributions towards the unfunded liabilities of the system as well as the contributions related to the excess pension costs.

Given the plan's current and future contribution rates and the new tier of benefits, if all actuarial assumptions are met (including the assumption of the plan earning 7.00% on the actuarial value of assets), it is expected that:

1. The employer normal cost as a percentage of pay will decrease to the level of the newest tier as the old tier population declines and is replaced by new tier members,
2. The employer contribution will remain level throughout the amortization period,
3. Thus, the net amount available to amortize the UAAL will increase over time,
4. The UAAL will increase in nominal dollars until the net amount for amortization is large enough to cover the interest charges, or approximately 2026, and then begin to decrease,
5. The UAAL will be fully amortized after 22 years, and
6. In the absence of benefit improvements and in consistent financial markets, the funded ratio should increase steadily until it reaches 100%.

The current projections expect the UAAL to begin to decline in FY 2026 (two years from the valuation date) with the annual amount of decline accelerating year over year thereafter. We believe two years is a reasonable amount of time as defined under the ASOP No. 4 (especially given that the UAAL has decreased in two of the last four valuation reports). All other parameters and methods used in the valuation also meet the requirements of a Reasonable Actuarially Determined Contribution (RADDC) under the ASOP.



Thus, the employer contribution rates of 41% of payroll for Police and Fire and 24% for All Other Employees meet the requirements of a RADC.

However, it is important to again note that these statements are based on the actual experience meeting the current assumptions. Also, these statements depend upon the employers meeting the contribution requirements established by the 2017 Legislature. Future changes to the actuarial assumptions or future changes to reduce the contribution requirements, or any increase in benefits, could significantly change the outlook of ERS and the expectation on when ERS will reach a 100% funded level.

This valuation assumed the continuing ability of the plan sponsors to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

BENEFIT PROVISIONS AND LEGISLATIVE CHANGES

This is the twelfth valuation with members covered under the new benefit tier.

There have been no changes in the benefit provisions since the prior valuation. See Table 16 of this report for more details on the benefit provisions for members of ERS.

ASSUMPTIONS AND METHODS

The actuarial assumptions used in this valuation were adopted by the Board in August of 2022 based on the recommendations provided by an Experience Study performed by GRS. There were no changes to the actuarial assumptions or methods since the prior valuation.

Further detail on the assumptions and methods may be found in Table 18 of this report and in our Experience Study Report dated June 14, 2022.

The actuarial assumptions represent estimates of future experience and are not market measures. The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. Based on the scope of this engagement, we have not performed analysis on the potential range of future measurements based on other factors. The actuarial calculations are intended to provide information for rational decision making.

In our opinion, the assumptions are internally consistent and are reasonably based on the actual experience of ERS.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.



DATA

Member data for retired, active, and inactive participants was supplied as of March 31, 2024, by ERS's staff. We have not subjected this data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data. Asset information was supplied by ERS's staff.

IMPACT OF TEMPORARY HAZARD DUTY PAY

As the reader is probably aware, many of the employees and retirees covered by ERS have or will be receiving Temporary Hazard Duty Pay (THP) for periods worked during March 2020 to March 2022 as a result of the COVID-19 pandemic. With the exception of the Maui employees, payments for known settlement amounts as of November 2024 will be made in fiscal year 2025 (Maui's payments were made in fiscal years 2023 and 2024). These payments will be incorporated into the pensionable earnings for impacted Tier 1 employees (the payments are not included in the pensionable earnings of Tier 2 employees).

For those employees (and retirees) who have not settled and/or received their payments yet, no adjustments have been made to their individual liabilities as of the valuation date. The impact of the THP payments will be incorporated into their liabilities in the 2025 (and future) valuations. However, because ERS has accrued the contributions for the known fiscal year 2025 THP payments in ERS's 2024 financial statements, we have incorporated an offsetting liability equal to those accrued contributions in the actuarial valuation (as a minimum impact).

While not all of the THP payments are yet known as of this date, we have estimated the possible impact of these payments on the UAAL and the funding period. Assuming on average that all of the Tier 1 employees receive a THP payment similar to the payments made to the State employees, the UAAL is expected to increase between \$240 million – \$350 million and the funding period is expected to increase between 6 to 12 months.

RESPONSIBILITY FOR TABLES AND SCHEDULES

The actuary is responsible for the information with respect to years after 1999 in the Required Supplementary Information, and the Notes to Required Supplementary Information in the Financial Section of ERS's Annual Comprehensive Financial Report (ACFR). Information with respect to years prior to 2000 was supplied by ERS.

Tables and schedules in the Actuarial Section of the ACFR were generally prepared directly by the Actuary. However, certain of these tables were prepared by ERS utilizing information from this report. When the tables were prepared by ERS from our report, they were so noted.



Board of Trustees

January 14, 2025

Page 6

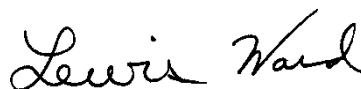
The undersigned are independent actuaries and consultants. Mr. Newton is an Enrolled Actuary, a Member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries. Finally, all of the undersigned are experienced in performing valuations for large public retirement systems.

Sincerely,

Gabriel, Roeder, Smith & Company



Joseph P. Newton, FSA, EA, MAAA
Pension Market Leader & Actuary



Lewis Ward
Consultant



Table of Contents

Pages

	Cover Letter	
Section A	Executive Summary.....	1
Section B	Introduction	2
Section C	Funded Status	3
Section D	Analysis of Changes.....	5
Section E	ERS Assets	6
Section F	Benefit and Contribution Provisions.....	7
Section G	GASB Disclosure	8
Section H	Actuarial Assumptions and Methods.....	9
Section I	Membership Data	10
Section J	Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions.....	11
Section K	Summary and Closing Comments	16
Section L	Actuarial Certification Statement	17
Section M	Valuation Tables.....	19
Section N	Statistical Tables.....	69
Section O	Definition of Actuarial Terms.....	97



SECTION A – EXECUTIVE SUMMARY

The following table summarizes the key results of the June 30, 2024 actuarial valuation of the Employees' Retirement System of the State of Hawaii (ERS).

Item	2024	2023
Membership <ul style="list-style-type: none"> • Number of <ul style="list-style-type: none"> - Active members - Retirees and beneficiaries - Inactive, vested - Total • Covered payroll for active members • Actual benefit payments and refunds 	65,337 55,820 8,847 <hr style="width: 100%;"/> 130,004 \$4,957 million \$1,907 million	64,243 54,973 8,997 <hr style="width: 100%;"/> 128,213 \$4,663 million \$1,822 million
Assets <ul style="list-style-type: none"> • Actuarial (smoothed) value • Market value • Return on actuarial value • Return on market value • Employer contributions during fiscal year • External cash flow % 	\$23,841 million \$23,701 million 6.8% 6.6% \$1,396 million (0.8%)	\$22,515 million \$22,425 million 6.9% 3.8% \$1,274 million (1.1%)
Actuarial Information <ul style="list-style-type: none"> • Total normal cost % (employee + employer) • Unfunded actuarial accrued liability (UAAL) • Funded ratio (based on smoothed assets) • Funded ratio (based on market assets) • Funding period (years)* • Employer contribution rate <ul style="list-style-type: none"> % of projected payroll Police and Firefighters All Other Employees 	14.51% \$14,008 million 63.0% 62.6% 22 41.00% 24.00%	14.57% \$13,710 million 62.2% 61.9% 23 41.00% 24.00%

* Funding Period based on actuarial value of assets, scheduled employer contribution rates, and an open group projection reflecting the adopted changes in benefits and member contribution rates.



SECTION B – INTRODUCTION

The results of the June 30, 2024 actuarial valuation of ERS are presented in this report.

The primary purpose of the valuation report is to determine the adequacy of the current employer contribution rates through measuring the resulting funding period, to describe the current financial condition of ERS, and to analyze changes in ERS's condition.

In preparing this valuation, Gabriel, Roeder, Smith & Company (GRS) has relied on employee data and asset information provided by the staff of ERS. While not verifying the data at their source, GRS has performed such tests for consistency and reasonableness as has been deemed necessary to be satisfied with the appropriateness of using the data supplied.

Section C discusses the funded status of ERS. Section D analyzes the change in the UAAL. Section G discusses the disclosure requirements of GASB No. 67.

Sections E, F, H, and I discuss background information used in the preparation of this report--benefit provisions, actuarial assumptions and methods, financial information, and membership data. Section J contains a discussion about risk and plan maturity measures and a table showing current and historical risk metrics. Section K contains a final summary and some closing comments about this year's valuation and Section L contains the actuarial certification.

All the tables referenced by the other sections appear in Section M.

SECTION C – FUNDED STATUS

Table 1 shows the development of the Plan's liabilities and funded status for the current year and compares it with those of the prior year.

The calculation of the funded status involves the following steps and includes the following comments:

- The actuarial present value of future benefits is determined for the present members, including retired members, beneficiaries, inactive members, and active members. This amounts to \$44.28 billion. Table 2 shows the development of this total for the current year and the prior year.
- The individual entry age normal cost method is used to allocate the actuarial present value of future benefits between that portion due for the current year (the normal cost), prior years (the actuarial accrued liability) and future years (the present value of future normal cost). Under the individual entry age normal cost method, the current and future normal costs are determined as a level percentage of payroll. Table 3 shows an analysis of the normal cost for the current year and the prior year. The amount needed to fund the current and future normal costs is 27.12% of pay for Police and Fire employees and 12.93% for All Other Employees. It includes all of the employees' contribution (if any) and the employers' normal cost rate.
- A part of the normal cost is paid by the employee contributions of 12.82% of pay for Police and Firefighters, leaving 14.30% of pay to be funded by the employers. Thus, the current year's employer normal cost for Police and Firefighters is deemed to be 14.30% of the valuation payroll. As for the All Other Employees group, the average weighted effective employee contribution rate is 6.08% of pay, leaving 6.85% of pay to be funded by the employers. This is shown in Line 3 of Table 1.
- The UAAL is \$14.01 billion for 2024, an increase from \$13.71 billion in 2023. As indicated in Table 1, the UAAL equals the difference between the total actuarial accrued liability (Item 7) and current actuarial assets (Item 8).
- In determining the number of years that will be required to amortize the UAAL, an assumption is made concerning future growth of ERS's covered payroll. Payroll can grow from intrinsic growth in the pay of individual members and it can also grow due to active membership growth. In determining the funding period of ERS, we have assumed that the number of active members will remain constant in our open group projection.
- As shown in Item 10 of Table 1 and on Table 9c, the period to fund the UAAL is 22 years for the Police and Fire and 22 years for the All Other Employees group. When combining both groups, the aggregate funding period for ERS is 22 years (i.e. the UAAL is expected to be paid off in fiscal year 2046). Since the aggregate funding period based on the contribution rates is less than the maximum funding period (25 years), the employer contribution rates are adequate to meet the requirements of Hawaii Revised Statutes §88-122(e)(1). Please note that this statement assumes the current contribution rates will remain in effect throughout the entire funding period.

SECTION C – FUNDED STATUS (CONTINUED)

As of the valuation date, ERS has a funded ratio of 63.0%, based on the actuarial value of assets.

Due to the significant changes in the future contribution rates and benefits for employees hired after June 30, 2012, ERS's funding policy uses an open group projection for determining how many years it will take to eliminate the unfunded liabilities of ERS. ERS is expected to be fully funded in 2046 which is 22 years from now. Therefore, the funding period is equal to 22 years. The open group projection assumes that the number of active members will remain constant and that there will be no actuarial gains or losses on liabilities or investments.

SECTION D – ANALYSIS OF CHANGES

Section C has noted that the unfunded actuarial accrued liability (UAAL) is \$14.01 billion as of June 30, 2024 compared to the \$13.71 billion UAAL for 2023.

Table 7 develops the estimated yield for the year based on two measures of asset values. Table 9b takes the information contained in Table 6 and develops the expected value of actuarial assets for this valuation, based on the prior year's investment return assumption of 7.00%.

As shown in Item 6 of Table 9b, the expected value of actuarial assets as of June 30, 2024 is \$23.90 billion. As developed in Table 6, the actual value of actuarial assets as of the valuation date is \$23.84 billion (as repeated in Item 7 of Table 9b). Thus, the loss for the year is the difference between the actual value and the expected value, or \$56.8 million (as shown in Item 8 of Table 9b). This asset loss for the year is a direct reflection of the estimated yield for the year based on the value of actuarial assets, namely 6.75% (as shown in Item B4 of Table 7) being less than the assumed rate of return.

The markets returned less than assumed in FY 2024 with a return of 6.55% on the market value of assets, which is below our benchmark of 7.00%. Therefore, the return for the year was less than our expectation. The rate of return for the actuarial value was 6.75%, which is greater than the market return due to the smoothing methodology used in the determination of the actuarial value of assets. The actuarial value of assets exceeds the market value of assets by \$140.4 million, so there are \$140.4 million in deferred investment losses still to be recognized in the actuarial value of assets.

Table 9a shows the total unanticipated change in the unfunded actuarial accrued liability was \$340 million (item 7), this means the UAAL increased \$340 million more than expected from all sources for the 2024 fiscal year. As noted above, the actuarial investment loss was equal to \$56.8 million. This means that there was a liability experience loss during the year equal to \$282.9 million. The liability experience loss is primarily due to higher than expected salary increases for both employee groups. For Tier 1 members, the pensionable earnings include overtime, and it is possible a source of the higher salaries was an increase in overtime during the fiscal year. Note that with the exception of the Maui employees, none of these salary losses are associated with the Temporary Hazard Duty Pay.

Table 9c shows the current year's valuation results plus a 30-year open group projection of ERS's assets and liabilities. As discussed previously, this projection assumes no actuarial gains or losses in the actuarial liabilities or the actuarial value of assets. In addition, the projection assumes the current employer contribution rates will continue and reflects the changes to the benefits and member contribution rates of employees hired after June 30, 2012. As may be seen by examining this table, the unfunded liability of ERS (Column 7) is expected to grow as a dollar amount until 2025 before beginning to decline and finally being eliminated in 2046.

The June 30, 2046 valuation is 22 years from this valuation. Therefore, for the purpose of satisfying Hawaii Revised Statutes §88-122(e)(1) the funding period is considered to be 22 years.



SECTION E – ERS ASSETS

Table 4 presents a summary of the market value of assets held by ERS. About 74% of the total invested assets available for benefits are held in equities (including alternative investments) and real assets compared to about 82% last year. Table 5 shows a reconciliation of the assets from the beginning of the prior year to the valuation date.

Table 6 shows the development of the Actuarial Value of Assets (AVA). An actuarial value is used in order to dampen some of the year-to-year fluctuations which would occur if the market value were used instead. The expected actuarial value of assets is calculated and compared to the actual market value of assets. This difference is then compared with the remaining deferrals from the prior years to determine this year's excess/shortfall. The current year's excess/shortfall is offset directly against any prior years' deferrals of the opposite sign (oldest bases first). Any remaining bases are then recognized over a four-year period from the date the base was established. Any remaining deferrals, after the current year's recognition, are then subtracted from the market value of assets to get the final actuarial value of assets. This method has the advantage of more quickly converging towards the market value in years when the returns go in the opposite direction of the prior years.

Table 7 shows an estimate of ERS's dollar-weighted rate of return for the year. This is shown on (i) the market value of assets (reflecting all realized and unrealized gains and losses), and (ii) the actuarial value of assets. While the dollar-weighted market return this year was 6.55%, the return on the actuarial value was 6.75%. The difference between these is due to the smoothing effect of the AVA valuation method.

Table 9b determines the asset gain or loss for the year, based on the difference between the actual fund return and the actuarial value of assets and the prior year's assumed rate of 7.00%.

Finally, Table 13 shows a history of cash flows for the trust.

SECTION F – BENEFIT AND CONTRIBUTION PROVISIONS

Table 16 summarizes the benefit provisions of ERS used in this valuation. Table 17 is a historical record of prior legislative changes starting with changes effective in 1999. There were significant changes made by the 2011 Legislature to the benefit provisions of ERS for employees hired after June 30, 2012. Because the Board has chosen to use the Individual Entry Age Normal Cost method, the normal cost and the growth of the accrued liabilities will be slowly impacted by the changes in the benefit provisions, as members under the new tier are hired to replace members who are covered under the older tier of benefits.

There have been no changes to the benefit provisions since the last valuation that had an actuarial impact on the valuation. Act 192 was enacted by the 2024 Legislature that decreased the maximum funding period from 30 years to 25 years for the June 30, 2024 actuarial valuation. In future years, the maximum funding period will decrease by 1 each year until the maximum funding period reaches 20 where it will remain in future years.

The 2017 Legislature enacted ACT 017 which increased the employer contribution rates over a four-year period.

The employer contribution rates for Police and Fire employees are 41% of pay in FY 2021 and beyond while the employer contribution rates for All Other Employees are 24% of pay in FY 2021 and beyond.

This valuation reflects benefits promised to members by ERS's statutes. There are no ancillary benefits - retirement type benefits not required by ERS's statutes but which might be deemed an ERS liability if continued beyond the availability of funding by the current funding source.

Act 179/2004 was adopted during FY 2003/2004 and established the new Hybrid class that became effective on July 1, 2006. Current participants had the choice to elect to move to the new class or stay in the current plan. There were 26,228 plan members who elected to transfer. The Hybrid class membership has since grown to approximately 52,100 members.

SECTION G – GASB DISCLOSURE

The Governmental Accounting Standards Board (GASB) has issued Statement No. 67 which provides the manner in which the actuarial condition of a public sector retirement plan is to be disclosed in the system's financial statements. This new standard replaces GASB No. 25, and went into effect for ERS for fiscal years ending on or after June 30, 2014.

Similar to last year, we will provide a separate accounting report with the required disclosures under this new standard.

SECTION H – ACTUARIAL ASSUMPTIONS AND METHODS

In determining costs and liabilities, actuaries use assumptions about the future, such as rates of salary increase, probabilities of retirement, termination, death and disability, and an investment return assumption. ERS's Board adopts the assumptions used, taking into account the actuary's recommendations.

In addition to the actuarial assumptions, the actuary also makes use of an actuarial funding method to allocate costs to particular years. In common with most public sector plans, ERS uses the entry age normal method (individual normal cost). This method produces a relatively level pattern of funding for individual employees over time. We believe this method is appropriate for ERS.

ERS's Board adopted new actuarial assumptions on August 8, 2022 to be used effective with the June 30, 2022 actuarial valuation. For a complete description of the recommended assumption changes please see our experience study report dated June 14, 2022.

Please see Table 18 for a complete description of the actuarial assumptions and methods.

SECTION I – MEMBERSHIP DATA

Membership data was provided in electronic files, via a secured file transfer protocol, by the staff. Data for active members include sex, birthdate, service, pay rate as of March 2024, employer entity and accumulated employee contributions. Data for inactive, nonretired members was similar, but also includes the members' unreduced benefit. For retired members, data includes status (service retiree, disabled retiree or beneficiary), sex, birthdate, pension amount, pension COLA amount, form of payment, beneficiary sex and birthdate if applicable, and date of retirement.

While not verifying the correctness of the data at the source, we performed various tests to ensure the internal consistency of the data and its overall reasonableness. Membership statistics are summarized in Table 12a. Table 12b summarizes certain active member data, and the age/service distribution of active members is shown in Table 19. Tables 30-43 show various distributions of retirees.

Since last year, the number of active members increased by 1,094 members from 64,243 to 65,337. These 65,337 active members are distributed as follows:

Category	Number	% of Total
(1)	(2)	(3)
Police & Fire	4,791	7.3%
Contributory	407	0.6%
Noncontributory	8,015	12.3%
Hybrid	<u>52,124</u>	<u>79.8%</u>
Total	65,337	100.00%

Covered payroll (which is the annualized pay for all active members on the census date) increased by 6.3% since last year. ERS also provided the actual aggregate payroll for fiscal year 2024 on which contributions were received (this includes payroll for members who terminated and retired during the year). The lesser of the covered payroll and the aggregate payroll is adjusted by the payroll growth rate to produce the *projected FY 2025 payroll for contribution purposes*, as shown in Item 1 of Table 1.

Average age of the active members decreased from 48.0 last year to 47.9 this valuation and the average service decreased from 13.1 to 12.9 years.

SECTION J – ASSESSMENT AND DISCLOSURE OF RISK ASSOCIATED WITH MEASURING PENSION OBLIGATIONS AND DETERMINING PENSION PLAN CONTRIBUTIONS

The determination of the accrued liability and an actuarially determined contribution (or funding period) requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and an actuarially determined contribution (or funding period) that result from the differences between actual experience and the actuarial assumptions.

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 due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
3. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
4. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
5. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening) increases (or decreases) in cost can be anticipated.

SECTION J – ASSESSMENT AND DISCLOSURE OF RISK ASSOCIATED WITH MEASURING PENSION OBLIGATIONS AND DETERMINING PENSION PLAN CONTRIBUTIONS (CONTINUED)

ERS SPECIFIC RELATIONSHIP TO CERTAIN RISKS

While ERS has various levels of exposure to all of the risks listed above, in our opinion the three that warrant the most observation for ERS's Board specifically are assumption change risk and affordability risk.

Assumption Change Risk is the potential for the environment to change such that future valuation assumptions are adjusted to be different than the current assumptions. For example, declines in interest rates or increases in earnings multiples over time may result in a change in the assumed rates of return used in the valuation. A healthier workforce may result in changes in employee behavior such that retirement rates are adjusted to reflect employees working longer. And the difference in changing an assumption versus the other experience related risks listed above is instead of the loss slowly building over time, there is the immediate recognition of the change. Over the past decade, the changing of assumptions has increased the liabilities of ERS more than any other source. While those changes were warranted and put ERS on a stronger path going forward, it did cause a setback in many of the actuarial measurements and at least gives the appearance of a weaker System. We do not currently anticipate any significant changes to assumptions in the future and will continue to communicate with the Board if any issues beginning to show.

Affordability Risk is the simple fact that the contributions into ERS are quite large and in order to achieve the benefit security desired by the Board and the beneficiaries of ERS, they must remain high for quite a number of years. State Law requires the actuarial contribution occur and there has been no requests or attempts to lower the amounts, but it will always be a risk a future decision maker does attempt to do so.

This is also risk in a continued contraction in the headcount of active members. As was realized in the 2022 valuation, the contributions into ERS are directly tied to the covered payroll of the active membership and the projection of that payroll is used in determining the funding period. If the headcount were to decline, it would be difficult for the amount of future revenue to meet the current expectations and thus it would likely take more than 22 years to fully amortize the UAAL.

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Several generally accepted plan maturity measures are described below and are followed by a table showing a 10-year history of the measurements for ERS.

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher/lower or increasing/decreasing level of this maturity measure generally indicates a higher/lower or increasing/decreasing volatility in plan sponsor contributions as a percentage of payroll.



SECTION J – ASSESSMENT AND DISCLOSURE OF RISK ASSOCIATED WITH MEASURING PENSION OBLIGATIONS AND DETERMINING PENSION PLAN CONTRIBUTIONS (CONTINUED)

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll (5 to 2 ratio), a change in liability 2% other than assumed would equal 5% of payroll. A higher/lower or increasing/decreasing level of this maturity measure generally indicates a higher/lower or increasing/decreasing volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

DURATION OF ACTUARIAL ACCRUED LIABILITY

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

ADDITIONAL RISK ASSESSMENT

Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability. While a robust measurement of additional risk assessment is outside the scope of the annual actuarial valuation, some scenario tests and sensitivity tests are included in the valuation summary PowerPoint presentation presented to the Board at the Board's January Board Meeting.

In addition, an annual stress test as prescribed by state law is conducted each year. Please see the stress test report dated December 18, 2023, which was conducted in conjunction with this valuation.



SECTION J – ASSESSMENT AND DISCLOSURE OF RISK ASSOCIATED WITH MEASURING PENSION OBLIGATIONS AND DETERMINING PENSION PLAN CONTRIBUTIONS (CONTINUED)

LOW-DEFAULT RISK OBLIGATION MEASURE

ASOP No. 4 was revised and reissued in December 2021 by the ASB. It includes a new calculation called a low-default-risk obligation measure (LDROM) to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:

“The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the “right” liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan’s funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.”

The LDROM estimates the amount of money the plan would need to invest in low risk securities to provide the benefits with greater certainty. The traditional model based on expected portfolio returns expects lower costs but with higher risk, which creates less certainty and a possibility of higher costs. The LDROM model creates higher expected costs but more predictability when compared to the traditional model. Thus, the difference between the two measures (Valuation and LDROM) is one illustration of the possible costs the sponsor could incur if there was a reduction in the investment risk in comparison to the current diversified portfolio. However, the downside risk would be limited in the scenarios where the current portfolio would fail to achieve returns in excess of the low-default-risk discount, in this case 5.32%.

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

A.	LDROM measure of benefits earned as of the measurement date:	\$46,769 million
B.	Valuation liability at 7% on measurement date:	<u>37,850 million</u>
C.	Cost to mitigate investment risk in the System’s portfolio:	\$ 8,919 million

Disclosures: Discount rate used to calculate LDROM: 5.32% Intermediate FTSE Pension Discount Curve as of June 30, 2024. This measure may not be appropriate for assessing the need for or amount of future contributions as the current portfolio is expected to generate significantly more investment earnings than the low-default-risk portfolio. This measure is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligation as this measure includes projections of salary increases and the ability for current members to continue to accrue eligibility and vesting service.



SECTION J – ASSESSMENT AND DISCLOSURE OF RISK ASSOCIATED WITH MEASURING PENSION OBLIGATIONS AND DETERMINING PENSION PLAN CONTRIBUTIONS (CONTINUED)

	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
Ratio of the market value of assets to payroll	4.66	4.67	4.74	4.59	3.75	3.81	3.79	3.68	3.30	3.48
Ratio of actuarial accrued liability to payroll	7.44	7.54	7.55	7.14	7.06	6.95	6.82	6.72	6.44	5.57
Ratio of actives to retirees and beneficiaries	1.17	1.17	1.19	1.25	1.30	1.33	1.36	1.40	1.48	1.52
Ratio of net cash flow to market value of assets	-0.8%	-1.1%	-1.1%	-0.5%	-1.1%	-1.8%	-2.0%	-2.0%	-1.9%	-1.8%
Duration of the actuarial accrued liability*	14.76	14.77	14.88	14.95	15.03	15.11	NA	NA	NA	NA

*Duration measure not available prior to 2019

SECTION K – SUMMARY AND CLOSING COMMENTS

To summarize the results of the actuarial valuation of the Employees' Retirement System as of June 30, 2024, it is our opinion that if all assumptions are met going forward, the present assets plus future expected contributions will be sufficient to provide the benefits specified in the law.

This year's valuation shows that ERS is expected to be fully funded in 2046 (22 years from this year's valuation date), which is the same year projected in last year's valuation. This is due to the increase in expected future contributions caused by the increase in the covered payroll that occurred in FY 2024. The 22 is consistent with the original impact statement which set the current contribution pattern which projected a 22-year funding period in 2024.

Based on this year's valuation results, the statutory contribution rates are sufficient to eliminate the UAAL over a period of 25 years or less as specified by Hawaii Revised Statute 88-122(e)(1).

Our modeling continues to show that the new contribution levels should be able to absorb material adverse experience without resulting in a need for further contribution rate increases. Moderate adverse experience may result in the date ERS obtains a fully funded status being later than 2046, but it is not expected to result in a requirement for further contribution rate increases.

The results of this valuation are uneven from the financial outlook of the System. While the end date for achieving full funding for the System remained unchanged when compared with last year (2046 for both valuations), ERS saw a larger than expected increase UAAL. This follows a decline in the UAAL in two of the previous three years. In addition, ERS is still deferring \$140.4 million in investment losses. If these deferred investment losses are recognized instead of being offset, the end date for achieving full funding could be extended.

Finally, while this valuation saw the date of full funding remain the same as last year, it is important to note that these projections assume the current contribution rates will be maintained throughout the funding period. Any reduction in the contribution rates would increase the length of time until ERS achieves a fully funded status.

SECTION L – ACTUARIAL CERTIFICATION STATEMENT

	Police and Firefighters June 30, 2024 (1)	All Other Employees June 30, 2024 (2)	All Employees June 30, 2024 (3)
1. Gross normal cost as a percentage of pay	27.12%	12.93%	14.51%
2. Present value of future benefits			
a. Active employees	\$ 4,343,140,213	\$ 17,498,115,440	\$ 21,841,255,653
b. Inactive members	74,514,821	1,155,926,497	1,230,441,318
c. Pensioners and beneficiaries	4,430,844,388	16,779,879,405	21,210,723,793
d. Total	\$ 8,848,499,422	\$ 35,433,921,342	\$ 44,282,420,764
3. Present value of future employee and employer contributions			
a. Present value of future normal costs	\$ 1,348,751,447	\$ 5,084,151,582	\$ 6,432,903,029
b. Present value of future employee contributions	707,209,722	2,701,720,336	3,408,930,058
c. Present value of future employer normal costs (Item 3a - Item 3b)	\$ 641,541,725	\$ 2,382,431,246	\$ 3,023,972,971
4. Actuarial accrued liability (Item 2d - Item 3a)	\$ 7,499,747,975	\$ 30,349,769,760	\$ 37,849,517,735
5. Actuarial value of assets			
a. Annuity Savings Fund	\$ 1,117,581,315	\$ 2,872,203,500	\$ 3,989,784,815
b. Pension Accumulation Fund	4,149,491,978	15,701,762,551	19,851,254,529
c. Total	\$ 5,267,073,293	\$ 18,573,966,051	\$ 23,841,039,344
6. Unfunded actuarial accrued liability	\$ 2,232,674,682	\$ 11,775,803,709	\$ 14,008,478,391
7. Adequacy of contribution rates			
a. Statutory Contribution Rate for Fiscal Year 2025	41.00%	24.00%	25.85%
b. Funding Period in years as of June 30, 2024*	22	22	22

* The Funding Period is calculated using an open group projection which reflects the impact of the benefits and member contribution rates for employees hired after June 30, 2012. It also assumes the current employer contribution rates will remain in place until the System is fully funded.



SECTION L – ACTUARIAL CERTIFICATION STATEMENT (CONTINUED)

The actuarial valuation as of June 30, 2024 is based on the provisions of Chapter 88 of the Hawaii Revised Statutes, as amended. The assumptions used in the cost calculations were those adopted by the Board of Trustees in August of 2022 based on the actuary's actuarial experience investigation report for the period ending June 30, 2021. The actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures.

In our opinion, the comparison of the current contribution policies to ERS's liabilities were calculated in accordance with the provisions of Chapter 88 regarding the funding of the Employees' Retirement System on an actuarial reserve basis.

All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of state law and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned is an independent actuary and consultant. Mr. Newton is an Enrolled Actuary, a Member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries. Finally, he is experienced in performing valuations for large public retirement systems.



Joseph P. Newton, FSA, EA, MAAA
Pension Market Leader & Actuary

SECTION M – VALUATION TABLES

		Pages
Table 1	Development of Employer Cost.....	20
Table 2	Actuarial Present Value of Future Benefits.....	21
Table 3	Analysis of Normal Cost	22
Table 4	Statement of Net Position	23
Table 5	Statement of Changes in Net Position	24
Table 6	Development of Actuarial Value of Assets	25
Table 7	Estimation of Yields.....	26
Table 8	Allocation of Cash and Investments.....	27
Table 9A	Total Experience Gain or Loss	28
Table 9B	Investment Experience Gain or Loss	29
Table 9C	Projection Results	30
Table 10	Employer Covered Payroll.....	31
Table 11	Schedule of Funding Progress.....	32
Table 12A	Membership Data	33
Table 12B	Historical Summary of Active Member Data	34
Table 13	History of Cash Flow	35
Table 14	Solvency Test.....	36
Table 15	Highlights of Last Five Annual Actuarial Valuations.....	37
Table 16	Summary of Benefit Provisions.....	38
Table 17	Summary of Plan Changes	51
Table 18	Summary of Actuarial Methods and Assumptions	55

TABLE 1

Development of Employer Cost

	Police and Firefighters June 30, 2024 (1)	All Other Employees June 30, 2024 (2)	All Employees June 30, 2024 (3)
1. Projected FY 2025 payroll for contribution purposes	\$ 553,420,240	\$ 4,531,329,081	\$ 5,084,749,321
2. Gross normal cost (Table 3)	27.12%	12.93%	14.51%
3. Employer normal cost rate (Table 3)	14.30%	6.85%	7.68%
4. Present value future benefits (Table 2)	\$ 8,848,499,422	\$ 35,433,921,342	\$ 44,282,420,764
5. Present value future employer normal cost	\$ 641,541,725	\$ 2,382,431,246	\$ 3,023,972,971
6. Present value future employee contributions	\$ 707,209,722	\$ 2,701,720,336	\$ 3,408,930,058
7. Actuarial accrued liability (Item 4 - Item 5 - Item 6)	\$ 7,499,747,975	\$ 30,349,769,760	\$ 37,849,517,735
8. Actuarial value of assets	\$ 5,267,073,293	\$ 18,573,966,051	\$ 23,841,039,344
9. Unfunded actuarial accrued liability (UAAL) (Item 7 - Item 8)	\$ 2,232,674,682	\$ 11,775,803,709	\$ 14,008,478,391
10. Funding Period*	22	22	22

	Police and Firefighters June 30, 2023 (1)	All Other Employees June 30, 2023 (2)	All Employees June 30, 2023 (3)
1. Projected FY 2024 payroll for contribution purposes	\$ 535,221,890	\$ 4,270,054,764	\$ 4,805,276,654
2. Gross normal cost (Table 3)	27.21%	12.94%	14.57%
3. Employer normal cost rate (Table 3)	14.43%	7.02%	7.86%
4. Present value future benefits (Table 2)	\$ 8,501,067,997	\$ 33,833,955,012	\$ 42,335,023,009
5. Present value future employer normal cost	\$ 646,300,181	\$ 2,306,438,576	\$ 2,952,738,757
6. Present value future employee contributions	\$ 694,547,730	\$ 2,463,119,269	\$ 3,157,666,999
7. Actuarial accrued liability (Item 4 - Item 5 - Item 6)	\$ 7,160,220,086	\$ 29,064,397,167	\$ 36,224,617,253
8. Actuarial value of assets	\$ 4,927,908,748	\$ 17,587,022,945	\$ 22,514,931,693
9. Unfunded actuarial accrued liability (UAAL) (Item 7 - Item 8)	\$ 2,232,311,338	\$ 11,477,374,222	\$ 13,709,685,560
10. Funding Period*	22	23	23

* The Funding Period is calculated using an open group projection which reflects the impact of the smaller benefits and larger member contribution rates for employees hired after June 30, 2012. Please refer to Table 9c for the full projection.

TABLE 2**Actuarial Present Value of Future Benefits**

	Police and Firefighters June 30, 2024 (1)	All Other Employees June 30, 2024 (2)	All Employees June 30, 2024 (3)
1. Active members			
a. Service retirement benefits	\$ 4,204,810,942	\$ 16,226,987,525	\$ 20,431,798,467
b. Termination Benefits	82,386,038	734,647,600	817,033,638
c. Survivor benefits	16,837,855	134,534,005	151,371,860
d. Disability retirement benefits	39,105,378	401,946,310	441,051,688
e. Total	\$ 4,343,140,213	\$ 17,498,115,440	\$ 21,841,255,653
2. Retired members			
a. Service retirement	\$ 4,149,994,007	\$ 15,444,158,566	\$ 19,594,152,573
b. Disability retirement	41,679,985	335,048,849	376,728,834
c. Beneficiaries	239,170,396	1,000,671,990	1,239,842,386
d. Total	\$ 4,430,844,388	\$ 16,779,879,405	\$ 21,210,723,793
3. Inactive members			
a. Vested terminations	\$ 63,217,629	\$ 925,856,626	\$ 989,074,255
b. Nonvested terminations	11,297,192	230,069,871	241,367,063
c. Total	\$ 74,514,821	\$ 1,155,926,497	\$ 1,230,441,318
4. Total actuarial present value of future benefits	\$ 8,848,499,422	\$ 35,433,921,342	\$ 44,282,420,764

	Police and Firefighters June 30, 2023 (1)	All Other Employees June 30, 2023 (2)	All Employees June 30, 2023 (3)
1. Active members			
a. Service retirement benefits	\$ 4,058,457,708	\$ 15,330,680,665	\$ 19,389,138,373
b. Termination Benefits	82,911,291	691,105,278	774,016,569
c. Survivor benefits	16,630,910	128,256,064	144,886,974
d. Disability retirement benefits	38,690,937	374,160,268	412,851,205
e. Total	\$ 4,196,690,846	\$ 16,524,202,275	\$ 20,720,893,121
2. Retired members			
a. Service retirement	\$ 3,973,678,601	\$ 14,905,264,452	\$ 18,878,943,053
b. Disability retirement	40,607,581	323,047,806	363,655,387
c. Beneficiaries	225,641,325	960,403,606	1,186,044,931
d. Total	\$ 4,239,927,507	\$ 16,188,715,864	\$ 20,428,643,371
3. Inactive members			
a. Vested terminations	\$ 55,695,619	\$ 912,548,153	\$ 968,243,772
b. Nonvested terminations	8,754,025	208,488,720	217,242,745
c. Total	\$ 64,449,644	\$ 1,121,036,873	\$ 1,185,486,517
4. Total actuarial present value of future benefits	\$ 8,501,067,997	\$ 33,833,955,012	\$ 42,335,023,009

TABLE 3**Analysis of Normal Cost**

	Police and Firefighters June 30, 2024 <u>(1)</u>	All Other Employees June 30, 2024 <u>(2)</u>	All Employees June 30, 2024 <u>(3)</u>
1. Normal cost as a percent of pay			
a. Service retirement benefits	24.33%	9.87%	11.47%
b. Deferred termination benefits	0.88%	0.60%	0.63%
c. Refunds	0.84%	1.41%	1.35%
d. Disability retirement benefits	0.49%	0.53%	0.53%
e. Survivor benefits	0.18%	0.12%	0.13%
f. Administrative Expenses	<u>0.40%</u>	<u>0.40%</u>	<u>0.40%</u>
g. Total	27.12%	12.93%	14.51%
2. Employee contribution rate	12.82%	6.08%	6.83%
3. Effective employer normal cost rate (Item 1g - Item 2)	14.30%	6.85%	7.68%

	Police and Firefighters June 30, 2023 <u>(1)</u>	All Other Employees June 30, 2023 <u>(2)</u>	All Employees June 30, 2023 <u>(3)</u>
1. Normal cost as a percent of pay			
a. Service retirement benefits	24.43%	9.90%	11.55%
b. Deferred termination benefits	0.88%	0.61%	0.65%
c. Refunds	0.84%	1.38%	1.32%
d. Disability retirement benefits	0.48%	0.53%	0.52%
e. Survivor benefits	0.18%	0.12%	0.13%
f. Administrative Expenses	<u>0.40%</u>	<u>0.40%</u>	<u>0.40%</u>
g. Total	27.21%	12.94%	14.57%
2. Employee contribution rate	12.78%	5.92%	6.71%
3. Effective employer normal cost rate (Item 1g - Item 2)	14.43%	7.02%	7.86%

TABLE 4

**Statement of Net Position
(Assets at Market or Fair Value)**

Item	Valuation as of	
	June 30, 2024	June 30, 2023
1. Cash and cash equivalents	\$ 816,534,332	\$ 497,906,509
2. Receivables:		
a. Accounts receivable and others	\$ 3,797,764	\$ 3,589,353
b. Investment sale proceeds	118,165,686	15,982,313
c. Accrued income	42,228,081	28,989,788
d. Member and employer contributions	146,686,334	151,378,373
e. Subtotal	<u>\$ 310,877,865</u>	<u>\$ 199,939,827</u>
3. Investments		
a. Equity securities	\$ 5,277,362,997	\$ 5,288,938,937
b. Fixed income securities	5,199,978,914	3,525,645,635
c. Real assets	4,261,689,706	3,774,821,802
d. Alternative investments	8,027,013,307	9,369,579,364
e. Subtotal	<u>\$ 22,766,044,924</u>	<u>\$ 21,958,985,738</u>
4. Other		
a. Invested securities lending collateral	\$ 765,590,308	\$ 491,507,300
b. Equipment at cost, net of depreciation	2,954,114	4,010,465
c. Other assets	-	-
d. Subtotal	<u>\$ 768,544,422</u>	<u>\$ 495,517,765</u>
5. Total assets	\$ 24,662,001,543	\$ 23,152,349,839
6. Liabilities		
a. Accounts payable	\$ 92,405,819	\$ 202,903,305
b. Investment commitments payable	103,373,060	32,554,259
c. Securities lending collateral	765,590,308	491,507,300
d. Notes payable	-	-
e. Total liabilities	<u>\$ 961,369,187</u>	<u>\$ 726,964,864</u>
7. Total market value of assets available for benefits (Item 5 - Item 6e)	\$ 23,700,632,356	\$ 22,425,384,975

TABLE 5

Statement of Changes in Net Position

	Year Ending	
	June 30, 2024	June 30, 2023
1. a. Value of assets at beginning of year	\$ 22,425,384,975	\$ 21,854,814,032
b. Adjustment due to post valuation changes in ACFR assets	-	-
c. Adjusted value of assets at beginning of year	\$ 22,425,384,975	\$ 21,854,814,032
2. Revenue for the year		
a. Contributions		
i. Member contributions	\$ 342,066,080	\$ 309,761,053
ii. Employer contributions	1,396,331,977	1,274,221,056
iii. Total	\$ 1,738,398,057	\$ 1,583,982,109
b. Income		
i. Interest, dividends, and other income	\$ 794,784,038	\$ 507,203,035
ii. Investment expenses	(174,112,484)	(153,900,913)
iii. Net	\$ 620,671,554	\$ 353,302,122
c. Net realized and unrealized gains/(loss)	\$ 841,228,583	\$ 473,600,753
d. Net income/(loss)	\$ 1,461,900,137	\$ 826,902,875
e. Total revenue	\$ 3,200,298,194	\$ 2,410,884,984
3. Expenditures for the year		
a. Refunds	\$ 28,548,843	\$ 26,353,782
b. Benefit payments	1,878,501,292	1,795,410,787
c. Administrative and miscellaneous expenses	18,000,678	18,549,472
d. Total expenditures	\$ 1,925,050,813	\$ 1,840,314,041
4. Increase/(decrease) in net assets (Item 2e - Item 3d)	\$ 1,275,247,381	\$ 570,570,943
5. Value of assets at end of year (Item 1c + Item 4)	\$ 23,700,632,356	\$ 22,425,384,975

TABLE 6

Development of Actuarial Value of Assets

	Year Ending June 30, 2024					
1. Actuarial value of assets, beginning of year	\$ 22,514,931,693					
2. Net new investments						
a. Contributions	\$ 1,738,398,057					
b. Benefits paid and Refunds	(1,907,050,135)					
c. Administrative expenses	<u>(18,000,678)</u>					
d. Subtotal	(186,652,756)					
3. Market value of assets at end of year	\$ 23,700,632,356					
4. Expected return on actuarial value of assets	\$ 1,569,512,372					
5. Expected actuarial value of assets, end of year	\$ 23,897,791,309					
6. Excess/(shortfall) return (Item 3-Item 5)	\$ (197,158,953)					
7. Development of amounts to be recognized as of June 30, 2024:						
	Remaining Deferrals of Excess (Shortfall)					
	of Investment					
	Offsetting of					
	Net Deferrals					
	Years					
	Recognized for					
	Remaining after					
Fiscal Year End	Income	Gains/(Losses)	Remaining	Remaining	this valuation	this valuation
	(1)	(2)	(3) = (1) + (2)	(4)	(5) = (3) / (4)	(6) = (3) - (5)
2021	\$ 0	\$ 0	\$ 0	1	\$ 0	\$ 0
2022	0	0	0	2	0	0
2023	(89,546,718)	0	(89,546,718)	3	(29,848,906)	(59,697,812)
2024	<u>(107,612,235)</u>	0	<u>(107,612,235)</u>	4	<u>(26,903,059)</u>	<u>(80,709,176)</u>
Total	\$ (197,158,953)	\$ 0	\$ (197,158,953)		\$ (56,751,965)	\$ (140,406,988)
8. Actuarial value of assets as of June 30, 2024 (Item 3 - Item 7)						\$ 23,841,039,344
9. Ratio of actuarial value to market value						100.6%
10. Asset gain/(loss) for year (Item 8 - Item 5)						\$ (56,751,965)

TABLE 7

Estimation of Yields

	June 30, 2024	June 30, 2023
	(1)	(2)
A. Market value yield		
1. Beginning of year market assets	\$ 22,425,384,975	\$ 21,854,814,032
2. Investment income		
a. Change in assets (Item 3 - Item 1)	\$ 1,275,247,381	\$ 570,570,943
b. Cash Flow	(186,652,756)	(256,331,932)
c. Total investment income based on market value (Item 2a less Item 2b)	\$ 1,461,900,137	\$ 826,902,875
3. End of year market assets	\$ 23,700,632,356	\$ 22,425,384,975
4. Estimated dollar weighted market value yield (net of investment and administrative expenses)	6.55%	3.81%
B. Actuarial value yield		
1. Beginning of year actuarial assets	\$ 22,514,931,693	\$ 21,317,835,653
2. Investment income (based on asset valuation method)		
a. Change in assets (Item 3 - Item 1)	\$ 1,326,107,651	\$ 1,197,096,040
b. Cash Flow	(186,652,756)	(256,331,932)
c. Total investment income based on market value (Item 2a less Item 2b)	\$ 1,512,760,407	\$ 1,453,427,972
3. End of year actuarial assets	\$ 23,841,039,344	\$ 22,514,931,693
4. Estimated actuarial value yield (net of investment and administrative expenses)	6.75%	6.86%

TABLE 8

Allocation of Cash and Investments

	<u>June 30, 2024</u>	<u>June 30, 2023</u>
	(1)	(2)
1. Cash and short-term equivalents	3.5%	2.2%
2. Fixed income securities	22.1%	15.7%
3. Equity securities	22.3%	23.6%
4. Real assets	18.1%	16.8%
5. Other	<u>34.0%</u>	<u>41.7%</u>
6. Total investments	100.0%	100.0%

TABLE 9A

Total Experience Gain or Loss

Item (1)	Police and Firefighters (2)	All Other Employees (3)	All Employees (4)
A. Calculation of total actuarial gain or loss			
1. Unfunded actuarial accrued liability (UAAL), as of June 30, 2023	\$ 2,232,311,338	\$ 11,477,374,222	\$ 13,709,685,560
2. Normal cost for the year (includes admin expense)	\$ 150,043,852	\$ 621,605,882	\$ 771,649,734
3. Less: contributions and assessments for the year	\$ (340,908,409)	\$ (1,397,489,648)	\$ (1,738,398,057)
4. Interest at 7.00%			
a. On UAAL	\$ 156,261,794	\$ 803,416,196	\$ 959,677,990
b. On normal cost	5,251,535	21,756,206	27,007,741
c. On contributions	(11,931,794)	(48,912,138)	(60,843,932)
d. Total	\$ 149,581,535	\$ 776,260,264	\$ 925,841,799
5. Expected UAAL as of June 30, 2024 (Sum of Items 1 - 4)	\$ 2,191,028,316	\$ 11,477,750,720	\$ 13,668,779,036
6. Actual UAAL as of June 30, 2024	\$ 2,232,674,682	\$ 11,775,803,709	\$ 14,008,478,391
7. Total gain/(loss) for the year (Item 5 - Item 6)	\$ (41,646,366)	\$ (298,052,989)	\$ (339,699,355)
B. Source of gains and losses			
8. Asset gain/(loss) for the year (Table 9b)	\$ (12,522,566)	\$ (44,229,399)	\$ (56,751,965)
9. Gain/(loss) due to change in actuarial assumptions	-	-	-
10. Other liability gain/(loss)	(29,123,800)	(253,823,590)	(282,947,390)
11. Change in benefit provisions	-	-	-
12. Total gain/(loss) for the year	\$ (41,646,366)	\$ (298,052,989)	\$ (339,699,355)

TABLE 9B**Investment Experience Gain or Loss**

Item (1)	June 30, 2024 (2)	June 30, 2023 (3)
1. Actuarial assets, beginning of year	\$ 22,514,931,693	\$ 21,317,835,653
2. Total contributions during year	\$ 1,738,398,057	\$ 1,583,982,109
3. Benefits and refunds paid	\$ (1,907,050,135)	\$ (1,821,764,569)
4. Administrative expenses paid	\$ (18,000,678)	\$ (18,549,472)
5. Assumed net investment income at 7.00%		
a. Beginning of year assets	\$ 1,576,045,219	\$ 1,492,248,496
b. Contributions	60,843,932	55,439,374
c. Benefits and refunds paid	(66,746,755)	(63,761,760)
d. Administrative expenses paid	(630,024)	(649,232)
e. Total	\$ 1,569,512,372	\$ 1,483,276,878
6. Expected actuarial assets, end of year (Sum of items 1 through 5)	\$ 23,897,791,309	\$ 22,544,780,599
7. Actual actuarial assets, end of year	\$ 23,841,039,344	\$ 22,514,931,693
8. Asset gain/(loss) for year (Item 7 - Item 6)	\$ (56,751,965)	\$ (29,848,906)
9. Asset gain/(loss) as a percent of actuarial value of assets, end of year (Item 8 / Item 7)	(0.24%)	(0.13%)

TABLE 9C

Projection Results Based on June 30, 2024 Actuarial Valuation

Valuation as of June 30,	Employer Contribution Rate for Fiscal Year Following Valuation Date	Compensation (in Millions)	Employer Contributions (in Millions)	Actuarial Accrued Liability (AAL, in Millions)	Actuarial Value of Assets (AVA, in Millions)	Unfunded Actuarial Accrued Liability (UAAL, in Millions)	Funded Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2024	25.85%	\$ 5,086	\$ 1,315	\$ 37,850	\$ 23,841	\$ 14,008	63.0%
2025	25.84%	5,210	1,346	39,170	25,140	14,030	64.2%
2026	25.82%	5,355	1,383	40,479	26,460	14,019	65.4%
2027	25.80%	5,505	1,420	41,784	27,814	13,970	66.6%
2028	25.79%	5,660	1,459	43,083	29,204	13,880	67.8%
2029	25.77%	5,819	1,500	44,380	30,637	13,743	69.0%
2030	25.76%	5,984	1,541	45,673	32,116	13,557	70.3%
2031	25.73%	6,155	1,584	46,962	33,646	13,316	71.6%
2032	25.73%	6,331	1,629	48,247	35,231	13,016	73.0%
2033	25.73%	6,512	1,676	49,526	36,878	12,649	74.5%
2034	25.73%	6,699	1,724	50,801	38,591	12,210	76.0%
2035	25.73%	6,894	1,774	52,073	40,381	11,692	77.5%
2036	25.73%	7,094	1,825	53,342	42,253	11,088	79.2%
2037	25.73%	7,302	1,879	54,609	44,217	10,392	81.0%
2038	25.73%	7,518	1,935	55,877	46,283	9,594	82.8%
2039	25.73%	7,744	1,993	57,150	48,463	8,687	84.8%
2040	25.73%	7,978	2,053	58,431	50,771	7,660	86.9%
2041	25.73%	8,223	2,116	59,728	53,223	6,505	89.1%
2042	25.73%	8,475	2,181	61,043	55,833	5,209	91.5%
2043	25.73%	8,738	2,248	62,380	58,616	3,763	94.0%
2044	25.73%	9,009	2,318	63,744	61,590	2,154	96.6%
2045	25.73%	9,289	2,390	65,140	64,773	367	99.4%
2046	25.73%	9,579	2,465	66,573	68,181	(1,609)	102.4%
2047	25.73%	9,879	2,542	68,047	71,837	(3,789)	105.6%
2048	25.73%	10,190	2,622	69,571	75,761	(6,191)	108.9%
2049	25.73%	10,510	2,704	71,149	79,979	(8,830)	112.4%
2050	25.73%	10,839	2,789	72,785	84,512	(11,727)	116.1%
2051	25.73%	11,179	2,876	74,484	89,383	(14,900)	120.0%
2052	25.73%	11,527	2,966	76,248	94,617	(18,370)	124.1%
2053	25.73%	11,887	3,059	78,080	100,240	(22,160)	128.4%



TABLE 10**Employer Covered Payroll**

	Police and Firefighters		All Other Employees		All Employees	
	March 31, 2024	March 31, 2023	March 31, 2024	March 31, 2023	March 31, 2024	March 31, 2023
	(1)	(2)	(3)	(4)	(5)	(6)
State of Hawaii	\$ 23,876,807	\$ 22,596,296	\$ 3,650,856,207	\$ 3,424,929,968	\$ 3,674,733,014	\$ 3,447,526,264
City & County of Honolulu	323,638,244	317,972,053	402,187,451	374,043,550	725,825,695	692,015,603
Board of Water Supply	-	-	40,153,296	39,320,778	40,153,296	39,320,778
County of Hawaii	89,312,550	85,215,972	124,886,400	116,945,043	214,198,950	202,161,015
County of Maui	68,074,377	62,680,822	136,075,991	127,636,344	204,150,368	190,317,166
County of Kauai	29,803,568	28,657,456	68,044,841	63,483,960	97,848,409	92,141,416
Total All Employers	\$ 534,705,546	\$ 517,122,599	\$ 4,422,204,186	\$ 4,146,359,643	\$ 4,956,909,732	\$ 4,663,482,242

TABLE 11**Schedule of Funding Progress**

Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial		Annual Covered Payroll	UAAL as % of Payroll (4)/(6)
			Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
June 30, 2006 *	\$ 9,529.4	\$ 14,661.4	\$ 5,132.0	65.0%	\$ 3,238.3	158.5%
June 30, 2007 **	10,589.8	15,696.5	5,106.8	67.5%	3,507.0	145.6%
June 30, 2008	11,381.0	16,549.1	5,168.1	68.8%	3,782.1	136.6%
June 30, 2009	11,400.1	17,636.4	6,236.3	64.6%	4,030.1	154.7%
June 30, 2010	11,345.6	18,483.7	7,138.1	61.4%	3,895.7	183.2%
June 30, 2011 **	11,942.8	20,096.9	8,154.2	59.4%	3,916.0	208.2%
June 30, 2012	12,242.5	20,683.4	8,440.9	59.2%	3,890.0	217.0%
June 30, 2013	12,748.8	21,243.7	8,494.9	60.0%	3,906.7	217.4%
June 30, 2014	13,641.8	22,220.1	8,578.3	61.4%	3,991.6	214.9%
June 30, 2015**	14,463.7	23,238.4	8,774.7	62.2%	4,171.4	210.4%
June 30, 2016**	14,998.7	27,439.2	12,440.5	54.7%	4,258.9	292.1%
June 30, 2017	15,720.6	28,648.6	12,928.0	54.9%	4,265.0	303.1%
June 30, 2018	16,512.7	29,917.4	13,404.7	55.2%	4,383.7	305.8%
June 30, 2019**	17,322.2	31,396.4	14,074.3	55.2%	4,519.7	311.4%
June 30, 2020	18,084.4	32,691.8	14,607.4	55.3%	4,630.2	315.5%
June 30, 2021	19,909.8	34,139.2	14,229.4	58.3%	4,783.8	297.5%
June 30, 2022**	21,317.8	34,822.8	13,504.9	61.2%	4,614.0	292.7%
June 30, 2023	22,514.9	36,224.6	13,709.7	62.2%	4,805.3	285.3%
June 30, 2024	23,841.0	37,849.5	14,008.5	63.0%	5,084.7	275.5%

Note : Dollar amounts in millions.

* Assumption changes and new Hybrid class effective June 30, 2006.

** New assumption effective on valuation date.

TABLE 12A

Membership Data

	Police and Firefighters		All Other Employees		All Employees	
	June 30, 2024	June 30, 2023	June 30, 2024	June 30, 2023	June 30, 2024	June 30, 2023
	(1)	(2)	(3)	(4)	(5)	(6)
1. Active members						
a. Number	4,791	4,832	60,546	59,411	65,337	64,243
b. Total salary	\$ 534,705,546	\$ 517,122,599	\$ 4,422,204,186	\$ 4,146,359,643	\$ 4,956,909,732	\$ 4,663,482,242
c. Average salary	\$ 111,606	\$ 107,020	\$ 73,039	\$ 69,791	\$ 75,867	\$ 72,591
d. Average age	42.5	42.5	48.3	48.4	47.9	48.0
e. Average service	14.1	14.0	12.8	13.0	12.9	13.1
2. Inactive members						
a. Number	235	228	8,612	8,769	8,847	8,997
b. Total annual deferred benefits	\$ 6,055,757	\$ 5,331,907	\$ 107,356,266	\$ 107,547,445	\$ 113,412,023	\$ 112,879,352
c. Average annual deferred benefit	\$ 25,769	\$ 23,386	\$ 12,466	\$ 12,265	\$ 12,819	\$ 12,546
3. Service retirees						
a. Number	4,207	4,156	44,413	43,782	48,620	47,938
b. Total annual benefits	\$ 306,722,571	\$ 293,231,396	\$ 1,365,908,147	\$ 1,315,364,185	\$ 1,672,630,718	\$ 1,608,595,581
c. Average annual benefit	\$ 72,908	\$ 70,556	\$ 30,755	\$ 30,043	\$ 34,402	\$ 33,556
4. Disabled retirees						
a. Number	124	124	1,645	1,630	1,769	1,754
b. Total annual benefits	\$ 3,692,776	\$ 3,573,996	\$ 27,749,273	\$ 26,638,064	\$ 31,442,049	\$ 30,212,060
c. Average annual benefit	\$ 29,780	\$ 28,823	\$ 16,869	\$ 16,342	\$ 17,774	\$ 17,225
5. Beneficiaries						
a. Number	429	407	5,002	4,874	5,431	5,281
b. Total annual benefits	\$ 20,511,498	\$ 18,958,831	\$ 97,877,735	\$ 93,297,190	\$ 118,389,233	\$ 112,256,021
c. Average annual benefit	\$ 47,812	\$ 46,582	\$ 19,568	\$ 19,142	\$ 21,799	\$ 21,257



TABLE 12B**Historical Summary of Active Member Data**

Year Ending June 30,	Active Members		Total Salaries		Average Salary		Average Age	Average Service
	Number	Percent Increase	Amount in \$ Millions	Percent Increase	\$ Amount	Percent Increase		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2004	62,573	0.5%	\$ 2,755.5	1.4%	\$ 44,037	0.9%	46.0	13.0
2005	63,073	0.8%	2,924.5	6.1%	46,368	5.3%	46.3	13.0
2006	64,069	1.6%	3,113.7	6.5%	48,599	4.8%	46.4	13.0
2007	65,251	1.8%	3,340.5	7.3%	51,194	5.3%	46.5	13.0
2008	66,589	2.1%	3,601.7	7.8%	54,089	5.7%	46.6	12.9
2009	67,912	2.0%	3,838.0	6.6%	56,514	4.5%	46.8	12.9
2010	65,890	-3.0%	3,713.6	-3.2%	56,360	-0.3%	47.1	13.2
2011	65,310	-0.9%	3,731.4	0.5%	57,133	1.4%	47.4	13.4
2012	65,599	0.4%	3,706.1	-0.7%	56,497	-1.1%	47.6	13.5
2013	66,226	1.0%	3,720.8	0.4%	56,184	-0.6%	47.7	13.5
2014	67,206	1.5%	3,871.0	4.0%	57,600	2.5%	47.8	13.5
2015	67,310	0.2%	3,952.6	2.1%	58,723	1.9%	47.8	13.2
2016	67,377	0.1%	4,118.4	4.2%	61,124	4.1%	47.9	13.3
2017	65,911	-2.2%	4,134.2	0.4%	62,723	2.6%	48.0	13.3
2018	66,271	0.5%	4,257.2	3.0%	64,240	2.4%	47.9	13.2
2019	66,383	0.2%	4,393.0	3.2%	66,176	3.0%	47.9	13.1
2020	66,750	0.6%	4,523.4	3.0%	67,766	2.4%	47.9	13.1
2021	65,561	-1.8%	4,622.0	2.2%	70,499	4.0%	48.0	13.2
2022	64,234	-2.0%	4,537.2	-1.8%	70,635	0.2%	48.0	13.2
2023	64,243	0.0%	4,663.5	2.8%	72,591	2.8%	48.0	13.1
2024	65,337	1.7%	4,956.9	6.3%	75,867	4.5%	47.9	12.9

TABLE 13**History of Cash Flow**

Year Ending June 30, (1)	Contributions			Expenditures				External Cash Flow for the Year ² (9)	Market Value of Assets (10)	External Cash Flow as Percent of Market Value (11)
	Employee (2)	Employer (3)	Total (4)	Benefit Payments (5)	Refunds (6)	Administrative Expenses ¹ (7)	Total (8)			
2009	\$ 184.5	\$ 578.6	\$ 763.1	\$ (839.1)	\$ (3.5)	\$ (12.3)	\$ (854.9)	\$ (91.8)	\$ 8,818.0	(1.0%)
2010	360.0	547.6	907.6	(906.4)	(7.8)	(12.2)	(926.4)	(18.8)	9,821.6	(0.2%)
2011	231.0	534.9	765.9	(960.2)	(7.9)	(13.3)	(981.4)	(215.5)	11,642.3	(1.9%)
2012	178.8	548.4	727.2	(1,015.4)	(7.2)	(11.6)	(1,034.2)	(307.0)	11,285.9	(2.7%)
2013	185.8	581.4	767.2	(1,060.6)	(7.2)	(12.3)	(1,080.1)	(312.9)	12,357.8	(2.5%)
2014	206.1	653.1	859.2	(1,122.4)	(8.5)	(12.6)	(1,143.5)	(284.3)	14,203.0	(2.0%)
2015	223.5	717.8	941.3	(1,170.7)	(10.5)	(14.0)	(1,195.2)	(253.9)	14,505.5	(1.8%)
2016	236.8	756.6	993.4	(1,232.6)	(12.9)	(14.0)	(1,259.5)	(266.1)	14,070.0	(1.9%)
2017	250.7	781.2	1,031.9	(1,306.8)	(16.3)	(15.0)	(1,338.1)	(306.2)	15,698.3	(2.0%)
2018	259.4	847.6	1,107.0	(1,395.9)	(20.8)	(15.8)	(1,432.5)	(325.5)	16,598.4	(2.0%)
2019	273.2	922.6	1,195.8	(1,469.6)	(16.5)	(13.8)	(1,499.9)	(304.1)	17,227.0	(1.8%)
2020	287.4	1,098.6	1,386.0	(1,545.6)	(22.4)	(17.8)	(1,585.8)	(199.8)	17,385.5	(1.1%)
2021	300.6	1,281.6	1,582.2	(1,651.4)	(23.6)	(19.0)	(1,694.0)	(111.8)	21,935.8	(0.5%)
2022	293.0	1,242.1	1,535.1	(1,738.8)	(24.5)	(17.5)	(1,780.8)	(245.7)	21,854.8	(1.1%)
2023	309.8	1,274.2	1,584.0	(1,795.4)	(26.4)	(18.5)	(1,840.3)	(256.3)	22,425.4	(1.1%)
2024	342.1	1,396.3	1,738.4	(1,878.5)	(28.5)	(18.0)	(1,925.0)	(186.6)	23,700.6	(0.8%)

Amounts in \$ millions

¹ Excludes investment expenses² Column (9) = Column (4) + Column (8)

TABLE 14

Solvency Test

	<u>June 30, 2024</u>	<u>June 30, 2023</u>
	(1)	(2)
1. Actuarial accrued liability (AAL)		
a. Active member contributions	\$ 3,437,939,005	\$ 2,290,437,945
b. Retirees and beneficiaries	21,210,723,793	20,428,643,371
c. Active and inactive members	<u>13,200,854,937</u>	<u>13,505,535,937</u>
d. Total	\$ 37,849,517,735	\$ 36,224,617,253
2. Actuarial value of assets	\$ 23,841,039,344	\$ 22,514,931,693
3. Cumulative portion of AAL covered		
a. Active member contributions	100%	100%
b. Retirees and beneficiaries	96%	99%
c. Active and inactive members	0%	0%

TABLE 15**Highlights of Last Five Annual Actuarial Valuations
2020 through 2024**

Item	Valuation Date: June 30				
	2020	2021	2022	2023	2024
Number of active members	66,750	65,561	64,234	64,243	65,337
Number of inactive members	9,204	9,011	9,031	8,997	8,847
Number of pensioners	46,486	47,724	48,913	49,692	50,389
Number of beneficiaries	4,667	4,894	5,077	5,281	5,431
Average monthly contributory member pension amount	\$ 3,293	\$ 3,458	\$ 3,632	\$ 3,807	\$ 3,971
Average monthly noncontributory member pension amount	\$ 1,773	\$ 1,813	\$ 1,861	\$ 1,909	\$ 1,960
Average monthly hybrid member pension amount	\$ 2,345	\$ 2,416	\$ 2,495	\$ 2,555	\$ 2,625
Average monthly beneficiary amount	\$ 1,610	\$ 1,668	\$ 1,713	\$ 1,771	\$ 1,817
Total actuarial value of assets (\$millions)	\$ 18,084	\$ 19,910	\$ 21,318	\$ 22,515	\$ 23,841
Unfunded actuarial accrued liability (\$millions)	\$ 14,607.4	\$ 14,229.4	\$ 13,504.9	\$ 13,709.7	\$ 14,008.5
Funding Period (in years) ⁽¹⁾	26	24	24	23	22
Item (Dollar amounts in millions)	Fiscal Year				
	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Employer contributions ⁽²⁾	\$ 1,098.6	\$ 1,281.6	\$ 1,242.1	\$ 1,274.2	\$ 1,396.3

⁽¹⁾ Beginning with the 2011 valuation, the funding period was determined using an open group projection. Prior valuations determined the remaining amortization based on the assumption that the amortization payment would remain constant as a percentage of pay.

⁽²⁾ Beginning July 1, 2019, the employer contribution rate was 36.0% for Police and Fire, 22.0% for All Other Employees. Beginning July 1, 2020, the employer contribution rate was 41.0% for Police and Fire, 24.0% for All Other Employees.

TABLE 16**Summary of Benefit Provisions
(For Members Hired Prior to 7/1/2012)**

	<u>Noncontributory</u>	<u>Contributory</u>	<u>Hybrid</u>
Employee Contributions	No employee contributions	7.8% of salary	6.0% of salary
Normal Retirement			
Eligibility	Age 62 and 10 years credited service; or Age 55 and 30 years credited service	Age 55 and 5 years credited service	Age 62 and 5 years credited service; or Age 55 and 30 years credited service
Benefit	1 ¼% of average final compensation times years of credited service (Average Final Compensation or AFC is an average of the highest salaries during any three years of credited service, excluding any salary paid in lieu of vacation or if ERS membership occurred prior to 1/1/71, AFC may be an average of the highest salaries during any five years of credited service including any salary paid in lieu of vacation.)	2% of average final compensation times years of credited service (Average Final Compensation or AFC is an average of the highest salaries during any three years of credited service, excluding any salary paid in lieu of vacation or if ERS membership occurred prior to 1/1/71, AFC may be an average of the highest salaries during any five years of credited service including any salary paid in lieu of vacation.)	2% of average final compensation times years of credited service, split formula for unconverted noncontributory service at 1 ¼% (Average Final Compensation or AFC is an average of the highest salaries during any three years of credited service, excluding any salary paid in lieu of vacation or if ERS membership occurred prior to 1/1/71, AFC may be an average of the highest salaries during any five years of credited service including any salary paid in lieu of vacation.)

TABLE 16 (CONTINUED)

	Noncontributory	Contributory	Hybrid
Early Retirement			
Eligibility	Age 55 and 20 years credited service	Any age and 25 years credited service	Age 55 with 20 years credited service
Benefit	Maximum allowance reduced 6% per year under age 62	Maximum allowance reduced 5% per year under age 55 plus 4% per year under age 50	Maximum allowance reduced 5% for each year under age 62
Deferred Vesting			
Eligibility	10 years credited service	5 years credited service and contributions left in ERS	5 years credited service and contributions left in ERS
Benefit	Accrued maximum allowance payable at age 65	Accrued maximum allowance payable at age 55	Accrued maximum allowance payable at age 62
Annuity Savings Account			
Interest	Not applicable	4.5% per annum on employee contributions and accrued interest	4.5% per annum on employee contributions and accrued interest
Eligibility	Not applicable	Requests refund and forfeits future retirement benefit	Requests refund and forfeits future retirement benefit
Benefit			
- Terminates with less than 5 years credited service	Not applicable	Return of member's contributions and accrued interest	Return of member's contributions and accrued interest
- Terminates with 5 or more years of credited service	Not applicable	Return of member's contributions and accrued interest	Return of member's Hybrid contributions and accrued interest, both times 150%. Return of non-Hybrid balance transfers and accrued interest.

TABLE 16 (CONTINUED)

	Noncontributory	Contributory	Hybrid
Ordinary Disability			
Eligibility	10 years credited service	10 years credited service	10 years credited service
Benefit	1 ¼% of AFC times years of credited service, unreduced for age (Minimum is 12.5% of AFC)	1 ¾% of AFC times years of credited service, unreduced for age (Minimum is 30% of AFC)	2% of AFC times years of credited service, unreduced for age, split formula for unconverted noncontributory service at 1 ¼% (Minimum is 25% of AFC)
Service-Connected Disability			
Eligibility	Any age or credited service	Any age or credited service	Any age or credited service
Benefit	Accrued maximum allowance, but not less than 15% AFC. For accidents that occur on or after July 1, 2004, lifetime pension of 35% of AFC.	Totally disabled: lifetime pension of 66 2/3% AFC plus annuity. Occupationally disabled: same benefit (66 2/3% pension plus annuity) paid for 3 years and then pension is reduced to 33 1/3% AFC if not totally disabled. For accidents on or after July 7, 1998, lifetime pension of 50% of AFC plus refund of member's contributions and accrued interest.	Lifetime pension of 35% of AFC plus refund of member's contributions and accrued interest.

TABLE 16 (CONTINUED)

	Noncontributory	Contributory	Hybrid
Ordinary Death			
Eligibility	Active employee at time of death with at least 10 years of credited service	Active employee at time of death with at least 1 year of service	Active employee at time of death with at least 5 years of service
Benefit	<p>Surviving spouse/reciprocal beneficiary and dependent children receive a benefit equal to a percentage of member's accrued maximum allowance unreduced for age; or</p> <p>Option B (100% Joint and Survivor) benefit for surviving spouse if member was eligible for retirement at time of death and a percentage of member's accrued maximum allowance unreduced for age for the dependent children</p>	<p>Lump sum payment of member's contributions and accrued interest plus a percentage of the salary earned in the 12 months preceding death; or</p> <p>Option 3 (50% Joint and Survivor) benefit if member was not eligible for retirement at the time of death, credited with 10 years of service, and one beneficiary designated (benefit calculated using the ordinary disability retirement formula); or</p> <p>Option 2 (100% Joint and Survivor) benefit if member was eligible for retirement at the time of death and one beneficiary designated</p>	<p>Return of member's Hybrid contributions and accrued interest (both times 150%) plus return of non-Hybrid balance transfers and accrued interest; or</p> <p>Option 3 (50% Joint Survivor) lifetime benefit if credited with at least 10 years of service and one beneficiary designated; or</p> <p>Option 2 (100% Joint Survivor) lifetime monthly benefit if member was eligible for service retirement at time of death, and one beneficiary designated</p>

TABLE 16 (CONTINUED)

	Noncontributory	Contributory	Hybrid
Service-Connected Death			
Eligibility	Any age or service	Any age or service	Any age or service
Benefit	<p>Surviving spouse/reciprocal beneficiary receives pension equal to 30% of AFC (until remarriage or re-entry into a new reciprocal beneficiary relationship); additional benefits payable to surviving dependent children (up to age 18)</p> <p>If there is no spouse/reciprocal beneficiary or dependent children, no benefit is payable.</p>	<p>Lump sum payment of member’s contributions and accrued interest, plus pension of 50% AFC to surviving spouse/reciprocal beneficiary (until remarriage or re-entry into a new reciprocal beneficiary relationship);</p> <p>If there is no surviving spouse or reciprocal beneficiary, surviving dependent children (up to age 18) or dependent parents shall be eligible for a monthly benefit.</p> <p>If there is no spouse/reciprocal beneficiary or dependent children/parents, the ordinary death benefit shall be payable to the designated beneficiary.</p>	<p>Lump sum payment of member’s contributions and accrued interest, plus pension of 50% AFC to surviving spouse/reciprocal beneficiary (until remarriage or re-entry into a new reciprocal beneficiary relationship);</p> <p>If there is no surviving spouse or reciprocal beneficiary, surviving dependent children (up to age 18) or dependent parents shall be eligible for a monthly benefit.</p> <p>If there is no spouse/reciprocal beneficiary or dependent children/parents, the ordinary death benefit shall be payable to the designated beneficiary.</p>

TABLE 16 (CONTINUED)

For members hired after June 30, 2011, the interest crediting rate on employee contributions and accrued interest is 2.0% per annum.

The plan provisions summarized above apply to teachers and most State and County employees. Special provisions applicable to other groups of employees are outlined below:

- A. Police officers, firefighters, investigators of the Department of the Prosecuting Attorney and the Attorney General, narcotic enforcement investigators, and public safety investigators contribute 12.2% of their monthly salary to ERS instead of 7.8%. These members may retire at age 55 with 5 years of credited service or at any age with 25 years of credited service and receive a retirement benefit of 2 ½% of average final compensation (AFC) for each year of such service up to a maximum of 80% AFC, provided the last 5 years of credited service in any of these occupations.
- B. Judges, elected officials, and legislative officers may retire at age 55 with at least 5 years of credited service, or at any age with at least 10 years of credited service and receive a pension of 3 ½% of AFC for each year of such service plus an annuity from their contributions allocable to the period of such service. This benefit cannot exceed 75% of the AFC. Judges hired after June 30, 1999 require 25 years of credited service in order to retire before age 55.
- C. Sewer workers in specified classifications, water safety officers, and emergency medical technicians (EMTs) may retire at any age if they are credited with 25 years of such service with the last 5 or more years in these occupations. (The 25-year feature is phased in through 7/1/2008 for EMTs.)
- D. Sewer workers in specified classifications, water safety officers, and emergency medical technicians (EMTs) that transfer to the Hybrid class contribute 9.75% of their monthly salary to ERS. These members may retire at age 62 with 5 years of credited service or at any age if they are credited with 25 years of such service with the last 5 or more years in these occupations.

TABLE 16 (CONTINUED)
Summary of Benefit Provisions
(For Members Hired After 6/30/2012)

	Contributory (for Police/Fire)	Contributory (for Judges/Elected Officers)	Hybrid
Employee Contributions	14.2% of base pay earnings	9.8% of base pay earnings	8.0% of base pay earnings 11.75% of base pay earnings for Sewer workers, water safety officers, and emergency medical technicians (EMTs)
Normal Retirement Eligibility	Age 60 and 10 years credited service	Age 60 and 10 years credited service	Age 65 and 10 years credited service; or Age 60 and 30 years credited service Sewer workers, water safety officers, and EMTs may retire with 25 years credited service at age 55.
Benefit	2.25% of average final compensation times years of credited service. (Average final compensation or AFC is an average of the highest base pay earnings during any five years of credited service, excluding any salary paid in lieu of vacation.) Maximum is 80% of AFC.	3.0% of average final compensation times years of credited service (Average final compensation or AFC is an average of the highest base pay earnings during any five years of credited service, excluding any salary paid in lieu of vacation.) Maximum is 75% of AFC.	1.75% of average final compensation times years of credited service (Average final compensation or AFC is an average of the highest base pay earnings during any five years of credited service, excluding any salary paid in lieu of vacation.)

TABLE 16 (CONTINUED)

	Contributory (for Police/Fire)	Contributory (for Judges/Elected Officers)	Hybrid
Early Retirement			
Eligibility	Age 55 and 25 years credited service	Age 55 and 25 years credited service Any age with 10 years for elected officers	Age 55 with 20 years credited service Sewer workers, water safety officers, and emergency medical technicians (EMTs) may retire with 25 years credited service.
Benefit	Maximum allowance reduced 6% per year under age 60	Maximum allowance reduced 6% per year under age 60	Maximum allowance reduced 5% for each year under age 65
Deferred Vesting			
Eligibility	10 years credited service and contributions left in ERS	10 years credited service and contributions left in ERS	10 years credited service and contributions left in ERS
Benefit	Accrued maximum allowance payable at age 60	Accrued maximum allowance payable at age 60	Accrued maximum allowance payable at age 65
Annuity Savings Account			
Interest	2.0% per annum	2.0% per annum	2.0% per annum
Eligibility	Requests refund and forfeits future retirement benefit	Requests refund and forfeits future retirement benefit	Requests refund and forfeits future retirement benefit
Benefit			
- Terminates with less than 10 years credited service	Return of member's contributions and accrued interest	Return of member's contributions and accrued interest	Return of member's contributions and accrued interest
- Terminates with 10 or more years of credited service	Return of member's contributions and accrued interest	Return of member's contributions and accrued interest	Return of member's contributions and accrued interest, both times 120%

TABLE 16 (CONTINUED)

	Contributory (for Police/Fire)	Contributory (for Judges/Elected Officers)	Hybrid
Ordinary Disability			
Eligibility	10 years credited service	10 years credited service	10 years credited service
Benefit	1 $\frac{3}{4}$ % of AFC times years of credited service, unreduced for age (Minimum is 30% of AFC)	3.0% of AFC times years of credited service, unreduced for age (Minimum is 30% of AFC)	1 $\frac{3}{4}$ % of AFC times years of credited service, unreduced for age (Minimum is 25% of AFC)
Service-Connected Disability			
Eligibility	Any age or credited service	Any age or credited service	Any age or credited service
Benefit	Lifetime pension of 50% of AFC plus refund of member's contributions and accrued interest.	Lifetime pension of 50% of AFC plus refund of member's contributions and accrued interest.	Lifetime pension of 35% of AFC plus refund of member's contributions and accrued interest.

TABLE 16 (CONTINUED)

	Contributory (for Police/Fire)	Contributory (for Judges/Elected Officers)	Hybrid
Ordinary Death			
Eligibility	Active employee at time of death with at least 1 years of credited service	Active employee at time of death with at least 1 years of credited service	Active employee at time of death with at least 10 years of service
Benefit	<p>Lump sum payment of member’s contributions and accrued interest plus a percentage of the salary earned in the 12 months preceding death; or</p> <p>Option 3 (50% Joint Survivor) lifetime benefit if credited with at least 10 years of service and one beneficiary designated; or</p> <p>Option 2 (100% Joint Survivor) lifetime monthly benefit if member was eligible for service retirement at time of death, and one beneficiary designated</p>	<p>Lump sum payment of member’s contributions and accrued interest plus a percentage of the salary earned in the 12 months preceding death; or</p> <p>Option 3 (50% Joint Survivor) lifetime benefit if credited with at least 10 years of service and one beneficiary designated; or</p> <p>Option 2 (100% Joint Survivor) lifetime monthly benefit if member was eligible for service retirement at time of death, and one beneficiary designated</p>	<p>Return of member’s Hybrid contributions and interest; or</p> <p>Option 3 (50% Joint Survivor) lifetime benefit if credited with at least 10 years of service and one beneficiary designated; or</p> <p>Option 2 (100% Joint Survivor) lifetime monthly benefit if member was eligible for service retirement at time of death, and one beneficiary designated</p>

TABLE 16 (CONTINUED)

	Contributory (for Police/Fire)	Contributory (for Judges/Elected Officers)	Hybrid
Service-Connected Death			
Eligibility	Any age or service	Any age or service	Any age or service
Benefit	<p>Same for all members.</p> <p>Lump sum payment of member’s contributions and interest, plus pension of 50% AFC to surviving spouse/reciprocal beneficiary (until remarriage or re-entry into a new reciprocal beneficiary relationship);</p> <p>If there is no surviving spouse or reciprocal beneficiary, surviving dependent children (up to age 18) or dependent parents shall be eligible for a monthly benefit.</p> <p>If there is no spouse/reciprocal beneficiary or dependent children/parents, the ordinary death benefit shall be payable to the designated beneficiary.</p>		

TABLE 16 (CONTINUED)

Post Retirement Benefit

Each retiree's original retirement allowance is increased by 1 ½% (if their membership date is after June 30, 2012) or 2 ½% (if their membership date is before July 1, 2012) on each July 1 beginning the calendar year after retirement. This cumulative benefit is not compounded.

Retirement Options

Contributory or Hybrid Member

Maximum Allowance: The member receives a lifetime maximum allowance and at death the difference between the value of the member's contributions at the time of retirement and the retirement allowance paid prior to death is paid to the designated beneficiary(ies) or estate.

Option One: The member receives a reduced lifetime allowance based on age and at death, the difference between the initial insurance reserve and the retirement allowance paid prior to death is paid to the designated beneficiary(ies) or estate.

Option Two (100% Joint and Survivor with Pop-Up): The member receives a reduced lifetime allowance based on ages of both the member and the sole beneficiary and at death of the member; the same allowance is paid to the designated beneficiary for life. Should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance, and all payments will cease at the retiree's death.

Option Three (50% Joint and Survivor with Pop-Up): This allowance is similar to Option Two. The member receives a reduced lifetime allowance which is higher than Option Two and is based on ages of both the member and the sole beneficiary; however, at death of the member one-half of the allowance is paid to the designated beneficiary for life. Like Option Two, should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance, and all payments will cease at the retiree's death.

Option Four: This option allows the member to devise an allowance that will provide a benefit according to the member's specifications. It requires certification by the Actuary and approval of the Board of Trustees. The following Option Four allowances have been approved:

Combination of Options Five and Maximum Allowance: The member receives a reduced lifetime allowance and is allowed to withdraw the pre-1987 nontaxable contribution, 50% of accumulated contributions, or 75% of accumulated contributions (Hybrid class members are not allowed the 75% option); at death, the difference between the value of the member's contributions at the time of retirement and the retirement allowance paid prior to death is paid to the designated beneficiary(ies) or estate.

Combination of Options Five and One: The member receives a reduced lifetime allowance and is allowed to withdraw the pre-1987 nontaxable contributions, 50% of accumulated contributions, or 75% of accumulated contributions (Hybrid class members are not allowed the 75% option); at death, the difference between the initial insurance reserve and the retirement allowance paid prior to death is paid to the designated beneficiary(ies) or estate.



TABLE 16 (CONTINUED)

Combination of Options Five and Two: The member receives a reduced lifetime allowance based on ages of both member and the sole beneficiary, and is allowed to withdraw the pre-1987 nontaxable contributions, 50% of accumulated contributions, or 75% of accumulated contributions (Hybrid class members are not allowed the 75% option); at death of the member, the same allowance is paid to the designated beneficiary for life. As in the case of Option Two, should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance (as adjusted for the contribution withdrawal), and all payments will cease at the retiree's death.

Combination of Options Five and Three: The member receives a reduced lifetime allowance based on ages of both member and the sole beneficiary, and is allowed to withdraw the pre-1987 nontaxable contributions, 50% of accumulated contributions, or 75% of accumulated contributions (Hybrid class members are not allowed the 75% option); at death of the member, one-half of the allowance is paid to the designated beneficiary for life. As in the case of Option Three, should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance (as adjusted for the contribution withdrawal), and all payments will cease at the retiree's death.

Option Five: The member receives a reduced lifetime allowance and is allowed to withdraw all accumulated contributions; at death, the retiree is entitled to the pension for the entire month that death occurs.

Option Four and Option Five are restricted to those members with at least ten years of credited service excluding unused sick leave credit.

Regardless of the option selected, should death occur during the first year of retirement, the designated beneficiary may elect to receive benefits as if death had occurred immediately prior to retirement in lieu of the death benefits described above.

Noncontributory Member

Maximum Allowance: The member receives a lifetime pension and at death, the retiree is entitled to the pension for the entire month that death occurs.

Option A (50% Joint and Survivor with Pop-Up): The member receives a reduced lifetime pension and at death of the member, one-half of the pension is paid to the sole designated beneficiary for life. Should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance, and all payments will cease at the retiree's death.

Option B (100% Joint and Survivor with Pop-up): The member receives a reduced lifetime pension and at death of the member, the same pension is paid to the sole designated beneficiary for life. Like Option A, should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance, and all payments will cease at the retiree's death.

Option C (Ten-Year Guarantee): The member receives a reduced lifetime pension. Should death occur within ten years of retirement, the same pension will be paid to the designated beneficiary for the balance of the ten-year period. Should the designated beneficiary predecease the retiree, another beneficiary can be named.

Regardless of the option selected, should death occur during the first year of retirement, the designated beneficiary may elect to receive benefits as if death had occurred immediately prior to retirement in lieu of the death benefits described above.



TABLE 17

Summary of Plan Changes

Act 65, effective July 1, 1999

Requires judges who enter or re-enter service after June 30, 1999 to be at least 55 years old and five years of service or have 25 years of service to retire.

Act 100, effective June 30, 1999

Uses actuarial investment earnings in excess of a ten percent (10%) actuarial investment yield rate to reduce the employer's contribution requirements by \$147.0 million and \$50.6 million for fiscal years ending June 30, 2000 and 2001, respectively.

Act 284, effective June 30, 2001

Provide an increase in pension benefits for current retirees with military service who retired prior to July 2, 1989. A retirant who rendered honorable active military service could be granted up to 4 years of military service credits based upon his/her years of credited service under ERS, not to exceed his/her actual years of military service. The years of military service credits granted are based on the following schedule:

- 0 years for retirants with less than 8 years of credited service
- Up to 2 years of retirants with 8 years or more of credited service
- Up to 3 years of retirants with 20 years or more of credited service
- Up to 4 years of retirants with 25 years or more of credited service

For each year of military service credits granted on the schedule above, the retirant will be provided a \$36.00 increase in his/her monthly pension or retirement allowance.

Act 199, effective June 30, 2003

Emergency Medical Technicians (EMTs) are allowed to retire with an unreduced benefit after 25 years of service regardless of age, of which the last five or more years prior to retirement must be in that capacity. This feature is phased in one year at a time, July 1, 2003 through June 30, 2008.

Act 177, effective July 1, 2004

This Act allows police officers with a permanent service-connected disability to retain the 2-1/2% benefit multiplier for each year of service as a police officer.

Act 181, effective July 1, 2004

This Act establishes fixed employer contribution rates as a percentage of compensation effective July 1, 2005. Employers will contribute 15.75% for their police officers and firefighters and 13.75% for other employees.



TABLE 17 (CONTINUED)

Act 183, effective July 1, 2004

This Act amends ERS's statutes to comply with the federal tax limits on compensation retroactive to July 1, 1996.

Act 56, effective December 1, 2004

This Act amends ERS's statutes to allow the automatic cost-of-living-adjustment to be reflected when determining actuarial equivalent optional forms of payment.

Act 256, effective July 5, 2007

Legislation was enacted to remove the statutory salary increase assumption from the statutes and to grant ERS's Board of Trustees the authority to set the salary increase assumption. As a result of this legislation, the Board has adopted effective with this valuation the salary increase assumption recommended by GRS as a result of the Experience Study performed in 2006.

Legislation was also enacted to increase the employer contribution rates to ERS. Effective July 1, 2008, the employer contribution rate for Police and Fire employees will increase from 15.75% to 19.70% and the rate for All Other employees will increase from 13.75% to 15.00%.

Act 163, effective June 23, 2011

Legislation was enacted that increased the future employer contribution rates to ERS. Employers of Police and Fire employees will contribute 22% of pay in FY 2013, 23% in FY 2014, 24% in FY 2015, and 25% in FY 2016 and beyond. Employers of All Other Employees will contribute 15.5% of pay in FY 2013, 16.0% in FY 2014, 16.5% in FY 2015, and 17.0% in FY 2016 and beyond.



TABLE 17 (CONTINUED)

Legislation was enacted that made numerous changes to the benefits and member contribution rates for employees hired after June 30, 2012. Key changes are shown below:

Benefit Provision	Police & Fire Employees	All Other Employees
Benefit Multiplier	2.25%	1.75%
Normal Retirement	Age 55 with 25 years of service, or age 60 with 10 years of service	Age 60 with 30 years of service, or age 65 with 10 years of service
Post-Retirement Increase	1.5%	1.5%
Hybrid Match	N/A	120%
Average Final Compensation	Highest 5 annual base salaries	Highest 5 annual base salaries
Eligibility for Deferred Benefit	10 years of service	10 years of service
Member Contribution Rate	14.20%	8.00%

Similar changes were also made to the benefits of Judges, Legislative Officers, etc.

Similar changes were also made to those employees in the All Other Employees group who are eligible to retire at 25 years of service including the addition of a minimum age requirement (55).

Finally, legislation was enacted that set the investment return assumption for the June 30, 2011 valuation at 7.75% (the rate recommended in the Experience Study presented to the Board in December of 2010). In addition, the legislation granted ERS's Board the authority to set this assumption for valuations after 2011.

Act 152, effective June 26, 2012

Legislation was enacted to eliminate most types of non-base pay from the definition of compensation for employees hired after June 30, 2012. For the impacted employees, non-base pay compensation will be excluded in determining both the contributions made by and on behalf of these employees and the benefits they will earn in the System.

Act 153, effective June 26, 2012

Legislation was enacted to require employers to pay additional contributions if a retiring employee, who was first employed prior to July 1, 2012 and who was last employed by the employer, has significant non-base pay increases included in their average final compensation. The additional contribution is equal to the actuarial present value of the additional benefits earned due to the "excessive" non-base pay increases.

TABLE 17 (CONTINUED)

Act 017, effective July 1, 2017

Legislation was enacted that increased the future employer contribution rates to ERS. Employers of Police and Fire employees will contribute 28% of pay in FY 2018, 31% in FY 2019, 36% in FY 2020, and 41% in FY 2021 and beyond. Employers of All Other Employees will contribute 18% of pay in FY 2018, 19% in FY 2019, 22% in FY 2020, and 24% in FY 2021 and beyond.

Act 192, effective June 30, 2024

Legislation was enacted by the 2024 Legislature that set the maximum funding period to 25 years for the June 30, 2024 valuation. Furthermore, the funding period will decrease by one year each year in the future until the maximum funding period is 20 years where it will remain for future years. If the maximum funding period is exceeded then the contribution rates may be increased to bring the funding period down to the maximum funding period.

TABLE 18

Summary of Actuarial Methods and Assumptions

Basis for assumption setting: The actuarial assumptions were adopted by the Board on August 8, 2022. Rationale for the recommendations are in the most recent experience study dated June 14, 2022.

I. Valuation Date

The valuation date is June 30th of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

II. Actuarial Cost Method

The normal cost and actuarial accrued liability are determined using the Entry Age Actuarial Cost Method. The actuarial accrued liability is assigned to years prior to the valuation, and the normal cost is assigned to the year following the valuation. The remaining costs are assigned to future years. The normal cost and accrued liability are determined on an individual basis.

The normal cost is the level percentage of payroll contribution required to accumulate the needed funds to pay all expected benefits. This percentage of payroll is then applied to the total compensation for the prior year for all active members, and is then adjusted for the payroll growth assumption.

The actuarial accrued liability is the difference between the total present value of future benefits and the actuarial present value of future normal costs. The unfunded actuarial accrued liability (UAAL) is the excess of the actuarial accrued liability over the actuarial value of assets.

III. Funding of Unfunded Actuarial Accrued Liability

Since the State statutes governing the System establish the employee and employer contribution rates, the actuarial valuation determines the number of years required to amortize (or fund) the UAAL. Because of the legislated increases in future employer contribution rates and the new tier of benefits for employees hired after June 30, 2012, an open group projection of liabilities and assets was used to determine the length of time until the UAAL is eliminated. The open group projection assumed that the number of active members would remain static (i.e. each active employee who leaves employment due to termination, retirement, death or disability, would be replaced by exactly one new employee.

Because of this methodology for determining the funding period, any change in the unfunded actuarial accrued liability due to (i) actuarial gains and losses, (ii) changes in actuarial assumptions, or (iii) amendments, affects the funding period.

Please see Section V of this table for a description of the new entrant profile used in the open group projection.

TABLE 18 (CONTINUED)

IV. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a four-year phase-in of actual investment return in excess of/(less than) expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continue to be recognized on their original timeframe. The expected actuarial value of assets is calculated net of investment expenses, and the expected investment return is equal to the assumed investment return rate multiplied by the prior year's actuarial value of assets, adjusted for contributions, benefits paid, and refunds.

V. New Entrant Profile

For the purposes of determining the funding period, an open group projection is used which replaces on a one-to-one basis each active member who leaves employment with an average new hire. The average new hire is determined based on a new entrant profile, which is created from the valuation data by determining the entry age and entry pay for anyone with seven or less years of service as of the valuation date. Each group of new hires' salaries is assumed to grow at the General Wage Inflation over the salaries of the previous year's group.

The new entrant profile for members assumed to be hired during the year following the valuation date for the Police and Fire Employees and the All Other Employees are shown in the table below.

New Entrant Profile for Police & Fire Employees		
Entry Age	# of Employees	Average Salary
15-19	3	\$61,201
20-24	269	69,513
25-29	400	68,341
30-34	299	67,827
35-39	130	67,607
40-44	46	69,374
45-49	18	71,265
50-54	8	104,858
55-59	8	84,861
60+	1	64,503
Total	1,182	68,819

It is assumed that 90% of new hires will be male.

TABLE 18 (CONTINUED)

New Entrant Profile for All Other Employees		
Entry Age	# of Employees	Average Salary
15-19	22	\$43,491
20-24	1,729	53,099
25-29	3,438	56,065
30-34	2,979	58,010
35-39	2,581	59,630
40-44	2,244	59,308
45-49	1,900	58,198
50-54	1,530	58,652
55-59	1,236	58,531
60-64	624	59,685
65+	98	59,896
Total	18,381	57,727

It is assumed that 40% of new hires will be male and Teachers replace Teachers and Non-Teachers replace Non-Teachers

VI. Actuarial Assumptions

A. Economic Assumptions

1. Investment return: 7.00% per year, compounded annually, composed of an assumed 2.50% inflation rate and a 4.50% net real rate of return (net of investment expenses).
2. General Wage Inflation: (used to index each year's group of new entrants in the open group projection) 3.50% per annum for Police and Fire Employees and 3.00% per annum for General Employees and Teachers.

TABLE 18 (CONTINUED)

3. Salary increase rates: As shown below

Years of Service	General Employees		Teachers	
	Service-Related Component	Total Rate Including 2.50% Inflation Component and 1.25% Productivity Component	Service-Related Component	Total Rate Including 2.50% Inflation Component and 1.25% Productivity Component
1	3.00%	6.75%	3.00%	6.75%
2	3.00%	6.75%	3.00%	6.75%
3	2.00%	5.75%	2.00%	5.75%
4	1.50%	5.25%	1.50%	5.25%
5	1.50%	5.25%	1.50%	5.25%
6	1.25%	5.00%	1.25%	5.00%
7	1.25%	5.00%	1.25%	5.00%
8	1.00%	4.75%	1.00%	4.75%
9	1.00%	4.75%	1.00%	4.75%
10	1.00%	4.75%	1.00%	4.75%
11	0.75%	4.50%	0.75%	4.50%
12	0.75%	4.50%	0.75%	4.50%
13	0.50%	4.25%	0.50%	4.25%
14	0.50%	4.25%	0.50%	4.25%
15	0.50%	4.25%	0.50%	4.25%
16	0.50%	4.25%	0.50%	4.25%
17	0.50%	4.25%	0.50%	4.25%
18	0.50%	4.25%	0.50%	4.25%
19	0.50%	4.25%	0.50%	4.25%
20	0.25%	4.00%	0.25%	4.00%
21	0.25%	4.00%	0.25%	4.00%
22	0.25%	4.00%	0.25%	4.00%
23	0.25%	4.00%	0.25%	4.00%
24	0.25%	4.00%	0.25%	4.00%
25 or more	0.00%	3.75%	0.00%	3.75%

TABLE 18 (CONTINUED)

3. Salary increase rates (continued):

Police & Fire		
Years of Service	Service-Related Component	Total Annual Rate of Increase Including 2.50% Inflation Component and 2.50% General Increase Rate
1	1.00%	6.00%
2	1.00%	6.00%
3	1.00%	6.00%
4	1.00%	6.00%
5	1.00%	6.00%
6	1.00%	6.00%
7	1.00%	6.00%
8	1.00%	6.00%
9	1.00%	6.00%
10	1.00%	6.00%
11	1.00%	6.00%
12	1.00%	6.00%
13	1.00%	6.00%
14	1.00%	6.00%
15	1.00%	6.00%
16	0.75%	5.75%
17	0.75%	5.75%
18	0.75%	5.75%
19	0.50%	5.50%
20	0.50%	5.50%
21	0.50%	5.50%
22	0.25%	5.25%
23	0.25%	5.25%
24	0.25%	5.25%
25 or more	0.00%	5.00%

Salary increases are assumed to occur once a year, on July 1. Therefore the pay used for the period between the valuation date and the first anniversary of the valuation date is equal to the reported pay for the prior year, annualized if necessary, and then increased by the salary increase assumption. To adjust the pays received as of March 31st to the June 30th valuation date, the reported pay for each member is increased by 1%.

TABLE 18 (CONTINUED)

B. Demographic Assumptions

1. Mortality rates:

Active Members: Multiples of the Pub-2010, Employee Tables for active employees based on the occupation of the member as follows:

Type	General Employees		Teachers		Police & Fire	
	Male & Female		Male & Female		Male & Female	
Ordinary	94%		92%		80%	
% of Ordinary	41%		52%		24%	
Choosing Annuity						
Duty Related	6%		8%		20%	

Healthy Retirees: The 2022 Public Retirees of Hawaii mortality tables. The rates are projected on a fully generational basis by Scale MP from the year 2022 (with immediate convergence) and with multiplier and setbacks based on plan and group experience. The following are sample rates of the base table as of 2022 with the corresponding multipliers:

Healthy Annuitant Mortality Rates Before Projection (Multiplier Added)

Age	General Employees		Teachers		Police & Fire	
	Male	Female	Male	Female	Male	Female
50	0.2094%	0.1276%	0.1698%	0.0951%	0.2421%	0.1130%
55	0.3215%	0.1687%	0.2883%	0.1596%	0.3473%	0.1633%
60	0.5570%	0.3095%	0.4672%	0.2467%	0.6179%	0.2799%
65	0.8041%	0.4488%	0.7256%	0.4063%	0.8426%	0.4283%
70	1.2621%	0.7066%	1.0762%	0.6015%	1.4172%	0.6565%
75	2.0700%	1.0964%	1.7879%	0.9358%	2.3227%	1.0121%
80	3.5996%	2.1275%	3.0429%	1.6565%	4.1824%	1.8863%
85	6.5891%	4.1569%	5.5564%	3.2698%	7.6513%	3.6977%
90	11.9340%	8.3647%	10.1056%	6.5007%	13.6689%	7.3991%
Multiplier	102%	98%	97%	101%	93%	100%
Setback	0	-1	1	1	-2	0

TABLE 18 (CONTINUED)

The following table provides the life expectancy for individuals retiring in future years based on the assumption with full generational projection:

<u>Life Expectancy for an Age 65 Retiree in Years</u>					
	Year of Retirement				
Gender	2025	2030	2035	2040	2045
<u>General Retirees</u>					
Male	22.8	23.2	23.5	23.9	24.2
Female	26.3	26.6	26.9	27.2	27.5
<u>Teachers</u>					
Male	24.1	24.5	24.9	25.2	25.5
Female	28.0	28.3	28.6	28.9	29.2
<u>Police & Fire</u>					
Male	21.8	22.1	22.4	22.8	23.1
Female	27.1	27.4	27.7	28.0	28.3

Disabled retirees: Base Table for healthy retiree's occupation, set forward 3 years, generational projection using the MP projection table from the year 2022 with immediate convergence. Minimum mortality rate of 3.5% for males and 2.5% for females.

2. Disability rates – The assumed total disability rates at select ages are multiples of the client specific table that follows:

Age	Male & Female
25	0.000%
30	0.001%
35	0.008%
40	0.026%
45	0.064%
50	0.146%
55	0.198%
60	0.212%

Note: The disability rates project the percentage of employees at each age that is assumed to become disabled before retiring. Multiples of the rates above are assumed to be ordinary disability or accidental disability, and varies by employee group as follows:

	General Employees	Teachers	Police & Fire
Type	Male & Female	Male & Female	Male & Female
Ordinary	200%	100%	50%
Accidental	60%	8%	120%

TABLE 18 (CONTINUED)

3. Termination Rates - Same male and female rates, based solely on the member's service. Rates reflect terminations for causes other than death, disability or retirement. Employees eligible for retirement are assumed to have no probability of termination. Sample rates are shown below:

Expected Terminations per 1000 Lives (Male & Female)			
Years of Service	General Employees	Teachers	Police & Fire
0	177.2	0.0	140.0
1	142.2	197.9	52.4
2	114.2	165.2	41.3
3	92.0	134.8	34.8
4	74.8	108.2	30.2
5	61.7	86.3	26.6
6	51.9	69.4	23.7
7	44.7	57.3	21.3
8	39.6	49.4	19.1
9	35.8	44.5	17.2
10	32.8	41.0	15.6
11	30.3	35.8	10.6
12	27.9	32.4	10.0
13	22.6	29.1	9.4
14	19.8	26.1	8.8
15	17.7	23.2	8.2
16	16.1	20.6	7.6
17	14.8	18.1	7.0
18	13.7	15.8	6.4
19	12.8	13.6	5.8
20	11.9	11.7	5.2
21	11.1	10.0	4.6
22	10.2	8.4	4.0
23	9.3	7.0	3.4
24	8.3	5.8	2.8
25	7.1	4.8	0.0
26	6.0	4.0	0.0
27	4.7	3.3	0.0
28	3.5	2.8	0.0
29	2.4	2.6	0.0
30	0.0	2.5	0.0
31 and more	0.0	0.0	0.0

TABLE 18 (CONTINUED)

4. Retirement Rates – separate male and female rates, based on age. Sample rates are shown below:

Contributory Members

Expected Retirements per 100 Lives									
Age	General Employees				Teachers				Police & Fire
	Unreduced		Reduced		Unreduced		Reduced		Unreduced
	Male	Female	Male	Female	Male	Female	Male	Female	Male & Female
45	0	0	0	0	0	0	0	0	16
46	0	0	0	0	0	0	0	0	16
47	0	0	0	0	0	0	0	0	16
48	0	0	0	0	0	0	0	0	16
49	0	0	0	0	0	0	0	0	16
50	0	0	0	0	0	0	1	0	18
51	0	0	2	1	0	0	1	1	18
52	0	0	2	1	0	0	1	1	18
53	0	0	2	1	0	0	2	2	18
54	0	0	3	2	0	0	3	3	18
55	25	20			20	18			22
56	25	20			15	16			22
57	16	13			15	16			22
58	16	13			15	16			24
59	13	13			15	16			27
60	13	15			14	18			30
61	13	15			14	18			30
62	28	25			14	25			30
63	20	20			14	20			30
64	20	20			14	15			30
65	20	20			20	25			100
66	18	20			15	25			100
67	18	20			15	20			100
68	18	20			15	20			100
69	18	20			15	20			100
70	20	20			15	20			100
71	20	20			15	20			100
72	20	20			15	20			100
73	20	20			15	20			100
74	20	20			15	20			100
75	100	100			100	100			100

For members hired after June 30, 2012 the retirement rates for members once they reach unreduced retirement eligibility are increased 10% (multiplicative) for each year the member is beyond the age the member would have been eligible under the provisions for members hired prior to June 30, 2012.

TABLE 18 (CONTINUED)

Noncontributory Members

Expected Retirements per 100 Lives										
	General Employees						Teachers			
	Unreduced		25 & Out		Reduced		Unreduced		Reduced	
Age	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
55	20	11	15	11	1	1	10	13	1	2
56	18	11	23	11	1	1	10	7	1	2
57	13	11	18	11	1	1	10	8	1	2
58	10	11	15	11	2	2	10	10	2	2
59	10	11	15	11	2	2	10	20	3	3
60	10	14	15	14	4	4	10	11	5	5
61	11	18	16	18	4	4	10	16	7	5
62	20	20	25	20			16	25		
63	20	20	25	20			12	20		
64	12	20	17	20			10	15		
65	14	20	19	20			20	25		
66	20	20	25	20			15	25		
67	20	20	25	20			15	25		
68	20	20	25	20			15	25		
69	20	20	25	20			15	25		
70	20	20	25	20			15	25		
71	20	20	25	20			15	25		
72	20	20	25	20			15	25		
73	20	20	25	20			15	25		
74	20	20	25	20			15	25		
75	100	100	100	100			100	100		

Note: Retirement rates for the 25&out group prior to age 55 are 15% for male and 11% for female.

TABLE 18 (CONTINUED)

Hybrid Members

Age	Expected Retirements per 100 Lives							
	General Employees				Teachers			
	Unreduced		Reduced		Unreduced		Reduced	
	Male	Female	Male	Female	Male	Female	Male	Female
55	18	18	1	1	20	16	2	2
56	12	13	1	1	13	10	2	2
57	12	13	1	1	13	10	2	2
58	16	13	2	2	13	12	2	2
59	16	13	2	2	13	12	3	3
60	14	13	4	4	14	14	3	5
61	14	15	4	4	14	18	3	10
62	21	20			22	30		
63	18	20			14	20		
64	18	20			14	20		
65	21	20			20	25		
66	18	18			15	25		
67	18	18			15	25		
68	18	18			15	25		
69	18	18			15	25		
70	20	20			15	25		
71	20	20			15	25		
72	20	20			15	25		
73	20	20			15	25		
74	20	20			15	25		
75	100	100			100	100		

Note: For the 25&out group with membership dates before July 1, 2012, the retirement rates prior to age 55 are 6% for both male and female.

For members hired after June 30, 2012 the retirement rates for members once they reach unreduced retirement eligibility are increased 10% (multiplicative) for each year the member is beyond the age the member would have been eligible under the Hybrid provisions for members hired prior to June 30, 2012.

TABLE 18 (CONTINUED)

C. Other Assumptions

1. Projected payroll for contributions: The aggregate projected payroll for the fiscal year following the valuation date is calculated taking the lesser of the actual payroll paid during the previous fiscal year and the current annualized pay on the valuation date and increasing this number by the payroll growth rate.
2. Age difference: Male members are assumed to be four years older than their spouses, and female members are assumed to be four years younger than their spouses.
3. Marriage Assumption: While not implicitly used in the valuation, 100% of active members are assumed to be married when setting other benefit election and eligibility assumptions.
4. Percent electing annuity on death for contributory participants (when eligible): All of the spouses of married participants who die after becoming eligible for a retirement benefit are assumed to elect an annuity or a refund, whichever is more valuable at time of participant's death.
5. Payment Option: Future healthy retirees are assumed to choose the life only payment option. 50% of future disabled retirees are assumed to choose the 100% Joint and Survivor option.
6. Percent electing deferred termination benefit: vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.
7. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt when eligible for early retirement.
8. Administrative expenses: Administrative expenses are assumed to be 0.40% of active member payroll.
9. Reemployment, purchase of service, transfers: No recognition is made of (i) future member reimbursements upon reemployment, (ii) future purchase of additional service, or (iii) special transfer provisions.
10. Sick Leave: It is assumed that all members will have their benefit service increased by sick leave and the following loads will be applied by group:

General Employees	3.25%
Teachers	3.75%
Police and Fire	5.00%

TABLE 18 (CONTINUED)

11. COLA delay: It is assumed that the first COLA will be received 9 months after retirement. Teachers are assumed to receive COLA 12 months after retirement,
12. There will be no recoveries once disabled.
13. No surviving spouse will remarry and there will be no children's benefit.
14. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
15. Decrement timing: Retirements and terminations of Teachers are assumed to occur at the beginning of the year. All other decrements are assumed to occur mid-year.
16. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
17. Decrement relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
18. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.
19. Benefit Service: All members are assumed to accrue 1 year of service each year. Exact fractional service is used to determine the amount of benefit payable.
20. Police officers, firefighters, investigators of the Department of the Prosecuting Attorney and the Attorney General, narcotic enforcement investigators, and public safety investigators hired prior to June 30, 2012 are not assumed to retire at age 55 unless they have 10 years of service.

VII. Participant Data

Participant data was supplied in electronic files for (i) active members, (ii) inactive vested members, who are entitled to a future deferred benefit, (iii) members and beneficiaries receiving benefits.

Salary supplied for the current year was based on the actual pensionable earnings for the 12-month period ending the March preceding the valuation date. This pay was increased by 1% to reflect the three-month difference from March to June. For members with less than one year of service, the base pay rate provided in the data was used

TABLE 18 (CONTINUED)

VIII. Dates of Adoption of Assumptions and Methods

The actuarial assumptions and methods were adopted by the Board of Trustees on August 8, 2022 as recommended by Gabriel, Roeder, Smith & Company (GRS).

IX. Changes in Assumptions and Methods since Prior Valuation

The actuarial assumptions have not been revised since the prior valuation. Please see our Experience Study report dated June 14, 2022 for a more extensive discussion of the actuarial assumptions and the rationale for the current assumptions.

SECTION N – STATISTICAL TABLES

Table No.	Page Number	Content of Table
19	70	Distribution of Active Members by Age and by Years of Service – All Employees
20	71	Distribution of Active Members by Age and by Years of Service – Noncontributory Members, All
21	72	Distribution of Active Members by Age and by Years of Service – Noncontributory Members, General Employees
22	73	Distribution of Active Members by Age and by Years of Service – Noncontributory Members, Teachers
23	74	Distribution of Active Members by Age and by Years of Service – Contributory Members, All
24	75	Distribution of Active Members by Age and by Years of Service – Contributory Members, General Employees
25	76	Distribution of Active Members by Age and by Years of Service – Contributory Members, Teachers
26	77	Distribution of Active Members by Age and by Years of Service – Contributory Members, Police and Fire
27	78	Distribution of Active Members by Age and by Years of Service – Hybrid Members, All
28	79	Distribution of Active Members by Age and by Years of Service – Hybrid Members, General Employees
29	80	Distribution of Active Members by Age and by Years of Service – Hybrid Members, Teachers
30	81	Summary of Pension in Force by Type of Retirement
31	82	Summary of Pension in Force by Age and Type – General Employees
32	83	Summary of Pension in Force by Age and Type – Teachers
33	84	Summary of Pension in Force by Age and Type – Police and Fire
34	85	Noncontributory Pensions in Force by Years of Service
35	86	Noncontributory Pensions in Force by Years Since Retirement
36-1	87	Contributory Pensions in Force by Years of Service
36-2	88	Hybrid Pensions in Force by Years of Service
37-1	89	Contributory Pensions in Force by Years Since Retirement
37-2	90	Hybrid Pensions in Force by Years Since Retirement
38,41	91/94	Pensions in Force by Payment Option – General Employees/New
39,42	92/95	Pensions in Force by Payment Option – Teachers/New
40,43	93/96	Pensions in Force by Payment Option – Police and Fire/New



TABLE 19

**Distribution of Active Members by Age and by Years of Service - All Employees
As of 06/30/2024**

Attained Age	Years of Credited Service												Total Count & Avg. Comp.	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.		
Under 25	612 \$51,932	398 \$51,456	96 \$51,649	26 \$51,866	7 \$46,114	1 \$36,023	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,140 \$51,691
25-29	855 \$54,457	980 \$53,615	755 \$56,763	441 \$58,627	375 \$59,919	459 \$61,627	1 \$48,036	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3,866 \$56,549
30-34	718 \$56,540	792 \$54,519	627 \$56,478	452 \$61,308	561 \$62,334	2,333 \$64,779	299 \$72,454	1 \$94,400	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	5,783 \$61,345
35-39	553 \$58,349	619 \$57,594	506 \$59,668	347 \$64,656	476 \$63,236	2,487 \$67,499	1,656 \$80,983	297 \$90,391	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	6,941 \$69,078
40-44	513 \$60,169	530 \$56,580	445 \$60,075	325 \$57,956	405 \$64,741	2,078 \$66,728	1,788 \$81,876	1,874 \$91,644	297 \$96,334	1 \$87,340	0 \$0	0 \$0	0 \$0	8,256 \$74,871
45-49	405 \$56,532	462 \$58,691	358 \$60,125	257 \$59,844	341 \$62,566	1,695 \$66,557	1,458 \$81,231	1,969 \$90,765	1,734 \$101,744	169 \$111,733	1 \$90,084	0 \$0	0 \$0	8,849 \$80,643
50-54	334 \$60,653	402 \$57,977	299 \$62,888	210 \$59,037	288 \$62,347	1,410 \$64,840	1,133 \$76,980	1,628 \$87,855	1,964 \$99,357	1,508 \$108,160	274 \$91,670	2 \$115,368	2 \$84,425	9,452 \$84,425
55-59	269 \$61,476	290 \$62,646	253 \$56,782	165 \$62,343	217 \$58,818	1,101 \$63,289	918 \$72,082	1,319 \$81,586	1,371 \$91,890	1,240 \$101,133	1,311 \$101,251	143 \$92,131	143 \$82,923	8,597 \$82,923
60-64	152 \$62,454	193 \$60,531	169 \$57,601	111 \$63,421	194 \$61,784	937 \$65,198	804 \$73,186	1,159 \$75,264	1,078 \$79,403	738 \$91,647	949 \$96,209	603 \$99,199	7,087 \$79,222	7,087 \$79,222
65 & Over	101 \$64,189	102 \$65,942	91 \$60,930	81 \$68,629	123 \$65,031	749 \$66,424	658 \$71,836	761 \$77,904	774 \$80,337	491 \$86,624	599 \$97,873	836 \$106,598	5,366 \$82,197	5,366 \$82,197
Total	4,512 \$57,123	4,768 \$56,384	3,599 \$58,384	2,415 \$60,807	2,987 \$62,311	13,250 \$65,716	8,715 \$78,044	9,008 \$85,985	7,218 \$93,368	4,147 \$100,711	3,134 \$98,237	1,584 \$102,486	65,337 \$75,867	65,337 \$75,867



TABLE 20

**Distribution of Active Members by Age and by Years of Service
Noncontributory Members, All
As of 06/30/2024**

Attained Age	Years of Credited Service												Total Count & Avg. Comp.
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
30-34	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
35-39	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	6 \$64,953	0 \$0	0 \$0	0 \$0	0 \$0	6 \$64,953
40-44	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3 \$49,094	230 \$85,045	124 \$82,566	1 \$87,340	0 \$0	0 \$0	358 \$83,892
45-49	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3 \$61,120	325 \$83,318	640 \$91,591	59 \$81,206	0 \$0	0 \$0	1,027 \$88,288
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$58,628	0 \$0	245 \$80,396	705 \$86,633	535 \$96,917	111 \$86,739	1 \$113,275	1,598 \$89,126
55-59	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3 \$45,371	232 \$77,384	576 \$83,111	519 \$93,889	517 \$92,677	75 \$85,158	1,922 \$87,924
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$77,417	170 \$66,839	507 \$75,292	356 \$85,378	417 \$90,384	235 \$93,393	1,687 \$82,823
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	4 \$56,884	134 \$67,762	354 \$74,158	249 \$78,558	320 \$91,912	356 \$101,471	1,417 \$85,149
Total	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$58,628	15 \$56,608	1,342 \$78,332	2,906 \$83,355	1,719 \$90,409	1,365 \$91,314	667 \$96,809	8,015 \$86,449



TABLE 21

**Distribution of Active Members by Age and by Years of Service
Noncontributory Members, General Employees
As of 06/30/2024**

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
30-34	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
35-39	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	6 \$64,953	0 \$0	0 \$0	0 \$0	0 \$0	6 \$64,953
40-44	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$42,481	112 \$77,411	83 \$77,025	1 \$87,340	0 \$0	0 \$0	198 \$76,947
45-49	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3 \$61,120	186 \$75,633	317 \$84,170	36 \$67,424	0 \$0	0 \$0	542 \$80,000
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$58,628	0 \$0	177 \$74,044	456 \$79,797	258 \$87,610	91 \$80,223	1 \$113,275	984 \$80,862
55-59	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3 \$45,371	184 \$71,235	451 \$77,475	329 \$88,054	332 \$84,655	63 \$81,247	1,362 \$81,041
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$77,417	147 \$62,990	404 \$67,198	260 \$77,940	319 \$83,681	173 \$88,676	1,305 \$75,756
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$39,881	115 \$64,526	282 \$64,980	196 \$69,542	244 \$81,349	265 \$93,628	1,104 \$76,192
Total	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$58,628	12 \$53,253	927 \$71,219	1,993 \$75,201	1,080 \$81,465	986 \$83,113	502 \$90,407	5,501 \$78,515



TABLE 22

**Distribution of Active Members by Age and by Years of Service
Noncontributory Members, Teachers
As of 06/30/2024**

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
30-34	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
35-39	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
40-44	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$62,322	118 \$92,290	41 \$93,785	0 \$0	0 \$0	0 \$0	160 \$92,486
45-49	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	139 \$93,601	323 \$98,875	23 \$102,779	0 \$0	0 \$0	485 \$97,549
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	68 \$96,932	249 \$99,151	277 \$105,586	20 \$116,389	0 \$0	614 \$102,370
55-59	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	48 \$100,954	125 \$103,446	190 \$103,992	185 \$107,073	12 \$105,694	560 \$104,664
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	23 \$91,438	103 \$107,043	96 \$105,521	98 \$112,201	62 \$106,556	382 \$106,965
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$73,887	19 \$87,347	72 \$110,108	53 \$111,898	76 \$125,826	91 \$124,312	313 \$116,744
Total	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3 \$70,032	415 \$94,218	913 \$101,155	639 \$105,525	379 \$112,651	165 \$116,286	2,514 \$103,810



TABLE 23

**Distribution of Active Members by Age and by Years of Service
Contributory Members, All
As of 06/30/2024**

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.
Under 25	38 \$72,039	35 \$68,237	20 \$67,568	6 \$70,115	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	99 \$69,675
25-29	41 \$67,710	61 \$69,044	71 \$70,615	62 \$72,200	71 \$73,871	79 \$74,751	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	385 \$71,761
30-34	29 \$70,828	47 \$66,573	49 \$69,185	64 \$71,715	93 \$73,502	280 \$77,053	59 \$88,694	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	621 \$75,373
35-39	16 \$62,677	25 \$68,296	27 \$72,338	30 \$71,430	54 \$72,408	303 \$77,644	279 \$103,731	75 \$130,092	0 \$0	0 \$0	0 \$0	0 \$0	809 \$90,161
40-44	10 \$79,977	15 \$69,748	12 \$68,753	9 \$71,676	23 \$70,496	149 \$78,612	221 \$102,923	299 \$128,713	66 \$143,655	0 \$0	0 \$0	0 \$0	804 \$108,661
45-49	3 \$62,834	7 \$93,342	6 \$109,354	7 \$73,461	7 \$73,648	7 \$82,226	60 \$108,810	153 \$131,656	277 \$145,837	301 \$166,940	46 \$0	0 \$0	867 \$129,358
50-54	0 \$0	2 \$59,034	2 \$123,911	4 \$143,181	4 \$103,205	24 \$103,436	60 \$103,251	174 \$132,494	366 \$143,140	228 \$164,256	15 \$160,417	0 \$0	879 \$142,581
55-59	3 \$116,110	4 \$70,541	2 \$140,571	1 \$152,167	3 \$116,335	7 \$89,208	16 \$101,609	64 \$138,554	149 \$147,486	108 \$158,312	62 \$171,397	5 \$181,471	424 \$148,909
60-64	1 \$240,061	1 \$217,251	1 \$203,619	3 \$96,071	4 \$145,691	8 \$111,949	9 \$121,844	15 \$139,292	18 \$144,119	26 \$164,547	31 \$162,549	34 \$129,303	151 \$145,173
65 & Over	0 \$0	1 \$73,453	2 \$70,124	0 \$0	1 \$204,735	13 \$131,080	5 \$144,491	13 \$162,083	8 \$114,038	13 \$141,938	11 \$140,934	92 \$113,521	159 \$123,923
Total	141 \$71,965	198 \$69,833	192 \$73,241	186 \$74,205	260 \$75,680	923 \$79,480	802 \$103,751	917 \$131,765	908 \$144,547	421 \$162,354	119 \$164,893	131 \$120,211	5,198 \$112,328



TABLE 24

**Distribution of Active Members by Age and by Years of Service
Contributory Members, General Employees
As of 06/30/2024**

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	1 \$73,453	0 \$0	2 \$54,691	0 \$0	2 \$64,290	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	5 \$62,283
30-34	0 \$0	1 \$73,453	0 \$0	2 \$74,066	1 \$73,453	3 \$72,094	2 \$67,214	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	9 \$71,750
35-39	0 \$0	4 \$75,660	3 \$82,755	1 \$73,453	1 \$87,204	5 \$79,279	6 \$88,524	1 \$81,465	0 \$0	0 \$0	0 \$0	0 \$0	21 \$81,932
40-44	2 \$138,199	1 \$73,453	0 \$0	0 \$0	2 \$46,190	10 \$104,395	7 \$88,589	6 \$75,843	2 \$105,412	0 \$0	0 \$0	0 \$0	30 \$92,406
45-49	0 \$0	2 \$139,094	2 \$204,735	0 \$0	1 \$70,828	3 \$117,214	6 \$159,277	8 \$101,785	10 \$110,753	0 \$0	0 \$0	0 \$0	32 \$124,613
50-54	0 \$0	0 \$0	0 \$0	4 \$143,181	1 \$203,906	7 \$148,728	5 \$99,499	13 \$145,345	20 \$117,153	7 \$154,743	0 \$0	0 \$0	57 \$133,877
55-59	1 \$205,325	2 \$74,066	1 \$216,661	0 \$0	3 \$116,335	1 \$73,453	3 \$121,189	7 \$193,915	18 \$139,459	9 \$174,211	4 \$97,855	0 \$0	49 \$146,594
60-64	1 \$240,061	1 \$217,251	1 \$203,619	1 \$59,146	3 \$169,115	6 \$122,310	6 \$137,574	7 \$144,300	3 \$172,553	6 \$164,530	8 \$123,974	17 \$88,953	60 \$130,094
65 & Over	0 \$0	1 \$73,453	2 \$70,124	0 \$0	1 \$204,735	12 \$136,127	4 \$162,108	10 \$174,277	4 \$107,503	9 \$134,870	4 \$160,941	63 \$98,941	110 \$117,855
Total	4 \$180,446	13 \$95,386	9 \$135,362	10 \$96,284	13 \$122,220	49 \$114,669	39 \$117,341	52 \$141,357	57 \$124,901	31 \$156,520	16 \$126,686	80 \$96,818	373 \$120,701



TABLE 25

Distribution of Active Members by Age and by Years of Service Contributory Members, Teachers As of 06/30/2024

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
30-34	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
35-39	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
40-44	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
45-49	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$78,524	1 \$89,969	0 \$0	0 \$0	0 \$0
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$111,089	0 \$0	0 \$0
55-59	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$110,437	2 \$45,938	0 \$0
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$76,808	2 \$114,214
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$210,669	3 \$115,018	20 \$135,006
Total	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$78,524	1 \$89,969	4 \$135,821	6 \$85,623	22 \$133,116	34 \$122,178



TABLE 26

Distribution of Active Members by Age and by Years of Service Contributory Members, Police and Firefighters As of 06/30/2024

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.
Under 25	38 \$72,039	35 \$68,237	20 \$67,568	6 \$70,115	0 #DIV/0!	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	99 \$69,675
25-29	41 \$67,710	60 \$68,971	71 \$70,615	60 \$72,784	71 \$73,871	77 \$75,023	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	380 \$71,886
30-34	29 \$70,828	46 \$66,423	49 \$69,185	62 \$71,639	92 \$73,503	277 \$77,107	57 \$89,448	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	612 \$75,426
35-39	16 \$62,677	21 \$66,893	24 \$71,036	29 \$71,360	53 \$72,129	298 \$77,617	273 \$104,065	74 \$130,749	0 \$0	0 \$0	0 \$0	0 \$0	788 \$90,380
40-44	8 \$65,422	14 \$69,483	12 \$68,753	9 \$71,676	21 \$72,811	139 \$76,757	214 \$103,392	293 \$129,796	64 \$144,850	0 \$0	0 \$0	0 \$0	774 \$109,291
45-49	3 \$62,834	5 \$75,041	4 \$61,664	7 \$73,461	6 \$74,118	57 \$80,384	147 \$106,750	268 \$132,746	290 \$147,239	46 \$166,940	0 \$0	0 \$0	833 \$129,649
50-54	0 \$0	2 \$59,034	2 \$123,911	0 \$0	3 \$69,638	17 \$84,786	55 \$103,592	161 \$131,456	346 \$144,642	219 \$165,046	15 \$160,417	0 \$0	820 \$143,263
55-59	2 \$71,502	2 \$67,016	1 \$64,481	1 \$152,167	0 \$0	6 \$91,834	13 \$97,090	57 \$131,755	131 \$148,589	98 \$157,340	56 \$181,131	5 \$181,471	372 \$149,871
60-64	0 \$0	0 \$0	0 \$0	2 \$114,533	1 \$75,417	2 \$80,864	3 \$90,384	8 \$134,910	15 \$138,432	20 \$164,552	22 \$180,474	15 \$177,046	88 \$156,935
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$70,513	1 \$74,024	3 \$121,438	4 \$120,573	3 \$140,231	4 \$140,363	9 \$167,841	25 \$139,354
Total	137 \$68,798	185 \$68,037	183 \$70,186	176 \$72,951	247 \$73,231	874 \$77,507	763 \$103,056	864 \$131,249	850 \$145,929	386 \$163,097	97 \$176,098	29 \$174,952	4,791 \$111,606



TABLE 27

**Distribution of Active Members by Age and by Years of Service
Hybrid Members, All
As of 06/30/2024**

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	574 \$50,601	363 \$49,838	76 \$47,459	20 \$46,392	7 \$46,114	1 \$36,023	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,041 \$49,981
25-29	814 \$53,790	919 \$52,591	684 \$55,325	379 \$56,406	304 \$56,660	380 \$58,899	1 \$48,036	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3,481 \$54,867
30-34	689 \$55,939	745 \$53,759	578 \$55,401	388 \$59,592	468 \$60,115	2,053 \$63,104	240 \$68,462	1 \$94,400	0 \$0	0 \$0	0 \$0	0 \$0	5,162 \$59,657
35-39	537 \$58,220	594 \$57,144	479 \$58,954	317 \$64,015	422 \$62,062	2,184 \$66,091	1,377 \$76,374	216 \$77,312	0 \$0	0 \$0	0 \$0	0 \$0	6,126 \$66,298
40-44	503 \$59,776	515 \$56,197	433 \$59,835	316 \$57,565	382 \$64,395	1,929 \$65,810	1,564 \$78,965	1,345 \$84,532	107 \$83,100	0 \$0	0 \$0	0 \$0	7,094 \$70,586
45-49	402 \$56,485	455 \$58,158	352 \$59,285	250 \$59,463	334 \$62,334	1,635 \$65,982	1,302 \$78,037	1,367 \$84,249	793 \$93,202	64 \$100,195	1 \$90,084	0 \$0	6,955 \$73,442
50-54	334 \$60,653	400 \$57,972	297 \$62,477	206 \$57,403	284 \$61,771	1,385 \$64,176	1,073 \$75,511	1,209 \$82,942	893 \$91,459	745 \$99,065	148 \$88,401	1 \$117,461	6,975 \$76,019
55-59	266 \$60,860	286 \$62,536	251 \$56,114	164 \$61,795	214 \$58,012	1,094 \$63,123	899 \$71,646	1,023 \$78,976	646 \$86,895	613 \$97,193	732 \$101,365	63 \$93,341	6,251 \$76,909
60-64	151 \$61,278	192 \$59,714	168 \$56,731	108 \$62,514	190 \$60,018	929 \$64,795	793 \$72,623	974 \$75,748	553 \$81,064	356 \$92,593	501 \$96,952	334 \$100,220	5,249 \$76,168
65 & Over	101 \$64,189	101 \$65,867	89 \$60,724	81 \$68,629	122 \$63,886	736 \$65,282	649 \$71,369	614 \$78,335	412 \$84,991	229 \$92,255	268 \$103,223	388 \$109,660	3,790 \$79,343
Total	4,371 \$56,644	4,570 \$55,801	3,407 \$57,547	2,229 \$59,689	2,727 \$61,036	12,326 \$64,686	7,898 \$75,474	6,749 \$81,287	3,404 \$88,264	2,007 \$96,604	1,650 \$99,157	786 \$104,350	52,124 \$70,604



TABLE 28

**Distribution of Active Members by Age and by Years of Service
Hybrid Members, General Employees
As of 06/30/2024**

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	368 \$48,703	251 \$48,685	72 \$47,218	20 \$46,392	7 \$46,114	1 \$36,023	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	719 \$48,441
25-29	540 \$52,511	632 \$52,042	410 \$54,874	196 \$54,147	187 \$54,403	253 \$55,467	1 \$48,036	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2,219 \$53,453
30-34	474 \$53,270	574 \$52,482	438 \$54,841	253 \$58,468	312 \$59,464	1,265 \$60,067	156 \$63,990	1 \$94,400	0 \$0	0 \$0	0 \$0	0 \$0	3,473 \$57,242
35-39	363 \$57,674	458 \$56,227	366 \$57,849	228 \$63,348	311 \$58,450	1,572 \$63,917	765 \$73,877	140 \$71,639	0 \$0	0 \$0	0 \$0	0 \$0	4,203 \$63,646
40-44	344 \$57,180	397 \$53,938	339 \$59,727	221 \$54,596	291 \$61,061	1,429 \$62,664	969 \$76,613	732 \$80,998	63 \$74,851	0 \$0	0 \$0	0 \$0	4,785 \$66,657
45-49	282 \$52,702	343 \$55,601	267 \$57,801	197 \$56,496	259 \$59,502	1,235 \$61,810	900 \$74,891	870 \$79,830	385 \$85,967	40 \$95,030	1 \$90,084	0 \$0	4,779 \$68,233
50-54	250 \$59,188	327 \$57,074	227 \$62,368	166 \$57,250	208 \$58,059	1,097 \$60,334	776 \$71,109	843 \$77,099	562 \$85,203	334 \$88,875	111 \$81,739	1 \$117,461	4,902 \$69,832
55-59	213 \$60,201	245 \$61,177	216 \$55,471	132 \$60,972	181 \$56,044	892 \$59,945	706 \$66,835	790 \$74,424	477 \$79,399	362 \$89,758	427 \$95,967	54 \$91,393	4,695 \$71,079
60-64	123 \$60,107	176 \$60,194	148 \$55,156	91 \$61,423	170 \$59,260	782 \$62,242	635 \$67,738	787 \$70,835	427 \$74,854	249 \$84,844	356 \$92,619	225 \$93,385	4,169 \$71,077
65 & Over	74 \$63,449	78 \$64,746	65 \$58,357	69 \$66,910	100 \$62,163	624 \$61,948	534 \$67,497	474 \$70,258	320 \$77,974	163 \$79,593	195 \$96,120	274 \$100,115	2,970 \$72,887
Total	3,031 \$55,000	3,481 \$54,803	2,548 \$56,855	1,573 \$58,315	2,026 \$58,696	9,150 \$61,574	5,442 \$71,593	4,637 \$75,848	2,234 \$80,790	1,148 \$87,176	1,090 \$93,447	554 \$96,563	36,914 \$66,468



TABLE 29

**Distribution of Active Members by Age and by Years of Service
Hybrid Members, Teachers
As of 06/30/2024**

Attained Age	Years of Credited Service												Total	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.		
Under 25	206 \$53,992	112 \$52,423	4 \$51,806	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	322 \$53,419
25-29	274 \$56,309	287 \$53,799	274 \$55,999	183 \$58,826	117 \$60,269	127 \$65,736	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,262 \$57,352
30-34	215 \$61,824	171 \$58,046	140 \$57,155	135 \$61,698	156 \$61,417	788 \$67,981	84 \$76,766	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,689 \$64,623
35-39	174 \$59,360	136 \$60,231	113 \$62,532	89 \$65,724	111 \$72,182	612 \$71,676	612 \$79,494	76 \$87,763	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,923 \$72,093
40-44	159 \$65,391	118 \$63,796	94 \$60,224	95 \$64,472	91 \$75,057	500 \$74,801	595 \$82,795	613 \$88,751	44 \$94,912	0 \$0	0 \$0	0 \$0	0 \$0	2,309 \$78,729
45-49	120 \$65,375	112 \$65,989	85 \$63,949	53 \$70,492	75 \$72,111	400 \$78,861	402 \$85,081	497 \$91,985	408 \$100,029	24 \$108,804	0 \$0	0 \$0	0 \$0	2,176 \$84,882
50-54	84 \$65,013	73 \$61,995	70 \$62,832	40 \$58,038	76 \$71,932	288 \$78,808	297 \$87,012	366 \$96,399	331 \$102,080	411 \$107,346	37 \$108,387	0 \$0	0 \$0	2,073 \$90,648
55-59	53 \$63,507	41 \$70,657	35 \$60,080	32 \$65,193	33 \$68,805	202 \$77,156	193 \$89,243	233 \$94,409	169 \$108,051	251 \$107,916	305 \$108,921	9 \$105,034	9 \$94,501	1,556 \$94,501
60-64	28 \$66,420	16 \$54,442	20 \$68,388	17 \$68,353	20 \$66,456	147 \$78,378	158 \$92,258	187 \$96,425	126 \$102,111	107 \$110,624	145 \$107,591	109 \$114,328	109 \$95,819	1,080 \$95,819
65 & Over	27 \$66,216	23 \$69,669	24 \$67,135	12 \$78,513	22 \$71,716	112 \$83,860	115 \$89,345	140 \$105,683	92 \$109,396	66 \$123,528	73 \$122,197	114 \$132,600	820 \$102,729	820 \$102,729
Total	1,340 \$60,364	1,089 \$58,993	859 \$59,599	656 \$62,983	701 \$67,800	3,176 \$73,654	2,456 \$84,073	2,112 \$93,228	1,170 \$102,536	859 \$109,205	560 \$110,272	232 \$122,946	15,210 \$80,640	15,210 \$80,640



TABLE 30

Summary of Pensions in Force by Type of Retirement

Employee Group	Contributory		Noncontributory		Hybrid	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
All Employees	16,019	\$ 3,971	18,056	\$ 1,960	16,314	\$ 2,625
	<u>Service</u>		<u>Service</u>		<u>Service</u>	
Total	15,716	\$ 4,009	17,160	\$ 2,001	15,744	\$ 2,659
General Employees - male	2,777	3,482	5,555	2,026	4,676	2,742
General Employees - female	4,453	2,519	6,961	1,559	6,968	2,286
Teachers - male	937	4,136	1,435	2,799	1,168	3,569
Teachers - female	3,342	3,804	3,209	2,560	2,932	3,050
Police and Firefighters	4,207	6,071	-	-	-	-
	<u>Ordinary Disability</u>		<u>Ordinary Disability</u>		<u>Ordinary Disability</u>	
Total	109	\$ 1,277	678	\$ 1,164	398	\$ 1,723
General Employees - male	32	1,175	308	1,174	176	1,561
General Employees - female	30	921	286	1,016	142	1,657
Teachers - male	4	1,817	31	1,774	18	2,492
Teachers - female	14	1,674	53	1,554	62	2,110
Police and Firefighters	29	1,493	-	-	-	-
	<u>Accidental Disability</u>		<u>Accidental Disability</u>		<u>Accidental Disability</u>	
Total	194	\$ 2,371	218	\$ 1,183	172	\$ 1,631
General Employees - male	62	1,979	113	1,248	84	1,615
General Employees - female	33	1,776	98	1,081	74	1,580
Teachers - male	-	-	1	1,335	2	1,759
Teachers - female	4	4,170	6	1,612	12	2,039
Police and Firefighters	95	2,757	-	-	-	-

TABLE 31**Summary of Pensions in Force by Age and Type****General Employees**

Age	Type of Pension			
	Total	Service	Ordinary Disability	Accidental Disability
Total	32,828	31,390	974	464
	Contributory			
Total	7,387	7,230	62	95
30-39	1	1	-	-
40-44	2	2	-	-
45-49	4	4	-	-
50-54	9	7	-	2
55-59	35	33	1	1
60-64	183	173	2	8
65-69	575	554	6	15
70-74	994	975	13	6
75-79	1,289	1,264	9	16
80-84	1,325	1,297	9	19
85-89	1,272	1,253	9	10
90-94	1,080	1,063	7	10
95-99	527	514	6	7
100 & over	91	90	-	1
	Noncontributory			
Total	13,321	12,516	594	211
30-39	-	-	-	-
40-44	-	-	-	-
45-49	4	1	1	2
50-54	31	6	18	7
55-59	323	262	52	9
60-64	1,000	869	100	31
65-69	2,438	2,265	114	59
70-74	3,065	2,878	139	48
75-79	3,033	2,907	104	22
80-84	2,166	2,086	55	25
85-89	934	919	10	5
90-94	276	274	1	1
95-99	48	46	-	2
100 & over	3	3	-	-
	Hybrid			
Total	12,120	11,644	318	158
30-39	3	-	1	2
40-44	3	-	-	3
45-49	11	-	7	4
50-54	28	5	13	10
55-59	434	370	47	17
60-64	1,672	1,554	86	32
65-69	3,469	3,355	76	38
70-74	3,785	3,689	63	33
75-79	2,110	2,077	20	13
80-84	500	491	3	6
85-89	92	90	2	-
90-94	12	12	-	-
95-99	1	1	-	-
100 & over	-	-	-	-

TABLE 32**Summary of Pensions in Force by Age and Type****Teachers**

Age	Type of Pension			
	Total	Service	Ordinary Disability	Accidental Disability
Total	13,230	13,023	182	25
	Contributory			
Total	4,301	4,279	18	4
30-39	-	-	-	-
40-44	-	-	-	-
45-49	-	-	-	-
50-54	-	-	-	-
55-59	1	1	-	-
60-64	25	25	-	-
65-69	140	138	2	-
70-74	382	380	2	-
75-79	1,005	998	6	1
80-84	1,020	1,016	3	1
85-89	899	896	3	-
90-94	632	631	-	1
95-99	171	169	1	1
100 & over	26	25	1	-
	Noncontributory			
Total	4,735	4,644	84	7
30-39	-	-	-	-
40-44	-	-	-	-
45-49	-	-	-	-
50-54	3	-	3	-
55-59	89	78	11	-
60-64	264	246	17	1
65-69	517	500	15	2
70-74	930	911	16	3
75-79	1,454	1,439	14	1
80-84	1,028	1,021	7	-
85-89	351	350	1	-
90-94	84	84	-	-
95-99	14	14	-	-
100 & over	1	1	-	-
	Hybrid			
Total	4,194	4,100	80	14
30-39	-	-	-	-
40-44	1	-	1	-
45-49	1	-	1	-
50-54	12	-	11	1
55-59	170	155	14	1
60-64	567	546	16	5
65-69	977	955	17	5
70-74	1,346	1,329	16	1
75-79	862	857	4	1
80-84	211	211	-	-
85-89	40	40	-	-
90-94	7	7	-	-
95-99	-	-	-	-
100 & over	-	-	-	-

TABLE 33**Summary of Pensions in Force by Age and Type****Police and Firefighters**

Age	Type of Pension			
	Total	Service	Ordinary Disability	Accidental Disability
Total	4,331	4,207	29	95
30-39	-	-	-	-
40-44	3	-	1	2
45-49	28	25	1	2
50-54	266	255	4	7
55-59	677	662	5	10
60-64	735	722	4	9
65-69	698	686	1	11
70-74	680	655	5	20
75-79	666	644	3	19
80-84	363	348	3	12
85-89	167	164	1	2
90-94	41	39	1	1
95-99	6	6	-	-
100 & over	1	1	-	-

TABLE 34

**Noncontributory Service Pensions in Force
by Years of Service**

Years of Service	Total		General Employees		Teachers	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	17,160	\$ 2,001	12,516	\$ 1,766	4,644	\$ 2,634
Less than 5	1	1,526	1	1,526	-	-
5-9	10	761	7	791	3	690
10-14	2,939	633	2,348	600	591	763
15-19	2,436	1,061	1,883	988	553	1,310
20-24	2,665	1,418	2,084	1,313	581	1,796
25-29	2,366	2,019	1,813	1,855	553	2,555
30-34	4,166	2,812	2,683	2,586	1,483	3,220
35 and over	2,577	3,732	1,697	3,415	880	4,345

TABLE 35

**Noncontributory Service Pensions in Force
by Years Since Retirement**

Years Since Retirement	Total		General Employees		Teachers	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	17,160	\$ 2,001	12,516	\$ 1,766	4,644	\$ 2,634
Less than 5	3,742	1,977	2,972	1,815	770	2,604
5-9	3,868	1,808	2,973	1,679	895	2,237
10-14	3,120	1,902	2,306	1,672	814	2,552
15-19	3,033	2,085	2,136	1,806	897	2,747
20-24	2,272	2,249	1,432	1,846	840	2,937
25-29	959	2,283	609	1,946	350	2,869
30 -34	155	2,429	81	2,103	74	2,786
35 and over	11	1,286	7	1,064	4	1,675

TABLE 36-1

**Contributory Service Pensions in Force
by Years of Service**

Years of Service	Total		General Employees		Teachers		Police and Firefighters	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	15,716	\$ 4,009	7,230	\$ 2,889	4,279	\$ 3,876	4,207	\$ 6,071
Less than 5	6	1,181	3	762	2	825	1	3,154
5-9	349	533	255	612	80	264	14	646
10-14	706	1,098	540	1,106	102	828	64	1,463
15-19	982	1,768	747	1,665	137	1,565	98	2,832
20-24	1,502	2,347	1,019	2,002	292	2,394	191	4,114
25-29	5,279	4,311	1,731	2,788	1,063	3,311	2,485	5,800
30-34	4,803	4,806	1,726	3,738	1,868	4,177	1,209	7,303
35 and over	2,089	5,238	1,209	4,606	735	5,775	145	7,795

TABLE 36-2**Hybrid Service Pensions in Force****by Years of Service**

Years of Service	Total		General Employees		Teachers	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	15,744	\$ 2,659	11,644	\$ 2,469	4,100	\$ 3,198
Less than 5	1	380	-	-	1	380
5-9	1,234	777	973	775	261	783
10-14	2,323	1,131	1,897	1,086	426	1,330
15-19	2,230	1,654	1,721	1,591	509	1,868
20-24	2,115	2,065	1,524	1,922	591	2,436
25-29	2,056	2,852	1,482	2,670	574	3,321
30-34	3,639	3,783	2,564	3,663	1,075	4,067
35 and over	2,146	4,933	1,483	4,664	663	5,536

TABLE 37-1

**Contributory Service Pensions in Force
by Years Since Retirement**

Years Since Retirement	Total		General Employees		Teachers		Police and Firefighters	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	15,716	\$ 4,009	7,230	\$ 2,889	4,279	\$ 3,876	4,207	\$ 6,071
Less than 5	1,202	6,984	261	5,286	62	5,950	879	7,561
5-9	1,489	6,095	496	4,465	162	5,583	831	7,168
10-14	1,803	5,054	840	3,805	309	5,289	654	6,548
15-19	2,259	4,128	1,128	3,156	607	4,567	524	5,711
20-24	2,771	3,593	1,300	2,794	922	4,118	549	4,603
25-29	2,778	3,237	1,381	2,573	946	3,628	451	4,448
30-34	1,945	2,685	998	2,039	740	3,227	207	3,862
35 -39	1,469	1,998	826	1,589	531	2,431	112	2,959
40-44	-	-	-	-	-	-	-	-
45 and over	-	-	-	-	-	-	-	-

TABLE 37-2**Hybrid Service Pensions in Force****by Years Since Retirement**

Years Since Retirement	Total		General Employees		Teachers	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	15,744	\$ 2,659	11,644	\$ 2,469	4,100	\$ 3,198
Less than 5	5,847	2,727	4,504	2,529	1,343	3,388
5-9	5,400	2,572	4,019	2,378	1,381	3,137
10-14	3,541	2,728	2,468	2,564	1,073	3,106
15-19	956	2,477	653	2,254	303	2,957

TABLE 38**Pensions in Force by Payment Option****General Employees**

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	32,828	\$ 2,243	31,390	\$ 2,285	974	\$ 1,260	464	\$ 1,467	-	\$ -
	Contributory									
Total	7,387	\$ 2,861	7,230	\$ 2,889	62	\$ 1,052	95	\$ 1,908	-	\$ -
Maximum	1,113	3,060	1,093	3,089	10	1,376	10	1,617	-	-
Option 1	378	2,292	359	2,347	11	1,165	8	1,394	-	-
Option 2	591	3,572	569	3,636	7	1,722	15	2,029	-	-
Option 3	313	4,046	310	4,068	2	1,223	1	2,741	-	-
Option 4	3,278	3,025	3,220	3,050	21	907	37	2,057	-	-
Option 5	1,714	2,080	1,679	2,094	11	464	24	1,862	-	-
	Noncontributory									
Total	13,321	\$ 1,727	12,516	\$ 1,766	594	\$ 1,098	211	\$ 1,170	-	\$ -
Maximum	6,702	1,708	6,375	1,738	232	1,085	95	1,207	-	-
Option A	2,805	1,825	2,680	1,856	85	1,200	40	1,114	-	-
Option B	3,088	1,685	2,776	1,752	246	1,067	66	1,176	-	-
Option C	726	1,706	685	1,741	31	1,152	10	1,008	-	-
	Hybrid									
Total	12,120	\$ 2,435	11,644	\$ 2,469	318	\$ 1,604	158	\$ 1,599	-	\$ -
Maximum	4,331	2,394	4,199	2,418	76	1,688	56	1,563	-	-
Option 1	809	2,242	786	2,256	16	1,668	7	1,918	-	-
Option 2	2,660	2,525	2,494	2,591	107	1,538	59	1,544	-	-
Option 3	1,642	2,926	1,595	2,964	30	1,666	17	1,628	-	-
Option 4	1,626	2,366	1,562	2,397	56	1,559	8	2,044	-	-
Option 5	1,052	1,864	1,008	1,876	33	1,616	11	1,497	-	-

TABLE 39**Pensions in Force by Payment Option****Teachers**

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	13,230	\$ 3,200	13,023	\$ 3,220	182	\$ 1,889	25	\$ 2,227	-	\$ -
Contributory										
Total	4,301	\$ 3,868	4,279	\$ 3,876	18	\$ 1,706	4	\$ 4,170	-	\$ -
Maximum	703	4,238	696	4,256	6	2,016	1	5,063	-	-
Option 1	172	3,450	171	3,460	1	1,759	-	-	-	-
Option 2	158	4,011	158	4,011	-	-	-	-	-	-
Option 3	141	4,790	140	4,798	1	3,615	-	-	-	-
Option 4	1,857	4,208	1,849	4,217	6	1,778	2	3,184	-	-
Option 5	1,270	3,101	1,265	3,107	4	641	1	5,249	-	-
Noncontributory										
Total	4,735	\$ 2,615	4,644	\$ 2,634	84	\$ 1,635	7	\$ 1,573	-	\$ -
Maximum	2,895	2,667	2,849	2,683	40	1,676	6	1,612	-	-
Option A	835	2,755	826	2,765	8	1,934	1	1,335	-	-
Option B	772	2,313	739	2,350	33	1,485	-	-	-	-
Option C	233	2,470	230	2,477	3	1,946	-	-	-	-
Hybrid										
Total	4,194	\$ 3,175	4,100	\$ 3,198	80	\$ 2,196	14	\$ 1,999	-	\$ -
Maximum	1,698	3,085	1,660	3,106	31	2,179	7	1,915	-	-
Option 1	210	3,045	205	3,068	5	2,125	-	-	-	-
Option 2	861	3,157	836	3,175	19	2,687	6	2,039	-	-
Option 3	592	3,605	583	3,628	8	2,132	1	2,343	-	-
Option 4	454	3,302	441	3,347	13	1,767	-	-	-	-
Option 5	379	2,865	375	2,878	4	1,611	-	-	-	-

TABLE 40
Pensions in Force by Payment Option
Police and Firefighters

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	4,331	\$ 5,968	4,207	\$ 6,071	29	\$ 1,493	95	\$ 2,757	-	\$ -
Maximum	231	6,618	216	6,893	-	-	15	2,656	-	-
Option 1	57	5,794	48	6,153	1	2,905	8	3,999	-	-
Option 2	370	6,522	347	6,771	9	2,034	14	3,229	-	-
Option 3	169	7,638	165	7,765	2	1,463	2	3,319	-	-
Option 4	2,613	6,313	2,583	6,357	8	1,503	22	2,915	-	-
Option 5	891	4,252	848	4,371	9	794	34	2,180	-	-

TABLE 41**Pensions in Force by Payment Option****General Employees - New Retirees**

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	1,609	\$ 2,236	1,550	\$ 2,265	40	\$ 1,387	19	\$ 1,692	-	\$ -
Contributory										
Total	32	\$ 5,513	31	\$ 5,584	-	\$ -	1	\$ 3,315	-	\$ -
Maximum	6	3,908	5	4,027	-	-	1	3,315	-	-
Option 1	1	3,528	1	3,528	-	-	-	-	-	-
Option 2	9	7,554	9	7,554	-	-	-	-	-	-
Option 3	1	4,219	1	4,219	-	-	-	-	-	-
Option 4	9	3,842	9	3,842	-	-	-	-	-	-
Option 5	6	7,108	6	7,108	-	-	-	-	-	-
Noncontributory										
Total	601	\$ 1,770	576	\$ 1,776	17	\$ 1,579	8	\$ 1,749	-	\$ -
Maximum	255	1,763	245	1,761	6	1,728	4	1,940	-	-
Option A	131	1,869	129	1,885	2	833	-	-	-	-
Option B	169	1,813	157	1,828	8	1,643	4	1,558	-	-
Option C	46	1,367	45	1,361	1	1,664	-	-	-	-
Hybrid										
Total	976	\$ 2,416	943	\$ 2,454	23	\$ 1,245	10	\$ 1,483	-	\$ -
Maximum	355	2,437	345	2,472	4	1,009	6	1,408	-	-
Option 1	72	2,460	70	2,499	2	1,091	-	-	-	-
Option 2	195	2,742	184	2,821	7	1,334	4	1,596	-	-
Option 3	101	2,730	100	2,741	1	1,625	-	-	-	-
Option 4	152	2,345	146	2,392	6	1,186	-	-	-	-
Option 5	101	1,472	98	1,473	3	1,443	-	-	-	-

TABLE 42**Pensions in Force by Payment Option****Teachers - New Retirees**

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	409	\$ 3,072	404	\$ 3,078	5	\$ 2,543	-	\$ -	-	\$ -
	Contributory									
Total	2	\$ 5,713	2	\$ 5,713	-	\$ -	-	\$ -	-	\$ -
Maximum	1	8,006	1	8,006	-	-	-	-	-	-
Option 1	-	-	-	-	-	-	-	-	-	-
Option 2	-	-	-	-	-	-	-	-	-	-
Option 3	-	-	-	-	-	-	-	-	-	-
Option 4	-	-	-	-	-	-	-	-	-	-
Option 5	1	3,421	1	3,421	-	-	-	-	-	-
	Noncontributory									
Total	153	\$ 2,601	152	\$ 2,602	1	\$ 2,434	-	\$ -	-	\$ -
Maximum	83	2,613	83	2,613	-	-	-	-	-	-
Option A	27	2,826	27	2,826	-	-	-	-	-	-
Option B	36	2,272	35	2,267	1	2,434	-	-	-	-
Option C	7	3,285	7	3,285	-	-	-	-	-	-
	Hybrid									
Total	254	\$ 3,335	250	\$ 3,347	4	\$ 2,570	-	\$ -	-	\$ -
Maximum	94	3,371	92	3,400	2	2,047	-	-	-	-
Option 1	16	2,883	15	2,949	1	1,904	-	-	-	-
Option 2	41	3,371	40	3,348	1	4,283	-	-	-	-
Option 3	27	3,537	27	3,537	-	-	-	-	-	-
Option 4	45	3,396	45	3,396	-	-	-	-	-	-
Option 5	31	3,145	31	3,145	-	-	-	-	-	-

TABLE 43**Pensions in Force by Payment Option****Police and Firefighters - New Retirees**

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	164	\$ 6,876	160	\$ 6,966	2	\$ 2,559	2	\$ 4,019	-	\$ -
Maximum	13	7,345	13	7,345	-	-	-	-	-	-
Option 1	2	6,073	1	7,326	-	-	1	4,821	-	-
Option 2	32	6,901	32	6,901	-	-	-	-	-	-
Option 3	7	7,433	7	7,433	-	-	-	-	-	-
Option 4	79	7,340	77	7,465	2	2,559	-	-	-	-
Option 5	31	5,395	30	5,468	-	-	1	3,217	-	-

SECTION O – DEFINITION OF ACTUARIAL TERMS

1. *Actuarial Accrued Liability* – for benefits payable in the future to present members, it will equal the present value of benefits payable in the future to them less the present value of future normal costs.
2. *Actuarial Assumptions* – assumptions as to future experience under ERS. Current actuarial assumptions are detailed in Table 18 of the current annual valuation report. Assumptions include future fund earnings rate, rates of future salary increases, and rates of death (both before and after retirement), disability, retirement, and withdrawal.
3. *Actuarial Gain or Actuarial Loss* - a measure of the difference between actual experience and assumed experience of ERS. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, actuarial liabilities emerge which may be the same as forecasted, or they may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., ERS's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.
4. *Actuarial Liabilities* - the actuarially determined present value of future benefits to be provided by ERS. There are separate actuarially determined present values for retired members and non-retired members (either active or inactive). When applied to active members, it takes into account benefits which will be earned through future service and future salary increases.
5. *Actuarial Value of Present Assets* - the value of present ERS assets for valuation purposes. This value is calculated under a four-year phase-in of the excess (shortfall) between expected and actual income return.
6. *Actuarially Determined* - values which 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 law.
7. *Decrements* - those types of activities by members of ERS which cause them no longer to be members, i.e., death, retirement, disability, and withdrawal. It is a general term referring to any or all of these membership-terminating events.
8. *Defined Benefits* - in a retirement plan, benefits which are defined by a specific formula applied to specific member compensation and/or specific years of service. The amount of the benefit is not a function of contributions or actual earnings on those contributions.
9. *Defined Contributions* - in a retirement plan, periodic contributions to the plan which are defined as a specific percent of compensation.

10. *Experience Study* - a periodic review and analysis of the actual experience of ERS which 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 as deemed appropriate by the Actuary.
11. *Funding Period* - the number of years in the future that will be required to fund (i.e., pay off or eliminate) the unfunded actuarial accrued liability, based on the actuarial assumptions and assuming no future actuarial gains or losses.
12. *Future Benefits* - benefits specified in the law which will become payable at some time in the future when the member satisfies the requirement to receive such benefits.
13. *Future Contributions* - contributions to be made by the member or the employers in the future.
14. *Normal Cost* - the actuarial cost to fund the benefits provided by ERS were the funding to begin at date of hire.
15. *Present Value* - the actuarially determined lump sum value as of the valuation date of a series of payments to be made in the future, where the lump sum value is equal to the sum of the discounted value of each future payment. The discounted value of each payment is the product of (a) the amount of the payment, (b) the probability that the payment will be made (based on the current actuarial assumptions as to future experience), and (c) the time value of money (based on the current assumed interest rate).
16. *Unfunded Actuarial Accrued Liability* - that portion of the actuarial accrued liability (including the present value of benefits presently being paid to retired members) that exceeds the value of current assets.
17. *Covered Payroll* - the total annualized payroll of active members as of the valuation date. Used to project individual members pay and benefits.
18. *Projected Payroll for Contributions Purposes* - The aggregate projected payroll for the fiscal year following the valuation date is calculated by increasing the actual payroll paid during the previous fiscal year by the payroll growth rate and multiplying by the ratio of current active members to the average number of active members during the previous fiscal year.