



**CURRAN ACTUARIAL**  
— CONSULTING, LTD. —

**Annual Funding Valuation  
June 30, 2024**

**Firefighters'  
Retirement System**



October 31, 2024

Board of Trustees  
Firefighters' Retirement System  
3100 Brentwood Drive  
Baton Rouge, LA 70809

Gentlemen:

We are pleased to present our report on the actuarial valuation of the Firefighters' Retirement System for the fiscal year ending June 30, 2024. Our report is based on the actuarial assumptions specified and relies on the data supplied by the system's administrators and accountants. This report was prepared at the request of the Board of Trustees of Firefighters' Retirement System of the State of Louisiana. The primary purpose of this report is to determine the actuarially required contribution for the retirement system for the fiscal year ending June 30, 2025 and to recommend the net direct employer contribution rate for Fiscal 2026.

This report does not contain the information necessary for accounting disclosures as required by Governmental Accounting Standards Board (GASB) Statements 67 and 68; that information is included in a separate report. This report was prepared exclusively for the Firefighters' Retirement System for a specific limited purpose. It is not for the use or benefit of any third party for any purpose.

In our opinion, all assumptions on which this valuation is based are reasonable individually and in the aggregate. Both economic and demographic assumptions are based on our expectations for future experience for the fund. These assumptions are based upon the June 30, 2020 Experience Study, are summarized in the back of this report, and are described in detail within that separate report unless stated otherwise.

This report has been prepared in accordance with generally accepted actuarial principles and practices, and to the best of our knowledge and belief, fairly reflects the actuarial present values and costs stated herein. The undersigned actuary is a member of the American Academy of Actuaries, has met the qualification standards for the American Academy of Actuaries to render the actuarial opinions incorporated in this report, and is available to provide further information or answer any questions with respect to this valuation.

Sincerely,

CURRAN ACTUARIAL CONSULTING, LTD.

By:   
Gregory Curran, F.C.A., M.A.A.A., A.S.A.  
Senior Consulting Actuary

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## SUMMARY OF VALUATION RESULTS FIREFIGHTERS' RETIREMENT SYSTEM

	June 30, 2024	June 30, 2023
Census Summary:		
Active Members	4,590	4,443
Retired Members and Survivors	2,857	2,744
DROP Participants	194	248
Terminated Due a Deferred Benefit	130	130
Terminated Due a Refund	1,140	1,048
Payroll (excluding DROP participants):	\$ 287,677,761	\$ 266,532,270
Benefits in Payment (excluding DROP accruals):	\$ 129,756,141	\$ 120,336,832
Present Value of Future Benefits	\$ 3,915,021,441	\$ 3,699,785,938
Actuarial Accrued Liability (EAN):	\$ 3,073,207,753	\$ 2,925,476,136
Frozen Unfunded Actuarial Accrued Liability:	\$ 422,057,401	\$ 456,965,908
Actuarial Value of Assets (AVA):	\$ 2,515,845,951	\$ 2,361,258,223
Market Value of Assets (MVA):	\$ 2,510,150,455	\$ 2,272,795,475
Ratio of AVA to Actuarial Accrued Liability:	81.86%	80.71%
	Fiscal 2024	Fiscal 2023
Market Rate of Return:	10.4%	8.9%
Actuarial Rate of Return:	6.5%	5.1%
	Fiscal 2025	Fiscal 2024
Employers' Normal Cost (Mid-year):	\$ 60,657,604	\$ 54,207,463
Amortization Cost (Mid-year):	\$ 63,669,160	\$ 64,259,191
Estimated Administrative Cost:	\$ 3,363,795	\$ 2,613,940
Projected Insurance Premium Taxes Due:	<u>\$ (34,828,941)</u>	<u>\$ (31,181,383)</u>
Net Direct Employer Actuarially Required Contributions:	\$ 92,861,618	\$ 89,899,211
Projected Payroll:	\$ 297,218,825	\$ 276,742,883
Statutory Employee Contribution Rate: *	10.00%	10.00%
Board Approved Net Direct Employer Contribution Rate: *	33.25%	33.25%
Actuarially Required Net Direct Employer Contribution Rate: *	31.24%	32.48%
	Fiscal 2026	Fiscal 2025
Minimum Recommended Net Direct Employer Cont. Rate: *	31.25%	32.50%

\* The above rates are for members with earnings greater than the Department of HHS poverty guidelines. For members with earnings below the poverty guidelines, employer rates will be 2.0% higher and employee rates will be 2.0% lower.

## GENERAL COMMENTS

The values and calculations in this report were determined by applying statistical analysis and projections to system data and the assumptions listed. There is sometimes a tendency for readers to either dismiss results as mere “guesses” or alternatively to ascribe a greater degree of accuracy to the results than is warranted. In fact, neither of these assessments is valid. Actuarial calculations by their very nature involve estimations. As such, it is likely that eventual results will differ from those presented. The degree to which such differences evolve will depend on several factors including the completeness and accuracy of the data utilized, the degree to which assumptions approximate future experience, and the extent to which the mathematical model accurately describes the plan’s design and future outcomes.

Data quality varies from system to system and year to year. The data inputs involve both asset information and census information of plan participants. In both cases, the actuary must rely on third parties; nevertheless, steps are taken to reduce the probability and degree of errors. The development of assumptions is primarily the task of the actuary; however, information and advice from plan administrators, staff, and other professionals may be factored into the formation of assumptions. The process of setting assumptions is based primarily on analysis of past trends, but modification of historical experience is often required when the actuary has reason to believe that future circumstances may vary significantly from the past. Setting assumptions includes but is not limited to collecting past plan experience and studying general population demographics and economic factors from the past. The actuary will also consider current and future macro-economic and financial expectations as well as factors that are likely to impact the particular group under consideration. Hence, assumptions will also reflect the actuary’s judgment regarding future changes in plan population and decrements in view of the particular factors which impact participants. Thus, the process of setting assumptions is not mere “guess work” but rather a process of mathematical analysis of past experience and of those factors likely to impact the future.

One area where an actuary has limited ability to develop accurate estimates is the projection of future investment earnings. The difficulties here are significant. First, the future is rarely like the past, and the data points available to develop stochastic trials are far fewer than the number required for statistical significance. In this area, some guess work is inevitable. However, there are tools available to lay a foundation for making estimates with an expectation of reliability. Although past data is limited, the available data is likely to provide some insight into the future. This data consists of general economic and financial values such as past rates of inflation, rates of return variance, and correlations of returns among various asset classes along with the actual asset experience of the plan. In addition, the actuary can review the current asset market environment as well as economic forecasts from governmental and investment research groups to form a reasonable opinion with regard to probable future investment experience for the plan.

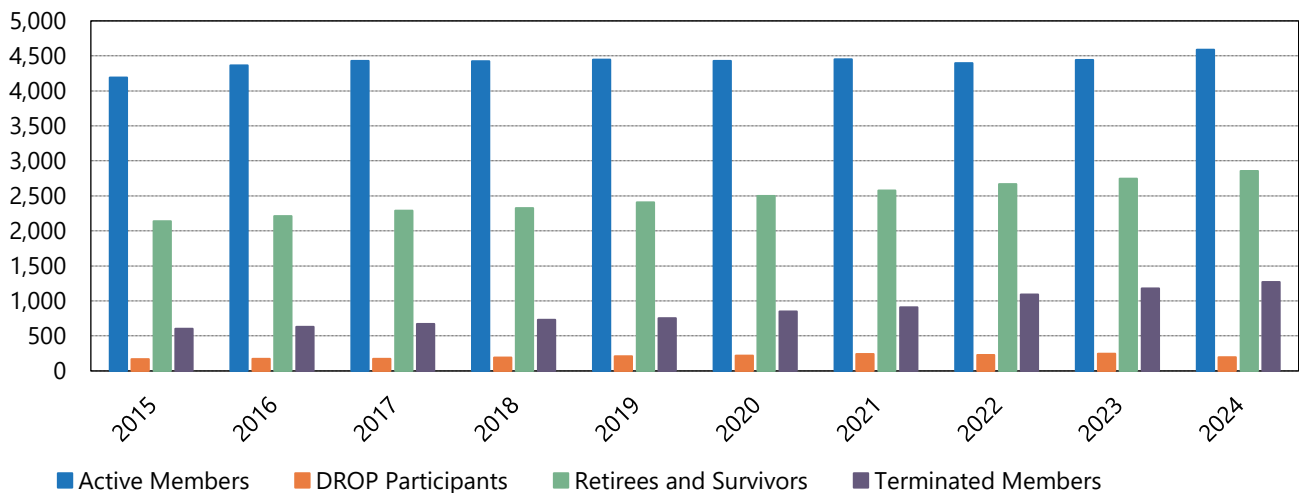
All of the above efforts would be in vain if the assumption process was static, and the plan would have to deal with the consequences of actual experience differing from assumptions after forty or fifty years of compounded errors. However, actuarial funding methods for pension plans all allow for periodic corrections of assumptions to conform with reality as it unfolds. This process of repeated correction of estimates produces imperfect results but is nevertheless a reasonable approach to determine the contribution levels that will provide for the future benefits of plan participants.

Despite this, future results may materially differ with this actuarial valuation. Employer contribution rates and other funding measures presented in this report will differ as the system is impacted by the following: changes in plan membership, plan liability or investment experience inconsistent with plan assumptions, future changes in plan assumptions or future changes in plan provisions. An analysis of the range of such deviations is outside the scope of this report.

## COMMENTS ON DATA

For the valuation, the system’s administrative staff furnished census data derived from the system’s master data processing file indicating each active covered employee’s sex, date of birth, service credit, annual salary, and accumulated contributions. Currently, the system’s computer database does not contain DROP member salaries. Since this information is required to value the payment of benefits based on current actuarial assumptions related to potential post-DROP service, estimates of these salaries were made based on each DROP participant’s historical average salaries. Information on retirees detailing retiree dates of birth, beneficiary dates of birth, retiree and beneficiary sex, optional form of benefit chosen, along with original and current benefit amounts, was provided. In addition, data was supplied on former employees who are vested or who have contributions remaining on deposit. As illustrated in Exhibit VIII, there are 4,590 active contributing members in the system of whom 2,191 have vested retirement benefits; in addition, there are 194 participants in the Deferred Retirement Option Plan (DROP); 2,857 former members or their beneficiaries are receiving retirement benefits. An additional 1,270 terminated members have contributions remaining on deposit with the system; of this number 130 have vested rights for future retirement benefits. According to **Figure 1**, active membership has declined over the past few years, while retiree and survivor levels have increased.

**Figure 1. Membership Counts**



Census data submitted to our office is tested for errors and changes are made when errors are identified. Several types of census data errors are possible. To ensure that the valuation results are as accurate as possible, a significant effort is made to identify and correct these errors. To minimize coverage errors (i.e., missing or duplicated individual records) the records are checked for duplicates, and a comparison of the current year’s records to those submitted in prior years is made. Changes in status, new records, and previous records, that have no corresponding current record, are identified. This portion of the review

indicates the annual flow of members from one status to another and is used to check some of the actuarial assumptions, such as rates of retirement, withdrawal, and mortality. In addition, the census is checked for reasonableness in several areas such as age, service, salary, and current benefits. Records identified by this review as questionable are checked against data from prior valuations, are reviewed against information on the system's membership database, and may be included in a detailed list of items sent to the system's administrative staff for verification and/or correction. Once the identified data has been researched and either verified or corrected, the final data is used in the valuation. Occasionally some requested information is either unavailable or impractical to obtain. In such cases, values may be assigned to missing data. The assigned values are based on information from similar records or based on information implied from other data in the record.

A member's salary is an important component of projecting future cash flows and computing normal costs and accrued liabilities. Our modeling requires the entry of annual salary for this purpose. For individuals who have not completed a full year of service during the measurement period, we use an estimate of their service during the fiscal year to annualize salaries.

In addition to the statistical information provided on the system's participants, the system's administrator furnished general information related to other aspects of the system's expenses, benefits and funding. Valuation asset values as well as income and expenses for the fiscal year were based on information furnished by EisnerAmper, LLP. As indicated in the system's financial statements, the net market value of the system's assets was \$2,510,150,455 as of June 30, 2024. Net investment income for Fiscal 2024 measured on a market value basis was \$237,122,318. Contributions to the system for the fiscal year totaled \$160,402,511; benefits and expenses amounted to \$160,169,849.

Notwithstanding our efforts to review both census and financial data for apparent errors, we must rely upon the system's administrative staff and accountants to provide accurate information. Our review of submitted information is limited to validation of reasonableness and consistency. Verification of submitted data to source information is beyond the scope of our efforts.

## **COMMENTS ON ACTUARIAL METHODS AND ASSUMPTIONS**

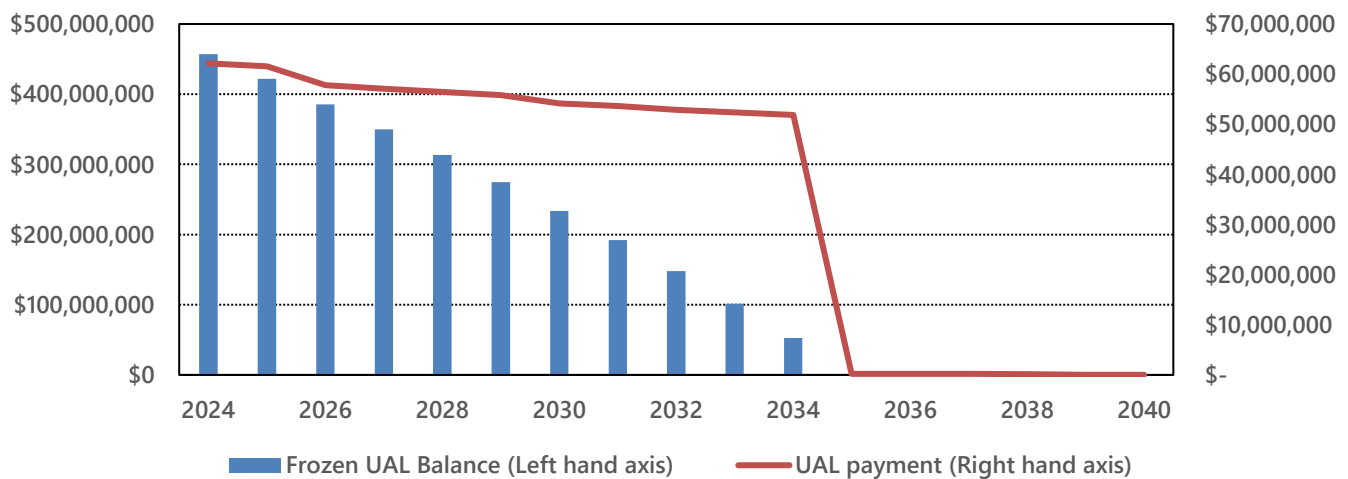
The system's actuarial funding method is set by R.S. 11:22. Prior to the 2019 actuarial valuation, all valuations of the Firefighters' Retirement System were based on the Entry Age Normal actuarial cost method. As of June 30, 1989, under the provisions of Louisiana R.S. 11:103, the funding excess for the plan which was determined to be \$239,425 was amortized over thirty years. Subsequent experience gains and losses were amortized over fifteen years. Contribution gains or losses arising from contributions in excess of or less than the required contributions were amortized over the same period as experience gains and losses. Further changes in the unfunded accrued liability generated by mergers of groups of firefighters into the system were amortized over thirty years. Act 620 of the 2003 Regular Session of the Louisiana Legislature changed the amortization of unfunded accrued liability. All non-merger amortization bases in existence on June 30, 2002, were combined, offset, and re-amortized through June 30, 2029, in accordance with R.S. 11:103(D). The aggregate value of the bases as of that date was \$175,578,584. Act 422 of the 2009 Regular Session of the Louisiana Legislature further changed the amortization of unfunded accrued liability. Beginning with Fiscal 2010, actuarial gains and losses, as well as contribution gains and losses, were amortized over a 20-year period. Each year thereafter, the amortization period was set to decrease by one year until attaining a 15-year amortization period. All

changes in assumptions or the method of valuing assets were then amortized over 15 years. All amortization payments were set on a level dollar basis.

Act 91 of the 2019 Regular Session of the Louisiana Legislature changed the funding method for use in actuarial valuations of the Firefighters’ Retirement System from the Entry Age Normal actuarial cost method to the Frozen Initial Liability actuarial cost method. This change was effective with the 2019 valuation. Based upon this change, all non-merger outstanding balances on the system’s entry age normal unfunded actuarial accrued liability as of June 30, 2019 were frozen, combined, and re-amortized over a fifteen year period with payments set to decrease by one percent each year. The remaining merger bases were not changed and will be paid off according to their original schedule. With this change, all actuarial experience gains and losses, contribution gains and losses, gains and losses arising from changes in benefits, and gains and losses arising from changes in assumptions which occur in fiscal years after 2019 are included in the calculation of the plan’s normal cost according to the Frozen Initial Liability funding method.

Since the Frozen Initial Liability funding method spreads actuarial gains and losses over future normal costs, favorable plan experience will lower future normal costs while unfavorable plan experience will increase future normal costs. Overall costs may also increase or decrease depending on payroll growth. Since non-merger amortization payments on the frozen unfunded accrued liability are set to decrease by one percent per year over the next eleven years and merger amortizations are level dollar amounts, future amortization payments as a percentage of payroll decrease if payroll is level or increases. Since projected payroll for Fiscal 2025 exceeds the Fiscal 2024 projected payroll and the payment required on the Frozen Unfunded Accrued Liability decreased, the employer contribution rate decreased by 1.80% based on projected UAL payments. **Figure 2** shows the future of the Frozen UAL and the required payments on that UAL.

**Figure 2. Frozen Unfunded Actuarial Accrued Liability**



The system’s valuation interest rate represents the actuary’s best estimate of the system’s expected long-term rate of return. This important financial assumption has a meaningful impact on the calculation of system liabilities. In the first actuarial valuation following the creation of the system by the Louisiana Legislature, the valuation interest rate was set at 7%. At that point in time, many of Louisiana’s statewide retirement systems used a valuation interest rate of 8%. The Firefighters’ Retirement System was created



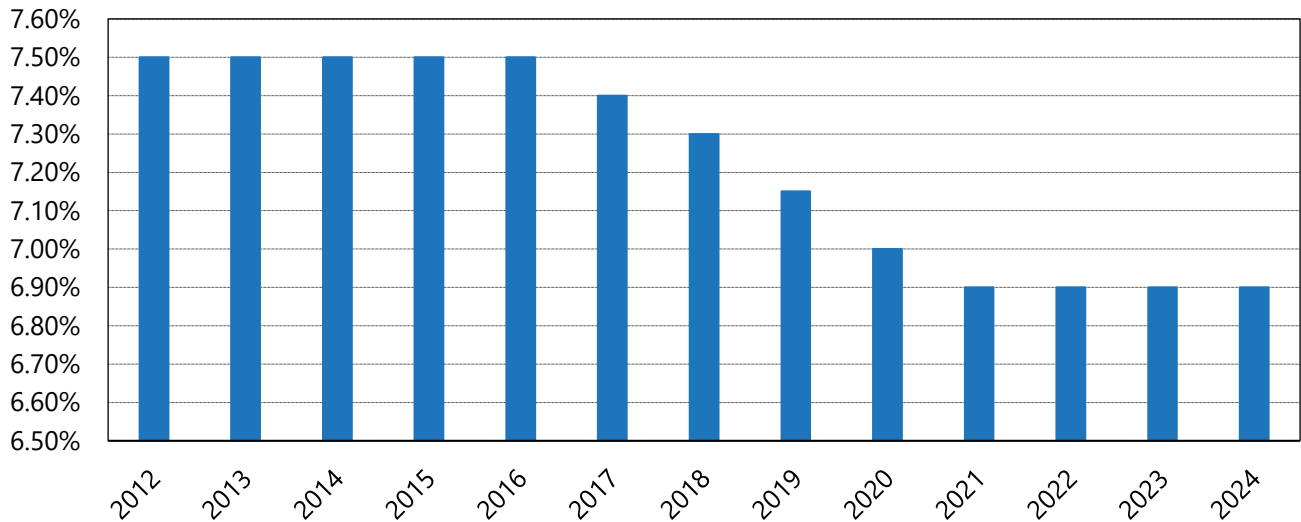
by the legislature in part to provide a centralized retirement system for a significant portion of the state's local fire departments and districts. Many of the fire departments and fire districts had previous retirement systems that were merged into the Firefighters' Retirement System. In such cases, the sponsors of those legacy, local retirement systems were allowed to pay for a portion of the merger liability with a promissory note with FRS. These notes were created with payments determined based on a 6% interest rate. With FRS receiving a significant amount of funding from merger notes based on a 6% interest rate, it was necessary to set the valuation interest rate below the rate that could be earned on the system's portfolio.

The 7% valuation interest rate was utilized through the fiscal 2003 actuarial valuation. A review of the valuation interest rate prior to the 2004 actuarial valuation found that most of the initial merger notes had been fully paid off by the responsible municipalities. Given this, the valuation interest rate was set based on best estimates of the system's expected long-term rate of return on the system portfolio. It was determined that a 7.5% valuation interest rate was reasonable, and the Board of Trustees elected to change this assumption to 7.5% within the Fiscal 2004 actuarial valuation. This assumption was maintained through fiscal 2016.

In February of 2017, a recommendation was made to the Board of Trustees to reduce the long-term rate of return assumption. The recommendation was formed after an analysis of the system's portfolio along with updated expected long-term rates of return, standard deviations of return, and correlations between asset classes collected from a number of investment consulting firms including the system's investment consultant, NEPC. Based on this analysis and after discussions with the Board, a plan was approved to reduce the 7.5% valuation interest rate in effect for the Fiscal 2016 actuarial valuation to 7.0% over the subsequent five actuarial valuations with reductions of 0.10% each year, beginning with the June 30, 2017 valuation. Annual testing with updated capital market assumptions was performed in the following years, and the review for Fiscal 2019 found that the 7.20% valuation interest rate scheduled for use in the 2019 actuarial valuation was no longer inside the reasonable range determined by the actuary. Therefore, the assumed rate of return for the Fiscal 2019 valuation was set at 7.15%. Based upon the Fiscal 2020 review, the Board elected to further reduce the valuation interest rate for use in the Fiscal 2020 valuation to 7.00%, which was found to be within the reasonable range. Prior to the completion of the Fiscal 2021 valuation, the system's actuary notified the Board of Trustees that the 7% valuation interest rate used in the Fiscal 2020 valuation remained within the actuary's reasonable range. However, given the sizable market rate of return for Fiscal 2021 and the Board's stated desire to reduce the risk inherent in the assumed rate of return, the actuary recommended that the Board consider opportunistically lowering the valuation interest rate. The Board of Trustees authorized the actuary to lower the return assumption to a level that would not cause an increase in the minimum recommended employer contribution rate for Fiscal 2023 when compared to Fiscal 2022. Based upon this decision, the valuation interest rate was lowered to 6.9%.

**Figure 3** shows the changes in valuation interest rate over the past 10 years.

Figure 3. Assumed Rate of Return



The actuary's review of the valuation interest rate prior to the 2022, 2023, and 2024 valuations found that the 6.9% return assumption remained within the reasonable range. These reviews were performed based on the development of 10,000 stochastic trials spanning 30 years. These trials were performed based on the assumption that portfolio returns are normally distributed based on the expected rate of return and standard deviation of returns inherent in modeling based on the firm's consultant average capital market assumptions and the system's target asset allocation. These stochastic trials were then used to determine return levels for each percentile. The reasonable range boundaries were set based on the 40<sup>th</sup> and 60<sup>th</sup> percentile expected return levels. Based upon these assumptions and the stochastic simulations, the 2024 review set a reasonable range of 6.73% to 7.91%. The resulting percentiles suggest that there is approximately a 56.8% probability that the system will have long-term earnings at or above 6.90% and a 50% probability that the system will have long-term investment earnings at or above 7.33%.

The remaining actuarial assumptions utilized for this report are based on the results of an actuarial experience study for the period July 1, 2014 – June 30, 2019, unless otherwise specified in this report. This study included a review of all plan decrements in addition to salary scale experience and other demographic factors which impact plan costs. The Experience Study report contains details related to each assumption including the actuary's recommended changes. The results of the actuarial valuation rely on the assumptions set by this experience study.

Although the Board of Trustees has authority to grant ad hoc Cost-of-living Adjustments (COLAs) under limited circumstances, these COLAs have not been shown to have a historical pattern, the amounts of the COLAs have not been paid relative to a defined cost-of-living or inflation index, and there is no evidence to conclude that COLAs will be granted on a predictable basis in the future. In addition, the Board of Trustees elected not to provide a COLA following the Fiscal 2021 actuarial valuation based on the cost of providing the statutorily permitted COLAs and the Board's concern about the potential impact on future costs. This decision demonstrates that although statutes provide a set of rules which require certain benchmarks to be met before offering a COLA, they do not guarantee future COLAs. Therefore, for purposes of determining the present value of benefits, future COLAs were not deemed to be substantively

automatic, and the present value of benefits excludes COLAs not previously granted by the Board of Trustees.

The current year actuarial assumptions utilized for the report are outlined at the end of this report. All assumptions used are based on estimates of future long-term experience for the system as described in the system's 2020 Experience Study report. All calculations, recommendations, and conclusions are based on the assumptions specified. To the extent that prospective experience differs from that assumed, adjustments to contribution levels will be required. Such differences will be revealed in future actuarial valuations.

## RISK FACTORS

Defined benefit pension plans are subject to a number of risks. These can be related either to plan assets or liabilities. In order to pay benefits, the plan must have sufficient assets when benefits become due. Several factors can lead to asset levels which are below those required to pay promised benefits. The following categories describe a number of key risks and provide measurements related to a few.

### Contribution Policy Risk

The first risk in this regard is the failure to contribute adequate funds to the plan. In some ways, this is the greatest risk, since other risks can usually be addressed by adequate actuarial funding. Louisiana constitutional and statutory provisions greatly limit this risk by requiring that state and statewide plans maintain funding on an actuarial basis. The State Constitution sets forth general requirements with specific funding parameters specified in the state statutes. This results in a funding policy that is expected to achieve a 100% funded status in time.

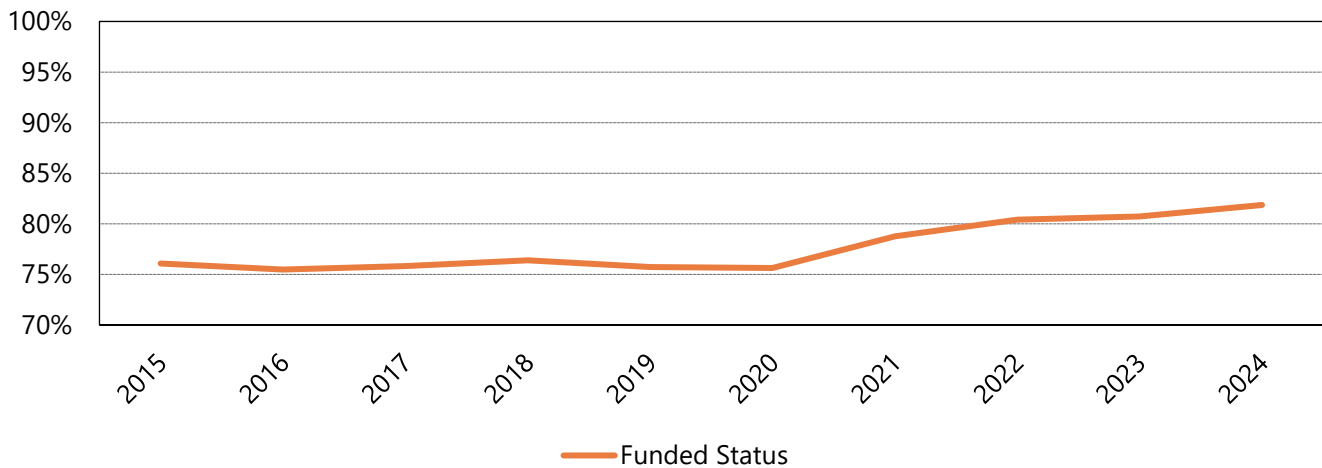
### Funded Status

Beyond identifying risk categories, it is possible to quantify some risk factors. One fairly well-known risk metric is the funded ratio of the plan. The rate is given as a ratio of plan assets divided by plan liabilities. However, the definition of each of these terms may vary. The two typical alternatives used for assets are the market and actuarial value of assets. There are several alternative measures of liability depending on the funding method employed. The Governmental Accounting Standards Board (GASB) specifies that, for financial reporting purposes, the funded ratio is determined by using the market value of assets divided by the entry age normal accrued liability. This value is given in the system's financial report. Alternatively, we have calculated the ratio of the actuarial value of assets to the entry age normal accrued liability based on the funding methodology used to fund the plan. The ratio is 81.86% for the plan as of June 30, 2024.

This value gives some indication of the financial strength of the plan; however, it does not guarantee the ability of the system to pay benefits in the future or indicate that in the future, contributions are likely to be less than or greater than current contributions. In addition, the ratio cannot be used in isolation to compare the relative strength of different retirement systems. However, the trend of this ratio over time can give some insight into the financial health of the plan. In this regard, caution is warranted since market fluctuations in asset values and changes in plan assumptions can distort underlying trends in this value. **Figure 4** gives a history of this value for the last ten years. Note that the underlying trend is

somewhat disguised since the system has significantly reduced the valuation interest rate over this period. Absent the reduction in the valuation interest rate, the current ratio would be higher.

**Figure 4. Historical Funded Status**



Following are a number of risks and risk measures related to system assets:

### **Inflation Risk**

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All pension plans are subject to the uncertainty of asset performance, and inflation is a major component of asset performance. The total nominal rate of return on assets is comprised of the real rates of return earned on the portfolio of investments plus the underlying inflation rate. High levels of inflation pose a risk to plan members in that they reduce the purchasing power of plan benefits. Were the plan to attempt to offset inflation by providing COLAs (often in the form of permanent benefit increases), minimum contribution rates would typically increase unless provisions are made to prefund such adjustments. Very low inflation typically reduces the nominal rate of return on assets; deflation can potentially reduce the capital value of trust assets. During the decade preceding 2020, inflation levels remained in a fairly narrow range. Since 2020, inflation has significantly increased. So far, Federal Reserve efforts to fight inflation have not had the desired effect of returning inflation measures to their 2% target level. Forecasters seem to believe that long-term average rates of future inflation may remain higher than the target level. There is always the possibility that high inflation will remain a problem in the future or that the country will experience a deflationary period; however, most expert opinion currently assesses these alternatives as unlikely in the near term.

### **Reinvestment Risk**

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Another element of asset risk is reinvestment risk. Interest rate declines can subject pension plans to an increase in this risk. As fixed income securities mature, investment managers may be forced to reinvest funds at decreasing rates of return. Reinvestment risk was significantly mitigated in recent years as the Federal Reserve increased the Federal Funds Rate. In September 2024, the Federal Reserve changed that policy by reducing that rate for the first time since March 2020. Should Federal Reserve policy continue

to reverse the recent cycle of increased interest rates by bringing down the Federal Funds Rate, reinvestment risk will increase.

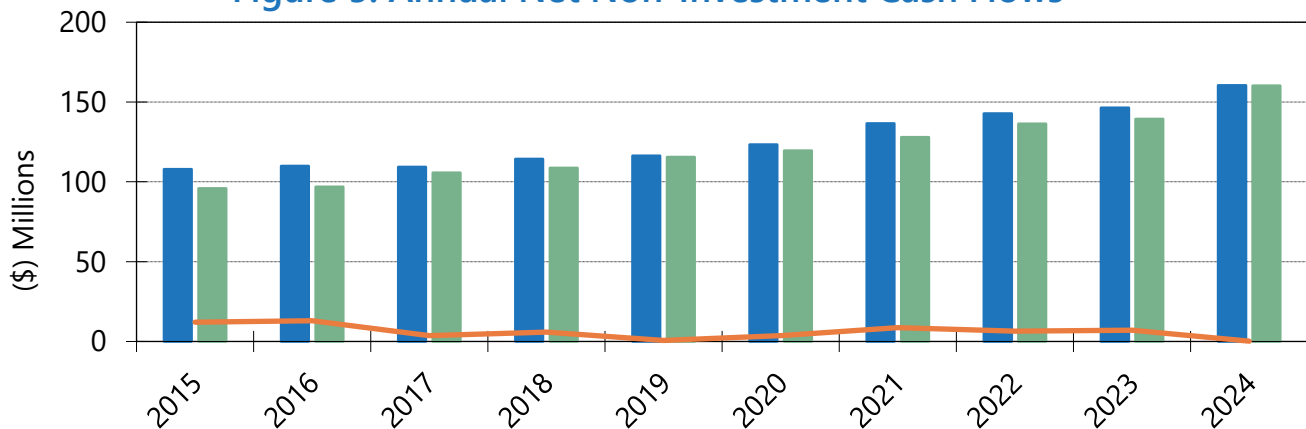
### Asset Return Volatility Risk

Long-term asset performance depends not only on average returns but also on the volatility of returns. Two portfolios of identical size with identical average rates of return will accumulate different levels of assets if the volatility of returns differs, since increased volatility reduces the accumulation of assets. Volatility of returns will be determined by both market conditions and the asset allocation of the investment portfolio. If the system’s investment portfolio has a substantial allocation to assets that have low price stability, the risk of portfolio volatility will increase, although low correlations among asset classes can mitigate this risk.

### Cash Flow Risk

The system is also exposed to risk related to cash flow. Where benefit payments exceed contributions to a plan, the plan will be required to use investment income or potentially investment capital to pay benefits. In cases where it is necessary to use investment income to pay retirement benefits, investment market downturns place additional stress on the portfolio and make the recovery from such downturns more difficult since funds available for reinvestment are reduced by benefit payments. The historical cash flow graph and demonstration given below in **Figure 5** compares the total contribution income to benefits and expenses to determine the noninvestment cash flow of the system over the last ten years. Currently, annual contributions slightly exceed annual benefit payments to the plan.

**Figure 5. Annual Net Non-Investment Cash Flows**



		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Contribution Income (\$Mil)	■	107.8	109.9	109.3	114.4	116.3	123.3	136.6	142.8	146.4	160.4
Benefits and Expenses (\$Mil)	■	95.8	96.9	105.7	108.6	115.6	119.6	127.9	136.3	139.4	160.2
Net Non-Inv. Cash Flow (\$Mil)	—	12.0	13.0	3.6	5.8	0.7	3.7	8.7	6.5	7.0	0.2

Future net noninvestment cash flows for the system will be determined based upon both the system maturity and future contribution levels. Hence, increases in future contributions due to adverse actuarial experience will tend to mitigate the potential of negative cash flows arising from the natural maturation of the system, whereas reduced contribution levels resulting from positive experience will tend to increase the scale of negative cash flows. Absent a significant increase in the active membership of the system, the trend of higher proportions of retired membership may continue, and the current trend toward higher levels of negative non-investment cash flows could continue in the near future.

### **Sensitivity to Investment Gains/Losses**

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Every retirement system is subject to investment return risk. When the rate of return on the actuarial value of assets does not equal the assumed rate of return, the system experiences investment gains or losses. These can cause contribution rate requirements to be more volatile. We have determined that based on current assets and demographics, for each percentage under (over) the assumed rate of return on the actuarial value of assets, there will be a corresponding increase (decrease) in the actuarially required contribution as a percentage of projected payroll of 0.78% for the system.

### **Sensitivity to Changes in Valuation Interest Rate**

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With regard to the economic assumptions, we have determined that a reduction in the valuation interest rate by 1% (without any change to other collateral factors) would increase the actuarially required employer contribution rate for 2025 by 15.82% of payroll. In the future, adjustments to the future assumed rate of return may be required; however, the likelihood of such an event is difficult to gauge since it requires assigning probabilities to future capital market scenarios.

Following are a number of risks and risk measures related to system liabilities:

### **Maturity Risk**

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The ability of a system to recover from adverse asset or liability performance is partly related to the maturity of the plan population. In general, plans with increasing active membership are less vulnerable to asset and liability gains and losses than mature plans since changes in plan costs can be partially allocated to new members. If the plan has a large number of active members compared to retirees, asset or liability losses can be more easily addressed. As more members retire, contributions can only be collected from a smaller segment of the overall plan population. Often, population ratios of actives to annuitants are used to measure the plan's ability to adjust or recover from adverse events since contributions are made by or on behalf of active members but not for retirees. Thus, if the plan suffers a mortality loss through increased longevity, this will affect both actives and retirees, but the system can only fund this loss by contributions related to active members. A measure of risk related to plan maturity is the ratio of total benefit payments to active payroll. For Fiscal 2024, this ratio is 45%; ten years ago, this ratio was 36%.

### **Assumption Risk**

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One other area of exposure the plan faces is the possibility that plan assumptions will need to be revised to conform to changing actual or expected plan experience. Such assumption revisions may relate to

economic or demographic factors. With regard to the economic assumptions, there is always the possibility that market expectations will require an adjustment to the assumed rate of return. Market expectations related to the assumed rate of return do not currently suggest that a further decrease in the assumption is warranted. We will continue to monitor capital market assumptions and the Board's decisions related to asset mix. We will advise the Board if the reasonable range changes in any material way in the future.

Non-economic assumptions, such as mortality or other rates of decrement such as withdrawal, retirement, or disability, are also subject to change. In general, such changes tend to affect plan costs less than adjustments to the assumed rates of return. Quantifying the probability or magnitude of such changes is beyond the scope of this report.

In summary, there is a risk that future actuarial measurements may differ significantly from current measurements presented in this report due to factors such as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, and changes in plan provisions or applicable law. Ordinarily, variations in these factors will offset to some extent. However, even with the expectation that not all variations in costs will likely travel in the same direction, factors such as those outlined above have the potential on their own accord to pose a significant risk to future cost levels and solvency of the system.

#### **Data Error Risk**

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Liability risk also includes items such as data errors. No actuarial valuation can provide accurate figures without accurate data on plan members, former members, retirees, and survivors. Significant errors in plan data can distort or disguise plan liabilities. When data corrections are made, the plan may experience unexpected increases or decreases in liabilities.

#### **Liability Duration Risk**

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Each pension plan has its own unique benefit structure and demographic profile. As a result, each plan will respond to changes in interest rates in a unique way. As the expected rate of return on investments changes and the interest rate used to discount plan liabilities is adjusted, the shift in plan liabilities will depend upon the duration of the liabilities (which can be understood as the plan's sensitivity to the change in the interest rate). A slightly different measure of the duration for the plan can also be understood as an indicator of the plan's maturity. When a pension plan is first established, all of the participants are active members; as members retire and the plan matures, the duration of the plan decreases. A determination of the liability duration gives some insight into the investment time horizon of the plan. Thus, the liability duration of a closed plan can be thought of as the weighted "center of gravity" of plan benefit cash flows with expected cash flows occurring both before and after the duration value. For open plans with a continuous flow of new entrants, this measure is somewhat less informative since the duration horizon keeps changing as new members enter the plan. For this plan we have estimated the effective liability duration as 11.09 years when measured based on the interest sensitivity of the fund's entry-age normal accrued liability.

## Other Liability Risks

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Other liability risks include such things as longevity risk (the risk that retirees will live longer than expected), termination risk (the risk that fewer than the anticipated number of members will terminate service prior to retirement), and other factors that may have an impact on the liability structure of the plan. In a general sense, the short-term effects of these risks on the cost structure of the plan are somewhat limited since changes in these factors tend to be gradual and follow long-term secular trends. Final average compensation plans are also vulnerable to unexpectedly large increases in salary for individual members near retirement. The effect of such events frequently relates to pay plan revisions where salaries catch up after a number of years of slow growth. Revisions of this type usually depend on general economic conditions and can result in liability losses. However, they are generally infrequent and are more of a short-term issue.

Even natural disasters and dislocations in the economy or other unforeseen events can present risks to the plan. These events can affect member payroll and plan demographics, both of which impact costs. The risk associated with either of these factors can vary depending upon the severity of the event and cannot be easily forecasted.

## CHANGES IN PLAN PROVISIONS

The following changes to the system were enacted during the 2024 Regular Session of the Louisiana Legislature:

Act 295 made changes to what constitutes a confidential personnel record. The cellular telephone number of public employees may be confidential and the personal email address or addresses of the public employee may be confidential if the employee requests that they remain confidential.

Act 495 made additional changes to public records laws related to confidential personal records.

Act 537 enacted changes to the makeup of the Board of Trustees by adding a retiree to be elected by a majority vote of the retired members and beneficiaries of the system. The act further stated that the board would consist of twelve trustees.

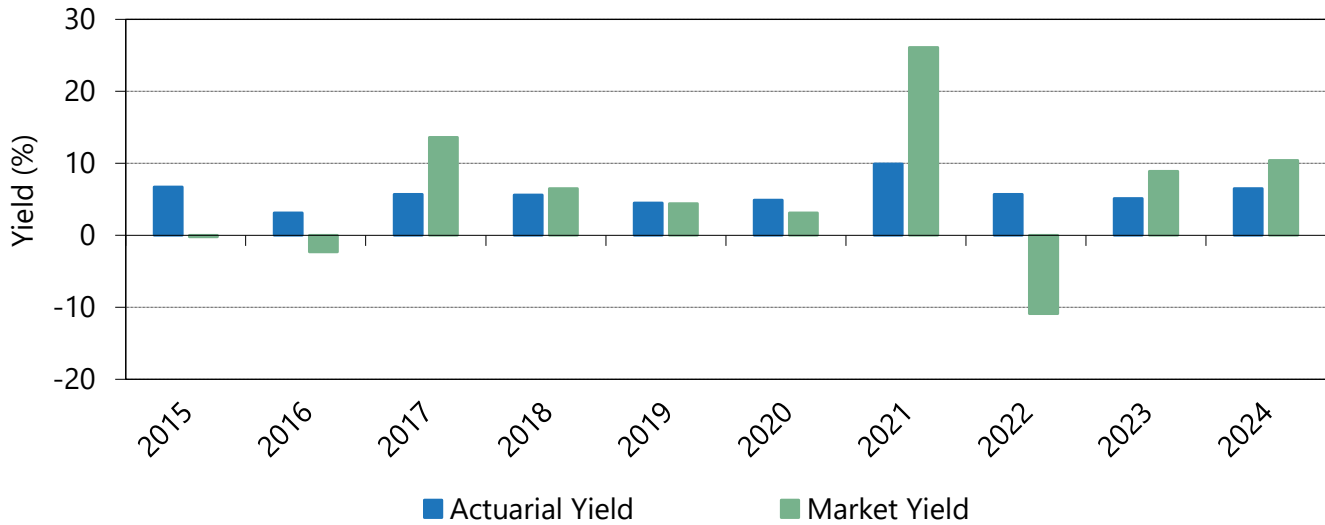
Act 672 enacted changes to the makeup of the Board of Trustees by adding an additional member elected by a majority of the officers of the Louisiana Fire Chiefs Association (changing from two members to three members). It also changed the number of affirmative votes required for a decision by the trustees at any meeting of the board from five to seven members. The act further stated that the board would consist of twelve trustees.

## ASSET EXPERIENCE

The actuarial and market rates of return for the past ten years are given below (**Figure 6**). These investment rates of return were determined by assuming a uniform distribution of income and expense throughout the fiscal year.



**Figure 6. Historical Asset Yields**



	<b>Market Yield</b>	<b>Actuarial Yield</b>
2015	-0.2%	6.7%
2016	-2.3%	3.1%
2017	13.6%	5.7%
2018	6.5%	5.6%
2019	4.4%	4.5%
2020	3.1%	4.9%
2021	26.1%	9.9%
2022	-10.9%	5.7%
2023	8.9%	5.1%
2024	10.4%	6.5%

<b>Geometric Average Market Rates of Return</b>		
5-year average	(Fiscal 2020 – 2024)	6.8%
10-year average	(Fiscal 2015 – 2024)	5.5%
15-year average	(Fiscal 2010 – 2024)	6.8%
20-year average	(Fiscal 2005 – 2024)	5.5%
25-year average	(Fiscal 2000 – 2024)	4.9%
30-year average	(Fiscal 1995 – 2024)	6.0%

The market rate of return gives a measure of investment return on a total return basis and includes realized and unrealized capital gains and losses as well as interest income. Asset and income values for merger notes were excluded from calculations in order to provide a measurement of the return on the portion of the portfolio under management. This rate of return gives an indication of performance for an actively managed portfolio where securities are bought and sold with the objective of producing the highest total rate of return. During 2024 the system earned \$32,201,848 of dividends, interest and other recurring income. During the same period, the system had net realized and unrealized capital gains on

investments and non-recurring income of \$213,362,933. This income was offset by investment expenses of \$8,442,463.

The Fiscal actuarial rate of return is presented for comparison to the assumed long-term rate of return of 6.90% used for the prior valuation. This rate is calculated based on the actuarial value of assets and the market value income adjusted for actuarial smoothing as given in Exhibit VI. Investment income used to calculate this yield is based upon a smoothing of investment income above or below the valuation interest rate over a five-year period subject to constraints. The difference between rates of return on an actuarial and market value basis results from the smoothing utilized. Yields in excess of the applicable interest assumption will reduce future costs; yields below the applicable assumption will increase future costs. For Fiscal 2024, the system experienced net actuarial investment earnings of \$8,579,644 below the actuarial assumed earnings rate in effect for Fiscal 2024 of 6.90%. This shortfall in earnings produced an actuarial loss, which increased the normal cost accrual rate by 0.2656%.

## **DEMOGRAPHICS AND LIABILITY EXPERIENCE**

A reconciliation of the census for the system is given in Exhibit VIII. The average active contributing member is 38 years old with 11.44 years of service credit and an annual salary of \$62,675. The system's active contributing membership experienced an increase of 147 members during Fiscal 2024. The number of DROP participants decreased by 54 during Fiscal 2024. Over the last five years active membership has increased by 144 members.

The average service retiree is 66 years old with an annual benefit of \$50,587. The average age of members at retirement is 54. The number of retirees and beneficiaries receiving benefits from the system increased by 113 during the fiscal year. Over the last five years, the number has increased by 450; during the same period, the annual benefits in payment increased by \$32,209,053.

Plan liability experience for Fiscal 2024 was unfavorable. Withdrawals were significantly above projected levels and DROP entries were below projected levels. These items tend to reduce costs. Active retirements and post-DROP retirements above projected levels increased costs. Salary increases exceeded projected levels at most durations, which increased costs. The posting of interest on DROP accounts added to the experience loss within this valuation. The posting of interest on certain DROP accounts based on the system's market rate of return of 10.4%, while the system's employer contribution rate is determined based on the 6.5% actuarial rate of return, produced a loss in Fiscal 2024. In aggregate, plan liability losses increased the normal cost accrual rate by 0.8178%. We estimate that salary increases alone were responsible for 0.57% of this cost increase.

## **FUNDING ANALYSIS AND RECOMMENDATIONS**

Actuarial funding of a retirement system is a process whereby funds are accumulated over the working lifetimes of employees in such a manner as to have sufficient assets available at retirement to pay for the lifetime benefits accrued by each member of the system. The required contributions are determined by applying a cost allocation procedure to the results of an actuarial valuation of liabilities based on rates of mortality, termination, disability, and retirement, as well as investment return and other statistical

measures specific to the particular group. The allocation of costs also depends on an asset smoothing method described in the assumptions section at the end of this report.

Prior to Act 91 of the 2019 regular session, the Firefighters' Retirement System was valued based upon the Individual Entry Age Normal Actuarial Cost Method. Act 91 changed the funding method to the Frozen Initial Liability Actuarial Cost Method with a frozen UAL determined as the remaining entry age normal unfunded actuarial accrued liability as of June 30, 2019. Under the Frozen Initial Liability Actuarial Cost Method, the system's normal cost incorporates the cost of additional annual accruals, changes in salary, changes in assumptions, and gains and losses. This funding method does not produce new unfunded accrued liability each year. Instead, the unfunded accrued liability represents a measure of the system's level of funding at the time the funding method changed.

Each year, a determination is made of two cost components (the normal cost and the amortization payments on the frozen unfunded actuarial accrued liability), and the actuarially required contributions are based on the sum of these two components plus administrative expenses. The normal cost refers to the portion of annual cost based on the salary of active participants. Each year the frozen UAL grows with interest and is reduced by payments. Under the Frozen Initial Liability Actuarial Cost Method, changes in plan experience, benefits, or assumptions do not affect the frozen unfunded actuarial accrued liability. These items increase or decrease future normal costs. Payroll growth affects plan costs. Payments on the system's non-merger portion of the frozen unfunded accrued liability are set to decrease by 1% per year and payments on the system's merger portion of the frozen unfunded accrued liability are set based upon a level schedule. Therefore, if payroll increases, these costs are reduced as a percentage of payroll.

To establish the actuarially required contribution in any given year, it is necessary to define the assumptions, funding method, and method of amortizing the UAL. Thus, the determination of the actuarially required contribution depends upon the funding method and amortization schedules employed. Regardless of the method selected, the ultimate cost of providing benefits is dependent upon the benefits, expenses, and investment earnings. Only to the extent that some methods accumulate assets more rapidly and thus produce greater investment earnings does the funding method affect the ultimate cost.

R.S. 11:103 governs the calculation of the annual actuarially determined employer contribution rate for statewide retirement systems. This statute describes the components of the employer contribution rate found in Exhibit I. We believe that the minimum recommended net direct employer contribution rate developed within this report represents a Reasonable Actuarially Determined Contribution (or RADDC) under the terms set forth in the actuarial standards of practice. We believe that the cost allocation procedure set forth in the statutes reasonably balances benefit security and intergenerational equity. The consistent payment of actuarially determined contributions based on Louisiana's constitutional requirements significantly improves the benefit security of plan members and retirees. The system's funding methodology seeks intergenerational equity by spreading actuarial costs over the future working lifetime of members. With the use of reasonable actuarial assumptions, the system's contribution allocation procedure should produce reasonably stable and predictable results. The system's annual valuation directly calculates the present value of future benefits for each member and former member. This measure accounts for expected future benefit payments and the expected duration of those payments. The valuation results are based on plan provisions in effect as of the valuation date. Therefore, results will be affected if plan provisions are changed in the future.

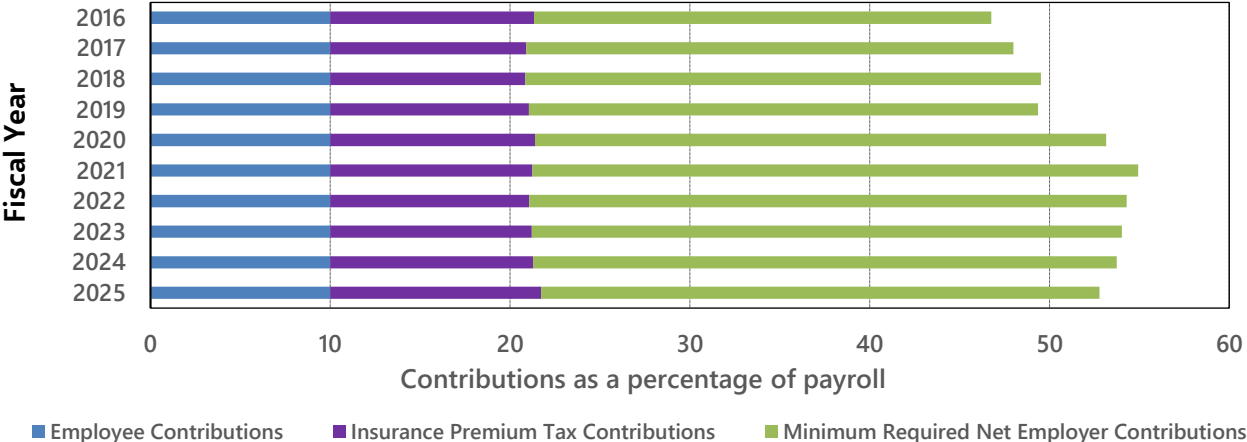
The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The employer normal cost for Fiscal 2025, interest adjusted for mid-year payment is \$60,657,604. The interest adjusted amortization payments on the system’s frozen unfunded actuarial accrued liability totaled \$63,669,160. The total actuarially required contribution is determined by summing these two values together with estimated administrative expenses. As given in line 16 of Exhibit I the total actuarially required contribution for Fiscal 2025 is \$127,690,559. We estimate insurance premium taxes of \$34,828,941, or 11.72% of payroll, will be paid to the system in Fiscal 2025. This level of Insurance Premium Taxes represents a 0.45% increase over the prior year as a percentage of payroll. Hence, the total actuarially required net direct employer contribution for Fiscal 2025 amounts to \$92,861,618 or 31.24% of payroll. R.S. 11:103 requires that the net direct employer contributions be rounded to the nearest 0.25%. The resulting Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2026 is 31.25%.

During Fiscal 2024, the Board of Trustees set the employer contribution rate at 33.25% which exceeded the Minimum Recommended Net Direct Employer Contribution Rate of 32.50% set by the Fiscal 2022 actuarial valuation. When the Board acts to hold the employer contribution rate above the minimum rate, any excess funds resulting from maintaining the rate are combined with any contribution surplus or offset by any contribution shortfall to determine if any funds are to be added to the system’s Funding Deposit Account. For Fiscal 2024, the net contribution gain was \$6,033,757. This amount was deposited into the system’s Funding Deposit Account.

Since the Board of Trustees elected to hold the employer contribution rate for Fiscal 2025 at 33.25% of payroll (above the Minimum Recommended Net Direct Employer Contribution Rate of 32.50%) the excess employer contributions resulting from this action will be combined with the system’s contribution surplus or shortfall to determine whether additional funds will be added to the system’s Funding Deposit Account in the next valuation.

The cost of providing benefits to current and former members is borne by employees and employers and relies in part on dedicated insurance premium tax funds. **Figure 7** shows the breakdown of annual costs as a percentage of payroll over the past ten years.

**Figure 7. Components of Actuarial Funding**



Liability and asset experience as well as changes in assumptions and benefits can increase or decrease plan costs. In addition to these factors, any COLA granted in the prior fiscal year will increase required future contributions. New entrants to the system can also increase or decrease costs as a percentage of payroll depending upon their demographic distribution and other factors related to prior plan experience. Finally, contributions above or below requirements may reduce or increase future costs.

The effects of various factors on the system’s cost structure are outlined below:

RECONCILIATION OF THE NORMAL COST ACCRUAL RATE	
Employer’s Normal Cost Accrual Rate – Fiscal 2024	19.6288%
Factors Increasing the Normal Cost Accrual Rate:	
Asset Experience Loss	0.2656%
Plan Liability Experience Loss	0.8178%
Factors Decreasing the Normal Cost Accrual Rate:	
New Members	0.2814%
Employer’s Normal Cost Accrual Rate – Fiscal 2025	20.4308%

**LOW-DEFAULT RISK OBLIGATION MEASURE (LDROM)**

The retirement system’s annual actuarial funding valuation determines the employer’s minimum contribution rate based upon a set of actuarial assumptions found to be reasonable individually and in the aggregate for the purpose of the measurement. For a system like the Firefighters’ Retirement System that is open to new members and expected to exist in perpetuity, boards of trustees generally elect to invest system assets in a basket of asset classes that subject the system to a number of investment risks, including the risk of default. Such risks are generally mitigated through diversification among the asset classes and through portfolio construction within each asset class. When considering expert opinions about expectations of future returns, generally called capital market assumptions, and when considering historical evidence, it is found that a portfolio composed of a combination of asset classes (including risky assets such as equities, fixed income assets, real estate investments, and other alternative investments) earns a larger return than risk-free or low-default-risk fixed income assets provide. The larger expected return is often referred to as a risk premium as investors generally require a larger return to accept the added risk. It is precisely this exchange of return for added risk that is at the heart of the low-default-risk obligation measure (LDROM) defined within Actuarial Standard of Practice #4. Were the system to simply invest in low-default-risk fixed income securities, the system would be expected to earn less from investment markets but would also expect less portfolio return volatility and less chance of investment default. Since investment income directly offsets the contributions owed by the system’s employers, building a portfolio that includes risky assets can be a strategy to lower the long-term requirement for employer contributions, but in doing so, employers accept certain investment risks.

The LDRM can help to quantify both the impact of investing in a portfolio that includes risky assets and using a long-term expected rate of return from such a portfolio to discount liabilities. In addition, the LDRM can help stakeholders understand how much liabilities would increase if the system was measured using a discount rate that did not include the risk premium for assets with higher default risk.

The standard of practice requires the following when determining the LDRM:

- The actuary should use an immediate gain actuarial cost method.
- The actuary should select a discount rate, or rates, derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future.
- Other than the discount rate or rates, the actuary may use the same assumptions used in the funding valuation for this measure.

The biggest decision in making LDRM calculations is the discount rate or rates to use. The standard discusses several possibilities. We have elected to base our LDRM calculations on discount rates derived from high-quality corporate bonds, which we believe best represent low-default-risk fixed income investments. For the purpose of these calculations, we intend to use the U.S. Department of the Treasury’s High-Quality Market (HQM) Corporate Bond Yield Curve weighted according to the closed fund cash flows developed for the most recently completed system specific GASB 67 analyses. The LDRM calculations have been performed based on the Entry Age Normal funding method.

The U.S. Treasury HQM Corporate Bond Yield Curve is developed using regression variables, projects yield curves beyond the longest maturity date and makes use of bond market characteristics to help generate a stable curve. It represents spot yields of corporate bonds rated AAA, AA, or A and is available monthly on the IRS website. When the June 2024 HQM Corporate Bond Yield Curve is weighted based on the GASB 67 cash flows, the effective single discount rate derived from the analysis is 5.45%.

In the following section, we disclose an LDRM-based actuarial accrued liability, which can be compared to the entry age normal actuarial accrued liability, and an LDRM-based funded ratio, which can be compared to the system’s funded ratio determined based on the entry age normal actuarial accrued liability. Our calculations are based on the effective single discount rate derived from the U.S. Treasury HQM Corporate Bond Yield Curve of 5.45%. All other assumptions match those used to determine funding liabilities.

LDRM Comparison	Funding Valuation	LDRM Valuation
Discount Rate	6.90%	5.45%
Accrued Liability for Active Members	\$ 1,469,768,690	\$ 1,822,957,076
Accrued Liability for Terminated Members	\$ 35,263,934	\$ 42,971,565
Accrued Liability for Retired Members	\$ 1,568,175,129	\$ 1,770,574,625
Total Actuarial Accrued Liability (AAL)	\$ 3,073,207,753	\$ 3,636,503,266
Funded Ratio (AVA/AAL)	81.86%	69.18%

The differences in the measures shown above can be viewed within the risk/return framework. By accepting added investment risk, the system is expected to significantly reduce the employer’s responsibility to fund system liabilities over the long run, but that decision will likely result in greater variability in employer contributions over time as risky assets typically experience greater return volatility.

### COST-OF-LIVING ADJUSTMENTS

During Fiscal 2024, the actual cost-of-living (as measured by the US Department of Labor CPI-U) increased by 3.0%.

RELEVANT COLA STATUTES	
Statute	Description
R.S. 11:2260A(7)	Allows the Board to grant cost-of-living adjustments of up to 3% of each retiree’s current benefit. Applies to those retired for at least one year.
R.S. 11:246	Provides supplemental cost-of-living adjustments to retirees and beneficiaries over the age of 65 equal to 2% of the benefit in payment on October 1, 1977, or the date the benefit was originally received if retirement commenced after that date. Applies to those retired for at least one year.
R.S. 11:241	Provides for cost-of-living benefits payable based on a formula equal to up to \$1 times the total of the number of years of credited service accrued at retirement or at death of the member or retiree plus the number of years since retirement or since death of the member or retiree to the system’s fiscal year end preceding the payment of the benefit increase. Applies to those retired for at least one year.

R.S. 11:243 sets forth the funding criteria necessary in order to grant cost-of-living adjustments to regular retirees and beneficiaries (who are neither the surviving spouse nor children of the retiree.) The criteria for the system to qualify as eligible to grant any such increase is as follows: a funded ratio of at least 70% if the system has not granted a benefit increase to retirees, survivors, or beneficiaries in any of the three most recent fiscal years; a funded ratio of at least 80% if the system has not granted such an increase in any of the two most recent fiscal years; or a funded ratio of at least 90% if the system has not granted such an increase in the most recent fiscal year. The funded ratio at any fiscal year end is the ratio of the actuarial value of assets to the actuarial accrued liability under the funding method prescribed by the legislative auditor (currently the Projected Unit Credit Method for this system).

For Fiscal 2024, the system experienced net actuarial investment earnings of \$8,579,644 below the actuarial assumed earnings rate of 6.90% in effect for Fiscal 2024. Therefore, there were no excess investment earnings in Fiscal 2024 and the Board is not authorized to grant a cost-of-living adjustment in 2025.

## EXHIBIT I

### ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1. Present Value of Future Benefits .....	\$ 3,915,021,441
2. Frozen Unfunded Actuarial Accrued Liability .....	\$ 422,057,401
3. Actuarial Value of Assets .....	\$ 2,515,845,951
4. Funding Deposit Account Credit Balance .....	\$ 6,033,757
5. Present Value of Future Employee Contributions .....	\$ 323,077,615
6. Present Value of Future Employer Normal Costs (1 - 2 - (3 - 4) - 5) .....	\$ 660,074,231
7. Present Value of Future Salaries .....	\$ 3,230,776,147
8. Employer Normal Cost Accrual Rate (6 ÷ 7) .....	20.430825%
9. Projected Fiscal 2025 Salary for Current Membership .....	\$ 287,151,105
10. Employer Normal Cost as of July 1, 2024 (8 × 9) .....	\$ 58,667,340
11. Employer Normal Cost Interest Adjusted for Mid-year Payment .....	\$ 60,657,604
12. Amortization Payment on Remaining Frozen Unfunded Accrued Liability .....	\$ 61,580,083
13. Amortization Payment Interest Adjusted for Mid-year Payment .....	\$ 63,669,160
14. TOTAL Employer Normal Cost and Amortization Payment (11 + 13) .....	\$ 124,326,764
15. Estimated Administrative Cost for Fiscal 2025 .....	\$ 3,363,795
16. GROSS Employer Actuarially Required Contribution for Fiscal 2025 (14 + 15) .....	\$ 127,690,559
17. Projected Insurance Premium Taxes for Fiscal 2025 .....	\$ (34,828,941)
18. Net Direct Employer Actuarially Required Contribution for Fiscal 2025 (16 + 17) .....	\$ 92,861,618
19. Projected Payroll for Fiscal 2025 .....	\$ 297,218,825
20. Employers' Minimum Net Direct Actuarially Required Contribution as a % of Projected Payroll for Fiscal 2025 (18 ÷ 19) .....	31.24%
21. Board Adopted Employer Contribution Rate for Fiscal 2025 .....	33.25%
22. Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2026 (20, Rounded to nearest 0.25%) .....	31.25%

\* The above rates are for members with earnings greater than the Department of HHS poverty guidelines. For members with earnings below the poverty guidelines, employer rates will be 2.0% higher and employee rates will be 2.0% lower.



## EXHIBIT II PRESENT VALUE OF FUTURE BENEFITS

### PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits .....	\$ 2,213,530,709
Survivor Benefits .....	36,271,652
Disability Benefits .....	20,189,871
Vested Termination Benefits .....	25,074,819
Refunds of Contributions .....	16,515,327

TOTAL Present Value of Future Benefits for Active Members ..... \$ 2,311,582,378

### PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement..	\$ 28,555,451
Terminated Members with Reciprocals	
Due Benefits at Retirement.....	0
Terminated Members Due a Refund.....	6,708,483

TOTAL Present Value of Future Benefits for Terminated Members..... \$ 35,263,934

### PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees	
Maximum .....	\$ 266,036,765
Option 1 .....	132,136,052
Option 2 .....	685,213,299
Option 3 .....	197,600,344
Option 4 .....	10,395,544
Option 5 .....	0

TOTAL Regular Retirees ..... \$ 1,291,382,004

Disability Retirees ..... 38,679,679

Survivors & Widows ..... 91,322,391

DROP Lifetime Annuities ..... 2,022,835

DROP Account Balances Payable to Retirees\* ..... 140,036,558

IBO Balances Payable to Retirees\* ..... 4,731,662

TOTAL Present Value of Future Benefits for Retirees & Survivors ..... \$ 1,568,175,129

TOTAL PRESENT VALUE OF FUTURE BENEFITS ..... \$ 3,915,021,441

\*DROP/IBO Balances include estimated interest for Fiscal 2024

## EXHIBIT III – SCHEDULE A MARKET VALUE OF ASSETS

### CURRENT ASSETS:

Cash in Banks.....	\$	15,805,048	
Contributions Receivable.....		12,147,408	
Accrued Interest and Dividends.....		5,919,283	
Prepaid Expenses.....		20,977	
Notes Receivable for Mergers.....		4,480,764	
TOTAL CURRENT ASSETS.....	\$		38,373,480
Property Plant & Equipment.....	\$		2,014,247

### INVESTMENTS:

Cash Equivalents.....	\$	92,280,226	
Equities.....		1,340,226,308	
Fixed Income.....		715,281,511	
Real Estate.....		139,085,904	
Alternative Investments.....		150,770,375	
Multi-Asset Strategies.....		38,058,425	
TOTAL INVESTMENTS.....	\$		2,475,702,749
DEFERRED OUTFLOWS.....	\$		99,723
TOTAL ASSETS.....	\$		2,516,190,199

### CURRENT LIABILITIES:

Accounts Payable.....	\$	2,634,133	
Investments Payable.....		2,724,410	
Other Post-Employment Benefits.....		388,800	
TOTAL CURRENT LIABILITIES.....	\$		5,747,343
DEFERRED INFLOWS OF RESOURCES.....	\$		292,401
TOTAL LIABILITIES.....	\$		6,039,744
MARKET VALUE OF ASSETS.....	\$		2,510,150,455

## EXHIBIT III – SCHEDULE B ACTUARIAL VALUE OF ASSETS

Excess (Shortfall) of invested income  
for current and previous 4 years:

Fiscal year 2024.....	\$ 80,291,537
Fiscal year 2023.....	42,701,843
Fiscal year 2022.....	(414,625,538)
Fiscal year 2021.....	351,501,915
Fiscal year 2020.....	(72,248,326)
Total for five years.....	\$ (12,378,569)

Deferral of excess (shortfall) of invested income:

Fiscal year 2024 (80%).....	\$ 64,233,230
Fiscal year 2023 (60%).....	25,621,106
Fiscal year 2022 (40%).....	(165,850,215)
Fiscal year 2021 (20%).....	70,300,383
Fiscal year 2020 ( 0%).....	0
Total deferred for year.....	\$ (5,695,496)

Market value of plan net assets, end of year ..... \$ 2,510,150,455

Preliminary actuarial value of plan assets, end of year ..... \$ 2,515,845,951

Actuarial value of assets corridor

85% of market value, end of year.....	\$ 2,133,627,887
115% of market value, end of year.....	\$ 2,886,673,023

Final actuarial value of plan net assets, end of year..... \$ 2,515,845,951

**EXHIBIT IV**  
**PRESENT VALUE OF FUTURE CONTRIBUTIONS**

Employee Contributions to the Annuity Savings Fund .....	\$	323,077,615
Employer Normal Contributions to the Pension Accumulation Fund .....		660,074,231
Employer Amortization Payments to the Pension Accumulation Fund .....		422,057,401
Funding Deposit Account Credit Balance.....		(6,033,757)
 TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS .....	 \$	 1,399,175,490

**EXHIBIT V - SCHEDULE A**  
**CHANGE IN FROZEN UNFUNDED ACTUARIAL ACCRUED LIABILITY**

Prior Year Frozen Unfunded Accrued Liability.....	\$	456,965,908
Interest on Frozen Unfunded Accrued Liability.....	\$	31,530,648
TOTAL Increase in Frozen Unfunded Accrued Liability .....	\$	31,530,648
Amortization Payment on Frozen Unfunded Accrued Liability.....	\$	62,150,754
Interest on Amortization Payment .....	\$	4,288,401
TOTAL Decrease in Frozen Unfunded Accrued Liability .....	\$	66,439,155
NET Change in Frozen Unfunded Accrued Liability.....	\$	(34,908,507)
 CURRENT YEAR FROZEN UNFUNDED ACCRUED LIABILITY .....	 \$	 422,057,401

**EXHIBIT V – SCHEDULE B**  
**RECONCILIATION OF CONTRIBUTIONS**

Interest Adjusted Prior Year Employer Normal Cost.....	\$	56,046,425
Interest Adjusted Amortization Payment on Remaining UAL .....		66,439,156
Interest Adjusted Administrative Expenses.....		2,713,825
TOTAL Interest Adjusted Actuarially Required Contributions .....	\$	125,199,406
Interest Adjusted Direct Employer Contributions .....	\$	98,993,965
Interest Adjusted Insurance Premium Taxes .....		32,239,198
TOTAL Interest Adjusted Employer Contributions.....	\$	131,233,163
 CONTRIBUTION SHORTFALL (SURPLUS) .....	 \$	 (6,033,757)

>

**EXHIBIT V - SCHEDULE C**  
**AMORTIZATION OF FROZEN UNFUNDED ACTUARIAL ACCRUED LIABILITY**

**June 30, 2024**

<b>FISCAL YEAR</b>		<b>AMORT. PERIOD</b>	<b>INITIAL BALANCE</b>	<b>YEARS REMAINING</b>	<b>REMAINING BALANCE</b>	<b>AMORT. PAYMENTS (BOY)</b>
1993	Merger Loss	30	\$ 13,485,002	0	\$ 0	\$ 0
1995	Merger Loss	30	41,779,611	1	3,213,999	3,213,999
1996	Merger Loss	30	1,772,399	2	263,603	136,197
1997	Merger Loss	30	890,324	3	192,076	68,342
1998	Merger Loss	30	1,602,435	4	445,922	122,874
1999	Merger Loss	30	14,104,876	5	4,748,357	1,080,432
2001	Merger Loss	30	3,117,590	7	1,377,835	238,327
2007	Merger Loss	30	1,065,812	13	726,780	80,887
2008	Merger Loss	30	1,556,324	14	1,109,028	117,916
2011	Merger Loss	30	329,132	17	260,855	24,821
2019	Cumulative Non-Merger Bases	15	549,175,053	10	409,718,946	56,496,288

TOTAL Frozen Unfunded Actuarial Accrued Liability as of July 1, 2024	\$ 422,057,401	
TOTAL Fiscal 2025 Amortization Payments on July 1, 2024		\$ 61,580,083
TOTAL Fiscal 2025 Amortization Payments Adjusted to Mid-Year		\$ 63,669,160

Sum of Remaining Balances and Amortization Payments may not equal total UAL or payments due to rounding

## EXHIBIT VI ANALYSIS OF CHANGE IN ASSETS

Actuarial Value of Assets (June 30, 2023)..... \$ 2,361,258,223

### INCOME:

Member Contributions.....	\$	28,797,803
Employer Contributions.....		95,745,830
Irregular Contributions.....		4,199,414
Insurance Premium Taxes.....		31,181,383
Transfers From Other Systems.....		212,404
Other Income.....		265,677

Total Contributions..... \$ 160,402,511

Net Appreciation of Investments.....	\$	213,356,856
Interest & Dividends.....		32,201,848
Legal Settlement.....		6,077
Investment Expense.....		(8,442,463)

Net Investment Income..... \$ 237,122,318

TOTAL Income..... \$ 397,524,829

### EXPENSES:

Retirement Benefits (Including DROP).....	\$	153,734,248
Refunds of Contributions.....		3,053,111
Transfers to Other Systems.....		757,710
Administrative Expenses (Includes OPEB).....		2,624,780

TOTAL Expenses..... \$ 160,169,849

Net Market Value Income for Fiscal 2024 (Income - Expenses)..... \$ 237,354,980

Unadjusted Assets as of June 30, 2024

(Assets Previous Year + Net Income)..... \$ 2,598,613,203

Adjustment for Actuarial Smoothing..... \$ (82,767,252)

Actuarial Value of Assets: (June 30, 2024)..... \$ 2,515,845,951

**EXHIBIT VII  
FUNDING DEPOSIT ACCOUNT**

Funding Deposit Account Balance as of June 30, 2023 .....	\$	0
Interest on Opening Balance at 6.90% .....		0
Contributions to the Funding Deposit Account.....		6,033,757
Withdrawals from the Funding Deposit Account.....		0
Funding Deposit Account Balance as of June 30, 2024 .....	\$	6,033,757

**EXHIBIT VIII – SCHEDULE A  
PENSION BENEFIT OBLIGATION**

Present Value of Credited Projected Benefits Payable to Current Employees.....	\$	1,402,735,734
Present Value of Benefits Payable to Terminated Employees .....		35,263,934
Present Value of Benefits Payable to Current Retirees and Beneficiaries .....		1,568,175,129
TOTAL PENSION BENEFIT OBLIGATION .....	\$	3,006,174,797
NET ACTUARIAL VALUE OF ASSETS .....	\$	2,515,845,951
Ratio of Net Actuarial Value of Assets to Pension Benefit Obligation .....		83.69%

**EXHIBIT VIII - SCHEDULE B  
ENTRY AGE NORMAL ACTUARIAL ACCRUED LIABILITIES**

Accrued Liability for Active Employees .....	\$	1,469,768,690
Accrued Liability for Terminated Employees.....	\$	35,263,934
Accrued Liability for Current Retirees and Beneficiaries.....	\$	1,568,175,129
TOTAL ENTRY AGE NORMAL ACCRUED LIABILITY .....	\$	3,073,207,753
ACTUARIAL VALUE OF ASSETS .....	\$	2,515,845,951
Ratio of Net Actuarial Value of Assets to Entry Age Normal Accrued Liability.....		81.86%

## EXHIBIT IX CENSUS DATA

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2023	4,443	1,178	248	2,744	8,613
Additions to Census					
Initial membership	425	61			486
Omitted in error last year		2			2
Death of another member				18	18
Adjustment for multiple records	1	2			3
Change in Status during Year					
Actives terminating service	(139)	139			
Actives who retired	(73)			73	
Actives entering DROP	(52)		52		
Term. members rehired	30	(30)			
Term. members who retire		(8)		8	
Retirees who are rehired					
Refunded who are rehired	6	1			7
DROP participants retiring			(93)	93	
DROP returned to work	13		(13)		
Omitted in error last year					
Eliminated from Census					
Refund of contributions	(64)	(74)			(138)
Deaths		(1)		(63)	(64)
Included in error last year					
Adjustment for multiple records				(16)	(16)
Number of members as of June 30, 2024	4,590	1,270	194	2,857	8,911



### Actives Census by Age:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 - 20	86	5	91	39,081	3,556,334
21 - 25	516	29	545	43,368	23,635,387
26 - 30	655	41	696	49,225	34,260,756
31 - 35	690	55	745	55,965	41,693,943
36 - 40	719	43	762	63,106	48,086,654
41 - 45	621	58	679	71,429	48,500,198
46 - 50	484	29	513	77,162	39,584,273
51 - 55	339	27	366	85,165	31,170,267
56 - 60	120	17	137	87,915	12,044,374
61 - 65	26	12	38	84,467	3,209,737
66 - 70	12	3	15	103,072	1,546,076
71 - 75	2	0	2	141,185	282,370
76 - 80	1	0	1	107,392	107,392
<b>Total</b>	<b>4,271</b>	<b>319</b>	<b>4,590</b>	<b>62,675</b>	<b>287,677,761</b>

\* The active census includes 2,191 actives with vested benefits, including 52 active former DROP participants. The 194 current DROP participants are excluded.

### DROP Participants by Age:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	1	0	1	60,566	60,566
46 - 50	12	1	13	64,787	842,236
51 - 55	87	2	89	71,644	6,376,273
56 - 60	66	4	70	72,581	5,080,647
61 - 65	17	1	18	61,406	1,105,313
66 - 70	2	1	3	45,946	137,838
<b>Total</b>	<b>185</b>	<b>9</b>	<b>194</b>	<b>70,118</b>	<b>13,602,873</b>

### Terminated Members Due a Deferred Retirement Benefit:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	9	0	9	22,290	200,611
36 - 40	19	1	20	25,030	500,593
41 - 45	31	5	36	31,633	1,138,771
46 - 50	41	3	44	31,754	1,397,174
51 - 55	19	0	19	22,651	430,375
56 - 60	1	0	1	109,147	109,147
61 - 65	1	0	1	73,705	73,705
<b>Total</b>	<b>121</b>	<b>9</b>	<b>130</b>	<b>29,618</b>	<b>3,850,376</b>

### Terminated Members Due a Refund of Contributions:

Contributions Ranging		Number	Total
From	To		Contributions
0	- 99	83	4,354
100	- 499	259	69,778
500	- 999	125	86,584
1,000	- 1,999	141	198,891
2,000	- 4,999	185	600,522
5,000	- 9,999	138	1,008,044
10,000	- 19,999	113	1,585,363
20,000	- 99,999	95	3,274,118
100,000	& Above	1	107,635
<b>Total</b>		<b>1,140</b>	<b>6,935,289</b>

Excludes \$9,477 in contributions due to the heirs of deceased members.

### Regular Retirees:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	2	0	2	69,450	138,900
46 - 50	43	2	45	55,879	2,514,542
51 - 55	176	12	188	58,519	11,001,657
56 - 60	383	26	409	54,788	22,408,468
61 - 65	511	25	536	54,372	29,143,510
66 - 70	410	25	435	51,959	22,602,237
71 - 75	305	10	315	45,321	14,276,161
76 - 80	212	6	218	39,647	8,642,955
81 - 85	94	0	94	39,652	3,727,297
86 - 90	41	0	41	33,701	1,381,752
91 - 95	10	0	10	23,230	232,303
96 - 100	2	0	2	29,599	59,197
101 - 105	1	0	1	19,415	19,415
<b>Total</b>	<b>2,190</b>	<b>106</b>	<b>2,296</b>	<b>50,587</b>	<b>116,148,394</b>

### Disability Retirees:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
26 - 30	1	1	2	25,872	51,743
31 - 35	1	0	1	11,694	11,694
36 - 40	1	0	1	29,063	29,063
41 - 45	11	0	11	31,456	346,016
46 - 50	14	2	16	31,610	505,753
51 - 55	22	2	24	27,764	666,337
56 - 60	11	3	14	23,177	324,481
61 - 65	18	1	19	23,889	453,898
66 - 70	19	1	20	20,033	400,660
71 - 75	15	2	17	21,605	367,290
76 - 80	5	0	5	20,406	102,029
81 - 85	2	0	2	7,966	15,932
86 - 90	4	0	4	12,951	51,803
91 - 95	2	0	2	12,879	25,757
<b>Total</b>	<b>126</b>	<b>12</b>	<b>138</b>	<b>24,293</b>	<b>3,352,456</b>

**Survivors:**

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 20	12	13	25	5,827	145,673
21 - 25	5	2	7	5,760	40,318
26 - 30	0	3	3	8,534	25,602
31 - 35	0	2	2	20,618	41,235
36 - 40	1	5	6	32,540	195,242
41 - 45	1	7	8	27,400	219,199
46 - 50	2	8	10	22,774	227,735
51 - 55	1	20	21	33,938	712,707
56 - 60	1	32	33	30,945	1,021,187
61 - 65	1	37	38	30,896	1,174,051
66 - 70	2	40	42	31,487	1,322,456
71 - 75	0	56	56	25,508	1,428,470
76 - 80	1	52	53	22,647	1,200,300
81 - 85	0	51	51	23,996	1,223,811
86 - 90	0	36	36	20,974	755,059
91 - 95	0	30	30	16,592	497,749
96 - 100	0	2	2	12,249	24,497
<b>Total</b>	<b>27</b>	<b>396</b>	<b>423</b>	<b>24,244</b>	<b>10,255,291</b>

### Active Members:

Attained Ages	Completed Years of Service								Total
	0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 & Over	
0 - 20	71	20	-	-	-	-	-	-	91
21 - 25	172	356	17	-	-	-	-	-	545
26 - 30	99	302	280	15	-	-	-	-	696
31 - 35	40	148	292	246	19	-	-	-	745
36 - 40	25	76	179	225	249	8	-	-	762
41 - 45	14	43	82	130	222	175	13	-	679
46 - 50	10	11	30	70	114	168	107	3	513
51 - 55	1	11	19	34	46	102	115	38	366
56 - 60	-	2	7	18	23	28	37	22	137
61 - 65	-	-	-	4	7	9	3	15	38
66 - 70	-	-	-	-	1	4	1	9	15
71 & Over	-	-	-	-	-	-	-	3	3
<b>Total</b>	<b>432</b>	<b>969</b>	<b>906</b>	<b>742</b>	<b>681</b>	<b>494</b>	<b>276</b>	<b>90</b>	<b>4,590</b>

### Average Annual Salary of Active Members:

Attained Ages	Completed Years of Service								Total
	0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 & Over	
0 - 20	38,022	42,840	-	-	-	-	-	-	39,081
21 - 25	38,216	45,438	52,140	-	-	-	-	-	43,368
26 - 30	40,375	47,090	54,082	59,968	-	-	-	-	49,225
31 - 35	41,886	47,606	55,234	63,076	69,890	-	-	-	55,965
36 - 40	42,787	51,085	57,130	64,728	71,237	75,790	-	-	63,106
41 - 45	47,845	52,064	57,394	65,487	76,509	80,959	93,783	-	71,429
46 - 50	46,119	46,621	56,423	65,077	74,624	80,713	93,540	95,490	77,162
51 - 55	37,678	64,865	61,745	67,117	78,817	84,265	94,450	102,147	85,165
56 - 60	-	85,423	61,498	63,464	72,702	84,413	104,752	108,597	87,915
61 - 65	-	-	-	58,053	72,729	71,586	110,873	99,435	84,467
66 - 70	-	-	-	-	67,610	75,021	129,761	116,514	103,072
71 & Over	-	-	-	-	-	-	-	129,921	129,921
<b>Total</b>	<b>39,777</b>	<b>47,284</b>	<b>55,614</b>	<b>64,293</b>	<b>74,057</b>	<b>81,451</b>	<b>95,753</b>	<b>105,412</b>	<b>62,675</b>

**Terminated Members Due a Deferred Retirement Benefit:**

Attained Ages	Years until Retirement Eligibility								Total
	0 - 1	1 - 2	2 - 3	3 - 5	5 - 10	10 - 15	15 - 20	20 & Over	
0 - 30	-	-	-	-	-	-	-	-	-
31 - 35	-	-	-	-	-	-	3	6	9
36 - 40	-	-	-	-	-	1	19	-	20
41 - 45	-	-	-	-	10	26	-	-	36
46 - 50	3	3	3	6	29	-	-	-	44
51 - 55	4	2	5	8	-	-	-	-	19
56 - 60	1	-	-	-	-	-	-	-	1
61 - 65	1	-	-	-	-	-	-	-	1
66 - 70	-	-	-	-	-	-	-	-	-
71 & Over	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>9</b>	<b>5</b>	<b>8</b>	<b>14</b>	<b>39</b>	<b>27</b>	<b>22</b>	<b>6</b>	<b>130</b>

**Average Annual Benefits of Terminated Members Due a Deferred Retirement Benefit:**

Attained Ages	Years until Retirement Eligibility								Total
	0 - 1	1 - 2	2 - 3	3 - 5	5 - 10	10 - 15	15 - 20	20 & Over	
0 - 30	-	-	-	-	-	-	-	-	-
31 - 35	-	-	-	-	-	-	23,015	21,928	22,290
36 - 40	-	-	-	-	-	37,873	24,354	-	25,030
41 - 45	-	-	-	-	41,924	27,674	-	-	31,633
46 - 50	43,430	46,295	45,431	35,634	26,824	-	-	-	31,754
51 - 55	21,441	22,900	20,046	24,823	-	-	-	-	22,651
56 - 60	109,147	-	-	-	-	-	-	-	109,147
61 - 65	73,705	-	-	-	-	-	-	-	73,705
66 - 70	-	-	-	-	-	-	-	-	-
71 & Over	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>44,323</b>	<b>36,937</b>	<b>29,566</b>	<b>29,456</b>	<b>30,696</b>	<b>28,052</b>	<b>24,171</b>	<b>21,928</b>	<b>29,618</b>

## Service Retirees:

Attained Ages	Completed Years Since Retirement								Total
	0 - 1	1 - 2	2 - 3	3 - 5	5 - 10	10 - 15	15 - 20	20 & Over	
0 - 50	20	9	8	10	-	-	-	-	47
51 - 55	55	33	27	46	26	1	-	-	188
56 - 60	57	38	56	82	135	32	9	-	409
61 - 65	25	17	28	70	173	158	64	1	536
66 - 70	9	8	10	18	98	154	109	29	435
71 - 75	1	-	2	2	19	57	91	143	315
76 - 80	-	-	1	-	4	15	31	167	218
81 - 85	-	-	-	-	-	2	7	85	94
86 - 90	-	-	-	-	-	1	1	39	41
91 & Over	-	-	-	-	-	-	-	13	13
<b>Total</b>	<b>167</b>	<b>105</b>	<b>132</b>	<b>228</b>	<b>455</b>	<b>420</b>	<b>312</b>	<b>477</b>	<b>2,296</b>

## Average Annual Benefits Payable to Service Retirees:

Attained Ages	Completed Years Since Retirement								Total
	0 - 1	1 - 2	2 - 3	3 - 5	5 - 10	10 - 15	15 - 20	20 & Over	
0 - 50	60,876	57,127	57,455	46,213	-	-	-	-	56,456
51 - 55	63,694	58,911	59,846	55,301	50,361	85,370	-	-	58,519
56 - 60	64,970	57,629	59,205	52,257	52,606	47,649	32,020	-	54,788
61 - 65	59,719	63,926	61,489	63,182	55,069	50,970	44,088	17,529	54,372
66 - 70	76,055	60,793	58,246	50,214	61,123	52,748	41,831	43,872	51,959
71 - 75	46,788	-	91,192	40,842	56,564	52,434	46,546	39,623	45,321
76 - 80	-	-	121,532	-	49,918	40,626	42,852	38,227	39,647
81 - 85	-	-	-	-	-	53,203	38,679	39,413	39,652
86 - 90	-	-	-	-	-	55,370	30,747	33,221	33,701
91 & Over	-	-	-	-	-	-	-	23,917	23,917
<b>Total</b>	<b>63,762</b>	<b>59,250</b>	<b>60,599</b>	<b>55,699</b>	<b>55,390</b>	<b>51,301</b>	<b>43,381</b>	<b>38,358</b>	<b>50,587</b>

## Disability Retirees:

Attained Ages	Completed Years Since Retirement								Total
	0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 & Over	
0 - 30	-	2	-	-	-	-	-	-	2
31 - 35	-	1	-	-	-	-	-	-	1
36 - 40	1	-	-	-	-	-	-	-	1
41 - 45	1	10	-	-	-	-	-	-	11
46 - 50	1	7	6	1	-	1	-	-	16
51 - 55	1	6	6	5	4	2	-	-	24
56 - 60	-	-	1	5	3	3	2	-	14
61 - 65	-	1	1	3	5	4	2	3	19
66 - 70	-	-	1	1	2	5	4	7	20
71 - 75	-	-	-	1	-	3	2	11	17
76 - 80	-	-	-	-	-	-	2	3	5
81 & Over	-	-	-	-	-	2	-	6	8
<b>Total</b>	<b>4</b>	<b>27</b>	<b>15</b>	<b>16</b>	<b>14</b>	<b>20</b>	<b>12</b>	<b>30</b>	<b>138</b>

## Average Annual Benefits Payable to Disability Retirees:

Attained Ages	Completed Years Since Retirement								Total
	0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 & Over	
0 - 30	-	25,872	-	-	-	-	-	-	25,872
31 - 35	-	11,694	-	-	-	-	-	-	11,694
36 - 40	29,063	-	-	-	-	-	-	-	29,063
41 - 45	30,751	31,527	-	-	-	-	-	-	31,456
46 - 50	27,220	35,680	31,047	27,451	-	15,044	-	-	31,610
51 - 55	32,790	31,288	29,951	35,119	17,003	11,250	-	-	27,764
56 - 60	-	-	24,479	27,560	21,703	20,816	17,324	-	23,177
61 - 65	-	39,579	60,242	19,736	27,676	24,400	10,930	12,342	23,889
66 - 70	-	-	25,265	19,788	28,679	19,859	20,645	16,625	20,033
71 - 75	-	-	-	42,439	-	29,592	18,359	18,124	21,605
76 - 80	-	-	-	-	-	-	19,083	21,288	20,406
81 & Over	-	-	-	-	-	10,207	-	12,180	11,687
<b>Total</b>	<b>29,956</b>	<b>31,695</b>	<b>31,732</b>	<b>28,893</b>	<b>23,490</b>	<b>20,304</b>	<b>17,831</b>	<b>16,323</b>	<b>24,293</b>



### Surviving Beneficiaries of Former Members:

Attained Ages	Completed Years Since Retirement								Total
	0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 & Over	
0 - 30	-	12	11	6	2	2	2	-	35
31 - 35	-	-	2	-	-	-	-	-	2
36 - 40	-	3	1	1	1	-	-	-	6
41 - 45	-	1	3	2	2	-	-	-	8
46 - 50	-	1	2	2	2	1	1	1	10
51 - 55	-	3	3	4	4	2	3	2	21
56 - 60	1	2	8	8	5	6	2	1	33
61 - 65	-	2	7	8	10	3	6	2	38
66 - 70	-	2	1	6	14	9	4	6	42
71 - 75	-	-	3	4	7	13	16	13	56
76 - 80	-	1	1	2	2	13	11	23	53
81 & Over	-	-	-	1	2	7	17	92	119
<b>Total</b>	<b>1</b>	<b>27</b>	<b>42</b>	<b>44</b>	<b>51</b>	<b>56</b>	<b>62</b>	<b>140</b>	<b>423</b>

### Average Annual Benefits Payable to Survivors of Former Members:

Attained Ages	Completed Years Since Retirement								Total
	0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 & Over	
0 - 30	-	6,222	7,199	5,612	2,779	3,894	5,365	-	6,046
31 - 35	-	-	20,618	-	-	-	-	-	20,618
36 - 40	-	37,522	15,701	32,146	34,830	-	-	-	32,540
41 - 45	-	15,617	45,177	14,776	19,250	-	-	-	27,400
46 - 50	-	10,910	28,130	32,864	21,199	15,635	35,014	1,791	22,774
51 - 55	-	73,241	51,162	37,545	21,584	19,024	13,458	12,280	33,938
56 - 60	29,504	49,070	37,608	33,280	32,124	20,680	16,028	9,691	30,945
61 - 65	-	49,281	49,048	37,432	25,711	13,645	17,512	14,793	30,896
66 - 70	-	45,873	86,771	41,450	32,169	27,726	25,277	15,706	31,487
71 - 75	-	-	34,634	35,410	32,912	23,536	23,838	20,397	25,508
76 - 80	-	30,481	40,000	23,848	21,361	23,113	27,019	19,205	22,647
81 & Over	-	-	-	28,500	70,171	19,204	29,443	18,449	21,018
<b>Total</b>	<b>29,504</b>	<b>27,867</b>	<b>32,292</b>	<b>30,534</b>	<b>29,199</b>	<b>21,730</b>	<b>24,250</b>	<b>18,315</b>	<b>24,244</b>

## EXHIBIT X YEAR-TO-YEAR COMPARISON

	Fiscal 2024	Fiscal 2023	Fiscal 2022	Fiscal 2021
Number of Active Members	4,590	4,443	4,394	4,450
Number of Retirees & Survivors	2,857	2,744	2,669	2,578
DROP Participants	194	248	229	241
Number of Terminated Due Deferred	130	130	123	99
Number Terminated Due Refunds	1,140	1,048	969	811
Active Lives Payroll (excludes DROP participants)	\$ 287,677,761	\$ 266,532,270	\$ 253,487,351	\$ 249,159,310
Retiree Benefits in Payment	\$ 129,756,141	\$ 120,336,832	\$ 114,949,681	\$ 108,262,093
Market Value of Assets	\$ 2,510,150,455	\$ 2,272,795,475	\$ 2,079,446,096	\$ 2,326,798,869
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability	81.86%	80.71%	80.41%	78.76%
Actuarial Accrued Liability (EAN)	\$ 3,073,207,753	\$ 2,925,476,136	\$ 2,784,575,320	\$ 2,681,184,069
Actuarial Value of Assets	\$ 2,515,845,951	\$ 2,361,258,223	\$ 2,239,176,342	\$ 2,111,737,202
UAL (Funding Excess)	\$ 422,057,401	\$ 456,965,908	\$ 491,237,338	\$ 523,878,929
P.V. of Future Employer Normal	\$ 660,074,231	\$ 584,026,545	\$ 504,572,690	\$ 490,121,628
Present Value of Future Employee Contrib.	\$ 323,077,615	\$ 297,535,262	\$ 281,367,086	\$ 278,140,120
Present Value of Future Benefits	\$ 3,915,021,441	\$ 3,699,785,938	\$ 3,516,353,456	\$ 3,403,877,879
	Fiscal 2025	Fiscal 2024	Fiscal 2023	Fiscal 2022
Employee Contribution Rate Above Poverty Level	10.00%	10.00%	10.00%	10.00%
Required Tax Contributions as a Percentage of Projected Payroll	11.72%	11.27%	11.54%	11.06%
Actuarially Required Employer Contribution as a Percentage of Projected Payroll	31.24%	32.48%	32.49%	33.23%
Actual Employer Contribution as a Percentage of Projected Payroll	33.25%	33.25%	33.25%	33.75%

The above employee and employer contribution rates are for members with earnings greater than the Department of HHS poverty guidelines. For members with earnings below the poverty guidelines, employer rates will be 2.0% higher and employee rates will be 2.0% lower.

Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015
4,426	4,446	4,424	4,429	4,362	4,192
2,497	2,407	2,327	2,289	2,213	2,139
220	208	192	173	173	166
85	84	76	72	72	81
763	671	656	597	558	523
\$ 245,786,834	\$ 240,413,972	\$ 236,005,445	\$ 232,500,397	\$ 225,301,112	\$ 211,963,892
\$ 102,305,920	\$ 97,547,088	\$ 91,808,883	\$ 88,444,685	\$ 83,899,034	\$ 79,924,818
\$ 1,837,689,661	\$ 1,778,931,314	\$ 1,704,049,168	\$ 1,593,696,648	\$ 1,399,892,212	\$ 1,419,138,769
75.63%	75.72%	76.40%	75.82%	75.48%	76.09%
\$ 2,530,844,605	\$ 2,405,122,324	\$ 2,279,256,967	\$ 2,166,881,556	\$ 2,053,982,618	\$ 1,958,850,006
\$ 1,914,024,117	\$ 1,821,040,904	\$ 1,741,451,961	\$ 1,643,007,075	\$ 1,550,261,745	\$ 1,490,408,510
\$ 554,826,689	\$ 584,081,420	\$ 537,805,006	\$ 523,874,481	\$ 503,720,873	\$ 468,441,496
\$ 475,561,988	\$ 352,991,474	\$ 346,076,765	\$ 328,942,059	\$ 305,570,473	\$ 286,640,979
\$ 269,628,321	\$ 243,350,511	\$ 240,713,969	\$ 238,106,260	\$ 230,423,085	\$ 216,351,986
\$ 3,214,041,115	\$ 3,001,464,309	\$ 2,866,047,701	\$ 2,733,929,875	\$ 2,589,976,176	\$ 2,461,842,971
Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016
10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
11.25%	11.38%	11.04%	10.85%	10.91%	11.33%
33.69%	31.78%	28.32%	28.67%	27.09%	25.44%
32.25%	27.75%	26.50%	26.50%	25.25%	27.25%

## SUMMARY OF PRINCIPAL PLAN PROVISIONS

The Firefighters' Retirement System was established as of January 1, 1980, for the purpose of providing retirement allowances and other benefits as described under R.S. 11:2256 - 11:2259. The following summary of plan provisions is for general informational purposes only and does not constitute a guarantee of benefits.

### MEMBERSHIP

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All full-time firefighters or any person in a position as defined in the municipal fire and police civil service system who is employed by a fire department of any municipality, parish, or fire protection district of the State of Louisiana, except Orleans, and East Baton Rouge Parishes, who earns at least three hundred seventy-five dollars per month excluding state supplemental pay are required to be members of this retirement system. Employees of the system are eligible, at their option to become members of the system. Persons must be under the age of fifty to be eligible for system membership unless they become members through merger.

### CONTRIBUTION RATES

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Under the provisions of R.S. 11:62, 11:103, and 22:1476A(3), the system is financed by a combination of employee contributions, employer contributions, and insurance premium taxes. The employee contribution rate is set by R.S. 11:62 but cannot be less than 8% or more than 10% of earnable compensation. The employee contribution rate is fixed at 8% for members whose earnable compensation is less than or equal to the poverty guidelines issued by the U. S. Department of Health and Human Services. Gross employer contributions are determined by actuarial valuation and are subject to change each year in accordance with R.S. 11:103, 11:105, 11:107 and 11:107.1. The employee contribution rate is set at 8% when gross employer contributions total 25% or less of earnable compensation. The employee rate then increases 0.25% for each 0.75% increase in the total rate, subject to a maximum rate of 10%. Insurance premium taxes are allocated to the system based on available funds and the statutory provisions as described in R.S. 22:1476A(3).

### CONTRIBUTION REFUNDS

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Upon withdrawal from service, members not entitled to a retirement allowance may receive a refund of accumulated contributions. Refunds are payable ninety days after the effective date of withdrawal from service.

### AVERAGE FINAL COMPENSATION

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The average annual earned compensation of an employee for any period of thirty-six successive or joined months of service as an employee during which the said earned compensation was the highest. In case of interruption of employment, the thirty-six-month period shall be computed by joining employment periods immediately preceding and succeeding the interruption. The earnings to be considered for the thirteenth through the twenty-fourth months shall not exceed one hundred fifteen percent of the earnings for the first through the twelfth months. The earnings to be considered for the final twelve

months shall not exceed one hundred fifteen percent of the earnings of the thirteenth through the twenty-fourth months.

## **RETIREMENT BENEFITS**

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Members with twelve years of creditable service may retire at age fifty-five; members with twenty years of service may retire at age fifty; members with twenty-five years of service may retire regardless of age, provided that they have been a member of this system for at least one year. The retirement allowance is equal to three and one-third percent of the member's average final compensation multiplied by his years of creditable service, not to exceed one hundred percent of his average final compensation.

## **OPTIONAL ALLOWANCES**

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Members may receive their benefits as a life annuity, or in lieu of such receive a reduced benefit according to the option selected which is the actuarial equivalent of the maximum benefit.

Option 1 - If the member dies before he has received in annuity payments the present value of his member's annuity as it was at the time of retirement the balance is paid to his beneficiary.

Option 2 - Upon retirement, the member receives a reduced benefit. Upon the member's death, the designated beneficiary will continue to receive the same reduced benefit.

Option 3 - Upon retirement, the member receives a reduced benefit. Upon the member's death, the designated beneficiary will receive one-half of the member's reduced benefit.

Option 4 - Upon retirement, the member elects to receive a board approved benefit payable to the member, the member's spouse, or the member's dependent child, which is actuarially equivalent to the maximum benefit.

A member may also elect to receive an actuarially reduced benefit which provides for an automatic 2 ½% annual compound increase in monthly retirement benefits based on the reduced benefit and commencing on the later of age fifty-five or retirement anniversary; this COLA is in addition to any ad hoc COLAs which are payable.

Initial Benefit Option – This option is available only to regular retirees who have not participated in the Deferred Retirement Option Plan. Under this option members may receive an initial benefit plus a reduced monthly retirement allowance which, when combined, equal the actuarially equivalent amount of the maximum retirement allowance. The initial benefit may not exceed an amount equal to thirty-six payments of the member's maximum retirement allowance. The initial benefit can be paid either as a lump-sum payment or placed in an account called an "initial benefit account" with interest credited thereto and monthly payments made from the account.

## **DISABILITY BENEFITS**

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Any member who has been officially certified as totally disabled solely as the result of injuries sustained in the performance of his official duties, or for any cause, provided the member has a least five years of creditable service and provided that the disability was incurred while the member was an active

contributing member, is entitled to disability benefits. Any member under the age of fifty who becomes totally disabled will receive a disability benefit equal to 60% of final compensation for an injury received in the line of duty; or 75% of his accrued retirement benefit with a minimum of 25% of average salary for any injury received, even though not in the line of duty. Any member age fifty or older who becomes totally disabled from an injury sustained in the line of duty is entitled to a disability benefit equal to the greater of 60% of final compensation or his accrued retirement benefit. Any member age fifty or older who becomes totally disabled as a result of any injury, even though not in the line of duty, is entitled to a disability benefit equal to his accrued retirement benefit with a minimum of 25% of average salary. The surviving spouse of a member who was on disability retirement at the time of death receives a benefit of \$200 per month. When the member takes disability retirement, he may in addition take an actuarially reduced benefit in which case the member's surviving spouse receives 50% of the disability benefit being paid immediately prior to the death of the disability retiree. The retirement system may reduce benefits paid to a disability retiree who is also receiving workers compensation payments.

### **SURVIVOR BENEFITS**

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Benefits are payable to survivors of a deceased member who dies and is not eligible for retirement as follows. If any member is killed in the line of duty and leaves a surviving eligible spouse, the spouse is entitled to an annual benefit equal to two-thirds of the deceased member's final compensation. If any member dies from a cause not in the line of duty, the surviving spouse is entitled to an annual benefit equal to 3% of the deceased member's average final compensation multiplied by his total years of creditable service; however, in no event is the annual benefit less than 40% nor more than 60% of the deceased member's average final compensation. Children of the deceased member who are under the age of eighteen years are entitled to the greater of \$200 per month or 10% of average final compensation (not to exceed 100% of average final compensation) until reaching the age of eighteen or until the age of twenty-two if enrolled full-time in an institution of higher learning, unless the surviving child is physically handicapped or mentally retarded in which case the benefit is payable regardless of age. If a deceased member dies leaving no surviving spouse, but at least one minor child, each child is entitled to receive forty percent of the deceased's average final compensation, not to exceed an aggregate of sixty percent of average final compensation.

### **DEFERRED RETIREMENT OPTION PLAN**

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In lieu of terminating employment and accepting a service retirement allowance, any member of the system who has at least twenty years of creditable service and who is eligible to receive a service retirement allowance may elect to participate in the deferred retirement option plan for up to thirty-six months and defer the receipt of benefits. Upon commencement of participation in the plan, membership in the system terminates and neither the employee nor employer contributions are payable. Compensation and creditable service will remain as they existed on the effective date of commencement of participation in the plan. The monthly retirement benefits that would have been payable, had the member elected to cease employment and receive a service retirement allowance, are paid into the deferred retirement option plan account. Upon termination of employment at the end of the specified period of participation, a participant in the program may receive, at his option, a lump sum payment from the account equal to the payments to the account, or a true annuity based upon his account, or he may elect any other method of payment if approved by the Board of Trustees. The monthly benefits that were being paid into the system during the period of participation will begin to be paid to the retiree. If

employment is not terminated at the end of the thirty-six months, payments into the account cease and the member resumes active contributing membership in the system. If the participant dies during the period of participation in the program, a lump sum payment equal to his account balance is paid to his named beneficiary or, if none, to his estate; in addition, normal survivor benefits are payable to survivors of retirees.

### **COST-OF-LIVING ADJUSTMENTS**

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The Board of Trustees is authorized to grant retired members and widows of members who have retired an annual cost-of-living increase of up to 3% of their current benefit, and all retired members and widows who are sixty-five years of age and older a 2% increase in their original benefit. In order for the Board to grant either of these increases the system must meet certain criteria detailed in the statute related to funding status and interest earnings. In lieu of these cost-of-living adjustments the Board may also grant an increase in the form based on a formula equal to up to \$1 times the total of the number of years of credited service accrued at retirement or at death of the member or retiree plus the number of years since retirement or since death of the member or retiree to the system's fiscal year end preceding the payment of the benefit increase.

## ACTUARIAL ASSUMPTIONS

In determining actuarial costs, certain assumptions must be made regarding future experience under the plan. These assumptions include the rate of investment return, mortality of plan members, rates of salary increase, rates of retirement, rates of termination, rates of disability, and various other factors that have an impact on the cost of the plan. To the extent that future experience varies from the assumptions selected for valuation, future costs will be either higher or lower than anticipated. The following chart illustrates the effect of emerging experience on the plan.

Factor	Increase in Factor Results in
Investment Earnings Rate	Decrease in Cost
Annual Rate of Salary Increase	Increase in Cost
Rates of Retirement	Increase in Cost
Rates of Termination	Decrease in Cost
Rates of Disability	Increase in Cost
Rates of Mortality	Decrease in Cost

### ACTUARIAL COST METHOD

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Frozen Initial Liability Actuarial Cost Method with allocation of cost based on earnings. The frozen unfunded accrued liability was calculated using the Individual Entry Age Normal Method.

### VALUATION INTEREST RATE

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6.90% (Net of investment expense)

### ACTUARIAL ASSET VALUES

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All assets are valued at market value adjusted to defer four-fifths of all earnings above or below the valuation interest rate in the valuation year, three-fifths of all earnings above or below the valuation interest rate in the prior year, two-fifths of all earnings above or below the valuation interest rate from two years prior, and one-fifth of all earnings above or below the valuation interest rate from three years prior. The resulting smoothed values are subject to a corridor of 85% to 115% of the market value of assets. If the smoothed value falls outside the corridor, the actuarial value is set equal to the average of the corridor limit and the smoothed value.

### ACTIVE MEMBER MORTALITY

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Pub-2010 Public Retirement Plans Mortality Table for Safety Below-Median Employees multiplied by 105% for males and 115% for females, each with full generational projection using the MP2019 scale.

### ANNUITANT AND BENEFICIARY MORTALITY

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Pub-2010 Public Retirement Plans Mortality Table for Safety Below-Median Healthy Retirees multiplied by 105% for males and 115% for females, each with full generational projection using the MP2019 scale.



## **DISABLED LIVES MORTALITY**

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Pub-2010 Public Retirement Plans Mortality Table for Safety Disabled Retirees multiplied by 105% for males and 115% for females, each with full generational projection using the MP2019 scale.

## **RETIREE COST-OF-LIVING ADJUSTMENTS**

---

The present value of future retirement benefits is based on benefits currently being paid by the system and includes previously granted cost-of-living adjustments. The present values do not include provisions for potential future increases not yet authorized by the Board of Trustees.

## **ANNUAL SALARY INCREASE RATE**

---

Salary increases include 2.5% inflation and merit increases. The gross rates including inflation and merit increases are as follows:

<b>Years of Service</b>	<b>Salary Growth Rate</b>
1 – 2	14.10%
3 & over	5.20%

## **RETIREMENT RATES**

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The table of these rates is included later in the report. These rates apply only to those individuals eligible to retire.

## **RETIREMENT LIMITATIONS**

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Projected retirement benefits are not subject to IRS Section 415 limits.

## **DROP ENTRY RATES**

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The table of these rates is included later in the report. These rates apply only to those individuals eligible to participate.

## **DROP PARTICIPATION PERIOD**

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All DROP participants are assumed to participate for 3 years and 75% are assumed to retire at the end of this participation period with 25% assumed to work 2 years post-DROP and then retire.

## **RETIREMENT RATES FOR ACTIVE FORMER DROP PARTICIPANTS**

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The rates of retirement for active former DROP participants are included later in this report.

## **DISABILITY RATES**

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75% of the disability rates used for the 27<sup>th</sup> valuation of the Railroad Retirement System for individuals with 10-19 years of service. The table of these rates is included later in the report.

## WITHDRAWAL RATES

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The rates of withdrawal are applied based upon completed years of service according to the following table:

Service Duration ( $\leq$ )	Factor	Service Duration ( $\leq$ )	Factor
1	0.095	9	0.029
2	0.079	10	0.025
3	0.066	11	0.022
4	0.055	12	0.018
5	0.047	13	0.015
6	0.040	14	0.013
7	0.036	15	0.010
8	0.032	>16	0.005

Note: The withdrawal rate for individuals eligible to retire is assumed to be zero.

## MARRIAGE STATISTICS

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70% of the members are assumed to be married; husbands are assumed to be three years older than wives.

## SERVICE-RELATED DEATH

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20% of Total Deaths

## FAMILY STATISTICS

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Assumptions utilized in determining the costs of various survivor benefits as listed below, are derived from the information provided in the 2019 Table F1: Family Households, by Type, Age of Own Children, Age of Family Members, and Age of Householder provided by the U.S. Census Bureau:

Member's Age	% With Children	Number of Children	Average Age
25	60%	1.77	4
35	82%	2.11	8
45	63%	1.75	11
55	11%	1.42	14
65	2%	1.50	14

## IN THE LINE OF DUTY DISABILITY

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20% of Total Disabilities

## **VESTING ELECTING PERCENTAGE**

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70% of those vested elect deferred benefits in lieu of contribution refunds.

## ACTUARIAL TABLES AND RATES

Age	Retirement Rates	DROP Entry Rates	Post-DROP Retirement Rates	Disability Rates
18	0.000000	0.000000	0.000000	0.000900
19	0.000000	0.000000	0.000000	0.000900
20	0.000000	0.000000	0.000000	0.000900
21	0.000000	0.000000	0.000000	0.000900
22	0.000000	0.000000	0.000000	0.000900
23	0.000000	0.000000	0.000000	0.000900
24	0.000000	0.000000	0.000000	0.000900
25	0.000000	0.000000	0.000000	0.000900
26	0.000000	0.000000	0.000000	0.000900
27	0.000000	0.000000	0.000000	0.000900
28	0.000000	0.000000	0.000000	0.000900
29	0.000000	0.000000	0.000000	0.000900
30	0.000000	0.000000	0.000000	0.000900
31	0.000000	0.000000	0.000000	0.000900
32	0.000000	0.000000	0.000000	0.000900
33	0.000000	0.000000	0.000000	0.000900
34	0.000000	0.000000	0.000000	0.000900
35	0.000000	0.000000	0.000000	0.000980
36	0.000000	0.000000	0.000000	0.000980
37	0.000000	0.000000	0.000000	0.000980
38	0.000000	0.000000	0.000000	0.001050
39	0.000000	0.000000	0.000000	0.001130
40	0.000000	0.000000	0.000000	0.001200
41	0.020000	0.000000	0.000000	0.001280
42	0.020000	0.000000	0.000000	0.001350
43	0.040000	0.000000	0.000000	0.001500
44	0.060000	0.050000	0.000000	0.001580
45	0.070000	0.060000	0.000000	0.001800
46	0.070000	0.070000	0.000000	0.001950
47	0.070000	0.080000	0.000000	0.002180
48	0.060000	0.090000	0.040000	0.002480
49	0.050000	0.100000	0.040000	0.002850
50	0.050000	0.120000	0.100000	0.003230
51	0.040000	0.130000	0.150000	0.003680
52	0.040000	0.150000	0.190000	0.004280
53	0.040000	0.170000	0.230000	0.004950
54	0.040000	0.180000	0.250000	0.005780
55	0.040000	0.190000	0.270000	0.006750
56	0.040000	0.210000	0.270000	0.007950
57	0.040000	0.220000	0.270000	0.009380
58	0.040000	0.230000	0.270000	0.011100
59	0.050000	0.230000	0.260000	0.013130
60	0.060000	0.230000	0.250000	0.017930
61	0.070000	0.220000	0.240000	0.021830
62	0.080000	0.200000	0.230000	0.024150
63	0.100000	0.200000	0.230000	0.025350
64	0.120000	0.200000	0.240000	0.019280
65	0.140000	0.200000	0.250000	0.015530
66	0.170000	0.200000	0.250000	0.003900
67	0.210000	0.200000	0.260000	0.003900
68	0.250000	0.200000	0.260000	0.003900
69	0.300000	0.200000	0.250000	0.003900
70	0.500000	0.000000	0.220000	0.003900
71	0.500000	0.000000	0.180000	0.003900
72	0.500000	0.000000	0.110000	0.003900
73	0.500000	0.000000	0.020000	0.003900
74	0.500000	0.000000	0.020000	0.003900
75	0.500000	0.000000	1.000000	0.003900

## GLOSSARY

### ACCRUED BENEFIT

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The pension benefit that an individual has earned as of a specific date based on the provisions of the plan and the individual's age, service, and salary as of that date.

### ACTUARIAL ACCRUED LIABILITY

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The actuarial present value of benefits payable to members of the system less the present value of future normal costs attributable to the members.

### ACTUARIAL ASSUMPTION

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Assumptions as to the occurrence of future events affecting pension costs. These assumptions include rates of mortality, withdrawal, disablement, and retirement. Also included are rates of investment earnings, changes in compensation, as well as statistics related to marriage and family composition.

### ACTUARIAL COST METHOD

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A procedure for determining the portion of the cost of a pension plan to be allocated to each year. Each cost method allocates a certain portion of the actuarial present value of benefits between the actuarial accrued liability and future normal costs. Once this allocation is made, a determination of the normal cost attributable to a specific year can be made along with the payment to amortize any unfunded actuarial accrued liability. To the extent that a particular funding method allocates a greater (lesser) portion of the actual present value of benefits to the actuarial accrued liability it will allocate less (more) to future normal costs.

### ACTUARIAL EQUIVALENCE

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Payments or receipts with equal actuarial value on a given date when valued using the same set of actuarial assumptions.

### ACTUARIAL GAIN (LOSS)

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The financial effect on the system of the difference between the expected and actual experience of the system. The experience may be related to investment earnings above (or below) those expected or changes in the liability structure due to fewer (or greater) than the expected numbers of retirements, deaths, disabilities, or withdrawals. In addition, other factors such as pay increases above (or below) those forecast can result in actuarial gains or losses. The effect of such gains (or losses) is to decrease (or increase) future costs.

### ACTUARIAL PRESENT VALUE

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The value, as of a specified date, of an amount or series of amounts payable or receivable thereafter, with each amount adjusted to reflect the time value of money (through accrual of interest) and the probability of payments. For example: if \$600 invested today will be worth \$1,000 in 10 years and there is a 50%

probability that a person will live 10 years, then the actuarial present value of \$1,000 payable to that person if he should survive 10 years is \$300.

### **ACTUARIAL VALUE OF ASSETS**

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The value of cash, investments, and other property belonging to the pension plan as used by the actuary for the purpose of the actuarial valuation. This may correspond to the book value, market value, or some modification involving either or both book and market value. Adjustments to market values are often made to reduce the volatility of asset values.

### **ASSET GAIN (LOSS)**

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That portion of the actuarial gain attributable to investment performance above (below) the expected rate of return in the actuarial assumptions.

### **AMORTIZATION PAYMENT**

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That portion of the pension plan contribution designated to pay interest and reduce the outstanding principal balance of unfunded actuarial accrued liability. If the amortization payment is less than the accrued interest on the unfunded actuarial accrued liability the outstanding principal balance will increase.

### **CONTRIBUTION SHORTFALL (EXCESS)**

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The difference between contributions recommended in the prior valuation and the actual amount received.

### **DECREMENTS**

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Events which result in the termination of membership in the system such as retirement, disability, withdrawal, or death.

### **EMPLOYER NORMAL COST**

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That portion of the normal cost not attributable to employee contributions. It includes both direct contributions made by the employer and contributions from other non-employee sources such as revenue sharing, and revenues related to taxes.

### **FUNDED RATIO**

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A measure of the ratio of assets to liabilities of the system according to a specific definition of those two values. Typically, the assets used in the measure are the actuarial value of assets; the liabilities are defined by reference to some recognized actuarial funding method. Thus, the funded ratio of a plan depends not only on the financial strength of the plan but also on the funding method used to determine the liabilities and the asset valuation method used to determine the assets in the ratio.

## **NORMAL COST**

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That portion of the actuarial present value of pension plan benefits and expenses allocated to a valuation year by the actuarial cost method. This is analogous to one year's insurance premium.

## **PENSION BENEFIT OBLIGATION**

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The actuarial present value of benefits earned or credited to date based on the members expected final average compensation at retirement. For current retirees or terminated members this is equivalent to the actuarial present value of their accrued benefit.

## **PROJECTED BENEFITS**

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The benefits expected to be paid in the future based on the provisions of the plan and the actuarial assumptions. The projected values are based on anticipated future advancement in age and accrual of service as well as increases in salary paid to the participant.

## **FROZEN UNFUNDED ACTUARIAL ACCRUED LIABILITY**

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The excess of the entry age normal actuarial accrued liability over the actuarial value of assets as of the date the Unfunded Actuarial Accrued Liability was frozen (June 30, 2019). The amortizations included in the Frozen UAL each have a specified period for payments to be made. Each year's required payment pays interest and a portion of principal.

## **VESTED BENEFITS**

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Benefits that the members are entitled to even if they withdraw from service.