



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

Annual Funding Valuation  
June 30, 2023

**Municipal Police  
Employees'  
Retirement System**



November 11, 2023

Board of Trustees  
Municipal Police Employees' Retirement System  
7722 Office Park Boulevard, Suite 200  
Baton Rouge, Louisiana 70809

Ladies and Gentlemen:

We are pleased to present our report on the actuarial valuation of the Municipal Police Employees' Retirement System for the fiscal year ending June 30, 2023. 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 Municipal Police Employees' Retirement System of the State of Louisiana. The primary purposes of the report are to determine the actuarially required contribution for the retirement system for the fiscal year ending June 30, 2024 and to recommend the net direct employer contribution rate for Fiscal 2025. 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 Municipal Police Employees' 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 of the 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 system. 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 MUNICIPAL POLICE EMPLOYEES' RETIREMENT SYSTEM

		June 30, 2023	June 30, 2022
Census Summary:	Active Members (excluding DROP Participants)	5,288	5,269
	Retired Members and Survivors	5,102	5,006
	DROP Participants	248	258
	Terminated Due a Deferred Benefit	258	252
	Terminated Due a Refund	2,474	2,184
Payroll: *		\$ 331,638,477	\$ 301,207,646
Benefits in Payment (excluding DROP accruals):		\$ 183,392,696	\$ 174,892,416
Present Value of Future Benefits:		\$ 4,215,063,773	\$ 4,003,271,048
Actuarial Accrued Liability (EAN):		\$ 3,625,748,371	\$ 3,449,325,984
Unfunded Actuarial Accrued Liability:		\$ 886,632,932	\$ 788,517,441
Actuarial Value of Assets (AVA):		\$ 2,739,115,439	\$ 2,660,808,543
Market Value of Assets (MVA):		\$ 2,625,060,377	\$ 2,478,317,694
Ratio of AVA to Actuarial Accrued Liability:		75.55%	77.14%
		Fiscal 2023	Fiscal 2022
Market Rate of Return:		7.9%	-10.4%
Actuarial Rate of Return:		4.8%	5.6%
		Fiscal 2024	Fiscal 2023
Employers' Normal Cost (Mid-year):		\$ 35,208,772	\$ 32,412,948
Amortization Cost (Mid-year):		\$ 110,241,351	\$ 95,252,363
Estimated Administrative Cost:		\$ 3,210,762	\$ 3,084,935
Expected Insurance Premium Taxes Due:		\$ (26,011,486)	\$ (23,919,098)
Net Direct Employer Actuarially Required Contributions:		\$ 122,649,399	\$ 106,831,148
Projected Payroll:		\$ 346,556,300	\$ 311,189,206
Actuarially Required Net Direct Employer Contribution Rate:		35.39%	34.33%
Minimum Employer Contribution Rate:		33.50%	31.25%
Additional Employer Contribution Rate:			
FDA funding for future COLAs		0.425%	N/A
Funding for UAL reduction		N/A	N/A
Statutory Employee Contribution Rate:			
Original Subplan or Hazardous Subplan		10.00% **	10.00%
**			
Non-Hazardous Subplan		8.00%	8.00%
		Fiscal 2025	Fiscal 2024
Minimum Recommended Net Direct Employer Cont. Rate:		34.75%	33.50%

\* Payroll excludes DROP participants who entered DROP prior to July 1, 2021. (Includes \$13,904,922 in payroll for 160 DROP participants who entered DROP on or after July 1, 2021)

\*\* For members with earnings greater than the Department of HHS poverty guidelines. For members with earnings below the poverty guidelines, employer rates will be 2.5% higher and employee rates will be 2.5% lower. Employer rates are not affected by the employees' subplan.

## 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.

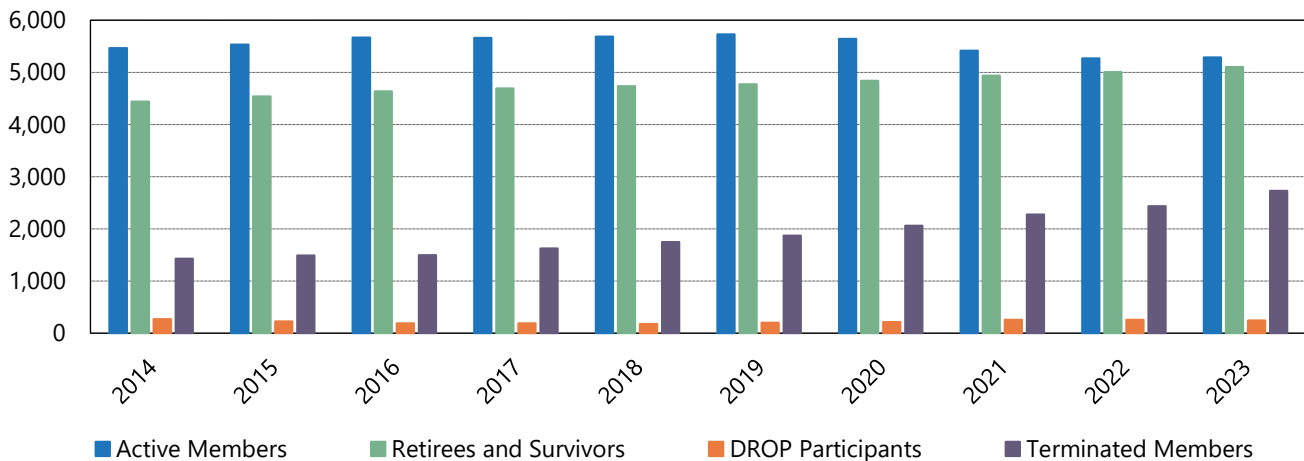
One area where an actuary has limited ability to develop accurate estimates is the projection of future investment earnings. The difficulties here are significant. First, the future is rarely like the past, and the data points available to develop stochastic trials are far fewer than the number required 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 regarding 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.

## COMMENTS ON DATA

For the valuation, the administrator of the system furnished a census 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. Information on retirees detailing dates of birth of retirees and beneficiaries, sex, as well as option categories and benefit amounts, was provided in like manner. In addition, data was supplied on former employees who are vested or who have contributions remaining on deposit. As illustrated in Exhibit VII, there are 5,288 active contributing members in the system of whom 2,139 have vested retirement benefits; in addition, there are 248 participants in the Deferred Retirement Option Plan (DROP); 5,102 former members or their beneficiaries are receiving retirement benefits. An additional 2,732 terminated members have contributions remaining on deposit with the system; of this number 258 have vested rights for future retirement benefits. **Figure 1** provides a ten year history of membership counts.

**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 verified or corrected, it is returned to us for use 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 the system's auditor, the firm of Duplantier, Hrapmann, Hogan & Maher, Certified Public Accountants. As indicated in the system's financial statements, the net market value of the system's assets was \$2,625,060,377 as of June 30, 2023. Net investment income for Fiscal 2023 measured on a market value basis was \$194,058,220. Contributions to the system for the fiscal year totaled \$161,265,965; benefits and expenses amounted to \$208,581,502.

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**

This valuation is based on the Individual Entry Age Normal actuarial cost method. Prior to Fiscal 2002, experience gains and losses as well as contribution gains and losses were amortized over fifteen years with level amortization payments. Act 1079 of 2003 explicitly changed the amortization period for experience gains and losses, changes in assumptions, changes in methods, cost-of-living increases, and changes in plan benefit provisions to thirty years with level amortization payments. Act 402 of 2014 was introduced to improve the long-term health of the system and to reduce the likelihood for intergenerational cost shifting due to long amortization periods. The act changed the amortization period for all the existing outstanding unfunded liability bases from various periods ranging from one to thirty years to twenty years. The act also set the period to amortize all future actuarial gains and losses as well as changes in assumptions and benefits at fifteen years.

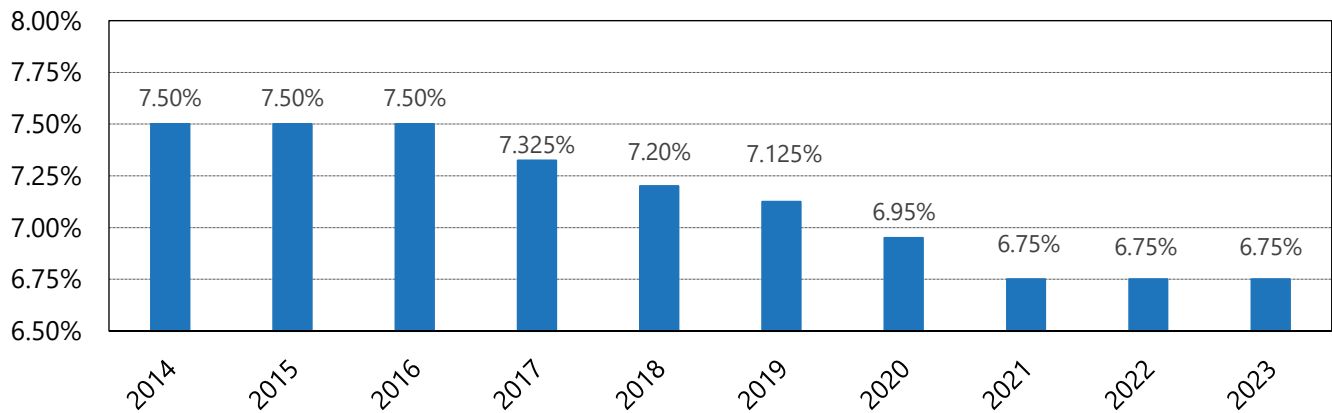
The cost method used for this valuation generally produces normal costs which are level as a percentage of pay if assumptions are met and the composition of the active group regarding age, sex, and service is stable. Overall costs may increase or decrease depending on payroll growth. Since payments on all of the system's amortization bases are level, any payroll growth will reduce future amortization payments as a percentage of payroll. Should overall payroll contract, amortization payments will increase as a percentage of payroll.

The current year 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. Details related to the study are contained within the 2020 Municipal Police Employees' Retirement System Experience Study Report.

Beginning with Fiscal 2017, the Board of Trustees voted on a plan to reduce the long-term assumed rate of return. Based on actuarial 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 7.125% over the subsequent three actuarial valuations with reductions of 0.175% in 2017, 0.125% in 2018, and 0.075% in 2019. Within the 2020 actuarial valuation the valuation interest rate was further reduced to 6.95%. Finally, the Board elected to opportunistically reduce the valuation interest rate to 6.75% within the 2021 valuation. This was the last such change in the valuation interest rate.

Figure 2 shows the changes in valuation interest rate over the past 10 years.

**Figure 2. Assumed Rate of Return**



Despite all of the changes in the valuation interest rate, we continue to review this important assumption once each year. Since 2021, the system's 6.75% valuation interest rate has remained within the actuary's reasonable range. These reviews involved 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 performed using 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 2023 review set a reasonable range of 6.71% to 7.94%. The resulting percentiles suggest that there is approximately a 59.4% probability that the system will have long-term earnings at or above 6.75% and a 50% probability that the system will have long-term investment earnings at or above 7.31%.

According to Act 360 of the 2022 Regular Session (and confirmed with Act 108 of the 2023 Regular Session), the Municipal Police Employees' Retirement System may only provide future COLAs in years where the balance in the Funding Deposit Account is sufficient to fund the COLA. The Funding Deposit Account can only be funded through employer contributions set by the Board in excess of the Minimum Recommended Net Direct Employer Contribution Rate. Because future COLAs must be prefunded, no future COLAs were included in the determination of the present value of future benefits or actuarial accrued liability.



The current year actuarial assumptions utilized for the report are outlined at the end of this report. All assumptions used within this valuation are based on estimates of future long-term experience for the system as described in the system's 2020 Experience Study report with the exception of the update to the valuation interest rate and an update to use option factors which became effective July 1, 2021. These option factors are used in determining the value of certain survivor benefits due if active members die in the future and for valuing the lifetime payments to members who have selected the "popup" form of benefits.

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. There were no changes in plan assumptions within the Fiscal 2023 actuarial valuation.

## **RISK FACTORS**

Defined benefit pension plans are subject to a number of risks. These risks 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**

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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.

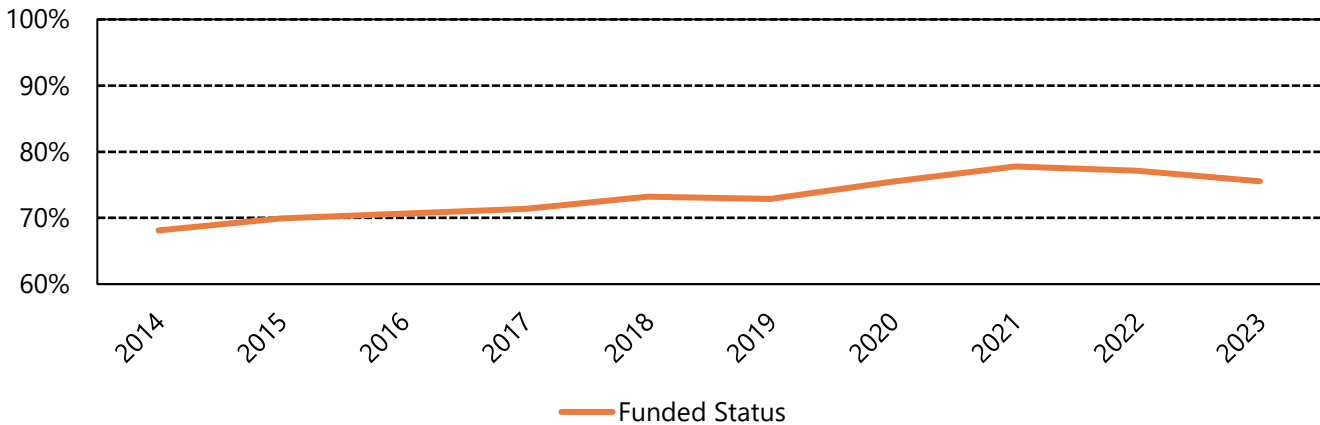
### **Funded Status**

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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 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 75.55% for the plan as of June 30, 2023. 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. Even in this regard, caution is warranted since market fluctuations in asset values and changes in plan assumptions can distort

underlying trends in this value. Exhibit VIII and **Figure 3** 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 discount rate, the current ratio would be higher.

**Figure 3. Historical Funded Status**



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

### **Inflation Risk**

All pension plans are subject to the uncertainty of asset performance, of which inflation is a major component. 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. As the plan attempts to offset inflation by providing COLAs (often in the form of permanent benefit increases), minimum contribution rates will inevitably 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. Forecasters seem to believe that although long-term average rates of future inflation may be higher than projected in recent years, the impact of near-term inflation will not be significant. 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**

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. For the foreseeable future it is unlikely, though not impossible, that interest rates will steeply decline, which mitigates the reinvestment risk the plan currently faces. As the current cycle of increasing interest rates abates, the possibility of reinvestment risk will undoubtedly increase.

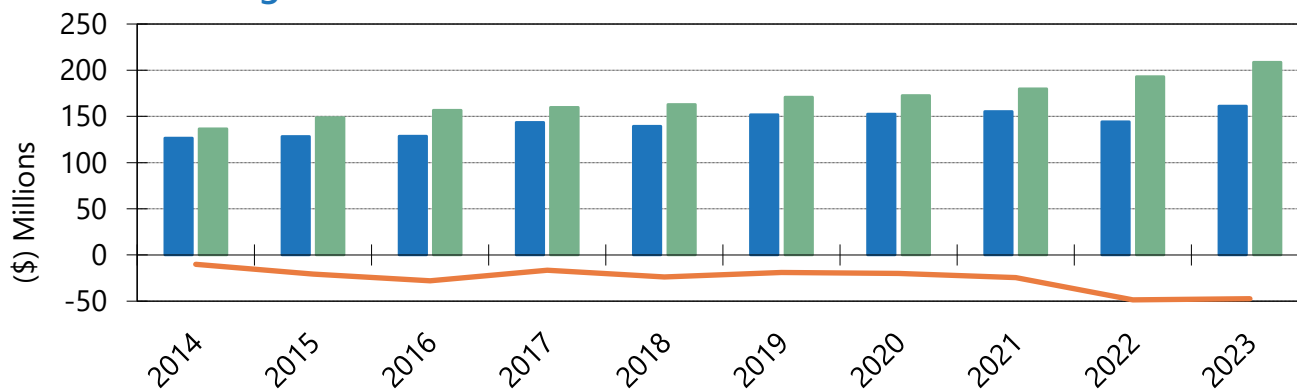
## Asset Return Volatility Risk

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 the 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 4** compares the total contribution income to benefits and expenses to determine the noninvestment cash flow of the system over the last ten years. In that ten-year period, annual benefit payments have slightly exceeded annual contributions to the plan. In this situation, portfolio construction is very important, and investment staff must consider what level of liquidity is necessary.

**Figure 4. Annual Net Non-Investment Cash Flows**



		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Contribution Income (\$Mil)	■	126.6	128.2	128.6	143.4	139.3	152.0	152.5	155.3	144.3	161.3
Benefits and Expenses (\$Mil)	■	136.7	148.7	156.6	159.8	163.0	170.8	172.5	179.8	192.9	208.6
Net Non-Inv. Cash Flow (\$Mil)	—	-10.1	-20.5	-28.0	-16.4	-23.7	-18.8	-20.0	-24.5	-48.6	-47.3

Future net non-investment 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 0.83% 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 Fiscal 2025 by 16.00% of payroll. Future adjustments to the future assumed rates 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 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 with 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 2023, this ratio is 55%; ten years ago, this ratio was 42%.

### **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 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 10.72.

### **Other Liability Risks**

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In addition to asset risk, the plan is also subject to risks related to liabilities. These 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 generally are 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 in plan provisions were enacted during the 2023 Regular Session of the Louisiana Legislature:

Act 108 replaced the language in R.S. 11:2225.5 enacted by Act No. 360 of the 2022 Regular Session of the Legislature with new language related to the system's Funding Deposit Account. Act 108 was essentially a reenactment of Act 360 of 2022 with one material change – for Fiscal 2023-2024 if the employer contribution rate determined under R.S. 11:103 is greater than or equal to the rate under R.S. 11:103 for the previous year, the actual employer contribution rate shall be set at the minimum recommended employer contribution rate plus 0.425%. Similar to the previous act, in future years the statute provides for an additional employer contribution of up to 0.85% to provide funding for future COLAs/PBIs. The act also provides that in years where the minimum employer rate decreases, the Board may also add to the minimum rate an amount up to one-half of the reduction in the minimum rate for the purpose of reducing the oldest positive amortization base of the unfunded accrued liability.

HCR 67 urges the United States Congress to review and eliminate or reduce the Government Pension Offset and Windfall Elimination Provision, which can result in decreases to Social Security Benefits for certain retirees and beneficiaries.

HCR 70 urges and requests the state treasurer and the state and statewide retirement systems to:

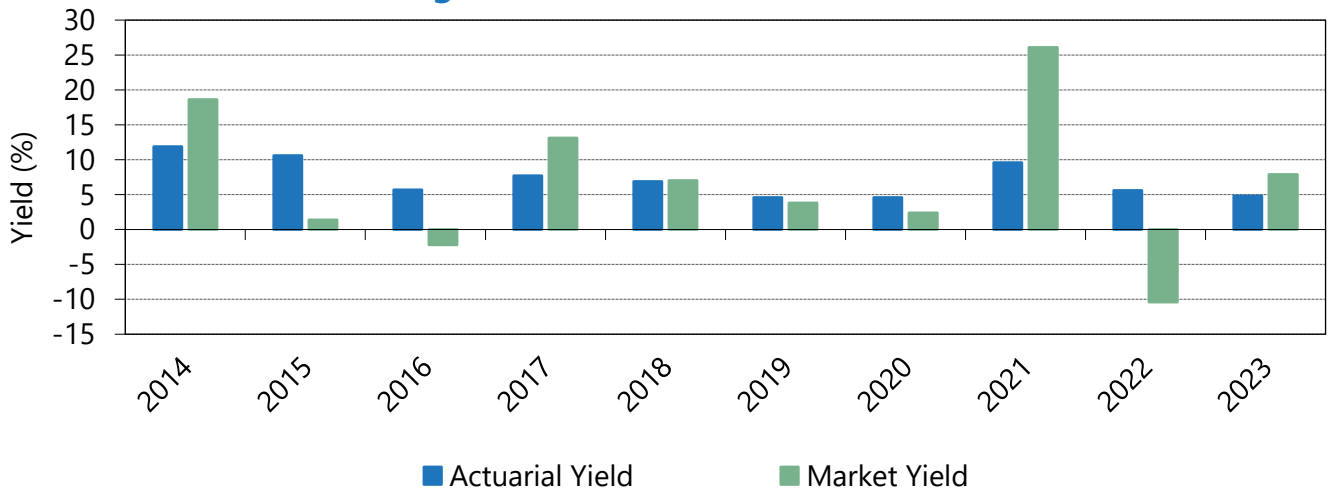
1. Report on investment advisors and companies used by the treasurer and the retirement systems that discriminate against the fossil fuel industry through environmental, social, and governance policies.
2. Report on investment of state and pension assets using nonpecuniary factors.
3. Report on the asset allocation of all of their investments.
4. Provide a report to the legislature including the name of any investment management company, investment advisor, mutual fund, or entity that uses nonpecuniary factors for investment purposes on behalf of the retirement system.
5. Provide a report to the legislature on any entity under contract that is known to boycott energy companies, including the aggregate amount that the listed entity has invested in Louisiana public companies and in U.S. and Louisiana oil and gas companies.
6. Provide a report to the legislature including specified information on investments and categorizing investments in Louisiana, within the United States, and outside the United States.

HCR 110 urges and requests that the state and statewide public retirement system boards of trustees uphold their fiduciary duty when making financial decisions and not allow Environmental, Social, and Governance policies to influence their investment decisions.

## ASSET EXPERIENCE

The actuarial and market rates of return for the past ten years are given below (Figure 5). These investment rates of return were determined by assuming a uniform distribution of income and expense throughout the fiscal year.

**Figure 5. Historical Asset Yields**



	Market Yield †	Actuarial Yield †
2014	18.6%	11.9%
2015	1.4%	10.6%
2016	-2.2%	5.7%
2017	13.1%	7.7%
2018	7.0%	6.9%
2019	3.8%	4.6%
2020	2.4%	4.6%
2021	26.1%	9.6%
2022	-10.4%	5.6%
2023	7.9%	4.8%

Geometric Average Market Rates of Return		
5-year average	(Fiscal 2019 – 2023)	5.3%
10-year average	(Fiscal 2014 – 2023)	6.3%
15-year average	(Fiscal 2009 – 2023)	5.3%
20-year average	(Fiscal 2004 – 2023)	5.9%
25-year average	(Fiscal 1999 – 2023)	5.0%
30-year average	(Fiscal 1994 – 2023)	5.8%



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. The rate of return is calculated on assets invested in the system's portfolio. 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 2023, the system earned \$24,346,752 of dividends, interest, and other recurring income. In addition, the system had net realized and unrealized capital gains on investments and non-recurring income of \$177,605,270. This income was offset by investment expenses of \$7,893,802.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 6.750% in effect for Fiscal 2023. For Fiscal 2023, the actuarial rate of return was 4.8%. DROP accounts should be credited with 4.3% (i.e., 4.8% less 0.5%). The actuarial rate of return is calculated based on the actuarial value of assets and a measure of investment income derived from the system's asset smoothing method. Investment income used to calculate this yield is based upon a smoothing of investment returns 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 of gains or losses on investments relative to the valuation interest rate. Yields in excess of the applicable interest assumption will reduce future costs; yields below the applicable interest assumption will increase future costs. For Fiscal 2023, the system experienced actuarial investment earnings of \$52,411,319 below the actuarial assumed earnings rate of 6.75%. This represents an actuarial loss and increased the interest-adjusted amortization payments on the system's UAL by \$5,481,955 or 1.58% of projected payroll.

## DEMOGRAPHICS AND LIABILITY EXPERIENCE

A reconciliation of the census for the system is given in Exhibit VII. The average active contributing member is 41 years old with 10.6 years of service credit and an annual salary of \$60,086. The system's active contributing membership experienced an increase of 19 members during Fiscal 2023. The number of DROP participants decreased by 10. Over the last five years, active membership has decreased by 397 members.

The average service retiree is 67 years old with an annual benefit of \$41,671. The average age at retirement for regular retirees is 53. The number of retirees and beneficiaries receiving benefits from the system increased by 96 during the fiscal year. Over the last five years, the number of retirees increased by 366 with annual benefits in payment increasing by \$39,230,369.

The changes in the makeup of the population and changes in members' salaries increased the interest adjusted employer normal cost over the last year by \$2,795,824; the corresponding change in employer normal cost percentage was a reduction of 0.26% of payroll. Plan liability experience for Fiscal 2023 was unfavorable. Active member retirements and retirements of DROP participants were significantly above projected levels. Salary increases were also significantly above projected levels. These factors tend to increase costs. Partially offsetting these factors were withdrawals and retiree deaths above projected levels along with disabilities, DROP entries, and retirements of former DROP participants below projected levels. Net plan liability experience losses totaled \$92,623,396. These losses increased the interest-adjusted amortization payments on the system's unfunded accrued liability by \$9,687,932, which corresponds to payments of 2.80% of Fiscal 2024 payroll.

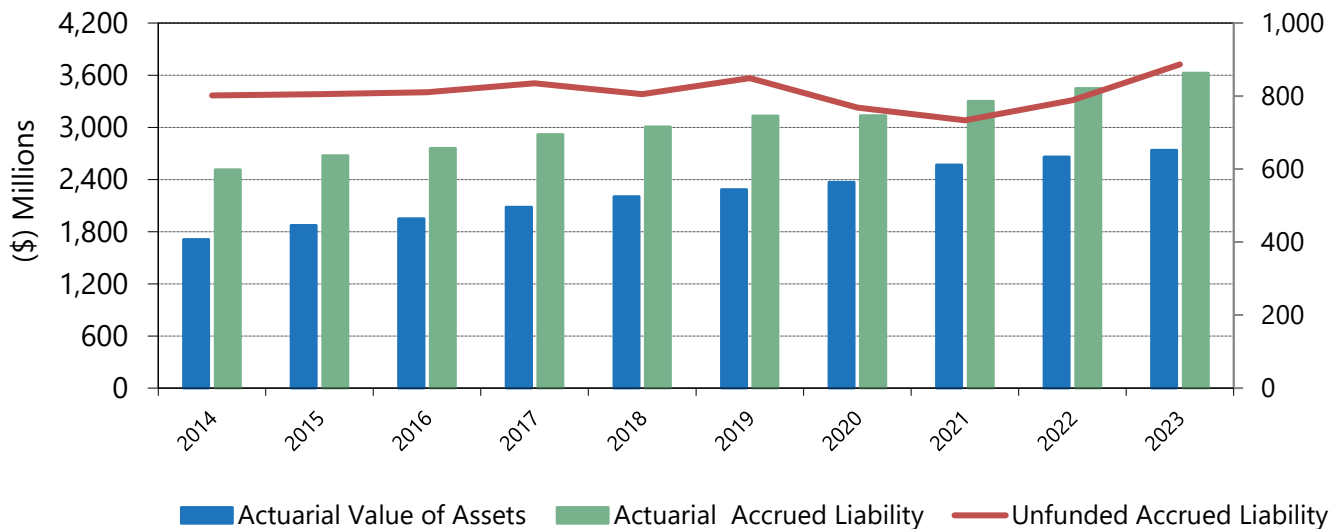


## FUNDING ANALYSIS AND RECOMMENDATIONS

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 an actuarial valuation based on rates of mortality, termination, disability, and retirement, as well as investment return and other statistical measures specific to the particular group. Each year a determination is made of two cost components: the normal cost and the amortization payments on the unfunded actuarial accrued liability. The normal cost refers to the annual cost for active members allocated each year by the particular cost method utilized. New entrants to the system can also increase or lower normal costs as a percentage of payroll depending upon their demographic distribution.

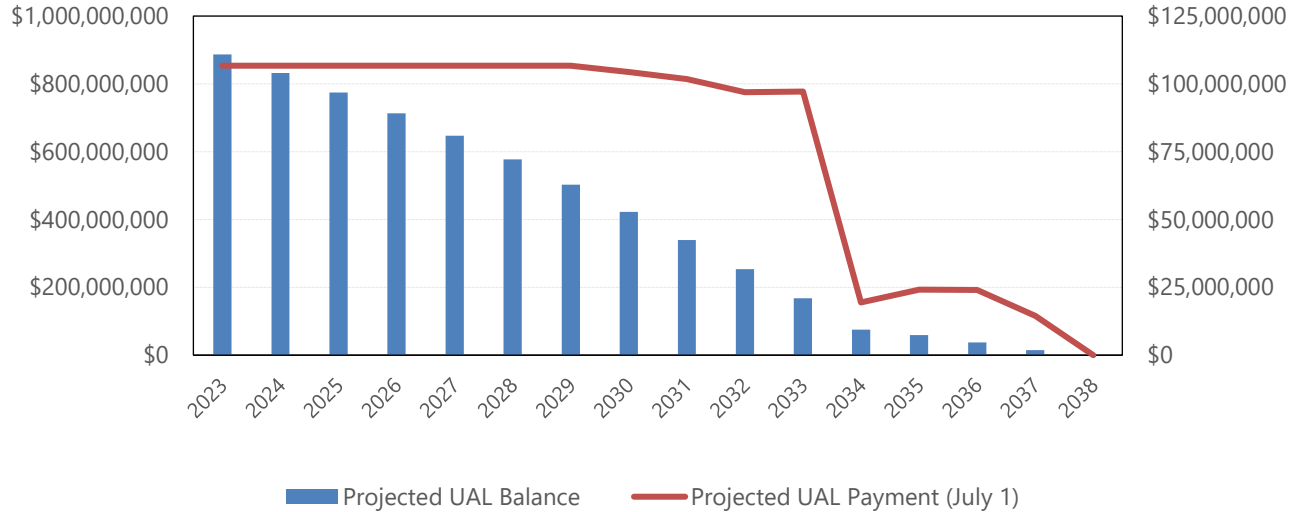
The annual required amortization payment on the unfunded accrued liability is derived from the sum of payments required on each of the individual bases listed in Exhibit V – Schedule C. Each amortization base is amortized with level annual payments over a specified amortization period. The unfunded actuarial accrued liability (UAL) equals the difference between the entry age normal accrued liability and the actuarial value of assets. The change in UAL includes the annual payment, interest accrual on the balance, and annual gains and losses. **Figure 6** details the UAL over the past decade.

**Figure 6. Actuarial Value of Assets versus Actuarial Accrued Liability**



Although actuarial assumptions are set such that the system is not expected to experience gains or losses over the long-term, actual experience seldom matches assumptions in the short-term. Therefore, it is common that gains and losses occur on an annual basis. Proper long-term assumptions should result in offsetting gains and losses over time. **Figure 7** shows the future of the current UAL based on the schedule of payments shown in Exhibit V - Schedule C. This chart does not account for future gains and losses. Although the system will have gains and losses each year, assumptions are set with the goal of gains and losses that offset each other over time.

**Figure 7. Projected Unfunded Accrued Liability**



Finally, since payments on the system’s UAL are made on a fixed, level dollar schedule, the percentage of payroll costs are affected by changes in plan payroll. If payroll increases, these costs are reduced as a percentage of payroll. Conversely, if payroll decreases, these costs are increased as a percentage of payroll.

In order 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 what contribution is actuarially required 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.

An explanation of the change in costs related to asset and liability gains and losses as well as changes in demographics and assumptions is given in prior sections of the report. In addition to these components, variances in contribution levels and payroll also affect costs. For Fiscal 2023 contributions totaled \$1,729,512 more than required; the interest-adjusted amortization credit on the contribution surplus for Fiscal 2024 is \$180,898, or 0.05% of projected payroll. In addition, for Fiscal 2024 the net effect of the change in payroll on amortization costs was to reduce such costs by 3.13% of projected payroll.

A reconciliation of the change in costs is given below. Values listed in dollars are interest-adjusted for payment throughout the fiscal year. Percentages are based on the projected payroll for Fiscal 2024, except for those items labeled Fiscal 2023.

The following is a derivation of the total normal cost and amortization payment portion of the minimum recommended employer contribution rate, which shows the many items that impact costs from one year to the next. Because the actuarial valuation is completed after the beginning of Fiscal 2024, Exhibit

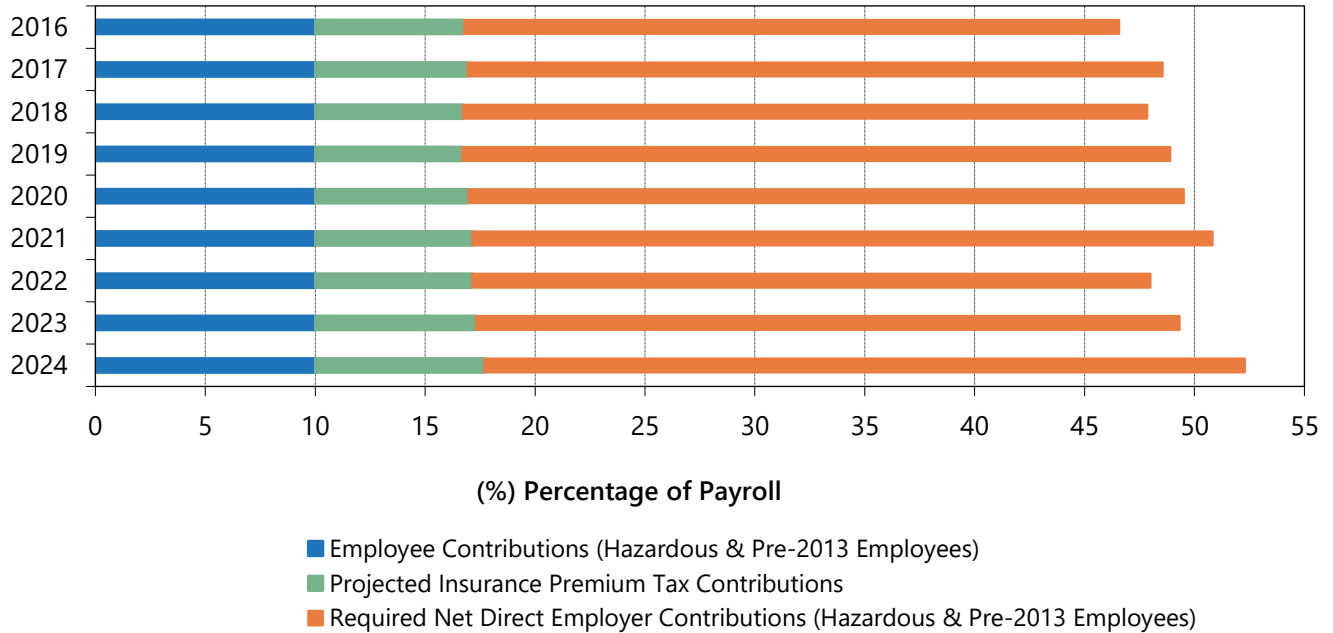
I must add projections for another year and produce a minimum recommended employer contribution rate for Fiscal 2025.

	Dollars	Percentage of Payroll
Employer Normal Cost for Fiscal 2023	\$ 32,412,948	10.42%
Cost of Demographic and Salary Changes	\$ 2,795,824	(0.26%)
Change due to Assumption Changes	\$ 0	0.00%
Employer Normal Cost for Fiscal 2024	\$ 35,208,772	10.16%
UAL Amortization Payments for Fiscal 2023	\$ 95,252,363	30.61%
Change due to change in payroll	N/A	(3.13%)
Additional Amortization Expenses for Fiscal 2024:		
Asset Experience Loss (Gain)	\$ 5,481,955	1.58%
Liability Experience Loss (Gain)	\$ 9,687,932	2.80%
Contribution Loss (Gain)	\$ (180,898)	(0.05%)
Total Amortization Expense (Credit) for Fiscal 2024	\$ 110,241,351	31.81%
Insurance Premium Taxes	\$ (26,011,486)	(7.51%)
Estimated Administrative Cost for Fiscal 2024	\$ 3,210,762	0.93%
Total Employer Normal Cost & Amortization Payments	\$ 122,649,399	35.39%

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The employer's normal cost for Fiscal 2024, interest-adjusted for mid-year payment is \$35,208,772. The amortization payments on the system's UAL total \$110,241,351. The total actuarially required contribution is determined by adding these two values together with administrative expenses. The net direct actuarially required employer contribution for Fiscal 2024 is determined based on the sum of employer normal cost, amortization payments on the unfunded actuarial accrued liability, and projected administrative expenses. As given in line 12 of Exhibit I, the total actuarially required employer contribution for Fiscal 2024 is \$148,660,885. We estimate insurance premium taxes of \$26,011,486, or 7.51% of payroll, will be paid to the system in Fiscal 2024. This level of Insurance Premium Taxes represents a 0.18% decrease from the prior year as a percentage of payroll. Hence, the actuarially required net direct employer contribution for Fiscal 2024 amounts to \$122,649,399 or 35.39% of payroll.

Total funding comes from three sources: direct employee contributions, direct employer contributions, and Insurance Premium Taxes. **Figure 8** shows the breakdown of these three forms of funding for the last decade. The system experiences changes in the required net direct employer contribution rate each year. Such changes may occur due to the impact of gains and losses or changes in overall plan payroll.

**Figure 8. Components of Actuarial Funding**



Within the Fiscal 2022 actuarial valuation, the minimum recommended net direct employer contribution rate for Fiscal 2024 was found to be 33.50%. Act 108 of the 2023 Regular Session of the Louisiana legislature set the funding level for future COLAs at 0.425% for Fiscal 2024. Therefore, employers are required to pay a total contribution rate of 33.925% during Fiscal 2024. Of this total Fiscal 2024 employer contribution rate, the portion dedicated to the actuarial funding of current benefits is 33.50%. Therefore, we expect a contribution shortfall of 1.89% of payroll. This shortfall will increase the actuarially required contribution recommended for Fiscal 2025. To determine a minimum recommended net direct employer contribution rate for Fiscal 2025, the employer normal cost and amortization payments were estimated for Fiscal 2025 and adjusted for the impact of the estimated contribution shortfall for Fiscal 2024 and the estimated Insurance Premium Taxes for Fiscal 2025. Therefore, as given in line 25 of Exhibit I, the estimated actuarially required net direct employer contribution for Fiscal 2025 is \$123,667,431, or 34.75% of projected payroll (rounded to the nearest 0.25%) for all members with earnings greater than the Department of HHS poverty guidelines. For members of the Hazardous Duty subplan and for members who were hired before January 1, 2013 who have earnings below the poverty guidelines, the employer contribution rates will be 2.5% higher and the employee contribution rates will be 2.5% lower.

In accordance with Act 108 of the 2023 Regular Session, the Board may set the employer contribution rate for Fiscal 2025 (effective July 1, 2024) at any rate between the minimum recommended net direct employer contribution rate and 0.85% above this level (i.e. between 34.75% and 35.60%). Should the Board elect to set the rate above 34.75%, the additional employer contributions collected will be added to the system’s Funding Deposit Account for the prefunding of future retiree cost-of-living adjustments.

## LOW-DEFAULT RISK OBLIGATION MEASURE (LDRM)

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 Municipal Police Employees' 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 (LDRM) 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 2023 HQM Corporate Bond Yield Curve is weighted based on the GASB 67 cash flows, the effective single discount rate derived from the analysis is 5.20%.

In the following section, we will disclose an LDROM-based actuarial accrued liability, which can be compared to the entry age normal actuarial accrued liability, and an LDROM-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 5.20%. All other assumptions match those used to determine funding liabilities.

LDROM Comparison	Funding Valuation	LDROM Valuation
Discount Rate	6.75%	5.20%
Accrued Liability for Active Members	\$ 1,482,846,151	\$ 1,843,587,315
Accrued Liability for Terminated Members	\$ 70,282,144	\$ 86,450,503
Accrued Liability for Retired Members	\$ 2,072,620,076	\$ 2,368,686,368
Total Actuarial Accrued Liability (AAL)	\$ 3,625,748,371	\$ 4,298,724,186
Funded Ratio (AVA/AAL)	75.55%	63.72%

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 2023, the actual cost-of-living (as measured by the US Department of Labor CPI-U) increased by 3.0%. Prior to 2022, the cost-of-living provisions for the system were detailed in R.S. 11:2225(A)(7)(b), R.S. 11:246, and R.S. 11:241. Act 360 of 2022 removed MPERS from R.S. 11:243, R.S. 11:246, R.S. 11:107.2, and repealed R.S. 11:2225(A)(7) and enacted R.S. 11:2225.5. In addition, it created a Funding Deposit Account for the accumulation of additional employer contributions dedicated to the funding of future cost-of-living increases. Under this statute, funding for additional benefits for retirees, survivors, and beneficiaries in years following 2022 may only be provided from the funding deposit account and only when sufficient funds are available to fully offset the present value of the additional benefits offered.

The funding deposit account may be credited with up to 0.85% of plan payroll (set by statute at 0.425% in fiscal 2024) in any year in which the Board of Trustees elects to require that employers contribute an amount in excess of the rate determined under R.S. 11:103. In such years as the Board sets the employer contribution rate above the rate determined under R.S. 11:103 (the minimum net direct actuarially determined employer contribution rate) for the purpose of funding additional benefits for retirees, survivors, and beneficiaries, a contribution to the Funding Deposit Account will be determined within

the system's actuarial valuation. The funds in the account shall earn interest annually at the board approved valuation interest rate. The account balance shall not be considered system assets for the purpose of computing the employer contribution rate under R.S. 11:103.

R.S. 11:2225.5(F) enumerates the framework that the Board of Trustees may use in providing additional benefits for retirees, survivors, and beneficiaries from the Funding Deposit Account. The Board may provide a nonrecurring lump sum payment (no more frequently than once in each three-year period) or a permanent benefit increase. Additional benefits may be defined based upon the original or current benefit. The Board may set a minimum age or minimum period (no less than one year) since benefit commencement for determining eligibility to receive the additional benefit. Permanent benefit increases may not exceed 3% of the benefit (whether original benefit or current benefit).

The most recent COLA granted by the Board of Trustees was effective July 1, 2022. The June 30, 2023 balance in the Funding Deposit Account is \$0. Therefore, the Board is not authorized to provide a nonrecurring lump sum payment or permanent benefit increase to retirees, survivors, and beneficiaries following this actuarial valuation.

**EXHIBITS**



## EXHIBIT I

### ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1. Normal Cost of Retirement Benefits.....	\$ 47,130,978	
2. Normal Cost of Death Benefits.....	\$ 1,993,384	
3. Normal Cost of Disability Benefits .....	\$ 5,208,869	
4. Normal Cost of Deferred Retirement Benefits.....	\$ 4,573,307	
5. Normal Cost of Contribution Refunds.....	\$ 6,269,958	
6. TOTAL Normal Cost as of July 1, 2023 (1 + 2 + 3 + 4 + 5).....	\$ 65,176,496	
7. TOTAL Normal Cost Interest Adjusted for Mid-year Payment.....	\$ 67,340,285	
8. Adjustment to Total Normal Cost for Employee Portion .....	\$ 32,131,513	
9. Employer Normal Cost, Adjusted for Midyear Payment (7 – 8).....	\$ 35,208,772	
10. Amortization Payments on Unfunded Accrued Liability at Midyear .....	\$ 110,241,351	
11. Projected Administrative Expenses for Fiscal 2024 .....	\$ 3,210,762	
12. TOTAL Employer Cost (9 + 10 + 11).....	\$ 148,660,885	
13. Expected Insurance Premium Taxes due in Fiscal 2024 .....	\$ (26,011,486)	
14. Net Direct Actuarially Required Employer Contribution for Fiscal 2024 (12 + 13).....	\$ 122,649,399	
15. Projected Payroll for Contributing Members (Fiscal 2024) .....	\$ 346,556,300	
16. Net Direct Actuarially Required Employer Contribution as a Percentage of Projected Payroll for Fiscal 2024 (14 ÷ 15) .....	35.39%	*
17. Minimum Employer Contribution Rate for Fiscal 2024 .....	33.50%	*
18. Projected Fiscal 2024 Contribution Loss (Gain) as a % of Payroll (16 – 17).....	1.89%	
19. Projected Fiscal 2024 Employer Contribution Shortfall (Surplus) (15 × 18).....	\$ 6,549,914	
20. Amortization of Interest Adjusted Fiscal 2024 Employer Contribution Shortfall (Surplus) Based on Midyear Payment in Fiscal 2025.....	\$ 707,831	
21. Estimated Fiscal 2025 Employer Normal Cost Adjusted for Midyear Payment ...	\$ 36,088,991	
22. Estimated Fiscal 2025 Amortization Payments on Fiscal 2023 UAL.....	\$ 110,241,351	
23. Estimated Fiscal 2025 Administrative Expenses .....	\$ 3,291,031	
24. Estimated Insurance Premium Taxes due in Fiscal 2025.....	\$ (26,661,773)	
25. Estimated Actuarially Required Net Direct Employer Contributions for Fiscal 2025 (20 + 21 + 22 + 23 +24).....	\$ 123,667,431	
26. Projected Payroll for Contributing Members (Fiscal 2025) .....	\$ 355,220,208	
27. Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2025 (25 ÷ 26, Rounded to nearest 0.25%) .....	34.75%	*

\* The above rates are for members with earnings greater than the Department of HHS poverty guidelines. For members of the Hazardous Duty Subplan or hired before January 1, 2013, and who have earnings below the poverty guidelines, employer rates will be 2.5% higher and employee rates will be 2.5% lower.

## EXHIBIT II PRESENT VALUE OF FUTURE BENEFITS

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

Retirement Benefits.....	\$ 1,814,218,786
Survivor Benefits.....	27,470,556
Disability Benefits.....	119,834,534
Vested Termination Benefits.....	76,167,709
Refunds of Contributions .....	34,469,968
 TOTAL Present Value of Future Benefits for Active Members.....	 \$ 2,072,161,553

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

Terminated Vested Members Due Benefits at Retirement ..	\$ 56,750,660
Terminated Members with Reciprocal Due Benefits at Retirement .....	0
Terminated Members Due a Refund .....	13,531,484
 TOTAL Present Value of Future Benefits for Terminated Members .....	 \$ 70,282,144

### PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees	
Maximum.....	\$ 656,628,498
Option 1 .....	3,384,866
Option 2 .....	804,334,489
Option 3 .....	270,735,534
Option 4 .....	1,103,122
Merged Retirees.....	14,065,599
 TOTAL Regular Retirees.....	 \$ 1,750,252,108
 Disability Retirees .....	 37,203,578
 Survivors.....	 181,487,181
 DROP/IBO Account Balances Payable to Retirees .....	 103,677,209
 TOTAL Present Value of Future Benefits for Retirees & Survivors.....	 \$ 2,072,620,076
 TOTAL PRESENT VALUE OF FUTURE BENEFITS.....	 \$ 4,215,063,773

## EXHIBIT III – SCHEDULE A MARKET VALUE OF ASSETS

### CURRENT ASSETS:

Cash in Banks .....	\$ 24,197,989	
Contributions and Taxes Receivable .....	11,200,115	
Accrued Interest and Dividends.....	4,426,677	
Investments Receivable.....	16,387,423	
Prepaid Expenses.....	1,172,556	
TOTAL CURRENT ASSETS.....		\$ 57,384,760
Property, Plant & Equipment .....		\$ 4,336,804

### INVESTMENTS:

Equities .....	\$ 1,298,061,269	
Fixed Income .....	776,626,853	
Alternative Investments .....	224,914,139	
Real Estate .....	217,647,190	
DROP Balances Held Outside System Assets .....	32,302,741	
Cash Equivalents.....	18,631,063	
Collateral for Securities Lending.....	6,870,404	
TOTAL INVESTMENTS .....		\$ 2,575,053,659
DEFERRED OUTFLOWS OF RESOURCES.....		\$ 471,800
TOTAL ASSETS.....		\$ 2,637,247,023

### CURRENT LIABILITIES:

Accounts Payable .....	\$ 976,319	
Benefits Payable.....	66,851	
Refunds Payable.....	410,501	
Investments Payable.....	588,439	
Securities Lending Obligations.....	6,870,404	
Other Post-Employment Benefits.....	1,510,529	
Net Pension Liability.....	665,182	
TOTAL CURRENT LIABILITIES.....		\$ 11,088,225
DEFERRED INFLOWS OF RESOURCES.....		\$ 1,098,421
TOTAL LIABILITIES.....		\$ 12,186,646
MARKET VALUE OF ASSETS .....		\$ 2,625,060,377

## EXHIBIT III – SCHEDULE B ACTUARIAL VALUE OF ASSETS

### Excess (Shortfall) of Invested Income for Current and Previous 4 Years:

Fiscal year 2023 .....	\$ 28,342,600
Fiscal year 2022 .....	(478,619,357)
Fiscal year 2021 .....	428,749,410
Fiscal year 2020 .....	(105,286,461)
Fiscal year 2019 .....	<u>(73,652,124)</u>
 Total for five years .....	 \$ (200,465,932)

### Deferral of Excess (Shortfall) of Invested Income:

Fiscal year 2023 (80%).....	\$ 22,674,080
Fiscal year 2022 (60%).....	(287,171,614)
Fiscal year 2021 (40%).....	171,499,764
Fiscal year 2020 (20%).....	(21,057,292)
Fiscal year 2019 ( 0%) .....	<u>0</u>
 Total Deferred for Year .....	 \$ (114,055,062)

Market Value of Plan Net Assets, End of Year ..... \$ 2,625,060,377

Preliminary Actuarial Value of Plan Assets, End of Year..... \$ 2,739,115,439

### Actuarial Value of Assets Corridor

85% of market value, end of year.....	\$ 2,231,301,320
115% of market value, end of year .....	\$ 3,018,819,434

Final Actuarial Value of Plan Net Assets, End of Year ..... \$ 2,739,115,439

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

Employee Contributions to the Annuity Savings Fund.....	\$ 258,770,789
Employer Normal Contributions to the Pension Accumulation Fund.....	330,544,613
Employer Amortization Payments to the Pension Accumulation Fund .....	886,632,932
<b>TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS.....</b>	<b>\$ 1,475,948,334</b>

**EXHIBIT V – SCHEDULE A**  
**ACTUARIAL ACCRUED LIABILITIES**

**LIABILITY FOR ACTIVE MEMBERS**

Accrued Liability for Retirement Benefits .....	\$ 1,391,113,171
Accrued Liability for Survivor Benefits .....	10,220,027
Accrued Liability for Disability Benefits .....	73,951,518
Accrued Liability for Vested Termination Benefits .....	33,918,213
Accrued Liability for Refunds of Contributions .....	(26,356,778)
<b>TOTAL Actuarial Accrued Liability for Active Members .....</b>	<b>\$ 1,482,846,151</b>
<b>LIABILITY FOR TERMINATED MEMBERS .....</b>	<b>\$ 70,282,144</b>
<b>LIABILITY FOR RETIREES AND SURVIVORS .....</b>	<b>\$ 2,072,620,076</b>
<b>TOTAL ACTUARIAL ACCRUED LIABILITY.....</b>	<b>\$ 3,625,748,371</b>
<b>ACTUARIAL VALUE OF ASSETS.....</b>	<b>\$ 2,739,115,439</b>
<b>UNFUNDED ACTUARIAL ACCRUED LIABILITY.....</b>	<b>\$ 886,632,932</b>
<b>Ratio of Actuarial Value of Assets to Entry Age Normal Accrued Liability.....</b>	<b>75.55%</b>

**EXHIBIT V – SCHEDULE B**  
**CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY**

<b>PRIOR YEAR UNFUNDED ACCRUED LIABILITY.....</b>	<b>\$ 788,517,441</b>
Interest on Unfunded Accrued Liability.....	\$ 53,224,927
Asset Experience Loss.....	52,411,319
Liability Experience Loss .....	92,623,396
<b>TOTAL Additions to UAL .....</b>	<b>\$ 198,259,642</b>
Interest Adjusted Amortization Payments.....	\$ 98,414,639
Contribution Excess with Accrued Interest.....	1,729,512
<b>TOTAL Reductions to UAL .....</b>	<b>\$ 100,144,151</b>
<b>NET Change in Unfunded Accrued Liability .....</b>	<b>\$ 98,115,491</b>
<b>CURRENT YEAR UNFUNDED ACCRUED LIABILITY.....</b>	<b>\$ 886,632,932</b>

**EXHIBIT V – SCHEDULE C**  
**AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY**

**JUNE 30, 2023**

FISCAL YEAR	DESCRIPTION	AMORT. PERIOD	INITIAL BALANCE	YEARS REMAINING	REMAINING BALANCE	AMORT. PAYMENTS
2014	Cumulative Bases	20	\$801,359,380	11	\$569,615,957	\$70,275,487
2015	Asset Experience Gain	15	(52,886,689)	7	(31,397,402)	(5,410,034)
2015	Liability Experience Gain	15	(9,412,440)	7	(5,587,911)	(962,844)
2015	Contribution Gain	15	(6,385,205)	7	(3,790,727)	(653,173)
2015	Liability Assumption Loss	15	91,142,323	7	54,108,743	9,323,386
2016	Asset Experience Loss	15	32,707,657	8	21,479,648	3,337,121
2016	Liability Experience Gain	15	(8,714,512)	8	(5,722,961)	(889,131)
2016	Contribution Loss	15	1,831,833	8	1,202,994	186,900
2017	Asset Experience Gain	15	(4,227,464)	9	(3,024,361)	(430,233)
2017	Liability Experience Loss	15	7,622,189	9	5,452,971	775,718
2017	Contribution Gain	15	(8,105,382)	9	(5,798,651)	(824,893)
2017	Liability Assumption Loss	15	52,448,263	9	37,521,894	5,337,711
2018	Asset Experience Loss	15	7,852,432	10	6,049,937	797,609
2018	Liability Experience Gain	15	(54,697,789)	10	(42,142,123)	(5,555,916)
2018	Contribution Loss	15	5,491,975	10	4,231,315	557,846
2018	Liability Assumption Loss	15	38,696,875	10	29,814,157	3,930,626
2019	Asset Experience Loss	15	58,094,818	11	47,758,714	5,892,158
2019	Liability Experience Gain	15	(788,461)	11	(648,181)	(79,968)
2019	Contribution Gain	15	(8,114,574)	11	(6,670,848)	(823,005)
2019	Liability Assumption Loss	15	24,575,373	11	20,202,978	2,492,511
2020	Asset Experience Loss	15	57,612,260	12	50,149,155	5,836,083
2020	Liability Experience Gain	15	(29,781,524)	12	(25,923,620)	(3,016,848)
2020	Contribution Loss	15	1,457,071	12	1,268,321	147,600
2020	Liability Assumption Gain	15	(75,574,461)	12	(65,784,530)	(7,655,642)
2021	Asset Experience Gain	15	(61,268,465)	13	(56,129,702)	(6,202,452)
2021	Liability Experience Loss	15	1,258,411	13	1,152,865	127,394
2021	Contribution Gain	15	(6,876,395)	13	(6,299,652)	(696,125)
2021	Liability Assumption Loss	15	67,936,761	13	62,238,709	6,877,510
2022	Asset Experience Loss	15	30,433,589	14	29,198,980	3,080,914
2022	Liability Experience Loss	15	7,901,075	14	7,580,550	799,857
2022	Contribution Loss	15	5,061,904	14	4,856,556	512,437
2022	COLA Loss	15	50,408,907	14	48,363,954	5,103,095
2023	Asset Experience Loss	15	52,411,319	15	52,411,319	5,305,807
2023	Liability Experience Loss	15	92,623,396	15	92,623,396	9,376,637
2023	Contribution Gain	15	(1,729,512)	15	(1,729,512)	(175,085)

TOTAL Unfunded Actuarial Accrued Liability	\$886,632,932	
TOTAL Fiscal 2024 Amortization Payments at Beginning of Year		\$106,699,058
TOTAL Fiscal 2024 Amortization Payments Adjusted to Mid-Year		\$110,241,351

## EXHIBIT VI ANALYSIS OF CHANGE IN ASSETS

Actuarial Value of Assets (June 30, 2022) ..... \$ 2,660,808,543

### INCOME:

Member Contributions .....	\$ 32,016,760
Employer Contributions .....	106,051,192
Irregular Contributions .....	24,131
Insurance Premium Taxes .....	23,063,214
Other Income .....	110,668

Total Contributions..... \$ 161,265,965

Net Appreciation of Investments .....	\$ 177,605,270
Interest & Dividends .....	24,070,001
Alternative Investment Income .....	112,774
Other Income .....	163,977
Investment Expense .....	(7,893,802)

Net Investment Income ..... \$ 194,058,220

TOTAL Income..... \$ 355,324,185

### EXPENSES:

Retirement Benefits .....	\$ 178,770,979
DROP Disbursements .....	16,897,261
Refunds of Contributions .....	6,248,784
Transfers to Other Systems .....	4,023,688
Administrative Expenses (Including Depreciation/OPEB) .....	2,640,790

TOTAL Expenses..... \$ 208,581,502

Net Market Value Income for Fiscal 2023 (Income – Expenses) ..... \$ 146,742,683

Unadjusted Fund Balance as of June 30, 2023  
(Fund Balance Previous Year + Net Income)..... \$ 2,807,551,226

Adjustment for Actuarial Smoothing..... \$ (68,435,787)

Actuarial Value of Assets: (June 30, 2023) ..... \$ 2,739,115,439

## EXHIBIT VII CENSUS DATA

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2022	5,269	2,436	258	5,006	12,969
Additions to Census					
Initial membership	631	169			800
Omitted in error last year					
Death of another member				60	60
Adjustment for multiple records					
Change in Status during Year					
Actives terminating service	(364)	364			
Actives who retired	(106)			106	
Actives entering DROP	(83)		83		
Term. members rehired	78	(78)			
Term. members who retire		(15)		15	
Retirees who are rehired	6			(6)	
Refunded who are rehired	31	33			64
DROP participants retiring			(80)	80	
DROP returned to work	12		(12)		
Status error last year	1			(1)	
Eliminated from Census					
Refund of contributions	(174)	(171)			(345)
Deaths	(12)	(5)	(1)	(151)	(169)
Included in error last year	(1)	(1)			(2)
Adjustment for multiple records				(7)	(7)
Number of members as of June 30, 2023	5,288	2,732	248	5,102	13,370



### Actives Census by Age:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 - 20	16	10	26	33,504	871,094
21 - 25	304	110	414	40,091	16,597,757
26 - 30	527	198	725	47,040	34,104,272
31 - 35	576	207	783	52,562	41,155,998
36 - 40	604	196	800	59,858	47,886,415
41 - 45	601	228	829	66,448	55,085,067
46 - 50	569	180	749	71,240	53,358,963
51 - 55	436	117	553	71,954	39,790,610
56 - 60	198	88	286	69,842	19,974,771
61 - 65	50	27	77	71,480	5,503,944
66 - 70	19	12	31	71,559	2,218,322
71 - 75	7	2	9	74,172	667,549
76 - 80	5	0	5	83,230	416,150
81 - 85	1	0	1	102,643	102,643
<b>Total</b>	<b>3,913</b>	<b>1,375</b>	<b>5,288</b>	<b>60,086</b>	<b>317,733,555</b>

Includes 2,387 actives with vested benefits, including 84 active former DROP participants. The 248 current DROP participants are excluded. Employer contributions are payable on \$13,904,922 of payroll for 160 DROP participants who entered DROP on or after July 1, 2021.

### DROP Participants by Age:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
46 - 50	14	2	16	66,406	1,062,491
51 - 55	94	15	109	68,842	7,503,798
56 - 60	69	12	81	59,369	4,808,865
61 - 65	24	9	33	57,567	1,899,713
66 - 70	8	1	9	50,423	453,807
<b>Total</b>	<b>209</b>	<b>39</b>	<b>248</b>	<b>63,422</b>	<b>15,728,674</b>

### Terminated Members Due a Deferred Retirement Benefit:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	2	0	2	17,629	35,257
36 - 40	34	7	41	25,413	1,041,953
41 - 45	54	7	61	27,943	1,704,541
46 - 50	69	20	89	31,759	2,826,521
51 - 55	55	9	64	24,969	1,598,012
56 - 60	1	0	1	16,258	16,258
<b>Total</b>	<b>215</b>	<b>43</b>	<b>258</b>	<b>27,994</b>	<b>7,222,542</b>

### Terminated Members Due a Refund of Contributions:

Contributions Ranging		Number	Total Contributions
From	To		
0	- 99	275	12,687
100	- 499	585	150,214
500	- 999	294	211,993
1,000	- 1,999	309	446,424
2,000	- 4,999	351	1,154,911
5,000	- 9,999	222	1,574,245
10,000	- 19,999	232	3,333,789
20,000	- 99,999	206	6,444,396
<b>Total</b>		<b>2,474</b>	<b>13,328,659</b>

Excludes \$ 202,825 due to survivors of several deceased members.

### Regular Retirees:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	1	0	1	30,609	30,609
46 - 50	51	7	58	56,353	3,268,481
51 - 55	263	37	300	55,144	16,543,094
56 - 60	492	102	594	50,970	30,276,068
61 - 65	563	132	695	48,351	33,604,094
66 - 70	646	152	798	41,867	33,410,248
71 - 75	536	85	621	34,786	21,602,396
76 - 80	431	57	488	28,942	14,123,649
81 - 85	179	17	196	25,834	5,063,534
86 - 90	56	5	61	23,309	1,421,847
91 - 95	18	0	18	24,635	443,438
96 - 100	7	1	8	18,224	145,792
<b>Total</b>	<b>3,243</b>	<b>595</b>	<b>3,838</b>	<b>41,671</b>	<b>159,933,250</b>

### Disability Retirees:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	1	0	1	9,516	9,516
36 - 40	2	3	5	21,852	109,262
41 - 45	7	7	14	23,815	333,409
46 - 50	10	11	21	22,071	463,500
51 - 55	25	5	30	22,056	661,675
56 - 60	15	10	25	16,191	404,780
61 - 65	16	3	19	13,989	265,784
66 - 70	10	6	16	13,028	208,455
71 - 75	17	4	21	12,852	269,891
76 - 80	10	2	12	16,968	203,617
81 - 85	4	2	6	18,492	110,950
<b>Total</b>	<b>117</b>	<b>53</b>	<b>170</b>	<b>17,887</b>	<b>3,040,839</b>

**Survivors:**

<b>Age</b>	<b>Number Male</b>	<b>Number Female</b>	<b>Total Number</b>	<b>Average Benefit</b>	<b>Total Benefit</b>
0 - 20	36	39	75	6,648	498,617
21 - 25	4	5	9	11,102	99,914
26 - 30	0	0	0	0	0
31 - 35	1	8	9	31,480	283,322
36 - 40	0	6	6	36,746	220,478
41 - 45	2	15	17	31,817	540,884
46 - 50	0	18	18	22,970	413,457
51 - 55	7	40	47	26,341	1,238,043
56 - 60	7	70	77	26,456	2,037,118
61 - 65	2	83	85	26,147	2,222,465
66 - 70	19	98	117	21,572	2,523,906
71 - 75	18	163	181	18,314	3,314,923
76 - 80	15	148	163	17,714	2,887,460
81 - 85	4	144	148	15,181	2,246,832
86 - 90	6	89	95	14,387	1,366,742
91 - 95	5	32	37	9,524	352,401
96 - 100	0	9	9	18,513	166,621
101 - 105	0	1	1	5,424	5,424
<b>Total</b>	<b>126</b>	<b>968</b>	<b>1,094</b>	<b>18,664</b>	<b>20,418,607</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	22	4	-	-	-	-	-	-	26
21 - 25	183	226	5	-	-	-	-	-	414
26 - 30	149	412	163	1	-	-	-	-	725
31 - 35	104	265	311	103	-	-	-	-	783
36 - 40	63	153	208	233	137	6	-	-	800
41 - 45	61	101	102	157	288	118	2	-	829
46 - 50	27	79	78	72	163	263	67	-	749
51 - 55	28	42	50	63	106	126	118	20	553
56 - 60	29	15	16	31	48	50	69	28	286
61 - 65	10	2	-	8	10	14	17	16	77
66 - 70	3	1	1	1	2	4	6	13	31
71 & Over	5	-	-	-	-	1	1	8	15
<b>Total</b>	<b>684</b>	<b>1,300</b>	<b>934</b>	<b>669</b>	<b>754</b>	<b>582</b>	<b>280</b>	<b>85</b>	<b>5,288</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	33,233	34,995	-	-	-	-	-	-	33,504
21 - 25	37,313	42,123	49,935	-	-	-	-	-	40,091
26 - 30	38,061	47,599	53,774	57,419	-	-	-	-	47,040
31 - 35	38,570	48,040	57,915	62,160	-	-	-	-	52,562
36 - 40	40,121	47,192	58,769	65,226	75,416	64,131	-	-	59,858
41 - 45	37,910	44,599	58,751	64,775	75,731	86,051	70,624	-	66,448
46 - 50	43,841	46,763	56,264	61,759	75,651	81,958	85,962	-	71,240
51 - 55	37,768	45,465	59,287	59,527	70,417	78,568	91,927	94,893	71,954
56 - 60	44,272	48,273	49,510	60,156	68,526	71,027	85,138	92,668	69,842
61 - 65	48,233	34,945	-	51,472	53,312	69,070	84,005	100,736	71,480
66 - 70	32,334	44,484	69,094	52,955	82,342	57,241	64,858	90,153	71,559
71 & Over	34,521	-	-	-	-	50,907	54,944	113,486	79,089
<b>Total</b>	<b>38,537</b>	<b>46,283</b>	<b>57,235</b>	<b>63,309</b>	<b>74,171</b>	<b>80,398</b>	<b>87,481</b>	<b>96,285</b>	<b>60,086</b>

\* Excludes DROP participants

### 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		-	-	-	-	-	1	1	2
36 - 40		-	-	-	-	8	33	-	41
41 - 45		-	-	-	6	55	-	-	61
46 - 50	7	5	4	7	66	-	-	-	89
51 - 55	12	13	12	27	-	-	-	-	64
56 - 60	1	-	-	-	-	-	-	-	1
61 - 65		-	-	-	-	-	-	-	-
66 - 70		-	-	-	-	-	-	-	-
71 & Over		-	-	-	-	-	-	-	-
<b>Total</b>	<b>20</b>	<b>18</b>	<b>16</b>	<b>34</b>	<b>72</b>	<b>63</b>	<b>34</b>	<b>1</b>	<b>258</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	-	-	-	-	-	-	12,712	22,545	17,629
36 - 40	-	-	-	-	-	27,985	24,790	-	25,413
41 - 45	-	-	-	-	36,181	27,045	-	-	27,943
46 - 50	51,378	42,402	62,270	28,368	27,382	-	-	-	31,759
51 - 55	26,575	25,826	21,148	25,541	-	-	-	-	24,969
56 - 60	16,258	-	-	-	-	-	-	-	16,258
61 - 65	-	-	-	-	-	-	-	-	-
66 - 70	-	-	-	-	-	-	-	-	-
71 & Over	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>34,740</b>	<b>30,431</b>	<b>31,428</b>	<b>26,123</b>	<b>28,115</b>	<b>27,164</b>	<b>24,435</b>	<b>22,545</b>	<b>27,994</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	24	19	8	5	3	-	-	-	59
51 - 55	72	55	53	59	56	5	-	-	300
56 - 60	62	65	81	111	209	57	8	1	594
61 - 65	33	29	32	69	263	199	60	10	695
66 - 70	10	10	17	34	159	243	231	94	798
71 - 75	1	-	5	9	43	94	198	271	621
76 - 80	-	-	-	2	14	29	64	379	488
81 - 85	-	1	-	-	1	4	14	176	196
86 - 90	-	-	-	-	-	-	2	59	61
91 & Over	-	-	-	-	-	-	-	26	26
<b>Total</b>	<b>202</b>	<b>179</b>	<b>196</b>	<b>289</b>	<b>748</b>	<b>631</b>	<b>577</b>	<b>1,016</b>	<b>3,838</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	58,341	65,419	49,124	37,713	24,795	-	-	-	55,917
51 - 55	60,881	60,362	55,366	54,088	46,304	24,215	-	-	55,144
56 - 60	51,562	51,035	49,637	51,623	53,580	45,085	27,590	22,435	50,970
61 - 65	46,071	48,114	56,107	49,288	50,418	48,316	40,000	21,724	48,351
66 - 70	43,939	40,067	52,338	40,380	48,532	44,467	38,668	30,352	41,867
71 - 75	80,635	-	42,334	40,049	43,584	40,364	35,022	30,800	34,786
76 - 80	-	-	-	43,494	40,885	36,682	31,000	27,484	28,942
81 - 85	-	14,899	-	-	14,233	30,822	22,227	26,136	25,834
86 - 90	-	-	-	-	-	-	46,791	22,513	23,309
91 & Over	-	-	-	-	-	-	-	22,663	22,663
<b>Total</b>	<b>54,559</b>	<b>54,140</b>	<b>52,270</b>	<b>49,589</b>	<b>49,870</b>	<b>44,521</b>	<b>36,181</b>	<b>27,927</b>	<b>41,671</b>

\* Members who have converted from disability retirement to regular retirement are listed with regular retirees.

## 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	-	-	-	-	-	-	-	-	-
31 - 35	-	1	-	-	-	-	-	-	1
36 - 40	1	1	3	-	-	-	-	-	5
41 - 45	1	3	5	5	-	-	-	-	14
46 - 50	-	7	2	8	2	2	-	-	21
51 - 55	2	2	7	8	7	4	-	-	30
56 - 60	-	-	4	3	5	6	5	2	25
61 - 65	-	-	-	4	2	8	-	5	19
66 - 70	-	-	-	1	2	2	4	7	16
71 - 75	-	-	-	-	-	3	3	15	21
76 - 80	-	-	-	-	-	1	3	8	12
81 & Over	-	-	-	-	-	-	1	5	6
<b>Total</b>	<b>4</b>	<b>14</b>	<b>21</b>	<b>29</b>	<b>18</b>	<b>26</b>	<b>16</b>	<b>42</b>	<b>170</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	-	-	-	-	-	-	-	-	-
31 - 35	-	9,516	-	-	-	-	-	-	9,516
36 - 40	19,147	25,638	21,492	-	-	-	-	-	21,852
41 - 45	41,421	24,532	21,444	22,235	-	-	-	-	23,815
46 - 50	-	28,162	29,067	19,430	15,184	11,215	-	-	22,071
51 - 55	39,116	26,126	27,683	19,671	18,644	12,381	-	-	22,056
56 - 60	-	-	15,165	26,796	18,092	13,109	10,977	19,867	16,191
61 - 65	-	-	-	20,738	12,561	13,939	-	9,239	13,989
66 - 70	-	-	-	14,334	15,370	16,073	11,091	12,410	13,028
71 - 75	-	-	-	-	-	12,190	15,036	12,548	12,852
76 - 80	-	-	-	-	-	9,183	21,122	16,384	16,968
81 & Over	-	-	-	-	-	-	6,678	20,854	18,492
<b>Total</b>	<b>34,700</b>	<b>25,581</b>	<b>23,061</b>	<b>20,747</b>	<b>17,067</b>	<b>13,078</b>	<b>13,400</b>	<b>14,199</b>	<b>17,887</b>

\* Members who have converted from disability retirement to regular retirement are listed with regular retirees.



## 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	5	25	34	9	8	3	-	-	84
31 - 35	1	3	4	-	-	-	1	-	9
36 - 40	2	1	2	-	1	-	-	-	6
41 - 45	1	4	7	-	2	1	1	1	17
46 - 50	1	2	1	6	5	1	-	2	18
51 - 55	2	10	10	4	5	9	5	2	47
56 - 60	-	7	12	12	14	10	11	11	77
61 - 65	-	1	11	13	22	14	12	12	85
66 - 70	-	1	3	13	23	27	21	29	117
71 - 75	-	1	2	12	27	36	48	55	181
76 - 80	-	-	2	8	9	17	48	79	163
81 & Over	-	-	3	2	2	16	24	243	290
<b>Total</b>	<b>12</b>	<b>55</b>	<b>91</b>	<b>79</b>	<b>118</b>	<b>134</b>	<b>171</b>	<b>434</b>	<b>1,094</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	6,052	7,260	8,032	6,570	4,698	5,656	-	-	7,125
31 - 35	70,926	30,482	27,288	-	-	-	11,799	-	31,480
36 - 40	49,184	18,146	45,385	-	13,195	-	-	-	36,746
41 - 45	91,205	30,438	34,430	-	24,599	9,911	11,510	16,300	31,817
46 - 50	29,243	43,024	42,833	16,492	28,032	9,492	-	3,367	22,970
51 - 55	42,929	40,328	34,583	29,733	18,806	13,249	8,828	13,366	26,341
56 - 60	-	56,244	39,405	33,101	25,064	15,377	11,186	13,239	26,456
61 - 65	-	53,582	38,509	37,357	29,479	22,158	13,504	11,571	26,147
66 - 70	-	38,225	39,374	31,532	27,374	20,794	20,108	11,873	21,572
71 - 75	-	31,960	50,725	21,134	20,821	17,529	21,330	12,924	18,314
76 - 80	-	-	59,419	24,229	33,013	15,987	19,678	13,435	17,714
81 & Over	-	-	21,831	43,169	28,416	17,250	21,769	12,884	14,269
<b>Total</b>	<b>33,822</b>	<b>25,812</b>	<b>26,407</b>	<b>26,627</b>	<b>24,401</b>	<b>17,611</b>	<b>19,097</b>	<b>12,861</b>	<b>18,664</b>

## EXHIBIT VIII YEAR-TO-YEAR COMPARISON

	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020
Number of Active Members	5,288	5,269	5,414	5,644
Number of Retirees & Survivors	5,102	5,006	4,938	4,837
DROP Participants	248	258	257	212
Number of Terminated Due Deferred Benefits	258	252	236	221
Number Terminated Due Refunds	2,474	2,184	2,040	1,842
Active Lives Payroll (excludes DROP participants)	\$ 331,638,477	\$ 301,207,646	\$ 293,949,856	\$ 302,984,686
Retiree Benefits in Payment	\$ 183,392,696	\$ 174,892,416	\$ 162,774,931	\$ 154,963,239
Market Value of Assets	\$ 2,625,060,377	\$ 2,478,317,694	\$ 2,816,973,727	\$ 2,256,740,977
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability	75.55%	77.14%	77.78%	75.50%
Actuarial Accrued Liability (EAN)	\$ 3,625,748,371	\$ 3,449,325,984	\$ 3,301,558,629	\$ 3,135,811,188
Actuarial Value of Assets	\$ 2,739,115,439	\$ 2,660,808,543	\$ 2,568,079,189	\$ 2,367,621,208
UAL (Funding Excess)	\$ 886,632,932	\$ 788,517,441	\$ 733,479,440	\$ 768,189,980
	Fiscal 2024	Fiscal 2023	Fiscal 2022	Fiscal 2021
Employee Contribution Rates:				
Original Subplan or Hazardous Subplan	10.00% †	10.00% †	10.00% †	10.00% †
Non-Hazardous Subplan	8.00%	8.00%	8.00%	8.00%
Tax Contributions as a % of Projected Payroll	7.51%	7.69%	7.31%	7.14%
Minimum Employer Contribution Rates:				
Original Subplan or Hazardous Subplan	33.50% †	31.25% †	29.75% †	33.75% †
Non-Hazardous Subplan	33.50%	31.25%	29.75%	33.75%
Additional Employer Contribution Rate:				
FDA funding for future COLAs	0.425%	N/A	N/A	N/A
Funding for UAL reduction	N/A	N/A	N/A	N/A

† For members with earnings greater than the Department of HHS poverty guidelines. For members with earnings below the poverty guidelines, employer rates will be 2.5% higher and employee rates will be 2.5% lower.

Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014
5,729	5,685	5,663	5,666	5,535	5,468
4,770	4,736	4,691	4,637	4,538	4,444
203	180	193	191	228	271
201	187	181	175	168	159
1,670	1,563	1,443	1,324	1,320	1,272
\$ 305,445,379	\$ 294,988,865	\$ 293,792,282	\$ 281,546,022	\$ 265,089,428	\$ 259,594,435
\$ 148,972,071	\$ 144,162,327	\$ 139,782,252	\$ 134,868,070	\$ 128,050,009	\$ 118,522,277
\$ 2,224,281,981	\$ 2,161,775,206	\$ 2,045,022,309	\$ 1,822,858,397	\$ 1,893,077,295	\$ 1,887,019,463
72.89%	73.23%	71.39%	70.64%	69.91%	68.11%
\$ 3,132,449,454	\$ 3,007,181,318	\$ 2,918,064,612	\$ 2,760,140,132	\$ 2,676,472,766	\$ 2,512,627,665
\$ 2,283,284,109	\$ 2,202,302,093	\$ 2,083,240,809	\$ 1,949,755,816	\$ 1,871,160,542	\$ 1,711,268,285
\$ 849,165,345	\$ 804,879,225	\$ 834,823,803	\$ 810,384,316	\$ 805,312,224	\$ 801,359,380
Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015
10.00% +	10.00% +	10.00% +	10.00% +	10.00% +	10.00% +
8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
7.14%	6.97%	6.69%	6.71%	6.93%	6.77%
32.50% +	32.25% +	30.75% +	31.75% +	29.50% +	31.50% +
32.50%	32.25%	30.75%	33.75%	31.50%	33.50%
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

## SUMMARY OF PRINCIPAL PLAN PROVISIONS

The Municipal Police Employees' Retirement System (MPERS) was established as of July 1, 1973, for the purpose of providing retirement allowances and other benefits as described under R.S. 11:2211 – 11:2235. MPERS represents a cost sharing multiple employer, defined benefit governmental pension plan.

The following summary of plan provisions is for general informational purposes only and does not constitute a guarantee of benefits. The provisions contained within this section are as of June 30, 2020.

### MEMBERSHIP

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All full-time police officers empowered to make arrests, all full-time police officers decommissioned due to illness or injury, empowered by a municipality of the state of Louisiana, and engaged in law enforcement, all individuals in a position as defined in the municipal fire and police civil service system who are employed on a full-time basis by a police department of any municipality of this state, and are under the direction of a chief of police, and are paid from the budget of the applicable police department are required to become members of this retirement system, if they earn at least \$375 per month excluding state supplemental pay. All elected chiefs of police, whose salary is at least \$100 per month, all academy recruits who are participating in or awaiting participation in a formal training program, required prior to commission as a municipal police officer, with complete law enforcement office authority, all full-time secretaries to an appointed chief or elected chief of police, and all full-time employees of the system are required to become members of this retirement system. Persons must be under the age of fifty on their date of employment to be eligible for system membership. Certain restrictions to membership apply to those who are receiving disability or regular retirement benefits from another system.

For employees whose first employment making them eligible for membership in the system occurred on or after January 1, 2013, membership will be in the Hazardous Duty Subplan if they are eligible to receive state supplemental pay by virtue of their employment or the Nonhazardous Duty Subplan if they are not eligible for state supplemental pay.

### CONTRIBUTION RATES

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The system is financed by employee and employer contributions together with funds from dedicated insurance premium taxes as allocated by the Public Retirement Systems' Actuarial Committee in accordance with R.S. 11:62, R.S. 11:103, and R.S. 22:1476(A)(3). For employees hired prior to January 1, 2013, the employee contribution rate is at least 7.5% but not greater than 10% based on the total contribution expressed as a percentage of payroll after applying all required tax contributions. The employee rate, when such contributions total 25% or less, is set at 7.5%. The employee rate then increases 0.25% for each 0.75% increase in the total rate, and an additional 0.25% when the rate exceeds 28.75%, subject to a maximum rate of 10%. Regardless of the total contribution rate, members whose earnable compensation is less than or equal to the poverty guidelines issued by the U.S. Department of Health and Human Services have an employee contribution rate of 7.5%. Where members qualify for discounted employee contributions due to the poverty guidelines, the employer must make up the difference through an increased employer contribution rate. Net direct employer contributions are nine

percent (9.0%) of earnable compensation unless the funds allocated from dedicated taxes are insufficient to provide the actuarially required contributions or the actuarially required contributions are less than 9.0%. Members who accrue 100% of average final compensation prior to July 1, 2021 are not required to contribute to the system once they have enough service to have accrued 100% of average final compensation, but the employer is required to continue to contribute the employer's contribution until the member retires. For members who enter DROP prior to July 1, 2021, no employer contributions are required while the members participate in DROP.

For employees hired on or after January 1, 2013 who are members of the Hazardous Duty Subplan, the employee contribution rate is the same as that for employees hired before January 1, 2013. For employees hired on or after January 1, 2013 who are members of the Nonhazardous Duty Subplan, the employee contribution rate is 8%.

## **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 thirty days after the effective date of withdrawal from service, if the member's employer has submitted all contributions.

## **AVERAGE FINAL COMPENSATION**

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**For employees hired prior to January 1, 2013:** The average annual earned compensation of an employee for the highest period of thirty-six successive or joined months of service as an employee.

**For employees hired on or after January 1, 2013:** The average annual earned compensation of an employee for the highest period of sixty successive or joined months of service as an employee.

The twelve-month salaries used to compute the average final compensation are subject to a limit in the rate of increase of 15% per year with certain exceptions.

## **NORMAL RETIREMENT BENEFITS**

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**For employees hired prior to January 1, 2013:** 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. 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.

**For employees hired on or after January 1, 2013 who participate in the Hazardous Duty Subplan:** Members with twelve years of creditable service may retire at age fifty-five; members with twenty-five years of service may retire at any age. The retirement allowance is equal to three 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. Members in this subplan who retire with thirty or more years of creditable service receive benefits according to a three and one-third percent retirement allowance.

**For employees hired on or after January 1, 2013 who participate in the Nonhazardous Duty Subplan:** Members with ten years of creditable service may retire at age sixty; members with twenty-five years of creditable service may retire at age fifty-five; members with thirty years of service may retire at any age. The retirement allowance is equal to two and one-half 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.

## **EARLY RETIREMENT BENEFITS**

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**For employees hired prior to January 1, 2013:** Members with twenty or more years of creditable service who leave employment before age fifty may elect to receive early retirement benefits equal to an actuarially reduced accrued normal retirement benefit.

**For employees hired on or after January 1, 2013:** Members with twenty or more years of creditable service may elect to receive early retirement benefits equal to an actuarially reduced accrued normal retirement benefit.

## **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 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**

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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, equals 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 ten years of creditable service and provided that the disability was incurred while the member was an active contributing member, is entitled to disability benefits.

**For employees hired prior to January 1, 2013:** Disability retirees will receive a benefit equal to three percent of average final compensation multiplied by the number of years of service, subject to a minimum of 40% of final compensation and a maximum of 60% of final compensation. Any disability retiree who is in a coma or paraplegic, who suffers a traumatic physical injury causing damage to the brain or spinal cord, or who is blinded or loses the total use of a limb, solely as a result of injuries sustained in the line of duty will receive a benefit equal to 100% of average final compensation. Disability retirees who retired with a service-connected disability benefit have the option, at normal retirement age, to continue receiving a disability benefit or to convert to receiving their vested retirement benefit. All other disability retirees, at normal retirement age, will receive the greater of their disability retirement benefit or their vested benefit.

**For employees hired on or after January 1, 2013 who participate in the Hazardous Duty Subplan:** Disability retirees who are disabled in the line of duty or who have 10 years of service credit will receive a benefit equal to two and three-quarters percent of average final compensation multiplied by the number of years of service, subject to a minimum of 33% of final compensation and a maximum of 55% of final compensation. Any disability retiree who is in a coma or paraplegic, who suffers a traumatic physical injury causing damage to the brain or spinal cord, or who is blinded or loses the total use of a limb, solely as a result of injuries sustained in the line of duty will receive a benefit equal to 100% of average final compensation. Disability retirees who retired with a service-connected disability benefit have the option, at normal retirement age, to continue receiving a disability benefit or to convert to receiving their vested retirement benefit. All other disability retirees, at normal retirement age, will receive the greater of their disability retirement benefit or their vested benefit.

**For employees hired on or after January 1, 2013 who participate in the Nonhazardous Duty Subplan:** Disability retirees who have at least 10 years of service credit will receive a benefit equal to two and one-quarter percent of average final compensation multiplied by the number of years of service, subject to a minimum of 25% of final compensation and a maximum of 50% of final compensation. Any disability retiree who is in a coma or paraplegic, who suffers a traumatic physical injury causing damage to the brain or spinal cord, or who is blinded or loses the total use of a limb, solely as a result of injuries sustained in the line of duty will receive a benefit equal to 100% of average final compensation. At normal retirement age, disability retirees will receive the greater of their disability retirement benefit or their vested benefit.

## SURVIVOR BENEFITS

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Benefits are payable to survivors of any active contributing member who dies before retirement, or disability retirees who die after retirement as follows.

**For employees hired prior to January 1, 2013:** If he leaves a surviving spouse, she will receive an annual benefit equal to  $3\frac{1}{3}\%$  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. If the surviving spouse remarries, the benefits shall cease unless the remarriage occurs after age fifty-five. If the member dies as a result of injuries sustained in the line of duty, the surviving spouse receives a benefit equal to 100% of average final compensation, which shall not cease due to remarriage, less any benefits payable to surviving children. Unmarried 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 when combined with the surviving spouse's benefit) until reaching the age of eighteen, or until the age of twenty-three, assuming they remain unmarried, if enrolled full-time in an institution of higher learning, high school, or vocational-technical school, 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, subject to the same age restrictions as in the case of a surviving spouse with minor children. If a member dies after he is eligible for retirement but before actual retirement, his surviving spouse will be paid the greater of the surviving spouse benefits detailed above, or an automatic option 2 benefit. Members who have terminated employment with at least twelve years of service credit are eligible for the benefits detailed in this paragraph.

**For employees hired on or after January 1, 2013 who participate in the Hazardous Duty Subplan:** The surviving spouse of a deceased active contributing member or disability retiree with at least ten years of creditable service not killed in the line of duty will receive an annual benefit equal to the benefit calculated using the regular retirement formula; however, in no event is the annual benefit less than 33% nor more than 55% of the deceased member's average final compensation. If the surviving spouse remarries, the benefits shall cease unless the remarriage occurs after age sixty. If the member dies as a result of injuries sustained in the line of duty, the surviving spouse receives a benefit equal to 100% of average final compensation, which shall not cease due to remarriage, less any benefits payable to surviving children. Unmarried 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 when combined with the surviving spouse's benefit) until reaching the age of eighteen, or until the age of twenty-three, assuming they remain unmarried, if enrolled full-time in an institution of higher learning, high school, or vocational-technical school, 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 twenty-five percent of the deceased's average final compensation, not to exceed an aggregate of fifty percent of average final compensation, subject to the same age restrictions as in the case of a surviving spouse with minor children. If a member dies after he is eligible for retirement but before actual retirement, his surviving spouse will be paid the greater of the surviving spouse benefits detailed above, or an automatic option 2 benefit. Members who have terminated employment with at least twelve years of service credit are eligible for the benefits detailed in this paragraph.

**For employees hired on or after January 1, 2013 who participate in the Nonhazardous Duty Subplan:** The surviving spouse of a deceased active contributing member or disability retiree with at least ten years of creditable service not killed in the line of duty will receive an annual benefit equal to



the benefit calculated using the regular retirement formula; however, in no event is the annual benefit less than 25% nor more than 50% of the deceased member's average final compensation. If the surviving spouse remarries, the benefits shall cease unless the remarriage occurs after age sixty. If the member dies as a result of injuries sustained in the line of duty, the surviving spouse receives a benefit equal to 100% of average final compensation, which shall not cease due to remarriage, less any benefits payable to surviving children. Unmarried 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 when combined with the surviving spouse's benefit) until reaching the age of eighteen, or until the age of twenty-three, assuming they remain unmarried, if enrolled full-time in an institution of higher learning, high school, or vocational-technical school, 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 twenty percent (twenty-five percent in the case of one minor child) of the deceased's average final compensation, not to exceed an aggregate of fifty percent of average final compensation, subject to the same age restrictions as in the case of a surviving spouse with minor children. If a member dies after he is eligible for retirement but before actual retirement, his surviving spouse will be paid the greater of the surviving spouse benefits detailed above, or an automatic option 2 benefit. Members who have terminated employment with at least twelve years of service credit are eligible for the benefits detailed in this paragraph.

#### **DEFERRED RETIREMENT OPTION PLAN (DROP)**

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In lieu of terminating employment and accepting a service retirement allowance, any member of the system who is eligible to receive a regular 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 fund 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. Such members may accumulate an additional benefit for service rendered after completion of the Deferred Retirement Option Plan. 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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Pursuant to R.S. 11:2225.5, the Board of Trustees may provide a nonrecurring lump sum payment (subject to frequency limitations) or permanent benefit increase only from funds set aside in the system's

Funding Deposit Account. Funds are credited to the system's Funding Deposit Account in years where the Board of Trustees sets the employer contribution rate in excess of the minimum employer rate determined pursuant to R.S. 11:103.

R.S. 11:2225.5(F) enumerates the framework that the Board of Trustees may use in providing additional benefits for retirees, survivors, and beneficiaries from the Funding Deposit Account. The Board may provide a nonrecurring lump sum payment (no more frequently than once in each three-year period) or a permanent benefit increase. Additional benefits may be defined based upon the original or current benefit. The Board may set a minimum age or minimum period (no less than one year) since benefit commencement for determining eligibility to receive the additional benefit. Permanent benefit increases may not exceed 3% of the benefit (whether original benefit or current benefit).

## 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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Individual Entry Age Normal with Allocation of Cost Based on Earnings. Entry and Attained Ages Calculated on an Age Near Birthday Basis.

### VALUATION INTEREST RATE

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6.75% (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 115% for males and 125% 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 115% for males and 125% 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 115% for males and 125% for females, each with full generational projection using the MP2019 scale.

## RETIREE COST-OF-LIVING ADJUSTMENTS

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

## SERVICE-RELATED DEATH

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20% of Total Deaths

## ANNUAL SALARY INCREASE RATE

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

Years of Service	Salary Growth Rate
1 – 2	12.30%
3 & over	4.70%

## RETIREMENT RATES

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The table of these rates through age 75 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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A table of these rates is included later in the report. These rates apply only to those individuals eligible to enter DROP.

## DROP PARTICIPATION PERIOD

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All DROP participants are assumed to participate for 3 years and 70% are assumed to retire at the end of this participation period with 30% 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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110% 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.

## SERVICE-RELATED DISABILITY

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20% of Total Disabilities

## 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	0.17	13	0.04
2	0.14	14	0.03
3	0.13	15	0.03
4	0.12	16	0.03
5	0.11	17	0.03
6	0.09	18	0.02
7	0.08	19	0.02
8	0.07	20	0.02
9	0.05	21	0.02
10	0.04	22	0.02
11	0.04	23	0.02
12	0.04	24 & Over	0.01

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

## VESTING ELECTING PERCENTAGE

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70% of vested participants with not more than 20 years of service and 90% of vested participants with more than 20 years of service elect deferred benefits in lieu of contribution refunds.

## 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.

## 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	Remarriage Rates
25	60%	1.77	4	0.04566
35	82%	2.11	8	0.02636
45	63%	1.75	11	0.01355
55	11%	1.42	14	N/A
65	2%	1.50	14	N/A

## ACTUARIAL TABLES AND RATES

Age	Retirement Rates	DROP Entry Rates	Post-DROP Retirement Rates	Disability Rates	Remarriage Rates
18	0.00132	0.00000	0.00000	0.00000	0.06124
19	0.00132	0.00000	0.00000	0.00000	0.06124
20	0.00132	0.00000	0.00000	0.00000	0.06124
21	0.00132	0.00000	0.00000	0.00000	0.05818
22	0.00132	0.00000	0.00000	0.00000	0.05524
23	0.00132	0.00000	0.00000	0.00000	0.05242
24	0.00132	0.00000	0.00000	0.00000	0.04971
25	0.00132	0.00000	0.00000	0.00000	0.04566
26	0.00132	0.00000	0.00000	0.00000	0.04335
27	0.00132	0.00000	0.00000	0.00000	0.04114
28	0.00132	0.00000	0.00000	0.00000	0.03902
29	0.00132	0.00000	0.00000	0.00000	0.03698
30	0.00132	0.00000	0.00000	0.00000	0.03502
31	0.00132	0.00000	0.00000	0.00000	0.03314
32	0.00132	0.00000	0.00000	0.00000	0.03134
33	0.00132	0.00000	0.00000	0.00000	0.02961
34	0.00132	0.00000	0.00000	0.00000	0.02795
35	0.00143	0.00000	0.00000	0.00000	0.02636
36	0.00143	0.00000	0.00000	0.00000	0.02483
37	0.00143	0.00000	0.00000	0.00000	0.02336
38	0.00154	0.00000	0.00000	0.00000	0.02195
39	0.00165	0.00000	0.00000	0.00000	0.02060
40	0.00176	0.00000	0.00000	0.00000	0.01930
41	0.00187	0.22000	0.02000	0.00000	0.01805
42	0.00198	0.22000	0.02000	0.00000	0.01686
43	0.00220	0.22000	0.02000	0.00000	0.01571
44	0.00231	0.18000	0.08000	0.32000	0.01461
45	0.00264	0.14000	0.11000	0.32000	0.01355
46	0.00286	0.12000	0.13000	0.32000	0.01253
47	0.00319	0.10000	0.14000	0.32000	0.01156
48	0.00363	0.09000	0.14000	0.32000	0.01063
49	0.00418	0.07000	0.14000	0.32000	0.00973
50	0.00473	0.07000	0.13000	0.31000	0.00887
51	0.00539	0.06000	0.14000	0.30000	0.00804
52	0.00627	0.06000	0.14000	0.29000	0.00725
53	0.00726	0.06000	0.15000	0.27000	0.00649
54	0.00847	0.06000	0.15000	0.26000	0.00576
55	0.00990	0.06000	0.15000	0.26000	0.00000
56	0.01166	0.06000	0.15000	0.25000	0.00000
57	0.01375	0.06000	0.15000	0.25000	0.00000
58	0.01628	0.06000	0.15000	0.26000	0.00000
59	0.01925	0.06000	0.15000	0.26000	0.00000
60	0.02629	0.07000	0.16000	0.26000	0.00000
61	0.03201	0.07000	0.16000	0.25000	0.00000
62	0.03542	0.09000	0.17000	0.24000	0.00000
63	0.03718	0.10000	0.18000	0.23000	0.00000
64	0.02827	0.12000	0.18000	0.22000	0.00000
65	0.02277	0.14000	0.17000	0.22000	0.00000
66	0.00572	0.17000	0.15000	0.21000	0.00000
67	0.00572	0.20000	0.12000	0.21000	0.00000
68	0.00572	0.23000	0.08000	0.21000	0.00000
69	0.00572	0.23000	0.08000	0.22000	0.00000
70	0.00572	0.23000	0.08000	0.22000	0.00000
71	0.00572	0.23000	0.08000	0.23000	0.00000
72	0.00572	0.23000	0.08000	0.22000	0.00000
73	0.00572	0.23000	0.08000	0.22000	0.00000
74	0.00572	0.23000	0.08000	0.21000	0.00000
75	0.00572	1.00000	0.00000	1.00000	0.00000

## 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 fund less the present value of future normal costs attributable to the members.

### ACTUARIAL ASSUMPTIONS

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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 fund of the difference between the expected and actual experience of the fund. 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. 301,207,646

### **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 average final 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.

## **UNFUNDED ACTUARIAL ACCRUED LIABILITY**

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The excess of the actuarial accrued liability over the actuarial value of assets.

## **VESTED BENEFITS**

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