CURRAN ACTUARIAL CONSULTING, LTD.

Annual Funding Valuation
June 30, 2022

Municipal Police Employees' Retirement System

CURRAN ACTUARIAL
— CONSULTING, LTD. —

November 29, 2022

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, 2022. 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, 2023 and to recommend the net direct employer contribution rate for Fiscal 2024. 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 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 fund. 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 M. C

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SUMMARY OF VALUATION RESULTS
MUNICIPAL POLICE EMPLOYEES' RETIREMENT SYSTEM

Valuation Date:		June 30, 2022	June 30, 2021
Census Summary:	Active Members	5,269	5,414
	Retired Members and Survivors	5,006	4,938
	DROP Participants	258	257
	Terminated Due a Deferred Benefit	252	236
	Terminated Due a Refund	2,184	2,040
Payroll: *		$ 301,207,646	$ 293,949,856
Benefits in Payment (excluding DROP accruals):		$ 174,892,416	$ 162,774,931
Present Value of Future Benefits:		$ 4,003,271,048	$ 3,859,066,095
Actuarial Accrued Liability (EAN):		$ 3,449,325,984	$ 3,301,558,629
Unfunded Actuarial Accrued Liability:		$ 788,517,441	$ 733,479,440
Actuarial Value of Assets (AVA):		$ 2,660,808,543	$ 2,568,079,189
Market Value of Assets (MVA):		$ 2,478,317,694	$ 2,816,973,727
Ratio of AVA to Actuarial Accrued Liability:		77.14%	77.78%

	Fiscal 2022	Fiscal 2021
Market Rate of Return:	-10.4%	26.1%
Actuarial Rate of Return:	5.6%	9.6%

	Fiscal 2023	Fiscal 2022
Employers' Normal Cost (Mid-year):	$ 32,412,948	$ 31,340,935
Amortization Cost (Mid-year):	$ 95,252,363	$ 85,440,794
Estimated Administrative Cost:	$ 3,084,935	$ 2,848,075
Expected Insurance Premium Taxes Due:	$ (23,919,098)	$ (22,251,594)
Net Direct Employer Actuarially Required Contributions:	$ 106,831,148	$ 97,378,210
Projected Payroll:	$ 311,189,206	$ 304,215,523
Statutory Employee Contribution Rate:		
For Employees in the Hazardous Subplan or Hired prior to January 1, 2013:	10.00%**	10.00%**
For Employees in the Non-Hazardous Subplan	8.00%	8.00%
Board Approved Net Direct Employer Contribution Rate:	31.25%**	29.75%**
Actuarially Required Net Direct Employer Contribution Rate:	34.33%	32.01%

	Fiscal 2024	Fiscal 2023
Minimum Recommended Net Direct Employer Cont. Rate:	33.50%**	31.25%**

* Payroll excludes DROP participants who entered DROP prior to 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 employee's 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 with regard to 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 the actuary is limited in his 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, that which is available is likely to provide some insight into the future. This data consists of general economic and financial values such as past rates of inflation, rates of return variance, and correlations of returns among various asset classes along with the actual asset experience of the plan. In addition, the actuary can review the current asset market environment as well as economic forecasts from governmental and investment research groups to form a reasonable opinion with regard to probable future investment experience for the plan.

All of the above efforts would be in vain if the assumption process was static, and the plan would have to deal with the consequences of actual experience differing from assumptions after forty or fifty years of compounded errors. However, actuarial funding methods for pension plans all allow for periodic corrections of assumptions to conform with reality as it unfolds. This process of repeated correction of estimates produces results which although imperfect are nevertheless a reasonable approach to determine the contribution levels which 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 5,269 active contributing members in the system of whom 2,252 have vested retirement benefits; in addition, there are 258 participants in the Deferred Retirement Option Plan (DROP); 5,006 former members or their beneficiaries are receiving retirement benefits. An additional 2,436 terminated members have contributions remaining on deposit with the system; of this number 252 have vested rights for future retirement benefits.

Census data submitted to our office is tested for errors. 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. In order 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 retirement rates, rates of withdrawal, and mortality. In addition, the census is checked for reasonableness in several areas such as age, service, salary, and current benefits. The records identified by this review as questionable are checked against data from prior valuations; those not recently verified are 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. For this valuation, the number of such records with imputed data is de minimis.

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 $2,478,317,694 as of June 30, 2022. Net investment income for Fiscal 2022 measured on a market value basis amounted to a loss of $290,086,100. Contributions to the system for the fiscal year totaled $144,331,291; benefits and expenses amounted to $192,901,224.

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 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 with regard to age, sex, and service is stable. Overall costs may increase or decrease depending on payroll growth. Since payments on all of the fund'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 rate of return assumption from 7.5%. 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 reduced to 6.95%. The Board elected to opportunistically reduce the valuation interest rate to 6.75% within the 2021 valuation.

The system's 6.75% valuation interest rate remained within the actuary's reasonable range during Fiscal 2022. In addition, the system's investment consultant, NEPC, provided a mid-year update to capital market assumptions that showed an increase in long-term expected returns for many risky assets. Based on these facts, the system's actuary recommended making no further change in the valuation interest rate during the Fiscal 2022 valuation report. For 2022, an assumed rate of inflation of 2.5% was implicit in the assumed rate of return.

Based upon Act 360 of the 2022 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 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 2022 actuarial valuation.

RISK FACTORS

Defined benefit pension plans are subject to a number of risks. These can be related either to plan assets or liabilities. In order to pay benefits, the plan must have sufficient assets. Several factors can lead to asset levels which are below those required to pay promised benefits. 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.

All pension plans are subject to the uncertainty of asset performance. The total nominal rate of return on assets is comprised of the real rates of return earned on the portfolio of investments plus the underlying inflation rate. High levels of inflation are a risk to plan members in that they reduce purchasing power of plan benefits. Should the plan attempt to offset inflation by providing cost-of-living adjustments, costs will inevitably increase unless provisions are made to prefund such adjustments. Very low inflation will generally reduce 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 persistent high inflation will become 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.

Asset performance over the long run 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. 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 decline mitigating the reinvestment risk the plan currently faces.

The system is also exposed to risk related to cash flow. Where benefit payments exceed contributions to a plan, the plan will be required to use investment income or potentially investment capital to pay benefits. In cases where it is necessary to use investment income to pay retirement benefits, investment market downturns will 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 in this report illustrates the noninvestment cash flow and benefit payments of the system over the last 10 years. Currently, annual benefit payments exceed annual contributions to the plan. Future net noninvestment cash flows for the system will be determined based upon both the system maturity and future contribution levels. Hence, increases in future contributions due to adverse actuarial experience will tend to mitigate the potential of negative cash flows arising from the natural maturation of the system whereas reduced contribution levels resulting from positive experience will tend to increase the extent of negative cash flows. Absent a significant increase in the active membership of the system, the trend of higher proportions of retired membership will continue and the current trend toward higher levels of negative noninvestment cash flows will continue in the near future.

In addition to asset risk, the plan is also subject to risks related to liabilities. These risks include 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.

Liability risk also includes items such as data errors. 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. Even natural disasters and dislocations in the economy or other unforeseen events (such as pandemics like COVID-19) 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 forecast.

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 a number of 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. The ratio is 77.14% as of June 30, 2022. This value gives some indication of the financial strength of the plan; however, it does not guarantee the ability of the fund 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 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 this rate, the current ratio would be significantly higher. One additional risk measure is the sensitivity of the plan's cost structure to asset gains and losses. 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 0.89% for the fund.

Each pension plan has its own unique benefit structure and demographic profile. As a result, each plan will respond to changes in interest rates in a unique way. As the expected rate of return on investments changes and the interest rate used to discount plan liabilities is adjusted, the shift in plan liabilities will depend upon the duration of the liabilities (which can be understood as the plan's sensitivity to the change in the interest rate). A slightly different measure of the duration for the plan can also be understood as an indicator of the plan's maturity. When a pension plan is first established, all of the participants are active members; as members retire and the plan matures, the duration of the plan decreases. A determination of the liability duration gives some insight into the investment time horizon of the plan. Thus, the liability duration of a closed plan can be thought of as the weighted "center of gravity" of plan benefit cash flows with expected cash flows occurring both before and after the duration value. For open plans with a continuous flow of new entrants this measure is somewhat less informative since the duration horizon keeps changing as new members enter the plan. For this plan we have estimated the effective liability duration as 10.71.

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 by contributions related to active members. A measure of risk related to plan maturity is the ratio of total benefit payments to active payroll. For Fiscal 2022, this ratio is 58%; ten years ago, this ratio was 39%.

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. Current market expectations related to the assumed rate of return suggest that a decrease in the assumption is more probable than an increase. The magnitude of any potential such change will be related to future capital market expectations. 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 2024 by 16.25% 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.

Noneconomic 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.

CHANGES IN PLAN PROVISIONS

The following changes in plan provisions were enacted during the 2022 Regular Session of the Louisiana Legislature:

Act 200 made changes to reemployed retiree benefits. The benefits of those retired on or after July 1, 2021 who become employed by an employer but do not meet the definition of employee within a 12 month period following the date of retirement shall be suspended for the duration of reemployment or twelve months from the date of retirement, whichever occurs first. This lessened the previous 24-month rule. In addition, the Act added a provision that states that no retiree may receive a retirement benefit during the 60-day period following the effective date of retirement. Finally, the Act stated that retirees reemployed for not more than 50 hours per month or those who are elected officials other than chief of police shall not have their benefits suspended. For such individuals, employee and employer contributions are due and upon termination, the employee shall receive a refund of his post retirement employee contributions without interest. Elected officials contributing to another Louisiana system are exempted from the payment of employee and employer contributions.

Act 360 established a Funding Deposit Account and authorizes the Board of Trustees to require a net direct contribution rate in excess of the rate determined in accordance with R.S. 11:103 under limited circumstances. First, in a year in which the employer rate determined in accordance with R.S. 11:103 is equal to or greater than the rate determined in the previous year, the Board may set the employer rate up to 0.85% above the minimum and add funds to the Funding Deposit Account to fund future COLAs. Alternatively, for a year in which the minimum employer rate is lower than the previous year, the employer rate may be to a level up to the minimum employer rate plus 0.85% plus one-half of the difference between the rates determined for the two years. In any year where the employer rate is set at a higher level based upon up to one-half of the difference between the rates determined for the two years, the additional contributions shall reduce the outstanding balance of the oldest positive amortization base.

The act repealed statutes previously applicable to MPERS with respect to the payment of cost-of-living adjustments, requires all future cost-of-living adjustments or one-time payments to be prefunded through the Funding Deposit Account, and changed the parameters that define the potential structure of future cost-of-living adjustments or one-time payments.

ASSET EXPERIENCE

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

	Market Value	Actuarial Value
2013	13.7%	11.2%
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%

Geometric Average Market Rates of Return

5-year average	(Fiscal 2018 – 2022)	5.1%
10-year average	(Fiscal 2013 – 2022)	6.9%
15-year average	(Fiscal 2008 – 2022)	4.2%
20-year average	(Fiscal 2003 – 2022)	5.6%
25-year average	(Fiscal 1998 – 2022)	5.2%
30-year average	(Fiscal 1993 – 2022)	6.0%

The market rate of return gives a measure of investment return on a total return basis and includes realized and unrealized capital gains and losses as well as interest income. 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 2022, the fund earned $31,478,924 of dividends, interest and other recurring income. In addition, the Fund had net realized and unrealized capital losses on investments (offset by non-recurring income) of $314,008,068. The Fund also had investment expenses of $7,556,956.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 6.750% in effect for Fiscal 2022. For Fiscal 2022, the actuarial rate of return adjusted for elimination of the effect of merger payments was 5.6%. DROP accounts should be credited with 5.1% (i.e. 5.6% less 0.5%). The actuarial rate of return is calculated based on the actuarial value of assets and all interest, dividends, and recognized capital gains as given in Exhibit VI. 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 6.75% assumption will reduce future costs; yields below 6.75% will increase future costs. For Fiscal 2022, the system experienced net actuarial investment earnings of $30,433,589 below the actuarial assumed earnings rate of 6.75% (in effect for Fiscal 2022) which produced an actuarial loss and increased the interest-adjusted amortization payments on the system's UAL by $3,183,197 or 1.02% 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 10.93 years of service credit and an annual salary of $55,862. The system's active contributing membership experienced a decrease of 145 members during Fiscal 2022.

The number of DROP participants increased by 1. Over the last five years active membership has decreased by 394 members.

The average service retiree is 67 years old with an annual benefit of $40,700. The average age at retirement for regular retirees is 53. The number of retirees and beneficiaries receiving benefits from the system increased by 68 during the fiscal year. Over the last five years, the number of retirees increased by 315 with annual benefits in payment increasing by $35,110,164.

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 $1,072,013; the corresponding change in employer normal cost percentage was an increase of 0.13% of payroll. Plan liability experience for Fiscal 2022 was unfavorable. Active member retirements and retirements of DROP participants were significantly above projected levels with DROP entries slightly above projected levels. Salary increases were above projected levels as well. These factors tend to increase costs. Partially offsetting these factors were withdrawals and retiree deaths significantly above projected levels along with disabilities and retirements of former DROP participants below projected levels. Net plan liability experience losses totaled $7,901,075. These losses increased the interest-adjusted amortization payments on the system's unfunded accrued liability by $826,411, which corresponds to payments of 0.27% of Fiscal 2023 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, and the actuarially required contributions are based on the sum of these two components plus administrative expenses. These two components are 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 to each year by the particular cost method utilized. The term unfunded accrued liability (UAL) refers to the excess of the present value of plan benefits over the sum of current assets and future normal costs. Each year the UAL grows with interest and is reduced by payments. In addition, it may be increased or diminished by plan experience, changes in assumptions, or changes in benefits including COLA's. Contributions in excess of or less than the actuarially required amount can also decrease or increase the UAL balance. New entrants to the system can also increase or lower costs as a percent of payroll depending upon their demographic distribution. Finally, payroll growth affects plan costs since payments on the system's unfunded liability are on a fixed, level schedule. If payroll increases, these costs are reduced 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 2022 contributions totaled $5,061,904 less than required; the interest-adjusted amortization payment on the contribution shortfall for Fiscal 2023 is $529,449, or 0.17% of projected payroll. In addition, for Fiscal 2023 the net effect of the change in payroll on amortization costs was to reduce such costs by 0.63% 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 2023, except for those items labeled Fiscal 2022.

	Dollars	Percentage of Payroll
Employer Normal Cost for Fiscal 2022	$ 31,340,935	10.30%
Cost of Demographic and Salary Changes	$ 1,072,013	0.13%
Change due to Assumption Changes	$ 0	0.00%
Employer Normal Cost for Fiscal 2023	$ 32,412,948	10.43%
UAL Amortization Payments for Fiscal 2022	$ 85,440,794	28.09%
Change due to change in payroll	N/A	(0.63%)
Change due to Interest Rate Change	$ 0	0.00%
Additional Amortization Expenses for Fiscal 2023:		
Asset Experience Loss (Gain)	$ 3,183,197	1.02%
Liability Experience Loss (Gain)	$ 826,411	0.27%
COLA Loss	$ 5,272,512	1.69%
Contribution Loss (Gain)	$ 529,449	0.17%
Total Amortization Expense (Credit) for Fiscal 2023	$ 95,252,363	30.61%
Insurance Premium Taxes	$ (23,919,098)	(7.69%)
Estimated Administrative Cost for Fiscal 2023	$ 3,084,935	0.99%
Total Employer Normal Cost & Amortization Payments	$ 106,831,148	34.33%

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The employer normal cost for Fiscal 2023, interest adjusted for mid-year payment is $32,412,948. The interest adjusted amortization payments on the system's unfunded actuarial accrued liability totaled $95,252,363. The total actuarially required contribution is determined by summing these two values together with estimated administrative expenses. As given in line 12 of Exhibit I the total actuarially required contribution for Fiscal 2023 is $130,750,246. We estimate insurance premium taxes of $23,919,098, or 7.69% of payroll, will be paid to the system in Fiscal 2023. This level of Insurance Premium Taxes represents a 0.38% increase over the prior year as a percentage of payroll. Hence, the actuarially required net direct employer contribution for Fiscal 2023 amounts to $106,831,148 or 34.33% of payroll.

Since the actual employer contribution rate for Fiscal 2023 is 31.25% of payroll, there will be a contribution shortfall of 3.08% of payroll. This shortfall will increase the actuarially required contribution recommended for Fiscal 2024. In order to determine a minimum recommended net direct employer contribution rate for Fiscal 2024, the Employer Normal Cost and Amortization Payments were estimated for Fiscal 2024, adjusted for the impact of the estimated contribution shortfall for Fiscal 2023, and the estimated Insurance Premium Taxes for Fiscal 2024. Therefore, as given in line 25 of Exhibit I, the estimated actuarially required net direct employer contribution for Fiscal 2024 is $108,401,275, or 33.50% 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.

COST OF LIVING INCREASES

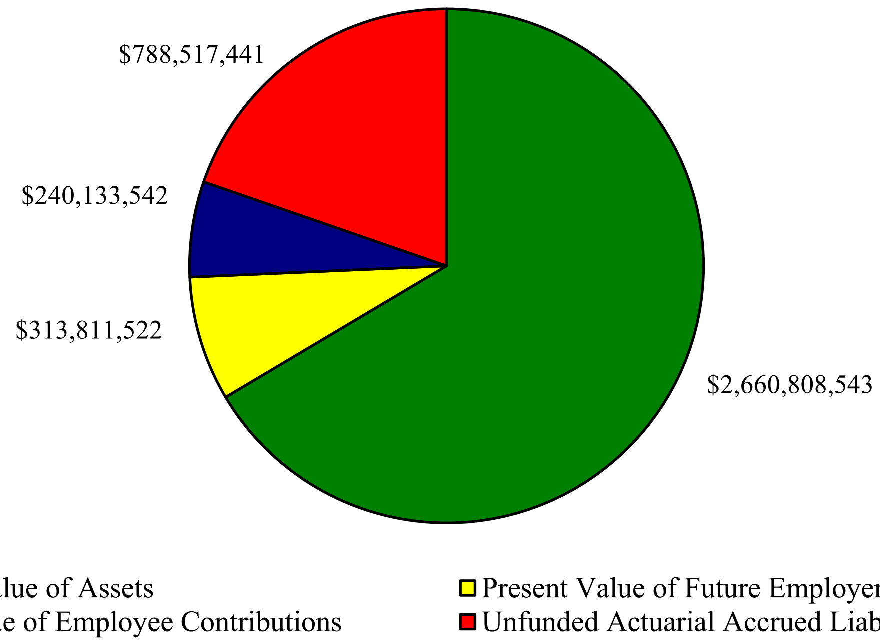
During Fiscal 2022, the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 9.1%. Prior to 2022, the cost-of-living provisions for the system were detailed in R.S. 11:2225(A)(7)(b), R.S. 11:246, and R.S. 11:241. Act 360 of 2022 removed MPERS from R.S. 11:243, R.S. 11:246, 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 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.

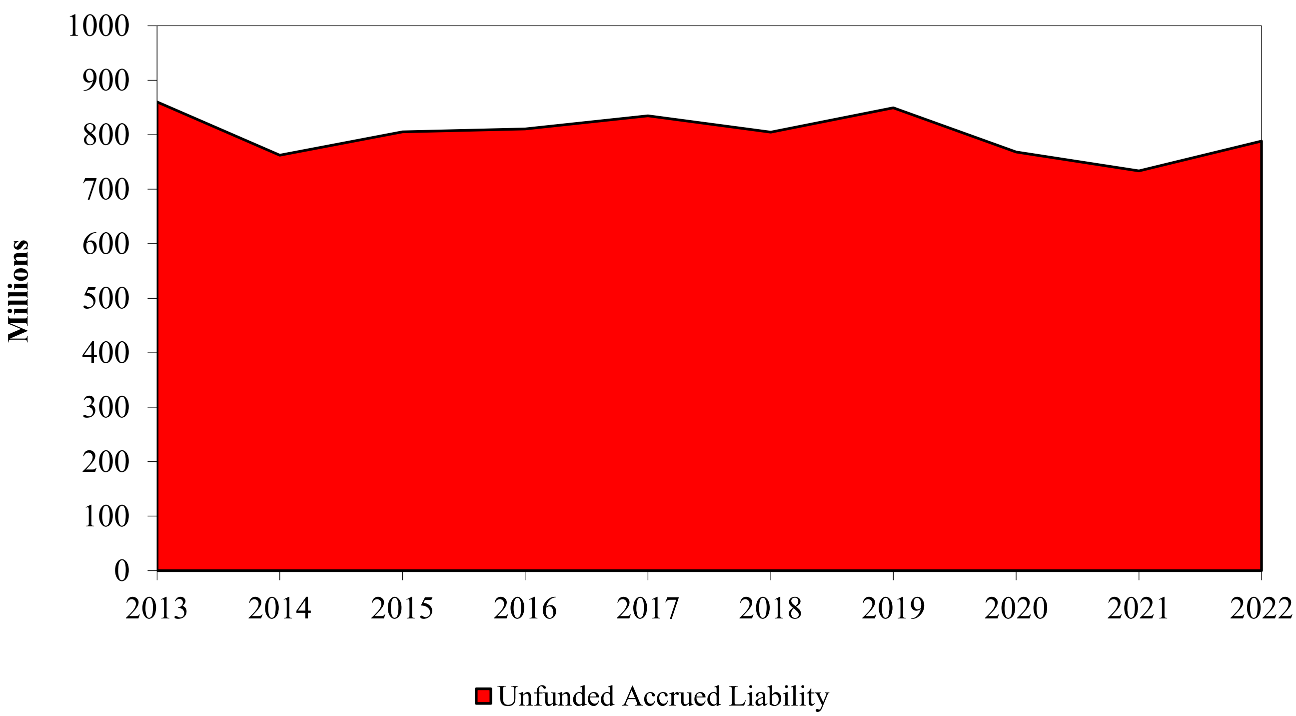
R.S. 11:2225.5(F) enumerates the framework that the Board of Trustees may use in providing additional benefits for retirees, survivors, and beneficiaries from the Funding Deposit Account. The Board may provide a nonrecurring lump sum payment (no more frequently than once in each three-year period) or 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, 2022 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.

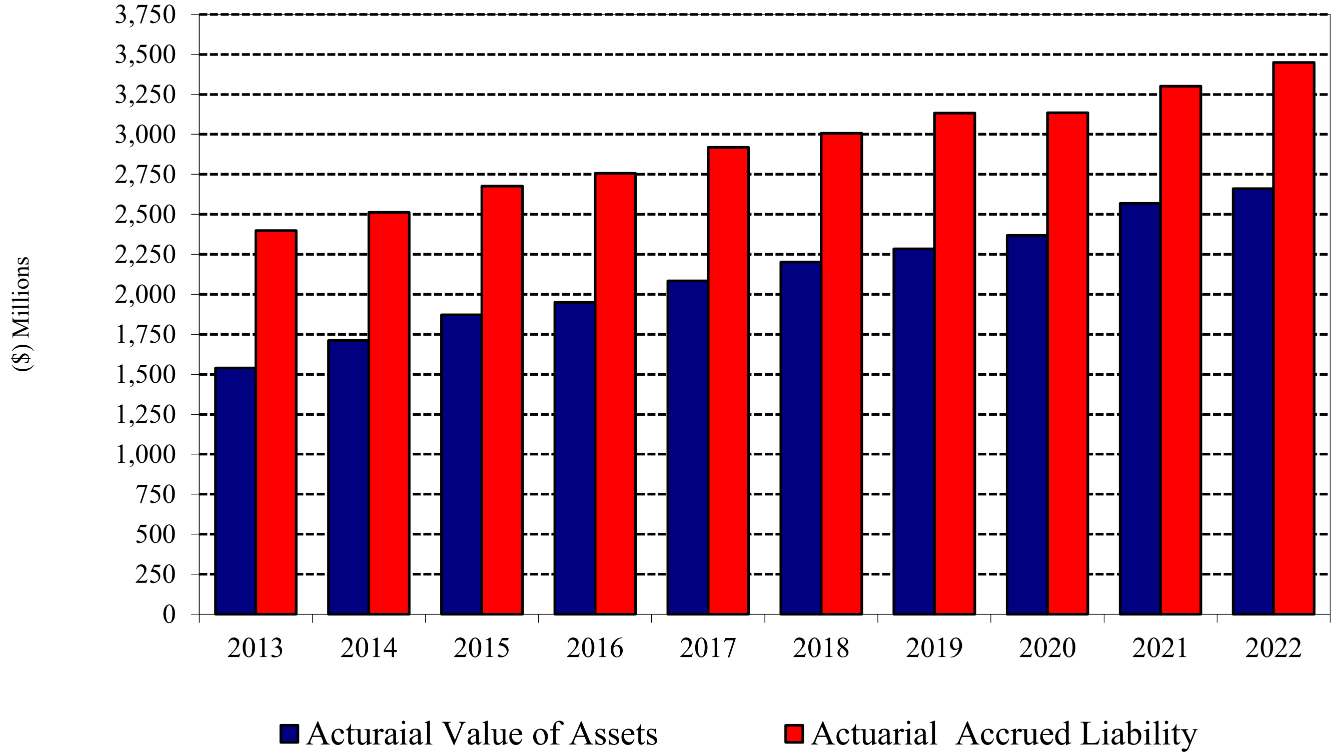
Components of Present Value of Future Benefits
June 30, 2022



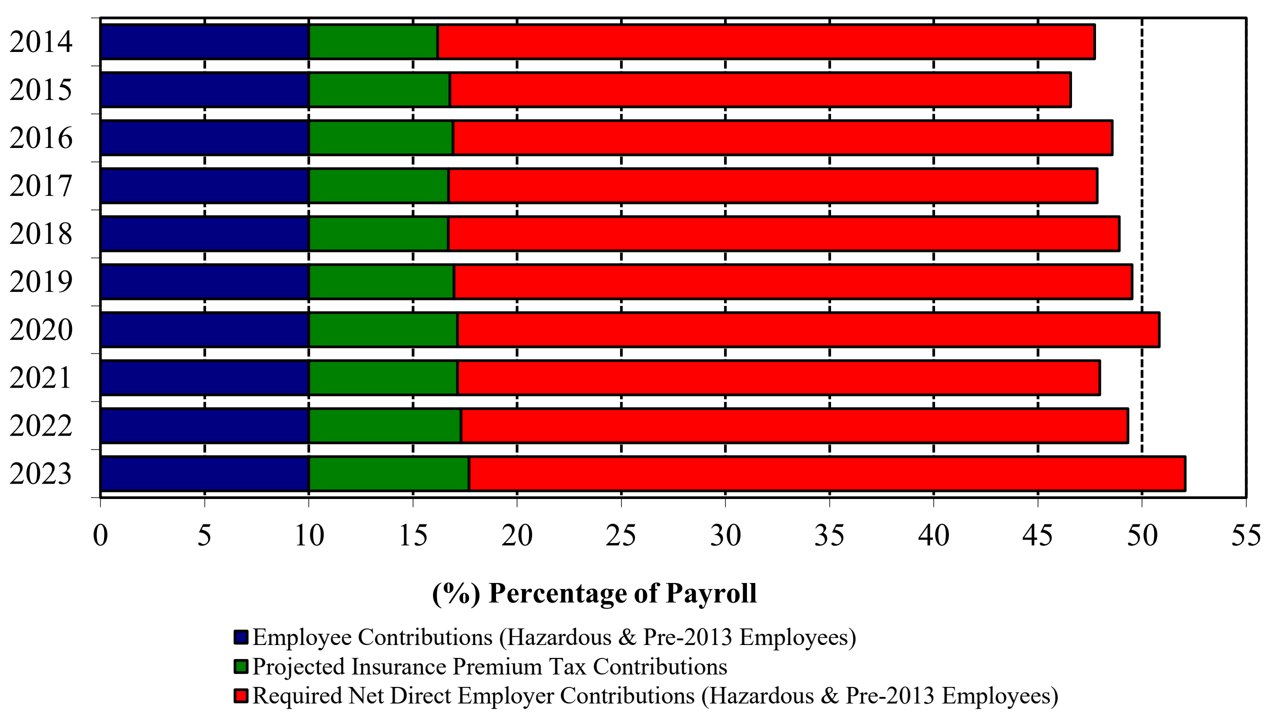
Unfunded Accrued Liability



Actuarial Value of Assets vs. Actuarial Accrued Liability

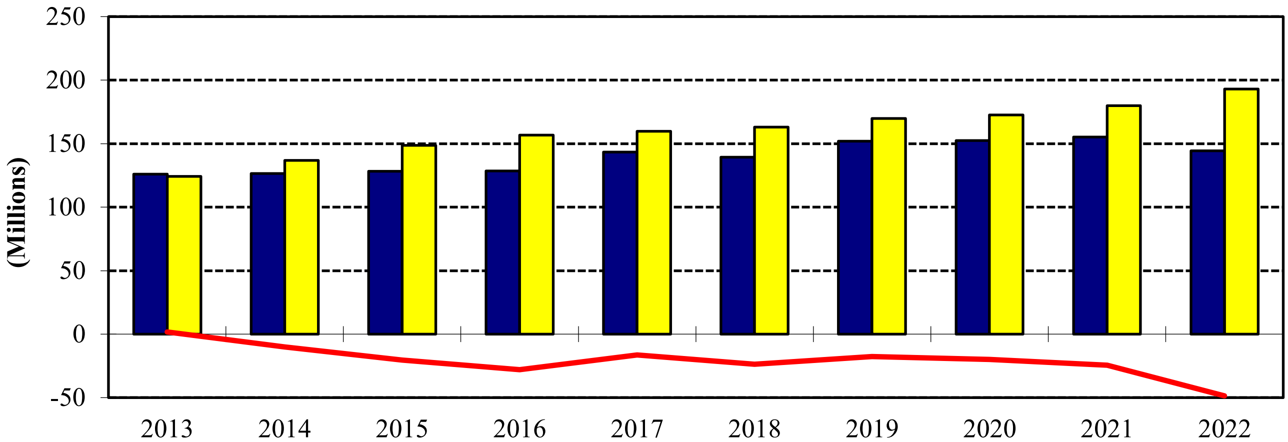


Components of Actuarial Funding



(2012 and later employee contribution level is based on members with earnings above the poverty level)

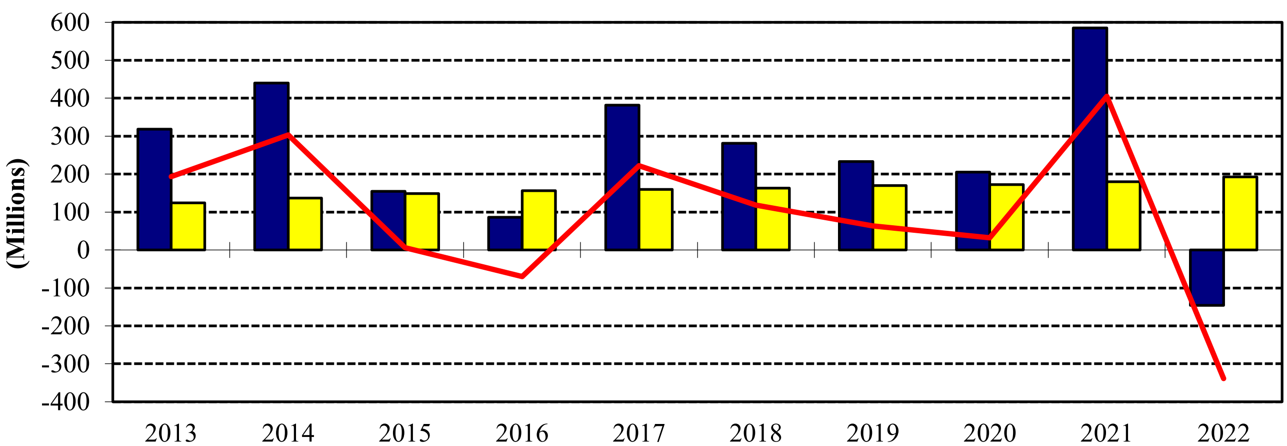
Net Non-Investment Income



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Non-Investment Income ($Mil)	125.9	126.6	128.2	128.6	143.4	139.3	152.0	152.5	155.3	144.3
Benefits and Expenses ($Mil)	124.2	136.7	148.7	156.6	159.8	163.0	170.8	172.5	179.8	192.9
Net Non-Investment Income ($Mil)	1.7	-10.1	-20.5	-28.0	-16.4	-23.7	-18.8	-20.0	-24.5	-48.6

Total Income vs. Expenses

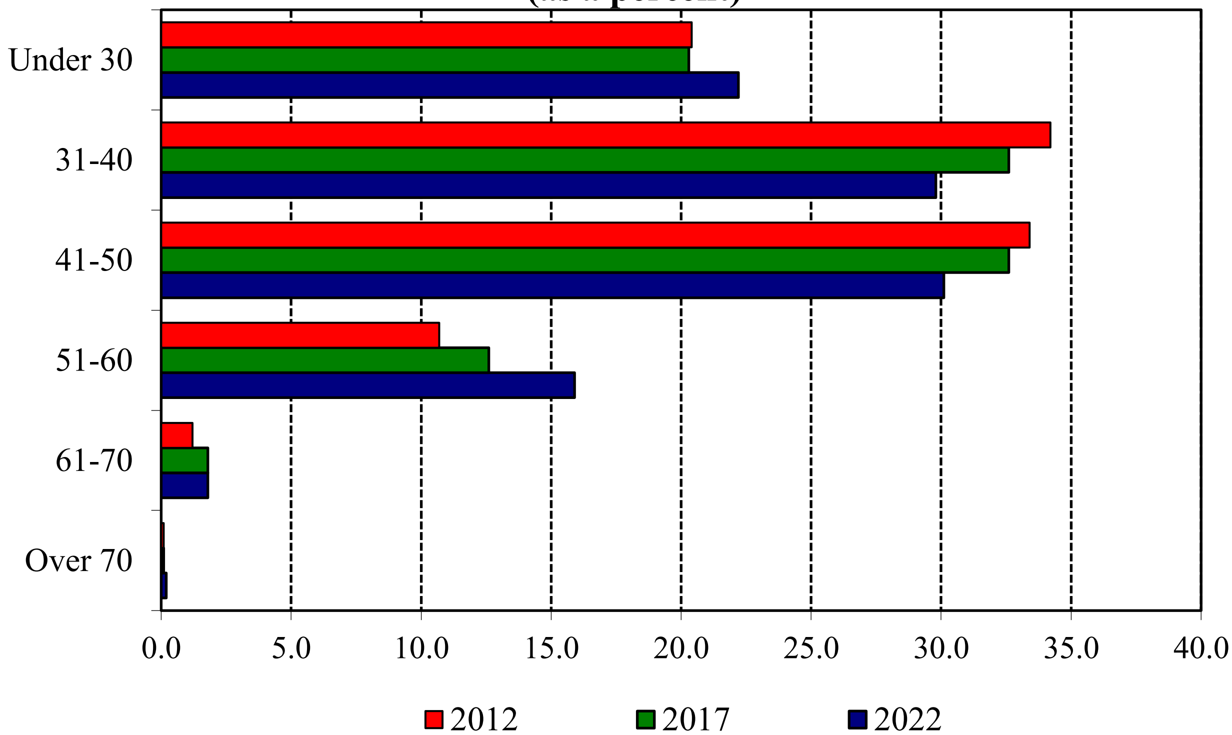
(Based on Market Value of Assets)



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total Income ($Mil)	85.9	318.0	439.9	154.8	86.4	382.0	280.9	233.3	205.0	-145.8
Benefits and Expenses ($Mil)	120.0	124.2	136.7	148.7	156.6	159.8	163.0	170.8	172.5	192.9
Net Change in MVA ($Mil)	34.1	193.8	303.2	6.1	-70.2	222.2	117.9	62.5	32.5	-338.7

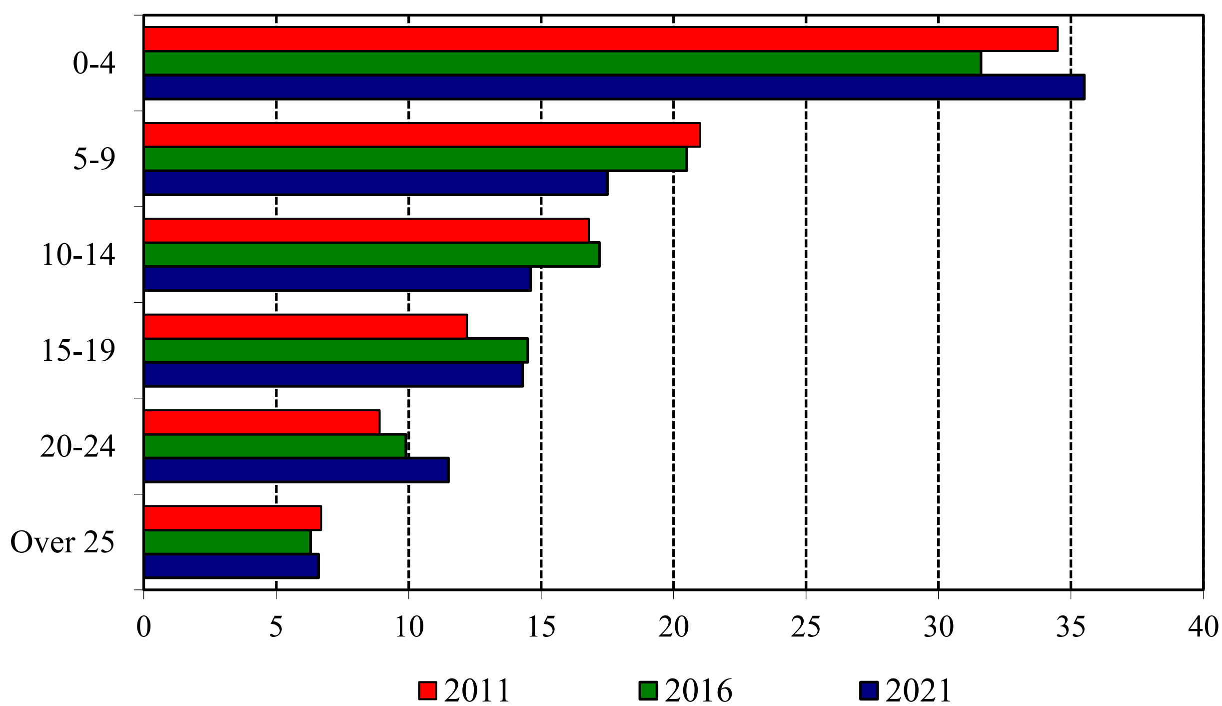
Active – Census by Age

(as a percent)



Active – Census by Service

(as a percent)



Historical Asset Yields

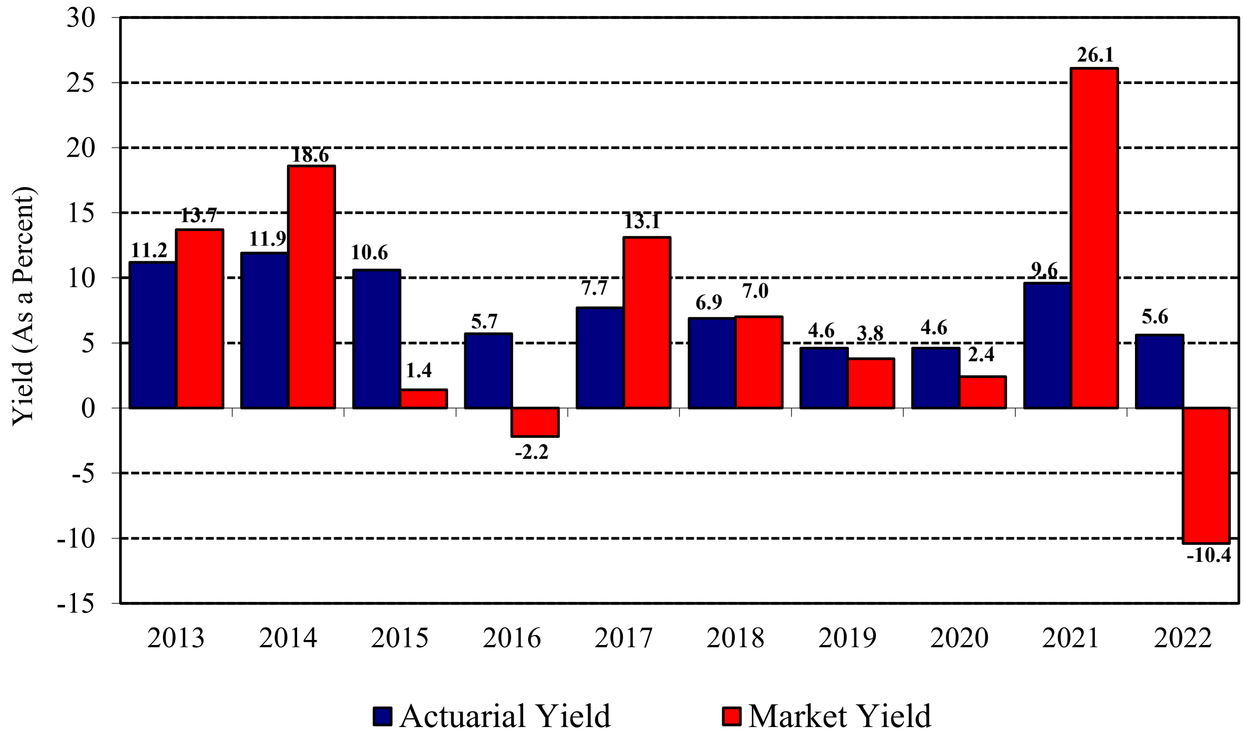


EXHIBIT I
ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1.	Normal Cost of Retirement Benefits	$	42,882,913
2.	Normal Cost of Death Benefits	$	1,801,986
3.	Normal Cost of Disability Benefits	$	4,712,697
4.	Normal Cost of Deferred Retirement Benefits	$	4,171,517
5.	Normal Cost of Contribution Refunds	$	6,016,774
6.	TOTAL Normal Cost as of July 1, 2022 (1 + 2 + 3 + 4 + 5)	$	59,585,887
7.	TOTAL Normal Cost Interest Adjusted for Mid-year Payment	$	61,564,074
8.	Adjustment to Total Normal Cost for Employee Portion	$	29,151,126
9.	Employer Normal Cost, Adjusted for Midyear Payment (7 – 8)	$	32,412,948
10.	Amortization Payments on Unfunded Accrued Liability at Midyear	$	95,252,363
11.	Projected Administrative Expenses for Fiscal 2023	$	3,084,935
12.	TOTAL Employer Cost (9 + 10 + 11)	$	130,750,246
13.	Expected Insurance Premium Taxes due in Fiscal 2023	$	(23,919,098)
14.	Net Direct Actuarially Required Employer Contribution for Fiscal 2023 (12 + 13)	$	106,831,148
15.	Projected Payroll for Contributing Members (Fiscal 2023)	$	311,189,206
16.	Net Direct Actuarially Required Employer Contribution as a Percentage of Projected Payroll for Fiscal 2023 (14 ÷ 15)		34.33% *
17.	Board Approved Net Direct Employer Contribution Rate for Fiscal 2023		31.25% *
18.	Projected Fiscal 2023 Contribution Loss (Gain) as a % of Payroll (16 – 17)		3.08%
19.	Projected Fiscal 2023 Employer Contribution Shortfall (Surplus) (15 × 18)	$	9,584,628
20.	Amortization of Interest Adjusted Fiscal 2023 Employer Contribution Shortfall (Surplus) Based on Midyear Payment in Fiscal 2024	$	1,035,785
21.	Estimated Fiscal 2024 Employer Normal Cost Adjusted for Midyear Payment	$	33,818,331
22.	Estimated Fiscal 2024 Amortization Payments	$	95,252,363
23.	Estimated Fiscal 2024 Administrative Expenses	$	3,162,058
24.	Estimated Insurance Premium Taxes due in Fiscal 2024	$	(24,867,262)
25.	Estimated Actuarially Required Net Direct Employer Contributions for Fiscal 2024 (20 + 21 + 22 + 23 +24)	$	108,401,275
26.	Projected Payroll for Contributing Members (Fiscal 2024)	$	324,681,963
27.	Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2024 (25 ÷ 26, Rounded to nearest 0.25%)		33.50% *

* 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	$ 1,717,074,247	
Survivor Benefits	25,773,105	
Disability Benefits	111,203,460	
Vested Termination Benefits	72,696,814	
Refunds of Contributions	32,537,961	
TOTAL Present Value of Future Benefits for Active Members		$ 1,959,285,587

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement	$ 53,932,384	
Terminated Members with Reciprocals Due Benefits at Retirement	0	
Terminated Members Due a Refund	12,492,321	
TOTAL Present Value of Future Benefits for Terminated Members		$ 66,424,705

PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees			
Maximum	$ 628,968,198		
Option 1	2,700,503		
Option 2	757,054,523		
Option 3	259,850,948		
Option 4	1,126,991		
Merged Retirees	15,591,746		
TOTAL Regular Retirees		$ 1,665,292,909 *	
Disability Retirees		37,539,644 *	
Survivors		175,794,892	
DROP Account Balances Payable to Retirees		97,079,078	
IBO Retirees' Account Balance		1,854,233	
TOTAL Present Value of Future Benefits for Retirees & Survivors			$ 1,977,560,756
TOTAL PRESENT VALUE OF FUTURE BENEFITS			$ 4,003,271,048

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

EXHIBIT III – SCHEDULE A
MARKET VALUE OF ASSETS

CURRENT ASSETS:				
Cash in Banks	$	20,581,743		
Contributions and Taxes Receivable		9,586,014		
Accrued Interest and Dividends		4,395,732		
Investments Receivable		603,591		
TOTAL CURRENT ASSETS			$	35,167,080
Property, Plant & Equipment			$	4,719,332
INVESTMENTS:				
Cash Equivalents	$	23,942,785		
Equities		1,244,852,383		
Fixed Income		703,182,511		
Real Estate		241,308,723		
Alternative Investments		200,928,206		
DROP Balances Held Outside System Assets		31,325,582		
Collateral for Securities Lending		6,665,222		
TOTAL INVESTMENTS			$	2,452,205,412
DEFERRED OUTFLOWS OF RESOURCES			$	603,618
TOTAL ASSETS			$	2,492,695,442
CURRENT LIABILITIES:				
Accounts Payable	$	487,347		
Benefits Payable		66,851		
Refunds Payable		406,017		
Investments Payable		3,022,438		
Securities Lending Obligations		6,665,222		
Other Post-Employment Benefits		2,239,201		
Net Pension Liability		708,747		
TOTAL CURRENT LIABILITIES			$	13,595,823
DEFERRED INFLOWS OF RESOURCES			$	781,925
TOTAL LIABILITIES			$	14,377,748
MARKET VALUE OF ASSETS			$	2,478,317,694

EXHIBIT III – SCHEDULE B
ACTUARIAL VALUE OF ASSETS

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

Fiscal year 2022	$	(478,619,357)
Fiscal year 2021		428,749,410
Fiscal year 2020		(105,286,461)
Fiscal year 2019		(73,652,124)
Fiscal year 2018		(7,361,314)
Total for five years	$	(236,169,846)

Deferral of Excess (Shortfall) of Invested Income:

Fiscal year 2022 (80%)	$	(382,895,486)
Fiscal year 2021 (60%)		257,249,646
Fiscal year 2020 (40%)		(42,114,584)
Fiscal year 2019 (20%)		(14,730,425)
Fiscal year 2018 (0%)		0
Total Deferred for Year	$	(182,490,849)

Market Value of Plan Net Assets, End of Year	$	2,478,317,694
Preliminary Actuarial Value of Plan Assets, End of Year	$	2,660,808,543

Actuarial Value of Assets Corridor

85% of market value, end of year	$	2,106,570,040
115% of market value, end of year	$	2,850,065,348

Final Actuarial Value of Plan Net Assets, End of Year	$	2,660,808,543

EXHIBIT IV
PRESENT VALUE OF FUTURE CONTRIBUTIONS

Employee Contributions to the Annuity Savings Fund	$	240,133,542
Employer Normal Contributions to the Pension Accumulation Fund		313,811,522
Employer Amortization Payments to the Pension Accumulation Fund		788,517,441
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS	$	1,342,462,505

EXHIBIT V – SCHEDULE A
ACTUARIAL ACCRUED LIABILITIES

LIABILITY FOR ACTIVE MEMBERS				
Accrued Liability for Retirement Benefits	$	1,320,354,954		
Accrued Liability for Survivor Benefits		9,609,373		
Accrued Liability for Disability Benefits		68,545,745		
Accrued Liability for Vested Termination Benefits		33,021,862		
Accrued Liability for Refunds of Contributions		(26,191,411)		
TOTAL Actuarial Accrued Liability for Active Members			$	1,405,340,523
LIABILITY FOR TERMINATED MEMBERS			$	66,424,705
LIABILITY FOR RETIREES AND SURVIVORS			$	1,977,560,756
TOTAL ACTUARIAL ACCRUED LIABILITY			$	3,449,325,984
ACTUARIAL VALUE OF ASSETS			$	2,660,808,543
UNFUNDED ACTUARIAL ACCRUED LIABILITY			$	788,517,441
Ratio of Actuarial Value of Assets to Entry Age Normal Accrued Liability				77.14%

EXHIBIT V – SCHEDULE B
CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY

PRIOR YEAR UNFUNDED ACCRUED LIABILITY			$	733,479,440
Interest on Unfunded Accrued Liability	$	49,509,862		
Asset Experience Loss		30,433,589		
Liability Experience Loss		7,901,075		
Cost of Living Adjustment Loss		50,408,907		
Contribution Shortfall with Accrued Interest		5,061,904		
TOTAL Additions to UAL			$	143,315,337
Interest Adjusted Amortization Payments	$	88,277,336		
TOTAL Reductions to UAL			$	88,277,336
NET Change in Unfunded Accrued Liability			$	55,038,001
CURRENT YEAR UNFUNDED ACCRUED LIABILITY			$	788,517,441

EXHIBIT V – SCHEDULE C
AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
JUNE 30, 2022

FISCAL YEAR	DESCRIPTION	AMORT. PERIOD	INTIAL BALANCE	YEARS REMAINING	REMAINING BALANCE	AMORT. PAYMENTS
2014	Cumulative Bases	20	$801,359,380	12	$603,873,573	$70,275,487
2015	Asset Experience Gain	15	(52,886,689)	8	(34,822,120)	(5,410,034)
2015	Liability Experience Gain	15	(9,412,440)	8	(6,197,421)	(962,844)
2015	Contribution Gain	15	(6,385,205)	8	(4,204,205)	(653,173)
2015	Liability Assumption Loss	15	91,142,323	8	60,010,733	9,323,386
2016	Asset Experience Loss	15	32,707,657	9	23,458,571	3,337,121
2016	Liability Experience Gain	15	(8,714,512)	9	(6,250,219)	(889,131)
2016	Contribution Loss	15	1,831,833	9	1,313,826	186,900
2017	Asset Experience Gain	15	(4,227,464)	10	(3,263,358)	(430,233)
2017	Liability Experience Loss	15	7,622,189	10	5,883,888	775,718
2017	Contribution Gain	15	(8,105,382)	10	(6,256,885)	(824,893)
2017	Liability Assumption Loss	15	52,448,263	10	40,487,026	5,337,711
2018	Asset Experience Loss	15	7,852,432	11	6,464,997	797,609
2018	Liability Experience Gain	15	(54,697,789)	11	(45,033,315)	(5,555,916)
2018	Contribution Loss	15	5,491,975	11	4,521,607	557,846
2018	Liability Assumption Loss	15	38,696,875	11	31,859,579	3,930,626
2019	Asset Experience Loss	15	58,094,818	12	50,631,000	5,892,158
2019	Liability Experience Gain	15	(788,461)	12	(687,163)	(79,968)
2019	Contribution Gain	15	(8,114,574)	12	(7,072,043)	(823,005)
2019	Liability Assumption Loss	15	24,575,373	12	21,418,017	2,492,511
2020	Asset Experience Loss	15	57,612,260	13	52,814,214	5,836,083
2020	Liability Experience Gain	15	(29,781,524)	13	(27,301,270)	(3,016,848)
2020	Contribution Loss	15	1,457,071	13	1,335,723	147,600
2020	Liability Assumption Gain	15	(75,574,461)	13	(69,280,494)	(7,655,642)
2021	Asset Experience Gain	15	(61,268,465)	14	(58,782,969)	(6,202,452)
2021	Liability Experience Loss	15	1,258,411	14	1,207,361	127,394
2021	Contribution Gain	15	(6,876,395)	14	(6,597,438)	(696,125)
2021	Liability Assumption Loss	15	67,936,761	14	65,180,750	6,877,510
2022	Asset Experience Loss	15	30,433,589	15	30,433,589	3,080,914
2022	Experience Loss	15	7,901,075	15	7,901,075	799,857
2022	Contribution Loss	15	5,061,904	15	5,061,904	512,437
2022	COLA Loss	15	50,408,907	15	50,408,907	5,103,095

TOTAL Unfunded Actuarial Accrued Liability	$788,517,441	*
TOTAL Fiscal 2023 Amortization Payments at Beginning of Year		$92,191,699
TOTAL Fiscal 2023 Amortization Payments Adjusted to Mid-Year		$95,252,363

* Does not equal sum of remaining balances due to rounding.

EXHIBIT VI
ANALYSIS OF CHANGE IN ASSETS

Actuarial Value of Assets (June 30, 2021)		$ 2,568,079,189
INCOME:		
Member Contributions	$ 29,701,135	
Employer Contributions	91,970,347	
Irregular Contributions	310,056	
Insurance Premium Taxes	22,245,182	
Other Income	104,571	
Total Contributions		$ 144,331,291
Net (Depreciation) of Investments	$(314,008,068)	
Interest & Dividends	31,435,528	
Other Income	43,396	
Investment Expense	(7,556,956)	
Net Investment Income		$ (290,086,100)
TOTAL Income		$ (145,754,809)
EXPENSES:		
Retirement Benefits	$ 165,826,982	
DROP Disbursements	13,991,842	
Refunds of Contributions	6,717,696	
Transfers to Other Systems	3,467,534	
Administrative Expenses (Including Depreciation and OPEB).	2,897,170	
TOTAL Expenses		$ 192,901,224
Net Market Value Income for Fiscal 2022 (Income – Expenses)		$ (338,656,033)
Unadjusted Fund Balance as of June 30, 2022 (Fund Balance Previous Year + Net Income)		$ 2,229,423,156
Adjustment for Actuarial Smoothing		$ 431,385,387
Actuarial Value of Assets: (June 30, 2022)		$ 2,660,808,543

EXHIBIT VII
CENSUS DATA

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2021	5,414	2,276	257	4,938	12,885
Additions to Census					
Initial membership	541	132			673
Omitted in error last year					
Death of another member				65	65
Adjustment for multiple records				1	1
Change in Status during Year					
Actives terminating service	(367)	367			
Actives who retired	(112)			112	
Actives entering DROP	(93)		93		
Term. members rehired	102	(102)			
Term. members who retire		(13)		13	
Retirees who are rehired	1			(1)	
Refunded who are rehired	16	2			18
DROP participants retiring			(69)	69	
DROP returned to work	20		(20)		
Eliminated from Census					
Refund of contributions	(242)	(223)			(465)
Deaths	(11)	(2)	(3)	(170)	(186)
Included in error last year		(1)		(2)	(3)
Adjustment for multiple records				(19)	(19)
Number of members as of June 30, 2022	5,269	2,436	258	5,006	12,969

Actives Census By Age:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 - 20	18	7	25	31,323	783,069
21 - 25	290	94	384	38,234	14,681,907
26 - 30	547	217	764	44,501	33,998,434
31 - 35	566	180	746	49,669	37,053,130
36 - 40	638	186	824	55,501	45,732,437
41 - 45	596	230	826	61,194	50,546,227
46 - 50	580	179	759	64,713	49,117,201
51 - 55	451	126	577	66,067	38,120,789
56 - 60	184	74	258	65,815	16,980,244
61 - 65	47	25	72	66,605	4,795,552
66 - 70	15	7	22	68,033	1,496,725
71 - 75	7	3	10	84,526	845,262
81 - 85	1	0	1	81,717	81,717
91 - 95	1	0	1	102,465	102,465
Total	3,941	1,328	5,269	55,862	294,335,159

Includes 2,252 actives with vested benefits, including 97 active former DROP participants. The 258 current DROP participants are excluded.

Drop Participants:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
46 - 50	17	4	21	68,290	1,434,086
51 - 55	109	11	120	67,439	8,092,690
56 - 60	59	10	69	58,088	4,008,072
61 - 65	29	8	37	52,430	1,939,923
66 - 70	8	3	11	49,489	544,376
Total	222	36	258	62,090	16,019,147

Terminated Members Due a Deferred Retirement Benefit:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	4	0	4	25,126	100,503
36 - 40	33	9	42	24,685	1,036,782
41 - 45	52	6	58	26,827	1,555,984
46 - 50	62	19	81	31,028	2,513,232
51 - 55	57	8	65	25,737	1,672,916
56 - 60	2	0	2	18,144	36,288
Total	210	42	252	27,443	6,915,705

Terminated Members Due a Refund of Contributions:

Contributions Ranging From	To	Number	Total Contributions
0	99	252	11,260
100	499	487	128,437
500	999	261	187,424
1,000	1,999	267	390,266
2,000	4,999	304	989,861
5,000	9,999	205	1,477,346
10,000	19,999	219	3,109,987
20,000	99,999	189	5,873,151
Total		2,184	12,167,732

Excludes $ 324,589 due to survivors of several deceased members.

Regular Retirees: *

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	0	1	1	17,119	17,119
46 - 50	55	5	60	54,864	3,291,821
51 - 55	247	38	285	53,581	15,270,617
56 - 60	474	108	582	50,142	29,182,514
61 - 65	576	145	721	47,267	34,079,350
66 - 70	616	132	748	40,125	30,013,235
71 - 75	578	74	652	33,442	21,804,010
76 - 80	369	54	423	27,590	11,670,568
81 - 85	161	18	179	26,230	4,695,197
86 - 90	60	3	63	24,207	1,525,044
91 - 95	15	0	15	23,776	356,638
96 - 100	5	1	6	17,935	107,608
Total	3,156	579	3,735	40,700	152,013,721

Disability Retirees: *

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	1	0	1	9,516	9,516
36 - 40	1	3	4	22,529	90,115
41 - 45	9	7	16	22,108	353,732
46 - 50	13	10	23	21,583	496,420
51 - 55	25	10	35	19,391	678,683
56 - 60	12	10	22	16,085	353,878
61 - 65	18	2	20	13,426	268,515
66 - 70	9	6	15	13,602	204,031
71 - 75	16	6	22	14,054	309,195
76 - 80	12	2	14	16,302	228,224
81 - 85	3	1	4	14,341	57,362
91 - 95	1	0	1	10,391	10,391
Total	120	57	177	17,288	3,060,062

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

Survivors:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 20	31	37	68	6,733	457,815
21 - 25	7	9	16	7,543	120,695
26 - 30	0	1	1	38,040	38,040
31 - 35	1	6	7	24,908	174,356
36 - 40	1	4	5	29,243	146,215
41 - 45	0	17	17	26,350	447,958
46 - 50	1	21	22	21,732	478,109
51 - 55	6	44	50	25,093	1,254,640
56 - 60	7	64	71	25,848	1,835,203
61 - 65	4	81	85	26,150	2,222,786
66 - 70	19	109	128	20,649	2,643,087
71 - 75	19	156	175	18,613	3,257,214
76 - 80	15	157	172	16,677	2,868,491
81 - 85	5	129	134	15,026	2,013,504
86 - 90	4	94	98	13,444	1,317,545
91 - 95	5	25	30	10,125	303,764
96 - 100	0	13	13	17,116	222,504
101 - 105	0	2	2	8,354	16,707
Total	125	969	1,094	18,116	19,818,633

Active Members:

Attained Ages	Completed Years of Service 0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	Over 30	Total
0 - 20	23	2	-	-	-	-	-	-	25
21 - 25	179	198	7	-	-	-	-	-	384
26 - 30	151	446	164	3	-	-	-	-	764
31 - 35	86	251	289	118	2	-	-	-	746
36 - 40	60	162	203	272	122	5	-	-	824
41 - 45	37	100	117	170	275	126	1	-	826
46 - 50	32	66	72	94	174	265	56	-	759
51 - 55	19	34	55	78	114	139	116	22	577
56 - 60	16	4	14	31	43	50	67	33	258
61 - 65	1	1	-	5	20	14	12	19	72
66 - 70	1	-	1	1	1	4	5	9	22
71 & Over	-	-	-	-	-	2	-	10	12
Total	605	1,264	922	772	751	605	257	93	5,269

Average Annual Salary of Active Members:

Attained Ages	Completed Years of Service 0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	Over 30	Total
0 - 20	31,422	30,178	-	-	-	-	-	-	31,323
21 - 25	34,944	41,089	41,636	-	-	-	-	-	38,234
26 - 30	35,915	45,024	50,882	49,937	-	-	-	-	44,501
31 - 35	36,098	45,585	54,229	57,002	54,301	-	-	-	49,669
36 - 40	37,333	44,311	54,847	61,159	67,589	59,840	-	-	55,501
41 - 45	36,036	43,135	54,526	59,236	68,928	74,898	57,377	-	61,194
46 - 50	37,860	47,322	50,883	57,534	66,942	73,960	79,704	-	64,713
51 - 55	35,928	47,575	51,731	56,958	66,277	70,276	81,016	82,312	66,067
56 - 60	40,074	62,780	39,861	52,607	60,867	66,285	76,491	86,138	65,815
61 - 65	30,688	70,032	-	42,546	53,161	72,823	73,974	79,561	66,605
66 - 70	36,500	-	65,012	48,236	44,589	62,920	60,045	83,387	68,033
71 & Over	-	-	-	-	-	50,373	-	92,870	85,787
Total	35,837	44,519	53,095	58,710	66,895	72,380	78,722	84,347	55,862

Terminated Members Due A Deferred Retirement Benefit:

Attained Ages	Years until Retirement Eligibility 0 - 1	1 - 2	2 - 3	3 - 5	5 - 10	10 - 15	15 - 20	Over 20	Total
0 - 30	-	-	-	-	-	-	-	-	-
31 - 35	-	-	-	-	-	-	2	2	4
36 - 40	-	-	-	-	-	5	37	-	42
41 - 45	-	-	-	-	9	49	-	-	58
46 - 50	1	5	3	11	61	-	-	-	81
51 - 55	15	13	12	25	-	-	-	-	65
56 - 60	2	-	-	-	-	-	-	-	2
61 - 65	-	-	-	-	-	-	-	-	-
66 - 70	-	-	-	-	-	-	-	-	-
71 & Over	-	-	-	-	-	-	-	-	-
Total	18	18	15	36	70	54	39	2	252

Average Annual Benefits of Terminated Members Due A Deferred Retirement Benefit:

Attained Ages	Years until Retirement Eligibility 0 - 1	1 - 2	2 - 3	3 - 5	5 - 10	10 - 15	15 - 20	Over 20	Total
0 - 30	-	-	-	-	-	-	-	-	-
31 - 35	-	-	-	-	-	-	24,633	25,619	25,126
36 - 40	-	-	-	-	-	25,066	24,634	-	24,685
41 - 45	-	-	-	-	31,325	26,001	-	-	26,827
46 - 50	56,768	51,586	41,762	39,247	26,910	-	-	-	31,028
51 - 55	29,291	25,956	25,944	23,392	-	-	-	-	25,737
56 - 60	18,144	-	-	-	-	-	-	-	18,144
61 - 65	-	-	-	-	-	-	-	-	-
66 - 70	-	-	-	-	-	-	-	-	-
71 & Over	-	-	-	-	-	-	-	-	-
Total	29,579	33,075	29,107	28,237	27,478	25,915	24,634	25,619	27,443

Service Retirees: *

Attained Ages	Completed Years Since Retirement								
	0 - 1	1 - 2	2 - 3	3 - 5	5 - 10	10 - 15	15 - 20	Over 20	Total
0 - 50	32	13	6	8	2	-	-	-	61
51 - 55	57	58	46	57	62	5	-	-	285
56 - 60	68	77	58	102	216	52	8	1	582
61 - 65	24	32	34	60	270	207	84	10	721
66 - 70	6	13	8	31	151	209	246	84	748
71 - 75	-	3	4	13	36	114	188	294	652
76 - 80	-	-	-	-	11	19	60	333	423
81 - 85	1	-	-	-	-	4	13	161	179
86 - 90	-	-	-	-	-	1	1	61	63
91 & Over	-	-	-	-	-	-	-	21	21
Total	188	196	156	271	748	611	600	965	3,735

Average Annual Benefits Payable To Service Retirees:

Attained Ages	Completed Years Since Retirement								
	0 - 1	1 - 2	2 - 3	3 - 5	5 - 10	10 - 15	15 - 20	Over 20	Total
0 - 50	62,451	47,046	41,765	47,067	35,883	-	-	-	54,245
51 - 55	59,889	57,534	53,951	54,637	45,049	26,184	-	-	53,581
56 - 60	50,415	47,900	52,017	51,416	51,691	46,893	23,245	14,910	50,142
61 - 65	41,646	55,381	49,471	51,983	49,833	46,666	38,081	19,302	47,267
66 - 70	40,047	51,716	38,511	38,535	49,252	40,501	38,141	27,543	40,125
71 - 75	-	51,754	32,389	39,916	39,241	40,265	33,309	29,712	33,442
76 - 80	-	-	-	-	42,350	31,444	30,347	26,386	27,590
81 - 85	14,899	-	-	-	-	26,738	24,565	26,422	26,230
86 - 90	-	-	-	-	-	47,251	73,610	23,019	24,207
91 & Over	-	-	-	-	-	-	-	22,107	22,107
Total	53,697	52,228	50,442	50,066	49,199	42,612	35,405	27,115	40,700

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

Disability Retirees: *

Attained Ages	Completed Years Since Retirement 0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	Over 30	Total
0 - 30	-	-	-	-	-	-	-	-	-
31 - 35	-	1	-	-	-	-	-	-	1
36 - 40	-	2	2	-	-	-	-	-	4
41 - 45	2	3	6	5	-	-	-	-	16
46 - 50	1	7	4	7	2	2	-	-	23
51 - 55	-	3	9	10	6	7	-	-	35
56 - 60	-	-	3	4	5	4	4	2	22
61 - 65	-	-	1	2	3	7	1	6	20
66 - 70	-	-	1	-	2	1	5	6	15
71 - 75	-	-	-	-	1	3	4	14	22
76 - 80	-	-	-	1	-	1	2	10	14
81 & Over	-	-	-	-	-	-	1	4	5
Total	3	16	26	29	19	25	17	42	177

Average Annual Benefits Payable To Disability Retirees:

Attained Ages	Completed Years Since Retirement 0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	Over 30	Total
0 - 30	-	-	-	-	-	-	-	-	-
31 - 35	-	9,516	-	-	-	-	-	-	9,516
36 - 40	-	25,015	20,043	-	-	-	-	-	22,529
41 - 45	23,543	24,086	20,375	22,427	-	-	-	-	22,108
46 - 50	23,626	29,044	22,054	18,353	15,184	11,215	-	-	21,583
51 - 55	-	23,647	24,699	20,846	14,877	12,533	-	-	19,391
56 - 60	-	-	14,147	23,558	17,470	12,163	10,367	19,867	16,085
61 - 65	-	-	13,973	27,569	14,371	13,172	10,415	8,946	13,426
66 - 70	-	-	14,334	-	15,370	22,772	12,703	12,112	13,602
71 - 75	-	-	-	-	13,319	10,816	19,243	13,318	14,054
76 - 80	-	-	-	13,962	-	9,183	13,258	17,856	16,302
81 & Over	-	-	-	-	-	-	6,678	15,269	13,551
Total	23,571	25,378	20,907	21,117	15,482	12,617	13,269	14,099	17,288

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

Surviving Beneficiaries of Former Members:

Attained Ages	Completed Years Since Retirement 0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	Over 30	Total
0 - 30	8	27	26	14	10	-	-	-	85
31 - 35	-	3	3	-	-	-	1	-	7
36 - 40	-	2	1	-	2	-	-	-	5
41 - 45	1	5	5	1	3	-	-	2	17
46 - 50	-	3	2	8	3	4	1	1	22
51 - 55	-	10	10	8	7	7	5	3	50
56 - 60	-	7	10	10	13	9	13	9	71
61 - 65	-	2	13	16	19	10	14	11	85
66 - 70	-	2	6	11	27	25	23	34	128
71 - 75	-	-	4	13	27	41	41	49	175
76 - 80	-	-	3	3	8	23	50	85	172
81 & Over	-	1	2	4	5	11	19	235	277
Total	9	62	85	88	124	130	167	429	1,094

Average Annual Benefits Payable To Survivors of Former Members:

Attained Ages	Completed Years Since Retirement 0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	Over 30	Total
0 - 30	11,714	6,844	8,129	5,803	4,544	-	-	-	7,254
31 - 35	-	29,958	24,228	-	-	-	11,799	-	24,908
36 - 40	-	37,334	48,442	-	11,553	-	-	-	29,243
41 - 45	30,676	35,601	26,974	8,126	25,732	-	-	9,543	26,350
46 - 50	-	39,219	29,991	24,610	15,259	12,040	5,703	3,948	21,732
51 - 55	-	36,642	37,963	29,443	17,652	9,574	10,352	10,237	25,093
56 - 60	-	56,030	36,999	33,678	25,065	15,119	11,069	14,490	25,848
61 - 65	-	57,373	42,213	33,499	26,931	18,052	15,512	10,356	26,150
66 - 70	-	35,093	30,259	34,179	24,429	19,412	19,486	12,421	20,649
71 - 75	-	-	37,737	18,024	19,677	19,804	20,448	14,088	18,613
76 - 80	-	-	44,902	43,118	26,235	14,652	19,282	12,864	16,677
81 & Over	-	5,341	30,076	36,205	24,661	19,333	21,151	12,451	13,986
Total	13,821	25,708	27,683	25,898	21,586	17,528	18,460	12,657	18,116

EXHIBIT VIII
YEAR-TO-YEAR COMPARISON

	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019
Number of Active Members	5,269	5,414	5,644	5,729
Number of Retirees & Survivors	5,006	4,938	4,837	4,770
DROP Participants	258	257	212	203
Number of Terminated Due Deferred Benefits	252	236	221	201
Number Terminated Due Refunds	2,184	2,040	1,842	1,670
Active Lives Payroll (excludes DROP participants entering prior to 7/1/21)	$ 301,207,646	$ 293,949,856	$ 302,984,686	$ 305,445,379
Retiree Benefits in Payment	$ 174,892,416	$ 162,774,931	$ 154,963,239	$ 148,972,071
Market Value of Assets	$ 2,478,317,694	$ 2,816,973,727	$ 2,256,740,977	$ 2,224,281,981
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability	77.14%	77.78%	75.50%	72.89%
Actuarial Accrued Liability (EAN)	$ 3,449,325,984	$ 3,301,558,629	$ 3,135,811,188	$ 3,132,449,454
Actuarial Value of Assets	$ 2,660,808,543	$ 2,568,079,189	$ 2,367,621,208	$ 2,283,284,109
UAL (Funding Excess)	$ 788,517,441	$ 733,479,440	$ 768,189,980	$ 849,165,345

	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020
Employee Contribution Rate:				
For Employees in the Hazardous Subplan or Hired prior to January 1, 2013:	10.00% †	10.00% †	10.00% †	10.00% †
For Employees in the Non-Hazardous Subplan:	8.00%	8.00%	8.00%	8.00%
Required Tax Contributions as a Percentage of Projected Payroll	7.69%	7.31%	7.14%	7.14%
Actuarially Required Employer Contribution Rate:				
For Employees in the Hazardous Subplan or Hired prior to January 1, 2013:	34.38% †	32.01% †	30.86% †	33.69% †
For Employees in the Non-Hazardous Subplan:	34.38%	32.01%	30.86%	33.69%
Actual Employer Contribution Rate				
For Employees in the Hazardous Subplan or Hired prior to January 1, 2013:	31.25% †	29.75% †	33.75% †	32.50% †
For Employees in the Non-Hazardous Subplan:	31.25%	29.75%	33.75%	32.50%

† 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 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013
5,685	5,663	5,666	5,535	5,468	5,602
4,736	4,691	4,637	4,538	4,444	4,340
180	193	191	228	271	314
187	181	175	168	159	145
1,563	1,443	1,324	1,320	1,272	1,252
$ 294,988,865	$ 293,792,282	$ 281,546,022	$ 265,089,428	$ 259,594,435	$ 264,711,491
$ 144,162,327	$ 139,782,252	$ 134,868,070	$ 128,050,009	$ 118,522,277	$ 110,735,234
$ 2,161,775,206	$ 2,045,022,309	$ 1,822,858,397	$ 1,893,077,295	$ 1,887,019,463	$ 1,600,532,779
73.23%	71.39%	70.64%	69.91%	68.11%	64.15%
$ 3,007,181,318	$ 2,918,064,612	$ 2,760,140,132	$ 2,676,472,766	$ 2,512,627,665	$ 2,399,375,820
$ 2,202,302,093	$ 2,083,240,809	$ 1,949,755,816	$ 1,871,160,542	$ 1,711,268,285	$ 1,539,218,085
$ 804,879,225	$ 834,823,803	$ 810,384,316	$ 805,312,224	$ 801,359,380	$ 860,157,735

Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014
10.00% †	10.00% †	10.00% †	10.00% †	10.00% †	10.00%
8.00%	8.00%	8.00%	8.00%	8.00%	N/A
6.97%	6.69%	6.71%	6.93%	6.77%	6.19%
32.55% †	32.22% †	31.14% †	31.63% †	29.80% †	31.53%
32.55%	32.22%	31.14%	33.63%	31.80%	N/A
32.25% †	30.75% †	31.75% †	29.50% †	31.50% †	31.00%
32.25%	30.75%	33.75%	31.50%	33.50%	N/A

* COLA not included

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 – 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 – The fund 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. 22:1476A(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 – 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 –

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 –

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 –

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

DISABILITY BENEFITS – 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 – 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 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 – 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 INCREASES – 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:	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:	6.75% (Net of investment expense)
ACTUARIAL ASSET VALUES:	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:	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:	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.

RETIREE COST OF LIVING INCREASES:	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.
ANNUAL SALARY INCREASE RATE:	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:	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:	Projected retirement benefits are not subject to IRS Section 415 limits.
DROP ENTRY RATES:	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:	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:	The rates of retirement for active former DROP participants are included later in this report.
DISABILITY RATES:	110% of the disability rates used for the 27th 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:	20% of Total Disabilities
DISABLED LIVES MORTALITY:	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.
SERVICE-RELATED DEATH:	20% of Total Deaths

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

Service Duration ≤	Factor	Service Duration ≤	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.

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

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

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

VESTING ELECTING PERCENTAGE: 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.

ACTUARIAL TABLES AND RATES

Age	Disability Rates	Retirement Rates	DROP Entry Rates	Post-DROP Retirement 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 – 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 – 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 – 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 – 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 – Payments or receipts with equal actuarial value on a given date when valued using the same set of actuarial assumptions.

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

Amortization Payment – 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) – The difference between contributions recommended in the prior valuation and the actual amount received. 301,207,646

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

Employer Normal Cost – 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 – 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 – 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 – 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 – 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 – The excess of the actuarial accrued liability over the actuarial value of assets.

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