CURRAN ACTUARIAL CONSULTING, LTD.

Annual Funding Valuation
June 30, 2022

Louisiana School Employees' Retirement System

CURRAN ACTUARIAL
CONSULTING, LTD.

September 29, 2022

Board of Trustees
Louisiana School Employees' Retirement System
8660 United Plaza Boulevard
Baton Rouge, Louisiana 70809

Ladies and Gentlemen:

We are pleased to present our report on the actuarial valuation of the Louisiana School 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 Louisiana School 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 Louisiana School 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 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. Curran

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SUMMARY OF VALUATION RESULTS
LOUISIANA SCHOOL EMPLOYEES' RETIREMENT SYSTEM

		June 30, 2022	June 30, 2021
Valuation Date:		June 30, 2022	June 30, 2021
Census Summary:	Active Members	11,450	11,700
	Retired Members and Survivors	13,812	13,699
	DROP Participants	577	587
	Terminated Due a Deferred Benefit	568	487
	Terminated Due a Refund	4,979	4,649
Payroll (excluding DROP accruals):		$ 319,921,190	$ 305,839,425
Benefits in Payment:		$ 187,682,379	$ 181,539,981
Present Value of Future Benefits		$ 3,078,211,149	$ 2,976,138,304
Actuarial Accrued Liability (EAN):		$ 2,806,773,108	$ 2,718,374,040
Unfunded Actuarial Accrued Liability:		$ 686,968,204	$ 660,505,117
Experience Account:		$ 605,339	$ 19,911,687
Actuarial Value of Assets:		$ 2,119,804,904	$ 2,057,868,923
Market Value of Assets (Includes Experience Account):		$ 2,141,775,693	$ 2,243,057,149
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability:		75.52%	75.70%

	Fiscal 2022	Fiscal 2021
Market Rate of Return (Excluding Money Market DROP funds):	-0.64%	27.45%
Actuarial Rate of Return (Excluding Money Market DROP funds):	7.57%	9.58%
Non-Money Market DROP Account Interest Credit Rate:	7.07%	9.08%

	Fiscal 2023	Fiscal 2022
Employers' Normal Cost (Mid-year):	$ 23,644,471	$ 22,830,330
Amortization Cost (Mid-year):	$ 62,464,353	$ 59,744,278
Projected Administrative Expenses:	$ 4,772,693	$ 4,736,629
Net Direct Employer Actuarially Required Contributions:	$ 90,881,517	$ 87,311,237
Projected Payroll:	$ 324,093,196	$ 310,143,196
Actuarially Required Net Direct Employer Contribution Rate:	28.0%	28.2%
Actual Employee Contribution Rate:		
Employees whose first state service occurred before July 1, 2010:	7.5%	7.5%
Employees whose first state service occurred on or after July 1, 2010:	8.0%	8.0%
Actual Net Direct Employer Contribution Rate:	27.6%	28.7%

	Fiscal 2024	Fiscal 2023
Minimum Recommended Net Direct Employer Cont. Rate:	27.6%	27.6%

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 system's administration furnished census data derived from the system's master data processing file indicating each active covered employee's sex, date of birth, service credit, annual salary, and accumulated contributions. 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 VIII, there are 11,450 active contributing members in the system of whom 6,550 have vested retirement benefits; in addition, there are 577 participants in the Deferred Retirement Option Plan (DROP); 13,812 former members or their beneficiaries are receiving retirement benefits. An additional 5,547 terminated members have contributions remaining on deposit with the system; of this number 568 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.

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 Duplantier, Hrapmann, Hogan & Maher, L.L.P. As indicated in the system's financial statements, the net market value of assets was $2,141,775,693 as of June 30, 2022. Net investment income for Fiscal 2022 measured on a market value basis amounted to a loss of $13,709,631. Contributions to the system for the fiscal year totaled $121,110,482; benefits and expenses amounted to $208,682,307.

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

COMMENTS ON ACTUARIAL METHODS AND ASSUMPTIONS

This valuation is based on the Individual Entry Age Normal actuarial cost method. The unfunded accrued liability is amortized with level payments over various periods as specified in Louisiana Revised Statute R.S. 11:102. Effective with the June 30, 2014 valuation, the system's outstanding amortization bases were consolidated and re-amortized over thirty years with level payments. For fiscal years 2015 and 2016, amortization bases for actuarial asset and liability gains or losses (except as noted below) or changes in assumptions were set to be amortized over 30 years. Since the 2016 valuation indicated that the funded ratio of the plan (based on the net valuation assets) exceeded 72%, such amortization periods for new amortization bases beginning with the Fiscal 2017 valuation have been set at twenty years. All contribution shortfalls and excesses are amortized as a level dollar amount over 5 years. In each valuation since Fiscal 2015, the first $15,000,000 of any asset gain (adjusted pro-rata for increases in the Actuarial Value of Assets) is used to immediately reduce the system's oldest outstanding amortization base without re-amortization. The statutes provide that beginning in Fiscal 2020 and every fifth year thereafter, the remaining liability net of all payments made since the last re-amortization will be re-amortized over the remainder of the amortization period originally established for that amortization base. Therefore, the 2020 valuation included a re-amortization of the 2014 Cumulative Base over the remaining amortization period. This resulted in a decrease in the required amortization payment. After the system's funded percentage reaches 80%, the remaining balance of the consolidated amortization base will be re-amortized over the remaining amortization period. Fifty percent of the asset gains which exceed the adjusted $15,000,000 threshold will be used to fund the system's Experience Account which may be allocated to future permanent benefit increases (commonly referred to as cost-of-living adjustments), subject to certain limitations. For any valuation following the June 30, 2015 valuation, any such allocation must be amortized as a loss with level dollar payments over ten years. The funding methodology for the plan also includes the application of LSERS "side funds" defined by R.S. 11:102. The only side fund currently utilized is the system's "Experience Account."

The system's Experience Account is funded by 50% of any investment gains above $15,000,000 (adjusted pro-rata for increases in the Actuarial Value of Assets subsequent to the June 30, 2015 valuation) subject to the limits on the account value (see priority amount history below). In addition, each year the balance in the account is credited with investment earnings or debited with investment losses, shown in this report as the rate of return on the Actuarial Value of Assets. The balance in the account cannot exceed the reserve necessary to grant one (two if the system has a funded ratio of 80% or greater) cost-of-living adjustment (or permanent benefit increase) as otherwise authorized by law. Any funds credited to the Experience Account reduce those allocated to the Investment Gain/Loss Experience base.

The Priority Amount, which represents the maximum amount of system returns in excess of the system's actuarially assumed rate of return that may be applied to the oldest outstanding positive amortization base, has been set at the following levels since its creation:

Fiscal 2015 –	$15,000,000
Fiscal 2016 –	$15,386,586
Fiscal 2017 –	$15,932,442
Fiscal 2018 –	$16,310,113
Fiscal 2019 –	$16,371,779
Fiscal 2020 –	$16,371,779
Fiscal 2021 –	$17,154,693
Fiscal 2022 –	$17,671,000

For the June 30, 2015 valuation, although the assumed rate of return was maintained at 7.25%, the interest rate used to discount plan liabilities was reduced to 7.00%. This reduction was made to implicitly account for administrative expenses as an offset to investment gains or an increase to investment losses. Based on Act 94 of the 2016 Regular Session of the Legislature, beginning with the June 30, 2016 actuarial valuation, the explicit cost of projected noninvestment related administrative expenses were included in the calculation of the actuarially required contribution for the system. With this change, the valuation of plan liabilities based on a valuation interest rate set 0.25% below the assumed long-term rate of return was no longer necessary. This would have resulted in an increase in the valuation interest rate of 0.25%. Instead, for the June 30, 2016 actuarial valuation, the assumed long-term rate of return was reduced from 7.25% to 7.125% and the valuation interest rate was set equal to the long-term rate of return. This resulted in an increase in the valuation interest rate from 7% to 7.125%. To maintain consistent economic assumptions, with the reduction in the long-term rate of return of 0.125%, the long term expected rate of inflation and the salary scale assumption were also reduced by 0.125%. In conjunction with the 2018 experience study, a reduction in the valuation interest rate to 7.0% was recommended. The Board of Trustees voted to accept the recommendation and elected to reduce the valuation interest rate over the following two years. Therefore, the Fiscal 2018 actuarial valuation was run at 7.0625% and the Fiscal 2019 actuarial valuation was run at 7.0%. The rate remained unchanged for the Fiscal 2020 actuarial valuation.

For Fiscal 2021, the Board of Trustees was advised by its actuary that the 7.0% valuation interest rate utilized in the prior valuation remained within the actuary's reasonable range. Despite this and given the market returns experienced by the system's investment portfolio during Fiscal 2021, the actuary recommended that the Board of Trustees consider opportunistically lowering the valuation interest rate. The Board voted to authorize lowering the valuation interest rate by up to 0.10% as long as the system met certain benchmarks. Thus, the Fiscal 2021 valuation was run based upon a 6.90% valuation interest rate since those requirements were met. Given the limited reduction, the actuary did not recommend lowering the assumed rate of inflation.

Prior to the Fiscal 2022 valuation, the system's actuary found that the 6.90% valuation interest rate remains within the system's reasonable range based on the 2022 consultant average capital market assumption. Nevertheless, after consultation with system management, an additional opportunistic reduction from 6.90% to 6.80% was made in this year's valuation. No change was made in the assumed rate of inflation. With the exception of the valuation interest rate, the actuarial assumptions utilized for this report are based on the results of an actuarial experience study for the period July 1, 2011 – June 30, 2018.

A liability is recognized for the existing balance in the Experience Account together with the present value of future contributions to the Account up to the maximum permissible value of the Account based upon current account limitations. This change was in recognition of the fact the legal mechanism for credits to the Experience Account are substantively automatic up to the limit set on the account balance. However, contributions to this account in excess of the account limit will require a legislative act. Although the board of trustees has authority to recommend ad hoc Cost of Living Increases (COLAs) be approved by the legislature under limited circumstances, these COLAs have not shown to have an historical pattern, the amounts of the COLAs have not been relative to a defined cost-of-living or inflation index, and there is no evidence to conclude that COLAs will be granted on a predictable basis in the future. Therefore, for purposes of determining the present value of benefits, these COLAs were deemed not to be substantively automatic and the present value of benefits excludes COLAs beyond the current account limitations of the Experience Account. Since a liability for future COLAs up to the authorized Experience Account balance has been included in the system's accrued liabilities, the assets in the Experience Account were included in the valuation assets for funding purposes.

For reports prior to 2017, the term "actuarial value of assets" referred to the smoothed asset value reduced by both the Experience Account and the Amortization Conversion Account, where applicable. The term "actuarial value of assets" in this report refers to the smoothed asset values, as calculated in Exhibit III – B, unreduced for any "side funds".

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. As the plan attempts to offset inflation by 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 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 steeply decline, which mitigates 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 ten years. In that ten-year period, annual benefit payments have exceeded 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 scale 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 can present risks to the plan. These events can affect member payroll and plan demographics, both of which impact costs. The risk associated with either of these factors can vary depending upon the severity of the event and cannot be easily forecasted.

Beyond identifying risk categories, it is possible to quantify some risk factors. One fairly well-known risk metric is the funded ratio of the plan. The rate is given as plan assets divided by plan liabilities. However, the definition of each of these terms may vary. The two typical alternatives used for assets are the market and actuarial value of assets. There are several alternative measures of liability depending on the funding method employed. The Governmental Accounting Standards Board (GASB) specifies that for financial reporting purposes, the funded ratio is determined by using the market value of assets divided by the entry age normal accrued liability. This value is given in the system's financial report. Alternatively, we have calculated the ratio of the actuarial value of assets to the entry age normal accrued liability based on the funding methodology used to fund the plan. The ratio is 75.52% for the plan 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 IX 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 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 the assumed rate of return on the actuarial value of assets, there will be a corresponding increase in the actuarially required contribution as a percentage of projected payroll of 0.59% for the fund. For earnings above the assumed rate of return, the reduction in costs will generally be less than this amount due to the priority allocation and the allocation of a portion of investment gains to the Experience Account.

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 8.75.

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 59%; ten years ago this ratio was 49%.

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 are that in this area a decrease in the assumptions 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 2023 by 8.2% of payroll. After accounting for the effect of the contribution shortfall, the recommended employer contribution rate for Fiscal 2024 would increase by 10.0%. 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 legislative changes directly affecting the retirement system were enacted during the 2022 Regular Session of the Louisiana Legislature.

Act 359 authorized LSERS to provide a permanent benefit increase (PBI) payable effective July 1, 2022 to authorized retirees and beneficiaries. The PBI was equal to 1.4% of the benefit being paid to retirees who have attained at least age sixty and who have received benefits for at least one year. The PBI was also paid to non-retiree beneficiaries whose benefits are not paid based on the death of a disability retiree if the retiree would have attained age sixty and if benefits have been paid at least one year. Any disability retiree or person receiving benefits based on the death of a disability retiree who has been paid benefits for at least one year also received the PBI.

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	13.73%	12.04%
2014	16.96%	13.63%
2015	3.00%	11.63%
2016	-0.59%	6.90%
2017	14.14%	8.47%
2018	6.41%	7.64%
2019	4.70%	5.37%
2020	-0.42%	4.61%
2021	27.45%	9.58%
2022	-0.64%	7.57%

† Rates of return calculated based on assets inclusive of Amortization Conversion Account and Experience Account but exclusive of money market DROP assets and income.

Geometric Average Market Rates of Return

5-year average	(Fiscal 2018 – 2022)	7.0%
10-year average	(Fiscal 2013 – 2022)	8.1%
15-year average	(Fiscal 2008 – 2022)	6.2%
20-year average	(Fiscal 2003 – 2022)	6.9%
25-year average	(Fiscal 1998 – 2022)	6.6%
30-year average	(Fiscal 1993 – 2022)	7.4%

The market rate of return gives a measure of investment return on a total return basis and includes realized and unrealized capital gains and losses as well as interest income. The rate of return is calculated on assets invested in the system's portfolio. DROP and IBRP assets invested in money market investments have been excluded from the rate of return calculation. 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 $41,098,729 of dividends, interest and other recurring income. In addition, the Fund had net realized and unrealized capital losses and non-recurring income on investments of $37,731,055. In addition, the Fund had investment expenses of $17,077,305.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 6.90% in effect for Fiscal 2022 (6.80% beginning in Fiscal 2023). DROP accounts that are credited with earnings based on the actuarial rate of return of the system should be credited with 7.07% (i.e., 7.57% less 0.50% as detailed in R.S. 11:1152(F)(3)). The actuarial rate of return is calculated based on the actuarial value of assets net of DROP and IBRP assets invested in money market accounts and includes all interest, dividends, and recognized capital gains as given in Exhibit VI net of money market income earned by DROP and IBRP assets. Investment income used to calculate this yield is based upon a smoothing of investment returns above or below the valuation interest rate over a five-year period, subject to constraints. The difference between rates of return on an actuarial and market value basis results from the smoothing of gains or losses on investments relative to the valuation interest rate. Yields in excess of the applicable interest assumption will reduce future costs; yields below the applicable interest assumption will increase future costs. For Fiscal 2022, the system experienced an actuarial investment gain of $13,224,680 above assumed actuarial earnings using the assumed rate of 6.90%. The interest adjusted amortization payment on this gain was $1,189,210, or 0.37% of projected payroll.

DEMOGRAPHICS AND LIABILITY EXPERIENCE

The average active contributing member is 53 years old with 9.2 years of service credit and an annual salary of $27,941. The system's active contributing membership experienced a decrease of 250 members during Fiscal 2022; over the last five years, the number of active contributing members decreased by 605. The number of DROP participants decreased by 10 during Fiscal 2022.

The average service retiree is 74 years old with an annual benefit of $14,268 and an average retirement age of 61. The number of retirees and beneficiaries receiving benefits from the system increased by 113 during the fiscal year. Over the last five years, the number of retirees increased by 458 with annual benefits in payment increasing by $20,253,564.

Liability experience for the year was unfavorable with a net plan liability experience loss totaling $39,459,944. The interest adjusted amortization credit on this loss was $3,548,378, or 1.09% of projected payroll. The primary reason for the unfavorable liability experience was the application of an additional liability of $36,313,395 to account for the future automatic filling of the Experience Account. The remaining liability experience was close to neutral with significant salary increases above projected levels (which tends to increase costs) offset by retirements significantly below projected levels and both withdrawals and retiree deaths significantly above projected levels (which tends to decrease costs). DROP entries and disability retirements were near projected levels.

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. 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 accrued liability are on a fixed, level dollar schedule. If payroll increases, these costs are reduced as a percentage of payroll. Conversely, if payroll decreases, these costs are increased as a percentage of payroll.

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

An explanation of the change in costs related to asset and liability gains and losses as well as changes in demographics and assumptions is given in prior sections of the report. In addition to these components, variances in contribution levels and payroll also affect costs. For Fiscal 2022 contributions totaled $7,812,420 more than required; the interest-adjusted amortization credit based on the contribution surplus for Fiscal 2023 is $1,833,858, or 0.57% of projected payroll. In addition, for Fiscal 2023 the net effect of the change in payroll on amortization costs was to decrease such costs by 0.82% of projected payroll. In addition to annual gains and losses, the net direct employer contribution rate was affected by the elimination of the payment related to the 2017 contribution loss and a reduction in payments on prior UAL amortization bases due to the lowering of the valuation interest rate, both of which decreased costs.

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	$ 22,830,330	7.36%
Change in Employer Normal Cost due to change in payroll	N/A	(0.31%)
Cost of Demographic and Salary Changes	606	0.00%
Change in Assumptions	$ 813,535	0.25%
Employer Normal Cost for Fiscal 2023	$ 23,644,471	7.30%

UAL Payments for Fiscal 2022	$	59,744,278	19.26%
Change in UAL Cost due to change in payroll		N/A	(0.82%)
Change due to reduction in valuation interest rate	$	(447,457)	(0.14%)
Change due to elimination of Amortization	$	(726,418)	(0.22%)
Additional Amortization Expenses for Fiscal 2023:			
Liability Assumption Loss (Gain)	$	2,179,430	0.67%
Asset Experience Loss (Gain)	$	(1,189,210)	(0.37%)
Priority Allocation	$	1,189,210	0.37%
Liability Experience Loss (Gain)	$	3,548,378	1.09%
Contribution Loss (Gain)	$	(1,833,858)	(0.57%)
Total Amortization Expense (Credit) for Fiscal 2023	$	62,464,353	19.27%
Projected Adminstrative Expenses for Fiscal 2023	$	4,772,693	1.47%
Total Normal Cost & Amortization Payments	$	90,881,517	28.04%

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The employer's normal cost for Fiscal 2023, interest adjusted for mid-year payment is $23,644,471. The amortization payments on the system's unfunded actuarial accrued liability total $62,464,353. The total actuarially required contribution is determined by adding these two values together with administrative expenses. The net direct actuarially required employer contribution for Fiscal 2023 is determined based on the sum of employer normal cost, amortization payments on the unfunded actuarial accrued liability, and projected administrative expenses. As given in line 12 of Exhibit I, the total actuarially required employer contribution for Fiscal 2023 is $90,881,517, or 28.0% of projected payroll.

Since the actual employer contribution rate for Fiscal 2023 is 27.6% of payroll, there will be a contribution deficit of 0.4% of payroll. This deficit 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 and adjusted for the impact of the estimated contribution deficit for Fiscal 2023. As given in line 22 of Exhibit I, the estimated actuarially required net direct employer contribution for Fiscal 2024 is $90,527,248, or 27.6% of projected payroll.

COST OF LIVING ADJUSTMENTS

During Fiscal 2022, the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 9.1%. Cost of living provisions for the system are detailed in R.S. 11:1145.1 within the statutes relative to the Experience Account. The Experience Account cannot be credited with funds that would cause the balance in the account to exceed the reserve of one permanent benefit increase (PBI) if the system is less than 80% funded or two permanent benefit increases if the system is at least 80% funded. R.S. 11:1145.1 sets forth the basis for determining the maximum percentage increase in the benefits permissible. LSERS had a funded ratio of 75.70% in Fiscal 2021. The maximum percentage increase is based upon the funded percentage of the system as of the most recent actuarial valuation, and is limited to

2.0% in any year in which the system does not earn an actuarial rate of return of at least 7.25%, according to the following:

Funded Percentage of the System	Maximum Percent PBI
At least 80%	3.0%
At least 75% but less than 80%	2.5%
At least 65% but less than 75%	2.0%
At least 55% but less than 65%	1.5%
Less than 55%	No COLA permitted

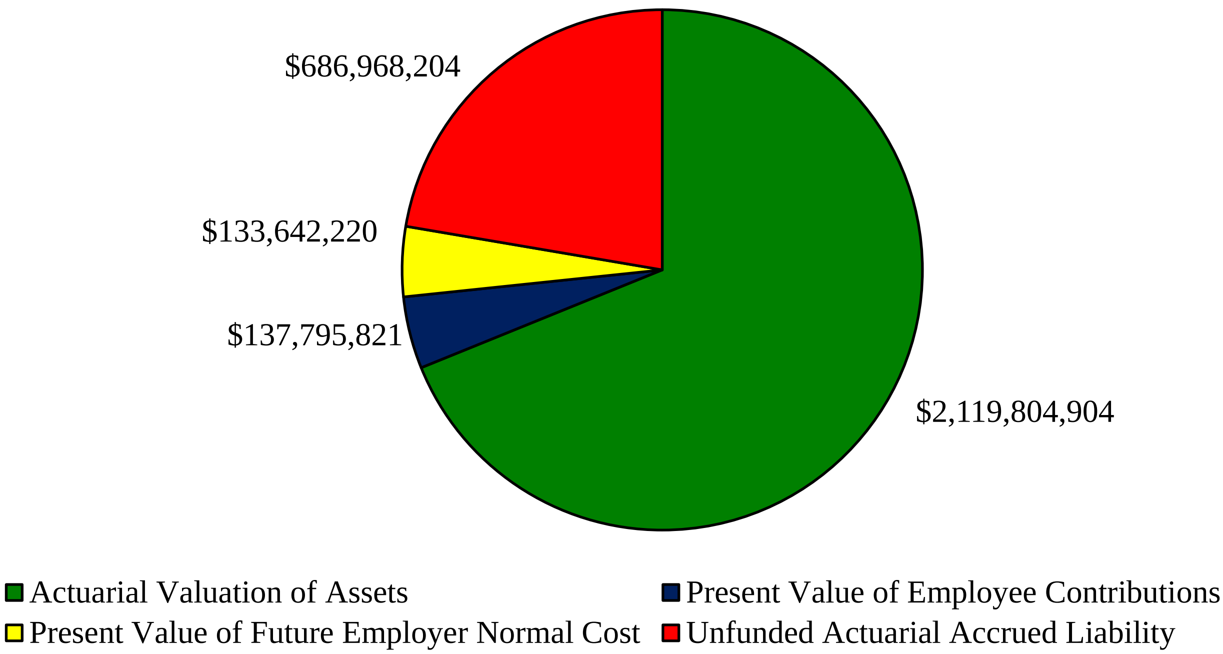
Because the system's funded ratio exceeds 75%, the max percentage PBI is 2.5%. In addition, when the fund is less than 85% funded and the legislature granted a permanent benefit increase in the preceding fiscal year, no increase may be granted.

If there are sufficient funds in the Experience Account and the system met the necessary criteria to grant a PBI, the Board of Trustees may recommend to the President of the Senate and the Speaker of the House of Representatives that the system be permitted to grant a permanent benefit increase. Permanent benefit increases are based on the benefit in payment at the time the benefit increase is approved with a maximum increase based on the first $60,000 of benefits, where the $60,000 limit is increased annually by the consumer price index for all urban consumers from July 1, 2015. No PBI can be paid in an amount greater than the increase in the Consumer Price Index for all urban consumers during the twelve-month period ending on the system's valuation date. Permanent benefit increases may be provided only to retirees who have received benefits for at least one full year. In addition, non-disabled retirees may only receive a PBI if they have attained age sixty.

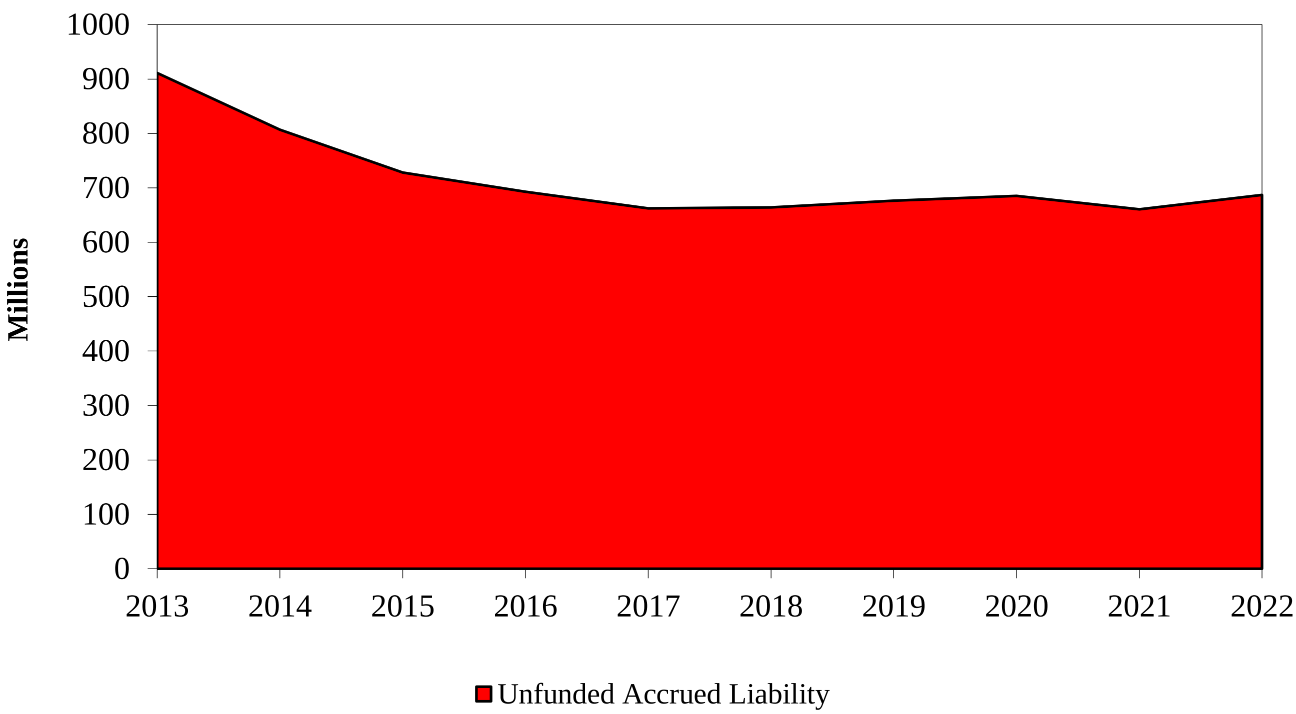
Through Act 359 of the 2022 legislative session, the legislature approved the payment of a permanent benefit increase to applicable retirees and non-retiree beneficiaries. Although the system's Experience Account did not reach the necessary balance to fully fund the maximum permissible PBI within the Fiscal 2021 valuation, the legislature determined that given the CPI increase over the past year it was preferable to provide the largest PBI that could be funded from the existing Experience Account than to wait for further funding. As stated in the section on Changes in Plan Provisions, a 1.4% PBI was authorized effective July 1, 2022.

Under the provisions of R. S. 11:1145.1, the system does not qualify to request that the Louisiana Legislature grant a PBI in the 2023 legislative session since the system provided a PBI on July 1, 2022, has a funded ratio below 85%, and has insufficient funds in its Experience Account.

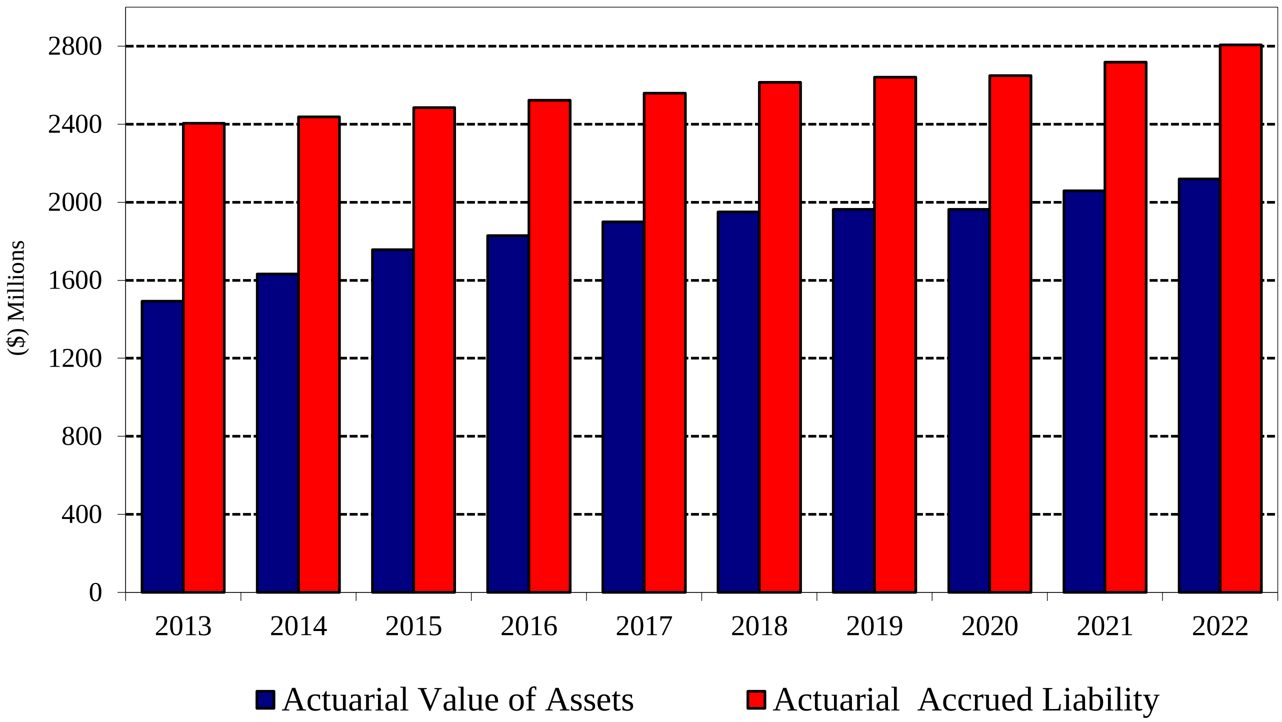
Components of Present Value of Future Benefits
June 30, 2022



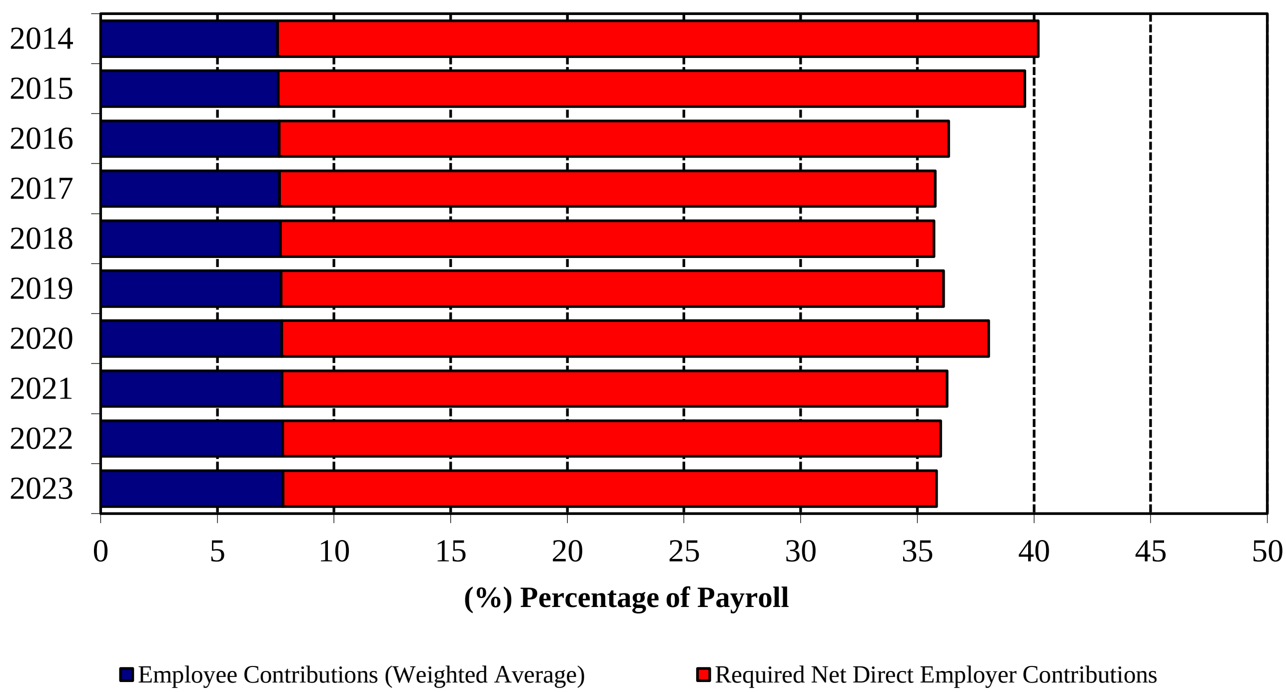
Unfunded Accrued Liability



Actuarial Value of Assets vs. Actuarial Accrued Liability

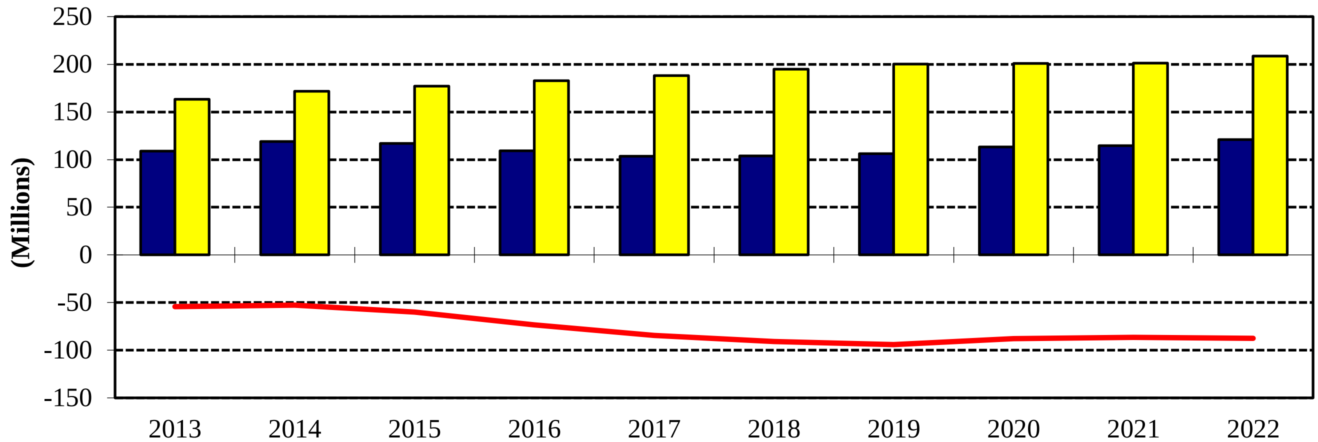


Components of Actuarial Funding



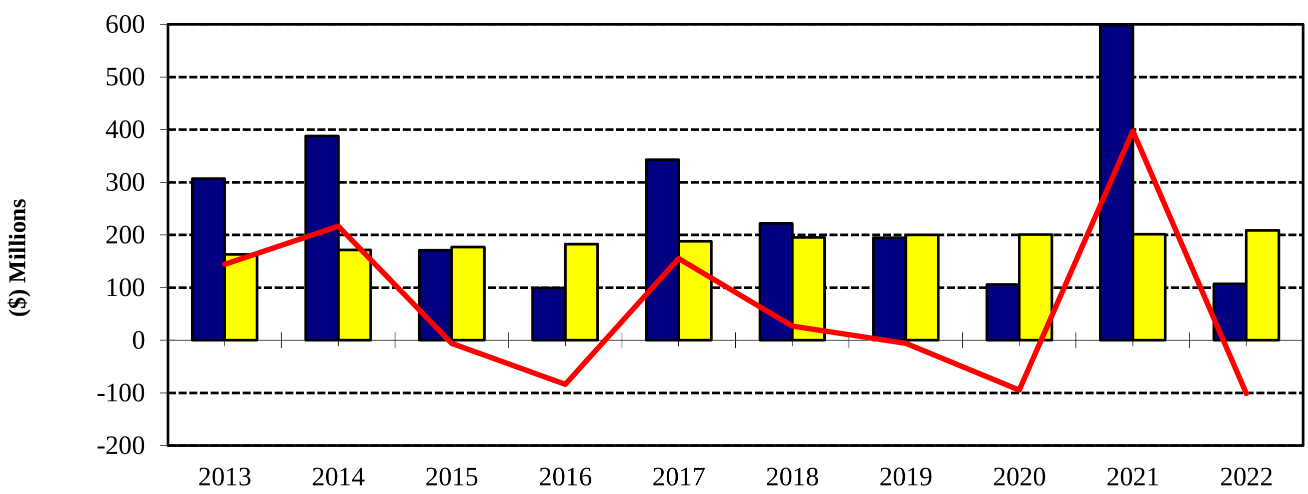
(Employee contribution level is a weighted average of rates paid by employees in different tiers)

Net Non-Investment Income



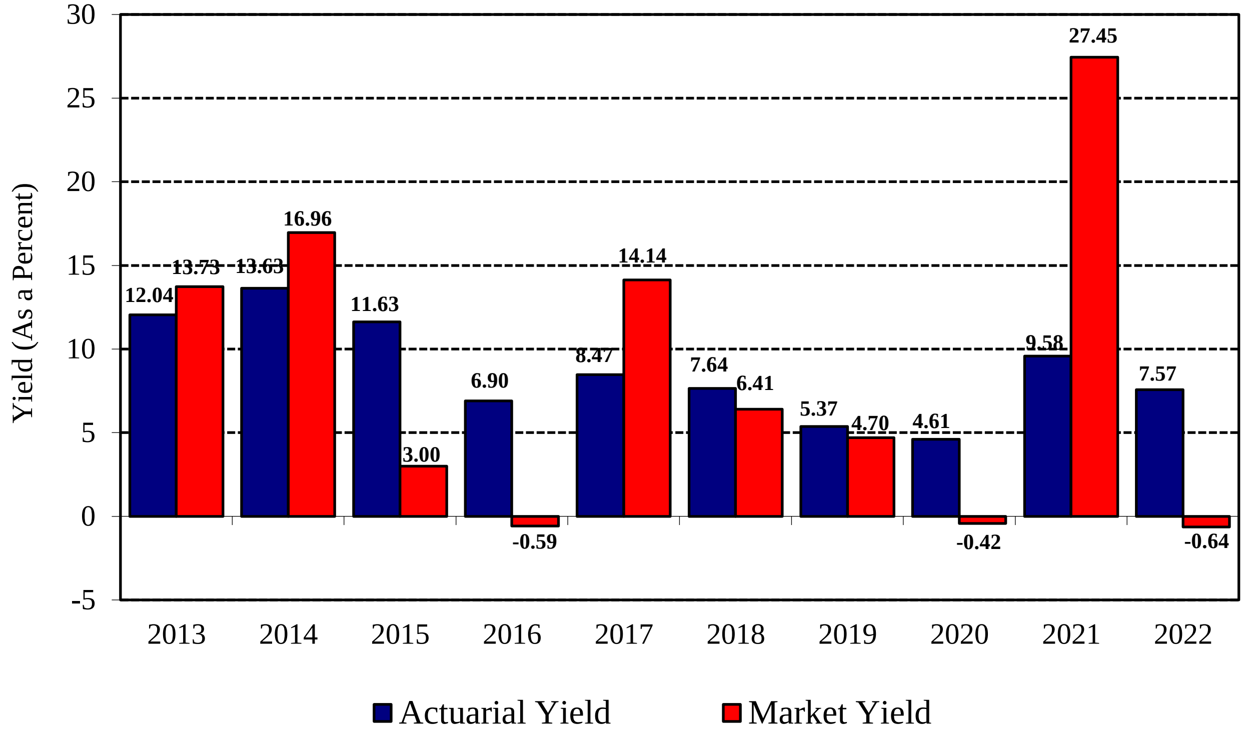
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Non-Investment Income ($Mil)		109.0	118.9	117.1	109.4	103.6	104.0	106.2	113.2	114.5	121.1
Benefits and Expenses ($Mil)		163.3	171.6	177.1	182.7	188.1	195.0	200.3	200.9	201.1	208.7
Net Non-Investment Income ($Mil)		-54.3	-52.7	-60.0	-73.3	-84.5	-91.0	-94.1	-87.7	-86.6	-87.6

Total Income vs. Expenses
(Based on Market Value of Assets)



		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Income ($Mil)		307.3	387.8	171.2	99.0	343.0	222.1	194.6	106.1	598.5	107.4
Benefits and Expenses ($Mil)		163.3	171.6	177.1	182.7	188.1	195.0	200.3	200.9	201.1	208.7
Net Change in MVA ($Mil)		144.0	216.2	-5.9	-83.7	154.9	27.1	-5.7	-94.8	397.4	-101.3

Historical Asset Yields



EXHIBITS

EXHIBIT I
ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1.	Normal Cost of Retirement Benefits	$	32,674,857
2.	Normal Cost of Death Benefits	$	1,729,148
3.	Normal Cost of Disability Benefits	$	3,310,129
4.	Normal Cost of Deferred Retirement Benefits	$	4,716,142
5.	Normal Cost of Contribution Refunds	$	4,632,436
6.	TOTAL Normal Cost as of July 1, 2022 (1 + 2 + 3 + 4 + 5)	$	47,062,712
7.	TOTAL Normal Cost Interest Adjusted for Midyear Payment	$	48,636,529
8.	Adjustment to Total Normal Cost for Employee Portion	$	24,992,058
9.	TOTAL Employer Normal Cost Adjusted for Midyear Payment (7 – 8)	$	23,644,471
10.	Amortization Payments on Unfunded Accrued Liability at Midyear	$	62,464,353
11.	Projected Administrative Expenses for Fiscal 2023	$	4,772,693
12.	Net Direct Actuarially Required Employer Contribution for Fiscal 2023 (9 + 10 + 11)	$	90,881,517
13.	Projected Payroll for Contributing Members (Fiscal 2023)	$	324,093,196
14.	Net Direct Actuarially Required Employer Contribution as a Percentage of Projected Payroll for Fiscal 2023 (12 ÷ 13)		28.0%
15.	Actual Net Direct Employer Contribution Rate for Fiscal 2023		27.6%
16.	Projected Fiscal 2023 Contribution Loss (Gain) as a % of Payroll (14 – 15)		0.4%
17.	Projected Fiscal 2023 Employer Contribution Shortfall (Surplus) (13 × 16)	$	1,296,373
18.	Amortization of Interest Adjusted Fiscal 2023 Employer Contribution Shortfall (Surplus) Based on Midyear Payment in Fiscal 2024	$	314,482
19.	Estimated Fiscal 2024 Employer Normal Cost Adjusted for Midyear Payment	$	23,952,812
20.	Estimated Fiscal 2024 Amortization Payments on Fiscal 2022 UAL	$	61,367,944
21.	Estimated Fiscal 2024 Administrative Expenses	$	4,892,010
22.	Estimated Actuarially Required Employer Contributions for Fiscal 2024 (18 + 19 + 20 + 21)	$	90,527,248
23.	Projected Payroll for Contributing Members (Fiscal 2024)	$	328,319,608
24.	Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2024 (22 ÷ 23, Rounded to nearest 0.10%)		27.6%

EXHIBIT II
PRESENT VALUE OF FUTURE BENEFITS

PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits	$ 1,052,232,239	
Survivor Benefits	25,521,426	
Disability Benefits	45,784,833	
Vested Termination Benefits	94,984,348	
Refunds of Contributions	22,501,983	
TOTAL Present Value of Future Benefits for Active Members		$ 1,241,024,829

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement	$ 32,833,116	
Terminated Members with Reciprocals Due Benefits at Retirement	141,915	
Terminated Members Due a Refund	9,273,314	
TOTAL Present Value of Future Benefits for Terminated Members		$ 42,248,345

PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees	$ 1,533,642,377	
Disability Retirees	16,362,484	
Survivors & Widows	175,696,398	
Liability Attributable to the Experience Account	36,313,395	
DROP/IBRP Account Balances Payable to Retirees	32,746,612	
Refundable Balance Payable to Reemployed Retirees	176,709	
TOTAL Present Value of Future Benefits for Retirees & Survivors		$ 1,794,937,975

TOTAL Present Value of Future Benefits	$ 3,078,211,149

EXHIBIT III – SCHEDULE A
MARKET VALUE OF ASSETS

CURRENT ASSETS:				
Cash in Banks	$	28,139,799		
Contributions Receivable		18,344,389		
Accrued Interest and Dividends		1,739,236		
Investments Receivable		2,094,394		
Other Current Assets		1,471,672		
TOTAL CURRENT ASSETS			$	51,789,490
Property Plant & Equipment			$	3,077,136
INVESTMENTS:				
Cash Equivalents	$	36,255,677		
Equities		666,872,738		
Fixed Income		163,718,853		
Real Estate		301,649,229		
Alternative Investments		887,318,477		
DROP Balances Held Outside System Assets		42,106,624		
Collateral for Securities Lending		54,567,778		
TOTAL INVESTMENTS			$	2,152,489,376
DEFERRED OUTFLOWS OF RESOURCES			$	1,303,810
TOTAL ASSETS			$	2,208,659,812
CURRENT LIABILITIES:				
Accounts Payable	$	1,398,151		
Benefits Payable		578,830		
Refunds Payable		42,990		
Investments Payable		2,118,988		
Securities Lending Obligations		54,567,778		
Other Post-Employment Benefits		7,183,438		
Accrued Payroll and Taxes		379,374		
TOTAL CURRENT LIABILITIES			$	66,269,549
DEFERRED INFLOWS OF RESOURCES			$	614,570
TOTAL LIABILITIES			$	66,884,119
MARKET VALUE OF ASSETS			$	2,141,775,693

EXHIBIT III – SCHEDULE B
ACTUARIAL VALUE OF ASSETS

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

Fiscal year 2022	$ (162,770,745)
Fiscal year 2021	360,253,165
Fiscal year 2020	(137,864,124)
Fiscal year 2019	(44,094,322)
Fiscal year 2018	(13,290,517)
Total for five years	$ 2,233,457

Deferral of excess (shortfall) of invested income:

Fiscal year 2022 (80%)	$ (130,216,596)
Fiscal year 2021 (60%)	216,151,899
Fiscal year 2020 (40%)	(55,145,650)
Fiscal year 2019 (20%)	(8,818,864)
Fiscal year 2018 (0%)	0
Total deferred for year	$ 21,970,789

Market value of plan net assets, end of year	$ 2,141,775,693
Preliminary actuarial value of plan assets, end of year	$ 2,119,804,904

Actuarial value of assets corridor

85% of market value, end of year	$ 1,820,509,339
115% of market value, end of year	$ 2,463,042,047

Actuarial Value of Plan Assets, end of year	$ 2,119,804,904

† Excess (shortfall) of actual investment income versus expected investment income is calculated based on assets and income adjusted to exclude the money market DROP accounts.

EXHIBIT IV
PRESENT VALUE OF FUTURE CONTRIBUTIONS

Employee Contributions to the Annuity Savings Fund	$	137,795,821
Employer Normal Contributions to the Pension Accumulation Fund		133,642,220
Employer Amortization Payments to the Pension Accumulation Fund		686,968,204
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS	$	958,406,245

EXHIBIT V – SCHEDULE A
ACTUARIAL ACCRUED LIABILITIES

LIABILITY FOR ACTIVE MEMBERS				
Accrued Liability for Retirement Benefits	$	875,696,218		
Accrued Liability for Survivor Benefits		16,335,659		
Accrued Liability for Disability Benefits		23,801,680		
Accrued Liability for Vested Termination Benefits		60,150,943		
Accrued Liability for Refunds of Contributions		(6,397,712)		
TOTAL Actuarial Accrued Liability for Active Members			$	969,586,788
LIABILITY FOR TERMINATED MEMBERS			$	42,248,345
LIABILITY FOR RETIREES AND SURVIVORS			$	1,794,937,975
TOTAL ACTUARIAL ACCRUED LIABILITY			$	2,806,773,108
ACTUARIAL VALUE OF ASSETS			$	2,119,804,904
UNFUNDED ACTUARIAL ACCRUED LIABILITY			$	686,968,204

EXHIBIT V – SCHEDULE B
CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY

PRIOR YEAR UNFUNDED ACCRUED LIABILITY			$	660,505,117
Interest on Unfunded Accrued Liability	$	45,574,853		
Liability Assumption Loss		24,236,466		
Liability Experience Loss		39,459,944		
TOTAL Additions to UAL			$	109,271,263
Asset Experience Gain	$	13,224,680		
Contribution Excess with Accrued Interest		7,812,420		
Interest Adjusted Amortization Payments		61,771,076		
TOTAL Reductions to UAL			$	82,808,176
NET Change in Unfunded Accrued Liability			$	26,463,087
CURRENT YEAR UNFUNDED ACCRUED LIABILITY			$	686,968,204

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

FISCAL YEAR	DESCRIPTION	AMORT. PERIOD	INITIAL BALANCE	YEARS REMAINING	REMAINING BALANCE	AMORT. PAYMENTS
2014	Cumulative Bases	30	$904,498,330	22	$710,172,073	$61,750,023
2014	Liability Experience Gain	30	(81,635,532)	22	(72,833,137)	(6,063,415)
2015	Change in Data/Model Gain	30	(42,073,134)	23	(38,233,797)	(3,121,866)
2015	Liability Assumption Loss	30	53,611,596	23	48,719,331	3,978,031
2015	Asset Experience Gain	30	(32,513,380)	23	(29,546,408)	(2,412,523)
2015	Liability Experience Gain	30	(29,473,558)	23	(26,783,982)	(2,186,966)
2016	Asset Experience Loss	30	7,620,492	24	7,046,103	565,166
2016	Liability Experience Gain	30	(366,508)	24	(338,884)	(27,182)
2016	Liability Assumption Gain	30	(29,907,056)	24	(27,652,837)	(2,218,026)
2016	Asset Assumption Loss	30	211,528	24	195,584	15,688
2017	Asset Experience Gain	20	(24,634,307)	15	(21,182,994)	(2,150,267)
2017	Gains Allocated to Experience Account	10	3,875,934	5	2,263,321	514,092
2017	Priority Excess Allocation	20	15,932,442	15	13,700,277	1,390,703
2017	Liability Experience Gain	20	(19,955,111)	15	(17,159,362)	(1,741,832)
2017	Contribution Loss	5	3,079,929	0	0	0
2017	Liability Assumption Loss	20	20,126,949	15	17,307,126	1,756,831
2017	Asset Assumption Gain	20	(4,562,632)	15	(3,923,401)	(398,261)
2018	Asset Experience Gain	20	(10,056,996)	16	(8,966,613)	(877,008)
2018	Priority Excess Allocation	20	9,415,089	16	8,394,300	821,031
2018	Liability Experience Gain	20	(14,310,770)	16	(12,759,190)	(1,247,953)
2018	Contribution Loss	5	4,655,410	1	1,060,931	1,060,931
2018	Liability Assumption Loss	20	32,157,641	16	28,671,098	2,804,268
2019	Asset Experience Loss	20	31,319,747	17	28,855,190	2,729,108
2019	Liability Experience Gain	20	(16,145,429)	17	(14,874,944)	(1,406,864)
2019	Contribution Loss	5	87,673	2	38,642	19,956
2019	Liability Assumption Loss	20	14,364,127	17	13,233,812	1,251,647
2019	Res. Balance of Amort. Conv. Account	10	(4,560,266)	7	(3,497,791)	(603,472)
2020	Asset Experience Loss	20	44,948,629	18	42,666,935	3,914,424
2020	Liability Experience Gain	20	(18,714,550)	18	(17,764,557)	(1,629,787)
2020	Contribution Gain	5	(1,289,291)	3	(824,850)	(293,223)
2021	Asset Experience Gain	20	(48,449,668)	19	(47,254,873)	(4,216,955)
2021	Gains Allocated to Experience Account	10	15,647,488	9	14,509,601	2,067,526
2021	Priority Excess Allocation	20	17,154,693	19	16,731,649	1,493,108
2021	Liability Experience Loss	20	2,271,325	19	2,215,313	197,691
2021	Contribution Gain	5	(4,859,377)	4	(4,012,688)	(1,104,227)
2021	Liability Assumption Loss	20	23,492,565	19	22,913,226	2,044,742
2022	Asset Experience Gain	20	(13,224,680)	20	(13,224,680)	(1,150,729)
2022	Priority Excess Allocation	20	13,224,680	20	13,224,680	1,150,729
2022	Liability Experience Loss	20	39,459,944	20	39,459,944	3,433,557
2022	Contribution Gain	5	(7,812,420)	5	(7,812,420)	(1,774,517)
2022	Liability Assumption Loss	20	24,236,466	20	24,236,466	2,108,906

TOTAL Unfunded Actuarial Accrued Liability $ 686,968,204

TOTAL Fiscal 2023 Amortization Payments at Beginning of Year $ 60,443,085

TOTAL Fiscal 2023 Amortization Payments Adjusted to Mid-Year $ 62,464,353

† Balance reduced by application of investment gains assigned by Act 399 of 2014. See Exhibit V – Schedule D for a detailed calculation of the outstanding balance.

EXHIBIT V – SCHEDULE D
CUMULATIVE AMORTIZATION BASE ADJUSTMENT

2014 Initial Cumulative Amortization Base	$	905,696,581
2014 Applied Base Reduction for Privatization Liability		(1,198,251)
2014 Priority Allocation Applied to Base		(7,500,000)
2014 PBI Cap Excess Applied to Base		(3,252,257)
2014 Adjusted Initial Amortization Base	$	893,746,073
2015 Amortization Payment (Beginning of Year)		(69,677,675)
2015 Interest on Amortization Base net of Amortization Payment		59,744,957
2015 Priority Allocation Applied to Base		(15,000,000)
Net Balance as of June 30, 2015 on 2014 Cumulative Base	$	868,813,355
2016 Amortization Payment (Beginning of Year)		(68,153,884)
2016 Interest on Amortization Base net of Amortization Payment		56,046,163
2016 Priority Allocation Applied to Base		0
Net Balance as of June 30, 2016 on 2014 Cumulative Base	$	856,705,634
2017 Amortization Payment (Beginning of Year)		(68,897,690)
2017 Interest on Amortization Base net of Amortization Payment		56,131,316
2017 Priority Allocation Applied to Base		(15,932,442)
Net Balance as of June 30, 2017 on 2014 Cumulative Base	$	828,006,818
2018 Amortization Payment (Beginning of Year)		(68,897,690)
2018 Interest on Amortization Base net of Amortization Payment		54,086,525
2018 Priority Allocation Applied to Base		(9,415,089)
Net Balance as of June 30, 2018 on 2014 Cumulative Base	$	803,780,564
2019 Amortization Payment (Beginning of Year)		(68,543,363)
2019 Interest on Amortization Base net of Amortization Payment		51,926,127
2019 Priority Allocation Applied to Base		0
Net Balance as of June 30, 2019 on 2014 Cumulative Base	$	787,163,328

(This Exhibit Continues on the Following Page)

EXHIBIT V – SCHEDULE D (Continued)
CUMULATIVE AMORTIZATION BASE ADJUSTMENT

Net Balance as of June 30, 2019 on 2014 Cumulative Base	$	787,163,328
2020 Amortization Payment (Beginning of Year)		(68,198,977)
2020 Interest on Amortization Base net of Amortization Payment		50,327,505
2020 Priority Allocation Applied to Base		0
Net Balance as of June 30, 2020 on 2014 Cumulative Base	$	769,291,856
2021 Amortization Payment (Beginning of Year)		(62,685,798)
2021 Interest on Amortization Base net of Amortization Payment		49,462,424
2021 Priority Allocation Applied to Base		(17,154,693)
Net Balance as of June 30, 2021 on 2014 Cumulative Base	$	738,913,789
2022 Amortization Payment (Beginning of Year)		(62,209,623)
2022 Interest on Amortization Base net of Amortization Payment		46,692,587
2022 Priority Allocation Applied to Base		(13,224,680)
Net Balance as of June 30, 2022 on 2014 Cumulative Base	$	710,172,073

EXHIBIT VI
ANALYSIS OF CHANGE IN ASSETS

Actuarial Value of Assets: (June 30, 2021)		$	2,057,868,923
INCOME:			
Member Contributions	$ 25,033,915		
Employer Contributions	93,114,029		
Irregular Contributions	2,962,538		
Total Contributions		$	121,110,482
Net Depreciation of Investments	$ (37,731,055)		
Interest & Dividends	13,823,795		
Alternative Investment Income	27,122,994		
Securities Lending Income	151,940		
Investment Expense	(17,077,305)		
Net Investment Income		$	(13,709,631)
TOTAL Income		$	107,400,851
EXPENSES:			
Retirement Benefits	$ 184,369,328		
DROP/IBRP Disbursements	13,629,723		
Refunds of Contributions	5,720,102		
Transfers to Other Systems	776,901		
Administrative Expenses	4,186,253		
TOTAL Expenses		$	208,682,307
Net Market Value Income for Fiscal 2022 (Income – Expenses)		$	(101,281,456)
Unadjusted Fund Balance as of June 30, 2022 (Fund Balance Previous Year + Net Income)		$	1,956,587,467
Income Adjustment for Actuarial Smoothing		$	163,217,437
Actuarial Value of Assets: (June 30, 2022)		$	2,119,804,904

EXHIBIT VII – SCHEDULE A
EXPERIENCE ACCOUNT

1.	Experience Account Balance – June 30, 2021	$	19,911,687
2.	Investment Gain, if any	$	13,224,680
3.	Priority Allocation to Reduce Oldest Positive UAL Base	$	13,224,680
4.	Residual Investment Gain, if any (2 – 3)	$	0
5.	Investment Gain to Allocate to the Experience Account (50% × 4)	$	0
6.	Credit for Positive Investment Returns on AVA basis, if applicable	$	1,507,315
7.	Total Preliminary Credits to be Allocated to Experience Account (5 + 6)	$	1,507,315
8.	Debit for Negative Investment Returns on AVA basis, if applicable	$	0
9.	Present Value of Permanent Benefit Increase Paid July 1, 2022	$	(20,813,663)
10.	Total Preliminary Debits to be Allocated to Experience Account (8 + 9)	$	(20,813,663)
11.	Total Net Credit/Debit to be Allocated to Experience Account (7 + 10)	$	(19,306,348)
12.	Upper Limit to the Experience Account Balance – June 30, 2022 (Present Value of PBI at CPI-U for Fiscal 2022 or 2.50%, whichever is less)	$	36,313,395
13.	Experience Account Balance – June 30, 2022 (Lesser of 1+11 & 12 - at least 0)	$	605,339

EXHIBIT VIII
CENSUS DATA

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2021	11,700	5,136	587	13,699	31,122
Additions to Census					
Initial membership	1,315	187			1,502
Omitted in error last year				19	19
Death of another member				179	179
Adjustment for multiple records				4	4
Change in Status during Year					
Actives terminating service	(690)	690			
Actives who retired	(474)			474	
Actives entering DROP	(214)		214		
Term. members rehired	102	(102)			
Term. members who retire		(33)		33	
Refunded who are rehired	26	2			28
DROP participants retiring			(105)	105	
DROP returned to work	112		(112)		
Status error last year	1	6	(1)	(6)	
Eliminated from Census					
Refund of contributions	(355)	(277)			(632)
Deaths	(73)	(62)	(6)	(695)	(836)
Included in error last year					
Adjustment for multiple records					
Number of members as of June 30, 2022	11,450	5,547	577	13,812	31,386

Actives Census By Age:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 - 20	16	8	24	21,969	527,246
21 - 25	123	59	182	26,147	4,758,803
26 - 30	159	179	338	27,045	9,141,115
31 - 35	255	396	651	27,348	17,803,712
36 - 40	287	533	820	26,999	22,139,138
41 - 45	367	700	1,067	28,336	30,234,161
46 - 50	432	765	1,197	28,886	34,576,531
51 - 55	653	1,123	1,776	28,693	50,958,714
56 - 60	917	1,417	2,334	28,613	66,783,370
61 - 65	727	859	1,586	27,946	44,322,113
66 - 70	482	416	898	26,370	23,679,818
71 - 75	233	181	414	25,586	10,592,597
76 - 80	69	60	129	27,968	3,607,864
81 - 85	16	11	27	23,867	644,419
86 - 90	3	4	7	21,656	151,589
Total	4,739	6,711	11,450	27,941	319,921,190

Drop Participants:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
51 - 55	19	16	35	31,140	1,089,913
56 - 60	74	112	186	23,166	4,308,832
61 - 65	141	190	331	14,664	4,853,681
66 - 70	10	5	15	4,660	69,902
71 - 75	6	2	8	3,755	30,038
76 - 80	1	0	1	2,356	2,356
81 - 85	1	0	1	1,898	1,898
Total	252	325	577	17,949	10,356,620

Terminated Members Due a Deferred Retirement Benefit:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
26 - 30	4	1	5	3,043	15,216
31 - 35	8	8	16	4,241	67,856
36 - 40	25	15	40	7,749	309,957
41 - 45	23	37	60	6,797	407,802
46 - 50	27	54	81	6,731	545,195
51 - 55	52	62	114	8,991	1,025,020
56 - 60	56	90	146	9,170	1,338,821
61 - 65	30	27	57	8,016	456,925
66 - 70	10	18	28	8,103	226,874
71 - 75	2	11	13	4,298	55,877
76 - 80	2	4	6	4,540	27,239
81 - 85	1	1	2	2,368	4,736
Total	240	328	568	7,890	4,481,518

Terminated Members Due a Refund of Contributions:

Contributions Ranging From		To	Number	Total Contributions
0	-	99	822	37,669
100	-	499	1,380	350,414
500	-	999	673	485,196
1,000	-	1,999	737	1,073,522
2,000	-	4,999	898	2,912,839
5,000	-	9,999	401	2,719,649
10,000	-	19,999	64	830,685
20,000	-	99,999	4	108,710
Total			4,979	* 8,518,684

* Excludes $754,630 in refunds due to heirs of deceased members and $176,709 in refunds due to reemployed retirees.

Regular Retirees:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	3	0	3	6,873	20,618
46 - 50	6	6	12	19,344	232,133
51 - 55	37	34	71	20,814	1,477,779
56 - 60	204	217	421	21,878	9,210,536
61 - 65	773	862	1,635	17,557	28,706,407
66 - 70	1,035	1,349	2,384	15,768	37,590,224
71 - 75	1,055	1,440	2,495	14,646	36,541,655
76 - 80	737	1,233	1,970	12,689	24,996,559
81 - 85	511	949	1,460	10,268	14,991,342
86 - 90	273	487	760	9,923	7,541,158
91 - 95	111	174	285	9,990	2,847,173
96 - 100	14	22	36	10,935	393,674
101 - 105	2	2	4	12,468	49,870
Total	4,761	6,775	11,536	14,268	164,599,128

Disability Retirees:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
36 - 40	0	2	2	5,832	11,663
46 - 50	5	18	23	9,720	223,570
51 - 55	15	33	48	8,590	412,321
56 - 60	25	67	92	8,939	822,354
61 - 65	1	0	1	6,519	6,519
Total	46	120	166	8,894	1,476,427

Survivors:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 20	21	18	39	11,254	438,901
21 - 25	6	1	7	13,361	93,526
26 - 30	2	4	6	7,101	42,604
31 - 35	6	6	12	9,026	108,312
36 - 40	8	4	12	7,134	85,612
41 - 45	6	16	22	9,854	216,779
46 - 50	7	25	32	8,123	259,927
51 - 55	18	42	60	10,063	603,773
56 - 60	23	87	110	11,218	1,234,033
61 - 65	34	165	199	12,320	2,451,707
66 - 70	52	197	249	11,589	2,885,777
71 - 75	68	298	366	11,144	4,078,626
76 - 80	58	288	346	9,693	3,353,767
81 - 85	58	270	328	9,274	3,041,965
86 - 90	27	181	208	8,244	1,714,751
91 - 95	6	91	97	8,857	859,142
96 - 100	3	14	17	8,095	137,622
Total	403	1,707	2,110	10,240	21,606,824

Active Members:

Attained Ages	0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 & Over	Total
				Completed Years of Service					
0 - 20	21	3	-	-	-	-	-	-	24
21 - 25	84	96	2	-	-	-	-	-	182
26 - 30	85	200	52	1	-	-	-	-	338
31 - 35	136	330	148	35	2	-	-	-	651
36 - 40	127	370	189	91	42	1	-	-	820
41 - 45	122	403	284	134	103	20	1	-	1,067
46 - 50	104	350	293	165	169	88	27	1	1,197
51 - 55	122	462	382	278	251	188	90	3	1,776
56 - 60	149	556	498	338	427	291	48	27	2,334
61 - 65	86	437	416	227	187	109	77	47	1,586
66 - 70	59	234	207	124	105	71	55	43	898
71 & Over	23	140	127	73	75	40	40	59	577
Total	1,118	3,581	2,598	1,466	1,361	808	338	180	11,450

Average Annual Salary of Active Members:

Attained Ages	0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 & Over	Total
				Completed Years of Service					
0 - 20	22,465	18,493	-	-	-	-	-	-	21,969
21 - 25	25,299	26,615	39,294	-	-	-	-	-	26,147
26 - 30	25,500	26,777	30,355	39,733	-	-	-	-	27,045
31 - 35	24,988	26,474	29,103	36,544	41,274	-	-	-	27,348
36 - 40	25,214	25,067	28,345	30,920	34,268	51,942	-	-	26,999
41 - 45	25,724	26,615	27,741	30,314	35,090	37,791	59,310	-	28,336
46 - 50	23,953	26,055	27,752	29,957	30,568	38,368	46,336	98,437	28,886
51 - 55	25,766	25,968	27,919	29,182	31,331	31,676	34,227	46,811	28,693
56 - 60	26,318	26,162	28,276	28,883	30,390	31,073	30,379	36,848	28,613
61 - 65	25,515	26,130	28,033	28,083	29,702	29,201	30,684	33,457	27,946
66 - 70	24,308	23,460	24,958	28,374	27,883	29,350	32,274	29,879	26,370
71 & Over	22,962	23,025	24,279	26,148	29,793	27,316	28,971	29,944	25,990
Total	25,238	25,830	27,710	29,205	30,756	31,610	32,975	32,543	27,941

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	20 & Over	Total
0 - 30	-	-	-	-	-	-	-	5	5
31 - 35	-	-	-	-	-	-	-	16	16
36 - 40	-	-	-	-	-	-	4	36	40
41 - 45	1	-	-	-	-	3	53	3	60
46 - 50	2	-	-	-	11	65	3	-	81
51 - 55	3	-	-	9	98	4	-	-	114
56 - 60	33	35	27	46	5	-	-	-	146
61 - 65	57	-	-	-	-	-	-	-	57
66 - 70	28	-	-	-	-	-	-	-	28
71 & Over	21	-	-	-	-	-	-	-	21
Total	145	35	27	55	114	72	60	60	568

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	20 & Over	Total
0 - 30	-	-	-	-	-	-	-	3,043	3,043
31 - 35	-	-	-	-	-	-	-	4,241	4,241
36 - 40	-	-	-	-	-	-	8,204	7,698	7,749
41 - 45	2,036	-	-	-	-	9,530	6,896	3,903	6,797
46 - 50	2,165	-	-	-	8,796	6,680	3,299	-	6,731
51 - 55	2,016	-	-	9,719	9,384	2,960	-	-	8,991
56 - 60	9,156	9,526	10,079	9,095	2,560	-	-	-	9,170
61 - 65	8,016	-	-	-	-	-	-	-	8,016
66 - 70	8,103	-	-	-	-	-	-	-	8,103
71 & Over	4,183	-	-	-	-	-	-	-	4,183
Total	7,491	9,526	10,079	9,197	9,028	6,592	6,803	6,199	7,890

Service Retirees:

Attained Ages	Completed Years Since Retirement 0 - 1	1 - 2	2 - 3	3 - 5	5 - 10	10 - 15	15 - 20	20 & Over	Total
0 - 50	7	2	1	4	1	-	-	-	15
51 - 55	19	10	12	11	14	4	-	1	71
56 - 60	84	59	37	74	106	33	20	8	421
61 - 65	212	222	181	309	385	166	119	41	1,635
66 - 70	142	155	151	365	823	361	281	106	2,384
71 - 75	47	83	62	156	707	678	577	185	2,495
76 - 80	26	29	25	66	215	432	771	406	1,970
81 - 85	5	10	11	24	97	141	430	742	1,460
86 - 90	3	2	2	-	16	34	98	605	760
91 & Over	-	-	-	-	6	6	17	296	325
Total	545	572	482	1,009	2,370	1,855	2,313	2,390	11,536

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	20 & Over	Total
0 - 50	20,354	9,900	14,972	12,452	25,698	-	-	-	16,850
51 - 55	28,557	24,598	21,843	17,627	13,081	11,083	-	5,750	20,814
56 - 60	20,763	22,667	22,956	27,303	22,914	17,367	9,609	8,146	21,878
61 - 65	14,604	14,840	15,721	17,238	23,082	19,910	13,724	7,777	17,557
66 - 70	11,703	12,779	13,605	14,832	16,885	20,273	15,970	7,330	15,768
71 - 75	12,548	13,064	11,748	13,201	14,736	14,535	17,529	9,148	14,646
76 - 80	11,312	13,060	11,706	11,710	13,309	13,606	13,293	10,517	12,689
81 - 85	11,098	11,954	13,036	10,418	13,553	11,477	10,248	9,546	10,268
86 - 90	4,123	11,893	14,349	-	13,448	12,072	10,358	9,646	9,923
91 & Over	-	-	-	-	17,069	8,536	10,282	10,008	10,125
Total	14,933	14,834	14,978	15,943	17,018	15,662	13,953	9,628	14,268

Disability Retirees:

Attained Ages	Completed Years Since Retirement 0 - 1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 & Over	Total
0 - 30	-	-	-	-	-	-	-	-	-
31 - 35	-	-	-	-	-	-	-	-	-
36 - 40	1	1	-	-	-	-	-	-	2
41 - 45	-	-	-	-	-	-	-	-	-
46 - 50	6	8	7	2	-	-	-	-	23
51 - 55	6	22	12	7	1	-	-	-	48
56 - 60	17	29	28	12	4	2	-	-	92
61 - 65	-	-	1	-	-	-	-	-	1
66 - 70	-	-	-	-	-	-	-	-	-
71 - 75	-	-	-	-	-	-	-	-	-
76 - 80	-	-	-	-	-	-	-	-	-
81 & Over	-	-	-	-	-	-	-	-	-
Total	30	60	48	21	5	2	-	-	166

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	30 & Over	Total
0 - 30	-	-	-	-	-	-	-	-	-
31 - 35	-	-	-	-	-	-	-	-	-
36 - 40	3,379	8,284	-	-	-	-	-	-	5,832
41 - 45	-	-	-	-	-	-	-	-	-
46 - 50	10,182	8,595	10,902	8,704	-	-	-	-	9,720
51 - 55	8,760	8,897	8,957	6,196	13,189	-	-	-	8,590
56 - 60	10,359	9,307	9,842	5,987	4,475	5,517	-	-	8,939
61 - 65	-	-	6,519	-	-	-	-	-	6,519
66 - 70	-	-	-	-	-	-	-	-	-
71 - 75	-	-	-	-	-	-	-	-	-
76 - 80	-	-	-	-	-	-	-	-	-
81 & Over	-	-	-	-	-	-	-	-	-
Total	9,771	9,045	9,706	6,315	6,218	5,517	-	-	8,894

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	30 & Over	Total
0 - 30	6	19	16	1	7	3	-	-	52
31 - 35	1	1	-	1	3	3	3	-	12
36 - 40	-	1	2	2	5	2	-	-	12
41 - 45	2	4	5	3	4	-	1	3	22
46 - 50	1	2	7	6	12	1	-	3	32
51 - 55	3	3	15	5	11	9	8	6	60
56 - 60	3	15	22	19	25	12	10	4	110
61 - 65	2	16	50	36	47	23	20	5	199
66 - 70	6	22	41	52	57	41	21	9	249
71 - 75	3	18	38	81	118	61	28	19	366
76 - 80	-	9	17	45	117	80	54	24	346
81 & Over	-	2	15	22	76	157	176	202	650
Total	27	112	228	273	482	392	321	275	2,110

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	30 & Over	Total
0 - 30	5,053	10,736	13,794	9,679	11,685	9,515	-	-	11,058
31 - 35	7,200	2,521	-	26,406	10,411	6,438	7,212	-	9,026
36 - 40	-	14,208	5,283	9,704	6,997	3,223	-	-	7,134
41 - 45	11,975	11,882	9,717	13,756	6,156	-	11,074	6,583	9,854
46 - 50	14,084	15,109	7,725	5,014	8,955	5,157	-	6,286	8,123
51 - 55	11,452	18,712	11,484	13,448	11,279	6,486	5,515	7,872	10,063
56 - 60	10,770	17,737	12,047	10,892	11,986	5,923	6,956	5,849	11,218
61 - 65	9,655	15,591	14,761	14,695	11,422	8,767	6,878	7,963	12,320
66 - 70	12,596	11,800	13,918	12,501	13,761	7,990	7,208	7,399	11,589
71 - 75	12,803	11,789	13,508	12,304	11,714	9,040	8,376	7,894	11,144
76 - 80	-	9,253	11,118	11,370	10,059	8,931	9,241	7,478	9,693
81 & Over	-	13,485	15,047	9,931	9,040	7,744	9,095	8,806	8,852
Total	10,204	12,966	13,193	12,113	10,936	8,163	8,628	8,451	10,240

EXHIBIT IX
YEAR-TO-YEAR COMPARISON

	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019
Number of Active Members	11,450	11,700	11,925	11,920
Number of Retirees & Survivors	13,812	13,699	13,657	13,648
DROP Participants	577	587	595	605
Number of Terminated Due Deferred Benefits	568	487	395	333
Number Terminated Due Refunds	4,979	4,649	4,425	4,328
Active Lives Payroll (excludes DROP participants)	$ 319,921,190	$ 305,839,425	$ 298,720,034	$ 289,730,586
Retiree Benefits in Payment	$ 187,682,379	$ 181,539,981	$ 178,634,191	$ 176,378,784
Market Value of Assets (Includes Side Funds)	$ 2,141,775,693	$ 2,243,057,149	$ 1,845,618,894	$ 1,940,389,574
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability	75.52%	75.70%	74.14%	74.39%
Actuarial Accrued Liability (EAN)	$ 2,806,773,108	$ 2,718,374,040	$ 2,649,075,730	$ 2,640,451,339
Actuarial Value of Assets (Net of Side Funds)	$ 2,119,804,904	$ 2,057,868,923	$ 1,963,950,923	$ 1,964,143,343
UAL (Funding Excess)	$ 686,968,204	$ 660,505,117	$ 685,124,807	$ 676,307,996
Experience Account	$ 605,339	$ 19,911,687	$ 5,413,514	$ 5,174,949
Amortization Conversion Account	$ 0	$ 0	$ 0	$ 0

	Fiscal 2023	Fiscal 2022	Fiscal 2021	Fiscal 2020
Employee Contribution Rate For Employees Hired Before July 1, 2010	7.50%	7.50%	7.50%	7.50%
Employee Contribution Rate For Employees Hired On Or After July 1, 2010	8.00%	8.00%	8.00%	8.00%
Actuarially Required Employer Contribution as a Percentage of Projected Payroll	28.0%	28.2%	28.5%	30.3%
Actual Employer Contribution as a Percentage of Projected Payroll	27.6%	28.7%	28.7%	29.4%

† Beginning in Fiscal 2017, valuation assets and accrued liability include the Experience Account and exclude the Amortization Conversion Account.

	Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013
	12,033	12,055	12,075	12,061	12,054	12,184
	13,482	13,354	13,148	13,024	12,711	13,369
	631	622	676	660	537	559
	339	311	275	276	413	355
	4,475	4,268	3,898	3,940	3,793	N/A
	$ 288,861,936	$ 284,075,888	$ 284,835,111	$ 276,949,800	$ 274,347,650	$ 290,013,756
	$ 171,928,419	$ 167,428,815	$ 159,448,329	$ 154,831,625	$ 146,084,220	$ 142,752,516
	$ 1,946,113,040	$ 1,922,705,998	$ 1,767,810,247	$ 1,851,456,181	$ 1,857,367,056	$ 1,641,164,883
	74.59%	74.16%	72.54%	70.71%	66.92%	62.10%
	$ 2,614,250,388	$ 2,562,633,003	$ 2,522,157,498	$ 2,485,583,187	$ 2,438,251,413	$ 2,404,014,249
	$ 1,949,906,654	$ 1,900,329,127	$ 1,829,595,670	$ 1,757,432,206	$ 1,631,618,702	$ 1,492,914,745
	$ 664,343,734	$ 662,303,876	$ 692,561,828	$ 728,150,981	$ 806,632,711	$ 911,099,504
	$ 4,911,217	$ 4,562,632	$ 633,076	$ 23,058,055	$ 20,787,326	$ 31,668,697
	$ 6,838,575	$ 11,106,470	$ 15,719,788	$ 19,079,106	$ 19,640,033	$ 0

	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014
	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
	28.4%	27.8%	27.9%	28.7%	32.0%	32.6%
	28.0%	27.6%	27.3%	30.2%	33.0%	32.3%

SUMMARY OF PRINCIPAL PLAN PROVISIONS

The Louisiana School Employees' Retirement System (LSERS) was established as of July 1, 1947, for the purpose of providing retirement allowances and other benefits as described under R.S. 11:1001 – 11:1206. The following summary of plan provisions covers many of the most important plan provisions covering LSERS but is not a description of every plan provision and should only be used for general informational purposes. This summary does not constitute a guarantee of benefits. The provisions contained within this section are as of June 30, 2022.

MEMBERSHIP:

Any school bus operator, janitor, custodian, maintenance employee, bus aide, monitor or attendant or other regular school employee helping with the transportation of school children, and who is a legal employee of a parish or city school board of the State of Louisiana along with employees of the system.

CONTRIBUTION RATES:

Employees whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred before July 1, 2010 contribute 7.50% of salary and employees whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or after July 1, 2010 contribute 8.00% of salary. Employers contribute an actuarially determined "normal contribution" rate plus "accrued liability contribution" rate. Members are not required to contribute to the system once they have enough service to have accrued 100% of their final average compensation, but the employer is required to continue to contribute the employer's contribution until the member retires or enters DROP.

CONTRIBUTION REFUNDS:

Upon withdrawal from service, members not entitled to a retirement allowance may receive a refund of accumulated contributions. Refunds are payable ninety days after the effective date of withdrawal from service, if the member's employer has submitted all contributions. (Members who are entitled to a retirement allowance may waive their right to the benefit and accept a refund of accumulated contributions.)

FINAL AVERAGE COMPENSATION:

For members whose first employment making them eligible for membership in the system began on or before June 30, 2006, the final average compensation is based on the 36 highest successive or joined months of employment. The compensation used to determine the final average compensation cannot increase more than 10% per year unless the raise is due to an increase in compensation by legislative act or city/parish system-wide salary increase.

For members whose first employment making them eligible for membership in the system began on or after July 1, 2006, and whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or before June 30, 2010, the final average compensation is based on the 60 highest successive or joined months of employment. The compensation used to determine the final average compensation cannot increase more than 10% per year unless the raise is due to an increase in compensation by legislative act or city/parish system-wide salary increase.

For members whose first employment making them eligible for membership in one of Louisiana's state retirement systems began on or after July 1, 2010, the final average compensation is based on the 60 highest successive or joined months of employment. The compensation used to determine the final average compensation cannot increase more than 15% per year unless the raise is due to an increase in compensation by legislative act or city/parish system-wide salary increase.

VESTED WITHDRAWAL BENEFITS:

Members whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or before June 30, 2010, who have ten or more years of creditable service, may elect to leave accumulated contributions on deposit and after withdrawal from service receive a retirement allowance based on the creditable service and accrual rate for their period of membership upon reaching age sixty.

Members whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or after July 1, 2010, and on or before June 30, 2015, who have five or more years of creditable service, may elect to leave accumulated contributions on deposit and after withdrawal from service receive a retirement allowance based on the creditable service and accrual rate for their period of membership upon reaching age sixty.

Members whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or after July 1, 2015, who have five or more years of creditable service, may elect to leave accumulated contributions on deposit and after withdrawal from service receive a retirement allowance based on the creditable service and accrual rate for their period of membership upon reaching age sixty-two.

NORMAL RETIREMENT BENEFITS:

For members whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or before June 30, 2010, eligibility for normal retirement occurs upon the attainment of age 60 and 10 years of accredited service, or age 55 and 25 years of accredited service, or at any age and 30 years of accredited service. The retirement allowance is equal to three and one-third percent of the member's final average compensation multiplied by his years of creditable service.

For members whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or after July 1, 2010, and on or before June 30, 2015, eligibility for normal retirement occurs upon the attainment of age 60 and 5 years of accredited service. The retirement allowance is equal to two and one-half percent of the member's final average compensation multiplied by his years of creditable service.

For members whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or after July 1, 2015, eligibility for normal retirement occurs upon the attainment of age 62 and 5 years of accredited service. The retirement allowance is equal to two and one-half percent of the member's final average compensation multiplied by his years of creditable service.

In addition to the normal retirement benefits, members receive a supplementary allowance equal to twenty-four dollars per annum, or two dollars per month, for each year of accredited service.

The retirement benefits provided by the system cannot annually exceed one hundred percent of average compensation.

EARLY RETIREMENT:

Members are eligible to retire under the early retirement provisions if they have at least twenty (20) years of service credit regardless of attained age, exclusive of military service and unused annual and sick leave.

The early retirement benefit is calculated, inclusive of military service credit and allowable unused annual and sick leave, actuarially reduced from the earliest age that the member would normally become eligible for a regular retirement benefit if they had continued in service to that age.

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 retiree dies before receiving in annuity payments the present value of their 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 retiree'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 retiree'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 reduced benefit and to provide a specified benefit to their designated beneficiary, which in total is actuarially equivalent to the maximum benefit. The form of benefit selected under Option 4 must be approved by the Board of Trustees.

NOTE: Under the legal construct for Option 4, the Board of Trustees has approved the "pop up" form of benefit which provides a benefit that reverts to the maximum benefit if the beneficiary predeceases the retiree. This feature requires additional reduction to the member's benefit. Members may select the "pop up" form with Option 2, Option 3 or Option 4 (where the member may specify a percentage benefit for their beneficiary other than 100% or 50%).

Self-Funded COLA Options: A member may also elect to receive an actuarially reduced benefit which provides for an automatic 2½% 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 Retirement Plan (IBRP): This plan is available only to members who have not participated in the Deferred Retirement Option Plan (DROP) and who meet regular retirement eligibility requirements. Under this plan, members may receive an initial benefit plus a reduced monthly retirement allowance which, when combined, equal the actuarially equivalent amount of the maximum or optional retirement allowance. The reduced monthly retirement allowance can be paid in the form of a maximum benefit or according to options described above. The initial benefit may not exceed an amount equal to thirty-six payments of the member's maximum retirement allowance. The initial benefit is placed in an account called an "IBRP Account" where interest is credited annually and can be withdrawn as a lump-sum payment, monthly payments, or other periodic payments.

DISABILITY BENEFITS:

Any member who meets the minimum service requirement for disability and who has been officially certified as likely to be totally and permanently incapacitated, either mentally or physically, from the further performance of the duties being performed is entitled to disability benefits.

A member whose first employment making them eligible for membership in LSERS occurred on or before June 30, 2006, may apply for disability benefits if he is not eligible to receive a regular service retirement allowance and has five years of actual credited service. The disability retirement allowance is equal to two and one-half percent of final average compensation multiplied by the years of creditable service, but not less than thirty-three and one-third percent of final average compensation. Such members are not eligible to choose an optional allowance. Upon the death of such disability retiree who leaves a surviving spouse who had been married to the deceased for at least two years prior to death, the spouse receives a benefit equal to 75% of the benefit being received by the disability retiree at death. These benefits are payable for the life of the spouse unless the spouse remarries before age 55. In such a case, the benefit ceases upon the remarriage.

A member whose first employment making them eligible for membership in LSERS occurred on or after July 1, 2006, and whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or before June 30, 2010, may apply for disability benefits if he is not eligible to receive a regular service retirement allowance and has ten years of actual credited service. The disability retirement allowance is equal to three percent of final average compensation multiplied by the years of creditable service. Upon the death of such disability retiree who leaves a surviving spouse who had been married to the deceased for at least two years prior to the death of the disability retiree, the spouse receives a benefit equal to 75% of the benefit being received by the disability retiree at their death. These benefits are payable for the life of the spouse unless the spouse remarries before age 55. In such a case, the benefit ceases upon the remarriage.

A member whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or after July 1, 2010, may apply for disability benefits if he is not eligible to receive a regular service retirement allowance and has ten years of actual credited service. The disability retirement allowance is equal to the regular retirement formula without reduction by reason of age. A selection of retirement option must be made at the time of retirement and upon the death of the disabled retiree, the option amount selected is paid to the option beneficiary.

SURVIVOR BENEFITS:

For members whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or before June 30, 2010:

In the case of a death of an active member with 5 years of creditable service (at least 2 years earned immediately prior to death) or a member with 20 years of service at the time of death who has a surviving spouse with a minor child or children, the benefit payable is 75% of the deceased member's final average compensation or $300 per month, whichever is greater. One-third of this benefit is designated to the spouse and two-thirds to the minor child or children. Child benefits cease at attainment of eighteen years, or upon marriage, except that benefits may continue until age twenty-three if the child remains a full-time student at a high school, vocational school, college, or university.

In the case of a death of an active member with 5 years of creditable service (at least 2 years earned immediately prior to death) or a member with 20 years of service at the time of death who has no surviving spouse but has a minor child or children, the benefit payable is 75% of the deceased member's final average compensation or $300 per month, whichever is greater. These benefits are paid to the person having legal custody of the child and benefits cease at attainment of eighteen years, or upon marriage, except that benefits may continue until age twenty-three if the child remains a full-time student at a high school, vocational school, college, or university.

In the case of a death of an active member with 10 years of creditable service (at least 2 years earned immediately prior to death) or a member with 20 years of service at the time of death who has a surviving spouse but has no minor child or children, the benefit payable is 50% of the deceased member's final average compensation or $200 per month, whichever is greater. Such benefits will not be paid to any surviving spouse who has remarried since the death of the member prior to the age of 55 unless the member was eligible for regular retirement or had twenty years of service credit on the date of death.

Any surviving child of a deceased member, regardless of age, who has a total physical or mental disability and is dependent on the surviving spouse or other legal guardian, may continue to receive lifetime surviving child benefits equal to 75% of the deceased member's final average compensation or $300 per month, whichever is greater. The total benefits are reduced to an amount which, when added to the other state assistance being received, does not exceed the maximum survivor benefits payable.

In the event of death of a member with no surviving spouse or child due benefits, the accumulated contributions are payable to the designated beneficiaries, or estate.

For members whose first employment making them eligible for membership in one of Louisiana's state retirement systems occurred on or after July 1, 2010:

In the case of a death of an active member with 5 years of creditable service (at least 2 years earned immediately prior to death) or a member with 20 years of service at the time of death who has a surviving spouse with a minor child or children, a spousal survivor is paid a benefit equal to 50% of the benefit to which the member would have been entitled if he had retired on the date of his death using the member's applicable accrual rate regardless of years of service or age, or $600 per month, whichever is greater.

These benefits are payable for the life of the spouse unless the spouse remarries before age 55. In such a case, the benefit ceases upon the remarriage, and resumes payment upon a subsequent divorce or death of a new spouse.

When all surviving children cease to be eligible for benefits, the surviving spouse is paid the benefits due to a surviving spouse without minor children or disabled children, as described below.

In addition to any benefits payable to a spouse or in cases where only surviving minor or disabled children are due benefits, each surviving eligible child, subject to a maximum of two children, is paid 50% percent of the benefit to which a spouse with children is entitled. These benefits are payable even if a member dies after retirement leaving an eligible minor or disabled child.

Any surviving child of a deceased member, regardless of age, who has a total physical or mental disability and is dependent on the surviving spouse or other legal guardian may continue to receive surviving child benefits. The total benefits paid are reduced to an amount which, when added to the other state assistance being received does not exceed the maximum survivor benefits payable.

In the case of a death of an active member with 10 years of creditable service (at least 2 years earned immediately prior to death) or a member with 20 years of service at the time of death who has a surviving spouse to whom they were married for at least one year prior to their death who has no minor child or children, a spousal survivor benefit equal to the accrued benefit that would have been due under option 2, or $600 per month, whichever is greater, is payable. Unless the member was eligible to retire at the time of death, such spousal benefits cease upon remarriage and resume upon a subsequent divorce or death of the new spouse.

In the event of death of a member with no surviving spouse or child due benefits, the accumulated contributions are payable to the designated beneficiaries, or estate.

DEFERRED RETIREMENT OPTION PLAN (DROP):

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 DROP and defer the receipt of benefits. An election to participate may be made only once and the duration of participation shall be specified and shall not exceed three years. The three-year period begins within sixty calendar days after the member reaches eligibility. The participation period must end not more than three years and sixty calendar days from the date the member reaches eligibility. Upon commencement of participation in the plan, active membership in the system terminates and neither the employee nor employer contributions are payable. Compensation and creditable service remain as they existed on the effective date of commencement of participation in the plan and creditable service excludes conversion of sick and annual leave. 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 DROP 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 DROP account equal to the payments to the account or systematic disbursements based on the individual's subaccount in any manner approved by the Board. The monthly benefits that were being paid into the fund during the period of participation will begin to be paid to the retiree based on the option selected at DROP entry. If employment is not terminated at the end of the DROP period, payments into the account cease and employee and employer contributions resume. Monthly retirement benefits payable after termination of participation in the plan and employment include a "base benefit" equal to the participant's monthly credit to the account plus conversion of sick and annual leave, if any, based on the final average compensation rate used to calculate the monthly credit and an additional benefit if employment continues. The additional benefit is based on service credit for the period after plan participation. If the participant dies while still employed, the credits and benefits, if any, due beneficiaries are payable as if the member retired immediately prior to death.

NOTE: For anyone eligible to enter DROP prior to January 1, 2004, the DROP Account Balance earns interest at a rate of one-half of one percentage point below the percentage rate of return of the System's investment portfolio as certified by the actuary on an annual basis. All other DROP accounts are moved to a self-directed plan administered by a third-party provider (Empower Retirement) selected by the Board of Trustees, effective January 1, 2020.

COST OF LIVING ADJUSTMENTS:

Act 333 of 2007 established an Experience Account to be used to pay cost of living adjustments (COLAs), or permanent benefit increases (PBIs). The Experience Account is credited with 50% of the investment experience gain in excess of $15 million (indexed based on increases in the actuarial value of assets after June 30, 2015) along with that portion of the net investment income, if any, attributable to the prior year balance, subject to maximum accumulation limitation based upon the Plan's funded percentage. The account is also debited with that portion of the system's net investment loss, if any, attributable to the prior year balance. In no event may the amount in the Experience Account fall below zero. Once the balance of the Experience Account accumulates a sum sufficient to grant retirees a PBI, the Board may recommend the granting of a PBI on benefits up to $60,000 (indexed), not to exceed the lesser of the CPI-U or a percentage determined based on the funded level percentage attained by the system as described in R. S. 11:1145.1(C)(2), provided a PBI had not been granted in the prior year. Benefits are restricted to disability retirees and those retirees and beneficiaries who have attained the age of 60 and have been retired for at least one year. Maximum limitations are outlined in ACT 399 of 2014.

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: 6.80% (Net of investment expenses)

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: 130% of the RP2014 Employee Table with Blue Collar Adjustment for males and 115% of the RP2014 Employee Table with Blue Collar Adjustment for females, each with the full generational MP2017 scale.

ANNUITANT AND BENEFICIARY MORTALITY: 130% of the RP2014 Healthy Annuitant Table with Blue Collar Adjustment for males and 115% of the RP2014 Healthy Annuitant Table with Blue Collar Adjustment for females, each with the full generational MP2017 scale.

DISABLED LIVES MORTALITY:	RP2014 Total Dataset Disabled Tables for Males and Females, with the full generational MP2017 scale.
RETIREE COST OF LIVING INCREASES:	Although the board of trustees has authority to recommend ad hoc Cost of Living Increases (COLAs) be approved by the legislature under limited circumstances, these COLAs have not been shown to have a historical pattern, the amounts of the COLAs have not been relative to a defined cost-of-living or inflation index, and there is no evidence to conclude that COLAs will be granted on a predictable basis in the future. In particular, since the Experience Account balance cannot exceed the value of one COLA authorized under R.S. 11:1145.1, COLAs beyond that which can be funded by the current balance and future contributions sufficient to grant a single payment of this COLA were deemed not to be substantively automatic and therefore were not included in the present value of future benefits.
ANNUAL SALARY INCREASE RATE:	3.25% (2.50% inflation /0.75% merit)
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.
ACCUMULATED LEAVE POLICIES:	Retirements are monitored to determine the amount of leave converted to service credit. Leave credit is accrued throughout the duration of the member's career. The average service credit converted is expressed as 1% percent of the accrued benefit.
RETIREMENT LIMITATIONS:	Projected retirement benefits are not subject to IRS Section 415 limits.
DROP ENTRY RATES:	The table of these rates is included later in the report. These rates apply only to those individuals eligible to enter the DROP plan and are applied only in the year of earliest DROP eligibility.
DROP PARTICIPATION PERIOD:	All DROP participants are assumed to participate for 3 years and retire at the end of this participation period.
RETIREMENT RATES FOR ACTIVE FORMER DROP PARTICIPANTS:	Active former DROP participants retire according to the rates listed for all actives. The table of these rates through age 75 is included later in the report.
DISABILITY RATES:	The table of these rates through age 75 is included later in this report. 55% of the disability rates used for the 21st

valuation of the Railroad Retirement System for individuals with 10-19 years of service.

WITHDRAWAL RATES: The following rates of withdrawal are applied based upon completed years of service:

Service	Rate	Service	Rate
<1	0.07	15	0.01
1	0.13	16	0.01
2	0.12	17	0.02
3	0.09	18	0.03
4	0.07	19	0.05
5	0.06	20	0.05
6	0.06	21	0.05
7	0.06	22	0.04
8	0.06	23	0.05
9	0.05	24	0.05
10	0.04	25	0.05
11	0.04	26	0.03
12	0.03	27	0.02
13	0.03	28	0.10
14	0.02	>28	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 U.S. Census reports from 2010 and the 2014 Family Household Survey:

Member's Age	% With Children	Number of Children	Average Age	Remarriage Rates
25	70%	1.84	5	0.04566
35	86%	2.13	9	0.02636
45	75%	1.70	12	0.01355
55	22%	1.42	14	N/A
65	4%	1.45	15	N/A

VESTING ELECTING PERCENTAGE: For members terminating with less than twenty years of service, it is assumed that 60% will withdraw their accumulated employee contributions. For members terminating with twenty or more years of service, it is assumed that only 2% will withdraw their accumulated employee contributions. The remaining are assumed to receive a deferred vested retirement benefit.

PRIOR YEAR ASSUMPTIONS

VALUATION INTEREST RATE: 6.90% (Net of investment expenses)

ACTUARIAL TABLES AND RATES

Age	Retirement Rates	Post-DROP Retirement Rates	DROP Rates	Disability Rates
18	0.00000	0.00000	0.00000	0.00083
19	0.00000	0.00000	0.00000	0.00083
20	0.00000	0.00000	0.00000	0.00083
21	0.00000	0.00000	0.00000	0.00083
22	0.00000	0.00000	0.00000	0.00083
23	0.00000	0.00000	0.00000	0.00083
24	0.00000	0.00000	0.00000	0.00083
25	0.00000	0.00000	0.00000	0.00083
26	0.00000	0.00000	0.00000	0.00083
27	0.00000	0.00000	0.00000	0.00083
28	0.00000	0.00000	0.00000	0.00083
29	0.00000	0.00000	0.00000	0.00083
30	0.00000	0.00000	0.00000	0.00083
31	0.00000	0.00000	0.00000	0.00083
32	0.00000	0.00000	0.00000	0.00083
33	0.00000	0.00000	0.00000	0.00083
34	0.00000	0.00000	0.00000	0.00083
35	0.00000	0.00000	0.00000	0.00094
36	0.00000	0.00000	0.00000	0.00105
37	0.00000	0.00000	0.00000	0.00116
38	0.00000	0.00000	0.00000	0.00132
39	0.00000	0.00000	0.00000	0.00149
40	0.00000	0.00000	0.00000	0.00171
41	0.00000	0.00000	0.00000	0.00193
42	0.00000	0.00000	0.00000	0.00215
43	0.00000	0.00000	0.00000	0.00242
44	0.00000	0.00000	0.00000	0.00275
45	0.00000	0.00000	0.00000	0.00314
46	0.17000	0.00000	0.83000	0.00358
47	0.17000	0.50000	0.83000	0.00402
48	0.17000	0.50000	0.83000	0.00457
49	0.17000	0.50000	0.83000	0.00517
50	0.17000	0.50000	0.83000	0.00589
51	0.25000	0.50000	0.75000	0.00671
52	0.28000	0.50000	0.72000	0.00759
53	0.33000	0.50000	0.67000	0.00864
54	0.17000	0.50000	0.83000	0.00979
55	0.19000	0.37000	0.81000	0.01111
56	0.36000	0.28000	0.64000	0.01265
57	0.18000	0.23000	0.82000	0.01436
58	0.40000	0.22000	0.60000	0.01628
59	0.33000	0.24000	0.67000	0.01854
60	0.23000	0.26000	0.61000	0.02684
61	0.18000	0.23000	0.49000	0.02684
62	0.16000	0.19000	0.44000	0.02684
63	0.17000	0.17000	0.42000	0.02684
64	0.22000	0.18000	0.38000	0.02684
65	0.27000	0.22000	0.32000	0.02684
66	0.31000	0.24000	0.24000	0.02684
67	0.31000	0.23000	0.20000	0.02684
68	0.28000	0.20000	0.20000	0.02684
69	0.24000	0.18000	0.21000	0.02684
70	0.22000	0.19000	0.22000	0.02684
71	0.22000	0.21000	0.21000	0.02684
72	0.23000	0.24000	0.21000	0.02684
73	0.22000	0.24000	0.25000	0.02684
74	0.22000	0.22000	0.33000	0.02684
75	0.23000	0.24000	0.39000	0.02684

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 – A value of assets that reflects averaged (or smoothed) investment returns over a specified period of time. The actuarial value of assets is used to determine the required plan contributions. The use of smoothed asset values is meant to reduce contribution volatility.

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.

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

Deferred Retirement Option Plan (DROP) Account – The account into which DROP accruals are paid and from which DROP lump sum balances are disbursed.

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.

Initial Benefit Retirement Plan (IBRP) Account – The account into which the initial benefit is deposited. Interest is credited thereto and monthly payments made from this account.

Net Valuation Assets – Refers to the actuarial value of assets, determined based upon the smoothing technique described in the section on Actuarial Assumptions within this report, reduced by the Amortization Conversion Account balance, if any.

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 final average compensation at retirement. For current retirees or terminated members this is equivalent to the actuarial present value of their accrued benefit.

Priority Allocation – The actual returns available for application to the oldest outstanding positive amortization base. (In accordance with R.S. 11:102.4)

Priority Amount – The maximum amount of system returns in excess of the system's actuarially assumed rate of return that may be applied to the oldest outstanding positive amortization base, regardless of whether actual returns that equal or exceed the maximum are available. (In accordance with R.S. 11:102.4)

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.