LOUISIANA SCHOOL EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL VALUATION AS OF
JUNE 30, 2020

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September 17, 2020

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, 2020. 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, 2021, and to recommend the net direct employer contribution rate for Fiscal 2022. 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 of the assumptions on which this valuation is based are reasonable individually and in the aggregate. Both economic and demographic assumptions are based on our expectations for future experience for the fund. This report has been prepared in accordance with generally accepted actuarial principles and practices, and to the best of our knowledge and belief, fairly reflects the actuarial present values and costs stated herein. The undersigned actuaries are members of the American Academy of Actuaries and have met the qualification standards for the American Academy of Actuaries to render the actuarial opinions incorporated in this report, and are available to provide further information or answers to any questions with respect to this valuation.

Sincerely,

G. S. CURRAN & COMPANY, LTD.

By: ______________________________
Gary Curran, F.C.A., M.A.A.A., A.S.A.

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Gregory Curran, F.C.A., M.A.A.A., A.S.A.

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SUMMARY OF VALUATION RESULTS
LOUISIANA SCHOOL EMPLOYEES' RETIREMENT SYSTEM

Valuation Date:		June 30, 2020	June 30, 2019
Census Summary:	Active Members	11,925	11,920
	Retired Members and Survivors	13,657	13,648
	DROP Participants	595	605
	Terminated Due a Deferred Benefit	395	333
	Terminated Due a Refund	4,425	4,328
Payroll (excluding DROP accruals):		$ 298,720,034	$ 289,730,586
Benefits in Payment:		$ 178,634,191	$ 176,378,784
Present Value of Future Benefits		$ 2,898,517,107	$ 2,887,298,287
Actuarial Accrued Liability (EAN):		$ 2,649,075,730	$ 2,640,451,339
Unfunded Actuarial Accrued Liability:		$ 685,124,807	$ 676,307,996
Experience Account:		$ 5,413,514	$ 5,174,949
Actuarial Value of Assets:		$ 1,963,950,923	$ 1,964,143,343
Market Value of Assets (Includes side funds):		$ 1,845,618,894	$ 1,940,389,574
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability:		74.14%	74.39%

	Fiscal 2020	Fiscal 2019
Market Rate of Return (Excluding Money Market DROP funds):	-0.42%	4.70%
Actuarial Rate of Return (Excluding Money Market DROP funds):	4.61%	5.37%
Non-Money Market DROP Account Interest Credit Rate:	4.11%	4.87%

	Fiscal 2021	Fiscal 2020
Employers' Normal Cost (Mid-year):	$ 22,269,195	$ 22,633,372
Amortization Cost (Mid-year):	$ 58,662,304	$ 61,358,318
Projected Administrative Expenses:	$ 4,812,222	$ 4,742,477
Net Direct Employer Actuarially Required Contributions:	$ 85,743,721	$ 88,734,167
Projected Payroll:	$ 300,615,748	$ 292,615,645
Actuarially Required Net Direct Employer Contribution Rate:	28.5%	30.3%
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:	28.7%	29.4%

	Fiscal 2022	Fiscal 2021
Minimum Recommended Net Direct Employer Cont. Rate:	28.7%	28.7%

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 11,925 active contributing members in the system of whom 7,528 have vested retirement benefits; in addition, there are 595 participants in the Deferred Retirement Option Plan (DROP); 13,657 former members or their beneficiaries are receiving retirement benefits. An additional 4,820 terminated members have contributions remaining on deposit with the system; of this number 395 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 $1,845,618,894 as of June 30, 2020. Net investment income for Fiscal 2020 measured on a market value basis amounted to a loss of $7,060,043. Contributions to the system for the fiscal year totaled $113,155,272; benefits and expenses amounted to $200,865,909.

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 will be 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, this valuation includes a re-amortization of the 2014 Cumulative Base over the remaining 24 year period. This resulted in an annual beginning of year amortization payment of $62,685,798 instead of the original payment amount of $68,198,977. 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 cost of living adjustments), subject to certain limitations. Effective with the first system valuation following June 30, 2015 valuation, any such allocation will be amortized as a loss with level 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 funds include the "Amortization Conversion Account" and 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) subject to the limits on the account value. (This limitation is called the Priority Excess Allocation). 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 is funded 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 Excess Allocation limit 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

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 and 2020 actuarial valuations were run at 7.0%. 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, unless otherwise specified in this report. Additional details are given in the complete 2018 Experience Study Report.

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. For the last decade, inflation levels have remained in a fairly narrow range. Current forecasts from investment professionals call for a continuation of this trend. 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 assess both of 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 mitigating the reinvestment risk the plan currently faces.

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

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

Liability risk also includes items such as data errors. Significant errors in plan data can distort or disguise plan liabilities. When data corrections are made, the plan may experience unexpected increases or decreases in liabilities. Even natural disasters and dislocations in the economy or other unforeseen events 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 dependent 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 a number of alternative measures of liability depending on the funding method employed. The Governmental Accounting Standards Board (GASB) specifies that for financial reporting purposes, the funded ratio is determined by using the market value of assets divided by the entry age normal accrued liability. This value is given in the system's financial report. Alternatively, we have calculated the ratio of the actuarial value of assets to the entry age normal accrued liability based on the funding methodology used to fund the plan. The ratio is 74.14% for the plan as of June 30, 2020. 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 0.60% 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 Excess 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 8.72.

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 2020 this ratio is 60%; ten years ago this ratio was 40%.

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 2021 by 8.3% of payroll. After accounting for the effect of the contribution shortfall, the recommended employer contribution rate for Fiscal 2022 would increase by 10.3%. 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 effect 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

There were no legislative changes directly affecting the retirement system enacted during the 2020 Regular Session of the Louisiana Legislature.

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 †
2010	13.02%	0.55%
2011	23.28%	4.35%
2012	2.27%	9.07%
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%

† 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 2016 – 2020)	4.7%
10 year average	(Fiscal 2011 – 2020)	8.1%
15 year average	(Fiscal 2006 – 2020)	5.9%
20 year average	(Fiscal 2001 – 2020)	5.4%
25 year average	(Fiscal 1996 – 2020)	6.7%
30 year average	(Fiscal 1991 – 2020)	7.3%

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 2020, the fund earned $21,773,665 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 $23,206,236. In addition, the Fund had investment expenses of $5,627,472.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 7.00% for Fiscal 2020. DROP accounts that are credited with earnings based on the actuarial rate of return of the system should be credited with 4.11% (i.e. 4.61% 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 2020, the system experienced actuarial investment earnings of $44,948,629 below the actuarial assumed earnings rate of 7.00%. The interest adjusted amortization payment on this loss was $4,101,701, or 1.36% of projected payroll.

DEMOGRAPHICS AND LIABILITY EXPERIENCE

The average active contributing member is 53 years old with 9.4 years of service credit and an annual salary of $25,050. The system’s active contributing membership experienced an increase of 5 members during Fiscal 2020; over the last five years, the number of active contributing members decreased by 136. The number of DROP participants decreased by 10 during Fiscal 2020.

The average service retiree is 73 years old with a monthly benefit of $1,145. The number of retirees and beneficiaries receiving benefits from the system increased by 9 during the fiscal year. Over the last five years, the number of retirees increased by 633 with annual benefits in payment increasing by $23,802,566.

Liability experience for the year was favorable. The total number of retirements, DROP entries, and disabilities were below expected levels. Retiree deaths were above projected levels. These factors tend to reduce costs. Partially offsetting these gains were withdrawals below projected levels and salary increases slightly above projected levels. Net plan liability experience gains totaled $18,714,550. The interest adjusted amortization credit on this gain was $1,707,760, or 0.57% of projected payroll.

FUNDING ANALYSIS AND RECOMMENDATIONS

Actuarial funding of a retirement system is a process whereby funds are accumulated over the working lifetimes of employees in such a manner as to have sufficient assets available at retirement to pay for the lifetime benefits accrued by each member of the system. The required contributions are determined by an actuarial valuation based on rates of mortality, termination, disability, and retirement, as well as investment return and other statistical measures specific to the particular group. Each year a determination is made of two cost components, and the actuarially required contributions are based on the sum of these two components. 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 2020 contributions totaled $1,289,291 more than required; the interest-adjusted amortization credit based on the contribution surplus for Fiscal 2021 is $303,987, or 0.10% of projected payroll. In addition, for Fiscal 2021 the net effect of the change in payroll on amortization costs was to decrease such costs by 2.46% of projected payroll.

A reconciliation of the change in costs is given below. Values listed in dollars are interest adjusted for payment throughout the fiscal year. Percentages are based on the projected payroll for Fiscal 2021 except for those items labeled Fiscal 2020.

	Dollars	Percentage of Payroll
Employer Normal Cost for Fiscal 2020	$ 22,633,372	7.73%
Cost of Demographic and Salary Changes	(364,177)	(0.32%)
Change in Assumptions	$ 0	0.00%
Employer Normal Cost for Fiscal 2021	$ 22,269,195	7.41%
UAL Payments for Fiscal 2020	$ 61,358,318	20.97%
Change due to change in payroll	N/A	(0.56%)
Change due to elimination of Amortization	$ 916,909	0.31%
Change due to re-amortization under Act 399 of 2014	$ (5,702,877)	(1.90%)
Additional Amortization Expenses for Fiscal 2021:		
Asset Experience Loss (Gain)	$ 4,101,701	1.36%
Liability Experience Loss (Gain)	$ (1,707,760)	(0.57%)
Contribution Loss (Gain)	$ (303,987)	(0.10%)
Total Amortization Expense (Credit) for Fiscal 2021	$ 58,662,304	19.51%
Projected Adminstrative Expenses for Fiscal 2021	$ 4,812,222	1.60%
Total Normal Cost & Amortization Payments	$ 85,743,721	28.52%

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The employer's normal cost for Fiscal 2021, interest adjusted for mid-year payment is $22,269,195. The amortization payments on the system's unfunded actuarial accrued liability total $58,662,304. 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 2021 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 14 of Exhibit I, the total actuarially required employer contribution for Fiscal 2021 is $85,743,721, or 28.5% of projected payroll.

Since the actual employer contribution rate for Fiscal 2021 is 28.7% of payroll, there will be a contribution surplus of 0.2% of payroll. This surplus will decrease the actuarially required contribution recommended for Fiscal 2022. In order to determine a minimum recommended net direct employer contribution rate for Fiscal 2022, the Employer Normal Cost and Amortization Payments were estimated for Fiscal 2022 and adjusted for the impact of the estimated contribution surplus for Fiscal 2021. As given in line 22 of Exhibit I, the estimated actuarially required net direct employer contribution for Fiscal 2022 is $86,901,752, or 28.7% of projected payroll.

In addition to annual gains and losses, the net direct employer contribution rate was affected by the elimination of the credit related to the 2015 contribution gain which increased costs and the required re-amortization of the payment on the 2014 Cumulative Base which significantly decreased costs.

COST OF LIVING ADJUSTMENTS

During Fiscal 2020, the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 0.6%. 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. 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:

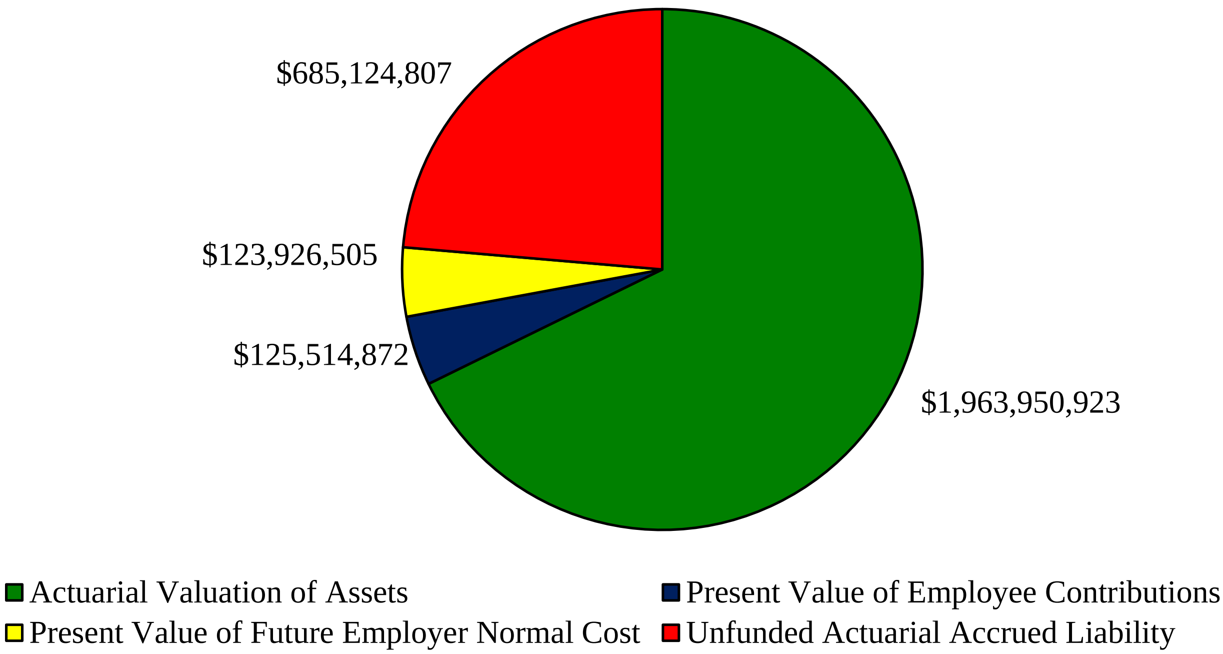
Funded Percentage of the System	Maximum Percent PBI
At least 80%	3.0%
At least 75% but less than 80%	2.5%
At least 65% but less than 75%	2.0%
At least 55% but less than 65%	1.5%
Less than 55%	No COLA permitted

In addition, if 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.

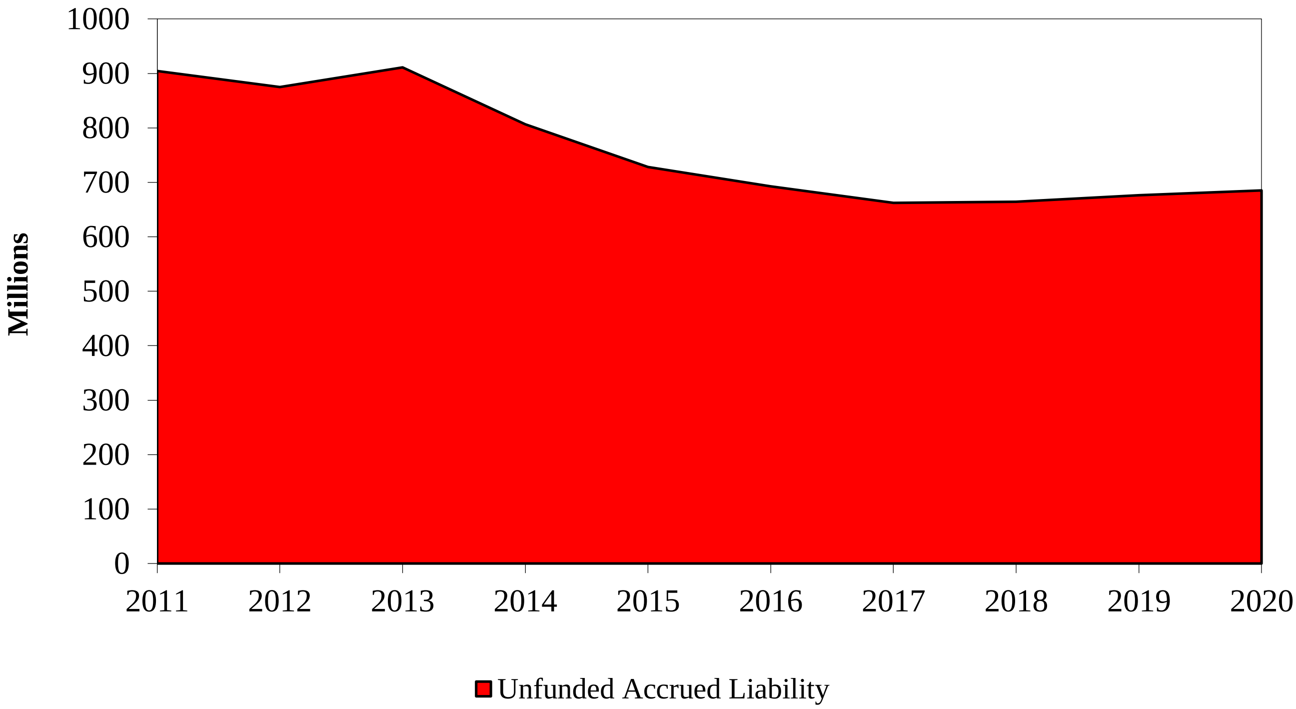
If there are sufficient funds in the Experience Account and the system met the necessary criteria to grant a PBI, the Board of Trustees may recommend to the President of the Senate and the Speaker of the House of Representatives that the system be permitted to grant a permanent benefit increase. Permanent benefit increases are based on the benefit in payment at the time the adjustment is approved with a maximum adjustment 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, 2020. 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.

Although the system did not grant a PBI in the preceding fiscal year, the system did not reach the maximum reserve permitted in the Experience Account and thus does not qualify to request that the Louisiana Legislature grant a PBI under the provisions of R. S. 11:1145.1.

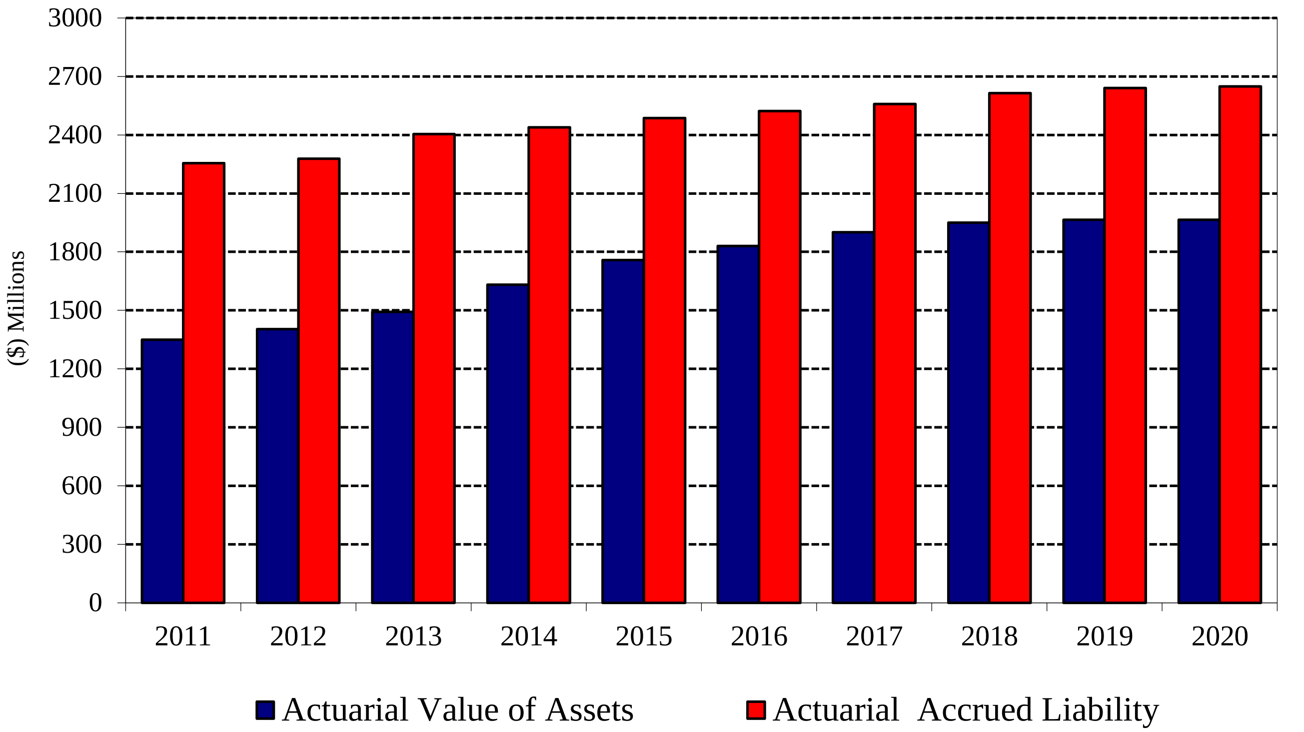
Components of Present Value of Future Benefits
June 30, 2020



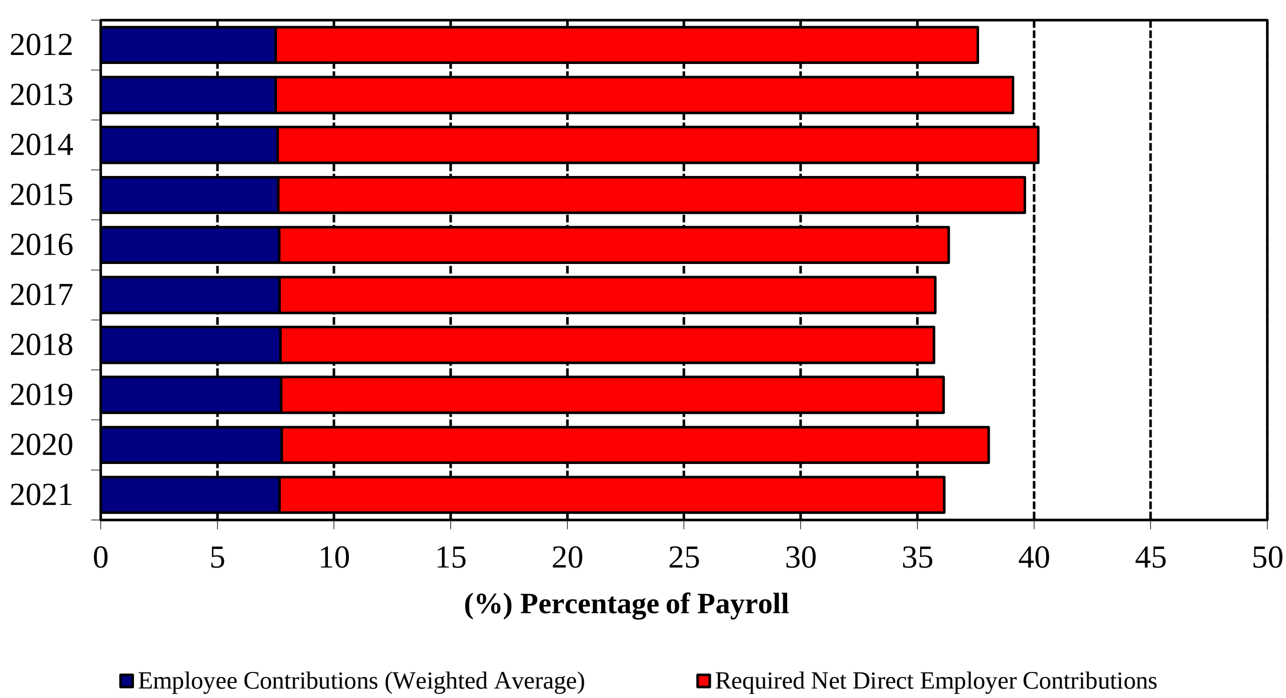
Unfunded Accrued Liability



Actuarial Value of Assets vs. Actuarial Accrued Liability

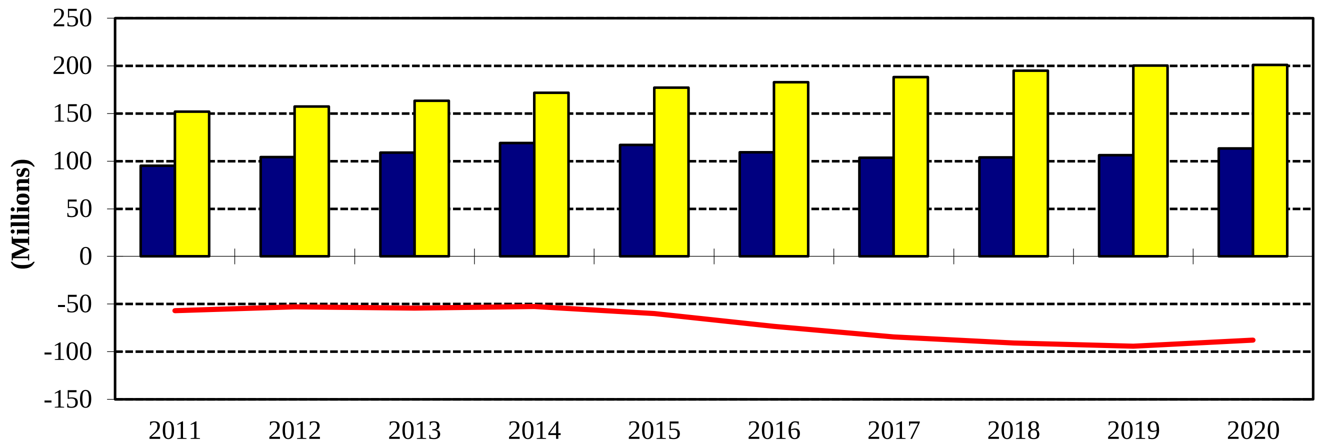


Components of Actuarial Funding



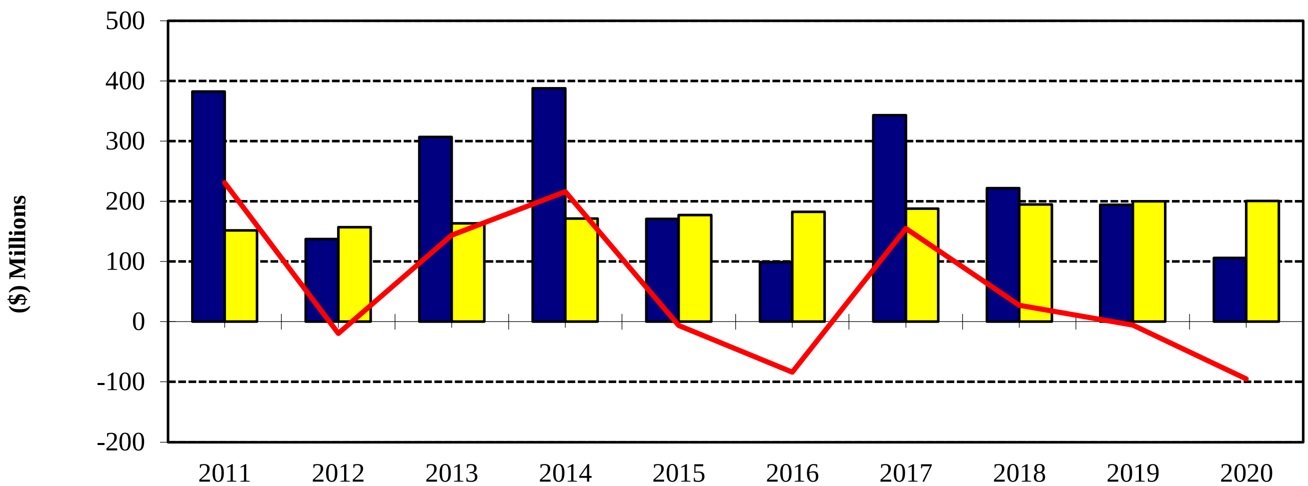
(2012 and later employee contribution level is a weighted average of rates paid by employees in different tiers)

Net Non-Investment Income



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Non-Investment Income ($Mil)	95.1	104.3	109.0	118.9	117.1	109.4	103.6	104.0	106.2	113.2
Benefits and Expenses ($Mil)	151.9	157.2	163.3	171.6	177.1	182.7	188.1	195.0	200.3	200.9
Net Non-Investment Income ($Mil)	-56.8	-52.9	-54.3	-52.7	-60.0	-73.3	-84.5	-91.0	-94.1	-87.7

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



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Income ($Mil)	382.7	137.7	307.3	387.8	171.2	99.0	343.0	222.1	194.6	106.1
Benefits and Expenses ($Mil)	151.9	157.2	163.3	171.6	177.1	182.7	188.1	195.0	200.3	200.9
Net Change in MVA ($Mil)	230.8	-19.5	144.0	216.2	-5.9	-83.7	154.9	27.1	-5.7	-94.8

Historical Asset Yields

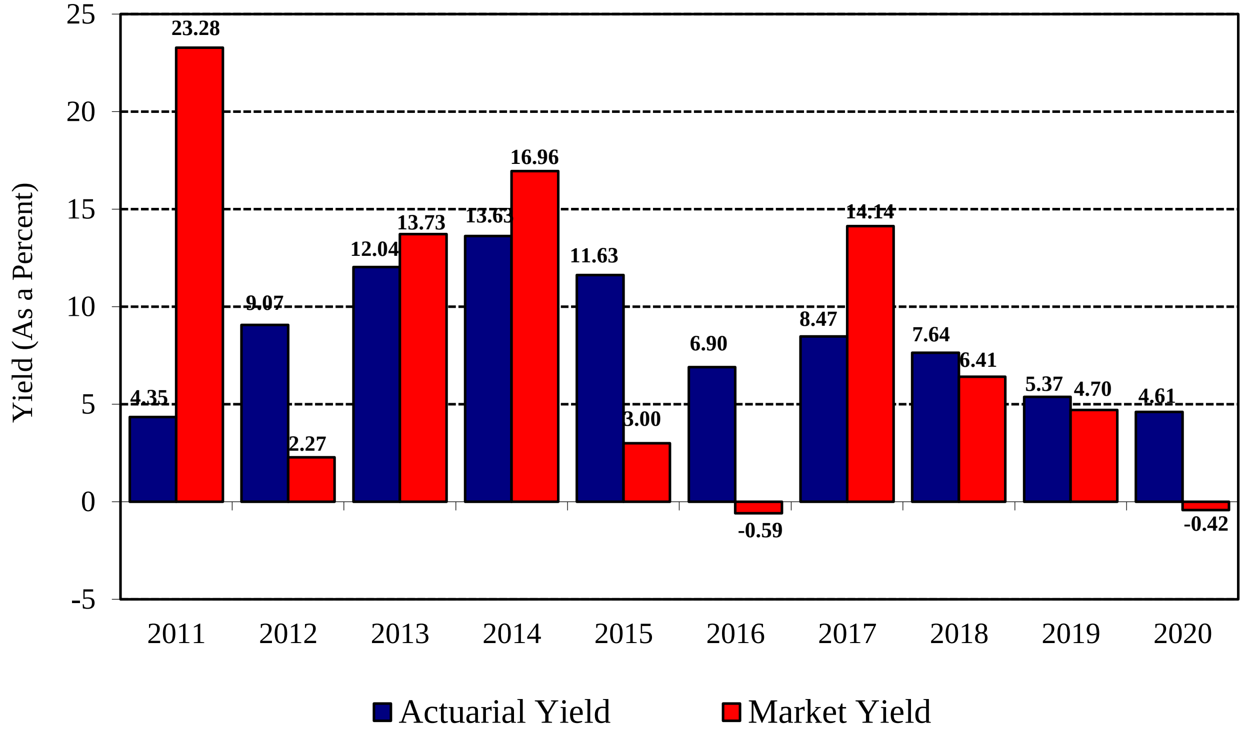


EXHIBIT I
ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1.	Normal Cost of Retirement Benefits	$	30,088,072
2.	Normal Cost of Death Benefits	$	1,658,166
3.	Normal Cost of Disability Benefits	$	3,138,224
4.	Normal Cost of Deferred Retirement Benefits	$	4,301,991
5.	Normal Cost of Contribution Refunds	$	4,588,923
6.	TOTAL Normal Cost as of July 1, 2020 (1 + 2 + 3 + 4 + 5)	$	43,775,376
7.	TOTAL Normal Cost Interest Adjusted for Midyear Payment	$	45,281,601
8.	Adjustment to Total Normal Cost for Employee Portion	$	23,012,406
9.	TOTAL Employer Normal Cost Adjusted for Midyear Payment (7 – 8)	$	22,269,195
10.	Amortization Payments on Unfunded Accrued Liability at Midyear	$	58,662,304
11.	Projected Administrative Expenses for Fiscal 2021	$	4,812,222
12.	Net Direct Actuarially Required Employer Contribution for Fiscal 2021 (9 + 10 + 11)	$	85,743,721
13.	Projected Payroll for Contributing Members (Fiscal 2021)	$	300,615,748
14.	Net Direct Actuarially Required Employer Contribution as a Percentage of Projected Payroll for Fiscal 2021 (12 ÷ 13)		28.5%
15.	Actual Net Direct Employer Contribution Rate for Fiscal 2021		28.7%
16.	Projected Fiscal 2021 Contribution Loss (Gain) as a % of Payroll (14 – 15)		(0.2%)
17.	Projected Fiscal 2021 Employer Contribution Shortfall (Surplus) (13 × 16)	$	(601,231)
18.	Amortization of Interest Adjusted Fiscal 2021 Employer Contribution Shortfall (Surplus) Based on Midyear Payment in Fiscal 2022	$	(146,635)
19.	Estimated Fiscal 2022 Employer Normal Cost Adjusted for Midyear Payment	$	22,410,518
20.	Estimated Fiscal 2022 Amortization Payments	$	59,705,341
21.	Estimated Fiscal 2022 Administrative Expenses	$	4,932,528
22.	Estimated Actuarially Required Employer Contributions for Fiscal 2022 (18 + 19 + 20 + 21)	$	86,901,752
23.	Projected Payroll for Contributing Members (Fiscal 2022)	$	302,523,492
24.	Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2022 (22 ÷ 23, Rounded to nearest 0.10%)		28.7%

EXHIBIT II
PRESENT VALUE OF FUTURE BENEFITS

PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits	$ 989,832,247	
Survivor Benefits	23,378,986	
Disability Benefits	43,393,016	
Vested Termination Benefits	90,738,974	
Refunds of Contributions	21,336,100	
TOTAL Present Value of Future Benefits for Active Members		$ 1,168,679,323

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement	$ 26,024,650	
Terminated Members with Reciprocals Due Benefits at Retirement	428,220	
Terminated Members Due a Refund	8,236,009	
TOTAL Present Value of Future Benefits for Terminated Members		$ 34,688,879

PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees	$ 1,461,170,285	
Disability Retirees	16,539,815	
Survivors & Widows	155,387,100	
Liability Attributable to the Experience Account	8,025,466	
DROP Account Balances Payable to Retirees	54,026,239	
IBRP Account Balance	0	
TOTAL Present Value of Future Benefits for Retirees & Survivors		$ 1,695,148,905

TOTAL Present Value of Future Benefits .... $ 2,898,517,107

EXHIBIT III – SCHEDULE A
MARKET VALUE OF ASSETS

CURRENT ASSETS:				
Cash in Banks	$	15,923,129		
Contributions Receivable		16,195,381		
Accrued interest and dividends		2,349,404		
Investments Receivable		2,826,459		
Other Current Assets		1,817,177		
TOTAL CURRENT ASSETS			$	39,111,550
Property Plant & Equipment			$	3,328,204
INVESTMENTS:				
Cash Equivalents	$	56,032,544		
Equities		955,220,080		
Fixed Income		306,860,311		
Real Estate		150,533,512		
Alternative Investments		348,846,047		
Collateral for Securities Lending		80,577,027		
Other Investments		216,398		
TOTAL INVESTMENTS			$	1,898,285,919
DEFERRED OUTFLOWS OF RESOURCES			$	597,030
TOTAL ASSETS			$	1,941,322,703
CURRENT LIABILITIES:				
Accounts Payable	$	1,264,572		
Benefits Payable		627,227		
Refunds Payable		578,920		
Investments Payable		4,856,703		
Securities Lending Obligations		80,577,027		
Other Post-Employment Benefits		6,092,727		
Other Current Liabilities		346,936		
TOTAL CURRENT LIABILITIES			$	94,344,112
DEFERRED INFLOWS OF RESOURCES			$	1,359,697
TOTAL LIABILITIES			$	95,703,809
MARKET VALUE OF ASSETS			$	1,845,618,894

EXHIBIT III – SCHEDULE B
ACTUARIAL VALUE OF ASSETS

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

Fiscal year 2020	$ (137,864,124)
Fiscal year 2019	(44,094,322)
Fiscal year 2018	(13,290,517)
Fiscal year 2017	118,660,351
Fiscal year 2016	(139,840,706)
Total for five years	$ (216,429,318)

Deferral of excess (shortfall) of invested income:

Fiscal year 2020 (80%)	$ (110,291,299)
Fiscal year 2019 (60%)	(26,456,593)
Fiscal year 2018 (40%)	(5,316,207)
Fiscal year 2017 (20%)	23,732,070
Fiscal year 2016 (0%)	0
Total deferred for year	$ (118,332,029)

Market value of plan net assets, end of year	$ 1,845,618,894
Preliminary actuarial value of plan assets, end of year	$ 1,963,950,923
Actuarial value of assets corridor	
85% of market value, end of year	$ 1,568,776,060
115% of market value, end of year	$ 2,122,461,728
Actuarial Value of Plan Assets, end of year	$ 1,963,950,923

† 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	$	125,514,872
Employer Normal Contributions to the Pension Accumulation Fund		123,926,505
Employer Amortization Payments to the Pension Accumulation Fund		685,124,807
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS	$	934,566,184

EXHIBIT V – SCHEDULE A
ACTUARIAL ACCRUED LIABILITIES

LIABILITY FOR ACTIVE MEMBERS				
Accrued Liability for Retirement Benefits	$	827,866,231		
Accrued Liability for Survivor Benefits		14,687,964		
Accrued Liability for Disability Benefits		23,577,649		
Accrued Liability for Vested Termination Benefits		59,868,328		
Accrued Liability for Refunds of Contributions		(6,762,226)		
TOTAL Actuarial Accrued Liability for Active Members			$	919,237,946
LIABILITY FOR TERMINATED MEMBERS			$	34,688,879
LIABILITY FOR RETIREES AND SURVIVORS			$	1,695,148,905
TOTAL ACTUARIAL ACCRUED LIABILITY			$	2,649,075,730
NET VALUATION ASSETS			$	1,963,950,923
UNFUNDED ACTUARIAL ACCRUED LIABILITY			$	685,124,807

EXHIBIT V – SCHEDULE B
CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY

PRIOR YEAR UNFUNDED ACCRUED LIABILITY			$	676,307,996
Interest on Unfunded Accrued Liability	$	47,341,561		
Asset Experience Loss		44,948,629		
TOTAL Additions to UAL			$	92,290,190
Liability Experience Gain	$	18,714,550		
Contribution Excess with Accrued Interest		1,289,291		
Interest Adjusted Amortization Payments		63,469,538		
TOTAL Reductions to UAL			$	83,473,379
NET Change in Unfunded Accrued Liability			$	8,816,811
CURRENT YEAR UNFUNDED ACCRUED LIABILITY			$	685,124,807

EXHIBIT V – SCHEDULE C
AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
June 30, 2020

FISCAL YEAR	DESCRIPTION	AMORT. PERIOD	INITIAL BALANCE	YEARS REMAINING	REMAINING BALANCE	AMORT. PAYMENTS
2014	Cumulative Bases	30	$904,498,330	24	$769,291,856	$62,685,798
2014	Liability Experience Gain	30	(81,635,532)	24	(75,539,013)	(6,155,301)
2014	Contribution Loss	5	823,919	0	0	0
2015	Change in Data/Model Gain	30	(42,073,134)	25	(39,536,939)	(3,170,734)
2015	Liability Assumption Loss	30	53,611,596	25	50,379,855	4,040,300
2015	Asset Experience Gain	30	(32,513,380)	25	(30,553,454)	(2,450,288)
2015	Liability Experience Gain	30	(29,473,558)	25	(27,696,874)	(2,221,199)
2015	Contribution Gain	5	(3,883,540)	0	0	0
2016	Asset Experience Loss	30	7,620,492	26	7,266,769	574,286
2016	Liability Experience Gain	30	(366,508)	26	(349,497)	(27,620)
2016	Contribution Gain	5	(4,417,900)	1	(1,008,342)	(1,008,342)
2016	Liability Assumption Gain	30	(29,907,056)	26	(28,518,852)	(2,253,816)
2016	Asset Assumption Loss	30	211,528	26	201,709	15,941
2017	Asset Experience Gain	20	(24,634,307)	17	(22,714,158)	(2,174,301)
2017	Gains Allocated to Experience Account	10	3,875,934	7	2,976,126	516,103
2017	Priority Excess Allocation	20	15,932,442	17	14,690,570	1,406,247
2017	Liability Experience Gain	20	(19,955,111)	17	(18,399,687)	(1,761,300)
2017	Contribution Loss	5	3,079,929	2	1,359,200	702,581
2017	Liability Assumption Loss	20	20,126,949	17	18,558,131	1,776,467
2017	Asset Assumption Gain	20	(4,562,632)	17	(4,206,994)	(402,712)
2018	Asset Experience Gain	20	(10,056,996)	18	(9,550,809)	(887,356)
2018	Gains Allocated to Experience Account	10	0	8	0	0
2018	Priority Excess Allocation	20	9,415,089	18	8,941,210	830,719
2018	Liability Experience Gain	20	(14,310,770)	18	(13,590,482)	(1,262,678)
2018	Contribution Loss	5	4,655,410	3	2,980,459	1,061,410
2018	Liability Assumption Loss	20	32,157,641	18	30,539,088	2,837,355
2019	Asset Experience Loss	20	31,319,747	19	30,555,766	2,762,956
2019	Gains Allocated to Experience Account	10	0	9	0	0
2019	Priority Excess Allocation	20	0	19	0	0
2019	Liability Experience Gain	20	(16,145,429)	19	(15,751,595)	(1,424,312)
2019	Contribution Loss	5	87,673	4	72,427	19,984
2019	Liability Assumption Loss	20	14,364,127	19	14,013,744	1,267,170
2019	Residual Amort. Conversion Account	10	(4,560,266)	9	(4,230,205)	(606,803)
2020	Asset Experience Loss	20	44,948,629	20	44,948,629	3,965,264
2020	Liability Experience Gain	20	(18,714,550)	20	(18,714,550)	(1,650,954)
2020	Contribution Loss	5	(1,289,291)	5	(1,289,291)	(293,875)

TOTAL Unfunded Actuarial Accrued Liability $ 685,124,807

TOTAL Fiscal 2021 Amortization Payments at Beginning of Year $ 56,710,990

TOTAL Fiscal 2021 Amortization Payments Adjusted to Mid-Year $ 58,662,304

† 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 Excess Interest 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 Excess Interest 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 Excess Interest 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 Excess Interest 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 Excess Interest 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 Excess Interest Applied to Base		0
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 Excess Interest Applied to Base		0
Net Balance as of June 30, 2020 on 2014 Cumulative Base	$	769,291,856

EXHIBIT VI
ANALYSIS OF CHANGE IN ASSETS

Actuarial Value of Assets: (June 30, 2019)			$ 1,964,143,343
INCOME:			
Member Contributions	$	23,098,769	
Employer Contributions		88,488,996	
Irregular Contributions		1,567,507	
Total Contributions			$ 113,155,272
Net Depreciation of Investments	$	(23,206,236)	
Interest & Dividends		13,930,255	
Alternative Investment Income		7,594,149	
Miscellaneous Income		249,261	
Investment Expense		(5,627,472)	
Net Investment Income			$ (7,060,043)
TOTAL Income			$ 106,095,229
EXPENSES:			
Retirement Benefits	$	183,174,018	
DROP Disbursements		8,342,147	
Refunds of Contributions		4,460,650	
Transfers to Other Systems		848,001	
Administrative Expenses		4,041,093	
TOTAL Expenses			$ 200,865,909
Net Market Value Income for Fiscal 2020 (Income – Expenses)			$ (94,770,680)
Unadjusted Fund Balance as of June 30, 2020 (Fund Balance Previous Year + Net Income)			$ 1,869,372,663
Income Adjustment for Actuarial Smoothing			$ 94,578,260
Actuarial Value of Assets: (June 30, 2020)			$ 1,963,950,923

EXHIBIT VII – SCHEDULE A
EXPERIENCE ACCOUNT

1.	Experience Account Balance – June 30, 2019	$	5,174,949
2.	Investment Gain, if any	$	0
3.	Priority Excess Interest Allocated to Reduce UAL	$	0
4.	Residual Investment Gain, if any (2 – 3)	$	0
5.	Investment Gain to Allocate to the Experience Account (50% × 4)	$	0
6.	Credit for Investment Earnings on Initial Balance based on AVA rate of return, if positive	$	238,565
7.	Total Preliminary Credits to be Allocated to Experience Account (5 + 6)	$	238,565
8.	Debit for Investment Losses on Initial Balance based on AVA rate of return, if negative	$	0
9.	Present Value of Permanent Benefit Increase Paid July 1, 2020	$	0
10.	Total Preliminary Debits to be Allocated to Experience Account (8 + 9)	$	0
11.	Total Net Credit/Debit to be Allocated to Experience Account (7 + 10)	$	238,565
12.	Limit to the Experience Account Balance – June 30, 2020 (Present Value of PBI at CPI-U for Fiscal 2020 or 2.00%)	$	8,025,466
13.	Experience Account Balance – June 30, 2020 (Lesser of 1+11 & 12 - at least 0)	$	5,413,514

EXHIBIT VIII
CENSUS DATA

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2019	11,920	4,661	605	13,648	30,834
Additions to Census					
Initial membership	1,259	103			1,362
Omitted in error last year		10		5	15
Death of another member			(3)	164	161
Adjustment for multiple records		2		10	12
Change in Status during Year					
Actives terminating service	(490)	490			
Actives who retired	(366)			366	
Actives entering DROP	(222)	(1)	223		
Term. members rehired	61	(61)			
Term. members who retire		(34)		34	
Retirees who are rehired		13		(13)	
Refunded who are rehired	28				28
DROP participants retiring			(109)	109	
DROP returned to work	119		(119)		
Omitted in error last year					
Eliminated from Census					
Refund of contributions	(331)	(312)			(643)
Deaths	(53)	(51)	(2)	(666)	(772)
Included in error last year					
Adjustment for multiple records					
Number of members as of June 30, 2020	11,925	4,820	595	13,657	30,997

ACTIVES CENSUS BY AGE:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 - 20	12	0	12	25,910	310,923
21 - 25	101	49	150	23,738	3,560,740
26 - 30	195	206	401	23,792	9,540,738
31 - 35	243	379	622	23,867	14,845,194
36 - 40	306	570	876	24,308	21,293,904
41 - 45	382	703	1,085	25,071	27,202,350
46 - 50	500	880	1,380	25,395	35,045,726
51 - 55	769	1,291	2,060	26,132	53,832,338
56 - 60	991	1,438	2,429	25,625	62,243,993
61 - 65	763	796	1,559	25,210	39,301,981
66 - 70	428	394	822	23,597	19,396,411
71 - 75	193	177	370	22,759	8,420,752
76 - 80	68	57	125	24,230	3,028,722
81 - 85	17	12	29	20,537	595,573
86 - 90	3	2	5	20,138	100,689
TOTAL	4,971	6,954	11,925	25,050	298,720,034

THE ACTIVE CENSUS INCLUDES 7,528 ACTIVES WITH VESTED BENEFITS, INCLUDING 568 ACTIVE FORMER DROP PARTICIPANTS. THE 595 CURRENT DROP PARTICIPANTS ARE EXCLUDED.

DROP PARTICIPANTS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
46 - 50	2	0	2	41,147	82,294
51 - 55	15	13	28	28,836	807,415
56 - 60	68	113	181	22,001	3,982,162
61 - 65	137	202	339	14,136	4,792,091
66 - 70	15	10	25	6,491	162,278
71 - 75	7	5	12	4,891	58,695
76 - 80	3	5	8	4,614	36,912
TOTAL	247	348	595	16,675	9,921,847

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
26 - 30	3	2	5	2,663	13,313
31 - 35	8	3	11	6,010	66,113
36 - 40	13	13	26	7,358	191,308
41 - 45	12	15	27	8,849	238,920
46 - 50	21	21	42	7,910	332,212
51 - 55	34	57	91	10,356	942,371
56 - 60	58	62	120	9,766	1,171,873
61 - 65	18	27	45	8,894	400,230
66 - 70	3	12	15	7,941	119,114
71 - 75	2	6	8	4,326	34,609
76 - 80	1	2	3	4,579	13,738
81 - 85	0	1	1	199	199
86 - 90	1	0	1	6,227	6,227
TOTAL	174	221	395	8,937	3,530,227

TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:

Contributions Ranging From		To	Number	Total Contributions
0	-	99	823	38,011
100	-	499	1,303	323,570
500	-	999	584	420,310
1000	-	1999	621	909,365
2000	-	4999	693	2,243,020
5000	-	9999	322	2,216,217
10000	-	19999	74	972,327
20000	-	99999	5	122,566
		TOTAL	4,425	7,245,386

REGULAR RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	1	0	1	8,439	8,439
46 - 50	7	4	11	13,030	143,329
51 - 55	46	28	74	22,130	1,637,598
56 - 60	305	239	544	21,466	11,677,476
61 - 65	734	939	1,673	16,855	28,198,209
66 - 70	1,063	1,318	2,381	15,545	37,012,272
71 - 75	983	1,411	2,394	13,672	32,731,757
76 - 80	762	1,225	1,987	11,333	22,518,473
81 - 85	513	899	1,412	9,844	13,899,627
86 - 90	275	467	742	9,615	7,134,439
91 - 99	117	149	266	10,505	2,794,284
TOTAL	4,806	6,679	11,485	13,736	157,755,903

DISABILITY RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	0	1	1	7,165	7,165
46 - 50	7	19	26	9,242	240,301
51 - 55	22	36	58	8,300	481,407
56 - 60	27	57	84	8,953	752,047
61 - 65	2	2	4	5,827	23,307
TOTAL	58	115	173	8,695	1,504,227

SURVIVORS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 25	26	28	54	10,796	582,967
26 - 30	4	1	5	5,180	25,900
31 - 35	3	6	9	12,141	109,272
36 - 40	6	8	14	8,131	113,828
41 - 45	4	12	16	7,905	126,482
46 - 50	10	22	32	9,642	308,558
51 - 55	17	39	56	9,841	551,104
56 - 60	24	99	123	11,500	1,414,467
61 - 65	32	153	185	11,324	2,095,012
66 - 70	42	196	238	11,227	2,672,058
71 - 75	54	261	315	10,069	3,171,850
76 - 80	65	270	335	8,912	2,985,685
81 - 85	51	267	318	8,559	2,721,900
86 - 90	20	174	194	8,284	1,607,065
91 - 99	8	97	105	8,456	887,913
TOTAL	366	1,633	1,999	9,692	19,374,061

ACTIVE MEMBERS:

Attained Ages	Completed Years of Service											
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 20	8	4										12
21 - 25	75	44	21	4	2	4						150
26 - 30	120	93	59	48	36	44	1					401
31 - 35	156	110	87	51	51	115	52					622
36 - 40	162	120	82	77	73	208	119	34	1			876
41 - 45	147	138	110	66	75	261	180	84	22	2		1,085
46 - 50	137	121	104	92	88	270	267	185	90	25	1	1,380
51 - 55	157	138	128	124	86	400	413	314	199	95	6	2,060
56 - 60	164	170	154	139	118	474	458	422	263	45	22	2,429
61 - 65	109	112	114	91	120	341	237	173	127	86	49	1,559
66 - 70	58	58	62	42	46	170	108	103	68	61	46	822
71 & Over	26	28	37	26	28	98	74	65	50	37	60	529
Totals	1,319	1,136	958	760	723	2,385	1,909	1,380	820	351	184	11,925

AVERAGE ANNUAL SALARY OF ACTIVE MEMBERS:

Attained Ages	Completed Years of Service											
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Salary
0 - 20	25,315	27,101										25,910
21 - 25	22,607	23,190	25,859	33,218	26,669	28,897						23,738
26 - 30	22,103	22,818	25,329	24,173	26,418	25,559	35,954					23,792
31 - 35	21,520	22,330	23,356	26,232	21,806	25,373	31,384					23,867
36 - 40	21,061	22,214	23,042	22,815	25,129	24,768	28,917	32,277	45,588			24,308
41 - 45	21,702	23,199	24,568	23,620	23,571	24,328	28,237	29,863	34,955	35,963		25,071
46 - 50	21,717	21,427	23,732	24,999	23,162	23,936	26,841	27,437	32,634	38,247	73,225	25,395
51 - 55	21,983	22,402	23,211	24,781	25,052	25,249	25,975	27,376	29,321	36,880	54,901	26,132
56 - 60	22,187	23,264	24,947	24,352	24,112	25,072	25,963	27,118	28,411	27,190	30,167	25,625
61 - 65	20,803	23,578	23,488	25,410	22,739	24,659	25,781	27,224	27,738	29,158	28,907	25,210
66 - 70	20,070	20,060	20,966	21,907	20,652	23,036	23,512	25,520	26,106	26,370	31,113	23,597
71 & Over	20,599	20,577	21,161	19,544	21,324	20,147	24,814	23,872	24,804	26,611	25,978	22,960
Average	21,639	22,530	23,698	24,270	23,558	24,489	26,434	27,255	28,776	30,929	29,742	25,050

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Attained Ages	Years Until Retirement Eligibility 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 25												0
26 - 30											5	5
31 - 35										11		11
36 - 40									26			26
41 - 45								27				27
46 - 50							42					42
51 - 55						91						91
56 - 60	23	28	22	28	19							120
61 - 65	45											45
66 - 70	15											15
71 - 75	8											8
76 - 80	3											3
81 - 85	1											1
86 - 90	1											1
91 & Over												0
Totals	96	28	22	28	19	91	42	27	26	11	5	395

AVERAGE ANNUAL BENEFITS OF TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Attained Ages	Years Until Retirement Eligibility 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 25												0
26 - 30											2,663	2,663
31 - 35										6,010		6,010
36 - 40									7,358			7,358
41 - 45								8,849				8,849
46 - 50							7,910					7,910
51 - 55						10,356						10,356
56 - 60	8,677	11,156	8,855	9,557	10,396							9,766
61 - 65	8,894											8,894
66 - 70	7,941											7,941
71 - 75	4,326											4,326
76 - 80	4,579											4,579
81 - 85	199											199
86 - 90	6,227											6,227
91 & Over												0
Average	8,059	11,156	8,855	9,557	10,396	10,356	7,910	8,849	7,358	6,010	2,663	8,937

SERVICE RETIREES:

Attained Ages	Completed Years Since Retirement 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 50	2	2	6	1		1						12
51 - 55	20	10	10	9	4	16	3	1		1		74
56 - 60	91	65	56	46	45	140	50	40	9	1	1	544
61 - 65	188	236	192	145	141	426	196	107	27	8	7	1,673
66 - 70	108	128	164	203	180	807	479	235	49	23	5	2,381
71 - 75	44	53	62	80	69	654	814	445	116	38	19	2,394
76 - 80	19	31	21	41	31	216	536	695	298	69	30	1,987
81 - 85	9	8	9	10	13	95	174	428	499	123	44	1,412
86 - 90	1			1	3	18	30	74	246	283	86	742
91 & Over						3	3	11	28	82	139	266
Totals	482	533	520	536	486	2,376	2,285	2,036	1,272	628	331	11,485

AVERAGE ANNUAL BENEFITS PAYABLE TO SERVICE RETIREES:

Attained Ages	Completed Years Since Retirement 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 50	11,008	8,624	12,529	25,698		11,634						12,647
51 - 55	25,593	32,553	29,837	16,512	14,149	15,321	11,095	12,451		5,750		22,130
56 - 60	19,250	23,464	26,185	22,324	27,554	24,568	14,948	10,541	5,312	4,600	6,487	21,466
61 - 65	13,370	14,691	16,740	18,303	17,206	21,318	16,868	11,876	6,606	5,114	6,576	16,855
66 - 70	12,166	14,309	14,260	15,023	14,860	16,480	18,281	13,832	7,145	5,150	5,703	15,545
71 - 75	11,353	11,814	12,619	13,905	11,988	13,840	14,516	14,868	8,566	7,055	7,312	13,672
76 - 80	14,863	12,054	9,427	11,669	12,798	13,769	11,831	11,159	10,016	7,735	6,651	11,333
81 - 85	12,858	12,469	8,274	13,375	16,879	13,928	10,408	9,128	9,108	10,527	8,540	9,844
86 - 90	19,365			30,391	9,774	12,334	10,711	9,034	9,143	9,746	9,721	9,615
91 & Over						14,107	12,001	10,797	7,929	9,706	11,362	10,505
Average	14,585	15,508	16,245	16,156	16,194	16,705	14,516	11,798	9,097	9,268	9,700	13,736

DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement: 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 40												0
41 - 45			1									1
46 - 50	1	6	2	4	3	9	1					26
51 - 55	7	5	3	6	6	19	8	3	1			58
56 - 60	3	14	7	14	5	27	11	3				84
61 - 65						2	1	1				4
66 & Over												0
Totals	11	25	13	24	14	57	21	7	1	0	0	173

AVERAGE ANNUAL BENEFITS PAYABLE TO DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement: 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 40												0
41 - 45			7,165									7,165
46 - 50	6,749	8,516	9,744	10,344	9,241	9,812	5,560					9,242
51 - 55	8,646	8,735	10,682	9,532	8,442	8,576	6,766	5,333	4,247			8,300
56 - 60	10,163	8,840	9,446	10,269	10,557	9,154	6,819	4,322				8,953
61 - 65						8,447	4,524	1,889				5,827
66 & Over												0
Average	8,887	8,741	9,601	10,097	9,368	9,040	6,630	4,408	4,247	0	0	8,695

SURVIVING BENEFICIARIES OF FORMER MEMBERS:

Attained Ages	Completed Years Since Retirement											
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 20	9	5		5	7	5	2	1				34
21 - 25	1	2	2	2	2	1	4	6				20
26 - 30							1		4			5
31 - 35	1					1	3	1	2	1		9
36 - 40		2				4	2	3	1		2	14
41 - 45	1		1	2		2	3	1	1	2	3	16
46 - 50				2	2	6	7	5	4	4	2	32
51 - 55	4	1	2	2	4	6	10	12	10	2	3	56
56 - 60	2	4	2	4	5	29	28	26	10	9	4	123
61 - 65	3	2	6	5	10	46	39	38	22	12	2	185
66 - 70	2	1	4	4	6	40	53	61	34	25	8	238
71 - 75	3	2	3	2	3	40	82	98	56	15	11	315
76 - 80			2		4	20	42	97	99	44	27	335
81 - 85	1				1	10	24	48	107	81	46	318
86 - 90						2	4	16	42	69	61	194
91 & Over						3	1	3	5	24	69	105
Totals	27	19	22	28	44	215	305	416	397	288	238	1,999

AVERAGE ANNUAL BENEFITS PAYABLE TO SURVIVORS OF FORMER MEMBERS:

Attained Ages	Completed Years Since Retirement											
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 20	8,761	7,868		14,327	13,908	10,343	17,902	5,152				11,172
21 - 25	4,736	9,987	4,730	14,747	12,662	25,471	6,721	10,296				10,156
26 - 30							2,574		5,832			5,180
31 - 35	13,922					26,406	10,327	13,138	10,840	3,146		12,141
36 - 40		13,389				9,294	10,485	5,733	1,280		5,213	8,131
41 - 45	7,200		29,103	5,037		8,623	6,640	6,888	5,086	7,678	5,203	7,905
46 - 50				9,550	8,687	10,799	14,773	8,524	4,191	6,090	10,069	9,642
51 - 55	17,605	10,233	21,488	12,954	8,289	17,310	7,855	7,976	6,032	5,449	6,356	9,841
56 - 60	12,865	8,086	29,905	11,164	8,380	14,231	13,043	10,719	6,732	6,783	6,269	11,500
61 - 65	11,846	18,159	11,457	10,299	17,409	14,344	10,733	10,973	6,420	5,872	10,866	11,324
66 - 70	2,554	22,053	9,157	11,078	18,052	14,087	13,241	11,335	8,012	6,411	8,287	11,227
71 - 75	7,618	18,458	11,603	11,495	5,400	11,469	11,294	9,984	8,378	8,226	7,475	10,069
76 - 80			8,839		6,402	13,113	8,710	8,654	8,797	8,902	7,861	8,912
81 - 85	13,818				9,678	8,627	10,149	8,006	8,485	8,762	7,972	8,559
86 - 90						6,064	12,550	7,690	7,149	8,706	8,537	8,284
91 & Over						6,225	11,383	9,345	4,502	9,001	8,569	8,456
Average	10,303	11,787	13,600	11,417	12,477	13,027	11,153	9,574	8,010	8,288	8,200	9,692

EXHIBIT IX
YEAR-TO-YEAR COMPARISON

	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017
Number of Active Members	11,925	11,920	12,033	12,055
Number of Retirees & Survivors	13,657	13,648	13,482	13,354
DROP Participants	595	605	631	622
Number of Terminated Due Deferred Benefits	395	333	339	311
Number Terminated Due Refunds	4,425	4,328	4,475	4,268
Active Lives Payroll (excludes DROP participants)	$ 298,720,034	$ 289,730,586	$ 288,861,936	$ 284,075,888
Retiree Benefits in Payment	$ 178,634,191	$ 176,378,784	$ 171,928,419	$ 167,428,815
Market Value of Assets (Includes Side Funds)	$ 1,845,618,894	$ 1,940,389,574	$ 1,946,113,040	$ 1,922,705,998
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability	74.14%	74.39%	74.59%	74.16%
Actuarial Accrued Liability (EAN)	$ 2,649,075,730	$ 2,640,451,339	$ 2,614,250,388	$ 2,562,633,003
Actuarial Value of Assets (Net of Side Funds)	$ 1,963,950,923	$ 1,964,143,343	$ 1,949,906,654	$ 1,900,329,127
UAL (Funding Excess)	$ 685,124,807	$ 676,307,996	$ 664,343,734	$ 662,303,876
Experience Account	$ 5,413,514	$ 5,174,949	$ 4,911,217	$ 4,562,632
Amortization Conversion Account	$ 0	$ 0	$ 6,838,575	$ 11,106,470

	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018
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	28.5%	30.3%	28.4%	27.8%
Actual Employer Contribution as a Percentage of Projected Payroll	28.7%	29.4%	28.0%	27.6%

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

Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011
12,075	12,061	12,054	12,184	12,416	12,854
13,148	13,024	12,711	13,369	12,930	12,717
676	660	537	559	612	619
275	276	413	355	339	351
3,898	3,940	3,793	N/A	N/A	N/A
$ 284,835,111	$ 276,949,800	$ 274,347,650	$ 290,013,756	$ 277,191,001	$ 296,693,950
$ 159,448,329	$ 154,831,625	$ 146,084,220	$ 142,752,516	$ 134,573,580	$ 128,989,260
$ 1,767,810,247	$ 1,851,456,181	$ 1,857,367,056	$ 1,641,164,883	$ 1,497,109,136	$ 1,516,634,590
72.54%	70.71%	66.92%	62.10%	61.60%	59.88%
$ 2,522,157,498	$ 2,485,583,187	$ 2,438,251,413	$ 2,404,014,249	$ 2,278,472,127	$ 2,254,351,456
$ 1,829,595,670	$ 1,757,432,206	$ 1,631,618,702	$ 1,492,914,745	$ 1,403,463,883	$ 1,349,829,757
$ 692,561,828	$ 728,150,981	$ 806,632,711	$ 911,099,504	$ 875,008,244	$ 904,521,699
$ 633,076	$ 23,058,055	$ 20,787,326	$ 31,668,697	$ 11,641,275	$ 0
$ 15,719,788	$ 19,079,106	$ 19,640,033	$ 0	$ 0	$ 0

Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012
7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
27.9%	28.7%	32.0%	32.6%	31.6%	30.1%
27.3%	30.2%	33.0%	32.3%	30.8%	28.6%

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, 2020.

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. For all others, DROP accounts are placed in liquid asset money market investments approved by the Board of Trustees.

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: 7.0% (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.

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.

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.