LOUISIANA SCHOOL EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL VALUATION AS OF
JUNE 30, 2018

G. S. CURRAN & COMPANY, LTD.

Actuarial Services

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September 21, 2018

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, 2018. 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, 2019, and to recommend the net direct employer contribution rate for Fiscal 2020. 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. 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, 2018	June 30, 2017
Census Summary:	Active Members	12,033	12,055
	Retired Members and Survivors	13,482	13,354
	DROP Participants	631	622
	Terminated Due a Deferred Benefit	339	311
	Terminated Due a Refund	4,475	4,268
Payroll (excluding DROP accruals):		$ 288,861,936	$ 284,075,888
Benefits in Payment:		$ 171,928,421	$ 167,428,812
Present Value of Future Benefits		$ 2,861,792,613	$ 2,834,673,526
Actuarial Accrued Liability (EAN):		$ 2,614,250,388 †	$ 2,562,633,003 †
Unfunded Actuarial Accrued Liability:		$ 664,343,734	$ 662,303,876
Experience Account:		$ 4,911,217	$ 4,562,632
Amortization Conversion Account:		$ 6,838,575	$ 11,106,470
Net Valuation Assets:		$ 1,949,906,654 †	$ 1,900,329,127 †
Market Value of Assets (Includes side funds):		$ 1,946,113,040	$ 1,922,705,998
Ratio of Net Valuation Assets to Actuarial Accrued Liability:		74.59%	74.16%

	Fiscal 2018	Fiscal 2017
Market Rate of Return (Excluding Money Market DROP funds):	6.41%	14.14%
Actuarial Rate of Return (Excluding Money Market DROP funds):	7.64%	8.47%
Non-Money Market DROP Account Interest Credit Rate:	7.14%	7.97%

	Fiscal 2019	Fiscal 2018
Employers' Normal Cost (Mid-year):	$ 22,716,996	$ 25,214,102
Amortization Cost (Mid-year):	$ 58,007,423	$ 55,646,290
Projected Administrative Expenses:	$ 4,792,189	$ 4,853,555
Amortization Conversion Account Supplement:	$ (2,278,309)	$ (4,267,895)
Net Direct Employer Actuarially Required Contributions:	$ 83,238,299	$ 81,446,048
Projected Payroll:	$ 292,662,231	$ 292,667,381
Actuarially Required Net Direct Employer Contribution Rate:	28.4%	27.8%
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:	28.0%	27.6%

	Fiscal 2020	Fiscal 2019
Minimum Recommended Net Direct Employer Cont. Rate:	29.4%	28.0%

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

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 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 12,033 active contributing members in the system of whom 6,858 have vested retirement benefits; in addition, there are 631 participants in the Deferred Retirement Option Plan (DROP); 13,482 former members or their beneficiaries are receiving retirement benefits. An additional 4,814 terminated members have contributions remaining on deposit with the system; of this number 339 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 the Louisiana Legislative Auditor's office. As indicated in the system's financial statements, the net market value of system's assets was $1,946,113,040 as of June 30, 2018. Net investment income for Fiscal 2018 measured on a market value basis was $118,140,167. Contributions to the system for the fiscal year totaled $103,952,543; benefits and expenses amounted to $195,015,058.

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. 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." For funding purposes, the Actuarial Value of Assets excludes the Amortization Conversion Account.

The Amortization Conversion Account was initially funded from the residual balance in the Experience Account as of June 30, 2013. Payments from the account are made as an offset to employer contributions based on the provisions of Act 478 of the 2014 Regular Legislative Session each year through Fiscal 2019. Any balances in the account as of June 30, 2019 will be amortized as an experience gain. Once the remaining balance in the Amortization Conversion Account is amortized, no further exclusion from the Actuarial Value of Assets will be necessary.

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

A plan experience study was performed in 2018 to review the assumptions used in the actuarial valuation. This study was performed based on the actuarial data for the Fiscal 2012 through Fiscal 2017 valuation. These updated assumptions have been used in this actuarial valuation. The assumptions that were changed included demographic and economic assumptions. The changes in liability assumptions (excluding the reduction in the valuation interest rate) increased the actuarial accrued liability of the system by $18,660,648. When amortized over the next twenty years, this results in an additional amortization payment of $1,710,623 per year, or 0.58% of projected payroll.

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 will be 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 is no longer necessary. 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 next two years. Therefore, the Fiscal 2018 actuarial valuation was run at 7.0625%. The reduction in the valuation interest rate increased the actuarial accrued liability of the system by $13,496,993. When amortized over the next twenty years, this results in an additional amortization payment of $1,237,270 per year, or 0.42% of projected payroll.

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 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. 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 used in this report, the term “net valuation assets” refers to the actuarial value of assets reduced solely by the Amortization Conversion Account balance. 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.

All pension plans are subject to asset performance risk. Asset performance is comprised of the real rates of return earned on the portfolio of investments plus the underlying inflation rate. High levels of inflation or deflation can present the plan with problems by either reducing the purchasing power of plan benefits or impairing asset values in the trust. 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. 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 pension plans which require significant net cash flow above contributions to fund benefit payments, the risk of insufficient liquidity is another risk component which can create problems if it becomes necessary to sell securities under unfavorable market conditions in order to raise cash necessary to pay retirement benefits. Even for individual securities, insolvency and performance risk can subject a plan to stress if these investments comprise a significant portion of plan assets. Security insolvency or severe underperformance can result in steep increases in sponsor contributions where individual investments comprise more than a de minimis amount of the investment portfolio.

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. Final average compensation plans are vulnerable to unexpectedly large increases in salary for individual members near retirement. Conversely, in cases where plans have large unfunded liabilities, payroll contraction is a risk insofar as contributions which are typically reported as a percentage of payroll may increase as payrolls decline.

Liability risk also includes factors 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.

Recommended actuarial contributions are based on expectations related to asset and liability performance; all of the above mentioned factors can produce unexpected changes in the future cost structures of the plan. For this reason, future costs may differ significantly from current levels. 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, certain factors have the potential on their own accord to pose a significant risk to future cost levels and solvency.

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 net valuation assets to the entry age normal accrued liability based on the funding methodology used to fund the plan. The ratio is 74.59% as of June 30, 2018. 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. One additional risk measure is the sensitivity of the plan's cost structure to asset gains and losses. For this plan, 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 0.61% 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.

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 sensitive 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. One measure of risk related to plan maturity is the ratio of total benefit payments to active payroll. For Fiscal 2018 this ratio is 60%; ten years ago this ratio was 41%. One other area of risk is the risk that plan assumptions will need to be revised to conform to changing actual or expected plan experience. Such assumption revisions could relate to demographic or economic factors.

With regard to the economic assumptions, we have determined that a reduction in the valuation interest rate by 1% (without any change to other collateral factors) would increase the actuarially required employer contribution rate for fiscal 2019 by 8.7% of payroll. However, after accounting for the effect of the contribution shortfall, the recommended employer contribution rate for fiscal 2020 would increase by 10.6%.

There is also 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 assumption, completion of amortization payment and credit schedules, and changes in plan provisions or applicable law. Analysis of the effect of all these factors and additional risk metrics is beyond the scope of this report.

CHANGES IN PLAN PROVISIONS

The following legislative changes directly affecting the retirement system were enacted during the 2018 Regular Session of the Louisiana Legislature.

Act 45 provides that state and statewide retirement systems may invest in terror free investments outside of index fund vehicles to meet the requirements of R.S. 11:316.

Act 225 added language to comply with certain federal laws related to the Uniformed Services Employment and Reemployment Rights Act (USERRA) providing that each Board of Trustees shall promulgate rules to comply with USERRA.

Act 397 stipulates that state and statewide retirement systems may appoint an actuary or actuaries whose duties assigned by the Board shall relate only to the practice of actuarial science or ministerial duties that do not require the exercise of supervision or discretionary control over the administration or management of the system.

Act 399 stipulates that the Public Retirement Systems' Actuarial Committee is established as the public chair and vice chair shall rotate biennially between the speaker of the House of Representatives, or his designee, and the president of the Senate, or his designee, with terms beginning on the first of July. The committee shall elect any other officers as deemed advisable but no officer shall serve for more than four consecutive years.

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 †
2009	-16.94%	-7.08%
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%

† 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 2014 – 2018)	7.78%
10 year average	(Fiscal 2009 – 2018)	6.95%
15 year average	(Fiscal 2004 – 2018)	6.97%

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 2018, the fund earned $18,362,876 of dividends, interest and other recurring income. In addition, the Fund had net realized and unrealized capital gains on investments of $110,658,549. In addition, the Fund had investment expenses of $10,881,258.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 7.125% for Fiscal 2018. (7.0625% for fiscal 2019) DROP accounts that are credited with earnings based on the actuarial rate of return of the system should be credited with 7.14% (i.e. 7.64% 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 2018, the system experienced actuarial investment earnings of $9,415,089 above the actuarial assumed earnings rate of 7.125%. All of these funds were allocated to the oldest UAL debit base. An additional gain related to the attribution of earnings on the Amortization Conversion Account of $641,907 was amortized over 20 years. This resulted in a credit of $58,844, or 0.02% of projected payroll.

DEMOGRAPHICS AND LIABILITY EXPERIENCE

The average active contributing member is 52 years old with 9.6 years of service credit and an annual salary of $24,006. The system's active contributing membership experienced a decrease of 22 members during Fiscal 2018; over the last five years, the number of active contributing members decreased by 151. The number of DROP participants increased by 9 during Fiscal 2018.

The average service retiree is 73 years old with a monthly benefit of $1,113. The number of retirees and beneficiaries receiving benefits from the system increased by 128 during the fiscal year. Over the last five years, the number of retirees increased by 662 with annual benefits in payment increasing by $29,175,903.

Liability experience for the year was favorable. The total number of retirements was below projected levels. Salary increases were also below expected levels. Withdrawals and retiree deaths were above projected levels. These factors tend to reduce costs. Disabilities were near projected levels. DROP entries were above projected levels. This partially offset other gains. Net plan liability experience gains totaled $14,310,770. The interest adjusted amortization credit on this gain was $1,311,870, or 0.45% 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 2018 contributions totaled $4,655,410 less than required; the interest-adjusted amortization expense based on the contribution deficit for Fiscal 2019 is $1,099,160, or 0.38% of projected payroll. In addition, for Fiscal 2019 the net effect of the change in payroll on amortization costs was to increase such costs by 0.02% 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 2019 except for those items labeled Fiscal 2018.

	Dollars	Percentage of Payroll
Employer Normal Cost for Fiscal 2018	$ 25,214,102	8.62%
Cost of Demographic and Salary Changes	(194,618)	(0.07%)
Change in Assumptions	$ (2,302,488)	(0.79%)
Employer Normal Cost for Fiscal 2019	$ 22,716,996	7.76%

		Dollars	Percentage of Payroll
UAL Payments for Fiscal 2018	$	55,646,286	19.01%
Change due to reduction in valuation interest rate	$	(315,203)	(0.11%)
Change due to change in payroll		N/A	0.00%
Change due to elimination of Amortization	$	0	0.00%
Additional Amortization Expenses for Fiscal 2019:			
Change in Valuation Interest Rate Loss (Gain)	$	1,237,270	0.42%
Liability Assumption Loss (Gain)	$	1,710,623	0.58%
Asset Experience Loss (Gain)	$	(921,926)	(0.32%)
Priority Excess Allocation	$	863,082	0.29%
Liability Loss (Gain)	$	(1,311,870)	(0.45%)
Contribution Loss (Gain)	$	1,099,160	0.38%
Total Amortization Expense (Credit) for Fiscal 2019	$	58,007,423	19.82%
Amortization Conversion Account Supplement for Fiscal 2019	$	(2,278,309)	(0.78%)
Projected Adminstrative Expenses for Fiscal 2019	$	4,792,189	1.64%
Total Normal Cost & Amortization Payments	$	83,238,299	28.44%

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The employer's normal cost for Fiscal 2019, interest adjusted for mid-year payment is $22,716,996. The amortization payments on the system's unfunded actuarial accrued liability total $58,007,423. 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 2019 is determined based on the sum of employer normal cost, amortization payments on the unfunded actuarial accrued liability, and administrative expenses less a payment from the system's Amortization Conversion Account set at $2,278,309 for Fiscal 2019. As given in line 14 of Exhibit I, the total actuarially required employer contribution for Fiscal 2019 is $83,238,299, or 28.4% of projected payroll.

Since the actual employer contribution rate for Fiscal 2019 is 28.0% of payroll, there will be a contribution deficit of 0.4% of payroll. This deficit will increase the actuarially required contribution recommended for Fiscal 2020. In order to determine a minimum recommended net direct employer contribution rate for Fiscal 2020, the Employer Normal Cost and Amortization Payments were estimated for Fiscal 2020 and adjusted for the impact of the estimated contribution shortfall for Fiscal 2019 and the scheduled payment from the Amortization Conversion Account. As given in line 25 of Exhibit I, the estimated actuarially required net direct employer contribution for Fiscal 2020 is $87,169,893, or 29.4% of projected payroll.

The primary factor leading to the 1.0% increase in the fiscal 2020 recommended employer contribution when compared to the actuarially required employer cost for fiscal 2019 was the reduction in the available funds from the Amortization Conversion Account (0.6% of projected payroll). In addition, there is an expected increase of 0.3% of projected payroll in amortization costs for the year due to the expiration of the 2014 Asset Experience Gain amortization credit base. Also, a 0.1% of projected payroll increase is related to the expected contribution shortfall for the year.

COST OF LIVING ADJUSTMENTS

During Fiscal 2018, the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 2.9%. 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(2) 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

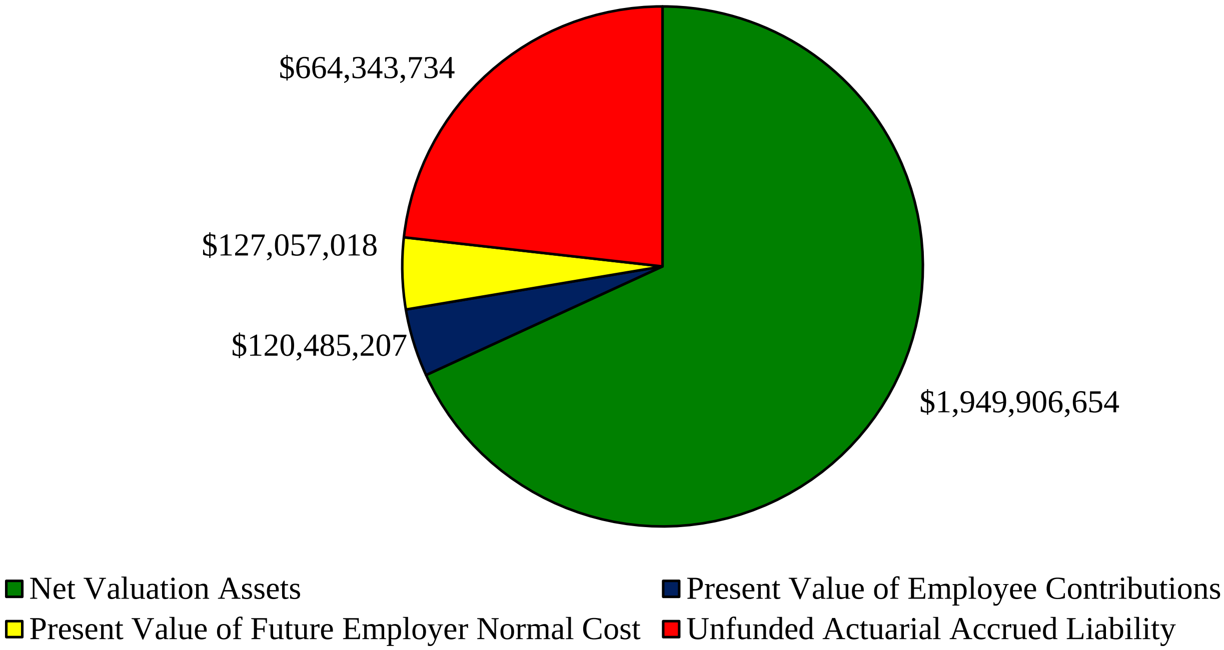
In addition, if the fund is less than 85% funded and the legislature granted a permanent benefit increase in the preceding fiscal year, no increase may be granted.

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, 2018. 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.

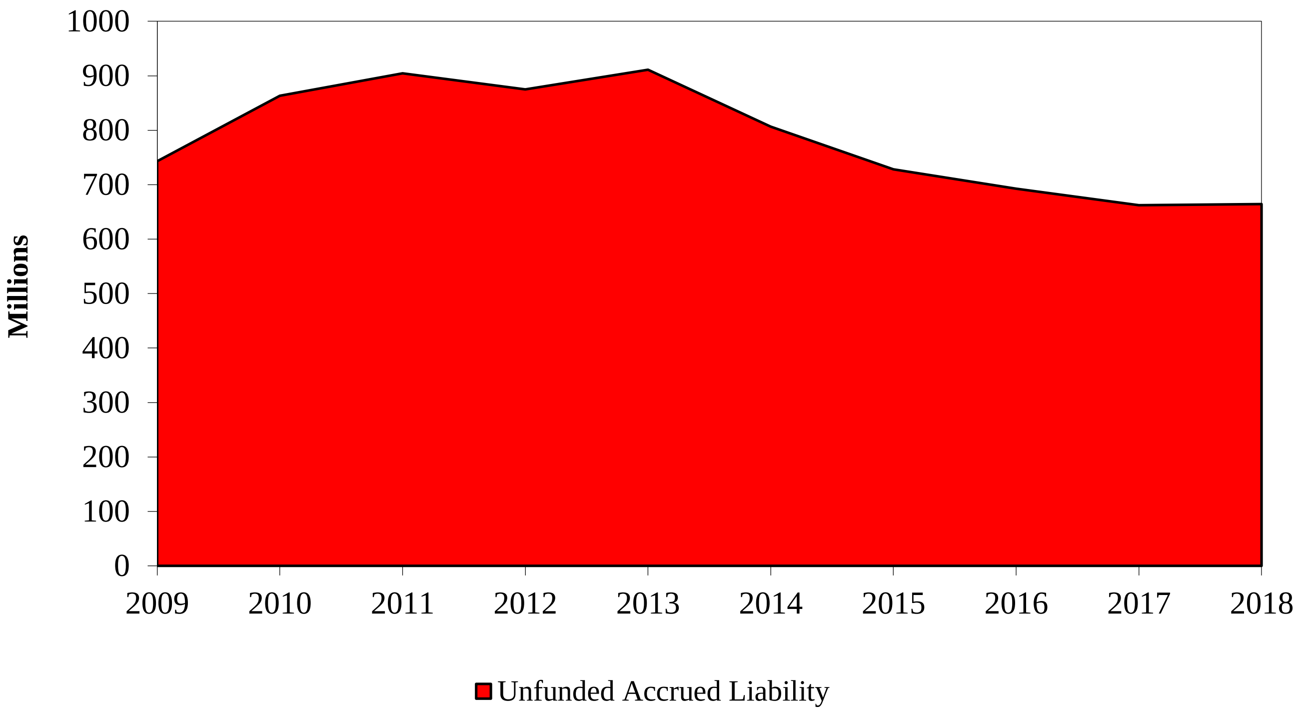
Although the system did not grant a PBI in the preceding fiscal year, the system did not reach the maximum reserve permitted in the Experience Account and thus does not qualify to request that the Louisiana Legislature grant a PBI under the provisions of R. S. 11:1145.1.

Components of Present Value of Future Benefits

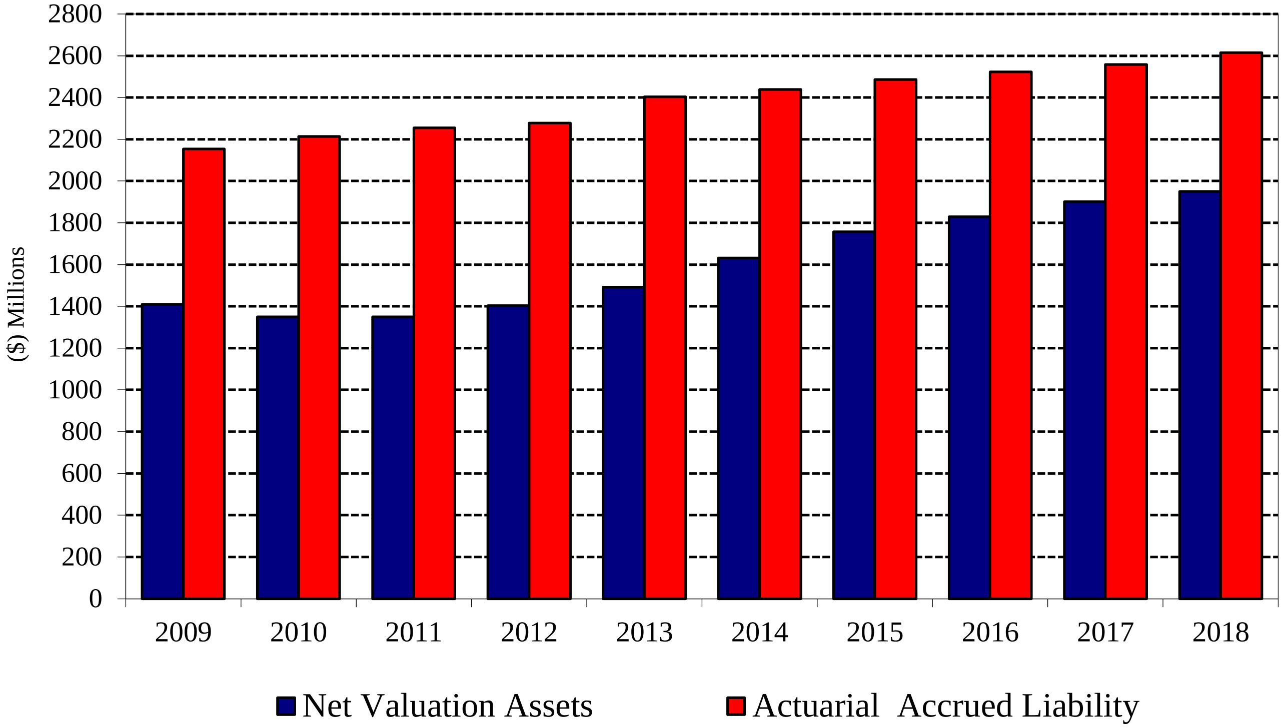
June 30, 2018



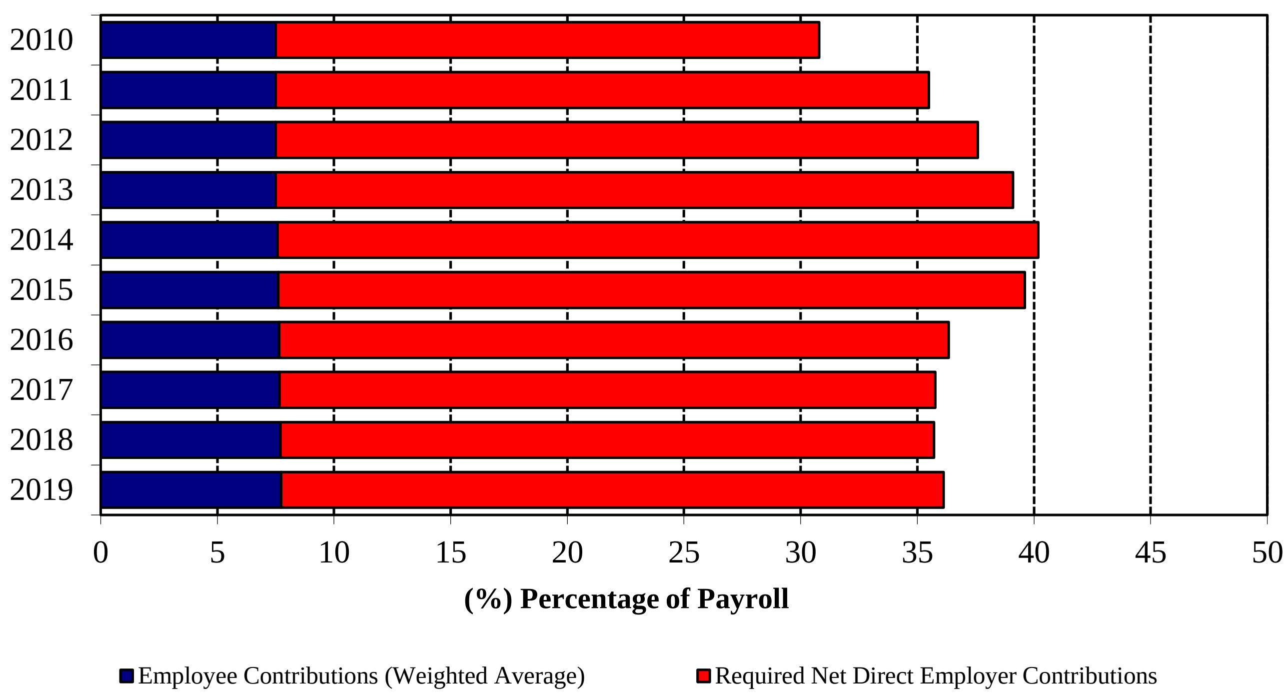
Unfunded Accrued Liability



Net Valuation Assets vs. Actuarial Accrued Liability

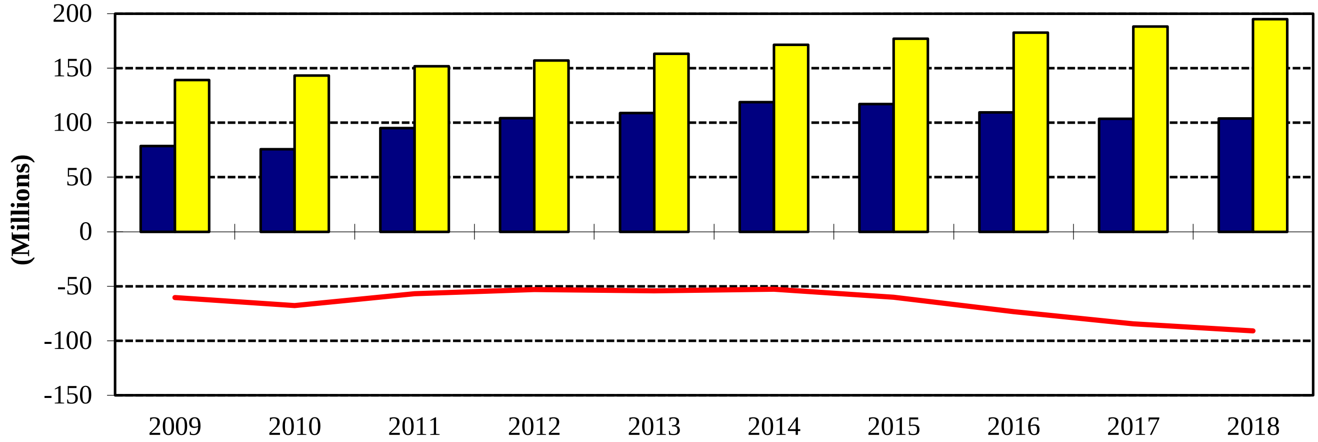


Components of Actuarial Funding



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

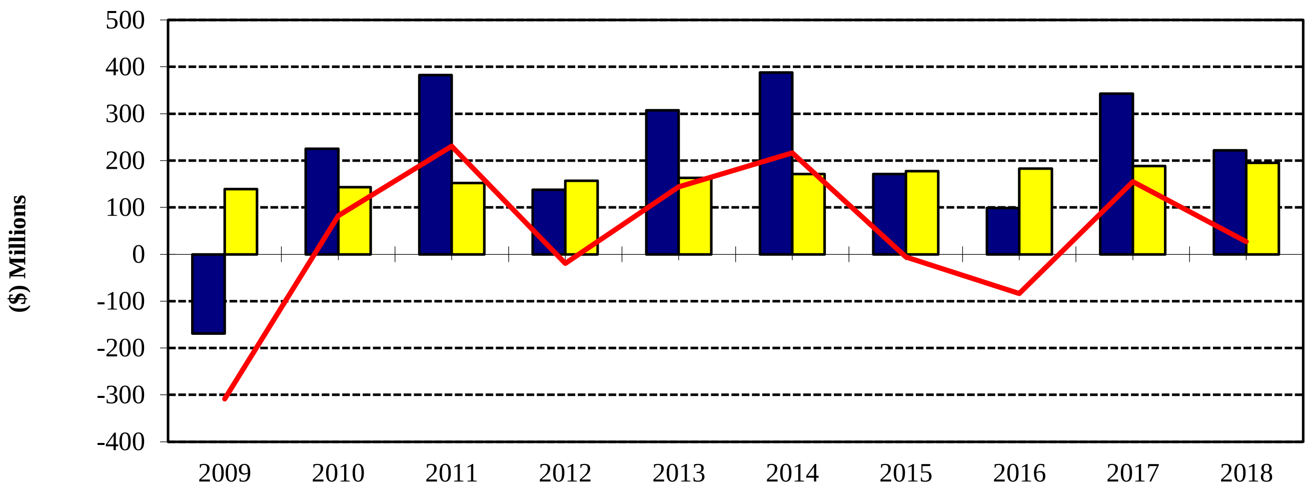
Net Non-Investment Income



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Non-Investment Income ($Mil)	78.7	75.6	95.1	104.3	109.0	118.9	117.1	109.4	103.6	104.0
Benefits and Expenses ($Mil)	139.1	143.3	151.9	157.2	163.3	171.6	177.1	182.7	188.1	195.0
Net Non-Investment Income ($Mil)	-60.4	-67.7	-56.8	-52.9	-54.3	-52.7	-60.0	-73.3	-84.5	-91.0

Total Income vs. Expenses

(Based on Market Value of Assets)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Income ($Mil)	-169.5	225.5	382.7	137.7	307.3	387.8	171.2	99.0	343.0	222.1
Benefits and Expenses ($Mil)	139.1	143.3	151.9	157.2	163.3	171.6	177.1	182.7	188.1	195.0
Net Change in MVA ($Mil)	-308.6	82.2	230.8	-19.5	144.0	216.2	-5.9	-83.7	154.9	27.1

Historical Asset Yields

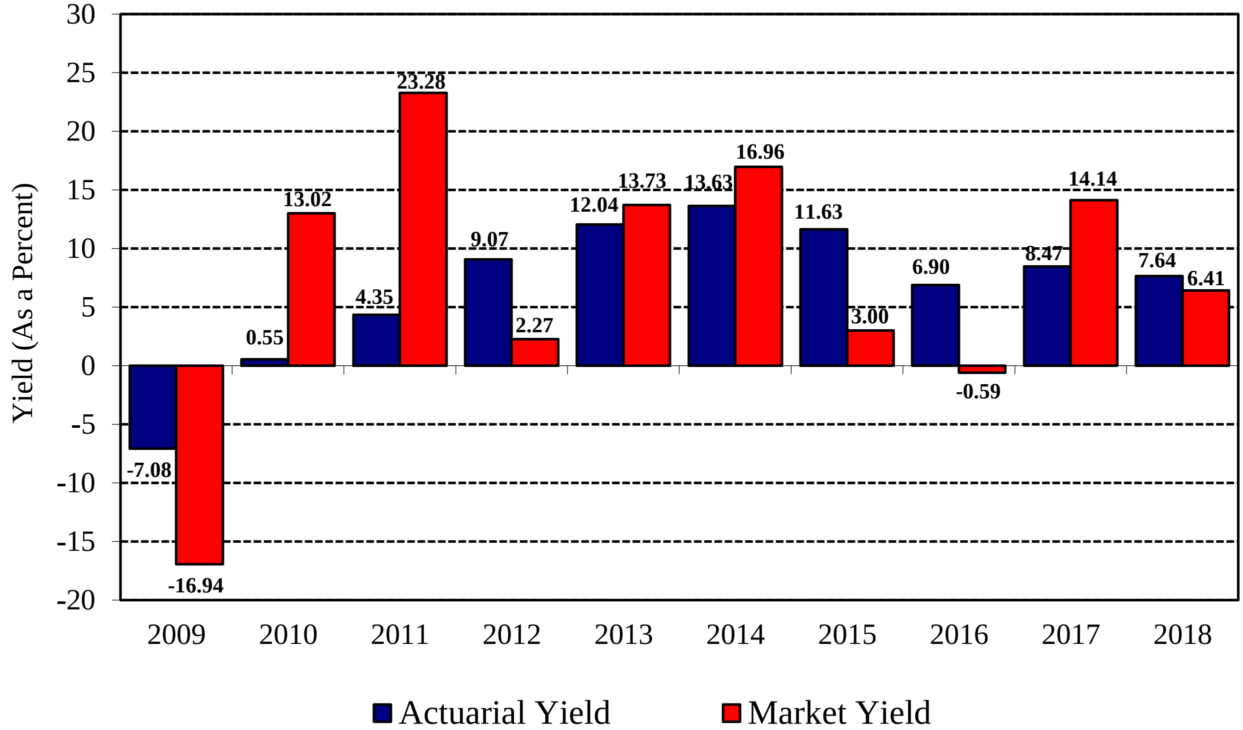


EXHIBIT I
ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1.	Normal Cost of Retirement Benefits	$	29,249,152
2.	Normal Cost of Death Benefits	$	1,614,475
3.	Normal Cost of Disability Benefits	$	3,299,620
4.	Normal Cost of Deferred Retirement Benefits	$	4,280,150
5.	Normal Cost of Contribution Refunds	$	4,989,181
6.	TOTAL Normal Cost as of July 1, 2018 (1 + 2 + 3 + 4 + 5)	$	43,432,578
7.	TOTAL Normal Cost Interest Adjusted for Midyear Payment	$	44,940,127
8.	Adjustment to Total Normal Cost for Employee Portion	$	22,223,131
9.	TOTAL Employer Normal Cost Adjusted for Midyear Payment (7 – 8)	$	22,716,996
10.	Amortization Payments on Unfunded Accrued Liability at Midyear	$	58,007,423
11.	Projected Administrative Expenses for Fiscal 2019	$	4,792,189
12.	TOTAL Normal Cost & Amortization Payments (9 + 10 + 11)	$	85,516,608
13.	Amortization Conversion Account Supplement for Fiscal 2019	$	(2,278,309)
14.	Net Direct Actuarially Required Employer Contribution for Fiscal 2019 (12 + 13)	$	83,238,299
15.	Projected Payroll for Contributing Members (Fiscal 2019)	$	292,662,231
16.	Net Direct Actuarially Required Employer Contribution as a Percentage of Projected Payroll for Fiscal 2019 (14 ÷ 15)		28.4%
17.	Actual Net Direct Employer Contribution Rate for Fiscal 2019		28.0%
18.	Projected Fiscal 2019 Contribution Loss (Gain) as a % of Payroll (16 – 17)		0.4%
19.	Projected Fiscal 2019 Employer Contribution Shortfall (Surplus) (15 × 18)	$	1,170,649
20.	Estimated Amortization of Fiscal 2019 Employer Contribution Shortfall (Surplus) Based on Midyear Payment in Fiscal 2020	$	285,988
21.	Estimated Fiscal 2020 Employer Normal Cost Adjusted for Midyear Payment	$	23,015,863
22.	Estimated Fiscal 2020 Amortization Payments based on Fiscal 2019 UAL	$	59,585,361
23.	Estimated Fiscal 2018 Administrative Expenses	$	4,911,994
24.	Amortization Conversion Account Supplement for Fiscal 2020	$	(629,313)
25.	Estimated Actuarially Required Employer Contributions for Fiscal 2020 (20 + 21 + 22 + 23 + 24)	$	87,169,893
26.	Projected Payroll for Contributing Members (Fiscal 2020)	$	296,512,523
27.	Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2020 (25 ÷ 26, Rounded to nearest 0.10%)		29.4%

EXHIBIT II
PRESENT VALUE OF FUTURE BENEFITS

PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits	$ 1,017,846,060	
Survivor Benefits	25,084,980	
Disability Benefits	44,434,809	
Vested Termination Benefits	90,880,183	
Refunds of Contributions	22,543,838	
TOTAL Present Value of Future Benefits for Active Members		$ 1,200,789,870

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement	$ 22,046,260	
Terminated Members with Reciprocals Due Benefits at Retirement	229,133	
Terminated Members Due a Refund	7,236,203	
TOTAL Present Value of Future Benefits for Terminated Members		$ 29,511,596

PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees	$ 1,409,903,812	
Disability Retirees	20,715,475	
Survivors & Widows	144,921,632	
Liability Attributable to the Experience Account	25,249,913	
DROP Account Balances Payable to Retirees	29,514,273	
IBRP Account Balance	1,186,042	
TOTAL Present Value of Future Benefits for Retirees & Survivors		$ 1,631,491,147

TOTAL Present Value of Future Benefits	$ 2,861,792,613

EXHIBIT III – SCHEDULE A
MARKET VALUE OF ASSETS

CURRENT ASSETS:				
Cash in Banks	$	51,848,421		
Contributions Receivable		15,419,849		
Accrued interest and dividends		2,458,603		
Investments Receivable		967,131		
Other Current Assets		1,748,441		
TOTAL CURRENT ASSETS			$	72,442,445
Property Plant & Equipment			$	3,238,751
INVESTMENTS:				
Cash Equivalents	$	25,384,396		
Equities		1,106,668,997		
Fixed Income		493,094,320		
Real Estate		166,802,172		
Alternative Investments		89,799,167		
Collateral for Securities Lending		109,782,579		
Other Investments		318,358		
TOTAL INVESTMENTS			$	1,991,849,989
DEFERRED OUTFLOWS OF RESOURCES			$	217,499
TOTAL ASSETS			$	2,067,748,684
CURRENT LIABILITIES:				
Accounts Payable	$	547,508		
Benefits Payable		2,391,070		
Refunds Payable		579,429		
Investments Payable		874,580		
Securities Lending Obligations		109,782,579		
Other Post-Employment Benefits		7,086,024		
TOTAL CURRENT LIABILITIES			$	121,261,190
DEFERRED INFLOWS OF RESOURCES			$	374,454
MARKET VALUE OF ASSETS			$	1,946,113,040

EXHIBIT III – SCHEDULE B
ACTUARIAL VALUE OF ASSETS

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

Fiscal year 2018	$ (13,290,517)
Fiscal year 2017	118,660,351
Fiscal year 2016	(139,840,706)
Fiscal year 2015	(76,298,518)
Fiscal year 2014	153,829,757
Total for five years	$ 43,060,367

Deferral of excess (shortfall) of invested income:

Fiscal year 2018 (80%)	$ (10,632,414)
Fiscal year 2017 (60%)	71,196,211
Fiscal year 2016 (40%)	(55,936,282)
Fiscal year 2015 (20%)	(15,259,704)
Fiscal year 2014 (0%)	0
Total deferred for year	$ (10,632,189)

Market value of plan net assets, end of year	$ 1,946,113,040
Preliminary actuarial value of plan assets, end of year	$ 1,956,745,229
Actuarial value of assets corridor	
85% of market value, end of year	$ 1,654,196,084
115% of market value, end of year	$ 2,238,029,996
Actuarial Value of Plan Assets, end of year	$ 1,956,745,229
Amortization Conversion Account Balance, end of year	$ 6,838,575
Net Valuation Assets, end of year	$ 1,949,906,654

† 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	$	120,485,207
Employer Normal Contributions to the Pension Accumulation Fund		127,057,018
Employer Amortization Payments to the Pension Accumulation Fund		664,343,734
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS	$	911,885,959

EXHIBIT V – SCHEDULE A
ACTUARIAL ACCRUED LIABILITIES

LIABILITY FOR ACTIVE MEMBERS				
Accrued Liability for Retirement Benefits	$	849,191,647		
Accrued Liability for Survivor Benefits		16,065,599		
Accrued Liability for Disability Benefits		26,064,936		
Accrued Liability for Vested Termination Benefits		66,741,565		
Accrued Liability for Refunds of Contributions		(4,816,102)		
TOTAL Actuarial Accrued Liability for Active Members			$	953,247,645
LIABILITY FOR TERMINATED MEMBERS			$	29,511,596
LIABILITY FOR RETIREES AND SURVIVORS			$	1,631,491,147
TOTAL ACTUARIAL ACCRUED LIABILITY			$	2,614,250,388
NET VALUATION ASSETS			$	1,949,906,654
UNFUNDED ACTUARIAL ACCRUED LIABILITY			$	664,343,734

EXHIBIT V – SCHEDULE B
CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY

PRIOR YEAR UNFUNDED ACCRUED LIABILITY			$	662,303,876
Interest on Unfunded Accrued Liability	$	47,189,151		
Liability Assumption Loss		32,157,641		
Contribution Shortfall with Accrued Interest		4,655,410		
Gains Allocated to the Experience Account		0		
TOTAL Additions to UAL			$	84,002,202
Gross Asset Experience Gain		10,056,996		
Liability Experience Gain		14,310,770		
Interest Adjusted Amortization Payments		57,594,578		
TOTAL Reductions to UAL			$	81,962,344
NET Change in Unfunded Accrued Liability			$	2,039,858
CURRENT YEAR UNFUNDED ACCRUED LIABILITY			$	664,343,734

EXHIBIT V – SCHEDULE C
AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
June 30, 2018

FISCAL YEAR	DESCRIPTION	AMORT. PERIOD	INITIAL BALANCE	YEARS REMAINING	REMAINING BALANCE	AMORT. PAYMENTS
2014	Cumulative Bases	30	$904,498,330	26	† $803,780,564	$68,543,363
2014	Asset Experience Gain	5	(7,500,000)	1	(1,713,212)	(1,713,212)
	(Allocated by Act 399 of 2014)					
2014	Liability Experience Gain	30	(81,635,532)	26	(77,875,826)	(6,186,384)
2014	Contribution Loss	5	823,919	1	188,207	188,207
2015	Change in Data/Model Gain	30	(42,073,134)	27	(40,661,694)	(3,187,187)
2015	Liability Assumption Loss	30	53,611,596	27	51,813,072	4,061,266
2015	Asset Experience Gain	30	(32,513,380)	27	(31,422,645)	(2,463,002)
2015	Liability Experience Gain	30	(29,473,558)	27	(28,484,800)	(2,232,725)
2015	Contribution Gain	5	(3,883,540)	2	(1,714,345)	(886,409)
2016	Asset Experience Loss	30	7,620,492	28	7,457,118	577,343
2016	Liability Experience Gain	30	(366,508)	28	(358,651)	(27,767)
2016	Contribution Gain	5	(4,417,900)	3	(2,830,663)	(1,008,627)
2016	Liability Assumption Gain	30	(29,907,056)	28	(29,265,883)	(2,265,814)
2016	Asset Assumption Loss	30	211,528	28	206,993	16,026
2017	Asset Experience Gain	20	(24,634,307)	19	(24,041,558)	(2,182,844)
2017	Gains Allocated to Experience Account	10	3,875,934	9	3,597,055	517,051
2017	Priority Excess Allocation	20	15,932,442	19	15,549,077	1,411,772
2017	Liability Experience Gain	20	(19,955,111)	19	(19,474,952)	(1,768,221)
2017	Contribution Loss	5	3,079,929	4	2,545,692	702,973
2017	Liability Assumption Loss	20	20,126,949	19	19,642,655	1,783,447
2017	Asset Assumption Gain	20	(4,562,632)	19	(4,452,847)	(404,294)
2018	Asset Experience Gain	20	(10,056,996)	20	(10,056,996)	(890,999)
2018	Gains Allocated to Experience Account	10	0	10	0	0
2018	Priority Excess Allocation	20	9,415,089	20	9,415,089	834,129
2018	Liability Experience Gain	20	(14,310,770)	20	(14,310,770)	(1,267,862)
2018	Contribution Loss	5	4,655,410	5	4,655,410	1,062,288
2018	Liability Assumption Loss	20	32,157,641	20	32,157,641	2,849,004

TOTAL Unfunded Actuarial Accrued Liability $ 664,343,734

TOTAL Fiscal 2019 Amortization Payments at Beginning of Year $ 56,061,522

TOTAL Fiscal 2019 Amortization Payments Adjusted to Mid-Year $ 58,007,423

† 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

EXHIBIT VI
ANALYSIS OF CHANGE IN ASSETS

Net Valuation Assets (June 30, 2017)			$ 1,900,329,127
Prior Period Adjustment			(3,670,610)
Adjusted Net Valuation Assets (June 30, 2017)			$ 1,896,658,517
INCOME:			
Member Contributions	$	22,140,933	
Employer Contributions		80,258,243	
Irregular Contributions		1,553,367	
Total Contributions			$ 103,952,543
Net Appreciation of Investments	$	110,658,549	
Interest & Dividends		13,467,156	
Alternative Investment Income		4,526,102	
Miscellaneous Income		369,618	
Investment Expense		(10,881,258)	
Net Investment Income			$ 118,140,167
TOTAL Income			$ 222,092,710
EXPENSES:			
Retirement Benefits	$	185,260,310	
Refunds of Contributions		4,843,590	
Transfers to Other Systems		536,882	
Administrative Expenses		4,374,276	
TOTAL Expenses			$ 195,015,058
Net Market Value Income for Fiscal 2018 (Income – Expenses)			$ 27,077,652
Unadjusted Fund Balance as of June 30, 2018 (Fund Balance Previous Year + Net Income)			$ 1,923,736,169
Income Adjustment for Actuarial Smoothing			$ 21,902,590
Change in Side Fund Balances			$ 4,267,895
Net Valuation Assets: (June 30, 2018)			$ 1,949,906,654

EXHIBIT VII – SCHEDULE A
EXPERIENCE ACCOUNT

1.	Experience Account Balance – June 30, 2017	$	4,562,632
2.	Investment Gain, if any	$	9,415,089
3.	Priority Excess Interest Allocated to Reduce UAL	$	16,310,113
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	$	348,585
7.	Total Preliminary Credits to be Allocated to Experience Account (5 + 6)	$	348,585
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, 2018	$	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)	$	348,585
12.	Limit to the Experience Account Balance – June 30, 2018 (Present Value of PBI at CPI-U for Fiscal 2018 or 2.00%)	$	25,249,913
13.	Experience Account Balance – June 30, 2018 (Lesser of 1+11 & 12 - at least 0)	$	4,911,217

EXHIBIT VII – SCHEDULE B
AMORTIZATION CONVERSION ACCOUNT

Amortization Conversion Account Balance as of June 30, 2017 .... $ 11,106,470

Fiscal Year Supplemental Contributions to be funded by the Amortization Conversion Account:

2014-15	$	560,927
2015-16		3,359,318
2016-17		4,613,318
2017-18		4,267,895
2018-19		2,278,309
Total	$	15,079,767

Residual balance as of June 30, 2019 to be amortized as a gain $ 4,560,266

Amortization Conversion Account Balance as of June 30, 2018 .... $ 6,838,575

EXHIBIT VIII
CENSUS DATA

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2017	12,055	4,579	622	13,354	30,610
Additions to Census					
Initial membership	1,280	129			1,409
Omitted in error last year		1			1
Death of another member			(2)	133	131
Adjustment for multiple records				6	6
Change in Status during Year					
Actives terminating service	(487)	487			
Actives who retired	(384)			384	
Actives entering DROP	(218)	(35)	253		
Term. members rehired	60	(60)			
Term. members who retire		(29)		29	
Retirees who are rehired	2			(2)	
Refunded who are rehired	18	2			20
DROP participants retiring			(131)	131	
DROP returned to work	104		(104)		
Omitted in error last year					
Eliminated from Census					
Refund of contributions	(357)	(239)			(596)
Deaths	(40)	(21)	(7)	(550)	(618)
Included in error last year				(1)	(1)
Adjustment for multiple records				(2)	(2)
Number of members as of June 30, 2018	12,033	4,814	631	13,482	30,960

ACTIVES CENSUS BY AGE:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 - 20	14	6	20	18,345	366,904
21 - 25	85	61	146	22,330	3,260,158
26 - 30	194	184	378	22,572	8,532,289
31 - 35	236	338	574	22,944	13,169,846
36 - 40	297	545	842	23,072	19,427,031
41 - 45	365	714	1,079	23,723	25,597,011
46 - 50	568	1,001	1,569	24,130	37,860,618
51 - 55	918	1,461	2,379	25,118	59,754,567
56 - 60	1,018	1,427	2,445	24,674	60,328,260
61 - 65	702	699	1,401	23,496	32,918,320
66 - 70	396	349	745	23,190	17,276,686
71 - 75	164	153	317	23,301	7,386,572
76 - 80	62	53	115	22,125	2,544,359
81 - 85	12	7	19	19,051	361,966
86 - 90	2	2	4	19,337	77,349
TOTAL	5,033	7,000	12,033	24,006	288,861,936

THE ACTIVE CENSUS INCLUDES 6,858 ACTIVES WITH VESTED BENEFITS, INCLUDING 535 ACTIVE FORMER DROP PARTICIPANTS. THE 631 CURRENT DROP PARTICIPANTS ARE EXCLUDED.

DROP PARTICIPANTS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
51 - 55	13	11	24	28,980	695,518
56 - 60	85	110	195	20,646	4,026,067
61 - 65	136	220	356	14,267	5,078,902
66 - 70	16	19	35	6,566	229,809
71 - 75	8	6	14	5,550	77,703
76 - 80	3	4	7	5,704	39,931
TOTAL	261	370	631	16,082	10,147,930

REGULAR RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	3	0	3	14,601	43,802
46 - 50	12	5	17	12,543	213,234
51 - 55	76	40	116	20,559	2,384,842
56 - 60	357	255	612	21,301	13,036,287
61 - 65	759	944	1,703	16,759	28,540,205
66 - 70	1,046	1,353	2,399	15,007	36,002,952
71 - 75	902	1,400	2,302	12,791	29,445,577
76 - 80	754	1,220	1,974	10,358	20,446,921
81 - 85	510	804	1,314	9,680	12,719,704
86 - 90	275	414	689	9,438	6,502,686
91 - 99	120	136	256	10,807	2,766,489
TOTAL	4,814	6,571	11,385	13,360	152,102,699

DISABILITY RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	1	2	3	8,368	25,105
46 - 50	8	18	26	8,974	233,311
51 - 55	24	44	68	9,730	661,669
56 - 60	34	77	111	8,455	938,492
71 - 75	1	0	1	4,368	4,368
TOTAL	68	141	209	8,914	1,862,945

SURVIVORS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 25	25	21	46	10,969	504,588
26 - 30	4	4	8	10,230	81,841
31 - 35	3	1	4	8,789	35,157
36 - 40	4	11	15	7,712	115,679
41 - 45	5	13	18	6,667	120,006
46 - 50	12	23	35	10,784	377,440
51 - 55	12	52	64	10,850	694,392
56 - 60	24	96	120	11,281	1,353,697
61 - 65	25	135	160	11,660	1,865,619
66 - 70	42	205	247	10,595	2,617,062
71 - 75	48	239	287	9,469	2,717,541
76 - 80	61	248	309	8,974	2,772,956
81 - 85	43	254	297	7,945	2,359,626
86 - 90	21	168	189	8,428	1,592,921
91 - 99	4	85	89	8,475	754,252
TOTAL	333	1,555	1,888	9,514	17,962,777

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	20											20
21 - 25	75	25	28	10	7	1						146
26 - 30	115	95	59	38	26	41	4					378
31 - 35	113	95	80	67	45	119	52	3				574
36 - 40	139	92	110	73	86	181	133	28				842
41 - 45	137	103	99	106	63	247	203	92	27	2		1,079
46 - 50	161	137	99	105	89	339	294	204	104	36	1	1,569
51 - 55	184	189	116	141	119	435	484	344	255	107	5	2,379
56 - 60	186	138	136	139	121	470	492	386	308	47	22	2,445
61 - 65	101	92	114	92	94	314	215	144	100	88	47	1,401
66 - 70	62	40	44	40	29	144	110	86	88	57	45	745
71 & Over	21	18	22	27	26	68	73	47	49	35	69	455
Totals	1,314	1,024	907	838	705	2,359	2,060	1,334	931	372	189	12,033

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	18,345											18,345
21 - 25	22,256	22,176	23,744	21,121	20,905	14,166						22,330
26 - 30	21,249	21,983	21,952	22,675	25,610	25,670	31,284					22,572
31 - 35	20,038	21,904	22,649	22,996	22,662	25,135	25,860	38,826				22,944
36 - 40	21,301	21,123	21,386	21,709	22,235	23,230	27,225	30,282				23,072
41 - 45	20,732	21,077	21,858	22,983	21,883	23,482	24,660	29,089	36,997	62,875		23,723
46 - 50	20,498	22,531	21,136	21,894	21,837	23,572	25,019	27,064	29,013	34,441	13,904	24,130
51 - 55	21,877	21,634	22,386	23,267	24,706	24,248	25,486	25,615	28,761	33,259	47,071	25,118
56 - 60	21,508	22,908	21,141	22,452	23,461	23,975	25,041	25,777	28,291	29,914	30,628	24,674
61 - 65	20,258	21,174	20,903	21,351	21,857	23,731	24,272	25,240	25,182	26,945	28,266	23,496
66 - 70	19,438	20,089	20,254	19,858	19,620	20,805	23,231	25,762	26,968	28,006	28,379	23,190
71 & Over	18,646	23,436	18,324	21,246	18,341	21,242	23,206	23,894	24,774	24,048	25,887	22,792
Average	20,939	21,825	21,532	22,276	22,618	23,638	25,037	26,159	28,109	29,945	28,121	24,006

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

	Years Until Retirement Eligibility											
Attained Ages	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 25												0
26 - 30											2	2
31 - 35										8		8
36 - 40									21			21
41 - 45								22				22
46 - 50							53					53
51 - 55		2				85						87
56 - 60	16	33	19	19	11							98
61 - 65	27											27
66 - 70	10											10
71 - 75	8											8
76 - 80	2											2
81 - 85	1											1
86 & Over												0
Totals	64	35	19	19	11	85	53	22	21	8	2	339

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

	Years Until Retirement Eligibility											
Attained Ages	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 25												0
26 - 30											4,327	4,327
31 - 35										6,483		6,483
36 - 40									8,559			8,559
41 - 45								8,309				8,309
46 - 50							9,334					9,334
51 - 55		16,479				9,923						10,074
56 - 60	11,858	9,265	9,549	11,151	10,588							10,258
61 - 65	7,704											7,704
66 - 70	5,924											5,924
71 - 75	4,586											4,586
76 - 80	3,869											3,869
81 - 85	1,115											1,115
86 & Over												0
Average	7,852	9,677	9,549	11,151	10,588	9,923	9,334	8,309	8,559	6,483	4,327	9,180

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	9	2	1	1	2	4				1		20
51 - 55	19	20	18	13	8	23	10	3	2			116
56 - 60	97	73	54	59	45	131	108	35	7	1	2	612
61 - 65	225	197	183	165	112	423	280	87	21	6	4	1,703
66 - 70	105	148	153	177	185	783	609	153	52	26	8	2,399
71 - 75	47	63	46	53	74	555	962	356	94	42	10	2,302
76 - 80	15	29	26	29	29	205	593	713	252	59	24	1,974
81 - 85	4	3	9	9	11	65	137	443	456	133	44	1,314
86 - 90		1		4		13	35	84	239	260	53	689
91 & Over						1	5	8	25	85	132	256
Totals	521	536	490	510	466	2,203	2,739	1,882	1,148	613	277	11,385

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	14,442	23,934	7,753	15,247	10,071	7,575				5,750		12,852
51 - 55	30,423	17,461	24,527	24,138	22,233	17,430	8,756	8,929	4,601			20,559
56 - 60	24,167	23,331	26,419	25,483	27,988	22,238	14,167	8,461	5,514	6,674	7,382	21,301
61 - 65	14,825	15,958	15,765	18,418	17,936	20,570	16,239	8,141	5,333	5,711	6,427	16,759
66 - 70	12,624	13,649	14,409	15,405	15,875	14,789	17,862	11,701	6,178	6,566	6,109	15,007
71 - 75	13,139	13,222	11,256	12,538	14,189	13,219	13,619	11,737	8,646	6,570	5,800	12,791
76 - 80	7,167	12,328	11,908	14,605	14,869	12,294	10,318	9,861	10,082	7,777	6,164	10,358
81 - 85	8,314	19,964	15,411	12,619	10,923	12,639	10,021	8,929	9,413	10,510	9,413	9,680
86 - 90		30,391		13,375		10,171	11,754	8,042	9,009	9,597	10,401	9,438
91 & Over						5,015	12,929	8,981	10,295	10,309	11,298	10,807
Average	16,260	15,942	16,187	17,359	17,177	15,634	13,914	9,954	9,179	9,334	9,935	13,360

DISABILITY RETIREES:

Attained Ages	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
	Completed Years Since Retirement											
0 - 40												0
41 - 45	1	1				1						3
46 - 50	2	3	4	3	4	9	1					26
51 - 55	3	11	8	7	6	22	8	3				68
56 - 60	11	17	11	11	10	39	11	1				111
61 - 65												0
66 - 70												0
71 - 75								1				1
76 & Over												0
Totals	17	32	23	21	20	71	20	5	0	0	0	209

AVERAGE ANNUAL BENEFITS PAYABLE TO DISABILITY RETIREES:

Attained Ages	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
	Completed Years Since Retirement											
0 - 40												0
41 - 45	7,165	12,380				5,560						8,368
46 - 50	9,744	9,665	8,793	8,728	11,017	7,377	13,007					8,973
51 - 55	7,630	14,181	10,025	11,803	11,918	8,464	5,689	5,573				9,730
56 - 60	9,004	9,646	9,660	8,868	8,708	8,268	5,127	5,729				8,455
61 - 65												0
66 - 70												0
71 - 75								4,368				4,368
76 & Over												0
Average	8,740	11,292	9,636	9,827	10,133	8,178	5,746	5,363	0	0	0	8,914

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	2	7	8	2	3	1	7	1				31
21 - 25			3			7	3	2				15
26 - 30						1	3	1	2	1		8
31 - 35						1	1	2				4
36 - 40				2		3	3	2		2	3	15
41 - 45		2	1		2	2	7		2	1	1	18
46 - 50	1	3	2			6	8	6	5	3	1	35
51 - 55	1	2	5		3	10	17	11	8	4	3	64
56 - 60	2	4	6	5	6	23	39	15	15	3	2	120
61 - 65	1	4	4	11	1	38	37	36	17	9	2	160
66 - 70	2	2	5	5	3	45	74	57	34	14	6	247
71 - 75	2	1	3	1	4	36	78	83	51	16	12	287
76 - 80			1	1	2	18	45	98	81	39	24	309
81 - 85			1		2	5	19	75	84	74	37	297
86 - 90						1	5	12	44	68	59	189
91 & Over						1	1	5	4	21	57	89
Totals	11	25	39	27	26	198	347	406	347	255	207	1,888

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	4,730	14,447	12,568	19,180	4,452	7,518	8,863	13,135				11,147
21 - 25			7,597			13,404	9,075	7,598				10,603
26 - 30						26,406	10,327	2,400	9,454	3,146		10,230
31 - 35						7,571	13,138	7,224				8,789
36 - 40				13,119		10,215	5,799	4,084		9,258	4,905	7,712
41 - 45		5,037	3,943		7,397	6,272	9,103		3,385	4,435	3,725	6,667
46 - 50	27,402	11,473	12,296			14,610	12,191	6,810	6,712	9,853	1,856	10,784
51 - 55	38,817	11,584	6,864		30,305	14,795	10,892	7,153	6,507	6,377	5,936	10,850
56 - 60	16,467	11,671	12,257	12,813	8,323	14,301	12,819	8,904	5,656	7,049	9,050	11,281
61 - 65	7,394	15,844	23,384	12,480	38,476	14,355	12,514	8,432	7,804	6,250	12,285	11,660
66 - 70	12,980	10,673	11,345	15,235	10,947	12,985	12,417	8,923	7,270	8,112	5,247	10,595
71 - 75	8,839	10,931	7,149	22,154	9,768	10,851	10,008	9,184	8,912	7,520	8,158	9,469
76 - 80			4,886	9,734	37,808	8,708	9,345	8,129	9,383	8,922	8,367	8,974
81 - 85			9,678		12,412	10,367	7,843	7,142	8,332	8,113	7,794	7,945
86 - 90						9,002	12,693	5,847	8,669	8,948	7,803	8,428
91 & Over						4,356	11,383	12,090	6,471	8,663	8,250	8,475
Average	14,513	12,445	11,436	13,852	14,609	12,553	10,963	8,236	8,351	8,358	7,874	9,514

EXHIBIT IX
YEAR-TO-YEAR COMPARISON

	Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015
Number of Active Members	12,033	12,055	12,075	12,061
Number of Retirees & Survivors	13,482	13,354	13,148	13,024
DROP Participants	631	622	676	660
Number of Terminated Due Deferred Benefits	339	311	275	276
Number Terminated Due Refunds	4,475	4,268	3,898	3,940
Active Lives Payroll (excludes DROP participants)	$ 288,861,936	$ 284,075,888	$ 284,835,111	$ 276,949,800
Retiree Benefits in Payment	$ 171,928,421	$ 167,428,815	$ 159,448,329	$ 154,831,625
Market Value of Assets (Includes Side Funds)	$ 1,946,113,040	$ 1,922,705,998	$ 1,767,810,247	$ 1,851,456,181
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability	74.59%	74.16%	72.54%	70.71%
Actuarial Accrued Liability (EAN) †	$ 2,614,250,388	$ 2,562,633,003	$ 2,522,157,498	$ 2,485,583,187
Net Valuation Assets †	$ 1,949,906,654	$ 1,900,329,127	$ 1,829,595,670	$ 1,757,432,206
UAL (Funding Excess)	$ 664,343,734	$ 662,303,876	$ 692,561,828	$ 728,150,981
Experience Account	$ 4,911,217	$ 4,562,632	$ 633,076	$ 23,058,055
Amortization Conversion Account	$ 6,838,575	$ 11,106,470	$ 15,719,788	$ 19,079,106

	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016
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	28.4%	27.8%	27.9%	28.7%
Actual Employer Contribution as a Percentage of Projected Payroll	28.0%	27.6%	27.3%	30.2%

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

Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009
12,054	12,184	12,416	12,854	13,166	13,265
12,711	13,369	12,930	12,717	12,450	12,290
537	559	612	619	599	508
413	355	339	351	355	361
3,793	N/A	N/A	N/A	N/A	N/A
$ 274,347,650	$ 290,013,756	$ 277,191,001	$ 296,693,950	$ 306,332,902	$ 315,400,539
$ 146,084,220	$ 142,752,516	$ 134,573,580	$ 128,989,260	$ 123,992,280	$ 120,719,868
$ 1,857,367,056	$ 1,641,164,883	$ 1,497,109,136	$ 1,516,634,590	$ 1,285,852,191	$ 1,203,687,757
66.92%	62.10%	61.60%	59.88%	61.00%	65.49%
$ 2,438,251,413	$ 2,404,014,249	$ 2,278,472,127	$ 2,254,351,456	$ 2,213,362,198	$ 2,153,359,512
$ 1,631,618,702	$ 1,492,914,745	$ 1,403,463,883	$ 1,349,829,757	$ 1,350,072,547	$ 1,410,315,974
$ 806,632,711	$ 911,099,504	$ 875,008,244	$ 904,521,699	$ 863,289,651	$ 743,043,538
$ 20,787,326	$ 31,668,697	$ 11,641,275	$ 0	$ 0	$ 0
$ 19,640,033	$ 0	$ 0	$ 0	$ 0	$ 0

Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010
7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
8.00%	8.00%	8.00%	8.00%	8.00%	N/A
32.0%	32.6%	31.6%	30.1%	28.0%	23.3%
33.0%	32.3%	30.8%	28.6%	24.3%	17.6%

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, 2018.

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:	7.0625% (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 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 /1.25% 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. The table of these rates is included later in the report.

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 2010 U. S. Census:

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

PRIOR YEAR ASSUMPTIONS

VALUATION INTEREST RATE: 7.125% (Net of investment expenses)

ACTIVE MEMBER MORTALITY: RP 2000 Combined Healthy Sex Distinct Tables

ANNUITANT AND BENEFICIARY MORTALITY: RP 2000 Combined Healthy Sex Distinct Tables

DISABLED LIVES MORTALITY: RP-2000 Disabled Lives Mortality Tables for Males and Females

ANNUAL SALARY INCREASE RATE: The gross rates including inflation of 2.625% and merit increases are as follows:

Years of Service	Salary Growth Rate
1-2	5.375%
3-18	4.075%
19-26	3.875%
27-30	3.375%
Above 30	3.075%

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 3% percent of the accrued benefit.

MARRIAGE STATISTICS: 80% 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 are listed below.

Member's Age	% With Children	Number of Children	Average Age
25	62%	1.66	6
30	74%	1.94	8
35	82%	2.06	10
40	81%	1.98	12
45	66%	1.75	13
50	40%	1.48	14
55	19%	1.35	15
60	6%	1.35	15
65	2%	1.35	15

ACTUARIAL TABLES AND RATES

Age	Male Mortality Rates	Female Mortality Rates	Retirement Rates for those hired prior to 7/1/2010	Retirement Rates for those hired after 6/30/2010 and before 7/1/2015	Retirement Rates for those hired after 6/30/2015	DROP Rates for those hired prior to 7/1/2010	DROP Rates for those hired after 6/30/2010 and before 7/1/2015	DROP Rates for those hired after 6/30/2015	Disability Rates	Termination Rates
18	0.000316	0.000188	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.15000
19	0.000331	0.000190	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.15000
20	0.000345	0.000191	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.15000
21	0.000357	0.000192	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.15000
22	0.000366	0.000194	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.15000
23	0.000373	0.000197	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.13000
24	0.000376	0.000201	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.13000
25	0.000376	0.000207	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.13000
26	0.000378	0.000214	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10000
27	0.000382	0.000223	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10000
28	0.000393	0.000235	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10000
29	0.000412	0.000248	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10000
30	0.000444	0.000264	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10000
31	0.000499	0.000307	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10000
32	0.000562	0.000350	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10000
33	0.000631	0.000394	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.08000
34	0.000702	0.000435	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.08000
35	0.000773	0.000475	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00100	0.07000
36	0.000841	0.000514	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00100	0.07000
37	0.000904	0.000554	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00100	0.07000
38	0.000964	0.000598	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00100	0.06500
39	0.001021	0.000648	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00100	0.06500
40	0.001079	0.000706	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00200	0.06500
41	0.001142	0.000774	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00200	0.05500
42	0.001215	0.000852	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00200	0.05500
43	0.001299	0.000937	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00300	0.05500
44	0.001397	0.001029	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00300	0.05500
45	0.001508	0.001124	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00300	0.04500
46	0.001616	0.001223	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00300	0.04500
47	0.001734	0.001326	0.80000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00400	0.04500
48	0.001860	0.001434	0.70000	0.00000	0.00000	0.35000	0.00000	0.00000	0.00400	0.04500
49	0.001995	0.001550	0.55000	0.00000	0.00000	0.35000	0.00000	0.00000	0.00500	0.04000
50	0.002138	0.001676	0.55000	0.00000	0.00000	0.35000	0.00000	0.00000	0.00500	0.04000
51	0.002449	0.001852	0.55000	0.00000	0.00000	0.30000	0.00000	0.00000	0.00600	0.04000
52	0.002667	0.002018	0.55000	0.00000	0.00000	0.30000	0.00000	0.00000	0.00600	0.04000
53	0.002916	0.002207	0.55000	0.00000	0.00000	0.20000	0.00000	0.00000	0.00600	0.04000
54	0.003196	0.002424	0.37000	0.00000	0.00000	0.20000	0.00000	0.00000	0.00600	0.04000
55	0.003624	0.002717	0.37000	0.00000	0.00000	0.50000	0.00000	0.00000	0.00700	0.04000
56	0.004200	0.003090	0.37000	0.00000	0.00000	0.15000	0.00000	0.00000	0.00700	0.04000
57	0.004693	0.003478	0.37000	0.00000	0.00000	0.15000	0.00000	0.00000	0.00600	0.04000
58	0.005273	0.003923	0.45000	0.00000	0.00000	0.15000	0.00000	0.00000	0.00600	0.04000
59	0.005945	0.004441	0.30000	0.00000	0.00000	0.15000	0.00000	0.00000	0.00300	0.04000
60	0.006747	0.005055	0.30000	0.48000	0.00000	0.45000	0.45000	0.00000	0.00300	0.04000
61	0.007676	0.005814	0.25000	0.25000	0.00000	0.10000	0.10000	0.00000	0.00300	0.04000
62	0.008757	0.006657	0.25000	0.25000	0.48000	0.05000	0.05000	0.45000	0.00300	0.04000
63	0.010012	0.007648	0.25000	0.25000	0.25000	0.05000	0.05000	0.10000	0.00300	0.04000
64	0.011280	0.008619	0.25000	0.25000	0.25000	0.05000	0.05000	0.05000	0.00300	0.04000
65	0.012737	0.009706	0.25000	0.25000	0.25000	0.05000	0.05000	0.05000	0.00300	0.04000
66	0.014409	0.010954	0.25000	0.25000	0.25000	0.05000	0.05000	0.05000	0.00300	0.04000
67	0.016075	0.012163	0.25000	0.25000	0.25000	0.05000	0.05000	0.05000	0.00300	0.04000
68	0.017871	0.013445	0.25000	0.25000	0.25000	0.05000	0.05000	0.05000	0.00300	0.04000
69	0.019802	0.014860	0.25000	0.25000	0.25000	0.05000	0.05000	0.05000	0.00300	0.04000
70	0.022206	0.016742	0.25000	0.25000	0.25000	0.05000	0.05000	0.05000	0.00300	0.04000
71	0.024570	0.018579	0.25000	0.25000	0.25000	0.00000	0.00000	0.00000	0.00300	0.04000
72	0.027281	0.020665	0.25000	0.25000	0.25000	0.00000	0.00000	0.00000	0.00300	0.04000
73	0.030387	0.022970	0.25000	0.25000	0.25000	0.00000	0.00000	0.00000	0.00300	0.04000
74	0.033900	0.025458	0.99000	0.99000	0.99000	0.00000	0.00000	0.00000	0.00300	0.04000
75	0.037834	0.028106	0.99000	0.99000	0.99000	0.00000	0.00000	0.00000	0.00300	0.04000

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.

NOTES