LOUISIANA STATE POLICE RETIREMENT SYSTEM

ACTUARIAL VALUATION AS OF
JUNE 30, 2020

G. S. CURRAN & COMPANY, LTD.

Actuarial Services

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September 17, 2020

Board of Trustees
Louisiana State Police Retirement System
9224 Jefferson Highway
Baton Rouge, Louisiana 70809

Ladies and Gentlemen:

We are pleased to present our report on the actuarial valuation of the Louisiana State Police Retirement System for the fiscal year ending June 30, 2020. Our report is based on the actuarial assumptions specified and relies on the data supplied by the system's administrators and accountants. This report was prepared at the request of the Board of Trustees of Louisiana State Police Retirement System. The primary purposes of the report are to determine the actuarially required contribution for the retirement system for the fiscal year ending June 30, 2021, and to recommend the net direct employer contribution rate for Fiscal 2022. This report does not contain the information necessary for accounting disclosures as required by Governmental Accounting Standards Board (GASB) Statements 67 and 68; that information is included in a separate report. This report was prepared exclusively for Louisiana State Police 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 STATE POLICE RETIREMENT SYSTEM

Valuation Date:		June 30, 2020	June 30, 2019
Census Summary:	Active Members	1,029	1,033
	Retired Members and Survivors	1,268	1,239
	Terminated Due a Deferred Benefit	38	44
	Terminated Due a Refund	179	170
Payroll:		$ 80,281,571	$ 79,742,159
Benefits in Payment:		$ 59,283,228	$ 54,960,399
Present Value of Future Benefits		$ 1,441,370,283	$ 1,389,414,153
Actuarial Accrued Liability (EAN):		$ 1,254,441,437	$ 1,203,479,513
Unfunded Actuarial Accrued Liability:		$ 324,114,494	$ 310,622,407
Experience Account:		$ 2,195,198	$ 2,079,574
Actuarial Value of Assets:		$ 930,326,943	$ 892,857,106
Market Value of Assets (Includes Experience Account):		$ 891,750,736	$ 893,350,033
Ratio of AVA to Actuarial Accrued Liability:		74.16%	74.19%

	Fiscal 2020	Fiscal 2019
Market Rate of Return (Excluding Money Market DROP funds):	1.15%	4.12%
Actuarial Rate of Return (Excluding Money Market DROP funds):	5.56%	6.26%
Non-Money Market DROP Account Interest Credit Rate:	5.06%	5.76%

	Fiscal 2021	Fiscal 2020
Employers' Normal Cost (Mid-year):	$ 16,796,513	$ 16,868,719
Amortization Cost (Mid-year):	$ 27,241,193	$ 25,672,855
Projected Administrative Expenses:	$ 930,656	$ 812,341
Insurance Premium Taxes	$ 1,500,000	$ 1,500,000
Net Direct Employer Actuarially Required Contributions:	$ 43,468,362	$ 41,853,915
Projected Payroll:	$ 80,098,373	$ 79,936,406
Actuarially Required Net Direct Employer Contribution Rate:	54.3%	52.4%
Actual Employee Contribution Rate:		
Employees whose first state service occurred before January 1, 2011:	8.5%	8.5%
Employees whose first state service occurred on or after January 1, 2011:	9.5%	9.5%
Actual Net Direct Employer Contribution Rate:	52.4%	49.1%

	Fiscal 2022	Fiscal 2021
Minimum Recommended Net Direct Employer Cont. Rate:	58.8%	52.4%

GENERAL COMMENTS

The values and calculations in this report were determined by applying statistical analysis and projections to system data and the assumptions listed. There is sometimes a tendency for readers to either dismiss results as mere "guesses" or alternatively to ascribe a greater degree of accuracy to the results than is warranted. In fact, neither of these assessments is valid. Actuarial calculations by their very nature involve estimations. As such, it is likely that eventual results will differ from those presented. The degree to which such differences evolve will depend on several factors including the completeness and accuracy of the data utilized, the degree to which assumptions approximate future experience, and the extent to which the mathematical model accurately describes the plan's design and future outcomes.

Data quality varies from system to system and year to year. The data inputs involve both asset information and census information of plan participants. In both cases, the actuary must rely on third parties; nevertheless, steps are taken to reduce the probability and degree of errors. The development of assumptions is primarily the task of the actuary; however, information and advice from plan administrators, staff, and other professionals may be factored into the formation of assumptions. The process of setting assumptions is based primarily on analysis of past trends, but modification of historical experience is often required when the actuary has reason to believe that future circumstances may vary significantly from the past. Setting assumptions includes but is not limited to collecting past plan experience and studying general population demographics and economic factors from the past. The actuary will also consider current and future macro-economic and financial expectations as well as factors that are likely to impact the particular group under consideration. Hence, assumptions will also reflect the actuary's judgment with regard to future changes in plan population and decrements in view of the particular factors which impact participants. Thus, the process of setting assumptions is not mere "guess work" but rather a process of mathematical analysis of past experience and of those factors likely to impact the future.

One area where the actuary is limited in his ability to develop accurate estimates is the projection of future investment earnings. The difficulties here are significant. First, the future is rarely like the past, and the data points available to develop stochastic trials are far fewer than the number required for statistical significance. In this area, some guess work is inevitable. However, there are tools available to lay a foundation for making estimates with an expectation of reliability. Although past data is limited, that which is available is likely to provide some insight into the future. This data consists of general economic and financial values such as past rates of inflation, rates of return variance, and correlations of returns among various asset classes along with the actual asset experience of the plan. In addition, the actuary can review the current asset market environment as well as economic forecasts from governmental and investment research groups to form a reasonable opinion with regard to probable future investment experience for the plan.

All of the above efforts would be in vain if the assumption process was static, and the plan would have to deal with the consequences of actual experience differing from assumptions after forty or fifty years of compounded errors. However, actuarial funding methods for pension plans all allow for periodic corrections of assumptions to conform with reality as it unfolds. This process of repeated correction of estimates produces results which although imperfect are nevertheless a reasonable approach to determine the contribution levels which will provide for the future benefits of plan participants.

COMMENTS ON DATA

For the valuation, the system's administration furnished a census derived from the system's master data processing file indicating each active covered employee's sex, date of birth, service credit, annual salary, and accumulated contributions. Information on retirees detailing dates of birth of retirees and beneficiaries, sex, as well as option categories and benefit amounts, was provided in like manner. In addition, data was supplied on former employees who are vested or who have contributions remaining on deposit. As illustrated in Exhibit VIII, there are 1,029 active contributing members in the system of whom 717 have vested retirement benefits; 1,268 former members or their beneficiaries are receiving retirement benefits. An additional 217 terminated members have contributions remaining on deposit with the system; of this number 38 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 firm of Heinz & Macaluso. As indicated in the system's financial statements, the net market value of system's assets was $891,750,736 as of June 30, 2020. Net investment income for Fiscal 2020 measured on a market value basis was $10,220,611. Contributions to the system for the fiscal year totaled $53,776,843; benefits and expenses amounted to $65,596,751.

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. Amortization bases for actuarial asset and liability gains or losses (except as noted below) or changes in assumptions were generally amortized over 30 years prior to Fiscal 2018. Since the funded ratio of the plan (based on the actuarial value of assets) exceeded 70% in Fiscal 2017, such amortization periods for new amortization bases beginning with the Fiscal 2018 valuation are set to twenty years as specified in the statutes. All contribution shortfalls and excesses are amortized as a level dollar amount over 5 years. Since the passage of Act 95 of 2016, in each valuation, the first $5,000,000 of any asset gain (adjusted pro-rata for increases in the Actuarial Value of Assets) has been used to immediately reduce the system's oldest outstanding positive amortization base (without re-amortization prior to fiscal 2020). The statutes state that after the system's funded percentage reaches 80%, the remaining balance of the bases that have been reduced by such gains will be re-amortized over the remainder of the amortization period originally established for each base. R.S. 11:102.4 further states that beginning with Fiscal 2020 and every fifth year thereafter, the remaining liability of such bases net of all payments made since the last re-amortization will be re-amortized with annual level-dollar payments over the remainder of the amortization period originally established. Therefore, the amortization of loss bases that have been previously reduced due to Act 95 of 2016 were re-amortized through the completion of the original amortization period. Details related to the reductions in the oldest positive amortization bases due to the application of the priority allocations are shown in Exhibit V-D. The 1995, 1997, 1999 and 2001 Experience Loss bases have been affected. Over the past few years, the 1995, 1997, and 1999 Experience Loss bases have been fully liquidated years earlier than originally planned due to the application of the priority allocations as well as continued payments on fully liquidated bases. The re-amortization provision effective in Fiscal 2020 resulted in no future payments for these loss bases. In addition, the July 1, 2019 payments on fully liquidated bases provided a small offset to the 2001 Experience Loss in Fiscal 2020. With the re-amortization provision, this resulted in a small reduction in the amortization payment.

In each year, fifty percent of the asset gains which exceed the adjusted $5,000,000 threshold (or Priority Excess Allocation limit) are used to fund the system's Experience Account which may be allocated to future permanent benefit increases (commonly referred to as cost of living adjustments), subject to certain limitations. Following the June 30, 2015 valuation, all allocations to the Experience Account have been amortized as a loss with level payments over ten years.

In addition to such deposits to the Experience Account, 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 adjustments (or permanent benefit increases) as otherwise authorized by law. Any funds credited to the Experience Account reduce those allocated to the Investment Gain/Loss Experience base. The funding methodology for the plan includes the system's "Experience Account" in the Actuarial Value of Assets.

The Priority Excess Allocation limit has been set at the following levels since its creation:

Fiscal 2015 -	$5,000,000
Fiscal 2016 -	$5,497,148
Fiscal 2017 -	$6,056,800
Fiscal 2018 -	$6,633,747
Fiscal 2019 -	$6,980,899
Fiscal 2020 -	$7,273,861

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 is 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 actuarial value of assets for funding purposes.

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. Beginning with the Fiscal 2018 actuarial valuation, the assumptions used in the actuarial valuation were set based upon that study. There were no changes in assumptions within the Fiscal 2020 valuation.

RISK FACTORS

Defined benefit pension plans are subject to a number of risks. These can be related either to plan assets or liabilities. In order to pay benefits, the plan must have sufficient assets. Several factors can lead to asset levels which are below those required to pay promised benefits. The first risk in this regard is the failure to contribute adequate funds to the plan. In some ways, this is the greatest risk, since other risks can usually be addressed by adequate actuarial funding.

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 position 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 items such as data errors. Significant errors in plan data can distort or disguise plan liabilities. When data corrections are made, the plan may experience unexpected increases or decreases in liabilities. Even natural disasters and dislocations in the economy or other unforeseen events can present risks to the plan. These events can affect member payroll and plan demographics, both of which impact costs.

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 actuarial value of assets to the entry age normal accrued liability based on the funding methodology used to fund the plan. The ratio is 74.16% as of June 30, 2020. This value gives some indication of the financial strength of the plan; however, it does not guarantee the ability of the fund to pay benefits in the future or indicate that in the future, contributions are likely to be less than or greater than current contributions. In addition, the ratio cannot be used in isolation to compare the relative strength of different retirement systems. However, the trend of this ratio over time can give some insight into the financial health of the plan. Even in this regard, caution is warranted since market fluctuations in asset values and changes in plan assumptions can distort underlying trends in this value. 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 1.06% 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 other measure of risk related to plan maturity is the ratio of total benefit payments to active payroll. For Fiscal 2020 this ratio is 74%; ten years ago this ratio was 58%. 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 2021 by 21.2% of payroll. However, after accounting for the effect of the contribution shortfall, the recommended employer contribution rate for Fiscal 2022 would increase by 25.8%.

There is a risk that future actuarial measurements may differ significantly from current measurements presented in this report due to factors such as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, 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

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

ASSET EXPERIENCE

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

	Market Value †	Actuarial Value †
2011	22.19%	2.57%
2012	0.53%	3.17%
2013	13.92%	16.77%
2014	17.93%	12.48%
2015	3.00%	10.66%
2016	-1.63%	6.23%
2017	14.62%	8.23%
2018	9.40%	8.22%
2019	4.12%	6.26%
2020	1.15%	5.56%

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

Geometric Average Market Rates of Return

5 year average	(Fiscal 2016 – 2020)	5.37%
10 year average	(Fiscal 2011 – 2020)	8.24%
15 year average	(Fiscal 2006 – 2020)	5.88%
20 year average	(Fiscal 2001 – 2020)	5.49%
25 year average	(Fiscal 1996 – 2020)	6.83%
30 year average	(Fiscal 1991 – 2020)	7.22%

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 assets invested in money market investments have been excluded from the rate of return calculation. This rate of return gives an indication of performance for an actively managed portfolio where securities are bought and sold with the objective of producing the highest total rate of return. During 2020, the fund earned $11,816,251 of dividends, interest and other recurring income. In addition, the Fund had net realized and unrealized capital gains on investments of $817,887. Fund investment expenses totaled $2,413,527.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 7.00% for Fiscal 2020. DROP accounts that are credited with earnings based on the actual rate of return of the system should be credited with 5.06% (i.e. 5.56% less 0.5% as detailed in the prior provision of R.S. 11:1312 as authorized by Section 4 of Act 480 of the 2009 Regular Legislative Session). The actuarial rate of return is calculated based on the actuarial value of assets net of DROP 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 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 7.00% assumption will reduce future costs; yields below 7.00% will increase future costs. For Fiscal 2020, the system experienced actuarial investment earnings of $12,800,034 below the actuarial assumed earnings rate of 7.00%. This actuarial loss increased the interest-adjusted amortization payments on the system's UAL by $1,168,042 or 1.46% of projected payroll.

DEMOGRAPHICS AND LIABILITY EXPERIENCE

The average active contributing member is 43 years old with 15.3 years of service credit and an annual salary of $78,019. The system's active contributing membership experienced a decrease of 4 members during Fiscal 2020; over the last five years, the number of active contributing members increased by 38.

The average service retiree is 67 years old with a monthly benefit of $4,463. The number of retirees and beneficiaries receiving benefits from the system as shown in the report increased by 29 during the fiscal year; over the last five years, the number of retirees and beneficiaries receiving benefits from the system increased by 44. Over the last five years, annual benefits in payment increased by $17,545,884.

Liability experience for the year was slightly unfavorable. The total number of retirements and disabilities were significantly below projected levels. This tends to decrease plan costs. The total number of withdrawals from active status were below projected levels. This offset the decreased costs. Overall salary increases and retiree deaths were near expected levels, but salary increases for members with 11-22 years of service exceeded assumed levels. Net plan liability experience losses totaled $5,965,187. The interest adjusted amortization payment on this loss was $544,342, or 0.68% of projected payroll.

FUNDING ANALYSIS AND RECOMMENDATIONS

Actuarial funding of a retirement system is a process whereby funds are accumulated over the working lifetimes of employees in such a manner as to have sufficient assets available at retirement to pay for the lifetime benefits accrued by each member of the system. The required contributions are determined by an actuarial valuation based on rates of mortality, termination, disability, and retirement, as well as investment return and other statistical measures specific to the particular group. Each year a determination is made of two cost components, and the actuarially required contributions are based on the sum of these two components. These two components are the normal cost and the amortization payments on the unfunded actuarial accrued liability. The normal cost refers to the annual cost for active members allocated to each year by the particular cost method utilized. The term unfunded accrued liability (UAL) refers to the excess of the present value of plan benefits over the sum of current assets and future normal costs. Each year the UAL grows with interest and is reduced by payments. In addition it may be increased or diminished by plan experience, changes in assumptions, or changes in benefits including COLA’s. Contributions in excess of or less than the actuarially required amount can also decrease or increase the UAL balance. New entrants to the system can also increase or lower costs as a percent of payroll depending upon their demographic distribution. Finally, payroll growth affects plan costs since payments on the system’s unfunded accrued liability are on a fixed, level dollar schedule. If payroll increases, these costs are reduced as a percentage of payroll. Conversely, if payroll decreases, these costs are increased as a percentage of payroll.

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

An explanation of the change in costs related to asset and liability gains and losses as well as changes in demographics and assumptions is given in prior sections of the report. In addition to these components, variances in contribution levels and payroll also affect costs. For Fiscal 2020 contributions totaled $460,495 more than required; the interest-adjusted amortization credit based on the contribution surplus for Fiscal 2021 is $108,575, or 0.14% of projected payroll. In addition, for Fiscal 2021 the net effect of the change in payroll on amortization costs was to decrease such costs by 0.07% of projected payroll.

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

	Dollars	Percentage of Payroll
Employer Normal Cost for Fiscal 2020	$ 16,868,719	21.10%
Cost of Assumption Changes	$ 0	0.00%
Cost of Demographic and Salary Changes	$ (72,206)	(0.13%)
Employer Normal Cost for Fiscal 2021	$ 16,796,513	20.97%
UAL Payments for Fiscal 2020	$ 25,672,855	32.12%
Change due to change in payroll	N/A	(0.07%)
Change due to elimination of Amortization Payments	$ 3,370,492	4.21%
Change due to re-amortization under Act399 of 2014	$ (3,405,963)	(4.25%)
Additional Amortization Expenses for Fiscal 2021:		
Liability Experience Loss	$ 544,342	0.68%
Asset Experience Loss	$ 1,168,042	1.46%
Contribution Surplus	$ (108,575)	(0.14%)
Total Amortization Expense for Fiscal 2021	$ 27,241,193	34.01%
Insurance Premium Taxes	$ (1,500,000)	(1.87%)
Projected Adminstrative Expenses for Fiscal 2021	$ 930,656	1.16%
Total Normal Cost & Amortization Payments	$ 43,468,362	54.27%

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The employer's normal cost for Fiscal 2021, interest adjusted for mid-year payment, is $16,796,513. The amortization payments on the system's unfunded actuarial accrued liability total $27,241,193. (Included within this figure are new gains and losses for Fiscal 2020 resulting in additional amortization credits or payments for Fiscal 2021. There were two other items of note affecting the total amortization expense. The elimination of the Fiscal 2015 contribution gain, which was fully amortized in Fiscal 2020, increased interest adjusted annual payments by $3,370,492. In addition, the re-amortization of the system's oldest outstanding positive bases which were fully or partially offset due to the application of the system's Priority Interest Allocation as described in Exhibit V- Schedule D lowered the interest adjusted annual payments by $3,405,963.)

The total actuarially required contribution is determined by adding these two values together with administrative expenses. The net direct actuarially required employer contribution for Fiscal 2021 is determined based on the sum of employer normal cost, amortization payments on the unfunded actuarial accrued liability, and estimated administrative expenses offset by projected insurance premium taxes collections allocated to the Fund for Fiscal 2021. As given in line 14 of Exhibit I, the net actuarially required employer contribution for Fiscal 2021 is $43,468,362, or 54.3% of projected payroll.

Since the actual employer contribution rate for Fiscal 2021 is 52.4% of payroll, there will be a contribution deficit of 1.9% of payroll. This deficit will increase the actuarially required contribution recommended for Fiscal 2022. In order to determine a minimum recommended net direct employer contribution rate for Fiscal 2022, the Employer Normal Cost and Amortization Payments were estimated for Fiscal 2022, and adjusted for the impact of the estimated contribution shortfall for Fiscal 2021. The estimated amortization payments for Fiscal 2022 include recognition of the elimination of the Fiscal 2016 contribution gain which will be fully amortized in Fiscal 2021. This is expected to increase interest adjusted annual payments by $4,031,133. As given in line 25 of Exhibit I, the estimated actuarially required net direct employer contribution for Fiscal 2022 is $48,313,843, or 58.8% of projected payroll.

COST OF LIVING ADJUSTMENTS

During Fiscal 2020, the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 0.6%. Cost of living provisions for the system are detailed in R.S. 11:1332 within the statutes relative to the Experience Account. Act 214 of the 2018 Regular Session of the Louisiana Legislature changed the limitation for adding funds to the Experience Account, allowing the Board to fund not only the basic cost of living increase but also the supplemental cost of living increase described in R. S. 11:1332(F). The Experience Account cannot be credited with funds that would cause the balance in the account to exceed the reserve of one "standard" cost of living adjustment defined in R.S. 11:1332(C) plus the cost of a "supplemental" cost of living increase defined in R.S. 11:1332(F) if the system is less than 80% funded or two cost of living adjustments if the system is at least 80% funded. R.S. 11:1332(C) sets forth the basis for determining the maximum percentage increase in the benefits permissible for the "standard" cost of living increase. The maximum percentage increase is based upon the funded percentage of the system as of the most recent actuarial valuation. In addition, other restrictions related to the system's actuarial rate of return and the timing of the most recent such increase may apply. A table of permissible increase rates is given below:

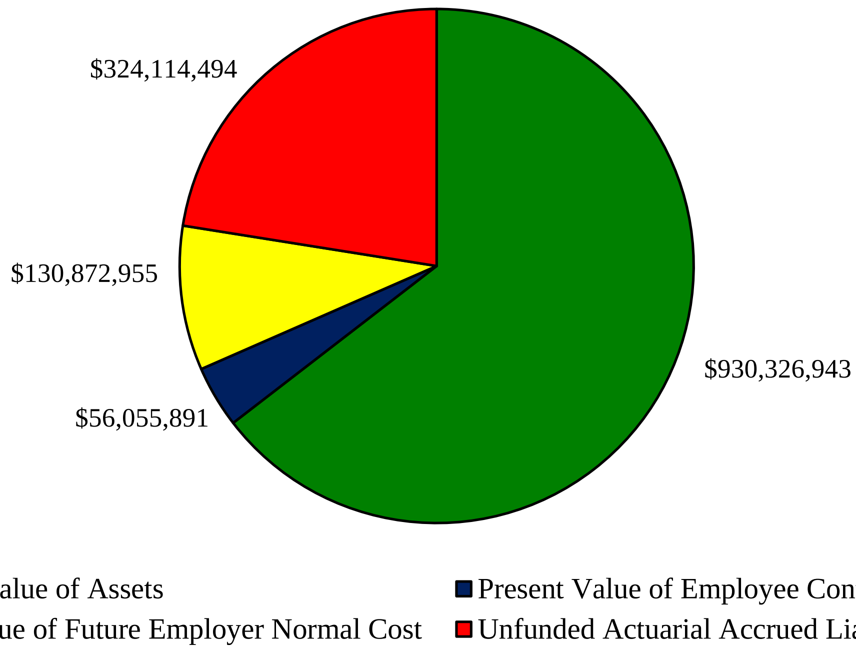
Funded Percentage of the System	Maximum Percent COLA
At least 80%	3.0%
At least 75% but less than 80%	2.5%
At least 65% but less than 75%	2.0%
At least 55% but less than 65%	1.5%
Less than 55%	No COLA permitted

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

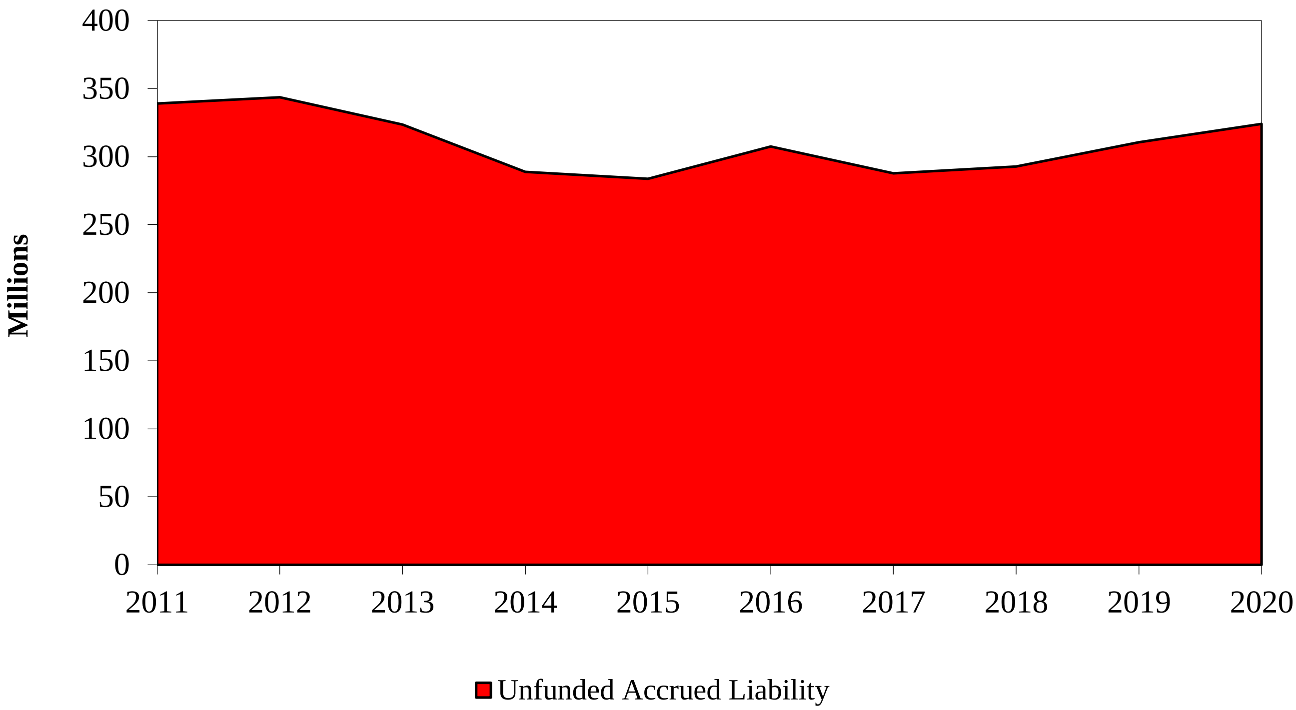
If there are sufficient funds in the Experience Account and the system met the necessary criteria to grant a cost of living adjustment, the Board of Trustees may recommend to the President of the Senate and the Speaker of the House of Representatives that the system be permitted to grant a cost of living adjustment. The standard cost of living adjustment is 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, 2015 through the end of the fiscal year of valuation. No cost of living adjustment 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. Cost of living adjustments 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 cost of living adjustment 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. 11:1332.

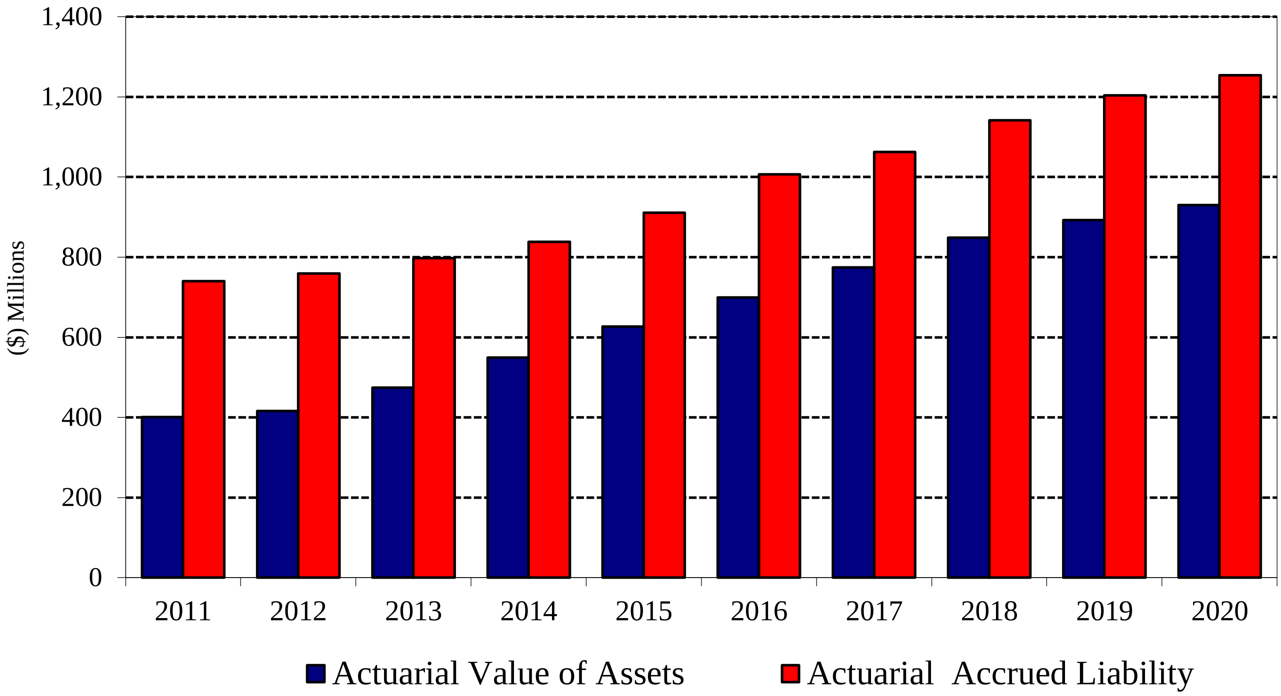
Components of Present Value of Future Benefits
June 30, 2020



Unfunded Accrued Liability

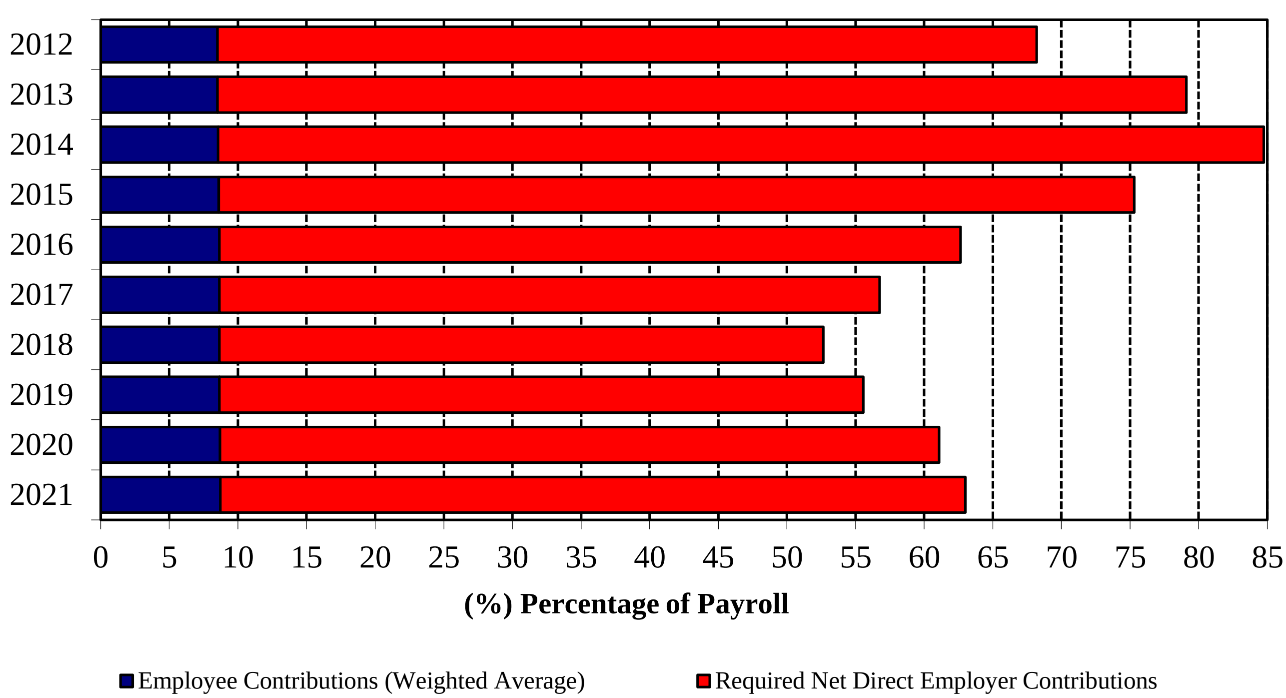


Actuarial Value of Assets vs. Actuarial Accrued Liability



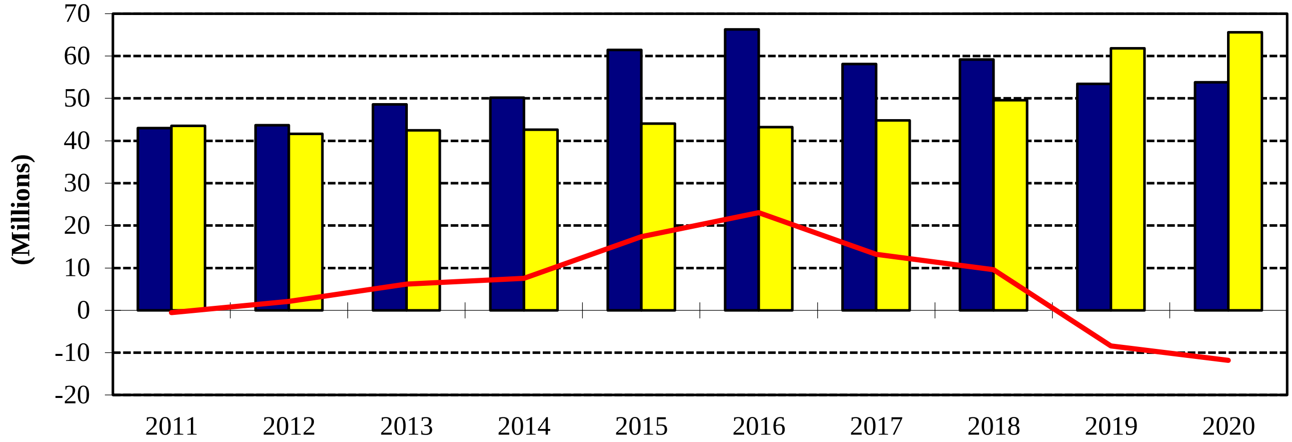
Actuarial Value of Assets includes the balance of the Experience Account beginning with Fiscal 2017.

Components of Actuarial Funding



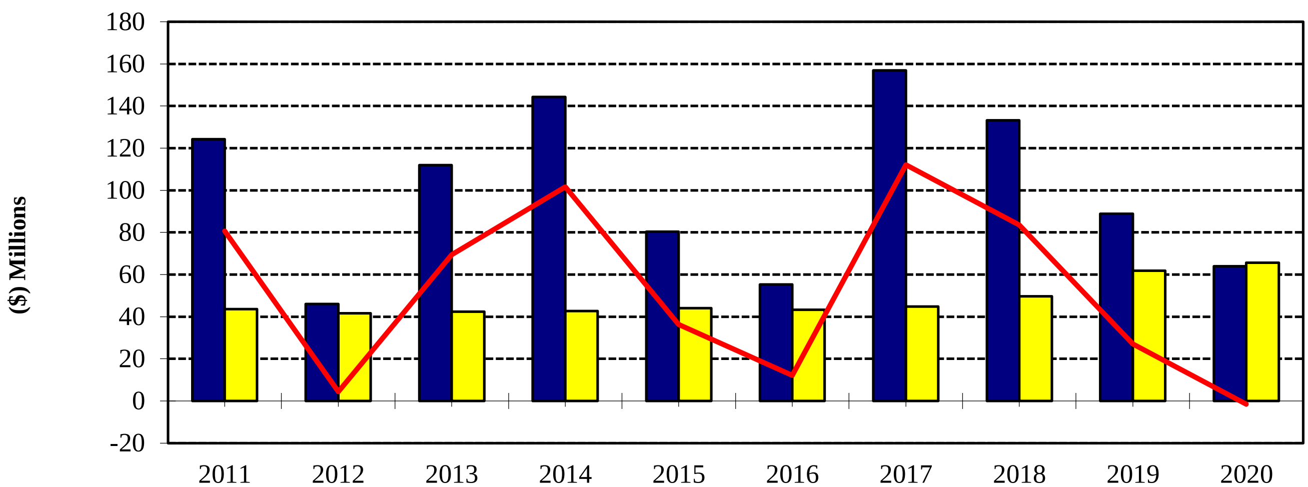
(2015 and later employee contribution level is a weighted average of rates paid by employees in different tiers. Counts by tier unavailable prior to 2015)

Net Non-Investment Income



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Non-Investment Income ($Mil)	43.0	43.7	48.6	50.2	61.5	66.3	58.1	59.2	53.4	53.8
Benefits and Expenses ($Mil)	43.6	41.6	42.4	42.6	44.1	43.2	44.9	49.6	61.8	65.6
Net Non-Investment Income ($Mil)	-0.6	2.1	6.2	7.6	17.4	23.0	13.2	9.6	-8.4	-11.8

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



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Income ($Mil)	124.2	46.1	111.9	144.3	80.4	55.4	157.0	133.2	88.9	64.0
Benefits and Expenses ($Mil)	43.6	41.6	42.4	42.6	44.1	43.2	44.9	49.6	61.8	65.6
Net Change in MVA ($Mil)	80.7	4.5	69.5	101.7	36.3	12.1	112.1	83.6	27.1	-1.6

Historical Asset Yields

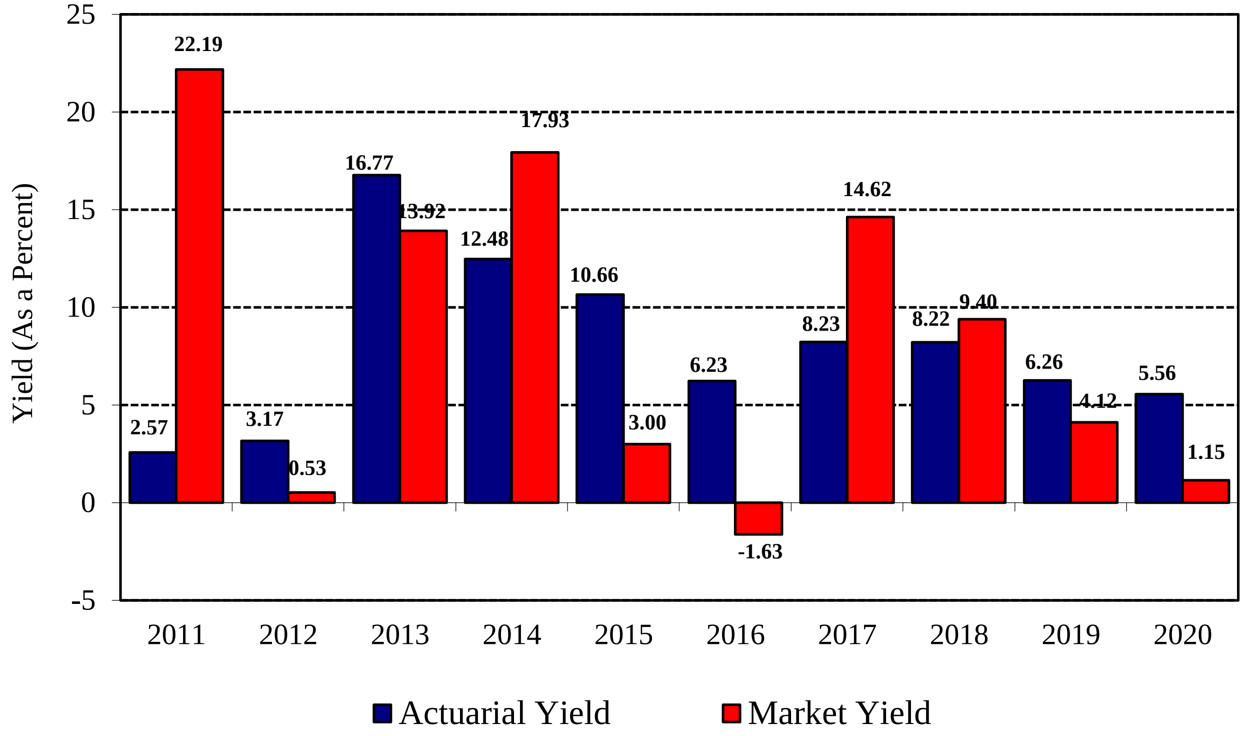


EXHIBIT I
ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1.	Normal Cost of Retirement Benefits	$	20,485,965
2.	Normal Cost of Death Benefits	$	422,105
3.	Normal Cost of Disability Benefits	$	1,419,161
4.	Normal Cost of Deferred Retirement Benefits	$	537,487
5.	Normal Cost of Contribution Refunds	$	284,094
6.	TOTAL Normal Cost as of July 1, 2020 (1 + 2 + 3 + 4 + 5)	$	23,148,812
7.	TOTAL Normal Cost Interest Adjusted for Midyear Payment	$	23,945,317
8.	Adjustment to Total Normal Cost for Employee Portion	$	7,148,804
9.	TOTAL Employer Normal Cost Adjusted for Midyear Payment (7 – 8)	$	16,796,513
10.	Amortization Payments on Unfunded Accrued Liability (Midyear)	$	27,241,193
11.	Projected Administrative Expenses for Fiscal 2021	$	930,656
12.	Gross Employer Required Contribution (9 + 10 + 11)	$	44,968,362
13.	Projected Insurance Premium Taxes due in Fiscal 2021	$	1,500,000
14.	Net Direct Actuarially Required Employer Contribution for Fiscal 2021 (12 – 13)	$	43,468,362
15.	Projected Payroll for Contributing Members (Fiscal 2021)	$	80,098,373
16.	Net Direct Actuarially Required Employer Contribution as a Percentage of Projected Payroll for Fiscal 2021 (14 ÷ 15)		54.3%
17.	Actual Net Direct Employer Contribution Rate for Fiscal 2021		52.4%
18.	Projected Fiscal 2021 Contribution Loss (Gain) as a % of Payroll (16 – 17)		1.9%
19.	Projected Fiscal 2021 Employer Contribution Shortfall (Surplus) (15 × 18)	$	1,521,869
20.	Amortization of Interest Adjusted Fiscal 2021 Employer Contribution Shortfall (Surplus) Based on Midyear Payment in Fiscal 2022	$	371,170
21.	Estimated Fiscal 2022 Employer Normal Cost Adjusted for Midyear Payment	$	17,216,426
22.	Estimated Fiscal 2022 Amortization Payments	$	31,272,325
23.	Estimated Fiscal 2022 Administrative Expenses	$	953,922
24.	Projected Insurance Premium Taxes due in Fiscal 2022	$	1,500,000
25.	Estimated Actuarially Net Direct Required Employer Contributions for Fiscal 2022 (20 + 21 + 22 + 23 - 24)	$	48,313,843
26.	Projected Payroll for Contributing Members (Fiscal 2022)	$	82,100,832
27.	Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2022 (25 ÷ 26, Rounded to nearest 0.10%)		58.8%

EXHIBIT II
PRESENT VALUE OF FUTURE BENEFITS

PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits	$	694,329,061		
Survivor Benefits		7,405,262		
Disability Benefits		28,894,885		
Vested Termination Benefits		6,301,014		
Refunds of Contributions		1,270,083		
TOTAL Present Value of Future Benefits for Active Members			$	738,200,305

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement	$	14,579,134		
Terminated Members with Reciprocals Due Benefits at Retirement		0		
Terminated Members Due a Refund		262,247		
TOTAL Present Value of Future Benefits for Terminated Members			$	14,841,381

PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees	$	579,063,464		
Disability Retirees		18,163,282		
Survivors & Widows		64,770,798		
Liability Attributable to the Experience Account		4,441,953		
DROP Account Balances Payable to Retirees		21,889,100		
TOTAL Present Value of Future Benefits for Retirees & Survivors			$	688,328,597

TOTAL Present Value of Future Benefits	$	1,441,370,283

EXHIBIT III – SCHEDULE A
MARKET VALUE OF ASSETS

CURRENT ASSETS:				
Cash in Banks	$	95,091		
Contributions Receivable		2,143,658		
Accrued interest and dividends		468,317		
Other Current Assets		1,757		
TOTAL CURRENT ASSETS			$	2,708,823
Property Plant & Equipment			$	1,175,342
INVESTMENTS:				
Cash Equivalents	$	19,123,431		
Equities		572,494,182		
Fixed Income		176,956,014		
Alternative Investments		121,643,446		
Collateral for Securities Lending		45,967,933		
TOTAL INVESTMENTS			$	936,185,006
DEFERRED OUTFLOWS OF RESOURCES			$	220,073
TOTAL ASSETS			$	940,289,244
CURRENT LIABILITIES:				
Accounts Payable	$	727,696		
Securities Lending Obligations		45,967,933		
Other Post-Employment Benefits		275,702		
Other Current Liabilities		1,417,908		
TOTAL CURRENT LIABILITIES			$	48,389,239
DEFERRED INFLOWS OF RESOURCES			$	149,269
TOTAL LIABILITIES			$	48,538,508
MARKET VALUE OF ASSETS			$	891,750,736

EXHIBIT III – SCHEDULE B
ACTUARIAL VALUE OF ASSETS

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

Fiscal year 2020	$	(51,903,672)
Fiscal year 2019		(24,865,406)
Fiscal year 2018		18,881,595
Fiscal year 2017		51,566,684
Fiscal year 2016		(57,851,897)
Total for five years	$	(64,172,696)

Deferral of excess (shortfall) of invested income:

Fiscal year 2020 (80%)	$	(41,522,938)
Fiscal year 2019 (60%)		(14,919,244)
Fiscal year 2018 (40%)		7,552,638
Fiscal year 2017 (20%)		10,313,337
Fiscal year 2016 (0%)		0
Total deferred for year	$	(38,576,207)

Market value of plan net assets, end of year	$	891,750,736
Preliminary actuarial value of plan assets, end of year	$	930,326,943

Actuarial value of assets corridor

85% of market value, end of year	$	757,988,126
115% of market value, end of year	$	1,025,513,346

Final actuarial value of plan net assets, end of year	$	930,326,943

† 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	$	56,055,891
Employer Normal Contributions to the Pension Accumulation Fund		130,872,955
Employer Amortization Payments to the Pension Accumulation Fund		324,114,494
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS	$	511,043,340

EXHIBIT V – SCHEDULE A
ACTUARIAL ACCRUED LIABILITIES

LIABILITY FOR ACTIVE MEMBERS				
Accrued Liability for Retirement Benefits	$	529,343,622		
Accrued Liability for Survivor Benefits		4,012,134		
Accrued Liability for Disability Benefits		17,031,099		
Accrued Liability for Vested Termination Benefits		2,150,866		
Accrued Liability for Refunds of Contributions		(1,266,262)		
TOTAL Actuarial Accrued Liability for Active Members			$	551,271,459
LIABILITY FOR TERMINATED MEMBERS			$	14,841,381
LIABILITY FOR RETIREES AND SURVIVORS			$	688,328,597
TOTAL ACTUARIAL ACCRUED LIABILITY			$	1,254,441,437
ACTUARIAL VALUE OF ASSETS			$	930,326,943
UNFUNDED ACTUARIAL ACCRUED LIABILITY			$	324,114,494

EXHIBIT V – SCHEDULE B
CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY

PRIOR YEAR UNFUNDED ACCRUED LIABILITY			$	310,622,407
Interest on Unfunded Accrued Liability	$	21,743,569		
Asset Experience Loss		12,800,034		
Liability Experience Loss		5,965,187		
TOTAL Additions to UAL			$	40,508,790
Contribution Excess with Accrued Interest		460,495		
Interest Adjusted Amortization Payments		26,556,208		
TOTAL Reductions to UAL			$	27,016,703
NET Change in Unfunded Accrued Liability			$	13,492,087
CURRENT YEAR UNFUNDED ACCRUED LIABILITY			$	324,114,494

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

FISCAL YEAR	DESCRIPTION	AMORT. PERIOD	INITIAL BALANCE	YEARS REMAINING	REMAINING BALANCE	AMORT. PAYMENTS
1994	Experience Gain	20	(1,381,660)	9	(854,489)	(122,572)
1996	Experience Gain	20	(9,762,782)	9	(6,037,789)	(866,092)
1998	Experience Gain	20	(2,444,207)	9	(1,511,619)	(216,835)
2000	Experience Gain	20	(21,262,939)	9	(13,150,058)	(1,886,314)
2001	Experience Loss	20	14,218,540	9	8,694,778	1,247,225
2002	Experience Loss	20	36,882,500	9	22,809,970	3,271,983
2003	Liability Assumption Loss	24	14,644,647	13	10,723,796	1,199,169
2003	Experience Loss	20	60,111,382	9	37,175,864	5,332,703
2004	Experience Loss	20	16,579,889	9	10,253,827	1,470,863
2005	Experience Loss	20	14,086,441	9	8,711,756	1,249,660
2006	Experience Gain	20	(11,718,142)	9	(7,247,079)	(1,039,560)
2007	Experience Loss	20	13,788,779	9	8,527,664	1,223,254
2008	Liability Assumption Loss	29	9,487,421	18	7,804,763	725,132
2008	Experience Loss	20	29,944,312	9	18,519,049	2,656,471
2009	Liability Assumption Loss	30	1,032,469	19	863,333	78,065
2009	Experience Loss	30	74,940,622	19	62,663,923	5,666,283
2010	Experience Loss	30	26,844,661	20	22,984,384	2,027,629
2011	Experience Loss	30	28,079,134	21	24,564,870	2,118,754
2012	Experience Loss	30	7,358,996	22	6,565,769	554,751
2013	Change in Method Gain	30	(12,256,998)	23	(11,134,076)	(923,128)
2013	Liability Assumption Loss	30	26,210,291	23	23,809,037	1,974,012
2013	Experience Gain	30	(25,552,458)	23	(23,211,471)	(1,924,468)
2014	Experience Gain	30	(1,327,488)	24	(1,226,961)	(99,979)
2015	Experience Loss	30	22,863,386	25	21,471,472	1,721,942
2016	Experience Loss	30	46,924,931	26	44,719,316	3,534,123
2016	Contribution Gain	5	(17,097,150)	1	(3,897,042)	(3,897,042)
2017	Change in Model	30	(5,046,395)	27	(4,874,645)	(380,066)
2017	Liability Assumption Loss	30	5,260,562	27	5,081,523	396,196
2017	Asset Assumption Gain	30	(5,260,562)	27	(5,081,523)	(396,196)
2017	Liability Experience Loss	30	6,707,700	27	6,479,410	505,186
2017	Asset Experience Gain ‡	30	(8,661,909)	27	(8,367,107)	(652,367)
2017	Gains Allocated to Experience Account	10	970,763	7	744,879	129,173
2017	Priority Excess Allocation	30	6,056,800	27	5,850,663	456,164
2017	Contribution Gain	5	(9,572,640)	2	(4,221,140)	(2,181,942)
2018	Asset Experience Gain ‡	20	(9,489,939)	18	(9,010,761)	(837,180)
2018	Gains Allocated to Experience Account	10	1,428,096	8	1,214,137	190,027
2018	Priority Excess Allocation	20	6,633,747	18	6,298,786	585,214
2018	Liability Experience Gain	20	(4,765,728)	18	(4,525,089)	(420,422)
2018	Contribution Gain	5	(9,859,043)	3	(6,310,244)	(2,247,223)
2018	Liability Assumption Loss	20	31,066,762	18	29,498,097	2,740,638
2019	Asset Experience Loss	20	6,255,910	19	6,103,310	551,882
2019	Liability Experience Loss	20	14,797,428	19	14,436,475	1,305,395
2019	Contribution Gain	5	(175,367)	4	(144,873)	(39,972)
2019	Liability Assumption Loss	20	46,005	19	44,883	4,058
2020	Asset Experience Loss	20	12,800,034	20	12,800,034	1,129,189
2020	Liability Experience Loss	20	5,965,187	20	5,965,187	526,235
2020	Contribution Gain	5	(460,495)	5	(460,495)	(104,963)

TOTAL Unfunded Actuarial Accrued Liability	$ 324,114,494	
TOTAL Fiscal 2021 Amortization Payments at Beginning of Year		$ 26,335,055
TOTAL Fiscal 2021 Amortization Payments Adjusted to Mid-Year		$ 27,241,193

‡ Asset Experience Gain is the gross gain on assets and includes those gains allocated to the Experience Account and the Priority Excess Allocation to the oldest outstanding positive base.

EXHIBIT V – SCHEDULE D
AMORTIZATION BASE ADJUSTMENTS

1995 Experience Loss:

Outstanding Balance of 1995 Experience Loss (as of June 30, 2016)	$	15,968,624
Accumulated Priority Offsets as of June 30, 2016	$	(6,056,900)
Amortization Payment on the 1995 Experience Loss (July 1, 2016)	$	(1,785,663)
Interest on the Net Amortization Base to June 30, 2017	$	568,824
Net Balance of the 1995 Experience Loss as of June 30, 2017	$	8,694,885
Priority Excess Allocation Applied to 1995 Liability Experience Loss - June 30, 2017	$	(6,056,800)
Outstanding Balance of 1995 Experience Loss (as of June 30, 2017)	$	2,638,085
Amortization Payment on the 1995 Experience Loss (July 1, 2017)	$	(1,785,663)
Interest on the Net Amortization Base to June 30, 2018	$	59,670
Net Balance of the 1995 Experience Loss as of June 30, 2018	$	912,092
Priority Excess Allocation Applied to 1995 Experience Loss - June 30, 2018	$	(912,092)
Outstanding Balance of the 1995 Experience Loss (as of June 30, 2018)	$	0

1997 Experience Loss:

Outstanding Balance of 1997 Experience Loss (as of June 30, 2017)	$	3,324,613
Amortization Payment on the 1997 Experience Loss (July 1, 2017)	$	(391,192)
Interest on the Net Amortization Base to June 30, 2018	$	205,339
Net Balance of the 1997 Experience Loss as of June 30, 2018	$	3,138,760
Priority Excess Allocation Applied to 1997 Experience Loss - June 30, 2018	$	(3,138,760)
Outstanding Balance of the 1997 Experience Loss (as of June 30, 2018)	$	0

1999 Experience Loss:

Outstanding Balance of 1999 Experience Loss (as of June 30, 2017)	$	9,362,648
Amortization Payment on the 1999 Experience Loss (July 1, 2017)	$	(1,101,660)
Interest on the Net Amortization Base to June 30, 2018	$	578,269
Net Balance of the 1999 Experience Loss as of June 30, 2018	$	8,839,257
Priority Excess Allocation Applied to 1999 Experience Loss - June 30, 2018	$	(2,582,895)
Outstanding Balance of the 1999 Experience Loss (as of June 30, 2018)	$	6,256,362
Amortization Payment on the 1999 Experience Loss (July 1, 2018)	$	(1,101,660)
Amortization Payment on the 1995 Experience Loss (July 1, 2018)	$	(1,785,663)
Amortization Payment on the 1997 Experience Loss (July 1, 2018)	$	(391,192)
Interest on the Net Amortization Base to June 30, 2019	$	208,449
Net Balance of the 1999 Experience Loss as of June 30, 2019	$	3,186,296
Priority Excess Allocation Applied to 1999 Experience Loss - June 30, 2019	$	0
Outstanding Balance of the 1999 Experience Loss (as of June 30, 2019)	$	3,186,296
Amortization Payment on the 1999 Experience Loss (July 1, 2019)	$	(1,101,660)
Amortization Payment on the 1995 Experience Loss (July 1, 2019)	$	(1,785,663)
Portion of Amortization Payment on the 1997 Experience Loss (July 1, 2019)	$	(298,973) †
Interest on the Net Amortization Base to June 30, 2020	$	0
Net Balance of the 1999 Experience Loss as of June 30, 2020	$	0

EXHIBIT V – SCHEDULE D CONTINUED
AMORTIZATION BASE ADJUSTMENTS

2001 Experience Loss:

Outstanding Balance of 2001 Experience Loss (as of June 30, 2019)..........................	$	9,479,559	
Remainder from payment on 1997 Liability Experience Loss (July 1, 2019)..............	$	(92,219)	†
Amortization Payment on the 2001 Liability Experience Loss (July 1, 2019).............	$	(1,261,379)	
Interest on the Net Amortization Base to June 30, 2020	$	568,817	
Net Balance of the 2001 Liability Experience Loss as of June 30, 2020	$	8,694,778	

† The total amortization payment related to the 1997 Experience Loss base was $391,192 as of July 1, 2019. Given the outstanding balance of $3,186,296 as of June 30, 2019, after accounting for payments made on the 1999 Experience Loss base and the 1995 Experience Loss base, only $298,973 of the $391,192 payment was required to fully liquidate the 1999 Experience Loss base. The remaining $92,219 was used to partially offset the next oldest positive base (the 2001 Experience Loss base).

EXHIBIT VI
ANALYSIS OF CHANGE IN ASSETS

Actuarial Value of Assets (June 30, 2019)			$	892,857,106
INCOME:				
Member Contributions	$	7,242,509		
Employer Contributions		40,980,857		
Irregular Contributions		2,870,937		
Motor Vehicle Fees		1,182,540		
Insurance Premium Taxes		1,500,000		
Total Contributions			$	53,776,843
Net Appreciation of Investments	$	817,887		
Interest & Dividends		11,733,762		
Miscellaneous Income		82,489		
Investment Expense		(2,413,527)		
Net Investment Income			$	10,220,611
TOTAL Income			$	63,997,454
EXPENSES:				
Retirement Benefits	$	64,173,503		
Refunds of Contributions		30,814		
Transfers to Other Systems		566,236		
Administrative Expenses		826,198		
TOTAL Expenses			$	65,596,751
Net Market Value Income for Fiscal 2020 (Income – Expenses)			$	(1,599,297)
Unadjusted Fund Balance as of June 30, 2020 (Fund Balance Previous Year + Net Income)			$	891,257,809
Income Adjustment for Actuarial Smoothing			$	39,069,134
Actuarial Value of Assets: (June 30, 2020)			$	930,326,943

EXHIBIT VII
EXPERIENCE ACCOUNT

1.	Experience Account Balance – June 30, 2019	$	2,079,574
2.	Investment Gain, if any	$	0
3.	Priority Excess Interest Allocated to Reduce UAL	$	0
4.	Residual Investment Gain, if any (2 – 3)	$	0
5.	Investment Gain to Allocate to the Experience Account (50% × 4)	$	0
6.	Credit for Investment Earnings based on AVA rate of return, if positive	$	115,624
7.	Total Preliminary Credits to be Allocated to Experience Account (5 + 6)	$	115,624
8.	Debit for Investment Losses based on AVA rate of return, if negative	$	0
9.	Present Value of Permanent Benefit Increase Paid July 1, 2020	$	0
10.	Total Preliminary Debits to be Allocated to Experience Account (8 + 9)	$	0
11.	Total Net Credit/Debit to be Allocated to Experience Account (7 + 10)	$	115,624
12.	Limit to the Experience Account Balance – June 30, 2020 (Present Value of PBI at CPI-U for Fiscal 2020 or 2.00%)	$	4,441,953
13.	Experience Account Balance – June 30, 2020 (Lesser of 1+11 &12 - at least 0)	$	2,195,198

EXHIBIT VIII
CENSUS DATA

	Active	Terminated with Funds on Deposit	Retired	Total
Number of members as of June 30, 2019	1,033	214	1,239	2,486
Additions to Census				
Initial membership	49	9		58
Omitted in error last year				
Death of another member			12	12
Adjustment for multiple records			1	1
Change in Status during Year				
Actives terminating service	(10)	10		0
Actives who retired	(44)		44	0
Actives entering DROP				
Term. members rehired	4	(4)		0
Term. members who retire		(8)	8	0
Retirees who are rehired				
Refunded who are rehired				
DROP participants retiring				
DROP returned to work				
Omitted in error last year				
Eliminated from Census				
Refund of contributions	(1)	(4)		(5)
Deaths	(2)		(36)	(38)
Included in error last year				
Adjustment for multiple records				
Number of members as of June 30, 2020	1,029	217	1,268	2,514

ACTIVES CENSUS BY AGE:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
21 - 25	20	1	21	48,362	1,015,602
26 - 30	95	4	99	51,430	5,091,542
31 - 35	108	2	110	54,761	6,023,685
36 - 40	160	10	170	64,615	10,984,592
41 - 45	183	10	193	77,555	14,968,051
46 - 50	244	13	257	94,520	24,291,645
51 - 55	135	3	138	100,258	13,835,578
56 - 60	39	0	39	99,523	3,881,380
61 - 65	2	0	2	94,748	189,496
TOTAL	986	43	1,029	78,019	80,281,571

THE ACTIVE CENSUS INCLUDES 717 ACTIVES WITH VESTED BENEFITS.

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
36 - 40	2	0	2	26,235	52,470
41 - 45	10	0	10	31,028	310,284
46 - 50	22	2	24	38,994	935,866
51 - 55	2	0	2	17,961	35,922
TOTAL	36	2	38	35,120	1,334,542

TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:

Contributions Ranging From		To	Number	Total Contributions
0	-	99	74	3,351
100	-	499	66	17,000
500	-	999	14	9,305
1000	-	1999	4	5,229
2000	-	4999	8	23,695
5000	-	9999	5	36,823
10000	-	19999	3	43,056
20000	-	99999	5	123,788
		TOTAL	179	262,247

REGULAR RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
46 - 50	18	1	19	86,893	1,650,966
51 - 55	119	8	127	82,352	10,458,676
56 - 60	109	4	113	75,185	8,495,897
61 - 65	120	3	123	66,836	8,220,855
66 - 70	187	1	188	48,633	9,142,942
71 - 75	176	1	177	38,338	6,785,854
76 - 80	100	1	101	30,251	3,055,339
81 - 85	49	1	50	28,119	1,405,943
86 - 90	24	0	24	21,737	521,676
91 - 99	10	0	10	17,511	175,106
TOTAL	912	20	932	53,555	49,913,254

DISABILITY RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
36 - 40	1	0	1	35,410	35,410
41 - 45	3	1	4	30,041	120,164
46 - 50	6	0	6	35,749	214,493
51 - 55	3	1	4	39,162	156,646
56 - 60	7	0	7	32,730	229,112
61 - 65	4	1	5	26,799	133,996
66 - 70	6	1	7	21,728	152,094
71 - 75	13	1	14	23,835	333,695
76 - 80	7	1	8	27,564	220,515
81 - 85	1	0	1	25,250	25,250
86 - 90	2	0	2	27,392	54,784
TOTAL	53	6	59	28,409	1,676,159

SURVIVORS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 25	3	3	6	55,990	335,938
31 - 35	0	2	2	39,659	79,318
41 - 45	2	1	3	48,653	145,958
46 - 50	0	6	6	62,494	374,961
51 - 55	0	4	4	42,685	170,739
56 - 60	0	11	11	49,329	542,617
61 - 65	0	15	15	42,568	638,526
66 - 70	0	29	29	26,459	767,316
71 - 75	2	50	52	25,682	1,335,463
76 - 80	1	42	43	24,121	1,037,222
81 - 85	1	58	59	23,489	1,385,869
86 - 90	0	27	27	19,186	518,033
91 - 99	0	20	20	18,093	361,855
TOTAL	9	268	277	27,776	7,693,815

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												0
21 - 25	10		11									21
26 - 30	17		32	15	15	19	1					99
31 - 35	13		14	5	13	40	25					110
36 - 40	3		11	6	7	17	89	37				170
41 - 45	3		4	3	4	13	37	92	36	1		193
46 - 50			3	1	3	1	15	54	129	51		257
51 - 55			1			4	7	14	41	61	10	138
56 - 60					2		2	5	7	12	11	39
61 - 65										2		2
66 & Over												0
Totals	46	0	76	30	44	94	176	202	213	127	21	1,029

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												0
21 - 25	44,984		51,433									48,362
26 - 30	45,170		51,553	53,418	53,829	53,173	54,971					51,430
31 - 35	45,870		51,796	53,369	53,798	54,213	62,700					54,761
36 - 40	45,183		51,427	53,423	55,320	56,204	66,889	72,081				64,615
41 - 45	45,340		51,514	53,422	54,856	57,776	67,486	83,495	90,004	76,567		77,555
46 - 50			56,107	53,428	55,320	51,016	69,706	82,633	97,925	112,018		94,520
51 - 55			52,184			57,496	71,360	77,865	98,191	108,840	129,871	100,258
56 - 60					55,318		67,107	81,809	93,069	106,229	118,295	99,523
61 - 65										94,748		94,748
66 & Over												0
Average	45,339	0	51,748	53,412	54,320	54,961	66,772	80,742	96,478	109,393	123,808	78,019

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Attained Ages	Years Until Retirement Eligibility 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 35												0
36 - 40							2					2
41 - 45						10						10
46 - 50	3	9	4	5	3							24
51 - 55	1			1								2
56 & Over												0
Totals	4	9	4	6	3	10	2	0	0	0	0	38

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

Attained Ages	Years Until Retirement Eligibility 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 35												0
36 - 40							26,235					26,235
41 - 45						31,028						31,028
46 - 50	51,544	43,837	28,800	41,121	21,964							38,994
51 - 55	24,324			11,598								17,961
56 & Over												0
Average	44,739	43,837	28,800	36,201	21,964	31,028	26,235	0	0	0	0	35,120

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	5	10	3	1								19
51 - 55	35	42	29	4	3	14						127
56 - 60	7	30	14	3		48	11					113
61 - 65	4	4	1	1		42	61	9		1		123
66 - 70	1	2				19	58	47	19	22	20	188
71 - 75						2	12	49	29	37	48	177
76 - 80						1		8	16	18	58	101
81 - 85								1	3	8	38	50
86 - 90										1	23	24
91 & Over											10	10
Totals	52	88	47	9	3	126	142	114	67	87	197	932

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	79,131	92,045	92,626	56,985								86,893
51 - 55	89,724	88,656	79,961	62,081	41,050	64,603						82,352
56 - 60	94,981	90,212	104,844	75,146		54,529	74,003					75,185
61 - 65	96,238	107,741	115,415	128,603		67,476	61,919	59,673		12,822		66,836
66 - 70	101,186	81,490				62,804	67,814	49,823	30,444	26,230	12,756	48,633
71 - 75						74,914	77,520	54,178	34,753	29,199	20,060	38,338
76 - 80						18,326		55,526	37,753	30,881	24,705	30,251
81 - 85								30,523	43,078	41,607	24,035	28,119
86 - 90										49,699	20,521	21,737
91 & Over											17,511	17,511
Average	90,135	90,276	88,935	73,261	41,050	61,248	66,581	52,703	34,620	29,984	21,377	53,555

DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 35												0
36 - 40		1										1
41 - 45		1			2	1						4
46 - 50			1		2	2	1					6
51 - 55					1		2		1			4
56 - 60							2	3	2			7
61 - 65								1	1	1	2	5
66 - 70										3	4	7
71 - 75									1	4	9	14
76 - 80									2		6	8
81 - 85											1	1
86 - 90											2	2
91 & Over												0
Totals	0	2	1	0	5	3	5	4	7	8	24	59

AVERAGE ANNUAL BENEFITS PAYABLE TO DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 35												0
36 - 40		35,410										35,410
41 - 45		38,421			28,975	23,794						30,041
46 - 50			31,665		34,905	42,575	27,867					35,749
51 - 55					35,131		41,380		38,755			39,161
56 - 60							42,997	26,428	31,918			32,730
61 - 65								40,094	15,664	38,897	19,671	26,799
66 - 70										18,677	24,016	21,728
71 - 75									24,403	24,229	23,598	23,835
76 - 80									26,229		28,010	27,564
81 - 85											25,250	25,250
86 - 90											27,392	27,392
91 & Over												0
Average	0	36,916	31,665	0	32,578	36,315	39,324	29,844	27,874	23,980	24,828	28,409

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	1					1						2
21 - 25	1					2			1			4
26 - 30												0
31 - 35	1					1						2
36 - 40												0
41 - 45					1			1	1			3
46 - 50	1		2				2				1	6
51 - 55						1	1		1	1		4
56 - 60		1				2	2		2		4	11
61 - 65				1		2		3	3	3	3	15
66 - 70							2	2	3	4	18	29
71 - 75							1	3	4	8	36	52
76 - 80									1	4	38	43
81 - 85									1	2	56	59
86 - 90										1	26	27
91 & Over											20	20
Totals	4	1	2	1	1	9	8	9	17	23	202	277

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	26,230					57,401						41,815
21 - 25	111,369					55,618			29,703			63,077
26 - 30												0
31 - 35	26,230					53,088						39,659
36 - 40												0
41 - 45					69,434			52,238	24,286			48,653
46 - 50	111,369		56,697				65,808				18,583	62,494
51 - 55						60,666	62,986		24,286	22,800		42,685
56 - 60		128,106				61,410	73,594		21,915		25,168	49,329
61 - 65				72,496		80,545		56,442	37,766	22,387	18,385	42,568
66 - 70							68,848	33,559	34,637	28,618	19,118	26,459
71 - 75							89,295	47,181	35,927	29,235	20,196	25,682
76 - 80									45,524	36,185	22,288	24,121
81 - 85									40,494	35,676	22,750	23,489
86 - 90										16,667	19,283	19,186
91 & Over											18,093	18,093
Average	68,799	128,106	56,697	72,496	69,434	62,922	71,098	47,803	33,473	29,177	20,939	27,776

EXHIBIT IX
YEAR-TO-YEAR COMPARISON

	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017
Number of Active Members	1,029	1,033	1,129	1,071
Number of Retirees & Survivors	1,268	1,239	1,174	1,155
DROP Participants	0	0	0	0
Number of Terminated Due Deferred Benefits	38	44	44	43
Number Terminated Due Refunds	179	170	169	139
Active Lives Payroll (excludes DROP participants)	$ 80,281,571	$ 79,742,159	$ 85,349,504	$ 84,059,551
Retiree Benefits in Payment	$ 59,283,228	$ 54,960,399	$ 47,329,769	$ 43,286,212
Market Value of Assets (Includes Side Funds)	$ 891,750,736	$ 893,350,033	$ 866,309,038	$ 782,572,348
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability	74.16%	74.19%	74.34%	72.91%
Actuarial Accrued Liability (EAN)	$ 1,254,441,437	$ 1,203,479,513	$ 1,141,255,546	$ 1,062,446,959
Actuarial Value of Assets †	$ 930,326,943	$ 892,857,106	$ 848,456,307	$ 774,664,801
UAL (Funding Excess)	$ 324,114,494	$ 310,622,407	$ 292,799,239	$ 287,782,158
Employee Experience Account	$ 2,195,198	$ 2,079,574	$ 1,957,062	$ 5,260,562

	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018
Employee Contribution Rate For Employees Hired Before July 1, 2010	8.5%	8.5%	8.5%	8.5%
Employee Contribution Rate For Employees Hired On Or After July 1, 2010	9.5%	9.5%	9.5%	9.5%
Actuarially Required Employer Contribution as a Percentage of Projected Payroll	54.3%	52.4%	46.9%	44.0%
Actual Employer Contribution as a Percentage of Projected Payroll	52.4%	49.1%	43.10%	47.4%

† Prior to 2017, AVA was net of Experience of Account

Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011
1,041	991	956	933	979	1,033
1,220	1,224	1,229	1,234	1,222	1,207
0	0	0	0	0	2
41	41	34	37	34	31
N/A	N/A	N/A	N/A	N/A	N/A
$ 75,969,718	$ 64,632,596	$ 54,331,845	$ 51,261,574	$ 57,828,488	$ 58,592,035
$ 41,866,788	$ 41,737,344	$ 40,440,528	$ 39,770,484	$ 38,290,020	$ 36,484,176
$ 670,423,169	$ 659,126,281	$ 622,793,610	$ 521,130,665	$ 451,657,917	$ 447,195,377
69.45%	68.85%	65.53%	59.44%	54.76%	54.19%
$ 1,006,626,437	$ 910,845,343	$ 837,940,546	$ 797,839,506	$ 759,652,635	$ 740,257,372
$ 699,121,700	$ 627,083,218	$ 549,075,148	$ 474,235,310	$ 415,965,659	$ 401,146,109
$ 307,504,737	$ 283,762,125	$ 288,865,398	$ 323,604,196	$ 343,686,976	$ 339,111,263
$ 3,963,595	$ 12,416,791	$ 12,069,552	$ 18,164,123	$ 0	$ 0

Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012
8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
9.5%	9.5%	9.5%	9.5%	9.5%	9.5%
48.1%	54.0%	66.7%	76.2%	70.6%	59.7%
51.2%	60.8%	75.3%	70.0%	68.6%	55.9%

SUMMARY OF PRINCIPAL PLAN PROVISIONS

The Louisiana State Police Retirement System (LSPRS) was established by Act 293 of the 1938 Legislative Session, for the purpose of providing retirement allowances and other benefits as described under R.S. 11:1301 – 11:1345. The following summary of plan provisions covers many of the most important plan provisions covering LSPRS, but is not a description of every plan provision and should only be used for general informational purposes. This summary does not constitute a guarantee of benefits. The provisions contained within this section are as of June 30, 2020.

MEMBERSHIP:

Sworn, commissioned law enforcement officers of the Division of State Police of the Department of Public Safety who have completed the State Police Training Academy Course of Instruction on the Effective Date of the Fund and those subsequently employed who did not withdraw employee contributions. In addition, the secretary and deputy secretary of the Department of Public Safety, provided they are sworn, commissioned State Police officers who have graduated from the State Police Academy.

CONTRIBUTION RATES:

Employees whose first employment making them eligible for membership in one of Louisiana’s state retirement systems occurred on or before December 31, 2010 contribute 8.50% of salary and employees whose first employment making them eligible for membership in one of Louisiana’s state retirement systems occurred on or after January 1, 2011 contribute 9.50% of salary. Employers contribute an actuarially determined "normal contribution" rate plus "accrued liability contribution" rate.

CONTRIBUTION REFUNDS:

Upon withdrawal from service, members not entitled to a retirement allowance may receive a refund of accumulated contributions.

FINAL AVERAGE COMPENSATION:

For members employed prior to September 8, 1978, the average final salary is the average salary including any additional pay or salary provided by the legislature over and above that set by the Civil Service Commission, received for the year ending on the last day of the month immediately preceding the date of retirement or date of death or for any one-year period, whichever is the greatest.

For members employed on or after September 8, 1978, and on or before December 31, 2010, the average final salary is the average salary including any additional pay or salary provided by the legislature over and above that set by the Civil Service Commission, received for the thirty-six month period ending on the last day of the month immediately preceding the date of retirement or date of death or for any thirty-six consecutive months, whichever is the greatest. The earnings to be considered exclude overtime, expenses, and clothing allowances. The earnings to be considered for the thirteenth through the twenty-fourth month shall not exceed one hundred twenty-five percent of the earnings of the first through the twelfth month. The earnings to be considered for the final twelve months shall not exceed one hundred twenty-five percent of the earnings of the thirteenth through the twenty-fourth month.

For members employed on or after January 1, 2011 the average final salary is the average annual earned compensation of a member for the sixty highest months of successive employment, or for the highest sixty successive joined months of employment where interruption of service occurred; The earnings to be considered for the thirteenth through the twenty-fourth month shall not exceed one hundred fifteen percent of the earnings of the first through the twelfth month. The earnings to be considered for the twenty-fifth through the thirty-sixth month shall not exceed one hundred fifteen percent of the earnings of the thirteenth through the twenty-fourth month. The earnings to be considered for the thirty-seventh through the forty-eighth month shall not exceed one hundred fifteen percent of the earnings of the twenty-fifth through the thirty-sixth month. The earnings for the final twelve months shall not exceed one hundred fifteen percent of the earnings of the thirty-seventh through the forty-eighth month.

VESTED WITHDRAWAL BENEFITS:

Members with sufficient service credit who terminate employment prior to reaching retirement eligibility age may elect to leave accumulated contributions on deposit and receive a retirement allowance based on the creditable service and accrual rate for their period of membership upon reaching their retirement eligibility age.

For members whose first employment making them eligible for membership in one of Louisiana’s state retirement systems occurred on or before December 31, 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 fifty.

For members whose first employment making them eligible for membership in one of Louisiana’s state retirement systems occurred on or after January 1, 2011, who have twelve 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 fifty-five.

NORMAL RETIREMENT BENEFITS:

Any member of the system whose initial date of employment was prior to September 8, 1978, regardless of age, who has credit for at least twenty years of service shall be paid a monthly benefit equal to the sum of three and one-third percent multiplied by the member's monthly average salary, and further multiplied by the number of years of service credited to the member's account, but the total annual benefit shall not exceed one hundred percent of the member's final average annual salary.

Any member of the system, whose first employment making him eligible for membership in one of the state systems occurred on or before December 31, 2010, and who has attained age fifty and who has credit for at least ten years of service shall be paid a monthly benefit equal to the sum of three and one-third percent multiplied by the member's monthly average salary, and further multiplied by the number of years of service credited to the member's account, but the total annual benefit shall not exceed one hundred percent of the member's final average annual salary.

Any member of the system whose initial date of employment occurred on or after September 8, 1978, and whose first employment making him eligible for membership in one of the state systems occurred on or before December 31, 2010, who has credit for at least twenty-five years of service, regardless of age, shall be paid a monthly benefit equal to the sum of three and one-third percent multiplied by the member's monthly average salary, and further multiplied by the number of years of service credited to the member's account, but the total annual benefit shall not exceed one hundred percent of the member's final average annual salary.

Any member of the system whose first employment making him eligible for membership in one of the state systems occurred on or after January 1, 2011, shall become a member of the New State Police Retirement Plan of the system as a condition of employment.

Any member of the New State Police Retirement Plan shall be eligible for retirement if he has:

(1) Twenty-five years or more of service, at any age.
(2) Twelve years or more of service, at age fifty-five or thereafter.
(3) Twenty years of service credit at any age, exclusive of military service and unused annual and sick leave, but any person retiring under this Paragraph shall have his benefit, inclusive of military service credit and allowable unused annual and sick leave, actuarially reduced from the earliest age that he would normally become eligible for a regular retirement if he had continued in service to that age. Members retiring under the twenty year at any age rule may not participate in Back-DROP or the Initial Benefit Option.

INITIAL BENEFIT OPTION: In lieu of receiving a regular retirement benefit according to the relevant benefit computation rules, a member who does not retire under the Back-DROP may elect to receive a reduced retirement benefit plus an initial lump sum payment. The reduced retirement benefit plus initial lump sum payment will be determined to be actuarially equivalent to the member's regular retirement benefit computed based on the relevant benefit computation rules.

BACK-DEFERRED RETIREMENT OPTION PLAN (BACK-DROP):

In lieu of receiving a normal retirement benefit, a member (1) who has accrued more service credit than the minimum required for eligibility for a normal retirement benefit and (2) who has attained an age that is greater than the minimum required for eligibility for a normal retirement benefit, if applicable, may elect to retire and have his benefits structured, calculated, and paid as provided in the Back-Deferred Retirement Option Program. At the time of retirement, a member who elects to receive a Back-DROP benefit shall select a period that shall not exceed the lesser of thirty-six months or the number of months of creditable service accrued after the member first attained eligibility. The period shall be comprised of the most recent calendar days corresponding to the member's employment for which service credit accrued. For purposes of Back-DROP, creditable service will be reduced by the Back-DROP period and shall not include reciprocal service credit. The sum of the Back-DROP period and the accrued service credit used to calculate the member's monthly benefit shall not exceed thirty years. Final average compensation shall be calculated by excluding all earnings during Back-DROP. Employee contributions received by the retirement system during the Back-DROP period shall, at the member's election, be refunded to the member without interest or deposited directly into the member's Back-DROP account. Employer contributions and any interest that has accrued on employer and employee contributions received during the period shall be retained by the system and shall not be refunded to the member or to the employer. The member's maximum monthly retirement benefit payable shall be equal to the Back-DROP monthly benefit. In addition to the monthly benefit, the member shall be paid a lump-sum benefit equal to the Back-DROP maximum monthly retirement benefit multiplied by the number of months selected as the Back-DROP period. The Back-DROP lump sum shall, at the member's election, be distributed to the member or paid into an individual account. Cost-of-living adjustments shall not be payable on the member's Back-DROP lump sum.

ACCUMULATION OF SICK AND ANNUAL LEAVE:

A member may convert unused sick and annual leave to retirement credit on the basis of one work day for each eight hours of unused leave. Such converted leave shall not be used to determine eligibility for retirement. A member who has sick and annual leave that if converted to retirement credit would exceed one hundred percent of the member's average compensation may receive a lump sum payment equal to the additional leave's actuarial value.

DISABILITY BENEFITS:

The board of trustees shall award disability benefits to any sworn, commissioned law enforcement officer of the office of state police who is eligible and who has been officially certified as having a disability by the State Medical Disability Board.

Any member whose first employment making him eligible for membership in one of the state systems occurred on or before December 31, 2010, who applies for retirement due to a total and permanent disability caused solely as the result of injuries sustained in the performance of his official duties shall receive a disability benefit equal to fifty percent of his average salary, plus one and one-half percent of his average salary for each year of service credit in excess of ten years. Such benefit shall not exceed one hundred percent of the member's average salary.

Any member whose first employment making him eligible for membership in one of the state systems occurred on or before December 31, 2010, who applies for retirement due to a total and permanent disability caused not as a result of injuries sustained in the performance of his official duties with at least five years of service credit shall receive a disability benefit equal to fifty percent of his average salary plus one and one-half percent for each year of service credit in excess of ten years. Such benefit shall not exceed one hundred percent of the member's average salary.

Any member whose first employment making him eligible for membership in one of the state systems occurred on or before December 31, 2010, who applies for retirement due to a total and permanent disability caused solely as the result of injuries sustained in the performance of official duties including loss of limb, loss of organ, total loss of sight or hearing, paralysis, or permanent damage to the brain or spinal cord, shall receive a disability benefit equal to one hundred percent of his average annual salary, or thirty-six thousand dollars annually, whichever is greater.

Any member whose first employment making him eligible for membership in one of the state systems occurred on or after January 1, 2011, who applies for retirement due to a total and permanent disability resulting solely from injuries sustained in the performance of his official duties, shall receive a disability benefit equal to seventy-five percent of his average compensation regardless of years of service.

Any member whose first employment making him eligible for membership in one of the state systems occurred on or after January 1, 2011, who applies for retirement due to a total and permanent disability caused as the result of any other reason, a member with at least ten years of service credit shall receive a disability benefit equal to fifty percent of his average salary plus one and one-half percent for each year of service credit in excess of ten years. Such benefit shall not exceed one hundred percent of the member's average salary.

SURVIVOR BENEFITS:

For members whose first employment making them eligible for membership in one of the state systems occurred on or before December 31, 2010:

The surviving spouse of any such sworn commissioned law enforcement officer of the office of state police of the Department of Public Safety and Corrections who is killed in the discharge of his duties, or dies from immediate effects of any injury received as the result of an act of violence occurring while engaged in the discharge of his duties, shall receive a benefit equal to seventy-five percent of the salary being received by the employee at the time of the decedent's death or injury, provided the surviving spouse was married to the decedent at the time of the event which resulted in the officer's death. If there is no surviving spouse, surviving minor children shall receive the benefit until reaching eighteen years of age, or twenty-three years of age if a student.

The surviving spouse of any such sworn commissioned law enforcement officer of the office of state police of the Department of Public Safety and Corrections whose death occurs other than in the line of duty shall receive a monthly benefit according to the following table:

Deceased officer's Service Credit	Percent of Final Salary Survivor Benefit
Less than 5 years	25%
At least 5, but less than 10	30%
At least 10, but less than 15	40%
At least 15, but less than 20	50%

If the officer dies with at least 20 years of service, the surviving spouse shall receive a monthly benefit equal to the amount that the employee would have received had the employee elected to retire at the time of his death.

The surviving spouse of any employee whose death occurs other than in the line of duty shall cease receiving benefits while remarried, if remarried before age fifty-five.

Upon the death of an employee where there is no surviving spouse, or if the spouse has remarried and forfeited his or her benefit, the minor children of the deceased shall receive a monthly benefit equal to the greater of 1) 60% of the average salary of the deceased member, or 2) The pension that would have been received by the surviving spouse. Such minor child benefits are divided equally and cease as each minor child reaches eighteen years of age, or twenty-three years of age if a student. Children with a total physical or mental disability may receive benefits beyond age eighteen (or twenty-three).

In the event of the death of member where there is no surviving spouse and no minor children, a monthly pension of twenty-five percent of the average salary of the deceased employee shall be paid to the parent(s) if either of them derives their main support from the employee.

In the event of death of a former employee with at least ten years of service credit, the qualified surviving spouse shall receive a pension equal to the monthly retirement pay that would have been payable to the decedent. In the event of death of a retired employee, the qualified surviving spouse shall receive a pension equal to the monthly retirement pay that was being paid to the decedent on the date of death. (Surviving spouse benefits cease upon remarriage in some cases) If there is no surviving spouse eligible to receive benefits, the minor children of the decedent shall be entitled to share equally in a benefit equal to the greater of the spousal benefit or 60% of the average salary. If there is no surviving spouse or minor children, the qualifying parent(s) of the decedent may be entitled to benefits.

For members whose first employment making them eligible for membership in one of the state systems occurred on or after January 1, 2011:

If a member's death occurs in the line of duty or is a direct result of an injury sustained while in the line of duty, a monthly benefit equal to eighty percent of the member's average compensation will be shared equally by the surviving spouse, qualified minor children, or qualified disabled children.

Upon the death of a member with at least five years of service credit (two of which were earned immediately prior to death unless the member had at least twenty years) other than in the line of duty, the surviving spouse with a minor child or child with a disability, shall receive fifty percent of the benefit to which the member would have been entitled if he had retired on the date of death, or $600 per month, whichever is greater. (Spousal benefits cease upon remarriage in some cases)

In addition, qualifying children receive fifty percent of the benefit to which the spouse would be entitled, up to a maximum 100% to all children.

A surviving spouse without a minor child or a child with a disability, shall receive a benefit based on the decedent's years of service credit earned to the date of death using the applicable accrual rate, or $600 per month, whichever is greater. (Spousal benefits cease upon remarriage in some cases)

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.

Upon the death of a former member who terminated prior to attaining the requisite age for retirement eligibility with at least twelve years of service credit and contributions on deposit, the surviving spouse shall receive a monthly benefit equal to fifty percent of the benefit that would have been payable to the decedent.

Upon the death of a retired employee, the surviving spouse shall receive a monthly benefit equal to seventy-five percent of the benefit that was being paid to the decedent on the date of death provided the surviving spouse was married to the decedent for at least two years prior to the decedent's death.

Upon the death of a former member or retired employee with no surviving spouse, or if the spouse has remarried and forfeited his benefit, the minor children shall be entitled to fifty percent of the monthly retirement benefit that would have been payable to the decedent or was being paid to the decedent on the date of death. If there are no qualified children, the parents of the decedent may be entitled to a benefit under certain circumstances.

COST OF LIVING ADJUSTMENTS/PERMANENT BENEFIT INCREASES:

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 $5 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 COLA, the Board may recommend that the legislature grant a COLA 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. 11:1332, provided a COLA had not been granted in the prior year. Benefits are restricted to disability retires 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. In addition, the Experience Account statute outlines a supplemental permanent benefit increase of 2% of the benefit being received (subject to limitation by the indexed $60,000 limit) to all retirees and beneficiaries who are at least age 65 and who retired on or before June 30, 2001.

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: 7.00% (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: 110% of the RP2014 Total Dataset Employee Table for males and 105% of the RP2014 Total Dataset Employee Table for females, each with the full generational MP2017 scale.

ANNUITANT AND BENEFICIARY MORTALITY: 110% of the RP2014 Total Dataset Healthy Annuitant Table for males and 105% of the RP2014 Total Dataset Healthy Annuitant Table for females, each with the full generational MP2017 scale.

DISABLED LIVES MORTALITY: RP2014 Total Dataset Disabled Tables for Males and Females with the full generational MP2017 scale.

RETIREE COST OF LIVING INCREASES: The present value of future retirement benefits is based on benefits currently being paid by the system and includes previously granted cost of living increases. The present values and accrued liabilities within this report do not include provisions for potential future increases not yet authorized by the Legislature, but do include a recognition of 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.

ANNUAL SALARY INCREASE RATE: 5.25% (2.50% inflation /2.75% merit)

RETIREMENT RATES: The table of these rates through age 75 is included later in the report. These rates apply only to those individuals eligible to retire.

DISABILITY RATES: The table of these rates through age 75 is included later in this report.

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

Service Duration (≤)	Rate	Service Duration (≤)	Rate
1	0.036	14	0.003
2	0.026	15	0.003
3	0.011	16	0.003
4	0.009	17	0.003
5	0.018	18	0.003
6	0.028	19	0.003
7	0.030	20	0.003
8	0.027	21	0.003
9	0.021	22	0.003
10	0.017	23	0.003
11	0.016	24	0.003
12	0.014	Above 24	0.010
13	0.003		

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

VESTING ELECTING PERCENTAGE: Any member who terminates service credit after reaching the vesting threshold may not receive a refund of employee contributions. Thus, we have elected to recognize that 100% of such employees will wait to receive a vested benefit.

Back-DROP UTILIZATION: Back-DROP is an alternative form of retirement benefit elected at the time of retirement. Back-DROP utilization probabilities based on recent experience are as follows:

1 year	2 year	3 year
9.93%	4.96%	12.06%

RETIREMENT LIMITATIONS: Projected retirement benefits are not subject to IRS Section 415 limits.

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 a 5.5% increase in the accrued benefit.

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

FAMILY STATISTICS: Assumptions utilized in determining the costs of various survivor benefits as listed below, are derived from the information provided in the U.S. Census reports from 2010 and the 2014 Family Household Survey:

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

"IN THE LINE OF DUTY" DEATH: 20% of the active deaths are assumed to occur while in the line of duty (service connected).

"IN THE LINE OF DUTY" DISABILITY: 50% of the active disabilities awarded by the Board of Trustees are assumed to have occurred while in the line of duty (service related).

ACTUARIAL TABLES AND RATES

Age	Retirement Rates	Disability Rates
18	0.00000	0.00083
19	0.00000	0.00083
20	0.00000	0.00083
21	0.00000	0.00083
22	0.00000	0.00083
23	0.00000	0.00083
24	0.00000	0.00083
25	0.00000	0.00083
26	0.00000	0.00083
27	0.00000	0.00083
28	0.00000	0.00083
29	0.00000	0.00083
30	0.00000	0.00083
31	0.00000	0.00083
32	0.00000	0.00083
33	0.00000	0.00083
34	0.00000	0.00083
35	0.00000	0.00094
36	0.00000	0.00105
37	0.00000	0.00116
38	0.00000	0.00132
39	0.00000	0.00149
40	0.00000	0.00171
41	0.00000	0.00193
42	0.00000	0.00215
43	0.10000	0.00242
44	0.10000	0.00275
45	0.10000	0.00314
46	0.10000	0.00358
47	0.10000	0.00402
48	0.10000	0.00457
49	0.10000	0.00517
50	0.25000	0.00589
51	0.25000	0.00671
52	0.25000	0.00759
53	0.25000	0.00864
54	0.25000	0.00979
55	0.25000	0.01111
56	0.25000	0.01265
57	0.50000	0.01436
58	0.50000	0.01628
59	0.50000	0.01854
60	0.50000	0.02684
61	0.50000	0.02684
62	0.50000	0.02684
63	0.99000	0.02684
64	0.99000	0.02684
65	0.99000	0.02684
66	0.99000	0.02684
67	0.99000	0.02684
68	0.99000	0.02684
69	0.99000	0.02684
70	0.99000	0.02684
71	0.99000	0.02684
72	0.99000	0.02684
73	0.99000	0.02684
74	0.99000	0.02684
75	1.00000	0.02684

GLOSSARY

Accrued Benefit – The pension benefit that an individual has earned as of a specific date based on the provisions of the plan and the individual's age, service, and salary as of that date.

Actuarial Accrued Liability – The actuarial present value of benefits payable to members of the fund less the present value of future normal costs attributable to the members.

Actuarial Assumptions – Assumptions as to the occurrence of future events affecting pension costs. These assumptions include rates of mortality, withdrawal, disablement, and retirement. Also included are rates of investment earnings, changes in compensation, as well as statistics related to marriage and family composition.

Actuarial Cost Method – A procedure for determining the portion of the cost of a pension plan to be allocated to each year. Each cost method allocates a certain portion of the actuarial present value of benefits between the actuarial accrued liability and future normal costs. Once this allocation is made, a determination of the normal cost attributable to a specific year can be made along with the payment to amortize any unfunded actuarial accrued liability. To the extent that a particular funding method allocates a greater (lesser) portion of the actual present value of benefits to the actuarial accrued liability it will allocate less (more) to future normal costs.

Actuarial Equivalence – Payments or receipts with equal actuarial value on a given date when valued using the same set of actuarial assumptions.

Actuarial Gain (Loss) – The financial effect on the fund of the difference between the expected and actual experience of the fund. The experience may be related to investment earnings above (or below) those expected or changes in the liability structure due to fewer (or greater) than the expected numbers of retirements, deaths, disabilities, or withdrawals. In addition, other factors such as pay increases above (or below) those forecast can result in actuarial gains or losses. The effect of such gains (or losses) is to decrease (or increase) future costs.

Actuarial Present Value – The value, as of a specified date, of an amount or series of amounts payable or receivable thereafter, with each amount adjusted to reflect the time value of money (through accrual of interest) and the probability of payments. For example: if $600 invested today will be worth $1,000 in 10 years and there is a 50% probability that a person will live 10 years, then the actuarial present value of $1,000 payable to that person if he should survive 10 years is $300.

Actuarial Value of Assets – The value of cash, investments, and other property belonging to the pension plan as used by the actuary for the purpose of the actuarial valuation. This may correspond to the book value, market value, or some modification involving either or both book and market value. Adjustments to market values are often made to reduce the volatility of asset values.

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

Amortization Payment – That portion of the pension plan contribution designated to pay interest and reduce the outstanding principal balance of unfunded actuarial accrued liability. If the amortization payment is less than the accrued interest on the unfunded actuarial accrued liability the outstanding principal balance will increase.

Contribution Shortfall (Excess) – The difference between contributions recommended in the prior valuation and the actual amount received.

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 Option (IBO) Account – The account into which the initial benefit is deposited. Interest is credited thereto and monthly payments made from this account.

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.