LOUISIANA STATE POLICE RETIREMENT SYSTEM

ACTUARIAL VALUATION AS OF
JUNE 30, 2017

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October 6, 2017

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, 2017. 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 of the State of Louisiana. The primary purposes of the report are to determine the actuarially required contribution for the retirement system for the fiscal year ending June 30, 2018, and to recommend the net direct employer contribution rate for Fiscal 2019. 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

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

Gregory M. Curran

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SUMMARY OF VALUATION RESULTS
LOUISIANA STATE POLICE RETIREMENT SYSTEM

Valuation Date:		June 30, 2017	June 30, 2016
Census Summary:	Active Members	1,071	1,041
	Retired Members and Survivors	1,155	1,220
	Terminated Due a Deferred Benefit	43	41
	Terminated Due a Refund	139	127
Payroll:		$ 84,059,551	$ 75,969,718
Benefits in Payment:		$ 43,286,212	$ 41,866,788
Present Value of Future Benefits		$ 1,226,459,113	$ N/A
Actuarial Accrued Liability (EAN):		$ 1,062,446,959	$ 1,006,626,437
Unfunded Actuarial Accrued Liability:		$ 287,782,158	$ 307,504,737
Experience Account:		$ 5,260,562	$ 3,963,595
Actuarial Value of Assets: †		$ 774,664,801	$ 699,121,700
Market Value of Assets (Includes Experience Account):		$ 782,572,348	$ 670,423,169
Ratio of AVA to Actuarial Accrued Liability:		72.91%	69.50%

	Fiscal 2017	Fiscal 2016
Market Rate of Return (Excluding Money Market DROP funds):	14.62%	-1.63%
Actuarial Rate of Return (Excluding Money Market DROP funds):	8.23%	6.23%
Non-Money Market DROP Account Interest Credit Rate:	7.73%	5.73%

	Fiscal 2018	Fiscal 2017
Employers' Normal Cost (Mid-year):	$ 15,158,998	$ 13,720,666
Amortization Cost (Mid-year):	$ 22,725,865	$ 24,792,373
Projected Administrative Expenses:	$ 751,409	$ 712,000
Insurance Premium Taxes	$ 1,500,000	$ 1,500,000
Net Direct Employer Actuarially Required Contributions:	$ 37,136,272	$ 37,013,039 *
Projected Payroll:	$ 84,480,807	$ 76,956,653
Actuarially Required Net Direct Employer Contribution Rate:	44.0%	48.1%
Actual Employee Contribution Rate:		
Employees whose first state service occurred before January 1, 2011:	8.50%	8.50%
Employees whose first state service occurred on or after January 1, 2011:	9.50%	9.50%
Actual Net Direct Employer Contribution Rate:	47.4%	51.2%

	Fiscal 2019	Fiscal 2018
Minimum Recommended Net Direct Employer Cont. Rate:	43.1%	47.4%

† For Fiscal 2016, the Actuarial Value of Assets excludes the Experience Account Balance. Beginning with Fiscal 2017, the Actuarial Value of Assets is inclusive of the Experience Account Balance.

* Excludes Administrative Expenses as per previous actuary's report.

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 1,071 active contributing members in the system of whom 792 have vested retirement benefits; 1,155 former members or their beneficiaries are receiving retirement benefits. An additional 182 terminated members have contributions remaining on deposit with the system; of this number 43 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 $782,572,348 as of June 30, 2017. Net investment income for Fiscal 2017 measured on a market value basis was $98,946,529. Contributions to the system for the fiscal year totaled $58,058,171; benefits and expenses amounted to $44,855,521.

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 are generally amortized over 30 years. Since this valuation indicates that the funded ratio of the plan (based on the actuarial value of assets) will exceed 70%, such amortization periods for new amortization bases beginning with the fiscal 2018 valuation will be twenty years as specified in the statutes. All contribution shortfalls and excesses are amortized as a level dollar amount over 5 years. In each valuation, the first $5,000,000 of any asset gain (adjusted pro-rata for increases in the Actuarial Value of Assets) is used to immediately reduce the system's oldest outstanding amortization base without re-amortization. After the system's funded percentage reaches 80%, the remaining balance of the oldest outstanding positive base after application of the first level of asset gains by $5,000,000 will be re-amortized over the remaining amortization period originally established for that base. Fifty percent of the asset gains which exceed the adjusted $5,000,000 threshold will be used to fund the system's Experience Account which may be allocated to future permanent benefit increases (commonly referred to cost of living adjustments), subject to certain limitations. Effective with the first system valuation following June 30, 2015 valuation, any such allocation will be amortized as a loss with level payments over ten years. The funding methodology for the plan also includes the application of "side funds" defined by R.S. 11:102. The funds include the system's "Experience Account."

The system's Experience Account is funded by 50% of any investment gains above $5,000,000 (adjusted pro-rate for increases in the Actuarial Value of Assets) subject to the limits on the account value. In addition, each year the balance in the account is credited with investment earnings or debited with investment losses, shown in this report as the rate of return on the Actuarial Value of Assets. The balance in the account cannot exceed the reserve necessary to grant one (two if the system is funded 80% or greater) cost-of-living adjustment (or permanent benefit increase) as otherwise authorized by law. Any funds credited to the Experience Account reduce, or offset, those allocated to the Investment Gain/Loss Experience base.

A review was made of the prior actuary's experience report, dated April 25, 2013. This report detailed the experience for the plan over the prior five year period. In particular, a review of the mortality as given in the experience report indicated that even though the RP2000 table without projection was utilized, it included significant margins for mortality improvement; hence no projection was made to the table. The general economic and non-economic assumptions used by the prior actuary for the June 30, 2016 valuation were reviewed for reasonableness and a determination was made to retain them (since no experience information was available to reset these assumptions) with the exception of the statistics related to family composition and rates of remarriage. The change was made in these categories to better accommodate the software model used in this valuation. We do not believe that these changes had a material effect. The valuation interest rate was determined by reviewing recent and long-term historical economic data as well as forward looking estimates provided by the fund's investment consultant, UBS, and other consulting groups. Inputs from these sources were used to establish estimated future real rates of return, return standard deviations, and correlations among asset classes. Consideration was also given to inflation data from consultants and other sources as well as historical inflation trends. The 7% nominal return rate was developed based on the above inputs and the system's current asset allocation model together with an inflation assumption of 2.50%. (Note that this represents a decrease from the prior year rate of 2.75%). Consideration was also given to expected investment costs.

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. Recent interest rate declines have subjected pension plans to an increase in this risk. As fixed income securities have matured, investment managers have been 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 72.91% as of June 30, 2017. This value gives some indication of the financial strength of the plan; however, it does not guarantee the ability of the fund to pay benefits in the future or indicate that in the future, contributions are likely to be less than or greater than current contributions. In addition, the ratio cannot be used in isolation to compare the relative strength of different retirement systems. However, the trend of this ratio over time can give some insight into the financial health of the plan. Even in this regard, caution is warranted since market fluctuations in asset values and changes in plan assumptions can distort underlying trends in this value. One additional risk measure is the sensitivity of the plan's cost structure to asset gains and losses. For this plan, we have determined that based on current assets and demographics, for each percentage under the assumed rate of return on the actuarial value of assets, there will be a corresponding increase in the actuarially required contribution as a percentage of projected payroll of 0.81% 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 2017 this ratio is 51%; ten years ago this ratio was 59%. 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 2018 by 16.7% of payroll.

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

CHANGES IN PLAN PROVISIONS

The following legislative changes directly affecting the retirement system were enacted during the 2017 Regular Session of the Louisiana Legislature.

Act 284 of the 2017 Regular Session of the Louisiana Legislature provides for increased payments to survivors of a member killed in an intentional act of violence.

Act 285 of the 2017 Regular Session of the Louisiana Legislature provides a framework to correct enrollment errors for all employees in positions covered by state and statewide retirement systems. The act requires the member to be enrolled in the correct system with a transfer of contributions and interest from the erroneous system to the correct system. As a part of the correction of the enrollment error, the member will be credited with the correct service credit, accrual rate, and employee contribution balance in the correct system. If the correction occurs within three years of the enrollment error, the correct system shall complete the correction upon receipt of the employee contributions and employer contributions that would have been paid had the member been properly enrolled with interest at the system's board-approved actuarial valuation interest rate. If the correction occurs more than three years after the enrollment error, the correct system shall receive the greater of 1) Employee contributions and employer contributions plus interest, and 2) The actuarial cost to the correct system of the service credit transferred. The employer must pay the difference between the amount transferred from the incorrect system to the correct system and the cost of the correction.

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 †
2008	-5.24%	4.55%
2009	-18.96%	-7.13%
2010	11.46%	0.32%
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%

† 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 2013 – 2017)	9.30%
10 year average	(Fiscal 2008 – 2017)	5.07%

The market rate of return gives a measure of investment return on a total return basis and includes realized and unrealized capital gains and losses as well as interest income. The rate of return is calculated on assets invested in the system's portfolio. DROP and IBO 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 2017, the fund earned $7,830,845 of dividends, interest and other recurring income. In addition, the Fund had net realized and unrealized capital gains on investments of $93,251,730. Fund investment expenses totaled $2,136,046.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 7.00% used for the valuation. DROP accounts that are credited with earnings based on the actual rate of return of the system should be credited with 7.73% (i.e. 8.23% 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 and IBO assets invested in money market accounts and includes all interest, dividends, and recognized capital gains as given in Exhibit VI net of money market income earned by DROP and IBO 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 2017, the system experienced actuarial investment earnings of $8,661,910 above the actuarial assumed earnings rate of 7.00%. Partially offsetting these asset experience gains were allocations of $6,056,800 to the oldest UAL debit base and $970,763 to the Experience Account leaving net asset gains of $1,634,347. This actuarial gain decreased the interest-adjusted amortization payments on the system's UAL by $69,335 or 0.08% of projected payroll.

DEMOGRAPHICS AND LIABILITY EXPERIENCE

The average active contributing member is 43 years old with 15.9 years of service credit and an annual salary of $78,487. The system's active contributing membership experienced an increase of 30 members during Fiscal 2017; over the last five years, the number of active contributing members increased by 92.

The average service retiree is 68 years old with a monthly benefit of $3,580. The number of retirees and beneficiaries receiving benefits from the system as shown in the report decreased by 65 during the fiscal year. The decrease resulted from the consolidation of records split for dual payments in cases of divorce. Over the last five years, annual benefits in payment increased by $4,996,191.

Liability experience for the year was unfavorable. The total number of retirements and disabilities were below projected levels. This tends to reduce costs. Deaths and withdrawals were also below projected levels; this tends to increase costs. The single largest factor related to the liability experience is the rate of salary increase. Increases this year were significantly above expected levels. It should be noted, however, that this increase was primarily related to the omission of one pay period of salary from the prior year valuation. Net plan liability experience losses totaled $6,707,700. The interest adjusted amortization payment on this loss was $522,568, or 0.62% 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 2017 contributions totaled $9,572,640 more than required; the interest-adjusted amortization credit based on the contribution surplus for Fiscal 2018 is $2,257,018, or 2.67% of projected payroll. In addition, for Fiscal 2018 the net effect of the change in payroll on amortization costs was to decrease such costs by 2.88% 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 2018 except for those items labeled Fiscal 2017.

	Dollars	Percentage of Payroll
Employer Normal Cost for Fiscal 2017	$ 13,720,666	17.83%
Cost of Demographic and Salary Changes	$ 1,438,332	0.11%
Employer Normal Cost for Fiscal 2018	$ 15,158,998	17.94%
UAL Payments for Fiscal 2017	$ 24,792,373	32.22%
Change due to change in payroll	N/A	(2.89%)
Change due to elimination of Amortization Credit	$ 130,420	0.17%

Additional Amortization Expenses for Fiscal 2018:

Change in Software Model	$	(393,143)	(0.47%)
Liability Assumption Loss	$	409,828	0.49%
Asset Assumption Gain	$	(409,828)	(0.49%)
Liability Experience Loss	$	522,568	0.62%
Asset Experience Gain	$	(674,813)	(0.80%)
Gains Allocated to Experience Account	$	133,618	0.16%
Priority Excess Allocation Offset	$	471,860	0.56%
Contribution Surplus	$	(2,257,018)	(2.67%)
Total Amortization Expense for Fiscal 2018	$	22,725,865	26.90%
Projected Adminstrative Expenses for Fiscal 2018	$	751,409	0.89%
Total Normal Cost & Amortization Payments	$	38,636,272	45.73%

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The employer's normal cost for Fiscal 2018, interest adjusted for mid-year payment is $15,158,998. The amortization payments on the system's unfunded actuarial accrued liability total $22,725,865. 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 2018 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 2018. As given in line 14 of Exhibit I, the net actuarially required employer contribution for Fiscal 2018 is $37,136,272, or 44.0% of projected payroll.

Since the actual employer contribution rate for Fiscal 2018 is 47.4% of payroll, there will be a contribution surplus of 3.4% of payroll. This surplus will decrease the actuarially required contribution recommended for Fiscal 2019. In order to determine a minimum recommended net direct employer contribution rate for Fiscal 2019, the Employer Normal Cost and Amortization Payments were estimated for Fiscal 2019, adjusted for the impact of the estimated contribution surplus for Fiscal 2018. As given in line 25 of Exhibit I, the estimated actuarially required net direct employer contribution for Fiscal 2019 is $36,605,034, or 43.1% of projected payroll.

COST OF LIVING ADJUSTMENTS

During Fiscal 2017, the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 1.63%. Cost of living provisions for the system are detailed in R.S. 11:1332 within the statutes relative to the Experience Account. The Experience Account cannot be credited with funds that would cause the balance in the account to exceed the reserve of one cost of living adjustment 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. 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:

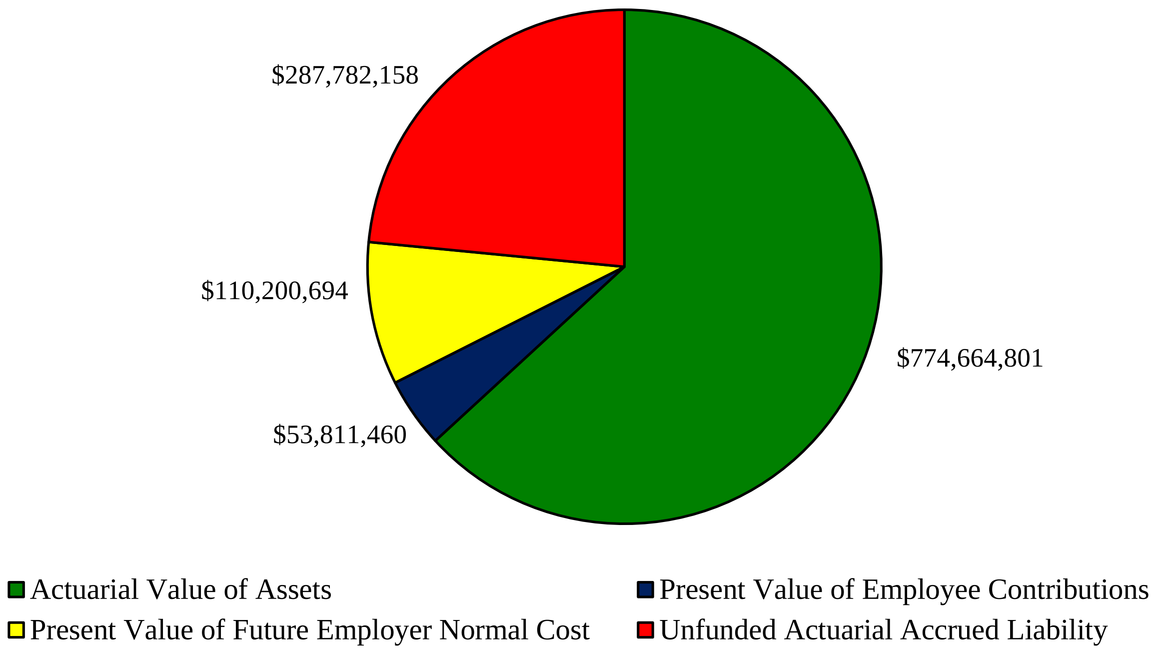
Funded Percentage of the System	Maximum Percent COLA
At least 80%	3.0%
At least 75% but less than 80%	2.5%
At least 65% but less than 75%	2.0%
At least 55% but less than 65%	1.5%
Less than 55%	No COLA permitted

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.

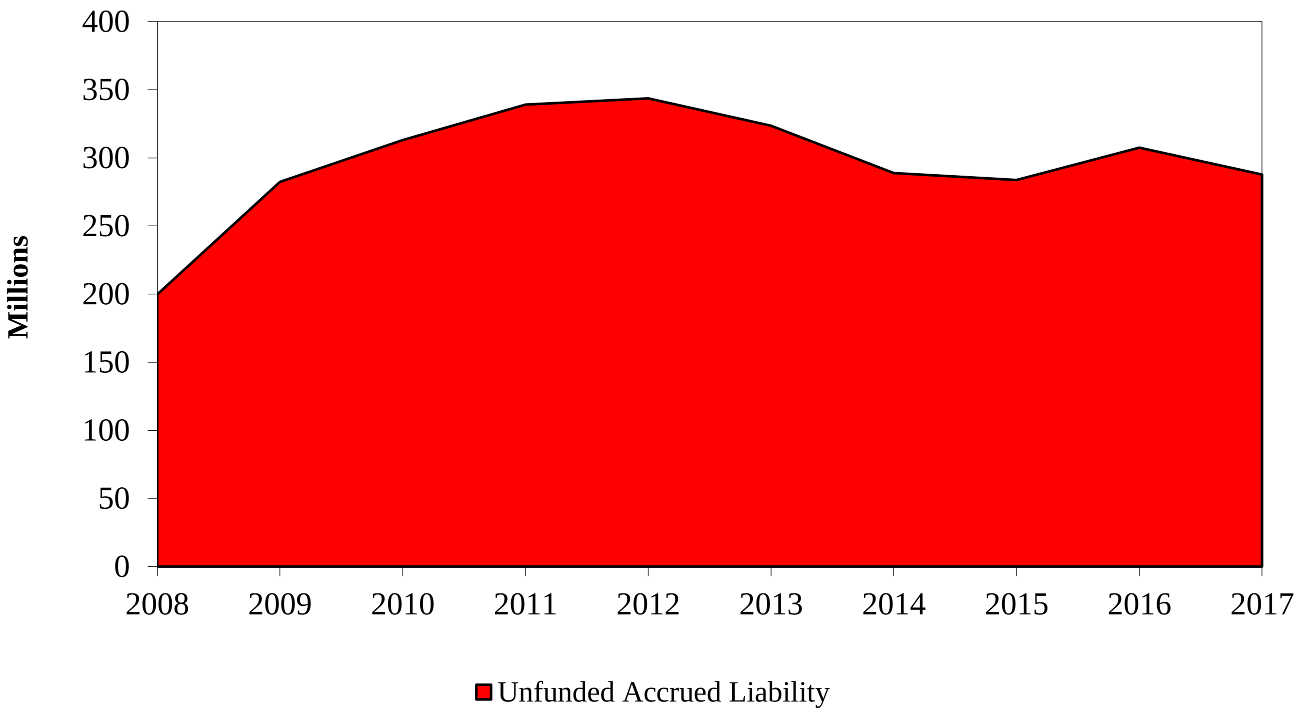
If there are sufficient funds in the Experience Account and the system met the necessary criteria to grant a cost of living adjustment, the Board of Trustees may recommend to the President of the Senate and the Speaker of the House of Representatives that the system be permitted to grant a cost of living adjustment. Cost of living adjustments are based on the benefit in payment at the time the adjustment is approved with a maximum adjustment based on the first $60,000 of benefits, where the $60,000 limit is increased annually by the consumer price index for all urban consumers from July 1, 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.

For fiscal 2017, the Experience Account was filled with an amount sufficient to fund one COLA payable to qualifying retirees and beneficiaries in an amount equal to the lesser of 2% or the increase in the CPI-U during the fiscal year (1.63%). Therefore, 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 equal to 1.63% of the current benefit being paid to qualifying retirees and beneficiaries. There are insufficient funds in the Experience Account to pay the supplemental COLA described in R. S. 11:1332(F).

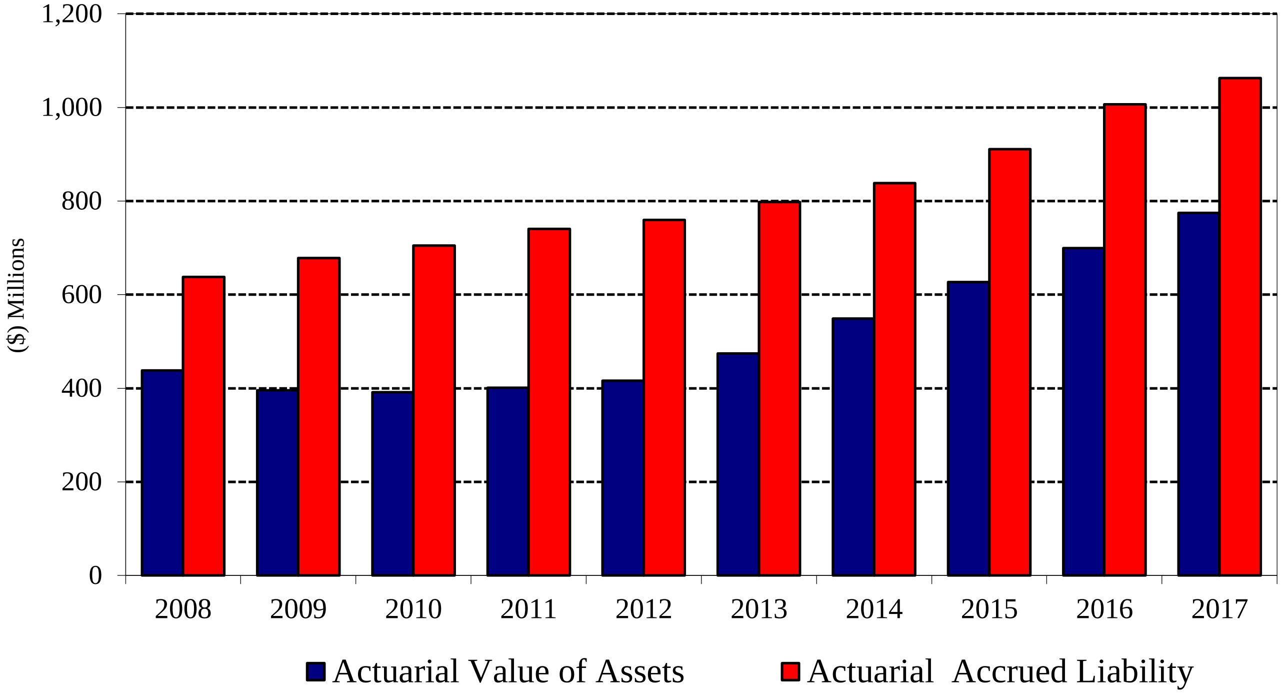
Components of Present Value of Future Benefits
June 30, 2017



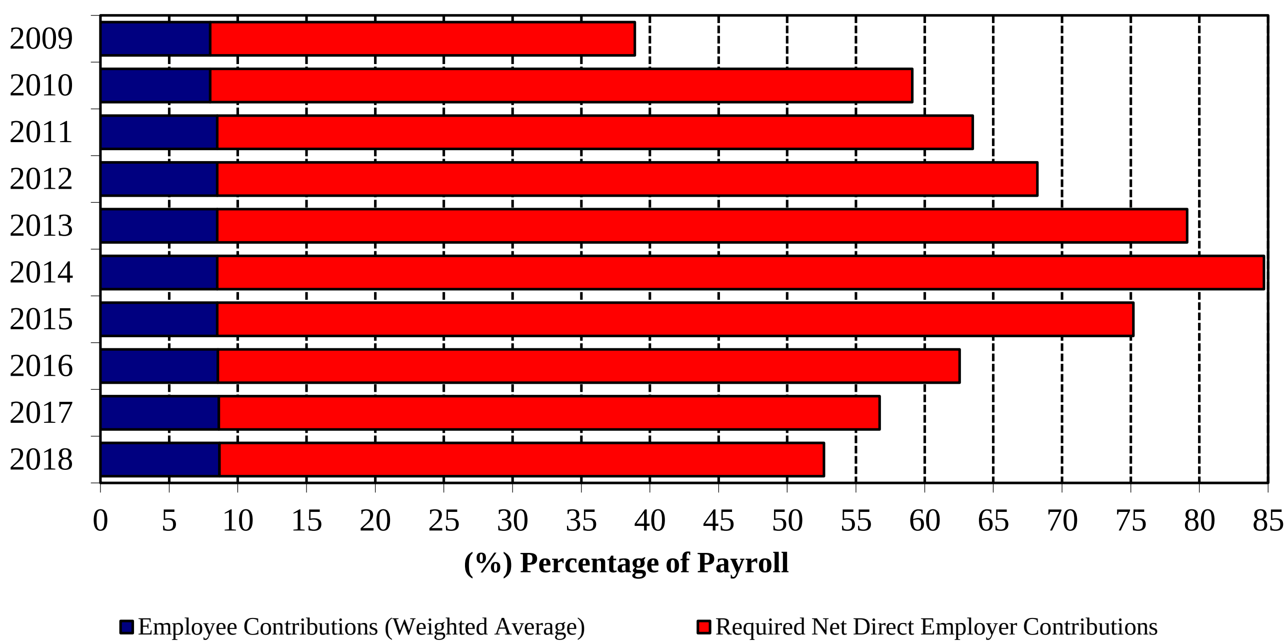
Unfunded Accrued Liability



Actuarial Value of Assets vs. Actuarial Accrued Liability



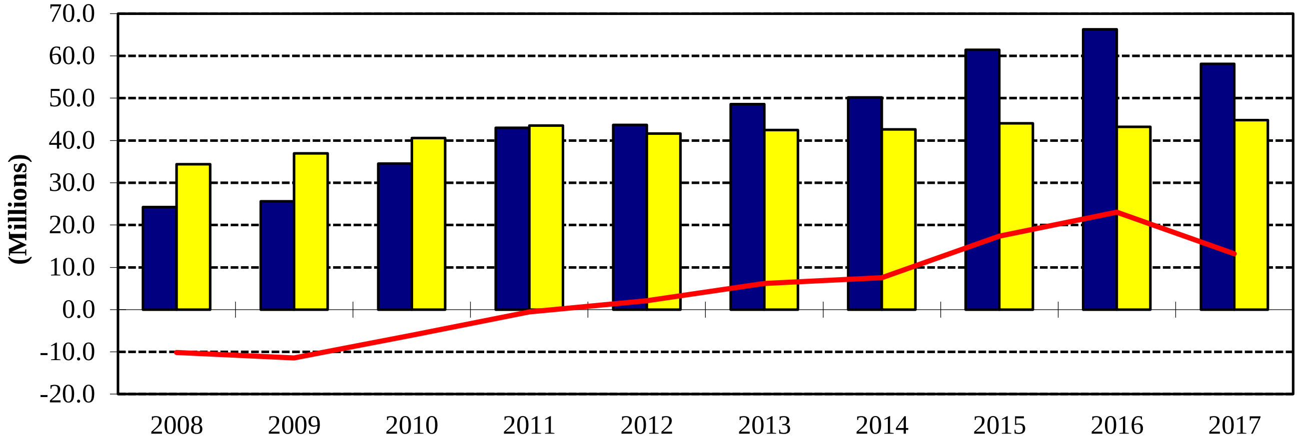
Components of Actuarial Funding



(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)

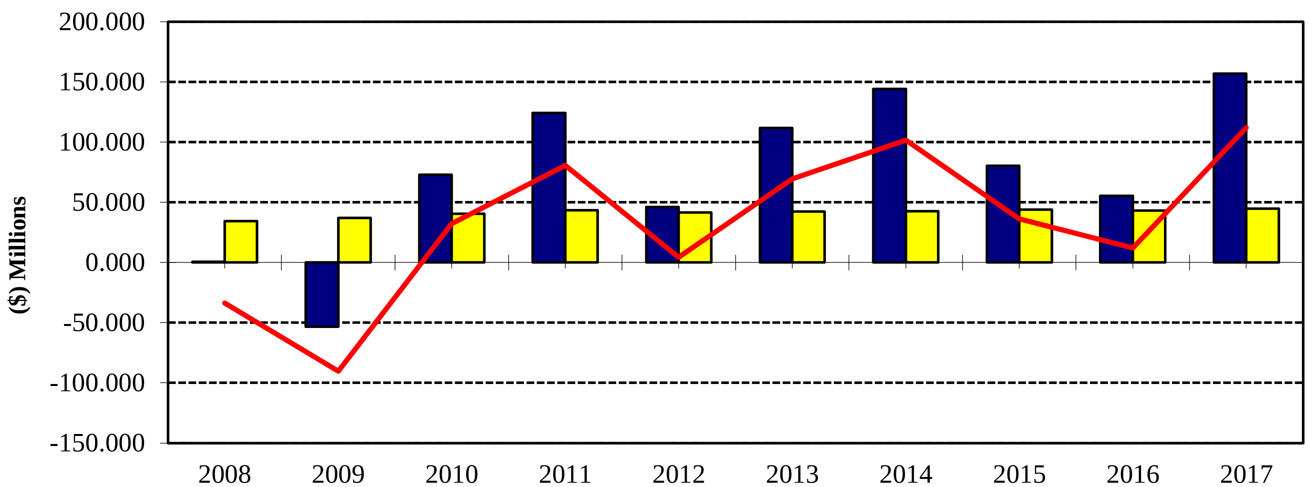
Actuarial Value of Assets includes the balance of the Experience Account beginning with fiscal 2017.

Net Non-Investment Income



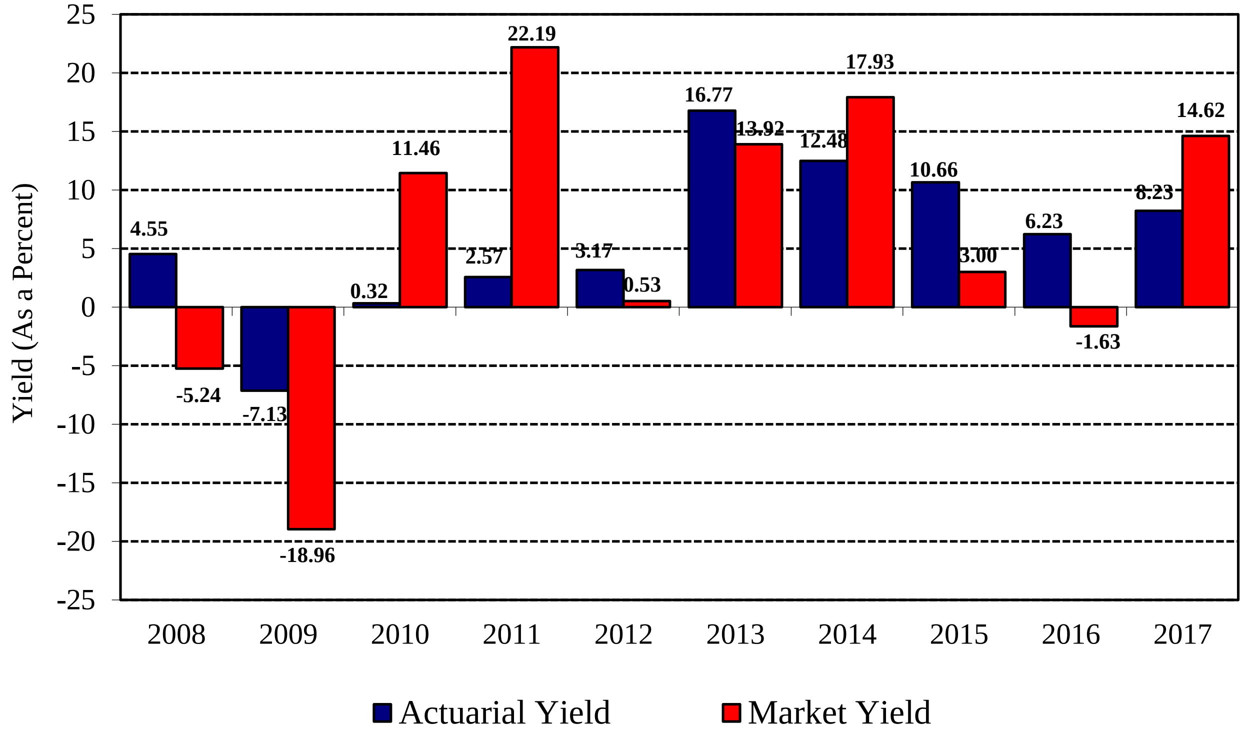
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Non-Investment Income ($Mil)	24.3	25.6	34.5	43.0	43.7	48.6	50.2	61.5	66.3	58.1
Benefits and Expenses ($Mil)	34.4	37.0	40.6	43.6	41.6	42.4	42.6	44.1	43.2	44.9
Net Non-Investment Income ($Mil)	-10.1	-11.4	-6.0	-0.6	2.1	6.2	7.6	17.4	23.0	13.2

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



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total Income ($Mil)	0.7	-53.3	72.9	124.2	46.1	111.9	144.3	80.4	55.4	157.0
Benefits and Expenses ($Mil)	34.4	37.0	40.6	43.6	41.6	42.4	42.6	44.1	43.2	44.9
Net Change in MVA ($Mil)	-33.7	-90.3	32.3	80.7	4.5	69.5	101.7	36.3	12.1	112.1

Historical Asset Yields



EXHIBITS

EXHIBIT I
ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1.	Normal Cost of Retirement Benefits	$	19,315,687
2.	Normal Cost of Death Benefits	$	562,998
3.	Normal Cost of Disability Benefits	$	900,048
4.	Normal Cost of Deferred Retirement Benefits	$	529,624
5.	Normal Cost of Contribution Refunds	$	507,023
6.	TOTAL Normal Cost as of July 1, 2017 (1 + 2 + 3 + 4 + 5)	$	21,815,380
7.	TOTAL Normal Cost Interest Adjusted for Midyear Payment	$	22,566,005
8.	Adjustment to Total Normal Cost for Employee Portion	$	7,407,007
9.	TOTAL Employer Normal Cost Adjusted for Midyear Payment (7 – 8)	$	15,158,998
10.	Amortization Payments on Unfunded Accrued Liability (Midyear)	$	22,725,865
11.	Projected Administrative Expenses for Fiscal 2018	$	751,409
12.	Gross Employer Required Contribution (9 + 10 + 11)	$	38,636,272
13.	Projected Insurance Premium Taxes due in Fiscal 2018	$	1,500,000
14.	Net Direct Actuarially Required Employer Contribution for Fiscal 2018 (12 – 13)	$	37,136,272
15.	Projected Payroll for Contributing Members (Fiscal 2018)	$	84,480,807
16.	Net Direct Actuarially Required Employer Contribution as a Percentage of Projected Payroll for Fiscal 2018 (14 ÷ 15)		44.0%
17.	Actual Net Direct Employer Contribution Rate for Fiscal 2018		47.4%
18.	Projected Fiscal 2018 Contribution Loss (Gain) as a % of Payroll (16 – 17)		(3.4%)
19.	Projected Fiscal 2018 Employer Contribution Shortfall (Surplus) (15 × 18)	$	(2,872,347)
20.	Estimated Amortization of Fiscal 2018 Employer Contribution Shortfall (Surplus) Based on Midyear Payment in Fiscal 2019	$	(700,539)
21.	Estimated Fiscal 2019 Employer Normal Cost Adjusted for Midyear Payment	$	15,234,966
22.	Estimated Fiscal 2019 Amortization Payments based on Fiscal 2018 UAL	$	22,800,413
23.	Estimated Fiscal 2019 Administrative Expenses	$	770,194
24.	Projected Insurance Premium Taxes due in Fiscal 2019	$	1,500,000
25.	Estimated Actuarially Net Direct Required Employer Contributions for Fiscal 2019 (20+ 21 + 22 + 23 - 24)	$	36,605,034
26.	Projected Payroll for Contributing Members (Fiscal 2019)	$	84,904,174
27.	Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2019 (25 ÷ 26, Rounded to nearest 0.10%)		43.1%

EXHIBIT II
PRESENT VALUE OF FUTURE BENEFITS

PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits	$ 689,584,823		
Survivor Benefits	7,192,437		
Disability Benefits	9,993,238		
Vested Termination Benefits	8,856,277		
Refunds of Contributions	3,051,818		
TOTAL Present Value of Future Benefits for Active Members		$	718,678,593

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement	$ 12,176,813		
Terminated Members with Reciprocals Due Benefits at Retirement	0		
Terminated Members Due a Refund	192,987		
TOTAL Present Value of Future Benefits for Terminated Members		$	12,369,800

PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees	$ 391,679,699		
Disability Retirees	18,496,395		
Survivors & Widows	59,078,720		
Liability Attributable to the Experience Account	5,260,562		
DROP Account Balances Payable to Retirees	20,895,344		
TOTAL Present Value of Future Benefits for Retirees & Survivors		$	495,410,720

TOTAL Present Value of Future Benefits	$	1,226,459,113

EXHIBIT III – SCHEDULE A
MARKET VALUE OF ASSETS

CURRENT ASSETS:				
Cash in Banks	$	2,029,178		
Contributions Receivable		1,282,815		
Accrued interest and dividends		426,103		
Other Current Assets		1,018		
TOTAL CURRENT ASSETS			$	3,739,114
Property Plant & Equipment			$	1,250,363
INVESTMENTS:				
Cash Equivalents	$	45,867,039		
Equities		492,218,623		
Fixed Income		139,687,893		
Alternative Investments		102,066,148		
Collateral for Securities Lending		65,032,536		
TOTAL INVESTMENTS			$	844,872,239
OTHER ASSETS			$	342,725
TOTAL ASSETS			$	850,204,441
CURRENT LIABILITIES:				
Accounts Payable	$	804,308		
Securities Lending Obligations		65,032,536		
Other Post-Employment Benefits		446,290		
Deferred Contributions		17,380		
Other Current Liabilities		1,331,579		
TOTAL CURRENT LIABILITIES			$	67,632,093
MARKET VALUE OF ASSETS			$	782,572,348

EXHIBIT III – SCHEDULE B
ACTUARIAL VALUE OF ASSETS

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

Fiscal year 2017	$	51,566,684
Fiscal year 2016		(57,851,897)
Fiscal year 2015		(25,258,982)
Fiscal year 2014		57,344,656
Fiscal year 2013		29,184,592
Total for five years	$	54,985,053

Deferral of excess (shortfall) of invested income:

Fiscal year 2017 (80%)	$	41,253,347
Fiscal year 2016 (60%)		(34,711,138)
Fiscal year 2015 (40%)		(10,103,593)
Fiscal year 2014 (20%)		11,468,931
Fiscal year 2013 (0%)		0
Total deferred for year	$	7,907,547

Market value of plan net assets, end of year	$	782,572,348
Preliminary actuarial value of plan assets, end of year	$	774,664,801

Actuarial value of assets corridor

85% of market value, end of year	$	665,186,496
115% of market value, end of year	$	899,958,200

Final actuarial value of plan net assets, end of year	$	774,664,801

† 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	$	53,811,460
Employer Normal Contributions to the Pension Accumulation Fund		110,200,694
Employer Amortization Payments to the Pension Accumulation Fund		287,782,158
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS	$	451,794,312

EXHIBIT V – SCHEDULE A
ACTUARIAL ACCRUED LIABILITIES

LIABILITY FOR ACTIVE MEMBERS				
Accrued Liability for Retirement Benefits	$	543,915,485		
Accrued Liability for Survivor Benefits		3,055,735		
Accrued Liability for Disability Benefits		3,392,737		
Accrued Liability for Vested Termination Benefits		4,947,117		
Accrued Liability for Refunds of Contributions		(644,635)		
TOTAL Actuarial Accrued Liability for Active Members			$	554,666,439
LIABILITY FOR TERMINATED MEMBERS			$	12,369,800
LIABILITY FOR RETIREES AND SURVIVORS			$	495,410,720
TOTAL ACTUARIAL ACCRUED LIABILITY			$	1,062,446,959
ACTUARIAL VALUE OF ASSETS			$	774,664,801
UNFUNDED ACTUARIAL ACCRUED LIABILITY			$	287,782,158

EXHIBIT V – SCHEDULE B
CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY

PRIOR YEAR UNFUNDED ACCRUED LIABILITY			$	307,504,737
Interest on Unfunded Accrued Liability	$	21,525,332		
Liability Assumption Loss		5,260,562		
Liability Experience Loss		6,707,700		
Gains Allocated to Experience Account		970,763		
TOTAL Additions to UAL			$	34,464,357
Change in Model	$	5,046,395		
Asset Assumption Gain		5,260,562		
Asset Experience Gain		8,661,910		
Contribution Excess with Accrued Interest		9,572,640		
Interest Adjusted Amortization Payments		25,645,430		
TOTAL Reductions to UAL			$	54,186,936
NET Change in Unfunded Accrued Liability			$	(19,722,579)
CURRENT YEAR UNFUNDED ACCRUED LIABILITY			$	287,782,158

EXHIBIT V – SCHEDULE C
AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
June 30, 2017

FISCAL YEAR	DESCRIPTION	AMORT. PERIOD	INITIAL BALANCE	YEARS REMAINING	REMAINING BALANCE	AMORT. PAYMENTS
1994	Liability Experience Gain	20	(1,381,660)	12	(1,041,702)	(122,572)
1995	Liability Experience Loss †	20	20,128,380	12	† 2,638,085	1,785,663
1996	Liability Experience Gain	20	(9,762,782)	12	(7,360,638)	(866,092)
1997	Liability Experience Loss	20	4,409,601	12	3,324,613	391,192
1998	Liability Experience Gain	20	(2,444,207)	12	(1,842,806)	(216,835)
1999	Liability Experience Loss	20	12,418,148	12	9,362,648	1,101,660
2000	Liability Experience Gain	20	(21,262,939)	12	(16,031,168)	(1,886,314)
2001	Liability Experience Loss	20	14,218,540	12	10,720,052	1,261,379
2002	Liability Experience Loss	20	36,882,500	12	27,807,517	3,271,983
2003	Liability Assumption Loss	24	14,644,647	16	12,121,100	1,199,169
2003	Liability Experience Loss	20	60,111,382	12	45,320,906	5,332,703
2004	Liability Experience Loss	20	16,579,889	12	12,500,387	1,470,863
2005	Liability Experience Loss	20	14,086,441	12	10,620,456	1,249,660
2006	Liability Experience Gain	20	(11,718,142)	12	(8,834,879)	(1,039,560)
2007	Liability Experience Loss	20	13,788,779	12	10,396,033	1,223,254
2008	Liability Assumption Loss	29	9,487,421	21	8,407,195	725,132
2008	Liability Experience Loss	20	29,944,312	12	22,576,479	2,656,471
2009	Liability Assumption Loss	30	1,032,469	22	923,945	78,065
2009	Change in Benefits Loss	10	671,120	2	174,078	89,983
2009	Liability Experience Loss	30	74,940,622	22	67,063,453	5,666,283
2010	Liability Experience Loss	30	26,844,661	23	24,455,723	2,027,629
2011	Liability Experience Loss	30	28,079,134	24	26,001,751	2,118,754
2012	Liability Experience Loss	30	7,358,996	25	6,917,375	554,751
2013	Change in Method Gain	30	(12,256,998)	26	(11,680,883)	(923,128)
2013	Liability Assumption Loss	30	26,210,291	26	24,978,328	1,974,012
2013	Liability Experience Gain	30	(25,552,458)	26	(24,351,415)	(1,924,468)
2013	Contribution Gain	5	(316,179)	1	(72,069)	(72,068)
2014	Asset Experience Gain (Allocated by Act 399 of 2014)	5	(2,500,000)	2	(1,102,397)	(569,838)
2014	Liability Experience Gain	30	(1,327,488)	27	(1,282,308)	(99,979)
2014	Contribution Gain	5	(2,038,403)	2	(898,851)	(464,624)
2015	Liability Experience Loss	30	22,863,386	28	22,362,361	1,721,942
2015	Contribution Gain	5	(14,295,186)	3	(9,149,581)	(3,258,376)
2016	Liability Experience Loss	30	46,924,931	29	46,428,165	3,534,123
2016	Contribution Gain	5	(17,097,150)	4	(14,124,114)	(3,897,043)
2017	Change in Model	30	(5,046,395)	30	(5,046,395)	(380,066)
2017	Liability Assumption Loss	30	5,260,562	30	5,260,562	396,196
2017	Asset Assumption Gain	30	(5,260,562)	30	(5,260,562)	(396,196)
2017	Liability Experience Loss	30	6,707,700	30	6,707,700	505,186
2017	Asset Experience Gain ‡	30	(8,661,910)	30	(8,661,910)	(652,366)
2017	Gains Allocated to Experience Account	10	970,763	10	970,763	129,173
2017	Priority Excess Allocation Offset ‡	30	6,056,800	30	6,056,800	456,164
2017	Contribution Gain	5	(9,572,640)	5	(9,572,640)	(2,181,942)

TOTAL Unfunded Actuarial Accrued Liability	$ 287,782,158	
TOTAL Fiscal 2018 Amortization Payments at Beginning of Year		$ 21,969,923
TOTAL Fiscal 2018 Amortization Payments Adjusted to Mid-Year		$ 22,725,865

† Balance reduced by application of investment gains assigned by Act 399 of 2014.

‡ 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
CUMULATIVE AMORTIZATION BASE ADJUSTMENT

Outstanding Balance of Oldest Positive Amortization Base (as of June 30, 2016)......	$	15,968,624
Accumulated Priority Offsets as of June 30, 2016	$	(6,056,900)
Amortization Payment on the Oldest Positive Amortization Base (July 1, 2016)........	$	(1,785,663)
Interest on the Net Amortization Base to June 30, 2017	$	568,824
Net Balance of Oldest 2016 Positive Amortization Base as of June 30, 2017	$	8,694,885
Priority Excess Allocation Applied to the Oldest Positive Base as of June 30, 2017 ..	$	(6,056,800)
Outstanding Balance of Oldest Positive Amortization Base (as of June 30, 2017)......	$	2,638,085

EXHIBIT VI
ANALYSIS OF CHANGE IN ASSETS

Actuarial Value of Assets (June 30, 2016)			$	699,121,700
INCOME:				
Member Contributions	$	7,183,798		
Employer Contributions		47,056,048		
Irregular Contributions		2,318,325		
Insurance Premium Taxes		1,500,000		
Total Contributions			$	58,058,171
Net Appreciation of Investments	$	93,251,730		
Interest & Dividends		7,784,657		
Miscellaneous Income		46,188		
Investment Expense		(2,136,046)		
Net Investment Income			$	98,946,529
TOTAL Income			$	157,004,700
EXPENSES:				
Retirement Benefits	$	43,534,215		
Refunds of Contributions		8,584		
Transfers to Other Systems		454,693		
Administrative Expenses		858,029		
TOTAL Expenses			$	44,855,521
Net Market Value Income for Fiscal 2017 (Income – Expenses)			$	112,149,179
Unadjusted Fund Balance as of June 30, 2017 (Fund Balance Previous Year + Net Income)			$	811,270,879
Income Adjustment for Actuarial Smoothing			$	(40,569,673)
Adjustment for Experience Account (Beginning of Year)			$	3,963,595
Actuarial Value of Assets: (June 30, 2017)			$	774,664,801

EXHIBIT VII
EXPERIENCE ACCOUNT

1.	Experience Account Balance – June 30, 2016	$	3,963,595
2.	Investment Gain, if any	$	8,710,661
3.	Priority Excess Interest Allocated to Reduce UAL	$	6,056,800
4.	Residual Investment Gain, if any (2 – 3)	$	2,653,861
5.	Investment Gain to Allocate to the Experience Account (50% × 4)	$	1,326,931
6.	Credit for Investment Earnings based on AVA rate of return, if positive	$	326,204
7.	Total Preliminary Credits to be Allocated to Experience Account (5 + 6)	$	1,653,135
8.	Debit for Investment Losses based on AVA rate of return, if negative	$	0
9.	Present Value of Permanent Benefit Increase Paid July 1, 2017	$	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)	$	1,653,135
12.	Limit to the Experience Account Balance – June 30, 2017 (Present Value of PBI at CPI-U for Fiscal 2017 or 1.63%)	$	5,260,562
13.	Experience Account Balance – June 30, 2017 (Lesser of 1+11 &12 - at least 0)	$	5,260,562

EXHIBIT VIII
CENSUS DATA

	Active	Terminated with Funds on Deposit	Retired	Total
Number of members as of June 30, 2016	1,041	168	1,220	2,429
Additions to Census				
Initial membership	44	16		60
Omitted in error last year				
Death of another member			12	12
Adjustment for multiple records				
Change in Status during Year				
Actives terminating service	(12)	12		
Actives who retired	(8)		8	
Actives entering DROP				
Term. members rehired	6	(6)		
Term. members who retire		(1)	1	
Retirees who are rehired				
Refunded who are rehired				
DROP participants retiring				
DROP returned to work				
Omitted in error last year			(10)	(10)
Eliminated from Census				
Refund of contributions		(3)		(3)
Deaths	(1)		(25)	(26)
Included in error last year				
Adjustment for multiple records		(4)	(51)	(55)
Number of members as of June 30, 2017	1,071	182	1,155	2,280

ACTIVES CENSUS BY AGE:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
21 - 25	18	0	18	50,719	912,940
26 - 30	62	2	64	50,989	3,263,326
31 - 35	106	3	109	56,026	6,106,849
36 - 40	182	13	195	63,956	12,471,495
41 - 45	210	8	218	77,218	16,833,549
46 - 50	266	14	280	91,739	25,686,861
51 - 55	141	7	148	99,642	14,746,953
56 - 60	34	0	34	103,938	3,533,893
61 - 65	5	0	5	100,737	503,685
TOTAL	1,024	47	1,071	78,487	84,059,551

THE ACTIVE CENSUS INCLUDES 792 ACTIVES WITH VESTED BENEFITS, INCLUDING 1 ACTIVE FORMER DROP PARTICIPANTS.

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
36 - 40	3	0	3	17,649	52,948
41 - 45	10	2	12	23,831	285,973
46 - 50	25	1	26	28,476	740,377
51 - 55	2	0	2	19,484	38,967
TOTAL	40	3	43	26,006	1,118,265

TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:

Contributions Ranging From		To	Number	Total Contributions
0	-	99	63	2,837
100	-	499	47	12,516
500	-	999	12	8,092
1000	-	1999	3	3,766
2000	-	4999	5	14,799
5000	-	9999	3	24,640
10000	-	19999	3	43,056
20000	-	99999	3	83,281
		TOTAL	139	192,987

REGULAR RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
46 - 50	10	0	10	65,686	656,856
51 - 55	44	1	45	57,382	2,582,189
56 - 60	85	2	87	61,995	5,393,547
61 - 65	162	2	164	55,856	9,160,425
66 - 70	212	1	213	39,726	8,461,688
71 - 75	135	1	136	33,042	4,493,749
76 - 80	73	1	74	28,000	2,072,031
81 - 85	50	0	50	23,051	1,152,555
86 - 90	16	0	16	17,669	282,708
91 - 99	4	0	4	16,445	65,778
TOTAL	791	8	799	42,956	34,321,526

DISABILITY RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
36 - 40	1	1	2	24,109	48,218
41 - 45	4	0	4	38,876	155,503
46 - 50	5	1	6	35,144	210,862
51 - 55	7	0	7	32,220	225,543
56 - 60	4	1	5	30,981	154,903
61 - 65	6	1	7	23,527	164,688
66 - 70	13	1	14	23,900	334,605
71 - 75	8	1	9	24,144	217,300
76 - 80	4	0	4	28,908	115,633
81 - 85	3	0	3	23,455	70,365
TOTAL	55	6	61	27,830	1,697,620

SURVIVORS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 25	2	3	5	38,816	194,081
26 - 30	0	1	1	53,088	53,088
31 - 35	0	1	1	32,266	32,266
36 - 40	0	1	1	68,448	68,448
41 - 45	2	1	3	40,022	120,066
46 - 50	0	2	2	20,366	40,732
51 - 55	0	3	3	38,836	116,508
56 - 60	0	11	11	40,509	445,599
61 - 65	0	22	22	32,019	704,417
66 - 70	2	34	36	26,098	939,526
71 - 75	0	52	52	24,249	1,260,971
76 - 80	1	52	53	22,965	1,217,162
81 - 85	1	51	52	21,301	1,107,677
86 - 90	0	32	32	18,296	585,458
91 - 99	1	20	21	18,146	381,067
TOTAL	9	286	295	24,634	7,267,066

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	5	3									18
26 - 30	14	16	15	5		13	1					64
31 - 35	10	9	8	9	1	48	24					109
36 - 40	7	7	4	6	1	43	87	39	1			195
41 - 45	3	1	2	1		11	39	106	55			218
46 - 50	1	3	1	1		6	23	57	154	34		280
51 - 55		2				3	10	11	65	48	9	148
56 - 60							1	4	10	13	6	34
61 - 65									2	2	1	5
66 & Over												0
Totals	45	43	33	22	2	124	185	217	287	97	16	1,071

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	50,638	50,772	50,899									50,719
26 - 30	50,638	49,987	50,863	50,963		52,761	50,932					50,989
31 - 35	50,638	50,712	49,111	50,900	50,932	57,355	62,045					56,026
36 - 40	50,638	50,347	50,561	50,932	50,932	59,087	66,219	72,903	60,816			63,956
41 - 45	50,638	50,638	50,932	50,920		59,812	65,001	77,331	92,513			77,218
46 - 50	50,638	50,771	50,932	50,932		59,520	68,548	80,447	98,541	108,457		91,739
51 - 55		50,641				59,635	67,584	86,071	98,469	113,387	111,228	99,642
56 - 60							71,294	80,041	98,068	107,498	127,381	103,938
61 - 65									97,805	106,664	94,748	100,737
66 & Over												0
Average	50,638	50,389	50,411	50,925	50,932	57,852	65,729	77,846	97,217	110,731	116,255	78,487

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							3					3
41 - 45						12						12
46 - 50	3	7	8	2	6							26
51 - 55	2											2
56 & Over												0
Totals	5	7	8	2	6	12	3	0	0	0	0	43

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							17,649					17,649
41 - 45						23,831						23,831
46 - 50	45,632	21,605	29,502	19,189	29,642							28,476
51 - 55	19,484											19,484
56 & Over												0
Average	35,173	21,605	29,502	19,189	29,642	23,831	17,649	0	0	0	0	26,006

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	3	1		3	3							10
51 - 55	3	2	8	8	9	15						45
56 - 60	3		2	4	8	56	14					87
61 - 65			1	2	7	52	71	11	11	3	6	164
66 - 70						18	44	50	46	42	13	213
71 - 75						2	10	21	30	32	41	136
76 - 80								6	8	17	43	74
81 - 85								1	3	2	44	50
86 - 90											16	16
91 & Over											4	4
Totals	9	3	11	17	27	143	139	89	98	96	167	799

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	60,446	70,971		67,064	67,785							65,686
51 - 55	68,883	26,089	65,891	53,355	50,344	61,087						57,382
56 - 60	90,454		57,635	62,216	57,692	61,325	61,594					61,995
61 - 65			51,478	69,629	81,677	65,876	59,013	34,031	27,078	11,875	12,442	55,856
66 - 70						74,779	64,451	38,575	28,614	20,387	13,733	39,726
71 - 75						42,105	75,032	43,989	32,481	26,289	22,433	33,042
76 - 80								42,078	39,076	29,396	23,424	28,000
81 - 85								31,595	44,375	16,843	21,685	23,051
86 - 90											17,669	17,669
91 & Over											16,445	16,445
Average	73,261	41,050	63,080	59,774	62,582	64,380	62,147	39,449	30,962	23,610	20,855	42,956

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									2
41 - 45		2	1	1								4
46 - 50		2				3		1				6
51 - 55					1	2	1	1	2			7
56 - 60						1	1	1	1	1		5
61 - 65									1	3	3	7
66 - 70									3	4	7	14
71 - 75									1	1	7	9
76 - 80									1		3	4
81 - 85											3	3
86 & Over												0
Totals	0	5	2	1	1	6	2	3	9	9	23	61

AVERAGE ANNUAL BENEFITS PAYABLE TO DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement											Average Benefit
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	
0 - 35												0
36 - 40		24,799	23,419									24,109
41 - 45		35,847	36,588	47,222								38,876
46 - 50		31,917				36,295		38,145				35,144
51 - 55					39,426	38,292	27,091	19,613	31,415			32,220
56 - 60						48,113	39,462	31,331	15,417	20,580		30,981
61 - 65									38,284	25,561	16,574	23,527
66 - 70									22,235	20,650	26,471	23,900
71 - 75									26,598	22,563	24,020	24,144
76 - 80									25,034		30,200	28,908
81 - 85											23,455	23,455
86 & Over												0
Average	0	32,065	30,003	47,222	39,426	38,930	33,277	29,696	26,096	22,492	24,527	27,830

SURVIVING BENEFICIARIES OF FORMER MEMBERS:

Attained Ages	Completed Years Since Retirement: 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 20				2		1						3
21 - 25				1					1			2
26 - 30						1						1
31 - 35								1				1
36 - 40		1										1
41 - 45						1		1	1			3
46 - 50										2		2
51 - 55				1				2				3
56 - 60	1				2	1		1	1	2	3	11
61 - 65						2	3		4	3	10	22
66 - 70							3	5	4	7	17	36
71 - 75							1	5	4	9	33	52
76 - 80									4	6	43	53
81 - 85										3	49	52
86 - 90							1				31	32
91 & Over										1	20	21
Totals	1	1	0	4	2	6	8	15	19	33	206	295

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				43,238		53,088						46,522
21 - 25				29,076					25,440			27,258
26 - 30						53,088						53,088
31 - 35								32,266				32,266
36 - 40		68,448										68,448
41 - 45						46,674		50,412	22,980			40,022
46 - 50										20,366		20,366
51 - 55				60,666				27,921				38,836
56 - 60	72,496				60,482	79,847		30,310	27,556	15,410	27,869	40,509
61 - 65						79,572	66,598		28,365	15,362	18,593	32,019
66 - 70							51,576	40,268	26,422	25,873	17,450	26,098
71 - 75							65,371	40,395	29,872	26,334	19,307	24,249
76 - 80									41,105	26,570	20,775	22,965
81 - 85										27,847	20,901	21,301
86 - 90							75				18,883	18,296
91 & Over										37,767	17,165	18,146
Average	72,496	68,448	0	44,055	60,482	65,307	52,496	38,143	30,476	24,742	19,658	24,634

EXHIBIT IX
YEAR-TO-YEAR COMPARISON

	Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014
Number of Active Members	1,071	1,041	991	956
Number of Retirees & Survivors	1,155	1,220	1,224	1,229
DROP Participants	0	0	0	0
Number of Terminated Due Deferred Benefits	43	41	41	34
Number Terminated Due Refunds	139	N/A	N/A	N/A
Active Lives Payroll (excludes DROP participants)	$ 84,059,551	$ 75,969,718	$ 64,632,596	$ 54,331,845
Retiree Benefits in Payment	$ 43,286,211	$ 41,866,788	$ 41,737,344	$ 40,440,528
Market Value of Assets (Includes Experience Account)	$ 782,572,348	$ 670,423,169	$ 659,126,281	$ 622,793,610
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability	72.90%	69.45%	68.85%	65.53%
Actuarial Accrued Liability (EAN)	$ 1,062,446,959	$1,006,626,437	$ 910,845,343	$ 837,940,546
Actuarial Value of Assets (Includes Experience Account) †	$ 774,664,801	$ 699,121,700	$ 627,083,218	$ 549,075,148
UAL (Funding Excess)	$ 287,782,158	$ 307,504,737	$ 283,762,125	$ 288,865,398
Experience Account	$ 5,260,562	$ 3,963,595	$ 12,416,791	$ 12,069,552

	Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015
Employee Contribution Rate For Employees Hired Before January 1, 2011	8.50%	8.50%	8.50%	8.50%
Employee Contribution Rate For Employees Hired On Or After January 1, 2011	9.50%	9.50%	9.50%	9.50%
Actuarially Required Employer Contribution as a Percentage of Projected Payroll	44.0%	48.1%	54.0%	66.7%
Actual Employer Contribution as a Percentage of Projected Payroll	47.4%	51.2%	60.8%	75.3%

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

Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009	Fiscal 2008
933	979	1,033	1,065	1,103	1,059
1,234	1,222	1,207	1,181	1,175	1,153
0	0	2	5	18	27
37	34	31	29	25	24
N/A	N/A	N/A	N/A	N/A	N/A
$ 51,261,574	$ 57,828,488	$ 58,592,035	$ 59,340,901	$ 59,556,036	$ 56,728,212
$ 39,770,484	$ 38,290,020	$ 36,484,176	$ 34,390,608	$ 33,536,628	$ 31,258,056
$ 521,130,665	$ 451,657,917	$ 447,195,377	$ 366,521,482	$ 334,197,124	$ 424,527,711
59.44%	54.76%	54.19%	55.58%	58.37%	68.68%
$ 797,839,506	$ 759,652,635	$ 740,257,372	$ 704,747,809	$ 678,306,663	$ 637,831,867
$ 474,235,310	$ 415,965,659	$ 401,146,109	$ 391,669,402	$ 395,905,112	$ 438,074,647
$ 323,604,196	$ 343,686,976	$ 339,111,263	$ 313,078,407	$ 282,401,551	$ 199,757,220
$ 18,164,123	$ 0	$ 0	$ 0	$ 0	$ 0

Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009
8.50%	8.50%	8.50%	8.50%	8.50%	8.00%
9.50%	9.50%	9.50%	N/A	N/A	N/A
76.2%	70.6%	59.7%	55.5%	51.10%	30.90%
70.0%	68.6%	55.9%	50.9%	41.3%	27.3%

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, 2017.

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 and placed in liquid asset money market investments. Such account shall be credited with interest at the actual rate of return earned on such account balance investments. 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 and administrative 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, ANNUITANT AND BENEFICIARY MORTALITY: The (2008-2012) Experience Study updated preretirement deaths and postretirement life expectancies in accordance with the experience of the RP-2000 Sex Distinct Mortality Table to the RP-2000 Sex Distinct Mortality Table with mortality improvements projected to 2025.

DISABLED LIVES MORTALITY:	RP-2000 Disabled Lives Mortality Tables for Males and Females
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:	The gross rates including inflation of 2.50% and merit increases are as follows:

Years of Service	Salary Growth Rate
1	16.5%
2	7.0%
3-4	5.0%
5-8	5.5%
9-11	6.0%
12-15	5.0%
16-30	4.5%
Above 30	4.0%

RETIREMENT RATES:	The table of these rates through age 75 is included later in the report. These rates apply only to those individuals eligible to retire.
RETIREMENT RATES FOR ACTIVE FORMER DROP PARTICIPANTS:	Active Former DROP Participants retire according to the rates listed for all actives in a table of rates through age 75 included later in the report.
DISABILITY RATES:	The table of these rates through age 75 is included later in this report.
TERMINATION/WITHDRAWAL RATES:	The table of these rates through age 75 is included later in the report.
VESTING ELECTING PERCENTAGE:	For members terminating with less than twenty years of service, it is assumed that 80% will withdraw their accumulated employee contributions. For members terminating with twenty or more years of service, it is assumed that

only 30% will withdraw their accumulated employee contributions. The remaining are assumed to receive a deferred vested retirement 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 3% increase in the accrued benefit.

MARRIAGE STATISTICS: 80% of the members are assumed to be married; husbands are assumed to be three years older than wives.

REMARRIAGE RATES: Remarriage rates were taken from the 1997 Railroad Retirement Study of Remarriage Rates (for ages below 55). The table of these rates is included later in this report.

FAMILY STATISTICS: Assumptions utilized in determining the costs of various survivor benefits are listed below.

Member's Age	% With Children	Number of Children	Average Age
25	70%	1.84	5
30	80%	2.11	7
35	86%	2.13	9
40	84%	2.02	10
45	75%	1.70	12
50	53%	1.46	13
55	22%	1.42	14
60	22%	1.42	14
65	4%	1.45	15

ACTUARIAL TABLES AND RATES

Age	Male Mortality Rates	Female Mortality Rates	Retirement Rates	Disability Rates	Termination Rates	Remarriage Rates
18	0.000196	0.000132	0.00000	0.00200	0.02500	0.06124
19	0.000205	0.000130	0.00000	0.00200	0.02500	0.06124
20	0.000214	0.000128	0.00000	0.00200	0.02500	0.06124
21	0.000227	0.000125	0.00000	0.00200	0.02500	0.05818
22	0.000238	0.000126	0.00000	0.00200	0.02500	0.05524
23	0.000256	0.000132	0.00000	0.00200	0.02500	0.05242
24	0.000271	0.000138	0.00000	0.00200	0.02500	0.04971
25	0.000292	0.000146	0.00000	0.00200	0.02500	0.04566
26	0.000325	0.000158	0.00000	0.00200	0.02500	0.04335
27	0.000337	0.000165	0.00000	0.00200	0.02500	0.04114
28	0.000347	0.000174	0.00000	0.00200	0.02500	0.03902
29	0.000363	0.000183	0.00000	0.00200	0.02500	0.03698
30	0.000392	0.000205	0.00000	0.00200	0.02500	0.03502
31	0.000440	0.000251	0.00000	0.00200	0.02000	0.03314
32	0.000496	0.000286	0.00000	0.00200	0.02000	0.03134
33	0.000557	0.000314	0.00000	0.00200	0.02000	0.02961
34	0.000619	0.000338	0.00000	0.00200	0.02000	0.02795
35	0.000682	0.000360	0.00000	0.00200	0.02000	0.02636
36	0.000742	0.000380	0.00000	0.00200	0.02000	0.02483
37	0.000798	0.000399	0.00000	0.00200	0.02000	0.02336
38	0.000829	0.000420	0.00000	0.00200	0.01500	0.02195
39	0.000857	0.000444	0.00000	0.00200	0.01500	0.02060
40	0.000883	0.000484	0.00000	0.00200	0.01500	0.01930
41	0.000911	0.000530	0.00000	0.00200	0.01500	0.01805
42	0.000945	0.000584	0.00000	0.00200	0.01500	0.01686
43	0.000985	0.000642	0.10000	0.00200	0.01000	0.01571
44	0.001033	0.000705	0.10000	0.00200	0.01000	0.01461
45	0.001087	0.000751	0.10000	0.00200	0.01000	0.01355
46	0.001136	0.000797	0.10000	0.00200	0.01000	0.01253
47	0.001188	0.000842	0.10000	0.00200	0.01000	0.01156
48	0.001243	0.000911	0.10000	0.00200	0.01000	0.01063
49	0.001300	0.000984	0.10000	0.00200	0.01000	0.00973
50	0.001358	0.001092	0.25000	0.00200	0.01000	0.00887
51	0.001516	0.001237	0.25000	0.00200	0.01000	0.00804
52	0.001609	0.001419	0.25000	0.00200	0.01000	0.00725
53	0.001760	0.001632	0.25000	0.00200	0.01000	0.00649
54	0.001929	0.001885	0.25000	0.00200	0.01000	0.00576
55	0.002243	0.002223	0.25000	0.00200	0.01000	0.00000
56	0.002667	0.002658	0.25000	0.00200	0.01000	0.00000
57	0.003057	0.003068	0.50000	0.00200	0.01000	0.00000
58	0.003523	0.003461	0.50000	0.00200	0.01000	0.00000
59	0.003972	0.003918	0.50000	0.00200	0.01000	0.00000
60	0.004508	0.004460	0.50000	0.00200	0.01000	0.00000
61	0.005261	0.005129	0.50000	0.00200	0.00000	0.00000
62	0.006002	0.005873	0.50000	0.00200	0.00000	0.00000
63	0.007038	0.006747	0.99000	0.00200	0.00000	0.00000
64	0.007929	0.007604	0.99000	0.00200	0.00000	0.00000
65	0.008953	0.008563	0.99000	0.00000	0.00000	0.00000
66	0.010389	0.009664	0.99000	0.00000	0.00000	0.00000
67	0.011590	0.010730	0.99000	0.00000	0.00000	0.00000
68	0.012562	0.011861	0.99000	0.00000	0.00000	0.00000
69	0.013920	0.013110	0.99000	0.00000	0.00000	0.00000
70	0.015219	0.014770	0.99000	0.00000	0.00000	0.00000
71	0.016839	0.015984	0.99000	0.00000	0.00000	0.00000
72	0.018697	0.017778	0.99000	0.00000	0.00000	0.00000
73	0.020825	0.019270	0.99000	0.00000	0.00000	0.00000
74	0.023233	0.021358	0.99000	0.00000	0.00000	0.00000
75	0.026595	0.022993	1.00000	0.00000	0.00000	0.00000

GLOSSARY

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

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

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

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

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

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

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

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

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

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

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

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.