MUNICIPAL POLICE EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL VALUATION AS OF
JUNE 30, 2016

G. S. CURRAN & COMPANY, LTD.

Actuarial Services

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November 23, 2016

Board of Trustees
Municipal Police Employees' Retirement System
7722 Office Park Boulevard, Suite 200
Baton Rouge, Louisiana 70809

Ladies and Gentlemen:

We are pleased to present our report on the actuarial valuation of the Municipal Police Employees' Retirement System for the fiscal year ending June 30, 2016. 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 Municipal Police Employees' Retirement System of the State of Louisiana. The primary purposes of the report are to determine the actuarially required contribution for the retirement system for the fiscal year ending 2017 and to recommend the net direct employer contribution rate for Fiscal 2018. This report was prepared exclusively for Municipal Police Employees' Retirement System for a specific limited purpose. It is not for the use or benefit of any third party for any purpose.

In our opinion, all of the assumptions on which this valuation is based are reasonable individually and in the aggregate. Both economic and demographic assumptions are based on our expectations for future experience for the fund.

This report has been prepared in accordance with generally accepted actuarial principles and practices, and to the best of our knowledge and belief, fairly reflects the actuarial present values and costs stated herein. The undersigned actuaries are members of the American Academy of Actuaries and have met the qualification standards for the American Academy of Actuaries to render the actuarial opinions incorporated in this report, and are available to provide further information or answer any questions with respect to this valuation.

Sincerely,

G. S. CURRAN & COMPANY, LTD.

By: _____ _____

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

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SUMMARY OF VALUATION RESULTS
MUNICIPAL POLICE EMPLOYEES' RETIREMENT SYSTEM

Valuation Date:		June 30, 2016	June 30, 2015
Census Summary:	Active Members	5,666	5,535
	Retired Members and Survivors	4,637	4,538
	DROP Participants	191	228
	Terminated Due a Deferred Benefit	175	168
	Terminated Due a Refund	1,324	1,320
Payroll (excluding DROP accruals):		$ 281,546,022	$ 265,089,428
Benefits in Payment:		$ 134,868,073	$ 128,050,009
Present Value of Future Benefits:		$ 3,156,001,249	$ 3,057,882,699
Actuarial Accrued Liability (EAN):		$ 2,760,140,132	$ 2,676,472,766
Unfunded Actuarial Accrued Liability:		$ 810,384,316	$ 805,312,224
Actuarial Value of Assets (AVA):		$ 1,949,755,816	$ 1,871,160,542
Market Value of Assets (MVA):		$ 1,822,858,397	$ 1,893,077,295
Ratio of AVA to Actuarial Accrued Liability:		70.64%	69.91%

	Fiscal 2016	Fiscal 2015
Market Rate of Return:	-2.2%	1.4%
Actuarial Rate of Return:	5.7%	10.6%

	Fiscal 2017	Fiscal 2016
Employers' Normal Cost (Mid-year):	$ 25,246,189	$ 24,681,536
Amortization Cost (Mid-year):	$ 81,091,004	$ 78,269,266
Estimated Administrative Cost:	$ 1,365,125	$ 1,404,125
Expected Insurance Premium Taxes Due:	$ (19,090,190)	$ (18,605,064)
Net Direct Employer Actuarially Required Contributions:	$ 88,612,128	$ 85,749,863
Projected Payroll:	$ 284,556,608	$ 268,299,658
Actual Employee Contribution Rate:		
For Employees in the Hazardous Subplan or Hired prior to January 1, 2013:	10.00% *	10.00% *
For Employees in the Non-Hazardous Subplan	8.00%	8.00%
Actual Net Direct Employer Contribution Rate:		
For Employees in the Hazardous Subplan or Hired prior to January 1, 2013:	31.75% *	29.50% *
For Employees in the Non-Hazardous Subplan:	33.75%	31.50%
Actuarially Required Net Direct Employer Contribution Rate:		
For Employees in the Hazardous Subplan or Hired prior to January 1, 2013:	31.14%	31.63%
For Employees in the Non-Hazardous Subplan:	31.14%	33.63%

	Fiscal 2018	Fiscal 2017
Minimum Recommended Net Direct Employer Cont. Rate:		
For Employees in the Hazardous Subplan or Hired prior to January 1, 2013:	30.75% *	31.75% *
For Employees in the Non-Hazardous Subplan:	30.75%	33.75%

* For members with earnings greater than the Department of HHS poverty guidelines. For members with earnings below the poverty guidelines, employer rates will be 2.5% higher and employee rates will be 2.5% lower.

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 ascribe absolute accuracy. In fact, neither of these descriptions 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 data used; 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 to 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 in such areas as expectation of population increase and turnover for the plan 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 process 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. Fortunately, 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 level of funding and to provide for the future benefits of plan participants.

COMMENTS ON DATA

For the valuation, the administrator of the system furnished a census on CD 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 IX, there are 5,666 active contributing members in the system of whom 2,501 have vested retirement benefits; in addition, there are 191 participants in the Deferred Retirement Option Plan (DROP); 4,637 former members or their beneficiaries are receiving retirement benefits. An additional 1,499 terminated members have contributions remaining on deposit with the system; of this number 175 have vested rights for future retirement benefits. All individuals submitted were included in the valuation.

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. For this valuation, the number of such records with imputed data is de minimis.

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 system's auditor, the firm of Duplantier, Hrapmann, Hogan & Maher, Certified Public Accountants. As indicated in the system's financial statements, the net market value of the system's assets was $1,822,858,397 as of June 30, 2016. Net investment income for Fiscal 2016 measured on a market value basis amounted to a loss of $42,215,916. Contributions to the system for the fiscal year totaled $128,625,724; benefits and expenses amounted to $156,628,706.

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 Entry Age Normal actuarial cost method. Prior to Fiscal 2002, experience gains and losses as well as contribution gains and losses were amortized over fifteen years with level amortization payments. Act 1079 of 2003 explicitly changed the amortization period for experience gains and losses, changes in assumptions, changes in methods, cost of living increases, and changes in plan benefit provisions to thirty years with level amortization payments. Act 402 of 2014 was introduced to improve the long-term health of the system and to reduce the likelihood for intergenerational cost shifting due to long amortization periods. The act changed the amortization period for all the existing outstanding unfunded liability bases from various periods ranging from one to thirty years to twenty years. The act also set the period to amortize all future actuarial gains and losses as well as changes in assumptions and benefits at fifteen years.

The cost method used for this valuation generally produces normal costs which are level as a percentage of pay if assumptions are met and the composition of the active group with regard to age, sex, and service is stable. Overall costs may increase or decrease depending on payroll growth. Since payments on all of the fund's amortization bases are level, any payroll growth will reduce future amortization payments as a percentage of payroll. Should overall payroll contract, amortization payments will increase as a percentage of payroll.

The current year actuarial assumptions utilized for this report are based on the results of an actuarial experience study for the period July 1, 2009 – June 30, 2014, unless otherwise specified in this report. In determining the valuation interest rate, consideration was given to several factors. First, consensus estimates of rates of return, standard deviations, and correlation coefficients for asset classes derived from various asset consulting firms were developed. These factors were used to derive forward estimates of the Fund's portfolio earnings rate. Consideration was also given to the 2015 report of New England Pension Consultants on future expected rates of return for the current portfolio asset allocation. Based on the results of this interest rate assumption review, the assumed rate of return for the valuation was set at 7.50%. An inflation rate of 2.875% was implicit in both the assumed rate of return and rate of salary increases. Additional details are given in the complete Experience Report for fiscal years 2010 through 2014.

All assumptions utilized for this report are the same as those used for the prior year report. However, a technical change was made in developing the employer's share of the total normal cost. The prior report simply reduced the total normal cost percentage by the nominal employee contribution rate to determine the employer normal cost percentage. Thus employer normal costs varied with subplan membership. For this valuation, a weighted average employer rate was used to reduce the total normal cost so that the employer normal cost was the same regardless of subplan. The valuation continues to be based on the assumption that the employers will contribute an additional 2.5% of pay for employees who qualify for lower employee contributions due to earnings below the Department of HHS poverty guidelines.

Although the Board of Trustees has authority to grant ad hoc Cost of Living Increases (COLAs) under limited circumstances, these COLAs have not been shown to have a historical pattern, the amounts of the COLAs have not been relative to a defined cost-of-living or inflation index, and there is no evidence to conclude that COLAs will be granted on a predictable basis in the future. Therefore, for purposes of determining the present value of benefits, these COLAs were deemed not to be substantively automatic and the present value of benefits excludes COLAs not previously granted by the Board of Trustees.

The current year actuarial assumptions utilized for the report are outlined on pages forty-one through forty-five. All assumptions used are based on estimates of future long-term experience for the fund. All calculations, recommendations, and conclusions are based on the assumptions specified. To the extent that prospective experience differs from that assumed, adjustments to contribution levels will be required. Such differences will be revealed in future actuarial valuations.

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 portion of plan assets. Security insolvency or severe underperformance can result in steep increases in sponsor contributions where individual investments comprise more than a de minimis amount of the investment portfolio.

In addition to asset risk, the plan is also subject to risks related to liabilities. These risks include longevity risk (the risk that retirees will live longer than expected), termination risk (the risk that fewer than the anticipated number of members will terminate service prior to retirement), and other factors that may have an impact on the liability structure of the plan. Final average compensation plans are vulnerable to unexpectedly large increases in salary for individual members near retirement. Conversely, in cases where plans have large unfunded liabilities, payroll contraction is a risk insofar as contributions which are typically reported as a percentage of payroll may increase as payrolls decline.

Liability risk also includes 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 70.64% as of June 30, 2016. 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 (over) the assumed rate of return on the actuarial value of assets, there will be a corresponding increase (reduction) in the actuarially required contribution as a percentage of projected payroll of 0.75% for the fund.

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. A measure of risk related to plan maturity is the ratio of total benefit payments to active payroll. For Fiscal 2016, this ratio is 47.90%; ten years ago this ratio was 34.74%.

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 2017 by 13.97% 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 changes to the system were enacted during the 2016 Regular Session of the Louisiana Legislature:

ACT 176 provides that the actuarial note for any bill prefiled at least 45 days prior to a regular session of the legislature shall be completed and filed at least five days prior to the convening of that session.

ACT 410 requires the executive director or person holding the equivalent position of each state or statewide retirement system to file a Tier 2.1 personal financial statement.

ACT 460 requires that at least every five years the legislative auditor report to the legislature comparative summaries of each system's reported actuarial assumptions and funded ratio and his findings as to the appropriateness of each system's assumptions.

ACT 621 places a member of the House Committee on Retirement appointed by the speaker of the House of Representatives as a trustee on each of the boards of the state and statewide retirement systems, instead of the chairman of the House Committee on Retirement.

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	
2007	16.5%	13.6%	
2008	- 7.6%	6.4%	
2009	-24.2%	-16.7%	
2010	12.4%	-0.8%	
2011	23.5%	3.9%	*
2012	-2.1%	7.8%	
2013	13.7%	11.2%	
2014	18.6%	11.9%	
2015	1.4%	10.6%	
2016	-2.2%	5.7%	

* Includes the effect of transition to a new method for calculating the actuarial value of assets. The new method for calculating the actuarial value of assets is based on the market value of investment securities adjusted to phase in asset earnings above or below the assumed rate of return over a five-year period with limits set at 85% and 115% of the market value of assets. When the adjusted value falls outside of the limits, the actuarial value is set equal to the average of the limited and adjusted value.

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. 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 2016, the fund earned $33,523,156 of dividends, interest and other recurring income. In addition, the Fund had net realized and unrealized capital losses on investments (offset by non-recurring income) of $69,839,931. The Fund also had investment expenses of $5,899,141. The geometric mean of the market value rate of return measured over the last ten years was 4.0%.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 7.5% used for the valuation. For Fiscal 2016, this rate adjusted for elimination of the effect of merger payments was 5.7%. DROP accounts should be credited with 5.2% (i.e. 5.7% less 0.5%). The actuarial rate of return is calculated based on the actuarial value of assets and all interest, dividends, and recognized capital gains as given in Exhibit VI. 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 7.5% assumption will reduce future costs; yields below 7.5% will increase future costs. For Fiscal 2016, the system experienced net actuarial investment earnings of $32,707,657 below the actuarial assumed earnings rate of 7.5% which produced an actuarial loss and increased the interest-adjusted amortization payments on the system's UAL by $3,573,767 or 1.26% of projected payroll.

DEMOGRAPHICS AND LIABILITY EXPERIENCE

A reconciliation of the census for the system is given in Exhibit IX. The average active contributing member is 40 years old with 10.96 years of service credit and an annual salary of $49,690. The system's active contributing membership experienced an increase of 131 members during Fiscal 2016. The number of DROP participants decreased by 37. Over the last five years active membership has decreased by 267 members.

The average service retiree is 66 years old with a monthly benefit of $2,903. The number of retirees and beneficiaries receiving benefits from the system increased by 99 during the fiscal year. Over the last five years, the number of retirees increased by 472 with annual benefits in payment increasing by $35,004,523.

The changes in the makeup of the population and changes in members' salaries increased the interest adjusted employer normal cost over the last year by $564,653; the employer normal cost percentage increased by 0.33% of payroll. Plan liability experience for the year was favorable. The number of disabilities and DROP entries were below projected levels. The number of deaths was above projected levels. These factors tend to reduce costs. Partially offsetting these factors were greater retirements than expected and fewer withdrawals than expected. Also, salary increase rates at most durations were higher than projected. Net plan liability experience gains totaled $8,714,512. The interest adjusted amortization credit on this gain was $952,182, or 0.33% 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 plus administrative expenses. 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 liability are on a fixed, level schedule. If payroll increases, these costs are reduced 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 2016 contributions totaled $1,831,833 more than required; the interest-adjusted amortization credit on the contribution surplus for Fiscal 2017 is $200,153, or 0.07% of projected payroll. In addition, for 2017 the net effect of the change in payroll on amortization costs was to reduce such costs by 1.67% 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 2017, except for those items labeled Fiscal 2016.

	Dollars	Percentage of Payroll
Employer Normal Cost for Fiscal 2016	$ 24,681,536	9.20%
Cost of Demographic and Salary Changes	$ 564,653	(0.33%)
Employer Normal Cost for Fiscal 2017	$ 25,246,189	8.87%
UAL Payments for Fiscal 2016	$ 78,269,266	29.17%
Change due to change in payroll	N/A	(1.67%)

Additional Amortization Expenses for Fiscal 2017:		
Asset Experience Loss (Gain)	$ 3,573,767	1.26%
Contribution Loss (Gain)	$ 200,153	0.07%
Liability Loss (Gain)	$ (952,182)	(0.33%)
Net Amortization Expense (Credit) for Fiscal 2017	$ 2,821,738	1.00%
Estimated Administrative Cost for Fiscal 2017	$ 1,365,125	0.48%
Total Normal Cost & Amortization Payments	$ 107,702,318	37.85%

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The employer normal cost for Fiscal 2017, interest adjusted for mid-year payment is $25,246,189. The interest adjusted amortization payments on the system's unfunded actuarial accrued liability totaled $81,091,004. The total actuarially required contribution is determined by summing these two values together with estimated administrative expenses. As given in line 12 of Exhibit I the total actuarially required contribution for Fiscal 2017 is $107,702,318. We estimate insurance premium taxes of $19,090,190, or 6.71% of payroll, will be paid to the system in Fiscal 2017. This level of Insurance Premium Taxes represents a 0.22% decrease from the prior year as a percentage of payroll. Hence, the total actuarially required net direct employer contribution for Fiscal 2017 amounts to $88,612,128 or 31.14% of payroll.

Since the actual employer contribution rate for Fiscal 2017 is 31.75% of payroll, there will be a contribution surplus of 0.61% of payroll. This surplus will decrease the actuarially required contribution recommended for Fiscal 2018. In order to determine a minimum recommended net direct employer contribution rate for Fiscal 2018, the Employer Normal Cost and Amortization Payments were estimated for Fiscal 2018, adjusted for the impact of the estimated contribution surplus for Fiscal 2017 and the estimated Insurance Premium Taxes for Fiscal 2018. Therefore, as given in line 25 of Exhibit I, the minimum recommended net direct employer contribution for Fiscal 2018 is $88,175,848, or 30.75% of projected payroll (rounded to the nearest 0.25%) for all members with earnings greater than the Department of HHS poverty guidelines. For members with earnings less than or equal to the Department of HHS poverty guidelines, employee contributions will be set equal to 7.50% of payroll. The employer contribution rate to be applied to the earnings of such members should be set equal to 33.25% of payroll. For members in the Nonhazardous Duty Subplan, employee contributions will be set equal to 8.00% of payroll. Note that this valuation sets an aggregate employer contribution rate that applies to all members regardless of subplan. Only those members with earnings less than or equal to the Department of HHS poverty guidelines have a higher employer rate to offset the statutory lower employee contribution rate. In prior years, employer normal costs were developed separately for the different subplans.

COST OF LIVING INCREASES

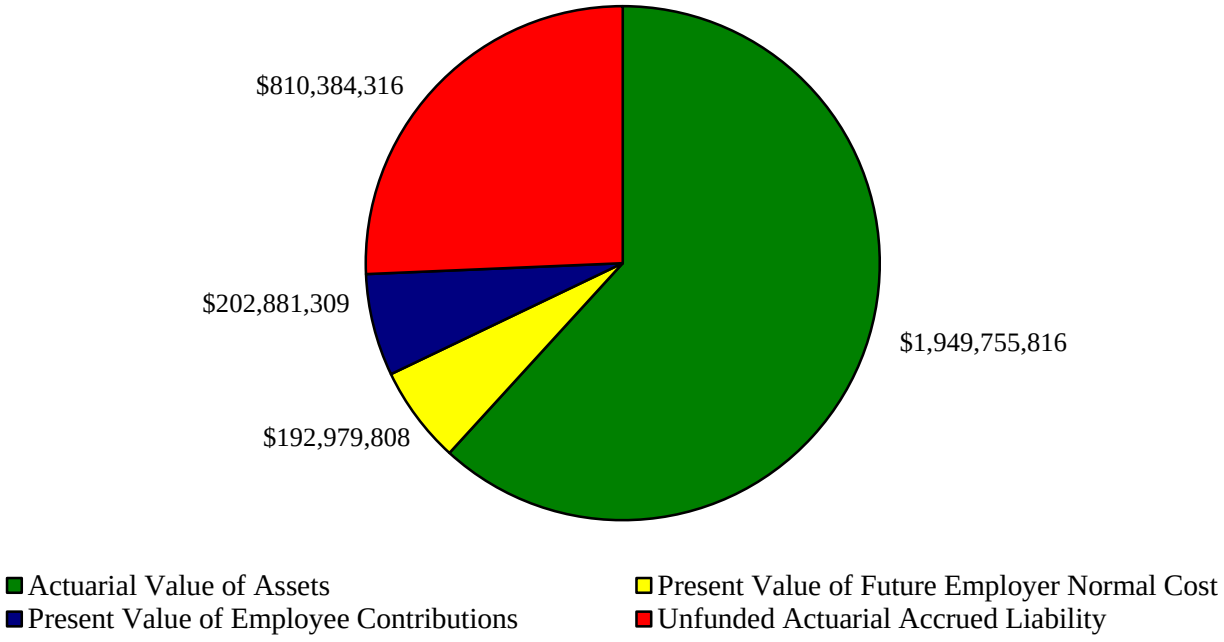
During Fiscal 2016, the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 1.01%. Cost of living provisions for the system are detailed in R.S. 11:2225(A)(7)(b), R.S. 11:246, and R.S. 11:241. R.S. 11:2225(A)(7)(b) allows the Board to use interest earnings in excess of the normal requirements to grant annual cost of living increases of 3% of each retiree's original or current benefit. R.S. 11:246 provides cost of living increases to retirees and beneficiaries over the age of 65 equal to 2% of the benefit in payment on October 1, 1977, or the date the benefit was originally received if retirement commenced after that date. R.S. 11:241 provides that cost of

living benefits shall be in the form (unless the Board otherwise specifies) of $X×(A+B) where X is at most $1 and "A" represents the number of years of credited service accrued at retirement or at death of the member or retiree and "B" is equal to the number of years since retirement or since death of the member or retiree to June 30th of the initial year of such increase. The provisions of this subpart do not repeal provisions relative to cost of living adjustments contained within the individual laws governing systems; however, they are to be controlling in cases of conflict.

All of the above provisions require that the system's investments produce sufficient excess interest earnings to fund the increases. R.S. 11:243 sets forth the funding criteria necessary in order to grant cost of living adjustments to regular retirees and beneficiaries (who are neither the surviving spouse nor children of the retiree.) The criteria for the fund to qualify as eligible to grant any such increase is as follows: a funded ratio of at least 70% if the system has not granted a benefit increase to retirees, survivors, or beneficiaries in any of the three most recent fiscal years; a funded ratio of at least 80% if the system has not granted such an increase in any of the two most recent fiscal years; or a funded ratio of at least 90% if the system has not granted such an increase in the most recent fiscal year. The funded ratio at any fiscal year end is the ratio of the actuarial value of assets to the actuarial accrued liability under the funding method prescribed by the legislative auditor (currently the Entry Age Normal Method for this system).

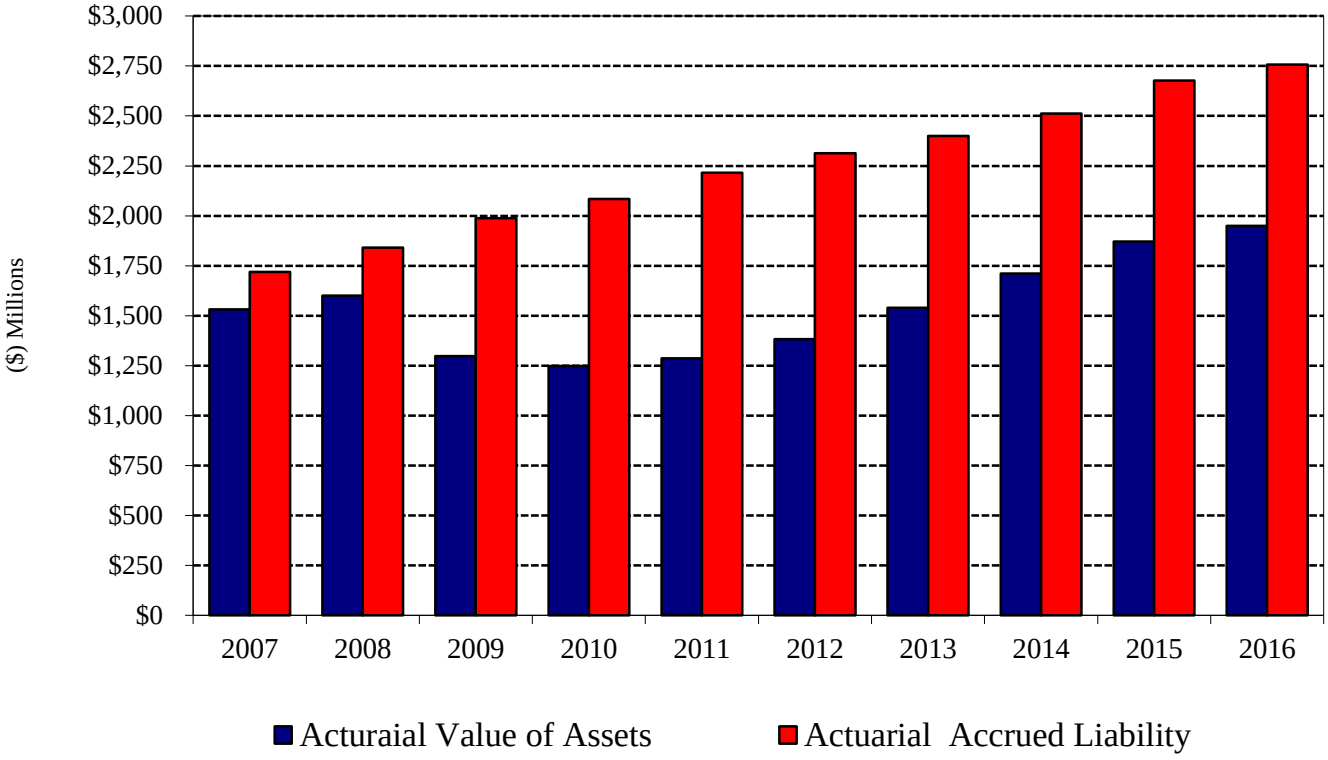
The system's funded ratio as of the end of Fiscal 2016 is 70.64% based on the Actuarial Value of Assets divided by the Entry Age Normal Accrued Liability. Since the system granted a COLA in Fiscal 2015 and R.S. 11:243 only permits a COLA to be paid if a COLA has not been granted in any of the three most recent fiscal years if the funded percentage of the system is less than 80% (but at least 70%) the system is not eligible to grant a COLA in Fiscal 2017. In addition, the system did not earn the necessary "excess interest" in Fiscal 2016 required to pay a COLA in Fiscal 2017.

Components of Present Value of Future Benefits
June 30, 2016

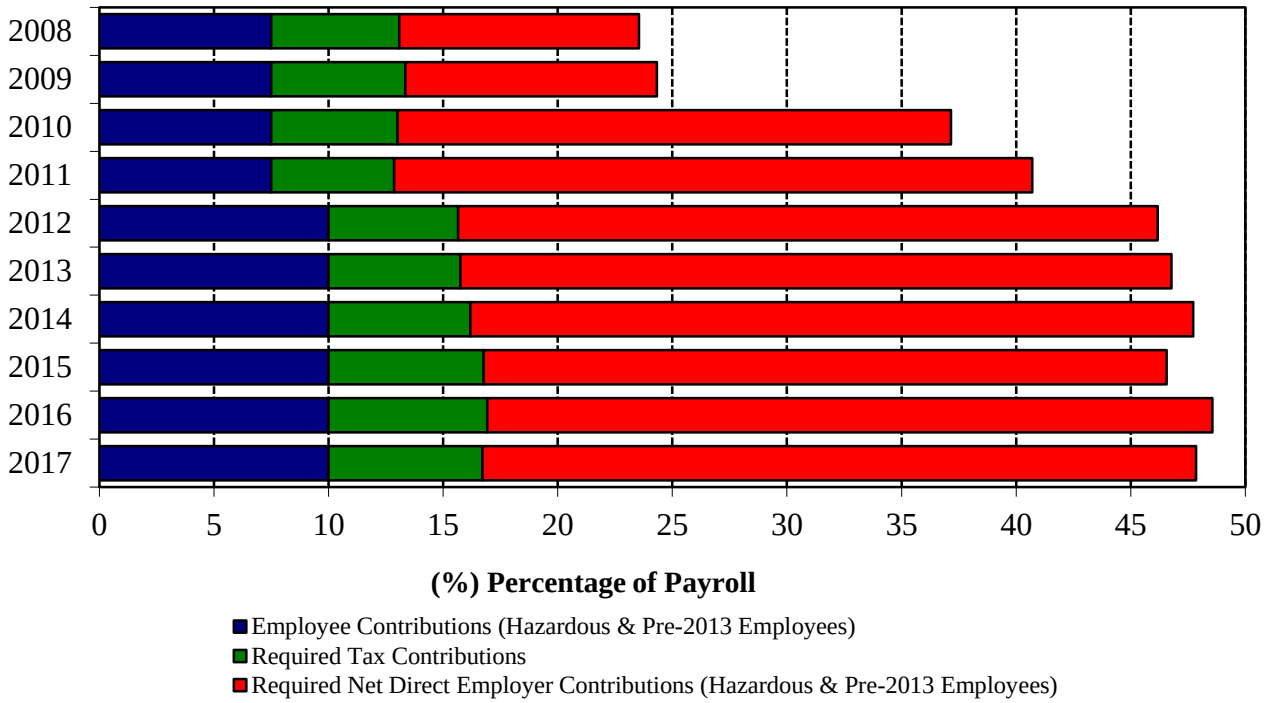


Unfunded Accrued Liability

Actuarial Value of Assets vs. Actuarial Accrued Liability

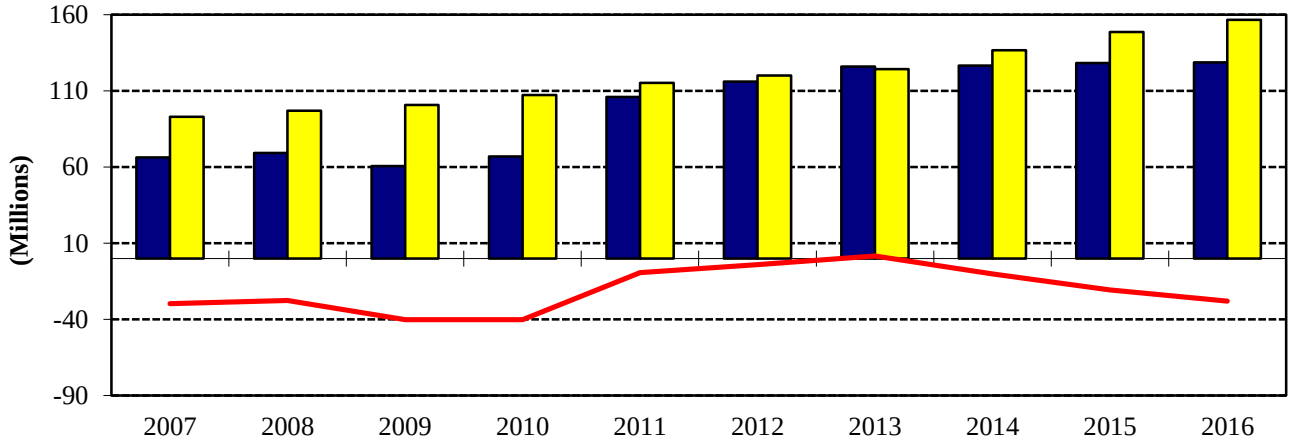


Components of Actuarial Funding



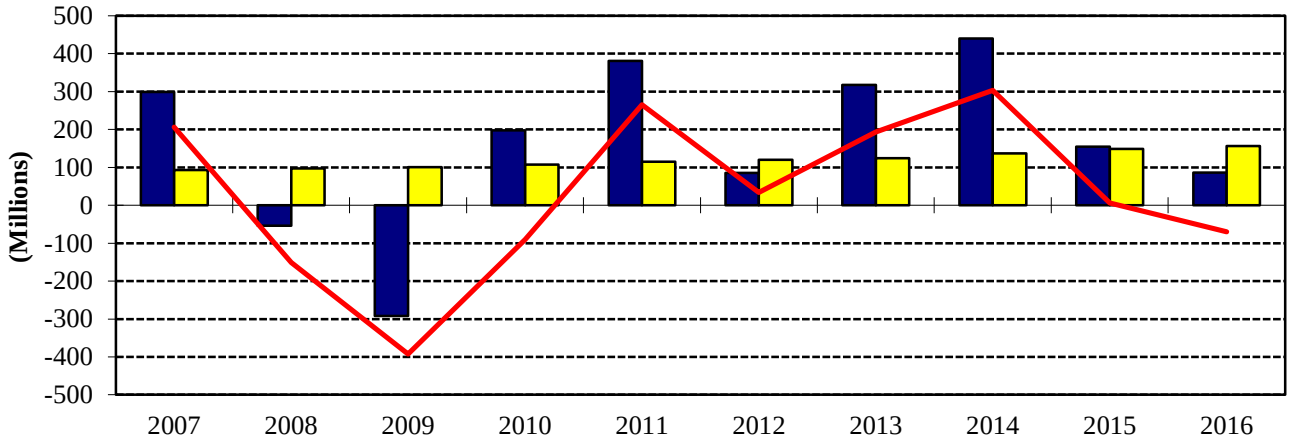
(2012 and later employee contribution level is based on members with earnings above the poverty level)

Net Non-Investment Income



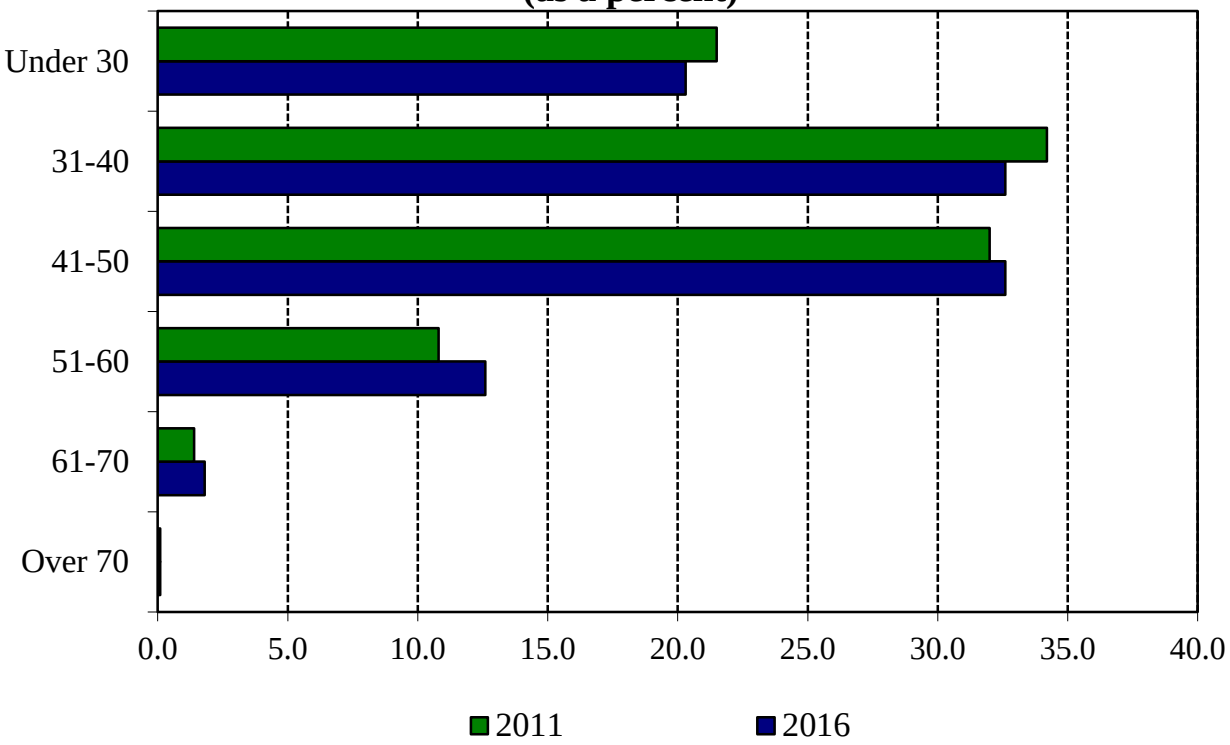
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Non-Investment Income ($Mil)	66.3	69.3	60.6	67.0	106.1	116.0	125.9	126.6	128.2	128.6
Benefits and Expenses ($Mil)	92.9	96.9	100.7	107.2	115.3	120.0	124.2	136.7	148.7	156.6
Net Non-Investment Income ($Mil)	-29.6	-27.6	-40.1	-40.2	-9.2	-4.0	1.7	-10.1	-20.5	-28.0

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

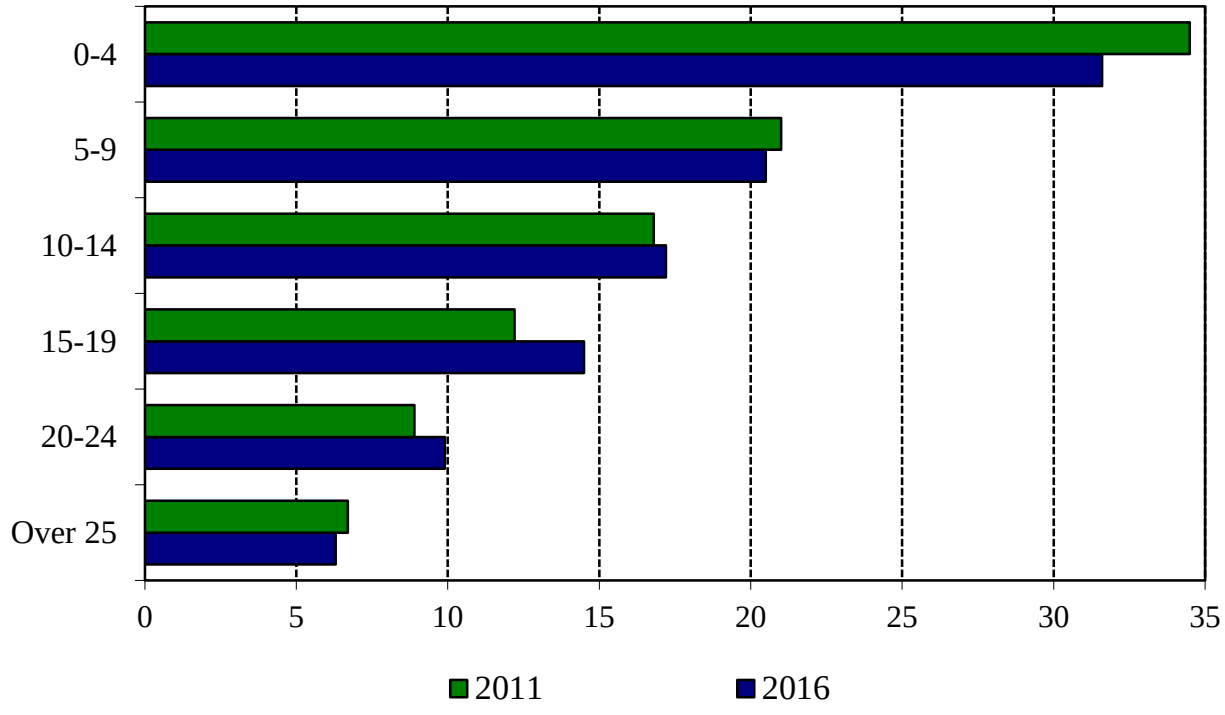


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total Income ($Mil)	299.2	-53.6	-291.8	198.1	381.0	85.9	318.0	439.9	154.8	86.4
Benefits and Expenses ($Mil)	92.9	96.9	100.7	107.2	115.3	120.0	124.2	136.7	148.7	156.6
Net Change in MVA ($Mil)	206.3	-150.5	-392.5	90.9	265.7	34.1	193.8	303.2	6.1	-70.2

Active – Census by Age
(as a percent)



Active – Census by Service
(as a percent)



Historical Asset Yields

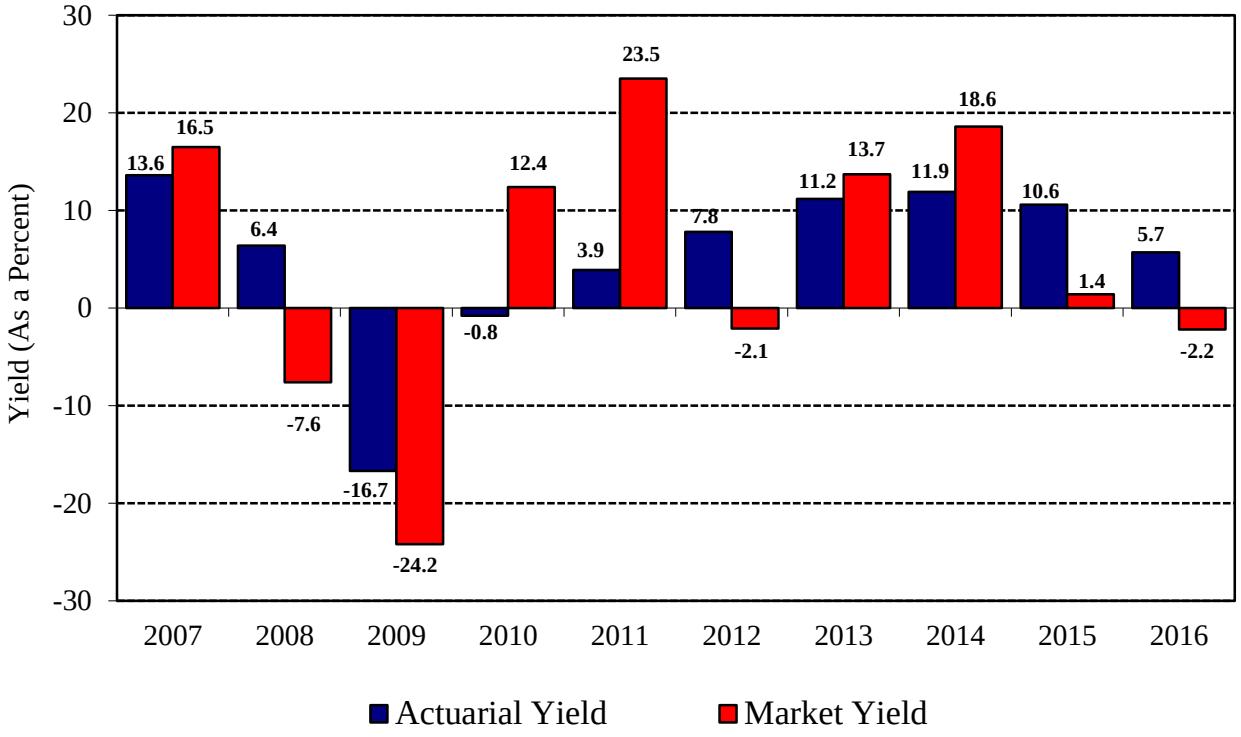


EXHIBIT I
ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1.	Normal Cost of Retirement Benefits	$	36,995,862
2.	Normal Cost of Death Benefits	$	1,261,419
3.	Normal Cost of Disability Benefits	$	3,560,169
4.	Normal Cost of Deferred Retirement Benefits	$	3,561,259
5.	Normal Cost of Contribution Refunds	$	5,518,764
6.	TOTAL Normal Cost as of July 1, 2016 (1+2+3+4+5)	$	50,897,473
7.	TOTAL Normal Cost Interest Adjusted for Mid-year Payment	$	52,771,623
8.	Adjustment to Total Normal Cost for Employee Portion	$	27,525,434
9.	Employer Normal Cost, Adjusted for Midyear Payment	$	25,246,189
10.	Amortization Payments on Unfunded Accrued Liability at Midyear	$	81,091,004
11.	Projected Administrative Expenses for Fiscal 2017	$	1,365,125
12.	TOTAL Employer Cost (9 + 10 + 11)	$	107,702,318
13.	Projected Insurance Premium Taxes due in Fiscal 2017	$	19,090,190
14.	Net Direct Actuarially Required Employer Contribution for Fiscal 2017 (12 – 13)	$	88,612,128
15.	Projected Payroll for Contributing Members (Fiscal 2017)	$	284,556,608
16.	Net Direct Actuarially Required Employer Contribution as a Percentage of Projected Payroll for Fiscal 2017 (14 ÷ 15)		31.14%*
17.	Actual Net Direct Employer Contribution Rate for Fiscal 2017		31.75%*
18.	Projected Fiscal 2017 Contribution Loss (Gain) as a % of Payroll (16 – 17)		(0.61%)
19.	Projected Fiscal 2017 Employer Contribution Shortfall (Surplus) (15 × 18)	$	(1,735,795)
20.	Estimated Amortization of Fiscal 2017 Employer Contribution Shortfall (Surplus) Based on Midyear Payment in Fiscal 2018	$	(196,643)
21.	Estimated Fiscal 2018 Employer Normal Cost Adjusted for Midyear Payment	$	25,516,148
22.	Estimated Fiscal 2018 Amortization Payments based on Fiscal 2017 UAL	$	81,091,004
23.	Estimated Fiscal 2018 Administrative Expenses	$	1,404,372
24.	Estimated Insurance Premium Taxes due in Fiscal 2018	$	19,639,033
25.	Estimated Actuarially Required Employer Contributions for Fiscal 2018 (20 + 21 + 22 + 23 – 24)	$	88,175,848
26.	Projected Payroll for Contributing Members (Fiscal 2018)	$	287,599,386
27.	Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2018 (25 ÷ 26, Rounded to nearest 0.25%)		30.75%*

* The above rates are for members with earnings greater than the Department of HHS poverty guidelines. For members of the Hazardous Duty Subplan or hired before January 1, 2013, and who have earnings below the poverty guidelines, employer rates will be 2.5% higher and employee rates will be 2.5% lower.

EXHIBIT II
PRESENT VALUE OF FUTURE BENEFITS

PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits	$ 1,441,692,690	
Survivor Benefits	17,092,099	
Disability Benefits	71,302,198	
Vested Termination Benefits	74,688,207	
Refunds of Contributions	33,313,013	
TOTAL Present Value of Future Benefits for Active Members		$ 1,638,088,207

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement	$ 29,247,634	
Terminated Members with Reciprocals Due Benefits at Retirement	122,357	
Terminated Members Due a Refund	5,977,006	
TOTAL Present Value of Future Benefits for Terminated Members		$ 35,346,997

PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees			
Maximum	$ 506,480,349		
Option 1	1,229,440		
Option 2	506,643,249		
Option 3	206,814,408		
Option 4	1,197,771		
Option 5	0		
TOTAL Regular Retirees		$ 1,222,365,217	
Disability Retirees		50,113,280	
Survivors & Widows		132,706,495	
DROP Account Balances Payable to Retirees		76,394,532	
IBO Retirees' Account Balance		986,521	
TOTAL Present Value of Future Benefits for Retirees & Survivors			$ 1,482,566,045
TOTAL PRESENT VALUE OF FUTURE BENEFITS			$ 3,156,001,249

EXHIBIT III – SCHEDULE A
MARKET VALUE OF ASSETS

CURRENT ASSETS:		
Cash in Banks	$ 32,107,039	
Contributions and Taxes Receivable	10,210,652	
Accrued Interest and Dividends	3,281,997	
Investments Receivable	21,148,797	
TOTAL CURRENT ASSETS		$ 66,748,485
Property Plant & Equipment		$ 2,063,704
INVESTMENTS:		
Cash Equivalents	$ 48,619,490	
Equities	960,315,971	
Fixed Income	373,266,991	
Real Estate	195,018,273	
Alternative Investments	103,792,959	
Tactical Allocation	88,130,942	
Collateral for Securities Lending	37,108,655	
TOTAL INVESTMENTS		$ 1,806,253,281
TOTAL ASSETS		$ 1,875,065,470
CURRENT LIABILITIES:		
Accounts Payable	$ 903,485	
Refunds Payable	262,598	
Investments Payable	13,253,140	
Securities Lending Obligations	37,108,655	
Other Post-Employment Benefits	679,195	
TOTAL CURRENT LIABILITIES		$ 52,207,073
MARKET VALUE OF ASSETS		$ 1,822,858,397

EXHIBIT III – SCHEDULE B
ACTUARIAL VALUE OF ASSETS

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

Fiscal year 2016	$ (183,165,585)
Fiscal year 2015	(114,129,074)
Fiscal year 2014	176,967,651
Fiscal year 2013	86,627,167
Fiscal year 2012	(138,057,227)
Total for five years	$ (171,757,068)

Deferral of excess (shortfall) of invested income:

Fiscal year 2016 (80%)	$ (146,532,468)
Fiscal year 2015 (60%)	(68,477,444)
Fiscal year 2014 (40%)	70,787,060
Fiscal year 2013 (20%)	17,325,433
Fiscal year 2012 (0%)	0
Total deferred for year	$ (126,897,419)

Market Value of Plan Net Assets, End of Year	$ 1,822,858,397
Preliminary Actuarial Value of Plan Assets, End of Year	$ 1,949,755,816

Actuarial value of assets corridor

85% of market value, end of year	$ 1,549,429,637
115% of market value, end of year	$ 2,096,287,157
Final Actuarial Value of Plan Net Assets, End of Year	$ 1,949,755,816

EXHIBIT IV
PRESENT VALUE OF FUTURE CONTRIBUTIONS

Employee Contributions to the Annuity Savings Fund		$ 202,881,309
Employer Normal Contributions to the Pension Accumulation Fund		192,979,808
Employer Amortization Payments to the Pension Accumulation Fund		810,384,316
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS		$ 1,206,245,433

EXHIBIT V – SCHEDULE A
ACTUARIAL ACCRUED LIABILITIES

LIABILITY FOR ACTIVE MEMBERS		
Accrued Liability for Retirement Benefits	$ 1,150,623,144	
Accrued Liability for Survivor Benefits	7,593,074	
Accrued Liability for Disability Benefits	44,186,680	
Accrued Liability for Vested Termination Benefits	47,519,757	
Accrued Liability for Refunds of Contributions	(7,695,565)	
TOTAL Actuarial Accrued Liability for Active Members		$ 1,242,227,090
LIABILITY FOR TERMINATED MEMBERS		$ 35,346,997
LIABILITY FOR RETIREES AND SURVIVORS		$ 1,482,566,045
TOTAL ACTUARIAL ACCRUED LIABILITY		$ 2,760,140,132
ACTUARIAL VALUE OF ASSETS		$ 1,949,755,816
UNFUNDED ACTUARIAL ACCRUED LIABILITY		$ 810,384,316

EXHIBIT V – SCHEDULE B
CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY

PRIOR YEAR UNFUNDED ACCRUED LIABILITY		$ 805,312,224
Interest on Unfunded Accrued Liability	$ 60,398,416	
Investment Loss	32,707,657	
Contribution Shortfall with Accrued Interest	1,831,833	
TOTAL Additions to UAL		$ 94,937,906
Liability Experience Gain	$ 8,714,512	
Interest Adjusted Amortization Payments	81,151,302	
TOTAL Reductions to UAL		$ 89,865,814
NET Change in Unfunded Accrued Liability		$ 5,072,092
CURRENT YEAR UNFUNDED ACCRUED LIABILITY		$ 810,384,316

EXHIBIT V – SCHEDULE C
AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
JUNE 30, 2016

FISCAL YEAR	DESCRIPTION	AMORT. PERIOD	INTIAL BALANCE	YEARS REMAINING	REMAINING BALANCE	AMORT. PAYMENTS
2014	Cumulative Bases	20	$801,359,380	18	$762,961,205	$73,122,882
2015	Asset Experience Loss (Gain)	15	(52,886,689)	14	(50,861,804)	(5,573,383)
2015	Experience Loss (Gain)	15	(9,412,440)	14	(9,052,063)	(991,916)
2015	Contribution Loss (Gain)	15	(6,385,205)	14	(6,140,733)	(672,895)
2015	Liability Assumption Loss (Gain)	15	91,142,323	14	87,652,735	9,604,895
2016	Asset Experience Loss (Gain)	15	32,707,657	15	32,707,657	3,446,847
2016	Experience Loss (Gain)	15	(8,714,512)	15	(8,714,512)	(918,366)
2016	Contribution Loss (Gain)	15	1,831,833	15	1,831,833	193,045

TOTAL Unfunded Actuarial Accrued Liability	$810,384,316	*
TOTAL Fiscal 2017 Amortization Payments at Beginning of Year		$78,211,109
TOTAL Fiscal 2017 Amortization Payments Adjusted to Mid-Year		$81,091,004

* Does not equal sum of remaining balances due to rounding.

EXHIBIT VI
ANALYSIS OF CHANGE IN ASSETS

Actuarial Value of Assets (June 30, 2015)		$ 1,871,160,542
INCOME:		
Member Contributions	$ 27,278,823	
Employer Contributions	82,720,635	
Irregular Contributions	21,202	
Insurance Premium Taxes	18,605,064	
Total Contributions		$ 128,625,724
Net (Depreciation) of Investments	$ (69,839,931)	
Interest & Dividends	20,441,910	
Alternative Investment Income	13,055,627	
Other Income	25,619	
Investment Expense	(5,899,141)	
Net Investment Income		$ (42,215,916)
TOTAL Income		$ 86,409,808
EXPENSES:		
Retirement Benefits	$ 131,341,723	
DROP Disbursements	16,827,436	
Refunds of Contributions	4,142,582	
Transfers to Other Systems	2,848,783	
Administrative Expenses	1,468,182	
TOTAL Expenses		$ 156,628,706
Net Market Value Income for Fiscal 2016 (Income – Expenses)		$ (70,218,898)
Unadjusted Fund Balance as of June 30, 2016 (Fund Balance Previous Year + Net Income)		$ 1,800,941,644
Adjustment for Actuarial Smoothing		$ 148,814,172
Actuarial Value of Assets: (June 30, 2016)		$ 1,949,755,816

EXHIBIT VII
CENSUS DATA

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2015	5,535	1,488	228	4,538	11,789
Additions to Census					
Initial membership	566	43			609
Omitted in error last year				5	5
Death of another member				50	50
Adjustment for multiple records				5	5
Change in Status during Year					
Actives terminating service	(150)	150			
Actives who retired	(90)			90	
Actives entering DROP	(64)		64		
Term. members rehired	31	(31)			
Term. members who retire		(15)		15	
Retirees who are rehired	1			(1)	
Refunded who are rehired	17	6			23
DROP participants retiring			(72)	72	
DROP returned to work	29		(29)		
Omitted in error last year					
Eliminated from Census					
Refund of contributions	(197)	(141)			(338)
Deaths	(12)	(1)		(137)	(150)
Included in error last year					
Adjustment for multiple records					
Number of members as of June 30, 2016	5,666	1,499	191	4,637	11,993

ACTIVES CENSUS BY AGE:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 – 20	9	4	13	29,964	389,536
21 – 25	267	95	362	33,807	12,238,255
26 – 30	599	177	776	39,858	30,929,727
31 – 35	708	213	921	45,371	41,786,233
36 – 40	694	231	925	49,372	45,669,185
41 – 45	731	212	943	53,575	50,521,669
46 – 50	719	185	904	57,210	51,717,539
51 – 55	401	112	513	58,472	29,996,304
56 – 60	145	58	203	58,531	11,881,798
61 – 65	56	23	79	59,310	4,685,462
66 – 70	16	6	22	65,825	1,448,141
71 – 75	3	1	4	50,576	202,304
86 – 90	1	0	1	79,869	79,869
TOTAL	4,349	1,317	5,666	49,690	281,546,022

THE ACTIVE CENSUS INCLUDES 2,501 ACTIVES WITH VESTED BENEFITS, INCLUDING 124 ACTIVE FORMER DROP PARTICIPANTS. THE 191 CURRENT DROP PARTICIPANTS ARE EXCLUDED.

DROP PARTICIPANTS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 – 45	1	0	1	38,429	38,429
46 – 50	21	4	25	52,496	1,312,410
51 – 55	86	16	102	54,003	5,508,271
56 – 60	37	12	49	47,532	2,329,075
61 – 65	6	7	13	36,906	479,780
66 – 70	1	0	1	19,627	19,627
TOTAL	152	39	191	50,720	9,687,592

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	1	0	1	19,058	19,058
36 - 40	23	2	25	23,262	581,549
41 - 45	49	8	57	26,043	1,484,451
46 - 50	51	6	57	26,932	1,535,101
51 - 55	23	10	33	19,885	656,202
56 - 60	1	1	2	16,752	33,503
TOTAL	148	27	175	24,628	4,309,864

TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:

Contributions Ranging From		To	Number	Total Contributions
0	-	99	202	8,627
100	-	499	340	88,008
500	-	999	180	129,788
1000	-	1999	145	207,368
2000	-	4999	140	454,287
5000	-	9999	108	787,186
10000	-	19999	123	1,812,598
20000	-	99999	86	2,489,144
TOTAL			1,324	5,977,006

REGULAR RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	1	0	1	18,866	18,866
46 - 50	55	3	58	42,395	2,458,912
51 - 55	248	41	289	49,265	14,237,655
56 - 60	486	113	599	44,322	26,548,850
61 - 65	619	110	729	37,204	27,121,371
66 - 70	628	81	709	31,026	21,997,323
71 - 75	434	42	476	25,390	12,085,506
76 - 80	216	17	233	25,286	5,891,695
81 - 85	109	10	119	23,233	2,764,693
86 - 90	58	1	59	20,870	1,231,334
91 - 99	18	5	23	17,978	413,493
TOTAL	2,872	423	3,295	34,831	114,769,698

DISABILITY RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	2	0	2	17,228	34,455
36 - 40	6	4	10	20,430	204,295
41 - 45	13	9	22	19,268	423,886
46 - 50	28	7	35	18,406	644,208
51 - 55	25	16	41	18,696	766,535
56 - 60	39	7	46	17,358	798,489
61 - 65	36	13	49	15,922	780,154
66 - 70	40	7	47	16,087	756,094
71 - 75	15	4	19	15,110	287,094
76 - 80	8	1	9	12,325	110,922
81 - 85	2	0	2	13,806	27,611
86 - 90	2	0	2	10,334	20,667
TOTAL	216	68	284	17,093	4,854,410

SURVIVORS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 25	45	58	103	6,959	716,810
26 - 30	0	1	1	17,301	17,301
31 - 35	1	1	2	9,798	19,595
36 - 40	0	12	12	22,314	267,771
41 - 45	0	14	14	17,147	240,056
46 - 50	1	30	31	17,863	553,765
51 - 55	0	53	53	19,979	1,058,886
56 - 60	5	49	54	21,388	1,154,939
61 - 65	8	97	105	17,849	1,874,191
66 - 70	4	127	131	17,063	2,235,277
71 - 75	9	150	159	13,979	2,222,712
76 - 80	4	131	135	14,108	1,904,516
81 - 85	6	118	124	11,616	1,440,432
86 - 90	4	79	83	11,620	964,499
91 - 99	5	46	51	11,240	573,215
TOTAL	92	966	1,058	14,408	15,243,965

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	10	3										13
21 - 25	179	123	38	15	5	2						362
26 - 30	159	153	90	118	64	188	4					776
31 - 35	93	83	58	64	54	403	165	1				921
36 - 40	57	61	28	37	30	247	338	127				925
41 - 45	44	35	31	20	18	143	220	319	111	2		943
46 - 50	30	18	15	16	12	106	122	200	280	104	1	904
51 - 55	6	5	1	6	9	48	84	111	108	114	21	513
56 - 60					2	21	32	39	43	35	31	203
61 - 65		2				2	8	22	14	8	23	79
66 - 70							1	2	3	1	15	22
71 & Over								1	1		3	5
Totals	578	483	261	276	194	1,160	974	822	560	264	94	5,666

AVERAGE ANNUAL SALARY OF ACTIVE MEMBERS:

Attained Ages	Completed Years of Service											Average Salary
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	
0 - 20	29,609	31,149										29,964
21 - 25	32,154	34,708	36,040	37,562	41,877	35,588						33,807
26 - 30	33,182	39,263	39,439	41,580	41,703	44,424	42,460					39,858
31 - 35	34,348	37,845	38,697	42,216	41,613	48,359	52,873	44,788				45,371
36 - 40	34,437	39,543	39,125	40,552	40,447	47,309	54,564	57,928				49,372
41 - 45	37,507	37,236	36,421	36,330	41,148	47,154	52,841	60,236	65,051	83,956		53,575
46 - 50	34,622	33,163	37,710	43,101	38,550	45,571	50,761	57,539	65,479	71,141	100,204	57,210
51 - 55	36,307	55,331	30,000	33,994	35,265	41,271	49,525	55,840	64,531	70,022	79,011	58,472
56 - 60					35,261	42,820	46,932	53,200	60,524	68,178	75,699	58,531
61 - 65		61,118				45,627	54,118	47,332	56,013	59,238	75,637	59,310
66 - 70							73,260	35,631	50,282	65,047	72,515	65,825
71 & Over								33,919	22,505		75,250	56,435
Average	33,550	37,727	38,252	40,914	40,877	46,674	52,692	57,840	64,436	69,979	76,162	49,690

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 - 30												0
31 - 35									1			1
36 - 40								25				25
41 - 45						4	52	1				57
46 - 50	4	2	3	2	2	44						57
51 - 55	3	7	6	6	11							33
56 - 60	2											2
61 & Over												0
Totals	9	9	9	8	13	48	52	26	1	0	0	175

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

Attained Ages	Years Until Retirement Eligibility											Average Benefit
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	
0 - 30												0
31 - 35									19,058			19,058
36 - 40								23,262				23,262
41 - 45						37,300	24,879	41,545				26,043
46 - 50	48,273	38,397	34,285	42,381	35,447	22,880						26,932
51 - 55	14,347	19,016	21,231	18,358	22,047							19,885
56 - 60	16,752											16,752
61 & Over												0
Average	29,960	23,323	25,582	24,364	24,109	24,081	24,879	23,965	19,058	0	0	24,628

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	24	17	8	4	2	4						59
51 - 55	60	44	51	37	31	63	3					289
56 - 60	51	55	77	57	54	217	85	3				599
61 - 65	23	27	39	32	34	237	262	70	4	1		729
66 - 70	7	8	9	10	18	109	210	236	86	8	8	709
71 - 75		2	4	2	1	29	55	131	191	15	46	476
76 - 80		1			1	5	15	23	49	77	62	233
81 - 85						3		9	13	28	66	119
86 - 90							1	3	1	5	49	59
91 & Over								1	1	3	18	23
Totals	165	154	188	142	141	667	631	476	345	137	249	3,295

AVERAGE ANNUAL BENEFITS PAYABLE TO SERVICE 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 - 50	46,627	43,673	41,927	31,216	39,850	19,076						41,996
51 - 55	49,102	55,454	54,881	46,488	50,432	42,540	29,699					49,265
56 - 60	45,693	47,547	50,416	49,278	48,508	41,891	37,240	12,424				44,322
61 - 65	50,687	40,791	48,179	48,619	41,192	36,773	35,341	28,261	11,879	18,747		37,204
66 - 70	48,253	36,244	42,487	33,115	36,488	37,278	29,649	29,111	29,052	28,866	13,753	31,026
71 - 75		25,125	38,546	48,914	20,788	29,344	26,664	23,656	27,822	27,013	13,628	25,390
76 - 80		23,517			22,087	25,735	26,550	22,014	30,064	29,667	17,021	25,286
81 - 85						55,598		20,982	26,517	28,611	19,140	23,233
86 - 90							2,840	43,439	8,238	32,054	18,973	20,870
91 & Over								6,605	36,608	29,123	15,717	17,978
Average	47,873	47,160	50,170	46,751	45,126	38,638	32,659	26,926	28,182	29,109	17,141	34,831

G. S. Curran & Company, Ltd.

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 - 30												0
31 - 35	1					1						2
36 - 40	1	1		3		5						10
41 - 45	2	1			3	10	5	1				22
46 - 50	1	5	3	2	1	9	7	7				35
51 - 55	1		3	2	2	9	9	10	3	2		41
56 - 60			1	3		4	13	15	4	5	1	46
61 - 65						5	8	8	16	9	3	49
66 - 70						2	6	4	15	10	10	47
71 - 75								2	3	4	10	19
76 - 80								1	1	3	4	9
81 - 85											2	2
86 - 90											2	2
91 & Over												0
Totals	6	7	7	10	6	45	48	48	42	33	32	284

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 - 30												0
31 - 35	18,570					15,885						17,227
36 - 40	16,716	23,278		19,670		21,058						20,429
41 - 45	39,444	17,486			17,875	17,385	17,876	10,660				19,268
46 - 50	21,318	21,165	23,798	18,213	37,061	19,022	16,941	11,771				18,406
51 - 55	11,297		25,449	24,315	26,622	32,008	12,363	11,101	15,526	10,042		18,696
56 - 60			9,620	19,351		24,497	20,917	15,776	17,680	9,398	6,560	17,358
61 - 65						14,466	22,263	17,659	15,274	11,944	12,189	15,922
66 - 70						12,790	13,982	19,008	19,060	14,966	13,503	16,087
71 - 75								10,759	13,307	16,538	15,950	15,110
76 - 80								12,341	8,830	9,735	15,137	12,325
81 - 85											13,806	13,806
86 - 90											10,333	10,333
91 & Over												0
Average	24,465	20,941	22,480	20,212	23,989	21,116	17,774	14,414	16,579	12,715	13,953	17,093

G. S. Curran & Company, Ltd.

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	10	10	1	1	6	29	10	4				71
21 - 25	3	1		2		11	5	5	5			32
26 - 30		1										1
31 - 35					1			1				2
36 - 40	2	2			1	4	1			1	1	12
41 - 45	1				1	5	3	2	1		1	14
46 - 50	2					8	8	5	4	1	3	31
51 - 55	2		1		1	9	7	12	14	5	2	53
56 - 60			2		2	11	11	10	9	4	5	54
61 - 65				2	1	10	18	23	20	15	16	105
66 - 70			1			11	14	36	28	12	29	131
71 - 75	1		2	2		1	7	18	34	28	66	159
76 - 80							3	6	12	22	92	135
81 - 85						1		6	5	12	100	124
86 - 90								1	1	7	74	83
91 & Over										1	50	51
Totals	21	14	7	7	13	100	87	129	133	108	439	1,058

AVERAGE ANNUAL BENEFITS PAYABLE TO SURVIVORS OF FORMER MEMBERS:

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 - 20	7,638	7,887	20,507	9,352	7,038	5,896	6,874	4,399				6,826
21 - 25	4,432	4,159		19,822		7,782	8,466	3,398	6,029			7,255
26 - 30		17,301										17,301
31 - 35					17,552			2,043				9,798
36 - 40	24,844	27,585			25,933	22,816	27,184			15,825	2,705	22,314
41 - 45	20,847				15,620	25,964	15,182	9,425	5,537		3,833	17,147
46 - 50	42,234					27,851	13,683	9,018	9,611	22,333	10,387	17,863
51 - 55	30,816		32,792		10,959	39,507	26,174	14,953	10,518	14,621	7,463	19,979
56 - 60			36,644		36,887	30,918	24,199	18,466	14,538	12,010	7,610	21,388
61 - 65				10,130	20,460	25,768	22,588	21,220	16,758	11,900	10,468	17,849
66 - 70			37,886			24,280	18,954	18,395	18,471	16,580	9,882	17,063
71 - 75	22,261		11,946	8,238		36,701	16,656	13,174	20,702	16,741	9,046	13,979
76 - 80							21,238	13,089	23,060	20,721	11,192	14,108
81 - 85						62,379		19,788	7,181	20,594	9,763	11,616
86 - 90								5,136	28,854	22,294	10,466	11,620
91 & Over										30,662	10,851	11,240
Average	15,646	11,107	26,909	12,248	15,886	20,200	18,332	15,926	16,917	17,548	10,170	14,408

EXHIBIT VIII
YEAR-TO-YEAR COMPARISON

	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013
Number of Active Members	5,666	5,535	5,468	5,602
Number of Retirees & Survivors	4,637	4,538	4,444	4,340
DROP Participants	191	228	271	314
Number of Terminated Due Deferred Benefits	175	168	159	145
Number Terminated Due Refunds	1,324	1,320	1,272	1,252
Active Lives Payroll (excludes DROP participants)	$ 281,546,022	$ 265,089,428	$ 259,594,435	$ 264,711,491
Retiree Benefits in Payment	$ 134,868,070	$ 128,050,009	$ 118,522,277*	$ 110,735,234
Market Value of Assets	$ 1,822,858,397	$ 1,893,077,295	$ 1,887,019,463	$ 1,600,532,779
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability	70.64%	69.91%	68.11%	64.15%
Actuarial Accrued Liability (EAN)	$ 2,760,140,132	$ 2,676,472,766	$ 2,512,627,665	$ 2,399,375,820
Actuarial Value of Assets	$ 1,949,755,816	$ 1,871,160,542	$ 1,711,268,285	$ 1,539,218,085
UAL (Funding Excess)	$ 810,384,316	$ 805,312,224	$ 801,359,380	$ 860,157,735

	Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014
Employee Contribution Rate:				
For Employees in the Hazardous Subplan or Hired prior to January 1, 2013:	10.00%†	10.00%†	10.00%†	10.00%
For Employees in the Non-Hazardous Subplan:	8.00%	8.00%	8.00%	N/A
Required Tax Contributions as a Percentage of Projected Payroll	6.71%	6.93%	6.77%	6.19%
Actuarially Required Employer Contribution Rate:				
For Employees in the Hazardous Subplan or Hired prior to January 1, 2013:	31.14%†	31.63%†	29.80%†	31.53%
For Employees in the Non-Hazardous Subplan:	31.14%	33.63%	31.80%	N/A
Actual Employer Contribution Rate				
For Employees in the Hazardous Subplan or Hired prior to January 1, 2013:	31.75%†	29.50%†	31.50%†	31.00%
For Employees in the Non-Hazardous Subplan:	33.75%	31.50%	33.50%	N/A

* COLA not included

† For members with earnings greater than the Department of HHS poverty guidelines. For members with earnings below the poverty guidelines, employer rates will be 2.5% higher and employee rates will be 2.5% lower.

Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009	Fiscal 2008	Fiscal 2007
5,779	5,933	6,197	6,071	5,908	5,840
4,230	4,165	4,028	3,984	3,896	3,834
284	231	194	185	213	217
130	128	112	112	114	108
1,176	1,251	1,198	1,197	1,095	993
$ 272,606,934	$ 273,348,634	$ 280,977,278	$ 270,236,561	$ 252,562,020	$ 229,145,048
$ 104,998,503	$ 99,863,547	$ 93,382,980	$ 90,285,300	$ 85,848,060	$ 81,976,596
$ 1,406,662,003	$ 1,440,795,586	$ 1,175,083,706	$ 1,084,169,309	$ 1,476,652,461	$ 1,627,120,612
59.75%	58.05%	59.87%	65.23%	86.95%	89.05%
$ 2,313,751,839	$ 2,215,674,343	$ 2,083,809,321	$ 1,988,394,358	$ 1,841,234,995	$ 1,719,536,371
$ 1,382,503,860	$ 1,286,287,651	$ 1,247,546,395	$ 1,297,128,398	$ 1,600,941,810	$ 1,531,297,284
$ 931,247,979	$ 929,386,692	$ 836,262,926	$ 691,265,960	$ 240,293,185	$ 188,239,087

Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009	Fiscal 2008
10.00%	10.00%	7.50%	7.50%	7.50%	7.50%
N/A	N/A	N/A	N/A	N/A	N/A
5.75%	5.65%	5.36%	5.52%	5.85%	5.59%
31.03%	30.52%	27.84%	24.13%	10.98%	10.45%
N/A	N/A	N/A	N/A	N/A	N/A
31.00%	26.50%	25.00%	11.00%	9.50%	13.75%
N/A	N/A	N/A	N/A	N/A	N/A

SUMMARY OF PRINCIPAL PLAN PROVISIONS

The Municipal Police Employees' Retirement System was established as of July 1, 1973, for the purpose of providing retirement allowances and other benefits as described under R.S. 11:2211 – 11:2235. The following summary of plan provisions is for general informational purposes only and does not constitute a guarantee of benefits. The provisions contained within this section are as of June 30, 2016.

MEMBERSHIP – All full-time police officers empowered to make arrests, all full-time police officers decommissioned due to illness or injury, empowered by a municipality of the state of Louisiana, and engaged in law enforcement, all individuals in a position as defined in the municipal fire and police civil service system who are employed on a full-time basis by a police department of any municipality of this state, and are under the direction of a chief of police, and are paid from the budget of the applicable police department are required to become members of this retirement system, if they earn at least $375 per month excluding state supplemental pay. All elected chiefs of police, whose salary is at least $100 per month, all academy recruits who are participating in or awaiting participation in a formal training program, required prior to commission as a municipal police officer, with complete law enforcement office authority, all full-time secretaries to an appointed chief or elected chief of police, and all full-time employees of the system are required to become members of this retirement system. Persons must be under the age of fifty on their date of employment to be eligible for system membership. Certain restrictions to membership apply to those who are receiving disability or regular retirement benefits from another system.

For employees whose first employment making them eligible for membership in the system occurred on or after January 1, 2013, membership will be in the Hazardous Duty Subplan if they are eligible to receive state supplemental pay by virtue of their employment or the Nonhazardous Duty Subplan if they are not eligible for state supplemental pay.

CONTRIBUTION RATES – The fund is financed by employee and employer contributions together with funds from dedicated insurance premium taxes as allocated by the Public Retirement Systems' Actuarial Committee in accordance with R.S. 11:62, R.S 11:103, and R.S. 22:1476A(3). For employees hired prior to January 1, 2013, the employee contribution rate is at least 7.5% but not greater than 10% based on the total contribution expressed as a percentage of payroll after applying all required tax contributions. The employee rate, when such contributions total 25% or less, is set at 7.5%. The employee rate then increases 0.25% for each 0.75% increase in the total rate, and an additional 0.25% when the rate exceeds 28.75%, subject to a maximum rate of 10%. Regardless of the total contribution rate, members whose earnable compensation is less than or equal to the poverty guidelines issued by the U.S. Department of Health and Human Services have an employee contribution rate of 7.5%. Net direct employer contributions are nine percent (9.0%) of earnable compensation unless the funds allocated from dedicated taxes are insufficient to provide the actuarially required contributions or the actuarially required contributions are less than 9.0%. Members are not required to contribute to the system once they have enough service to have accrued 100% of final average compensation, but the employer is required to continue to contribute the employer's contribution until the member retires or enters DROP.

For employees hired on or after January 1, 2013 who are members of the Hazardous Duty Subplan, the employee contribution rate is the same as that for employees hired before January 1, 2013. For employees hired on or after January 1, 2013 who are members of the Nonhazardous Duty Subplan, the employee contribution rate is 8%.

CONTRIBUTION REFUNDS – Upon withdrawal from service, members not entitled to a retirement allowance may receive a refund of accumulated contributions. Refunds are payable thirty days after the effective date of withdrawal from service, if the member's employer has submitted all contributions.

AVERAGE FINAL COMPENSATION –

For employees hired prior to January 1, 2013: The average annual earned compensation of an employee for the highest period of thirty-six successive or joined months of service as an employee.

For employees hired on or after January 1, 2013: The average annual earned compensation of an employee for the highest period of sixty successive or joined months of service as an employee.

The twelve month salaries used to compute the average final compensation are subject to a limit in the rate of increase of 15% per year with certain exceptions.

NORMAL RETIREMENT BENEFITS –

For employees hired prior to January 1, 2013: Members with twelve years of creditable service may retire at age fifty-five; members with twenty years of service may retire at age fifty; members with twenty-five years of service may retire regardless of age. The retirement allowance is equal to three and one-third percent of the member's average final compensation multiplied by his years of creditable service, not to exceed one hundred percent of his average final compensation.

For employees hired on or after January 1, 2013 who participate in the Hazardous Duty Subplan: Members with twelve years of creditable service may retire at age fifty-five; members with twenty-five years of service may retire at any age. The retirement allowance is equal to three percent of the member's average final compensation multiplied by his years of creditable service, not to exceed one hundred percent of his average final compensation. Members in this subplan who retire with thirty or more years of creditable service receive benefits according to a three and one-third percent retirement allowance.

For employees hired on or after January 1, 2013 who participate in the Nonhazardous Duty Subplan: Members with ten years of creditable service may retire at age sixty; members with twenty-five years of creditable service may retire at age fifty-five; members with thirty years of service may retire at any age. The retirement allowance is equal to two and one-half percent of the member's average final compensation multiplied by his years of creditable service, not to exceed one hundred percent of his average final compensation.

EARLY RETIREMENT –

For employees hired prior to January 1, 2013: Members with twenty or more years of creditable service who leave employment before age fifty may elect to receive early retirement benefits equal to an actuarially reduced accrued normal retirement benefit.

For employees hired on or after January 1, 2013: Members with twenty or more years of creditable service may elect to receive early retirement benefits equal to an actuarially reduced accrued normal retirement benefit.

OPTIONAL ALLOWANCES – Members may receive their benefits as a life annuity, or in lieu of such receive a reduced benefit according to the option selected which is the actuarial equivalent of the maximum benefit.

Option 1 – If the member dies before he has received in annuity payments the present value of his member's annuity as it was at the time of retirement the balance is paid to his beneficiary.

Option 2 – Upon retirement, the member receives a reduced benefit. Upon the member's death, the designated beneficiary will continue to receive the same reduced benefit.

Option 3 – Upon retirement, the member receives a reduced benefit. Upon the member's death, the designated beneficiary will receive one-half of the member's reduced benefit.

Option 4 – Upon retirement, the member elects to receive a Board approved benefit which is actuarially equivalent to the maximum benefit.

A member may also elect to receive an actuarially reduced benefit which provides for an automatic 2 ½% annual compound increase in monthly retirement benefits based on the reduced benefit and commencing on the later of age fifty-five or retirement anniversary; this COLA is in addition to any ad hoc COLAs which are payable.

Initial Benefit Option – This option is available only to regular retirees who have not participated in the Deferred Retirement Option Plan. Under this option members may receive an initial benefit plus a reduced monthly retirement allowance which, when combined, equal the actuarially equivalent amount of the maximum retirement allowance. The initial benefit may not exceed an amount equal to thirty-six payments of the member's maximum retirement allowance. The initial benefit can be paid either as a lump-sum payment or placed in an account called an "initial benefit account" with interest credited thereto and monthly payments made from the account.

DISABILITY BENEFITS – Any member who has been officially certified as totally disabled solely as the result of injuries sustained in the performance of his official duties, or for any cause, provided the member has a least ten years of creditable service and provided that the disability was incurred while the member was an active contributing member, is entitled to disability benefits.

For employees hired prior to January 1, 2013: Disability retirees will receive a benefit equal to three percent of final average compensation multiplied by the number of years of service, subject to a minimum of 40% of final compensation and a maximum of 60% of final compensation. Any disability retiree who is in a coma or paraplegic, or who is blinded or loses the total use of a limb, solely as a result of injuries sustained in the line of duty will receive a benefit equal to 100% of final average compensation. Disability retirees who retired with a service-connected disability benefit have the option, at normal retirement age, to continue receiving a disability benefit or to convert to receiving their vested retirement benefit. All other disability retirees, at normal retirement age, will receive the greater of their disability retirement benefit or their vested benefit.

For employees hired on or after January 1, 2013 who participate in the Hazardous Duty Subplan: Disability retirees who are disabled in the line of duty or who have 10 years of service credit will receive a benefit equal to two and three-quarters percent of final average compensation multiplied by the number of years of service, subject to a minimum of 33% of final compensation and a maximum of 55% of final compensation. Any disability retiree who is in a coma or paraplegic, or who

is blinded or loses the total use of a limb, solely as a result of injuries sustained in the line of duty will receive a benefit equal to 100% of final average compensation. Disability retirees who retired with a service-connected disability benefit have the option, at normal retirement age, to continue receiving a disability benefit or to convert to receiving their vested retirement benefit. All other disability retirees, at normal retirement age, will receive the greater of their disability retirement benefit or their vested benefit.

For employees hired on or after January 1, 2013 who participate in the Nonhazardous Duty Subplan: Disability retirees who have at least 10 years of service credit will receive a benefit equal to two and one-quarter percent of final average compensation multiplied by the number of years of service, subject to a minimum of 25% of final compensation and a maximum of 50% of final compensation. Any disability retiree who is in a coma or paraplegic, or who is blinded or loses the total use of a limb, solely as a result of injuries sustained in the line of duty will receive a benefit equal to 100% of final average compensation. At normal retirement age, disability retirees will receive the greater of their disability retirement benefit or their vested benefit.

SURVIVOR BENEFITS – Benefits are payable to survivors of any active contributing member who dies before retirement, or disability retirees who die after retirement as follows.

For employees hired prior to January 1, 2013: If he leaves a surviving spouse, she will receive an annual benefit equal to 3 1/3% of the deceased member's average final compensation multiplied by his total years of creditable service; however, in no event is the annual benefit less than 40% nor more than 60% of the deceased member's average final compensation. If the surviving spouse remarries, the benefits shall cease unless the remarriage occurs after age fifty-five. If the member dies as a result of injuries sustained in the line of duty, the surviving spouse receives a benefit equal to 100% of final average compensation, which shall not cease due to remarriage, less any benefits payable to surviving children. Unmarried children of the deceased member who are under the age of eighteen years are entitled to the greater of $200 per month or 10% of average final compensation (not to exceed 100% of average final compensation when combined with the surviving spouse's benefit) until reaching the age of eighteen, or until the age of twenty-three, assuming they remain unmarried, if enrolled full-time in an institution of higher learning, high school, or vocational-technical school, unless the surviving child is physically handicapped or mentally retarded in which case the benefit is payable regardless of age. If a deceased member dies leaving no surviving spouse, but at least one minor child, each child is entitled to receive forty percent of the deceased's average final compensation, not to exceed an aggregate of sixty percent of average final compensation, subject to the same age restrictions as in the case of a surviving spouse with minor children. If a member dies after he is eligible for retirement but before actual retirement, his surviving spouse will be paid the greater of the surviving spouse benefits detailed above, or an automatic option 2 benefit. Members who have terminated employment with at least twelve years of service credit are eligible for the benefits detailed in this paragraph.

For employees hired on or after January 1, 2013 who participate in the Hazardous Duty Subplan: The surviving spouse of a deceased active contributing member or disability retiree with at least ten years of creditable service not killed in the line of duty will receive an annual benefit equal to the benefit calculated using the regular retirement formula; however, in no event is the annual benefit less than 33% nor more than 55% of the deceased member's average final compensation. If the surviving spouse remarries, the benefits shall cease unless the remarriage occurs after age sixty. If the member dies as a result of injuries sustained in the line of duty, the surviving spouse receives a benefit equal to 100% of final average compensation, which shall not cease due to remarriage, less any

benefits payable to surviving children. Unmarried children of the deceased member who are under the age of eighteen years are entitled to the greater of $200 per month or 10% of average final compensation (not to exceed 100% of average final compensation when combined with the surviving spouse's benefit) until reaching the age of eighteen, or until the age of twenty-three, assuming they remain unmarried, if enrolled full-time in an institution of higher learning, high school, or vocational-technical school, unless the surviving child is physically handicapped or mentally retarded in which case the benefit is payable regardless of age. If a deceased member dies leaving no surviving spouse, but at least one minor child, each child is entitled to receive twenty-five percent of the deceased's average final compensation, not to exceed an aggregate of fifty percent of average final compensation, subject to the same age restrictions as in the case of a surviving spouse with minor children. If a member dies after he is eligible for retirement but before actual retirement, his surviving spouse will be paid the greater of the surviving spouse benefits detailed above, or an automatic option 2 benefit. Members who have terminated employment with at least twelve years of service credit are eligible for the benefits detailed in this paragraph.

For employees hired on or after January 1, 2013 who participate in the Nonhazardous Duty Subplan: The surviving spouse of a deceased active contributing member or disability retiree with at least ten years of creditable service not killed in the line of duty will receive an annual benefit equal to the benefit calculated using the regular retirement formula; however, in no event is the annual benefit less than 25% nor more than 50% of the deceased member's average final compensation. If the surviving spouse remarries, the benefits shall cease unless the remarriage occurs after age sixty. If the member dies as a result of injuries sustained in the line of duty, the surviving spouse receives a benefit equal to 100% of final average compensation, which shall not cease due to remarriage, less any benefits payable to surviving children. Unmarried children of the deceased member who are under the age of eighteen years are entitled to the greater of $200 per month or 10% of average final compensation (not to exceed 100% of average final compensation when combined with the surviving spouse's benefit) until reaching the age of eighteen, or until the age of twenty-three, assuming they remain unmarried, if enrolled full-time in an institution of higher learning, high school, or vocational-technical school, unless the surviving child is physically handicapped or mentally retarded in which case the benefit is payable regardless of age. If a deceased member dies leaving no surviving spouse, but at least one minor child, each child is entitled to receive twenty percent (twenty-five percent in the case of one minor child) of the deceased's average final compensation, not to exceed an aggregate of fifty percent of average final compensation, subject to the same age restrictions as in the case of a surviving spouse with minor children. If a member dies after he is eligible for retirement but before actual retirement, his surviving spouse will be paid the greater of the surviving spouse benefits detailed above, or an automatic option 2 benefit. Members who have terminated employment with at least twelve years of service credit are eligible for the benefits detailed in this paragraph.

DEFERRED RETIREMENT OPTION PLAN – In lieu of terminating employment and accepting a service retirement allowance, any member of the system who is eligible to receive a regular retirement allowance may elect to participate in the Deferred Retirement Option Plan for up to thirty-six months and defer the receipt of benefits. Upon commencement of participation in the plan, membership in the system terminates and neither the employee nor employer contributions are payable. Compensation and creditable service will remain as they existed on the effective date of commencement of participation in the plan. The monthly retirement benefits that would have been payable, had the member elected to cease employment and receive a service retirement allowance, are paid into the deferred retirement option plan account. Upon termination of employment at the end of the specified period of participation, a participant in the program may receive, at his option, a lump sum payment

from the account equal to the payments to the account, or a true annuity based upon his account, or he may elect any other method of payment if approved by the Board of Trustees. The monthly benefits that were being paid into the fund during the period of participation will begin to be paid to the retiree. If employment is not terminated at the end of the thirty-six months, payments into the account cease and the member resumes active contributing membership in the system. Such members may accumulate an additional benefit for service rendered after completion of the Deferred Retirement Option Plan. If the participant dies during the period of participation in the program, a lump sum payment equal to his account balance is paid to his named beneficiary or, if none, to his estate; in addition, normal survivor benefits are payable to survivors of retirees.

COST OF LIVING INCREASES – Pursuant to R.S. 11:2225, the Board of Trustees is authorized to use interest earnings in excess of the normal requirements to grant annual cost of living increases of 3% of each retiree's original or current benefit. R.S. 11:246 provides cost of living increases to retirees and beneficiaries over the age of 65 equal to 2% of the benefit in payment on October 1, 1977, or the date the benefit was originally received if retirement commenced after that date. In lieu of these cost of living adjustments, the Board may grant an increase under R.S. 11:241 in the form of $\$X\times(A+B)$ where X is at most $1 and "A" represents the number of years of credited service accrued at retirement or at death of the member or retiree, and "B" is equal to the number of years since retirement or since death of the member or retiree to June 30th of the initial year of such increase.

All of the above provisions require that the system earn sufficient excess interest earnings to fund the increases and to meet certain other criteria detailed in the statutes related to funding status.

R. S. 11:2225(A)(7)(c) and (d) provide that the Board of Trustees is authorized to provide a one-time cost of living adjustment of 3% of each retiree's normal monthly benefit (not to be less than $20 per month) from excess interest earnings without regard to the provisions of R.S. 11:242 (which describes the target ratio).

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:	7.5% (Net of investment expense)
ACTUARIAL ASSET VALUES:	All assets are valued at market value adjusted to defer four-fifths of all earnings above or below the valuation interest rate in the valuation year, three-fifths of all earnings above or below the valuation interest rate in the prior year, two-fifths of all earnings above or below the valuation interest rate from two years prior, and one-fifth of all earnings above or below the valuation interest rate from three years prior. The resulting smoothed values are subject to a corridor of 85% to 115% of the market value of assets. If the smoothed value falls outside the corridor, the actuarial value is set equal to the average of the corridor limit and the smoothed value.
ACTIVE MEMBER MORTALITY:	RP 2000 Sex Distinct Employee Tables set back 4 years for males and set back 3 years for females.
ANNUITANT AND BENEFICIARY MORTALITY:	RP-2000 Combined Healthy with Blue Collar Adjustment Sex Distinct Tables Projected to 2029 using Scale AA for males and set back 1

year and Projected to 2029 using Scale AA for 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 do not include provisions for potential future increases not yet authorized by the Board of Trustees.

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

Years of Service	Salary Growth Rate
1-2	9.75%
3-23	4.75%
Above 23	4.25%

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

DROP ENTRY RATES: A table of these rates is included later in the report. These rates apply only to those individuals eligible to enter DROP.

DROP PARTICIPATION PERIOD: All DROP participants are assumed to participate for 3 years and retire at the end of this participation period.

RETIREMENT RATES FOR ACTIVE FORMER DROP PARTICIPANTS: Retirement rates for active former DROP participants are as follows:

Ages	Retirement Rates
74 & Under	0.24
75 & Over	1.00

DISABILITY RATES: 55% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. The table of these rates is included later in the report.

WITHDRAWAL RATES: The rates of withdrawal are applied based upon the attained age with a multiplier applied based upon the member's completed years of service. A

table of the age based rates is included later in the report. Those rates are multiplied by the following factors based on the member's completed years of service.

Service	Factor
<1	4.5
1	3.3
2-3	2.6
4	2.5
5-6	2.0
7-9	1.6
10-13	1.4
14-16	1.2
>16	1.0

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

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

SERVICE RELATED DEATH: 20% of Total Deaths

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

Member's Age	% With Children	Number of Children	Average Age
25	70%	1.84	5
35	86%	2.13	9
45	75%	1.70	12
55	22%	1.42	14
65	2%	1.45	15

SERVICE RELATED DISABILITY: 20% of Total Disabilities

DISABLED LIVES MORTALITY: RP-2000 Disabled Lives Mortality Tables set back 5 years for males and set back 3 years for females.

VESTING ELECTING PERCENTAGE: 55% of vested participants with not more than 20 years of service and 90% of vested participants with more than 20 years of service elect deferred benefits in lieu of contribution refunds.

ACTUARIAL TABLES AND RATES

Age	Disability Rates	Retirement Rates	DROP Entry Rates	Withdrawal Rates	Remarriage Rates
18	0.00083	0.00000	0.00000	0.04750	0.06124
19	0.00083	0.00000	0.00000	0.04750	0.06124
20	0.00083	0.00000	0.00000	0.04750	0.06124
21	0.00083	0.00000	0.00000	0.04750	0.05818
22	0.00083	0.00000	0.00000	0.04750	0.05524
23	0.00083	0.00000	0.00000	0.04750	0.05242
24	0.00083	0.00000	0.00000	0.04500	0.04971
25	0.00083	0.00000	0.00000	0.04500	0.04566
26	0.00083	0.00000	0.00000	0.04500	0.04335
27	0.00083	0.00000	0.00000	0.04000	0.04114
28	0.00083	0.00000	0.00000	0.04000	0.03902
29	0.00083	0.00000	0.00000	0.04000	0.03698
30	0.00083	0.00000	0.00000	0.04000	0.03502
31	0.00083	0.00000	0.00000	0.03500	0.03314
32	0.00083	0.00000	0.00000	0.03500	0.03134
33	0.00083	0.00000	0.00000	0.03500	0.02961
34	0.00083	0.00000	0.00000	0.03500	0.02795
35	0.00094	0.00000	0.00000	0.03500	0.02636
36	0.00105	0.00000	0.00000	0.03000	0.02483
37	0.00116	0.00000	0.00000	0.03000	0.02336
38	0.00132	0.00000	0.00000	0.03000	0.02195
39	0.00149	0.00000	0.00000	0.02300	0.02060
40	0.00171	0.00000	0.00000	0.02300	0.01930
41	0.00193	0.08000	0.23000	0.02300	0.01805
42	0.00215	0.08000	0.23000	0.02300	0.01686
43	0.00242	0.08000	0.23000	0.02300	0.01571
44	0.00275	0.08000	0.23000	0.02300	0.01461
45	0.00314	0.08000	0.23000	0.02300	0.01355
46	0.00358	0.08000	0.23000	0.02300	0.01253
47	0.00402	0.08000	0.23000	0.02500	0.01156
48	0.00457	0.08000	0.23000	0.02500	0.01063
49	0.00517	0.08000	0.23000	0.02500	0.00973
50	0.00589	0.08000	0.15000	0.03000	0.00887
51	0.00671	0.08000	0.23000	0.03000	0.00804
52	0.00759	0.08000	0.23000	0.03000	0.00725
53	0.00864	0.08000	0.23000	0.03000	0.00649
54	0.00979	0.08000	0.23000	0.03000	0.00576
55	0.01111	0.08000	0.20000	0.03000	0.00000
56	0.01265	0.05000	0.20000	0.03000	0.00000
57	0.01436	0.05000	0.20000	0.03000	0.00000
58	0.01628	0.05000	0.20000	0.03000	0.00000
59	0.01854	0.05000	0.20000	0.03000	0.00000
60	0.02684	0.12000	0.20000	0.03000	0.00000
61	0.02684	0.12000	0.20000	0.03000	0.00000
62	0.02684	0.12000	0.20000	0.03000	0.00000
63	0.02684	0.12000	0.20000	0.03000	0.00000
64	0.02684	0.12000	0.20000	0.03000	0.00000
65	0.02684	0.12000	0.20000	0.03000	0.00000
66	0.02684	0.12000	0.20000	0.03000	0.00000
67	0.02684	0.12000	0.20000	0.03000	0.00000
68	0.02684	0.12000	0.20000	0.03000	0.00000
69	0.02684	0.12000	0.20000	0.03000	0.00000
70	0.02684	0.12000	0.20000	0.03000	0.00000
71	0.02684	0.12000	0.20000	0.03000	0.00000
72	0.02684	0.12000	0.20000	0.03000	0.00000
73	0.02684	0.12000	0.20000	0.03000	0.00000
74	0.02684	0.12000	0.20000	0.03000	0.00000
75	0.02684	1.00000	0.00000	0.03000	0.00000

ACTUARIAL TABLES AND RATES (Continued)

Age	Male Employee Mortality Rates	Female Employee Mortality Rates	Male Retired Mortality Rates	Female Retired Mortality Rates	Male Disabled Mortality Rates	Female Disabled Mortality Rates
18	0.00025	0.00017	0.00018	0.00012	0.02257	0.00745
19	0.00027	0.00018	0.00019	0.00012	0.02257	0.00745
20	0.00028	0.00018	0.00020	0.00012	0.02257	0.00745
21	0.00030	0.00019	0.00021	0.00012	0.02257	0.00745
22	0.00032	0.00019	0.00022	0.00012	0.02257	0.00745
23	0.00033	0.00019	0.00024	0.00012	0.02257	0.00745
24	0.00035	0.00019	0.00026	0.00013	0.02257	0.00745
25	0.00036	0.00019	0.00028	0.00013	0.02257	0.00745
26	0.00037	0.00020	0.00032	0.00015	0.02257	0.00745
27	0.00037	0.00020	0.00033	0.00015	0.02257	0.00745
28	0.00038	0.00021	0.00034	0.00016	0.02257	0.00745
29	0.00038	0.00021	0.00036	0.00017	0.02257	0.00745
30	0.00038	0.00022	0.00038	0.00019	0.02257	0.00745
31	0.00038	0.00024	0.00043	0.00021	0.02257	0.00745
32	0.00039	0.00025	0.00049	0.00024	0.02257	0.00745
33	0.00041	0.00026	0.00055	0.00027	0.02257	0.00745
34	0.00044	0.00031	0.00061	0.00029	0.02257	0.00745
35	0.00050	0.00035	0.00067	0.00032	0.02257	0.00745
36	0.00056	0.00039	0.00073	0.00033	0.02257	0.00745
37	0.00063	0.00044	0.00078	0.00035	0.02257	0.00745
38	0.00070	0.00047	0.00081	0.00037	0.02257	0.00745
39	0.00077	0.00051	0.00083	0.00039	0.02257	0.00745
40	0.00084	0.00055	0.00085	0.00042	0.02257	0.00745
41	0.00090	0.00060	0.00088	0.00046	0.02257	0.00745
42	0.00096	0.00065	0.00091	0.00050	0.02257	0.00745
43	0.00102	0.00071	0.00094	0.00055	0.02257	0.00745
44	0.00108	0.00077	0.00098	0.00060	0.02257	0.00745
45	0.00114	0.00085	0.00103	0.00064	0.02257	0.00745
46	0.00122	0.00094	0.00107	0.00068	0.02257	0.00745
47	0.00130	0.00103	0.00112	0.00072	0.02257	0.00745
48	0.00140	0.00112	0.00117	0.00078	0.02257	0.00745
49	0.00151	0.00122	0.00121	0.00085	0.02257	0.00818
50	0.00162	0.00133	0.00316	0.00094	0.02257	0.00896
51	0.00173	0.00143	0.00317	0.00147	0.02385	0.00978
52	0.00186	0.00155	0.00314	0.00163	0.02512	0.01063
53	0.00200	0.00168	0.00318	0.00187	0.02640	0.01154
54	0.00214	0.00181	0.00323	0.00216	0.02769	0.01248
55	0.00229	0.00197	0.00339	0.00253	0.02897	0.01346
56	0.00245	0.00213	0.00362	0.00297	0.03027	0.01446
57	0.00262	0.00232	0.00392	0.00339	0.03156	0.01550
58	0.00281	0.00253	0.00432	0.00379	0.03286	0.01654
59	0.00303	0.00276	0.00469	0.00426	0.03415	0.01760
60	0.00331	0.00301	0.00513	0.00478	0.03544	0.01865
61	0.00363	0.00329	0.00581	0.00536	0.03673	0.01971
62	0.00400	0.00360	0.00640	0.00598	0.03803	0.02077
63	0.00441	0.00393	0.00728	0.00665	0.03933	0.02184
64	0.00488	0.00429	0.00805	0.00736	0.04067	0.02294
65	0.00538	0.00466	0.00892	0.00812	0.04204	0.02408
66	0.00592	0.00504	0.01017	0.00896	0.04347	0.02529
67	0.00647	0.00543	0.01126	0.00987	0.04498	0.02660
68	0.00703	0.00582	0.01209	0.01084	0.04658	0.02803
69	0.00757	0.00621	0.01336	0.01191	0.04831	0.02959
70	0.00810	0.00658	0.01433	0.01310	0.05017	0.03132
71	0.00860	0.00695	0.01585	0.01406	0.05221	0.03323
72	0.00907	0.00729	0.01760	0.01560	0.05445	0.03533
73	0.00951	0.00761	0.01960	0.01686	0.05691	0.03764
74	0.00992	0.01858	0.02187	0.01874	0.05961	0.04014
75	0.02457	0.02067	0.02514	0.02017	0.06258	0.04285

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.

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.

Normal Cost – That portion of the actuarial present value of pension plan benefits and expenses allocated to a valuation year by the actuarial cost method. This is analogous to one year's insurance premium.

Pension Benefit Obligation – The actuarial present value of benefits earned or credited to date based on the members expected final average compensation at retirement. For current retirees or terminated members this is equivalent to the actuarial present value of their accrued benefit.

Projected Benefits – The benefits expected to be paid in the future based on the provisions of the plan and the actuarial assumptions. The projected values are based on anticipated future advancement in age and accrual of service as well as increases in salary paid to the participant.

Unfunded Actuarial Accrued Liability – The excess of the actuarial accrued liability over the actuarial value of assets.

Vested Benefits – Benefits that the members are entitled to even if they withdraw from service.

NOTES