CLERKS' OF COURT
RETIREMENT & RELIEF FUND

ACTUARIAL VALUATION AS OF
JUNE 30, 2018

G. S. CURRAN & COMPANY, LTD.

Actuarial Services

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October 19, 2018

Board of Trustees
Clerks' of Court Retirement and Relief Fund
10202 Jefferson Highway, Building A
Baton Rouge, Louisiana 70809

Ladies and Gentlemen:

We are pleased to present our report on the actuarial valuation of the Clerks' of Court Retirement and Relief Fund for the fiscal year ending June 30, 2018. Our report is based on the actuarial assumptions specified and relies on the data supplied by the system's administrators and accountants. This report was prepared at the request of the Board of Trustees of the Clerks' of Court Retirement and Relief Fund of the State of Louisiana. The primary purpose of this report is to determine the actuarially required contribution for the retirement system for the fiscal year ending June 30, 2019, and to recommend the net direct employer contribution rate for Fiscal 2020. This report does not contain the information necessary for accounting disclosures as required by Governmental Accounting Standards Board (GASB) Statements 67 and 68; that information is included in a separate report. This report was prepared exclusively for the Clerks' of Court Retirement and Relief Fund 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
CLERKS' OF COURT RETIREMENT AND RELIEF FUND

Valuation Date:		June 30, 2018	June 30, 2017
Census Summary:	Active Members	2,205	2,164
	Retired Members and Survivors	1,360	1,311
	Terminated Due a Deferred Benefit	78	78
	Terminated Due a Refund	585	550
Payroll:		$ 92,738,643	$ 89,180,971
Benefits in Payment:		$ 37,248,506	$ 34,679,675
Present Value of Future Benefits		$ 928,384,337	$ 864,738,192
Actuarial Accrued Liability (EAN):		$ 777,615,742	$ 729,009,277
Frozen Unfunded Actuarial Accrued Liability:		$ 75,869,452	$ 80,361,839
Funding Deposit Account Credit Balance		$ 7,981,218	$ 9,388,977
Actuarial Value of Assets (AVA):		$ 631,612,601	$ 595,749,559
Market Value of Assets (MVA):		$ 628,437,651	$ 593,677,582
Ratio of AVA to Actuarial Accrued Liability:		81.22%	81.72%

	Fiscal 2018	Fiscal 2017
Market Rate of Return:	7.0%	12.8%
Actuarial Rate of Return:	7.1%	7.6%

	Fiscal 2019	Fiscal 2018
Employers' Normal Cost (Mid-year):	$ 18,263,233	$ 15,851,353
Amortization Cost (Mid-year):	$ 9,671,027	$ 9,781,165
Estimated Administrative Cost	$ 715,075	$ 763,291
Projected Ad Valorem Tax Contributions	$ 10,532,049	$ 10,609,702
Projected Revenue Sharing Funds	$ 319,513	$ 320,154
Net Direct Employer Actuarially Required Contributions:	$ 17,797,773	$ 15,465,953
Projected Payroll:	$ 94,333,936	$ 91,056,264
Statutory Employee Contribution Rate:	8.25%	8.25%
Board Adopted Net Direct Employer Contribution Rate:	19.00% †	19.00% †
Actuarially Required Net Direct Employer Contribution Rate:	18.87%	16.99%

	Fiscal 2020	Fiscal 2019
Minimum Recommended Net Direct Employer Cont. Rate:	18.75%	17.25%

† The Board of Trustees elected to adopt a Net Direct Employer Contribution Rate in excess of the Minimum Recommended Net Direct Employer Contribution Rate.

GENERAL COMMENTS

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

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

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

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

COMMENTS ON DATA

For the valuation, the administrative staff of the system furnished a census derived from the system's master data processing file indicating each active covered employee's sex, date of birth, service credit, annual salary, and accumulated contributions. Information on retirees detailing dates of birth of retirees and beneficiaries, 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 2,205 active members in the system of whom 905 members have vested retirement benefits including 159 participants in the Deferred Retirement Option Plan (DROP); 1,360 former members or their beneficiaries are receiving retirement benefits. An additional 663 terminated members have contributions remaining on deposit with the system; of this number 78 have vested rights for future retirement benefits. All participant data is as of June 30, 2018. 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, which 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 administrator 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, L.L.P. As indicated in the system's audit report, the net market value of system assets was $628,437,651 as of June 30, 2018. Net investment income for Fiscal 2018 measured on a market value basis was $41,112,500. Contributions to the system for the fiscal year totaled $35,767,082; benefits and expenses amounted to $42,119,513.

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 Frozen Attained Age Normal actuarial cost method with the unfunded accrued liability frozen as of June 30, 1989. Under the provisions of Louisiana R.S. 11:103 the unfunded accrued liability which was determined to be $58,719,822 as of June 30, 1989, was frozen and amortized over forty years with payments increasing at 4.75% per year.

Since 1997, statutes relevant to the system have provided that the Board of Trustees could require employers to contribute at a rate higher than the minimum recommended net direct employer contribution rate under certain circumstances. For fiscal years 1999 through 2002, the Board did freeze the employer contribution rate. The additional payments of $6,660,791 and the accrued interest thereon reduced the outstanding Unfunded Accrued Liability by $9,536,353 through June 30, 2005, and shortened the remaining amortization period to June 30, 2026. However, in 2006 a statutory change re-amortized the then existing balance of the Frozen Unfunded Accrued Liability through June 30, 2029. Effective July 1, 2016, the statute was changed to amortize the remaining balance using level annual payments through June 30, 2029.

Effective in Fiscal 2009, any additional employer contributions collected due to the action of the Board of Trustees to set the employer contribution rate above the minimum recommended rate were credited to the Funding Deposit Account. Through June 30, 2017, the Funding Deposit Account had grown to a balance of $9,388,977 based upon the collection of excess employer contributions along with the crediting of interest. For Fiscal 2018, the contribution rate was set at 19.00%, which was above the minimum recommended rate of 17.25%. The additional funds collected, amounting to $2,357,410, were also credited to the Funding Deposit Account. In addition, the Board elected to authorize the payment of a cost of living increase to retirees from funds in the Funding Deposit Account. The present value of cost of living benefits granted as of January 1, 2018 totaled $4,422,397. After accounting for excess contributions collected during Fiscal 2018, the credit of interest, and the reduction due to the cost of living increase, the final balance in the Funding Deposit Account as of June 30, 2018 is $7,981,218.

The cost method used for this valuation generally produces normal costs which are level as a percentage of payroll if assumptions are met and the composition of the active group with regard to age and service is stable. Overall costs may increase or decrease depending on payroll growth. Since payments on the Fund’s frozen unfunded actuarial accrued liability are level, any increase in payroll will cause payments to decrease as a percentage of payroll; any contraction in payroll will cause payments to increase as a percentage of payroll. Under the Frozen Attained Age Normal Cost Method, actuarial gains and losses are spread over future normal costs. Thus, favorable plan experience will lower future normal costs; unfavorable experience will cause future normal costs to increase. In addition, changes in benefits and assumptions are also spread over future normal costs.

With the exception of the valuation interest rate, 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. In determining the valuation interest rate, consideration was given to several factors. First, average 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 2018 information received from Summit Strategies Group on future expected rates of return for the current portfolio asset allocation. Based on the results of this interest rate assumption review and a desire to reduce the long-term risk of the retirement fund, the assumed rate of return for the valuation (or valuation interest rate) was reduced from 7.00% to 6.75%. Assuming expected returns on the portfolio as a whole are normally distributed, using a consultant average nominal rate of return of 6.90% and long-term portfolio standard deviation of 2.00%, we estimate that there is a 53% probability that the fund will have earnings at or above 6.75% in the long term. We have maintained the assumed long-term inflation rate of 2.50% implicit in both the assumed rate of return and rate of salary increases.

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. Furthermore, it is probable that the costs of future COLAs will be offset with funds from the Funding Deposit Account. 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 thirty-eight through forty-two. With the exception of the change in valuation interest rate described above, all assumptions were the same as those used in the Fiscal 2017 valuation. 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. The net effect of the changes in assumptions on the normal cost accrual rate was an increase of 2.9615%.

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 81.22% as of June 30, 2018. This value gives some indication of the financial strength of the plan; however, it does not guarantee the ability of the fund to pay benefits in the future or indicate that in the future, contributions are likely to be less than or greater than current contributions. In addition, the ratio cannot be used in isolation to compare the relative strength of different retirement systems. However, the trend of this ratio over time can give some insight into the financial health of the plan. Even in this regard, caution is warranted since market fluctuations in asset values and changes in plan assumptions can distort underlying trends in this value. One additional risk measure is the sensitivity of the plan’s cost structure to asset gains and losses. For this plan, we have determined that based on current assets and demographics, for each percentage under (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 2018, this ratio is 40%; ten years ago this ratio was 19%.

One other area of risk is the risk that plan assumptions will need to be revised to conform to changing actual or expected plan experience. Such assumption revisions could relate to demographic or economic factors. With regard to the economic assumptions, we have determined that a reduction in the valuation interest rate by 1% (without any change to other collateral factors) would increase the actuarially required employer contribution rate for Fiscal 2019 by 11.89% 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 2018 Regular Session of the Louisiana Legislature:

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

Act 108 allows a reemployed retiree to work up to six hundred and thirty hours during any calendar year without any reduction in benefits. No additional service credit will be received nor will any additional retirement benefit be accrued. The employer shall make employer contributions to the retirement system for the reemployed retiree at the current employer contribution rate, as a percentage of salary earned during the reemployment period.

Act 344 provides for eligible rollover distributions to certain persons.

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

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

ASSET EXPERIENCE

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

	Market Value	Actuarial Value
2009	-19.3%	-6.1% *
2010	8.7%	4.1%
2011	22.1%	5.8%
2012	1.6%	1.6%
2013	12.9%	4.9%
2014	16.3%	11.7%
2015	2.7%	10.2%
2016	-0.8%	6.0%
2017	12.8%	7.6%
2018	7.0%	7.1%

* Includes effect of change in asset valuation method. Effective with 2009 fiscal year, the corridor limits were increased to 85% to 115% of the market value of assets and the final asset value was determined by averaging the smoothed value with the corridor limit if the smoothed value extends beyond the corridor.

Geometric Average Market Rates of Return

5 year average	(Fiscal 2014 – 2018)	7.4%
10 year average	(Fiscal 2009 – 2018)	5.8%
15 year average	(Fiscal 2004 – 2018)	6.5%
20 year average	(Fiscal 1999 – 2018)	5.5%
25 year average	(Fiscal 1994 – 2018)	6.9%

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 and dividends. This rate of return gives an indication of performance for an actively managed portfolio where securities are bought and sold with the objective of producing the highest total rate of return. During 2018, the fund earned $8,590,005 of dividends, interest and other recurring income. Net income was increased by realized and unrealized capital gains of $35,624,262. Investment expenses reduced income by $3,101,767.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 7.00%. The current assumed rate of return is 6.75%. This rate is calculated based on the actuarial value of assets and the market value income adjusted for actuarial smoothing as given in Exhibit VI. Investment income used to calculate this yield is based upon a smoothing of investment income above or below the valuation interest rate over a five year period subject to limits as described in the section detailing actuarial assumptions. The difference between rates of return on an actuarial and market value basis results from the smoothing utilized. In the future, yields in excess of the 6.75% assumption will reduce future costs; yields below 6.75% will increase future costs. For Fiscal 2018, the system experienced net actuarial investment earnings of $731,579 more than the actuarial assumed earnings rate of 7.00% in effect for Fiscal 2018. (Beginning with Fiscal 2019, actuarial investment gains and losses will be measured against the 6.75% valuation interest rate). This surplus in earnings produced an actuarial gain, which decreased the normal cost accrual rate by 0.0865%.

DEMOGRAPHICS AND LIABILITY EXPERIENCE

A reconciliation of the census for the system is given in Exhibit X. The average active member is 46 years old with 12.06 years of service and an annual salary of $42,058. The system's active membership increased during the fiscal year by 41 members. The plan has experienced a decrease in the active plan population of 43 members over the last five years. A review of the active census by age indicates that over the last ten years the population in the under-fifty age group has decreased significantly while the proportion of active members over-fifty increased. Over the same ten-year period, the census by service has remained relatively stable.

The average regular retiree is 70 years old with a monthly benefit of $2,355. The number of retirees and beneficiaries receiving benefits from the system increased by 49 during the fiscal year. Over the last five years, the number of retirees has increased by 296. During this same period, annual benefits in payment increased by $13,265,498.

Plan liability experience for Fiscal 2018 was nearly neutral. Most decrements were near projected levels. Salary increases were slightly above expected levels which tends to increase costs. In aggregate, plan liability losses increased the normal cost accrual rate by 0.0005%.

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 payment on the unfunded actuarial accrued liability. The normal cost refers to the portion of annual cost based on the salary of active participants. 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. Under the funding method used for the plan, changes in plan experience, benefits, or assumptions do not affect the frozen unfunded actuarial accrued liability. These items increase or decrease future normal costs.

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.

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The employer normal cost for Fiscal 2019 is $18,263,233. The amortization payment on the fund's frozen unfunded actuarial accrued liability is $9,671,027. The gross employer actuarially required contribution is determined by adding to these values estimated administrative expenses. As given on line 16 of Exhibit I the gross employer actuarially required contribution for Fiscal 2019 is $28,649,335. When this amount is reduced by projected tax contributions and revenue sharing funds, the resulting employers' net direct actuarially required contribution for Fiscal 2019 is $17,797,773 or 18.87% of projected payroll.

In setting the minimum recommended net direct employer contribution rate for Fiscal 2019 an adjustment was made to the employers' net direct actuarially required contribution to account for the change in the rate of ad valorem taxes payable from Orleans Parish in 2019. The change in expected ad valorem taxes from Orleans Parish increased the employers' net direct actuarially required contribution rate for Fiscal 2019 by 0.34%.

Liability and asset experience as well as changes in assumptions and benefits can increase or decrease plan costs. In addition to these factors, any COLA granted in the prior fiscal year will increase required future contributions. However, to the extent that COLA's are funded by withdrawals from the Funding Deposit Account, there is no increase in future normal cost. New entrants to the system can also increase or decrease costs as a percent of payroll depending upon their demographic distribution and other factors related to prior plan experience. Finally, contributions above or below requirements may reduce or increase future costs.

The effects of various factors on the fund's cost structure are outlined below:

Employer's Normal Cost Accrual Rate – Fiscal 2018	17.8312%
Factors Increasing the Normal Cost Accrual Rate:	
Assumption Changes	2.9615%
Cost of Living Increase	0.5231%
Plan Liability Experience Loss	0.0005%
Factors Decreasing the Normal Cost Accrual Rate:	
New Members	0.7826%
FDA Offset to fund the 2018 COLA	0.5231%
Asset Experience Gain	0.0865%
Employer's Normal Cost Accrual Rate – Fiscal 2019	19.9241%

In addition to the above factors, payroll growth affects plan costs to the extent that payments on the system's unfunded liability are on a schedule that varies from actual trends in payroll growth or decline. If payroll changes at rates not consistent with the amortization schedule the result will be costs that change as a percentage of payroll. For Fiscal 2019, the net effect of the change in payroll on amortization costs was to decrease such costs by 0.37% of payroll. Required net direct employer contributions are also affected by the available ad valorem taxes and revenue sharing funds which the system receives each year. When these funds change as a percentage of payroll, net direct employer contributions are adjusted accordingly. We estimate that these funds will decrease by 0.50% of payroll in Fiscal 2019.

Although the actuarially required net direct employer contribution rate for Fiscal 2018 was 16.99%, the Board of Trustees voted to maintain the employer contribution at 19.00%. For Fiscal 2018, this system experienced a contribution gain of $2,357,410. In accordance with R. S. 11:107, these additional contributions were credited to the system's Funding Deposit Account as of June 30, 2018. Although the actuarially required net direct employer contribution rate for Fiscal 2019 is 18.87%; the board adopted employer contribution rate for Fiscal 2019 is 19.00% of payroll. Since the contribution rate for Fiscal 2019 was held at 19.00% by the Board, any surplus in employer contributions collected during the fiscal year will be credited to the Funding Deposit Account.

R.S. 11:103 requires that the net direct employer contributions be rounded to the nearest 0.25%, hence we are recommending a minimum net direct employer contribution rate of 18.75% for Fiscal 2020. Under the provisions of R.S. 11:105, R.S. 11:106 and R.S. 11:107, the Board of Trustees may set the net direct employer contribution at any level between the minimum recommended employer contribution rate of 18.75% and 21.75%. If the Board sets the net direct employer contribution rate above the minimum rate, any excess funds collected will be deposited in the Funding Deposit Account. Funds in this account can be used to reduce either future required contributions in a particular year or the normal cost accrual rate or reduce the frozen unfunded accrued liability. In addition, if the system may grant a cost of living increase to retirees, such increase may be paid from funds in the Funding Deposit Account.

COST OF LIVING INCREASES

During Fiscal 2018, the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 2.9%. Cost of living adjustment provisions for the system are detailed in R.S. 11:1549, R.S. 11:246, and R.S. 11:241. The first listed statute allows the Board to grant annual cost of living increases of 2.5% of each retiree's current benefit subject to a limit of $40 per month. 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 for cost of living benefits payable based on a formula equal to up to $1 times the total of the number of years of credited service accrued at retirement or at death of the member or retiree plus the number of years since retirement or since death of the member or retiree to the system's fiscal year end preceding the payment of the benefit increase.

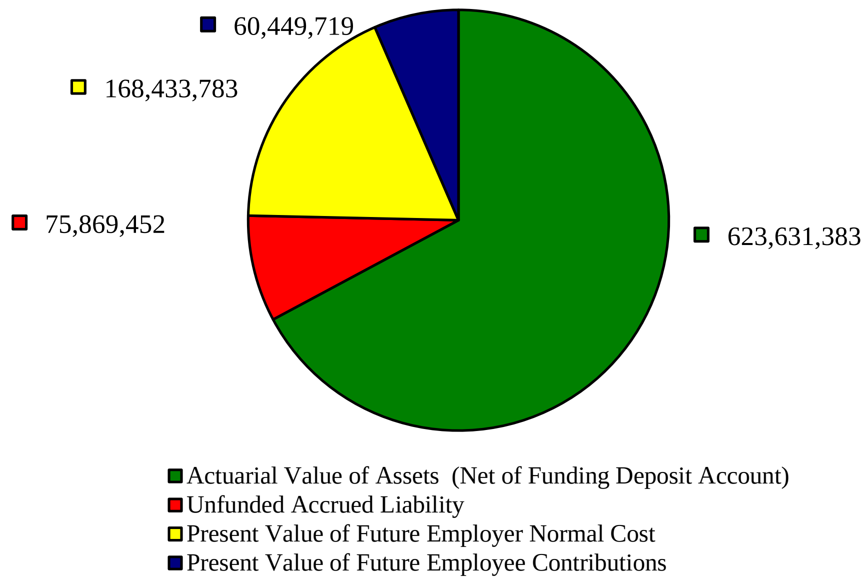
The provisions of R.S.11:1549 require that in order to grant an increase authorized by this section there must have been an increase in the CPI-U of more than 3% since the fiscal year in which the last such increase was granted. The last cost of living increase granted by the Board of Trustees was paid beginning January 1, 2018. The increase in the CPI-U since that fiscal year has not exceeded 3%.

The increase authorized by R. S. 11:246 may only be granted if the system's earnings exceed those which would be realized based on the valuation interest rate as applied to the actuarial value of assets in sufficient amount to offset the present value of the increase or by funding the lifetime cost of the increase through a withdrawal from the Funding Deposit Account balance.

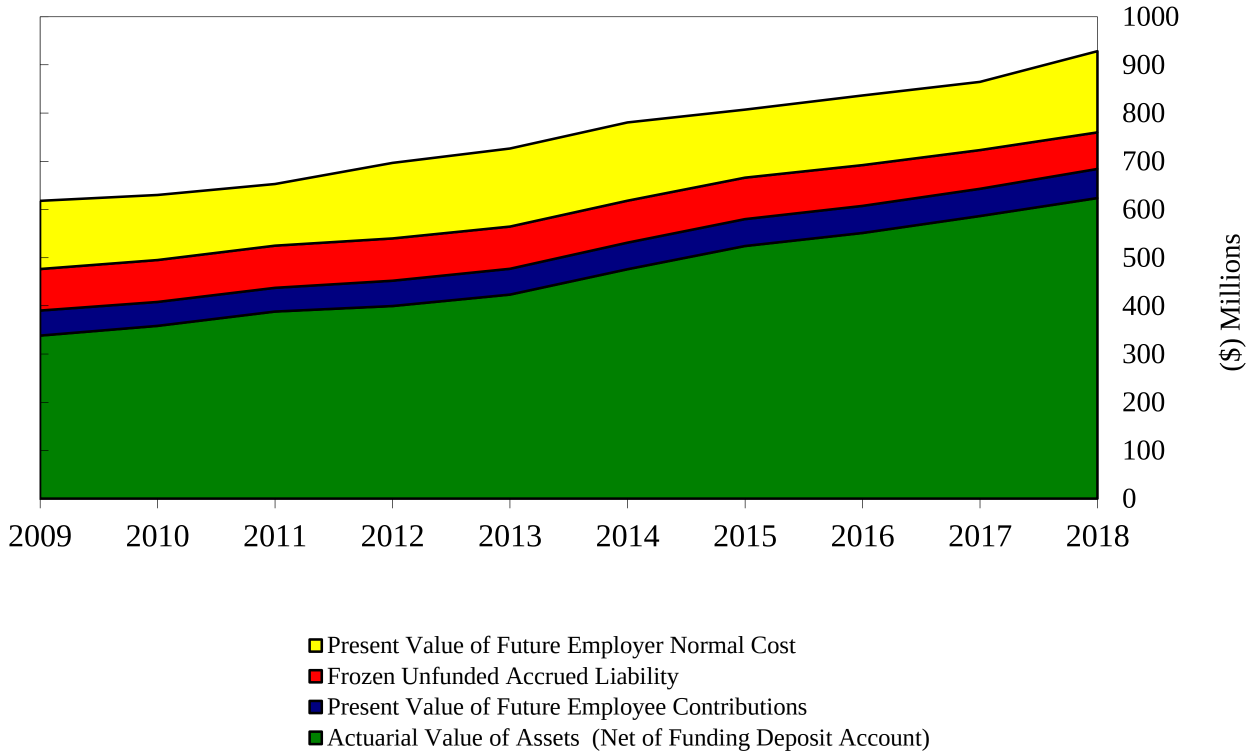
R.S. 11:243 sets forth the funding criteria necessary in order to grant cost of living adjustments to regular retirees and beneficiaries (who are neither the surviving spouse nor children of the retiree.) The criteria for the fund to qualify as eligible to grant any such increase is as follows: a funded 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 Projected Unit Credit Method for this system.)

Although the plan's funded ratio for COLA purposes is 81.61% (i.e. the actuarial value of assets divided by the pension benefit obligation), the plan does not qualify for an increase under the requirements of R.S. 11:243 because the fund has granted a benefit increase to retirees, survivors, and beneficiaries of the fund within the prior two fiscal years.

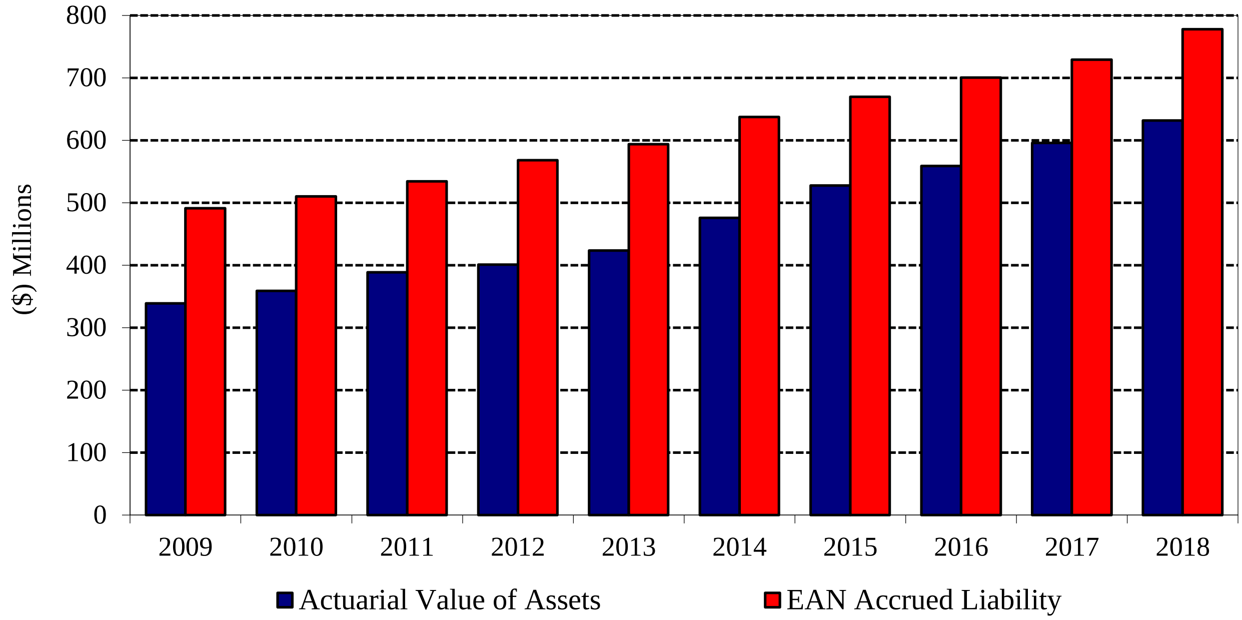
Components of Present Value of Future Benefits
June 30, 2018



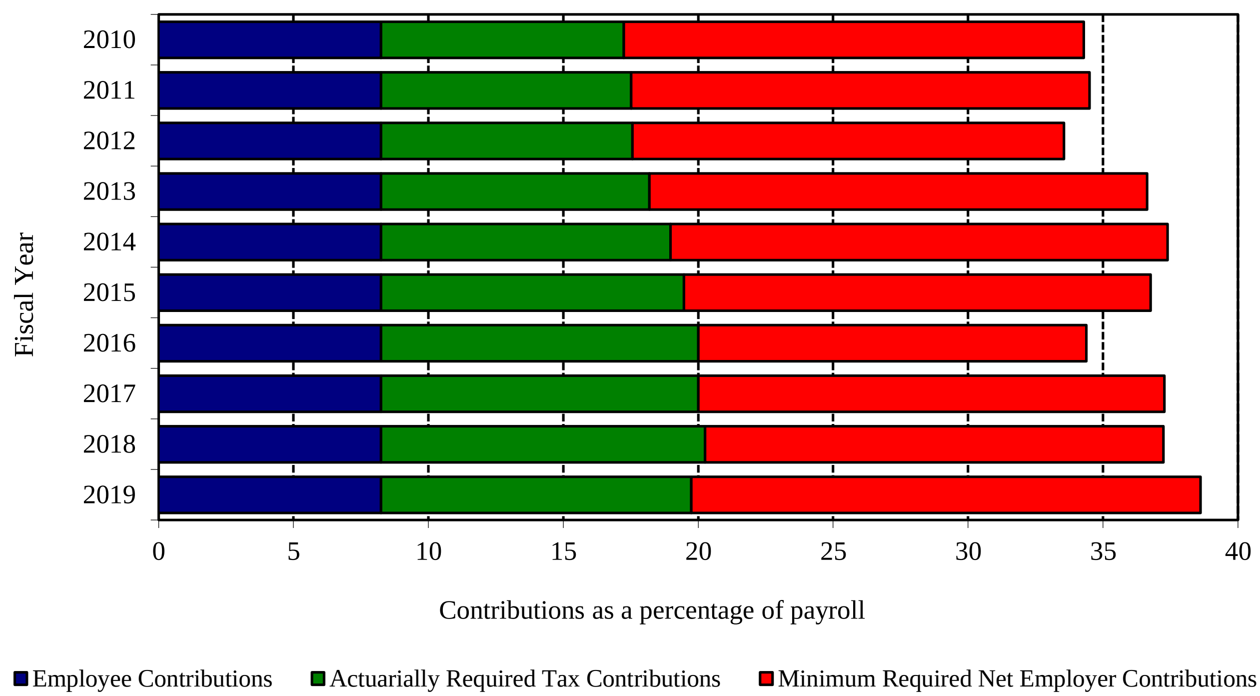
Components of Present Value of Future Benefits



Actuarial Value of Assets vs. EAN Accrued Liability

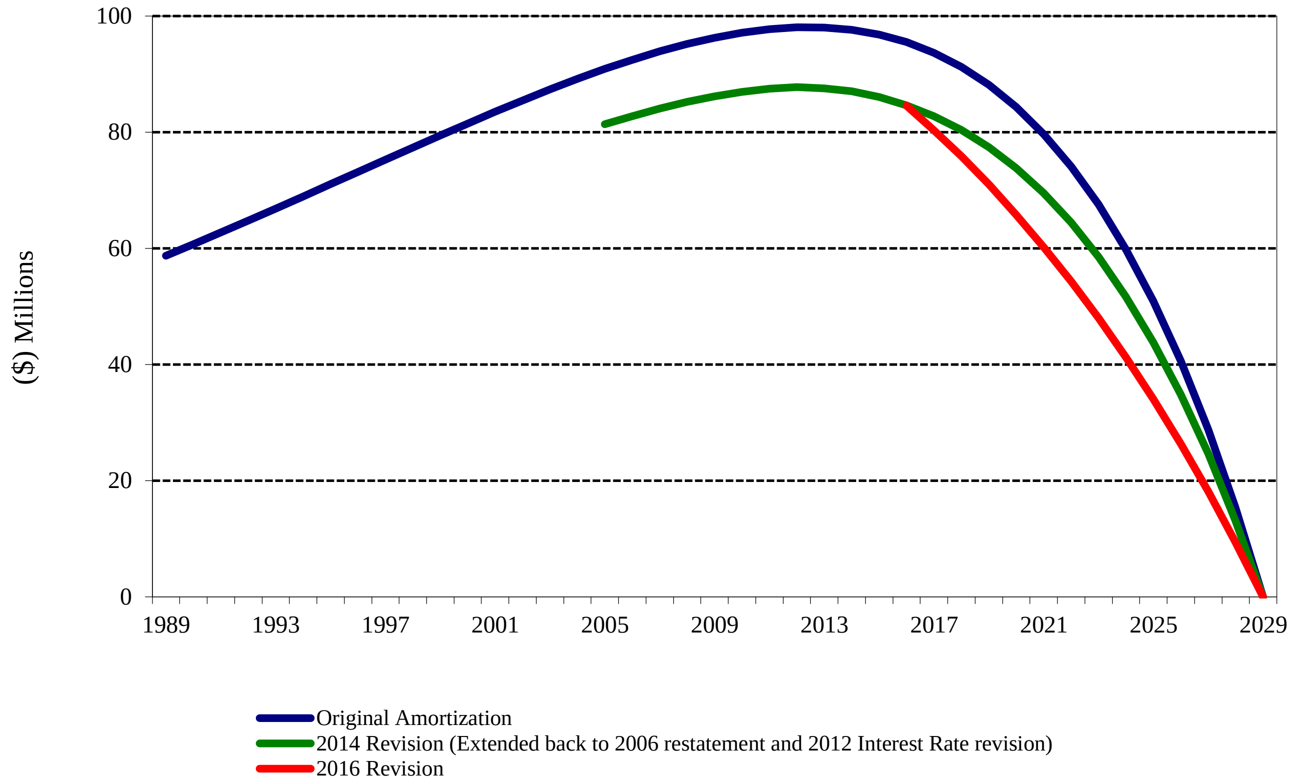


Components of Actuarial Funding

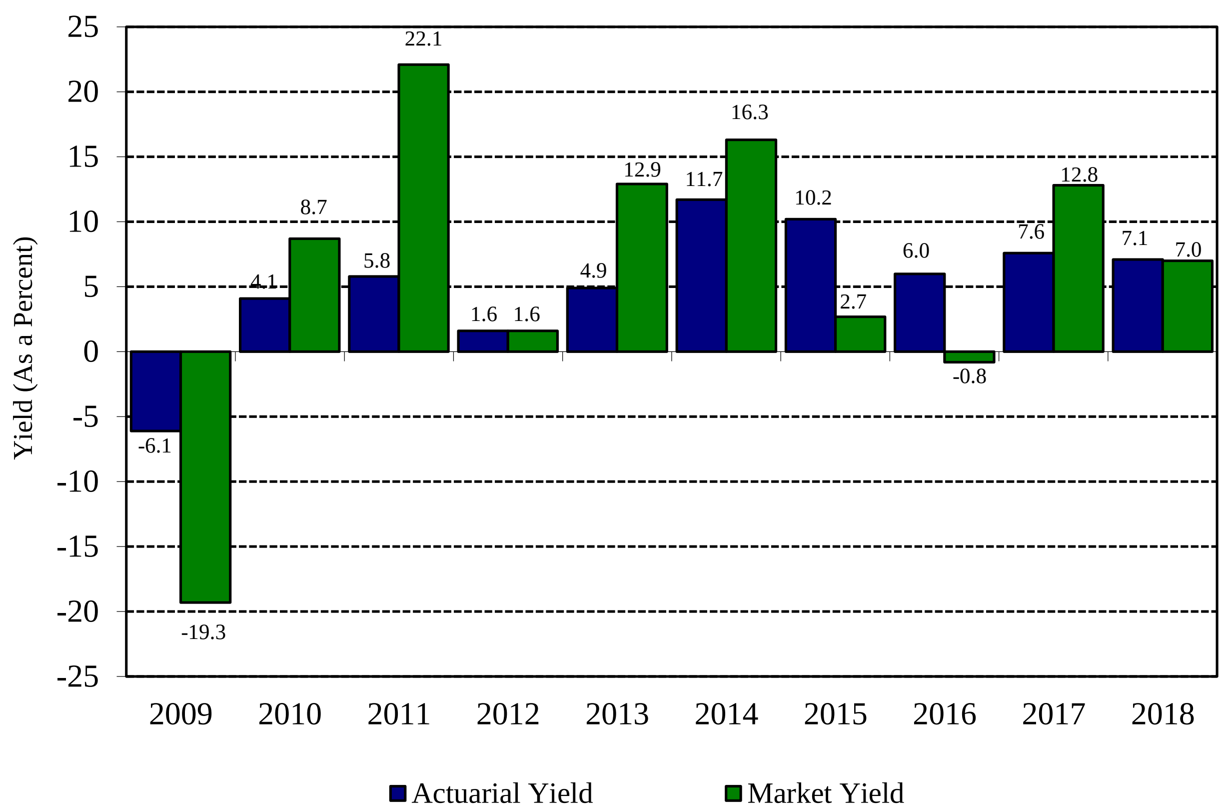


Actuarially Required Tax Contributions consist of the lesser of Actuarially Required Contributions and amount of taxes divided by the projected valuation payroll.

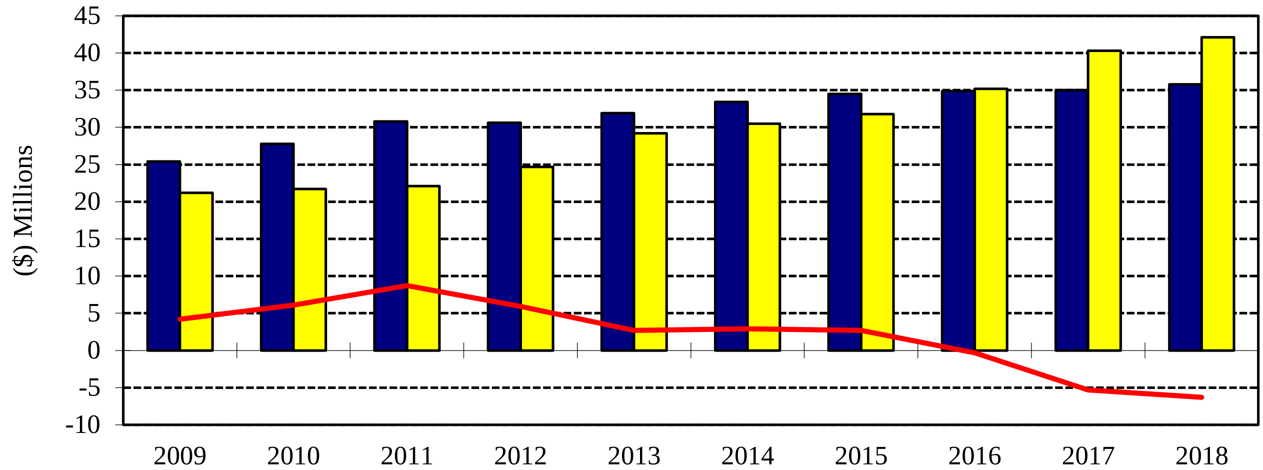
Frozen Unfunded Actuarial Accrued Liability



Historical Asset Yields

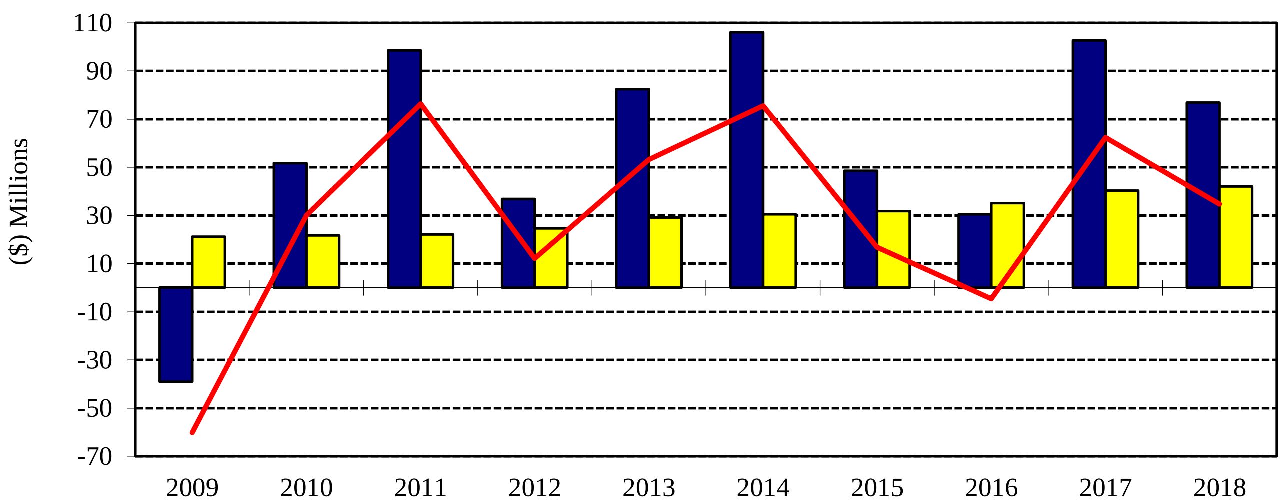


Net Non-Investment Income



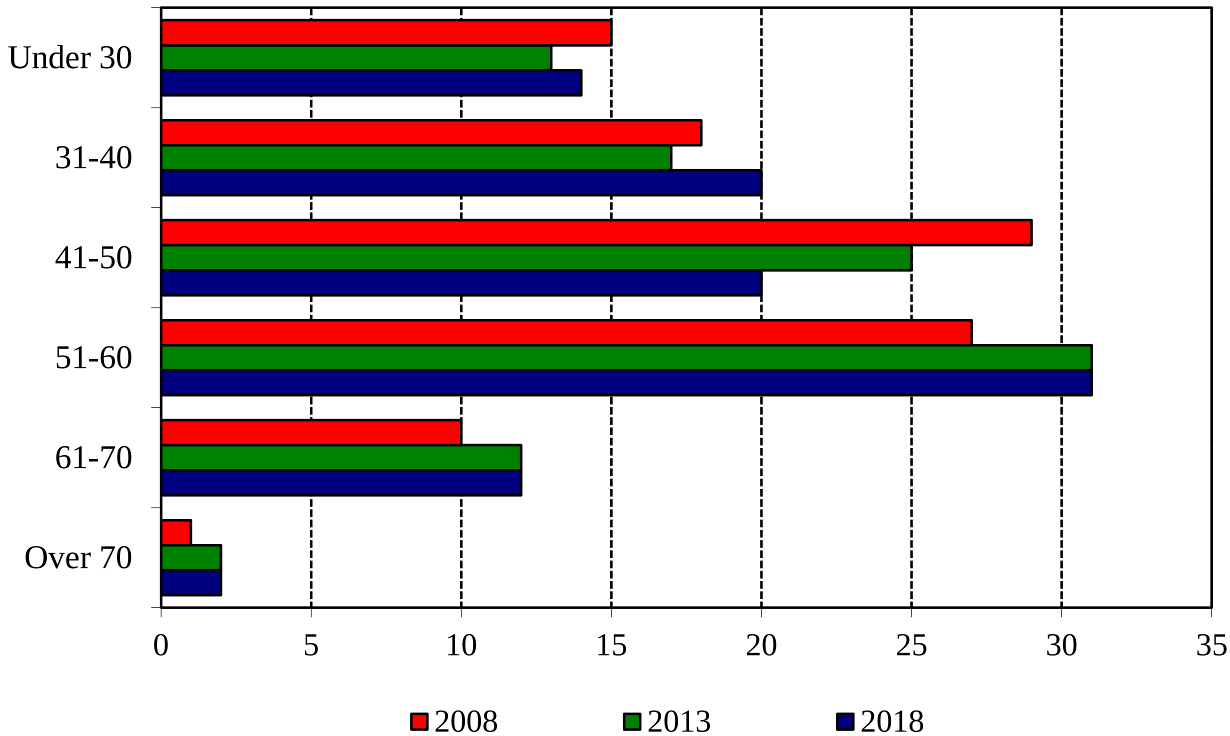
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Non-Investment Income ($Mil)		25.4	27.8	30.8	30.6	31.9	33.4	34.5	34.9	35.0	35.8
Benefits and Expenses ($Mil)		21.2	21.7	22.1	24.7	29.2	30.5	31.8	35.2	40.3	42.1
Net Non-Investment Income ($Mil)		4.2	6.1	8.7	5.9	2.7	2.9	2.7	-0.3	-5.3	-6.3

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



		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Income ($Mil)		-39.0	51.8	98.5	36.9	82.4	106.1	48.6	30.6	102.7	76.9
Benefits and Expenses ($Mil)		21.2	21.7	22.1	24.7	29.2	30.5	31.8	35.2	40.3	42.1
Net Change in MVA ($Mil)		-60.2	30.1	76.4	12.2	53.2	75.6	16.8	-4.6	62.4	34.8

Active – Census by Age
(as a percent)



Active – Census by Service
(as a percent)

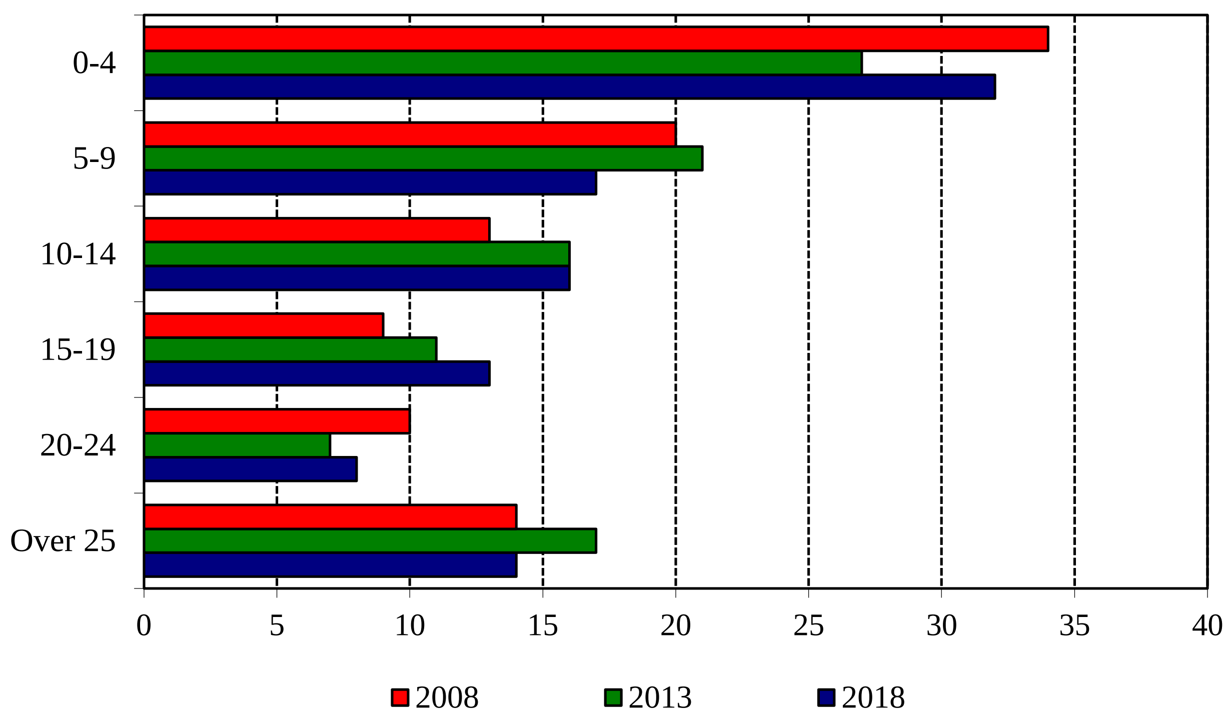


EXHIBIT I
ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1. Present Value of Future Benefits	$	928,384,337
2. Funding Deposit Account Credit Balance	$	7,981,218
3. Unfunded Actuarial Accrued Liability	$	75,869,452
4. Actuarial Value of Assets	$	631,612,601
5. Present Value of Future Employee Contributions	$	60,449,719
6. Present Value of Future Employer Normal Costs (1 + 2 – 3 – 4 – 5)	$	168,433,783
7. Present Value of Future Salaries	$	845,375,855
8. Employer Normal Cost Accrual Rate (6 ÷ 7)		19.924130%
9. Projected Fiscal 2019 Salary for Current Membership	$	88,718,536
10. Employer Normal Cost as of July 1, 2018 (8 × 9)	$	17,676,396
11. Employer Normal Cost Interest Adjusted for Mid-year Payment	$	18,263,233
12. Amortization Payment on Remaining Frozen Unfunded Accrued Liability with Level Annual Payments	$	9,360,276
13. Amortization Payment Interest Adjust for Mid-year Payment	$	9,671,027
14. TOTAL Employer Normal Cost and Amortization Payment (11 + 13)	$	27,934,260
15. Estimated Administrative Cost for Fiscal 2019	$	715,075
16. GROSS Employer Actuarially Required Contribution for Fiscal 2019 (14 + 15)	$	28,649,335
17. Projected Ad Valorem Tax Contributions for Fiscal 2019	$	10,532,049
18. Projected Revenue Sharing Funds for Fiscal 2019	$	319,513
19. Net Direct Employer Actuarially Required Contribution for Fiscal 2019 (16 – 17 – 18)	$	17,797,773
20. Projected Payroll for Fiscal 2019	$	94,333,936
21. Employers' Minimum Net Direct Actuarially Required Contribution as a % of Projected Payroll for Fiscal 2019 (19 ÷ 20)		18.87%
22. Board Adopted Employer Contribution Rate for Fiscal 2019		19.00%
23. Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2020 (21, Rounded to nearest 0.25%)		18.75%

EXHIBIT II
PRESENT VALUE OF FUTURE BENEFITS

PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits	$ 479,397,671	
Survivor Benefits	5,477,410	
Disability Benefits	5,131,489	
Vested Termination Benefits	22,771,571	
Refunds of Contributions	6,342,210	
TOTAL Present Value of Future Benefits for Active Members		$ 519,120,351

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement	$ 14,673,914	
Terminated Members with Reciprocals Due Benefits at Retirement	25,110	
Terminated Members Due a Refund	2,640,205	
TOTAL Present Value of Future Benefits for Terminated Members		$ 17,339,229

PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees			
Maximum	$ 187,302,040		
Option 2	107,158,085		
Option 3	45,396,084		
Option 4	8,675,515		
Option 5	2,475,816		
TOTAL Regular Retirees		$ 351,007,540	
Disability Retirees		2,212,890	
Survivors & Widows		20,569,605	
DROP Account Balances Payable to Retirees		18,134,722	
TOTAL Present Value of Future Benefits for Retirees & Survivors			$ 391,924,757
TOTAL Present Value of Future Benefits			$ 928,384,337

EXHIBIT III – Schedule A
MARKET VALUE OF ASSETS

CURRENT ASSETS:			
Cash in Banks	$ 1,758,435		
Contributions and Taxes Receivable	1,711,010		
Accrued Interest and Dividends	62,349		
Investments Receivable	582,556		
Other Current Assets	2,123		
TOTAL CURRENT ASSETS		$	4,116,473
Property Plant & Equipment		$	752,368
INVESTMENTS:			
Equities	$ 342,558,694		
Alternative Investments	80,804,739		
Fixed Income	82,547,382		
Real Estate	53,216,865		
Tactical Allocation	30,689,497		
Cash Equivalents	9,151,573		
DROP Account Assets at Contract Value	22,598,595		
DROP Account Assets Held Outside System	3,099,288		
TOTAL INVESTMENTS		$	624,666,633
TOTAL ASSETS		$	629,535,474
CURRENT LIABILITIES:			
Accounts Payable	$ 591,314		
Investments Payable	404,992		
Other Current Liabilities	101,517		
TOTAL CURRENT LIABILITIES		$	1,097,823
MARKET VALUE OF ASSETS		$	628,437,651

EXHIBIT III – Schedule B
ACTUARIAL VALUE OF ASSETS

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

Fiscal year 2018	$	(226,356)
Fiscal year 2017		30,768,074
Fiscal year 2016		(41,858,104)
Fiscal year 2015		(23,557,336)
Fiscal year 2014		39,256,798
Total for five years	$	4,383,076

Deferral of excess (shortfall) of invested income:

Fiscal year 2018 (80%)	$	(181,085)
Fiscal year 2017 (60%)		18,460,844
Fiscal year 2016 (40%)		(16,743,242)
Fiscal year 2015 (20%)		(4,711,467)
Fiscal year 2014 (0%)		0
Total deferred for year	$	(3,174,950)

Market value of plan net assets, end of year	$	628,437,651
Preliminary actuarial value of plan assets, end of year	$	631,612,601

Actuarial value of assets corridor

85% of market value, end of year	$	534,172,003
115% of market value, end of year	$	722,703,299

Final actuarial value of plan net assets, end of year	$	631,612,601

EXHIBIT IV
PRESENT VALUE OF FUTURE CONTRIBUTIONS

Employee Contributions to the Annuity Savings Fund	$	60,449,719
Employer Normal Contributions to the Pension Accumulation Fund		168,433,783
Employer Amortization Payments to the Pension Accumulation Fund		75,869,452
Funding Deposit Account Credit Balance		(7,981,218)
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS	$	296,771,736

EXHIBIT V
CHANGE IN FROZEN UNFUNDED ACTUARIAL ACCRUED LIABILITY

Prior Year Frozen Unfunded Accrued Liability			$	80,361,839
Interest on Frozen Unfunded Accrued Liability	$	5,625,329		
TOTAL Increase in Unfunded Accrued Liability			$	5,625,329
Amortization Payment on Unfunded Accrued Liability	$	9,455,809		
Interest on Amortization Payment		661,907		
Withdrawals From Funding Deposit Account		0		
TOTAL Decrease in Unfunded Accrued Liability			$	10,117,716
NET Change in Frozen Unfunded Accrued Liability			$	(4,492,387)
CURRENT YEAR FROZEN UNFUNDED ACCRUED LIABILITY			$	75,869,452

EXHIBIT VI
ANALYSIS OF CHANGE IN ASSETS

Actuarial Value of Assets (June 30, 2017)			$	595,749,559
INCOME:				
Member Contributions	$	6,865,645		
Employer Contributions		17,644,700		
Tax Revenue		10,969,148		
Transfers from Other Systems		169,118		
Other Income		118,471		
Total Contributions			$	35,767,082
Net Appreciation of Investments	$	35,017,235		
Interest & Dividends		8,590,005		
Recovery of Funds through Litigation		607,027		
Investment Expense		(3,101,767)		
Net Investment Income			$	41,112,500
TOTAL Income			$	76,879,582
EXPENSES:				
Retirement Benefits	$	36,227,863		
DROP Disbursements		3,963,845		
Refunds of Contributions		620,524		
Transfers to Other Systems		604,944		
Administrative Expenses		702,337		
TOTAL Expenses			$	42,119,513
Net Market Value Income for Fiscal 2018 (Income – Expenses)			$	34,760,069
Unadjusted Fund Balance as of June 30, 2018 (Fund Balance Previous Year + Net Income)			$	630,509,628
Adjustment for Actuarial Smoothing			$	1,102,973
Actuarial Value of Assets: (June 30, 2018)			$	631,612,601

EXHIBIT VII
FUNDING DEPOSIT ACCOUNT

Funding Deposit Account Balance as of June 30, 2017	$	9,388,977
Interest on Opening Balance at 7.00%		657,228
Contributions to the Funding Deposit Account		2,357,410
Withdrawals from the Funding Deposit Account		(4,422,397)
Funding Deposit Account Balance as of June 30, 2018	$	7,981,218

EXHIBIT VIII – Schedule A
PENSION BENEFIT OBLIGATION

Present Value of Credited Projected Benefits Payable to Current Employees	$	364,695,950
Present Value of Benefits Payable to Terminated Employees		17,339,229
Present Value of Benefits Payable to Current Retirees and Beneficiaries		391,924,757
TOTAL PENSION BENEFIT OBLIGATION	$	773,959,936
NET ACTUARIAL VALUE OF ASSETS	$	631,612,601
Ratio of Net Actuarial Value of Assets to Pension Benefit Obligation		81.61%

EXHIBIT VIII – Schedule B
ENTRY AGE NORMAL ACCRUED LIABILITIES

Accrued Liability for Active Employees	$	368,351,756
Accrued Liability for Terminated Employees		17,339,229
Accrued Liability for Current Retirees and Beneficiaries		391,924,757
TOTAL ENTRY AGE NORMAL ACCRUED LIABILITY	$	777,615,742
ACTUARIAL VALUE OF ASSETS	$	631,612,601
Ratio of Net Actuarial Value of Assets to Entry Age Normal Accrued Liability		81.22%

EXHIBIT IX
CENSUS DATA

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2017	2,010	628	154	1,311	4,103
Additions to Census					
Initial membership	217	11			228
Omitted in error last year					
Death of another member			(1)	11	10
Adjustment for multiple records				1	1
Change in Status during Year					
Actives terminating service	(81)	81			
Actives who retired	(27)			27	
Actives entering DROP	(58)		58		
Term. members rehired	6	(6)			
Term. members who retire		(8)		8	
Retirees who are rehired					
Refunded who are rehired	7	1			8
DROP participants retiring			(38)	38	
DROP returned to work	14		(14)		
Omitted in error last year					
Eliminated from Census					
Refund of contributions	(41)	(44)			(85)
Deaths	(1)			(36)	(37)
Included in error last year					
Adjustment for multiple records					
Number of members as of June 30, 2018	2,046	663	159	1,360	4,228

ACTIVES CENSUS BY AGE:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 - 20	3	10	13	23,654	307,498
21 - 25	15	86	101	25,984	2,624,343
26 - 30	30	171	201	28,796	5,787,913
31 - 35	32	180	212	32,739	6,940,683
36 - 40	30	203	233	37,506	8,738,860
41 - 45	30	178	208	42,881	8,919,217
46 - 50	34	209	243	43,886	10,664,209
51 - 55	51	296	347	47,635	16,529,292
56 - 60	47	290	337	47,573	16,032,208
61 - 65	30	129	159	53,281	8,471,638
66 - 70	18	83	101	47,797	4,827,490
71 - 75	15	24	39	53,977	2,105,091
76 - 80	3	6	9	66,793	601,137
81 - 85	1	0	1	146,909	146,909
86 - 90	0	1	1	42,155	42,155
TOTAL	339	1,866	2,205	42,058	92,738,643

THE ACTIVE CENSUS INCLUDES 905 ACTIVES WITH VESTED BENEFITS, INCLUDING 159 DROP PARTICIPANTS AND 67 ACTIVE FORMER DROP PARTICIPANTS.

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	0	2	2	12,545	25,090
36 - 40	1	4	5	12,467	62,336
41 - 45	0	9	9	17,777	159,997
46 - 50	4	20	24	19,984	479,618
51 - 55	6	31	37	23,090	854,338
71 - 75	0	1	1	2,970	2,970
TOTAL	11	67	78	20,312	1,584,349

TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:

Contributions Ranging From		To	Number	Total Contributions
0	-	99	61	2,439
100	-	499	108	30,334
500	-	999	74	54,776
1000	-	1999	75	106,202
2000	-	4999	101	331,971
5000	-	9999	83	582,662
10000	-	19999	58	816,945
20000	-	99999	25	714,876
		TOTAL	585	2,640,205

REGULAR RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
51 - 55	2	7	9	29,795	268,159
56 - 60	18	141	159	34,047	5,413,541
61 - 65	27	246	273	33,444	9,130,101
66 - 70	34	216	250	28,199	7,049,681
71 - 75	41	159	200	25,733	5,146,512
76 - 80	25	128	153	25,276	3,867,290
81 - 85	16	77	93	19,881	1,848,963
86 - 90	13	39	52	17,590	914,683
91 - 99	1	25	26	26,903	699,474
TOTAL	177	1,038	1,215	28,262	34,338,404

DISABILITY RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
46 - 50	0	3	3	15,316	45,948
51 - 55	1	4	5	14,291	71,456
56 - 60	0	2	2	11,197	22,394
61 - 65	0	3	3	11,585	34,755
71 - 75	0	1	1	7,977	7,977
76 - 80	0	1	1	9,475	9,475
TOTAL	1	14	15	12,800	192,005

SURVIVORS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 25	2	2	4	2,064	8,255
26 - 30	1	0	1	4,408	4,408
31 - 35	0	1	1	18,559	18,559
36 - 40	0	1	1	10,463	10,463
41 - 45	1	0	1	6,714	6,714
46 - 50	3	0	3	14,145	42,434
51 - 55	1	3	4	14,095	56,379
56 - 60	4	3	7	21,397	149,781
61 - 65	4	6	10	22,576	225,756
66 - 70	10	5	15	26,763	401,445
71 - 75	8	4	12	21,565	258,781
76 - 80	5	16	21	19,193	403,043
81 - 85	3	17	20	18,502	370,035
86 - 90	5	15	20	27,703	554,061
91 - 99	2	8	10	20,798	207,983
TOTAL	49	81	130	20,908	2,718,097

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	13											13
21 - 25	49	17	19	11	3	2						101
26 - 30	33	39	24	32	20	47	6					201
31 - 35	37	15	17	12	18	55	55	3				212
36 - 40	28	19	15	14	11	44	62	35	5			233
41 - 45	21	12	8	14	7	31	35	44	32	4		208
46 - 50	18	16	20	3	5	26	47	48	39	19	2	243
51 - 55	12	15	19	9	14	50	41	57	43	25	62	347
56 - 60	11	15	6	14	10	48	46	48	36	37	66	337
61 - 65	3	7	3	8	8	25	32	19	18	13	23	159
66 - 70	2	2	3	4	3	15	26	23	6	5	12	101
71 & Over	1		2	3	1	5	14	4	4	4	12	50
Totals	228	157	136	124	100	348	364	281	183	107	177	2,205

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	23,654											23,654
21 - 25	25,385	27,192	26,923	24,435	26,444	29,285						25,984
26 - 30	30,790	26,133	29,519	29,365	27,743	28,653	33,826					28,796
31 - 35	26,082	27,622	33,137	28,296	34,163	34,005	37,108	44,096				32,739
36 - 40	32,655	27,928	30,997	28,369	36,220	39,874	39,732	44,802	49,491			37,506
41 - 45	30,997	44,586	44,429	33,081	29,230	35,159	39,995	50,014	54,487	69,029		42,881
46 - 50	30,766	28,525	30,700	52,000	28,694	34,689	47,760	50,507	51,645	52,182	81,980	43,886
51 - 55	32,825	34,394	43,504	42,060	34,581	43,922	38,003	45,648	56,811	61,798	57,842	47,635
56 - 60	28,071	29,362	60,494	28,626	36,562	42,491	44,662	43,696	48,258	54,442	63,796	47,573
61 - 65	36,939	32,430	29,170	34,412	34,931	37,484	48,248	56,916	48,775	75,425	90,029	53,281
66 - 70	25,313	26,659	40,070	24,417	31,878	33,531	49,601	49,280	42,727	90,480	64,604	47,797
71 & Over	24,040		35,337	28,817	36,880	37,624	50,417	44,019	41,533	103,653	85,539	57,906
Average	28,683	29,647	34,453	30,670	32,573	37,028	42,593	47,742	51,835	62,378	66,854	42,058

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									2			2
36 - 40								5				5
41 - 45							9					9
46 - 50						24						24
51 - 55	8	10	5	9	5							37
56 - 60												0
61 - 65												0
66 - 70												0
71 - 75	1											1
76 & Over												0
Totals	9	10	5	9	5	24	9	5	2	0	0	78

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

Attained Ages	Years Until Retirement Eligibility 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 30												0
31 - 35									12,545			12,545
36 - 40								12,467				12,467
41 - 45							17,777					17,777
46 - 50						19,984						19,984
51 - 55	22,760	22,231	33,608	20,599	19,303							23,090
56 - 60												0
61 - 65												0
66 - 70												0
71 - 75	2,970											2,970
76 & Over												0
Average	20,561	22,231	33,608	20,599	19,303	19,984	17,777	12,467	12,545	0	0	20,312

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												0
51 - 55	9											9
56 - 60	33	52	21	22	22	9						159
61 - 65	17	32	25	33	28	132	6					273
66 - 70	8	21	14	11	16	82	91	7				250
71 - 75	5	6	16	7	4	50	51	52	8	1		200
76 - 80	2	7	2	3	4	23	22	49	37	2	2	153
81 - 85				1	2	8	11	25	16	24	6	93
86 - 90			1	1		3	5	6	4	10	22	52
91 & Over						2	1	1	5	1	16	26
Totals	74	118	79	78	76	309	187	140	70	38	46	1,215

AVERAGE ANNUAL BENEFITS PAYABLE TO SERVICE RETIREES:

Attained Ages	Completed Years Since Retirement 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 50												0
51 - 55	29,795											29,795
56 - 60	40,257	34,079	37,925	27,749	31,069	24,725						34,047
61 - 65	29,736	46,098	41,184	31,021	37,175	29,757	21,215					33,444
66 - 70	26,246	40,944	27,218	17,764	26,980	29,245	26,334	25,328				28,199
71 - 75	19,297	37,266	33,572	29,561	27,329	27,636	26,254	20,274	22,332	19,368		25,733
76 - 80	78,328	39,912	60,431	56,707	16,007	42,252	18,840	21,617	15,752	15,389	8,571	25,276
81 - 85				9,436	19,598	23,425	23,677	18,557	18,348	21,826	11,859	19,881
86 - 90			58,287	15,415		25,270	11,407	11,858	12,169	18,191	18,473	17,590
91 & Over						99,584	8,445	48,238	33,177	10,220	16,720	26,903
Average	34,666	39,068	37,005	28,609	31,166	30,306	24,615	20,529	18,137	20,161	16,570	28,262

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 - 45												0
46 - 50	1		1				1					3
51 - 55			3		1		1					5
56 - 60						1		1				2
61 - 65		1				1			1			3
66 - 70												0
71 - 75									1			1
76 - 80								1				1
81 & Over												0
Totals	1	1	4	0	1	2	2	2	2	0	0	15

AVERAGE ANNUAL BENEFITS PAYABLE TO DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 45												0
46 - 50	10,156		22,590				13,202					15,316
51 - 55			17,411		11,993		7,230					14,291
56 - 60						10,014		12,379				11,197
61 - 65		15,362				11,095			8,298			11,585
66 - 70												0
71 - 75									7,977			7,977
76 - 80								9,475				9,475
81 & Over												0
Average	10,156	15,362	18,706	0	11,993	10,555	10,216	10,927	8,138	0	0	12,800

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	3											3
21 - 25							1					1
26 - 30							1					1
31 - 35							1					1
36 - 40							1					1
41 - 45					1							1
46 - 50		1				1		1				3
51 - 55	1							3				4
56 - 60		1	1	1	1	2			1			7
61 - 65		1	1			3	1	3		1		10
66 - 70			2	1	2	3	6			1		15
71 - 75				1		5	2	3	1			12
76 - 80				1	1	1	6	2	6	1	3	21
81 - 85						2	2	3	5	6	2	20
86 - 90						3		4	1	4	8	20
91 & Over								2	1	1	6	10
Totals	4	3	4	4	5	20	21	21	15	14	19	130

AVERAGE ANNUAL BENEFITS PAYABLE TO SURVIVORS OF FORMER MEMBERS:

Attained Ages	Completed Years Since Retirement: 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 20	1,283											1,283
21 - 25							4,408					4,408
26 - 30							4,408					4,408
31 - 35							18,559					18,559
36 - 40							10,463					10,463
41 - 45					6,714							6,714
46 - 50		29,197				6,424		6,813				14,145
51 - 55	42,625							4,585				14,095
56 - 60		5,373	19,649	75,397	6,278	19,230			4,625			21,397
61 - 65		48,586	20,948			22,192	7,013	26,238		3,918		22,576
66 - 70			25,022	19,140	16,309	36,004	27,447			26,950		26,763
71 - 75				10,893		30,840	20,207	15,199	7,674			21,565
76 - 80				27,533	30,431	7,126	26,649	10,979	18,763	16,690	8,944	19,193
81 - 85						43,333	8,543	8,996	28,739	12,566	10,102	18,502
86 - 90						64,376		40,574	9,136	19,045	14,165	27,703
91 & Over								25,135	24,657	39,285	15,629	20,798
Average	11,618	27,719	22,660	33,241	15,208	33,030	20,330	19,352	20,158	17,030	13,375	20,908

EXHIBIT X
YEAR-TO-YEAR COMPARISON

	Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015
Number of Active Members	2,205	2,164	2,208	2,234
Number of Retirees & Survivors	1,360	1,311	1,235	1,173
Number of Terminated Due Deferred Benefits	78	78	81	78
Number Terminated Due Refunds	585	550	500	471
Active Lives Payroll	$ 92,738,643	$ 89,180,971	$ 90,323,689	$ 89,814,463
Retiree Benefits in Payment	$ 37,248,506	$ 34,679,675	$ 30,727,570	$ 28,162,472
Market Value of Assets	$ 628,437,651	$ 593,677,582	$ 531,220,994	$ 535,853,689
Entry Age Normal Accrued Liability	$ 777,615,742	$ 729,009,277	$ 700,260,558	$ 669,774,954
Ratio of AVA to EAN Accrued Liability	81.22%	81.72%	79.81%	78.76%
Actuarial Value of Assets	$ 631,612,601	$ 595,749,559	$ 558,910,784	$ 527,535,949
Frozen Unfunded Actuarial Accrued Liability	$ 75,869,452	$ 80,361,839	$ 84,560,331	$ 86,060,294
Present Value of Future Employer Normal Cost	$ 168,433,783	$ 141,532,146	$ 144,555,899	$ 141,097,058
Present Value of Future Employee Contrib.	$ 60,449,719	$ 56,483,625	$ 56,237,290	$ 55,853,464
Funding Deposit Account Balance	$ 7,981,218	$ 9,388,977	$ 7,741,426	$ 3,449,340
Present Value of Future Benefits	$ 928,384,337	$ 864,738,192	$ 836,522,878	$ 807,097,425

	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016
Statutory Employee Contribution Rate	8.25%	8.25%	8.25%	8.25%
Estimated Tax Contribution as a % of Payroll	11.50%	12.00%	11.76%	11.76%
Actuarially Required Net Direct Employer Contribution Rate	18.87%	16.99%	17.27%	14.37%
Board Adopted Employer Contribution Rate †	19.00%	19.00%	19.00%	19.00%

† Exceeds minimum recommended employer contribution rate in years where Board elected to hold the rate higher.

Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009
2,219	2,248	2,269	2,326	2,330	2,371
1,108	1,064	1,000	975	929	894
88	97	92	88	97	101
444	410	387	372	360	338
$ 88,522,141	$ 86,935,230	$ 87,238,557	$ 87,403,148	$ 86,484,686	$ 85,840,893
$ 26,301,025	$ 23,983,008	$ 21,372,677	$ 19,981,482	$ 18,640,843	$ 17,431,083
$ 518,993,448	$ 443,430,781	$ 390,272,342	$ 378,083,955	$ 301,692,473	$ 271,624,094
$ 637,131,442	$ 593,967,044	$ 568,108,691	$ 534,191,730	$ 510,100,152	$ 491,201,447
74.70%	71.28%	70.61%	72.77%	70.37%	68.96%
$ 475,945,220	$ 423,354,992	$ 401,136,469	$ 388,757,787	$ 358,981,529	$ 338,755,452
$ 87,052,600	$ 87,579,997	$ 87,771,278	$ 87,493,460	$ 86,953,999	$ 86,185,073
$ 162,356,479	$ 161,988,761	$ 156,709,315	$ 127,887,962	$ 135,032,044	$ 141,512,187
$ 55,197,088	$ 53,537,913	$ 52,501,678	$ 49,250,744	$ 49,677,464	$ 51,983,870
$ 1,739,546	$ 1,618,182	$ 1,505,286	$ 603,658	$ 558,943	$ 517,540
$ 778,811,841	$ 724,843,481	$ 696,613,454	$ 652,786,295	$ 630,086,093	$ 617,919,042

Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010
8.25%	8.25%	8.25%	8.25%	8.25%	8.25%
11.22%	10.72%	9.94%	9.31%	9.27%	8.99%
17.30%	18.43%	18.45%	16.21%	16.98%	17.05%
19.00%	18.50%	17.25%	17.25%	17.25%	14.75%

SUMMARY OF PRINCIPAL PLAN PROVISIONS

The Clerks' of Court Retirement and Relief Fund is a defined benefit pension plan which provides retirement allowances and other benefits. The following summary of plan provisions is for general informational purposes only and does not constitute a guarantee of benefits.

MEMBERSHIP – Members include the clerk of the supreme court, the clerks of each of the courts of appeal, each of the district courts, and each of the city and traffic courts in cities having a population in excess of four hundred thousand, and the employees of such clerks, who work an average of more than twenty hours per week, and the employees of the Louisiana Clerks of Court Association, the Louisiana Clerks' of Court Retirement and Relief Fund, and the Louisiana Clerks of Court Insurance Fund.

CONTRIBUTION RATES – Under the provisions of R.S. 11:62 and 11:103, the fund is financed by statutory employee contributions of 8.25% of earnable compensation (Under R.S. 11:1562(C), the employer may elect to pay all or a portion of the employee contributions). In addition, the fund receives revenue sharing funds as appropriated each year by the legislature. Also, under R.S. 11:82, each sheriff and ex-officio tax collector remits the employers' share of the actuarially required contribution to fund the system's defined benefit plan up to a maximum of 0.25% of the aggregate amount of the tax shown to be collected by the tax roll of each respective parish. Should employee contributions and tax funds collected from ad valorem taxes and revenue sharing funds be insufficient to provide for the gross employer actuarially required contribution, the employer is required to make direct contributions as determined by the Public Retirement Systems' Actuarial Committee. Under R.S. 11:106, the Board of trustees is authorized to require a net direct contribution rate of up to three percent more than the rate determined under R.S. 11:103. Under R.S. 11:105 and R.S. 11:207, in any fiscal year during which the net direct employer contribution rates would otherwise be decreased, the Board of trustees is authorized to set the employer contribution rate at any point between the previous year's employer contribution rate and the decreased rate that would otherwise occur. Any excess funds resulting from the additional contributions will be credited to the Funding Deposit Account defined in R.S. 11:107.1.

CONTRIBUTION REFUNDS – Upon withdrawal from service, members not entitled to a retirement allowance are paid a refund of accumulated contributions upon request. Receipt of such a refund cancels all accrued rights in the system.

RETIREMENT BENEFITS – Members with twelve or more years of creditable service may retire at age fifty-five (age sixty if they are hired on or after January 1, 2011). The retirement allowance is equal to three percent of the member's monthly average final compensation multiplied by the number of years of creditable service, not to exceed one hundred percent of monthly average final compensation. The retirement benefit accrual rate is increased to 3 1/3% for all service credit accrued after June 30, 1999 (for members hired prior to January 1, 2011). For members whose first employment making them eligible for system membership began before July 1, 2006 and who retire prior to January 1, 2011, monthly average final compensation is based on the highest thirty-six consecutive months, with a limit of increase of 10% in each of the last three years of measurement. For members whose first employment making them eligible for system membership began on or after July 1, 2006, monthly average final compensation is based on the highest compensated sixty consecutive months or successive joined months if service was interrupted, with a limit increase of 10% in each of the last five years of measurement. For members who were employed prior to July 1, 2006 and who retire after December 31, 2010, the period of final average compensation is thirty-six months plus the number of whole months elapsed since January 1, 2011, not to exceed sixty months.

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.
>
> **Option 5** – Upon retirement, the member receives 90% of the maximum benefit. Upon the death of the member, the spouse receives one-half of the reduced 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.

DISABILITY BENEFITS – Disability benefits are awarded to active members who are totally and permanently disabled as a result of injuries sustained in the line of duty or to active members with ten or more years of creditable service who are totally disabled due to any cause. A member who is officially certified as totally and permanently disabled by the State Medical Disability Board will be paid monthly disability retirement benefits equal to the greater of forty percent of their monthly average final compensation or seventy-five percent of their monthly regular retirement benefit computed as per R.S. 11:1521(C).

SURVIVOR BENEFITS – Upon the death of any active contributing member with less than five years of creditable service, his accumulated contributions are paid to his designated beneficiary. Upon the death of any active contributing member with five or more years of service, automatic option 2 benefits are payable to the surviving spouse. These benefits are based on the retirement benefits accrued at the member's date of death with option factors used as if the member had continued in service to earliest normal retirement age. Benefit payments commence on the date a member would have first become eligible for normal retirement assuming continued service until that time. In lieu of a deferred survivor benefit, the surviving spouse may elect benefits payable immediately with benefits reduced one-quarter of 1% for each month by which payments commence in advance of member's earliest normal retirement age. If a member has no surviving spouse, the surviving minor children under eighteen or disabled children are paid one-half of the member's accrued retirement benefit in equal shares. Upon the death of any former member with less than twelve years of service, the designated beneficiary may receive his accumulated contributions. Upon the death of any former member with twelve or more years of service, automatic option 2 benefits are payable to the surviving spouse with payments to commence on the member's retirement eligibility date. In lieu of periodic payments, the surviving spouse or children may receive a refund of the member's accumulated contributions.

DEFERRED RETIREMENT OPTION PLAN – In lieu of terminating employment and accepting a service retirement allowance, any member of the system who is eligible for a service 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, active membership in the system terminates and the participant's contributions cease; however, employer contributions continue. Compensation and creditable service 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 (subject to approval by the Board of Trustees); in addition, the member receives the monthly benefits that were paid into the fund during the period of participation. If employment is not terminated at the end of the participation period, payments into the account cease and the member resumes active contributing membership in the system. Interest is paid on DROP account balances for members who complete their DROP participation but do not terminate employment. The interest earnings are based on the actual rate of return on funds in such accounts. These interest accruals cease upon termination of employment. Upon termination, the member receives a lump sum payment from the DROP fund equal to the payments made to that fund on his behalf, or a true annuity based on his account (subject to approval by the Board of Trustees). The monthly benefit payments that were being paid into the DROP fund are paid to the retiree and an additional benefit based on his additional service rendered since termination of DROP participation is calculated using the normal method of benefit computation. Prior to January 1, 2011, the average compensation used to calculate the additional benefit is that used to calculate the original benefit unless his period of additional service is at least thirty-six months; effective January 1, 2011 the average compensation for members whose additional service is less than thirty-six months is equal to the lesser of the amount used to calculate his original benefit or the compensation earned in the period of additional service divided by the number of months of additional service. For former DROP participants who retire after December 31, 2010, the period used to determine final average compensation for post-DROP service is thirty-six months plus the number of whole months elapsed from January 1, 2011 to the date of DROP entry. In no event can the entire monthly benefit amount paid to the retiree exceed 100% of the average compensation used to compute the additional benefit. If a 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.

COST OF LIVING INCREASES (COLAs) – The Board of trustees is authorized to grant retired members and widows of members who have been retired for at least one full calendar year an annual cost of living increase of 2.50% of their benefit (not to exceed forty dollars per month), and all retired members and widows who are sixty-five years of age and older a 2% increase in their original benefit (or their benefit as of October 1, 1977, if they retired prior to that time). In order to grant the 2.50% COLA the increase in the Consumer Price Index must have exceeded 3% since the last COLA granted. In order for the Board to grant either of these increases, the system must meet certain other criteria detailed in the statute related to funding status. In lieu of granting the above cost of living increases, the Board of trustees may grant a cost of living increase in the form of $\$X \times (A+B)$. In this formula, X is any amount up to one dollar per month. "A" represents the number of years of credited service at retirement or death, and "B" is equal to the number of years since retirement or since death of the member or retiree through June 30th of the initial year of such increase.

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 which 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: Frozen Attained Age Normal Actuarial Method with allocation based on earnings. The actuarial accrued liabilities utilized to calculate the frozen unfunded accrued liability were calculated on the Projected Unit Credit Cost Method. Changes in assumptions and plan benefits are funded through adjustments to future normal costs.

VALUATION INTEREST RATE: 6.75% (Net of Investment Expense)

ACTUARIAL ASSET VALUES: 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.

Note: All deferrals are based on the valuation interest rate in effect as of the beginning of the fiscal year for each individual year.

ANNUAL SALARY INCREASE RATE: 5.00% (2.5% inflation / 2.5% merit)

ACTIVE MEMBER MORTALITY: RP 2000 Employee Table set back 4 years for males and set back 3 years for females

ANNUITANT, AND BENEFICIARY MORTALITY: RP 2000 Healthy Annuitant Table set forward 1 year and projected to 2030 using Scale AA for males and projected to 2030 using Scale AA for females.

RETIREE COST OF LIVING INCREASE: 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.

RATES OF RETIREMENT: The table of these rates is included later in the report. These rates apply only to those individuals eligible to retire. The assumed rate of retirement for members at first eligibility is 3.2 times the relevant rate listed in the table of these rates.

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

RATES OF WITHDRAWAL: The rates of withdrawal are applied based upon completed years of service according to the following table:

Service	Factor	Service	Factor
<1	0.140	10	0.030
1	0.120	11	0.030
2	0.110	12	0.030
3	0.100	13	0.030
4	0.090	14	0.030
5	0.060	15	0.030
6	0.060	16	0.030
7	0.050	17	0.015
8	0.030	18	0.015
9	0.030	>18	0.015

Note: Withdrawal rates for members eligible to retire are assumed to be zero.

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

DROP PARTICIPATION: All persons who enter the DROP are assumed to participate for the full 3 year period and 2/3 are assumed to retire at the end of DROP participation with 1/3 assumed to work 4 years post DROP and then retire.

RETIREMENT RATES FOR ACTIVE FORMER DROP PARTICIPANTS: The rate for all ages is assumed to be 17%.

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

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

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

DISABLED LIVES MORTALITY: RP-2000 Disabled Lives Mortality Tables set back 5 years for Males and set back 3 years for Females

DISABILITY RATES: 20% 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.

SERVICE RELATED DISABILITIES: 10% of total disabilities

VESTING ELECTING PERCENTAGE: 80% of those vested elect deferred benefits in lieu of contribution refunds.

ACTUARIAL TABLES AND RATES

Age	Male Employee Mortality Rates	Female Employee Mortality Rates	Male Retiree Mortality Rates	Female Retiree Mortality Rates	Male Disability Mortality Rates	Female Disability Mortality Rates	Retirement Rates	DROP Entry Rates	Disability Rates	Post 1/1/2011 Hires Retirement Rates	Post 1/1/2011 Hires DROP Entry Rates
18	0.00025	0.00017	0.00019	0.00012	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
19	0.00027	0.00018	0.00019	0.00012	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
20	0.00028	0.00018	0.00020	0.00012	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
21	0.00030	0.00019	0.00021	0.00011	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
22	0.00032	0.00019	0.00022	0.00012	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
23	0.00033	0.00019	0.00024	0.00012	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
24	0.00035	0.00019	0.00025	0.00013	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
25	0.00036	0.00019	0.00028	0.00014	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
26	0.00037	0.00020	0.00032	0.00015	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
27	0.00037	0.00020	0.00034	0.00016	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
28	0.00038	0.00021	0.00035	0.00016	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
29	0.00038	0.00021	0.00038	0.00017	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
30	0.00038	0.00022	0.00043	0.00020	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
31	0.00038	0.00024	0.00048	0.00024	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
32	0.00039	0.00025	0.00054	0.00028	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
33	0.00041	0.00026	0.00060	0.00030	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
34	0.00044	0.00031	0.00067	0.00032	0.02257	0.00745	0.00000	0.00000	0.00030	0.00000	0.00000
35	0.00050	0.00035	0.00072	0.00034	0.02257	0.00745	0.00000	0.00000	0.00034	0.00000	0.00000
36	0.00056	0.00039	0.00078	0.00036	0.02257	0.00745	0.00000	0.00000	0.00038	0.00000	0.00000
37	0.00063	0.00044	0.00083	0.00037	0.02257	0.00745	0.00000	0.00000	0.00042	0.00000	0.00000
38	0.00070	0.00047	0.00085	0.00039	0.02257	0.00745	0.00000	0.00000	0.00048	0.00000	0.00000
39	0.00077	0.00051	0.00087	0.00041	0.02257	0.00745	0.00000	0.00000	0.00054	0.00000	0.00000
40	0.00084	0.00055	0.00090	0.00045	0.02257	0.00745	0.00000	0.00000	0.00062	0.00000	0.00000
41	0.00090	0.00060	0.00093	0.00049	0.02257	0.00745	0.00000	0.00000	0.00070	0.00000	0.00000
42	0.00096	0.00065	0.00096	0.00054	0.02257	0.00745	0.00000	0.00000	0.00078	0.00000	0.00000
43	0.00102	0.00071	0.00100	0.00060	0.02257	0.00745	0.00000	0.00000	0.00088	0.00000	0.00000
44	0.00108	0.00077	0.00105	0.00065	0.02257	0.00745	0.00000	0.00000	0.00100	0.00000	0.00000
45	0.00114	0.00085	0.00109	0.00069	0.02257	0.00745	0.00000	0.00000	0.00114	0.00000	0.00000
46	0.00122	0.00094	0.00114	0.00073	0.02257	0.00745	0.00000	0.00000	0.00130	0.00000	0.00000
47	0.00130	0.00103	0.00118	0.00077	0.02257	0.00745	0.00000	0.00000	0.00146	0.00000	0.00000
48	0.00140	0.00112	0.00123	0.00083	0.02257	0.00745	0.00000	0.00000	0.00166	0.00000	0.00000
49	0.00151	0.00122	0.00320	0.00090	0.02257	0.00818	0.00000	0.00000	0.00188	0.00000	0.00000
50	0.00162	0.00133	0.00321	0.00140	0.02257	0.00896	0.00000	0.00000	0.00214	0.00000	0.00000
51	0.00173	0.00143	0.00317	0.00152	0.02385	0.00978	0.00000	0.00000	0.00244	0.00000	0.00000
52	0.00186	0.00155	0.00312	0.00173	0.02512	0.01063	0.00000	0.00000	0.00276	0.00000	0.00000
53	0.00200	0.00168	0.00316	0.00202	0.02640	0.01154	0.00000	0.00000	0.00314	0.00000	0.00000
54	0.00214	0.00181	0.00322	0.00236	0.02769	0.01248	0.00000	0.00000	0.00356	0.00000	0.00000
55	0.00229	0.00197	0.00344	0.00277	0.02897	0.01346	0.05000	0.40000	0.00404	0.00000	0.00000
56	0.00245	0.00213	0.00374	0.00328	0.03027	0.01446	0.05000	0.20000	0.00460	0.00000	0.00000
57	0.00262	0.00232	0.00412	0.00377	0.03156	0.01550	0.05000	0.20000	0.00522	0.00000	0.00000
58	0.00281	0.00253	0.00461	0.00423	0.03286	0.01654	0.05000	0.20000	0.00592	0.00000	0.00000
59	0.00303	0.00276	0.00505	0.00476	0.03415	0.01760	0.05000	0.20000	0.00674	0.00000	0.00000
60	0.00331	0.00301	0.00555	0.00533	0.03544	0.01865	0.05000	0.20000	0.00976	0.05000	0.40000
61	0.00363	0.00329	0.00630	0.00595	0.03673	0.01971	0.05000	0.20000	0.00976	0.05000	0.20000
62	0.00400	0.00360	0.00696	0.00662	0.03803	0.02077	0.05000	0.20000	0.00976	0.05000	0.20000
63	0.00441	0.00393	0.00794	0.00732	0.03933	0.02184	0.05000	0.20000	0.00976	0.05000	0.20000
64	0.00488	0.00429	0.00879	0.00808	0.04067	0.02294	0.05000	0.20000	0.00976	0.05000	0.20000
65	0.00538	0.00466	0.00974	0.00892	0.04204	0.02408	0.10000	0.20000	0.00976	0.10000	0.20000
66	0.00592	0.00504	0.01112	0.00982	0.04347	0.02529	0.10000	0.20000	0.00976	0.10000	0.20000
67	0.00647	0.00543	0.01229	0.01079	0.04498	0.02660	0.10000	0.20000	0.00976	0.10000	0.20000
68	0.00703	0.00582	0.01317	0.01185	0.04658	0.02803	0.10000	0.20000	0.00976	0.10000	0.20000
69	0.00757	0.00621	0.01455	0.01304	0.04831	0.02959	0.10000	0.20000	0.00976	0.10000	0.20000
70	0.00810	0.00658	0.01561	0.01440	0.05017	0.03132	0.10000	0.20000	0.00976	0.10000	0.20000
71	0.00860	0.00695	0.01734	0.01551	0.05221	0.03323	0.10000	0.20000	0.00976	0.10000	0.20000
72	0.00907	0.00729	0.01931	0.01725	0.05445	0.03533	0.10000	0.20000	0.00976	0.10000	0.20000
73	0.00951	0.00761	0.02154	0.01861	0.05691	0.03764	0.10000	0.20000	0.00976	0.10000	0.20000
74	0.00992	0.01858	0.02404	0.02062	0.05961	0.04014	0.10000	0.20000	0.00976	0.10000	0.20000
75	0.02457	0.02067	0.02762	0.02209	0.06258	0.04285	0.10000	0.20000	0.00976	0.10000	0.20000

PRIOR YEAR ASSUMPTIONS

VALUATION INTEREST RATE: 7.0% (Net of investment expense)

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.