

**CLERKS' OF COURT  
RETIREMENT & RELIEF FUND**

ACTUARIAL VALUATION AS OF  
JUNE 30, 2020

# G. S. CURRAN & COMPANY, LTD.

Actuarial Services

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October 19, 2020

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, 2020. Our report is based on the actuarial assumptions specified and relies on the data supplied by the system's administrators and accountants. This report was prepared at the request of the Board of Trustees of 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, 2021, and to recommend the net direct employer contribution rate for Fiscal 2022. This report does not contain the information necessary for accounting disclosures as required by Governmental Accounting Standards Board (GASB) Statements 67 and 68; that information is included in a separate report. This report was prepared exclusively for 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:   
Gregory M. 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, 2020	June 30, 2019
Census Summary:		
Active Members	2,209	2,196
Retired Members and Survivors	1,459	1,414
Terminated Due a Deferred Benefit	70	78
Terminated Due a Refund	679	618
Payroll:	\$ 97,551,861	\$ 95,247,068
Benefits in Payment:	\$ 41,681,175	\$ 39,475,815
Present Value of Future Benefits	\$ 1,007,367,860	\$ 961,020,516
Actuarial Accrued Liability (EAN):	\$ 845,767,564	\$ 805,671,731
Frozen Unfunded Actuarial Accrued Liability:	\$ 65,798,853	\$ 70,998,546
Funding Deposit Account Credit Balance	\$ 10,803,791	\$ 9,429,752
Actuarial Value of Assets (AVA):	\$ 673,105,546	\$ 655,273,733
Market Value of Assets (MVA):	\$ 621,541,786	\$ 641,204,758
Ratio of AVA to Actuarial Accrued Liability (EAN):	79.59%	81.33%

	Fiscal 2020	Fiscal 2019
Market Rate of Return:	-1.9%	3.2%
Actuarial Rate of Return:	3.9%	4.9%

	Fiscal 2021	Fiscal 2020
Employers' Normal Cost (Mid-year):	\$ 22,609,358	\$ 19,360,672
Amortization Cost (Mid-year):	\$ 9,671,027	\$ 9,671,027
Estimated Administrative Cost	\$ 827,575	\$ 725,075
Projected Ad Valorem Tax Contributions	\$ 11,741,746	\$ 10,953,446
Projected Revenue Sharing Funds	\$ 319,582	\$ 319,560
Net Direct Employer Actuarially Required Contributions:	\$ 21,046,632	\$ 18,483,768
Projected Payroll:	\$ 99,109,150	\$ 97,325,212
Statutory Employee Contribution Rate:	8.25%	8.25%
Board Adopted Net Direct Employer Contribution Rate:	21.00% †	19.00% †
Actuarially Required Net Direct Employer Contribution Rate:	21.24%	18.99%

	Fiscal 2022	Fiscal 2021
Minimum Recommended Net Direct Employer Cont. Rate:	21.25%	19.00%

† 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 2,209 active members in the system of whom 951 members have vested retirement benefits including 146 participants in the Deferred Retirement Option Plan (DROP); 1,459 former members or their beneficiaries are receiving retirement benefits. An additional 749 terminated members have contributions remaining on deposit with the system; of this number 70 have vested rights for future retirement benefits. All participant data is as of June 30, 2020. 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 \$621,541,786 as of June 30, 2020. Net investment income for Fiscal 2020 measured on a market value basis amounted to a loss of \$12,246,469. Contributions to the system for the fiscal year totaled \$39,041,126; benefits and expenses amounted to \$46,457,629.

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.

Beginning 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 are credited to the Funding Deposit Account. Since 2009, the Board has elected to set the employer contribution rate at a level in excess of the minimum employer contribution rate on a number of occasions. In each such year, contribution gains were deposited into the Funding Deposit Account. Additionally, the Board of Trustees authorized the payment of a cost of living increase to retirees as of January 1, 2018 from funds in the Funding Deposit Account. For Fiscal 2020, the contribution rate was set at 19.00%, which exceeded the minimum recommended rate of 18.75%. The additional funds collected, amounting to \$737,531, were credited to the Funding Deposit Account. In addition, the account was credited with interest. The ending balance including the additional funds and interest credited at the valuation interest rate was \$10,803,791 as of June 30, 2020.

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.

The current year actuarial assumptions utilized for this report are based on the results of an actuarial experience study for the period July 1, 2014 – June 30, 2019, unless otherwise specified in this report. This study included a review of all plan decrements in addition to salary scale experience and other demographic factors which impact plan costs. The Fund's target asset allocation was reviewed based upon the G. S. Curran & Company consultant average return study for 2020. The study found that the 6.75% valuation interest rate remains within the reasonable range for a long-term assumed rate of return based on the Fund's target asset allocation. The reasonable range was set by developing 10,000 stochastic trials based on the expected long-term arithmetic return for the Fund's target allocation and the consultant average portfolio standard deviation.

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 this valuation are outlined at the end of this report. All assumptions used are based on estimates of future long-term experience for the fund as described in the system's 2020 Experience Study report. 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 2.3412%.

## **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. Louisiana constitutional and statutory provisions greatly limit this risk by requiring that state and statewide plans maintain funding on an actuarial basis. The State Constitution sets forth general requirements with specific funding parameters specified in the state statutes.

All pension plans are subject to the uncertainty of asset performance. The total nominal rate of return on assets is comprised of the real rates of return earned on the portfolio of investments plus the underlying inflation rate. High levels of inflation are a risk to plan members in that they reduce purchasing power of plan benefits. As the plan attempts to offset inflation by cost of living adjustments, costs will inevitably increase unless provisions are made to prefund such adjustments. Very low inflation will generally reduce the nominal rate of return on assets; deflation can potentially reduce the capital value of trust assets. For the last decade, inflation levels have remained in a fairly narrow range. Current forecasts from investment professionals call for a continuation of this trend. There is always the possibility that high inflation will become a problem in the future or that the country will experience a deflationary period; however, most expert opinion currently assess both of these alternatives as unlikely in the near term.

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. Volatility of returns will be determined by both market conditions and the asset allocation of the investment portfolio. If the system's investment portfolio has a substantial allocation to assets that have low price stability, the risk of portfolio volatility will increase, although low correlations among



asset classes can mitigate this risk. Another element of asset risk is reinvestment risk. Interest rate declines can subject pension plans to an increase in this risk. As fixed income securities mature, investment managers may be forced to reinvest funds at decreasing rates of return. For the foreseeable future it is unlikely, though not impossible, that interest rates will steeply decline mitigating the reinvestment risk the plan currently faces.

The system is also exposed to risk related to cash flow. Where benefit payments exceed contributions to a plan, the plan will be required to use investment income or potentially investment capital to pay benefits. In cases where it is necessary to use investment income to pay retirement benefits, investment market downturns will place additional stress on the portfolio and make the recovery from such downturns more difficult since funds available for reinvestment are reduced by benefit payments. The historical cash flow graph and demonstration given in this report illustrates the noninvestment cash flow and benefit payments of the system over the last 10 years. Currently, annual benefit payments exceed annual contributions to the plan. Future net noninvestment cash flows for the system will be determined based upon both the system maturity and future contribution levels. Hence, increases in future contributions due to adverse actuarial experience will tend to mitigate the potential of negative cash flows arising from the natural maturation of the system whereas reduced contribution levels resulting from positive experience will tend to increase the extent of negative cash flows. Absent a significant increase in the active membership of the system, the trend of higher proportions of retired membership will continue and the current trend toward higher levels of negative noninvestment cash flows will continue in the near future.

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. In a general sense, the short term effects of these risks on the cost structure of the plan are somewhat limited since changes in these factors tend to be gradual and follow long-term secular trends. Final average compensation plans are also vulnerable to unexpectedly large increases in salary for individual members near retirement. The effect of such events frequently relates to pay plan revisions where salaries “catch-up” after a number of years of slow growth. Revisions of this type usually depend on general economic conditions and can result in liability losses. However, they generally are infrequent and are more of a short term issue.

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. The risk associated with either of these factors can vary depending upon the severity of the event, and cannot be easily forecast.

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. The ratio is 79.59% for the plan as of June 30, 2020. This value gives some

indication of the financial strength of the plan; however, it does not guarantee the ability of the fund to pay benefits in the future or indicate that in the future, contributions are likely to be less than or greater than current contributions. In addition, the ratio cannot be used in isolation to compare the relative strength of different retirement systems. However, the trend of this ratio over time can give some insight into the financial health of the plan. Even in this regard, caution is warranted since market fluctuations in asset values and changes in plan assumptions can distort underlying trends in this value. Exhibit X gives a history of this value for the last ten years. Note that the underlying trend is somewhat disguised since the system has significantly reduced the valuation interest rate over this period. Absent the reduction in this rate, the current ratio would be significantly higher. One additional risk measure is the sensitivity of the plan's cost structure to asset gains and losses. 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 (decrease) in the actuarially required contribution as a percentage of projected payroll of 0.74% for the fund.

Each pension plan has its own unique benefit structure and demographic profile. As a result each plan will respond to changes in interest rates in a unique way. As the expected rate of return on investments changes and the interest rate used to discount plan liabilities is adjusted, the shift in plan liabilities will depend upon the duration of the liabilities (which can be understood as the plan's sensitivity to the change in the interest rate). A slightly different measure of the duration for the plan can also be understood as an indicator of the plan's maturity. When a pension plan is first established, all of the participants are active members; as members retire and the plan matures, the duration of the plan decreases. A determination of the liability duration gives some insight into the investment time horizon of the plan. Thus the liability duration of a closed plan can be thought of as the weighted "center of gravity" of plan benefit cash flows with expected cash flows occurring both before and after the duration value. For open plans with a continuous flow of new entrants this measure is somewhat less informative since the duration horizon keeps changing as new members enter the plan. For this plan we have estimated the effective liability duration as 10.17.

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 vulnerable 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 2020, this ratio is 43%; ten years ago this ratio was 22%.

One other area of exposure the plan faces is the possibility that plan assumptions will need to be revised to conform to changing actual or expected plan experience. Such assumption revisions may relate to economic or demographic factors. With regard to the economic assumptions, there is always the possibility that market expectations will require an adjustment to the assumed rate of return. Current market expectations related to the assumed rate of return suggest that a decrease in the assumption is more probable than an increase. The magnitude of any potential such change will be related to future capital market expectations. With regard to the economic assumptions, we have determined that a reduction in the valuation interest rate by 1% (without any change to other collateral

factors) would increase the actuarially required employer contribution rate for Fiscal 2021 by 11.87% of payroll. Future adjustments to the future assumed rates of return may be required; however the likelihood of such an event is difficult to gauge since it requires assigning probabilities to future capital market scenarios.

Noneconomic assumptions such as mortality or other rates of decrement such as withdrawal, retirement, or disability are also subject to change. In general, such changes tend to affect plan costs less than adjustments to the assumed rates of return. Quantifying the probability or magnitude of such changes is beyond the scope of this report.

In summary, there is a risk that future actuarial measurements may differ significantly from current measurements presented in this report due to factors such as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, and changes in plan provisions or applicable law. 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, factors such as those outlined above have the potential on their own accord to pose a significant risk to future cost levels and solvency of the system.

## **CHANGES IN PLAN PROVISIONS**

The Fund had no changes enacted during the 2020 Regular Session of the Louisiana Legislature.

## **ASSET EXPERIENCE**

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

	<u>Market Value</u>	<u>Actuarial Value</u>
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%
2019	3.2%	4.9%
2020	-1.9%	3.9%

### Geometric Average Market Rates of Return

5 year average (Fiscal 2016 – 2020)	3.9%
10 year average (Fiscal 2011 – 2020)	7.3%
15 year average (Fiscal 2006 – 2020)	5.2%
20 year average (Fiscal 2001 – 2020)	4.8%
25 year average (Fiscal 1996 – 2020)	6.4%
30 year average (Fiscal 1991 – 2020)	6.8%

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 2020, the fund earned \$8,438,160 of dividends, interest and other recurring income. Net income was decreased by realized and unrealized capital losses of \$17,857,787. Investment expenses reduced income by \$2,826,842.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 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 2020, the system experienced net actuarial investment losses of \$18,736,441 below the actuarial assumed earnings rate of 6.75% in effect for Fiscal 2020. This shortfall in earnings produced an actuarial loss, which increased the normal cost accrual rate by 2.0725%.

## **DEMOGRAPHICS AND LIABILITY EXPERIENCE**

A reconciliation of the census for the system is given in Exhibit IX. The average active member is 47 years old with 11.81 years of service and an annual salary of \$44,161. The system's active membership increased during the fiscal year by 13 members. The plan has experienced a decrease in the active plan population of 25 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 71 years old with a monthly benefit of \$2,441. The average age at retirement for regular retirees is 60. The number of retirees and beneficiaries receiving benefits from the system increased by 45 during the fiscal year. Over the last five years, the number of retirees has increased by 286. During this same period, annual benefits in payment increased by \$13,518,703.

Plan liability experience for Fiscal 2020 was nearly neutral. Most decrements were near projected levels. Salary increases and retirements slightly below expected levels tends to decrease costs. These savings were partially offset by deaths and withdrawals below projected levels. In aggregate, plan liability gains decreased the normal cost accrual rate by 0.6004%.

## **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 interest adjusted employer normal cost for Fiscal 2021 is \$22,609,358. The interest adjusted 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 2021 is \$33,107,960. When this amount is reduced by projected tax contributions and revenue sharing funds, the resulting employers’ net direct actuarially required contribution for Fiscal 2021 is \$21,046,632 or 21.24% of projected payroll.

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 2020	20.5577%
Factors Increasing the Normal Cost Accrual Rate:	
Assumption Changes	2.3412%
Asset Experience Loss	2.0725%
Factors Decreasing the Normal Cost Accrual Rate:	
New Members	0.7139%
Plan Liability Experience Gain	0.6004%
Employer’s Normal Cost Accrual Rate – Fiscal 2021	23.6571%

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 2021, the net effect of the change in payroll on amortization costs was to decrease such costs by 0.18% 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 increase by 0.59% of payroll in Fiscal 2021.

Although the minimum recommended net direct employer contribution rate for Fiscal 2020 was 18.75%, the Board of Trustees voted to maintain the employer contribution rate for Fiscal 2020 at 19.00%. During Fiscal 2020, the system experienced a contribution gain of \$737,531. In accordance with R.S. 11:107.1, these additional contributions were credited to the system's Funding Deposit Account as of June 30, 2020. For Fiscal 2021 the minimum recommended net direct employer contribution rate set by the Fiscal 2019 valuation is 19.00%; the board adopted employer contribution rate set previously for Fiscal 2021 is 21.00% of payroll. Since the board adopted employer contribution rate for Fiscal 2021 is greater than the minimum recommended net direct employer contribution rate, should the system experience a contribution gain any additional contributions will be credited to the Funding Deposit Account. Since the employers' net direct actuarially required contribution rate for Fiscal 2021 of 21.24% exceeds the board-adopted employer contribution rate, we do not expect the fund to generate a contribution gain during Fiscal 2021 unless payroll exceeds projected payroll or taxes collected exceed projected levels by a sufficient amount.

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 21.25% for Fiscal 2022. 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 21.25% and 24.25%. 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, the normal cost accrual rate of the fund, or to reduce the fund's frozen unfunded accrued liability. In addition, the Board of Trustees may grant a cost of living increase to retirees using funds in the Funding Deposit Account, subject to certain limits.

## **COST OF LIVING INCREASES**

During Fiscal 2020, the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 0.6%. Cost of living 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 to grant cost of living adjustments to retirees, beneficiaries, and survivors of retired members. 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.)

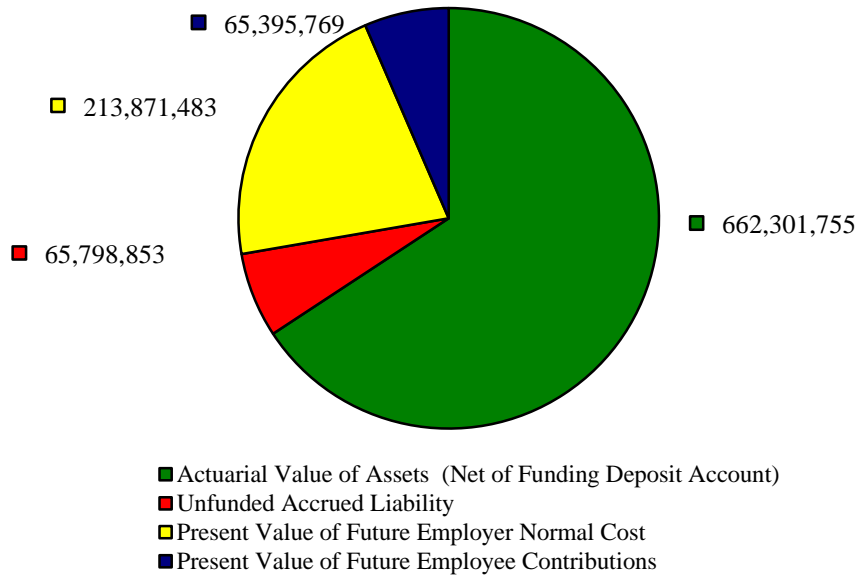
The fund qualifies under the requirements of R.S. 11:243 since the fund's funded ratio for COLA purposes is 80.30% (i.e. the actuarial value of assets divided by the pension benefit obligation) and the fund has not granted a benefit increase to retirees, survivors, and beneficiaries of the fund within the prior two fiscal years. Since the fund experienced net actuarial investment losses of \$18,736,441, the Board may only authorize the payment of a COLA out of the Funding Deposit Account. Further, since the CPI-U has not grown by more than 3% since the end of the fiscal year of the last COLA, the Board is not authorized to provide a COLA based upon the provisions of R.S. 11:1549 during Fiscal 2021. Therefore, we have quoted the estimated actuarial cost of a COLA based upon R.S. 11:241 and R.S. 11:246.

The estimated impact of granting the COLA's described above are as follows:

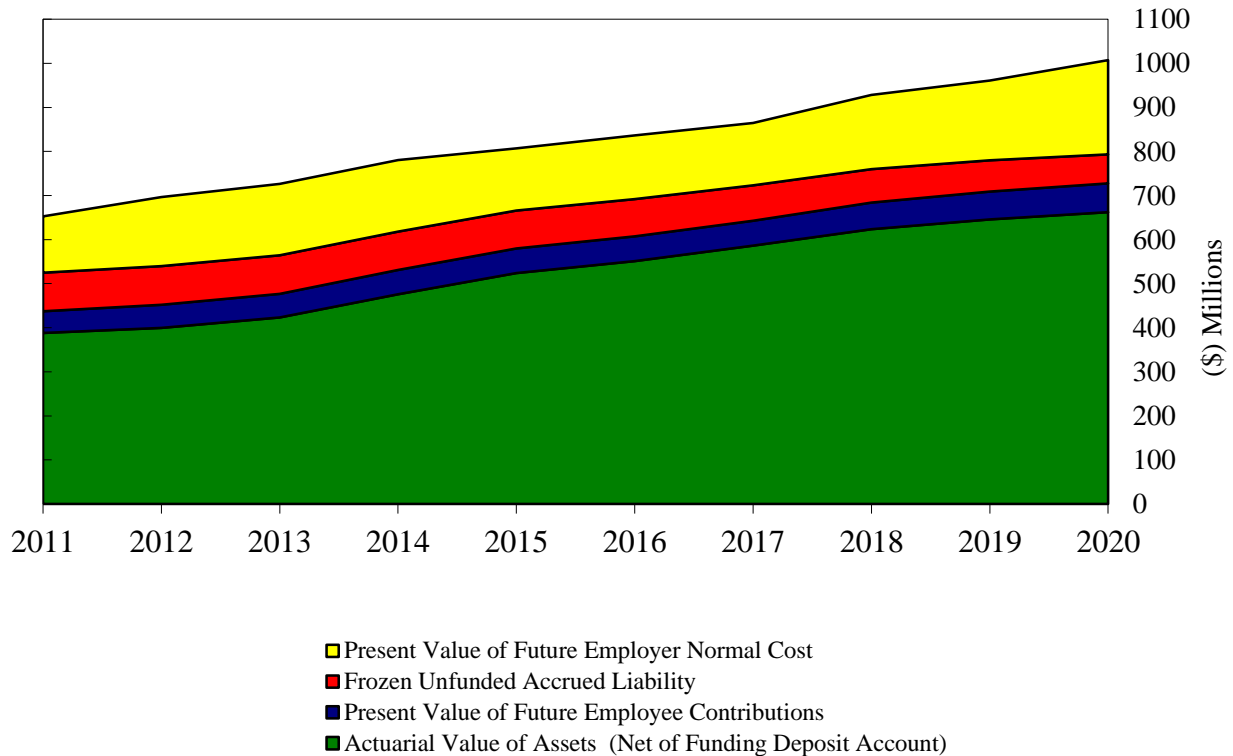
	<u>Increase In Annual Benefits</u>	<u>Increase In Present Value</u>	<u>Equivalent Increase in Normal Cost Accrual Rate *</u>
R.S. 11:241 - Up to \$1 × the sum of years of service plus the years retired	\$ 593,664	\$ 5,192,771	0.57%
R.S. 11:246 - 2% of base to over age 65	\$ 520,560	\$ 4,491,816	0.50%

\* Note: Should either of the above COLA's be granted there will be no increase in the system's normal cost accrual rate since funds equivalent to the present value of additional benefits will be withdrawn from the Funding Deposit Account. The Equivalent Increase in Normal Cost Accrual Rate is provided for informational purposes only.

## Components of Present Value of Future Benefits June 30, 2020

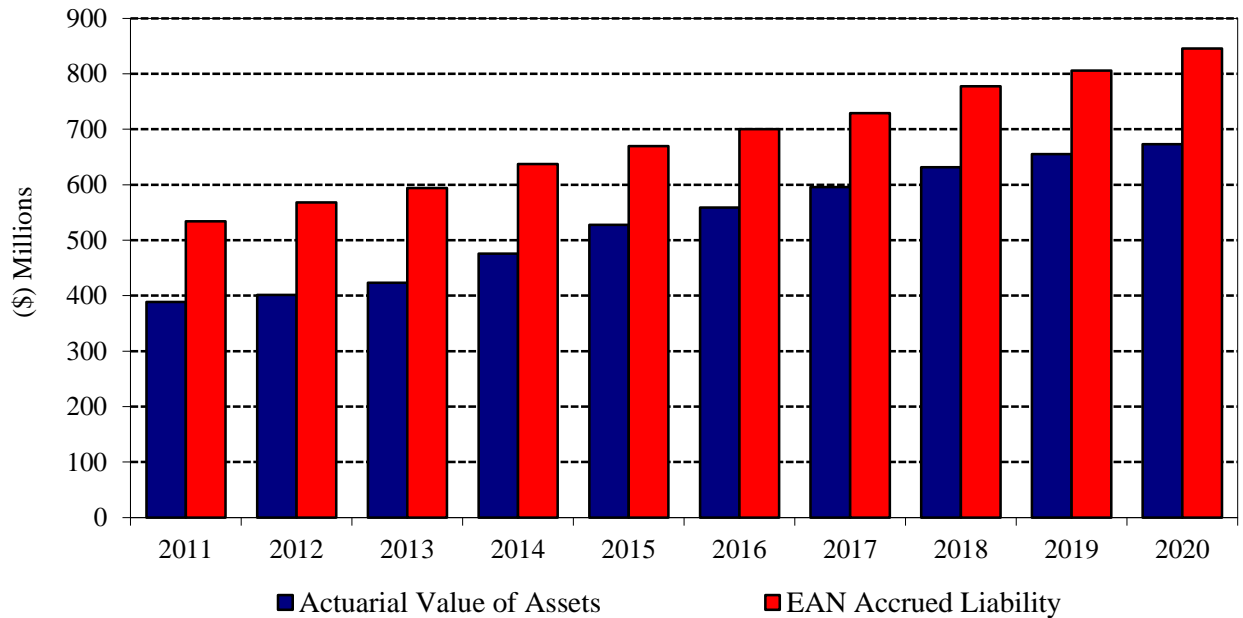


## Components of Present Value of Future Benefits

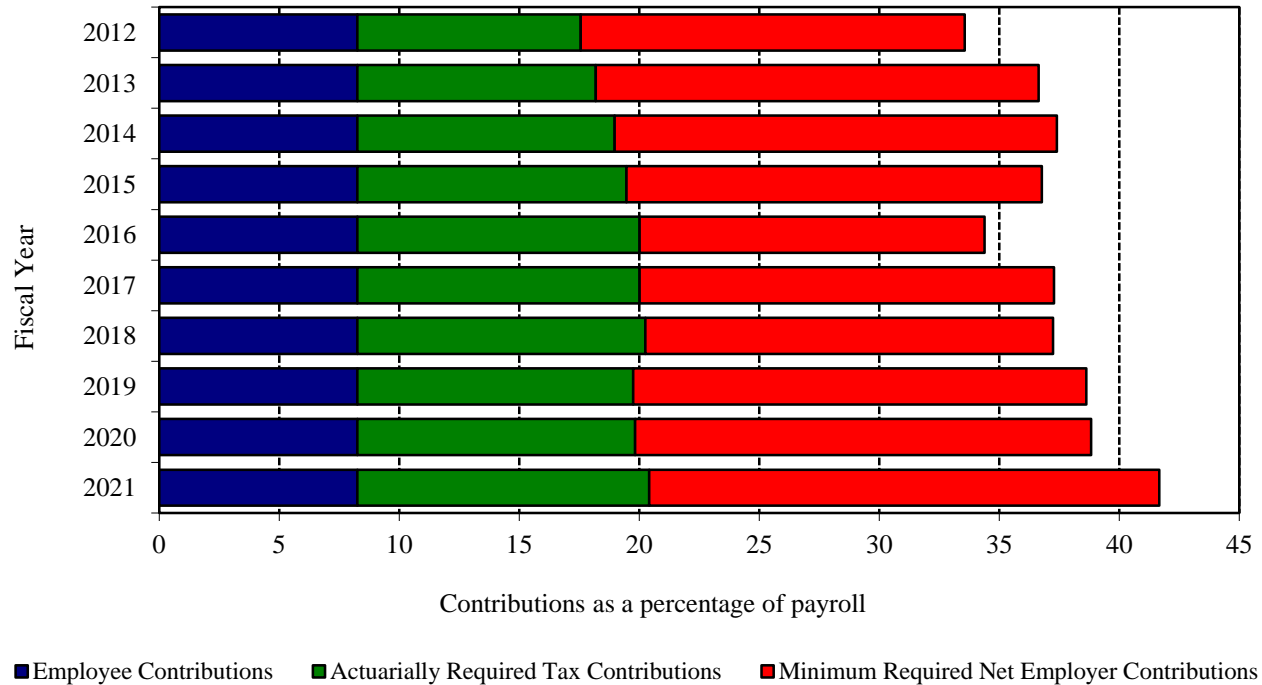




# Actuarial Value of Assets vs. EAN Accrued Liability

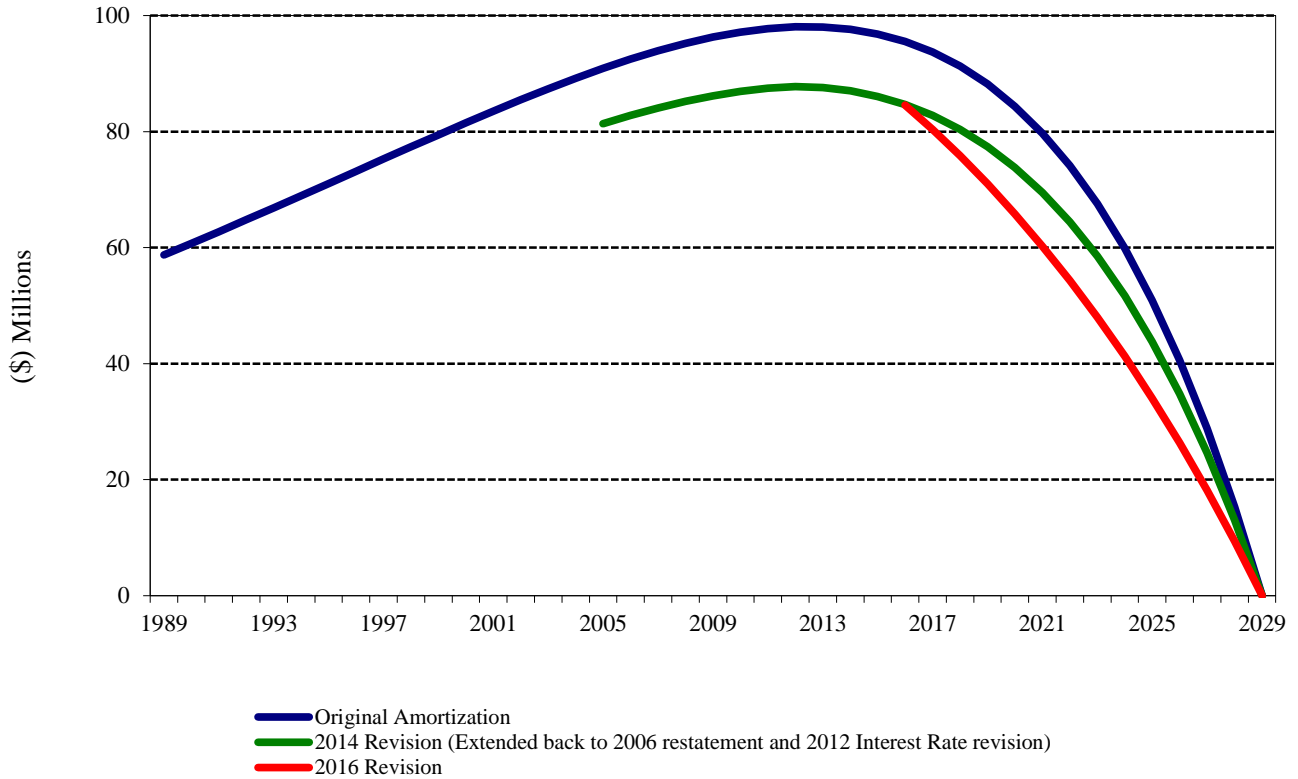


# Components of Actuarial Funding

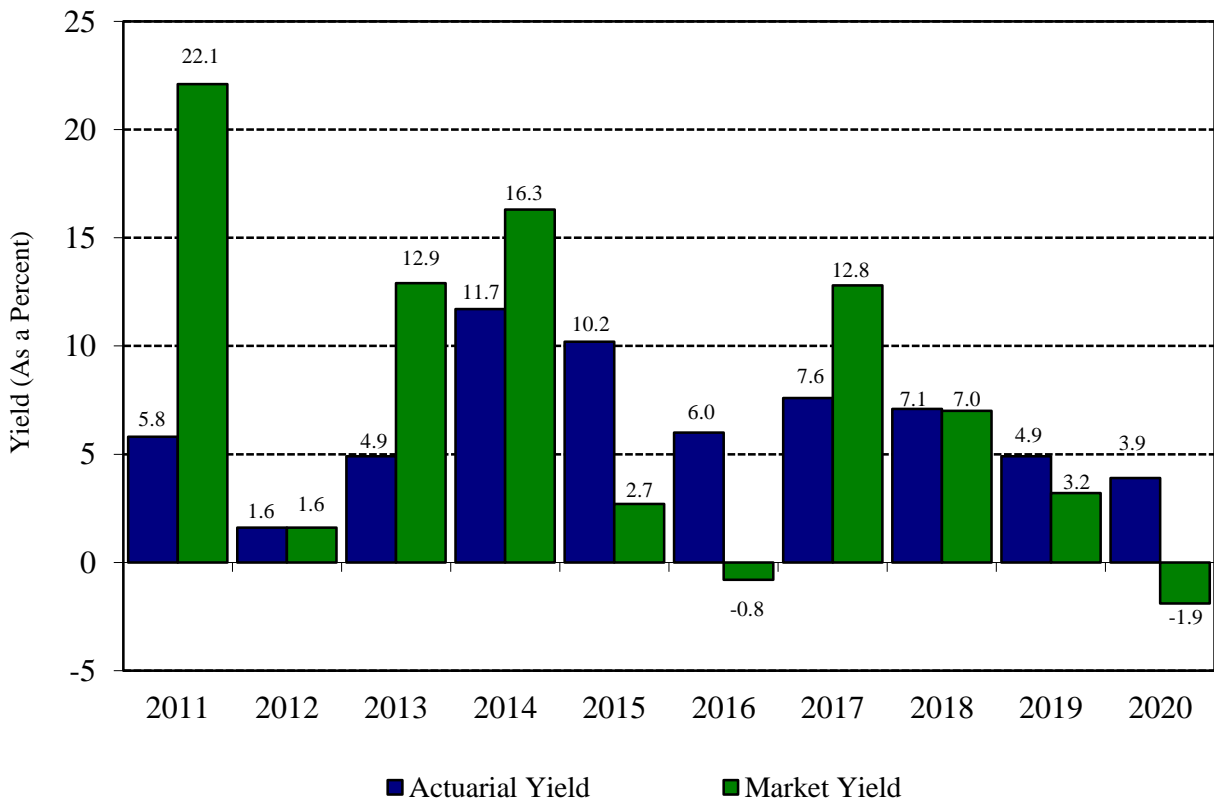


Actuarially Required Tax Contributions consist of the lesser of Actuarially Required Contributions and amount of taxes divided by the projected valuation payroll.

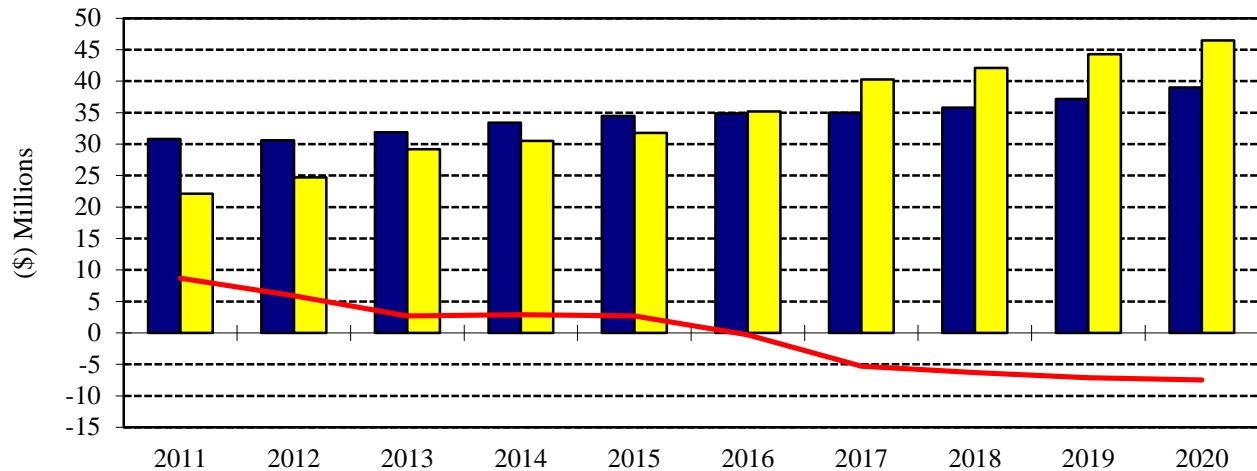
## Frozen Unfunded Actuarial Accrued Liability



## Historical Asset Yields

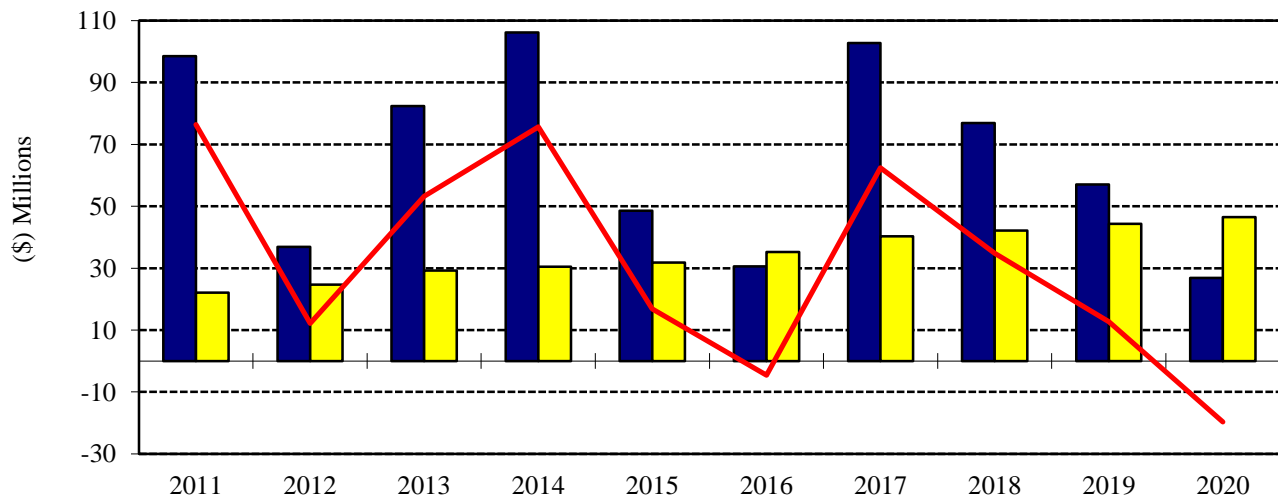


## Net Non-Investment Income



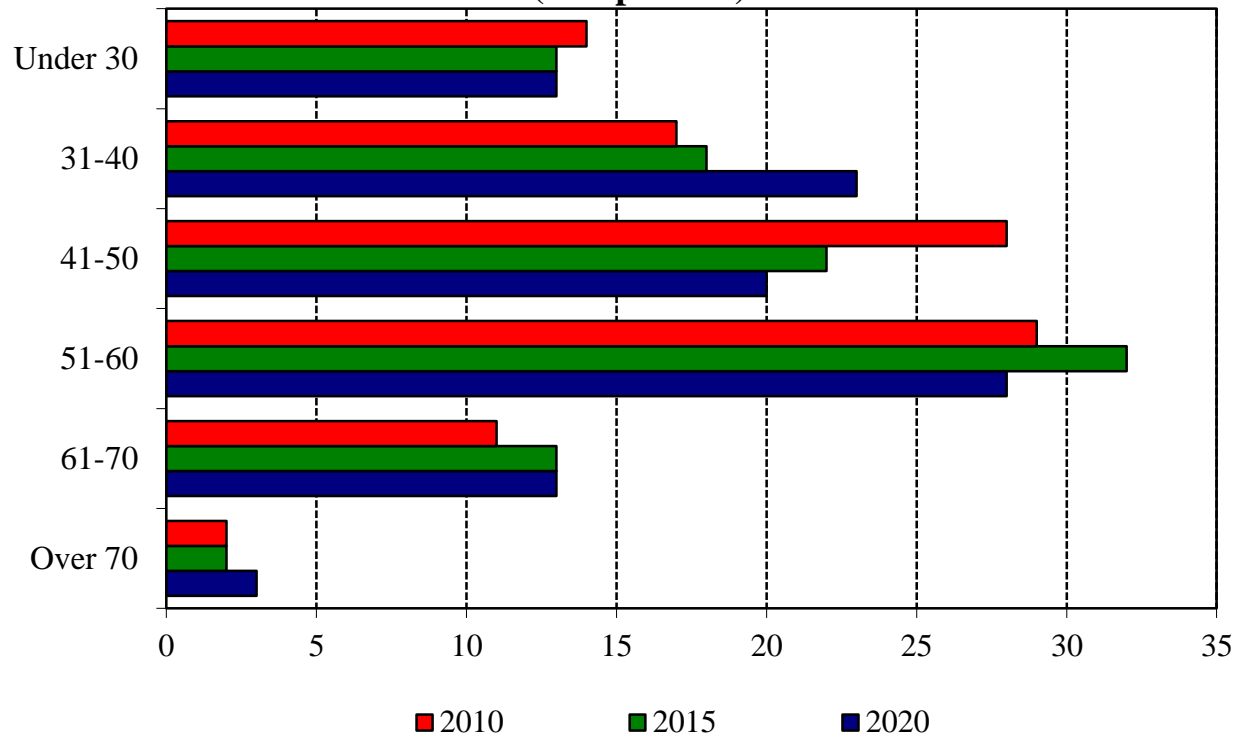
		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Non-Investment Income (\$Mil)	■	30.8	30.6	31.9	33.4	34.5	34.9	35.0	35.8	37.2	39.0
Benefits and Expenses (\$Mil)	■	22.1	24.7	29.2	30.5	31.8	35.2	40.3	42.1	44.3	46.5
Net Non-Investment Income (\$Mil)	—	8.7	5.9	2.7	2.9	2.7	-0.3	-5.3	-6.3	-7.1	-7.5

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

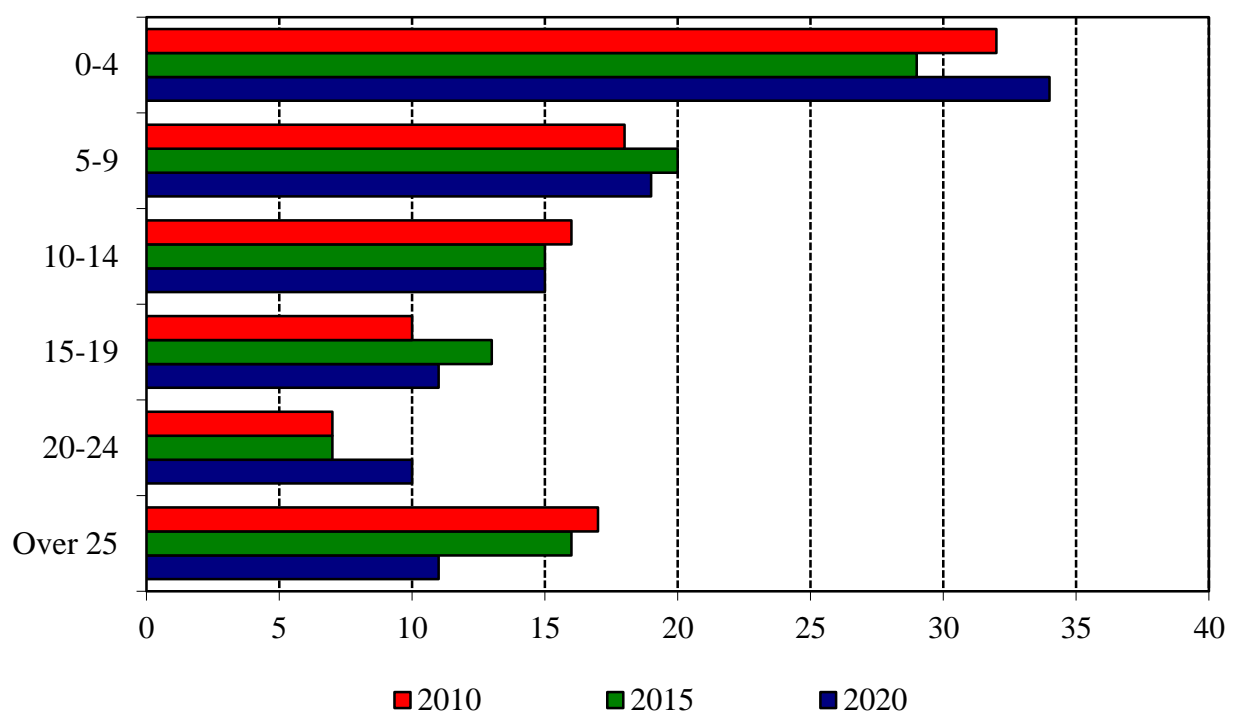


		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Income (\$Mil)	■	98.5	36.9	82.4	106.1	48.6	30.6	102.7	76.9	57.0	26.8
Benefits and Expenses (\$Mil)	■	22.1	24.7	29.2	30.5	31.8	35.2	40.3	42.1	44.3	46.5
Net Change in MVA (\$Mil)	—	76.4	12.2	53.2	75.6	16.8	-4.6	62.4	34.8	12.7	-19.7

## 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.....	\$ 1,007,367,860
2. Funding Deposit Account Credit Balance .....	\$ 10,803,791
3. Unfunded Actuarial Accrued Liability .....	\$ 65,798,853
4. Actuarial Value of Assets .....	\$ 673,105,546
5. Present Value of Future Employee Contributions .....	\$ 65,395,769
6. Present Value of Future Employer Normal Costs (1 + 2 – 3 – 4 – 5) .....	\$ 213,871,483
7. Present Value of Future Salaries.....	\$ 904,047,604
8. Employer Normal Cost Accrual Rate (6 ÷ 7) .....	23.657104%
9. Projected Fiscal 2021 Salary for Current Membership .....	\$ 92,500,208
10. Employer Normal Cost as of July 1, 2020 (8 × 9).....	\$ 21,882,870
11. Employer Normal Cost Interest Adjusted for Mid-year Payment .....	\$ 22,609,358
12. Amortization Payment on Remaining Frozen Unfunded Accrued Liability with Level Annual Payments.....	\$ 9,360,276
13. Amortization Payment Interest Adjusted for Mid-year Payment .....	\$ 9,671,027
14. TOTAL Employer Normal Cost and Amortization Payment (11 + 13).....	\$ 32,280,385
15. Estimated Administrative Cost for Fiscal 2021 .....	\$ 827,575
16. GROSS Employer Actuarially Required Contribution for Fiscal 2021 (14 + 15) .....	\$ 33,107,960
17. Projected Ad Valorem Tax Contributions for Fiscal 2021 .....	\$ 11,741,746
18. Projected Revenue Sharing Funds for Fiscal 2021 .....	\$ 319,582
19. Net Direct Employer Actuarially Required Contribution for Fiscal 2021 (16 – 17 – 18) .....	\$ 21,046,632
20. Projected Payroll for Fiscal 2021 .....	\$ 99,109,150
21. Employers' Minimum Net Direct Actuarially Required Contribution as a % of Projected Payroll for Fiscal 2021 (19 ÷ 20).....	21.24%
22. Board Adopted Employer Contribution Rate for Fiscal 2021 .....	21.00%
23. Contribution Shortfall (Excess) as a Percentage of Payroll (21 – 22).....	0.24%
24. Increase (Reduction) to Following Year Payment for Contribution Shortfall (Excess).....	0.02%
25. Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2022 (21 + 24, Rounded to nearest 0.25%) .....	21.25%

**EXHIBIT II**  
**PRESENT VALUE OF FUTURE BENEFITS**

PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits .....	\$ 501,412,992
Survivor Benefits.....	5,005,194
Disability Benefits .....	6,804,748
Vested Termination Benefits.....	22,954,017
Refunds of Contributions .....	7,768,679

TOTAL Present Value of Future Benefits for Active Members..... \$ 543,945,630

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement.....	\$ 13,961,035
Terminated Members with Reciprocals	
Due Benefits at Retirement .....	23,377
Terminated Members Due a Refund .....	3,280,623

TOTAL Present Value of Future Benefits for Terminated Members..... \$ 17,265,035

PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees

Maximum.....	\$ 204,530,760
Option 1 .....	0
Option 2 .....	130,805,026
Option 3 .....	48,860,434
Option 4 .....	10,817,032
Option 5 .....	2,361,846

TOTAL Regular Retirees..... \$ 397,375,098

Disability Retirees..... 2,042,578

Survivors & Widows..... 23,413,096

DROP Annuities..... 52,962

DROP Account Balances Payable to Retirees ..... 23,273,461

TOTAL Present Value of Future Benefits for Retirees & Survivors..... \$ 446,157,195

TOTAL Present Value of Future Benefits..... \$ 1,007,367,860

**EXHIBIT III – Schedule A  
MARKET VALUE OF ASSETS**

CURRENT ASSETS:

Cash in Banks .....	\$ 441,423
Contributions and Taxes Receivable.....	1,931,558
Accrued Interest and Dividends .....	289,479
Investments Receivable .....	953,675
Other Income .....	16,878

TOTAL CURRENT ASSETS..... \$ 3,633,013

Property Plant & Equipment..... \$ 695,062

INVESTMENTS:

Equities .....	\$ 332,276,751
Alternative Investments .....	50,620,014
Fixed Income .....	95,845,951
Real Estate .....	30,479,978
Tactical Allocation.....	35,704,610
Cash Equivalents.....	43,419,820
DROP Account Assets at Contract Value .....	25,025,877
DROP Account Assets Held Outside System Assets .....	4,918,739

TOTAL INVESTMENTS..... \$ 618,291,740

TOTAL ASSETS .....

CURRENT LIABILITIES:

Accounts Payable .....	\$ 519,528
Investments Payable.....	528,759
Other Current Liabilities .....	29,742

TOTAL CURRENT LIABILITIES .....

MARKET VALUE OF ASSETS..... \$ 621,541,786

**EXHIBIT III – Schedule B**  
**ACTUARIAL VALUE OF ASSETS**

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

Fiscal year 2020 .....	\$ (55,281,570)
Fiscal year 2019 .....	(22,335,962)
Fiscal year 2018 .....	(226,356)
Fiscal year 2017 .....	30,768,074
Fiscal year 2016 .....	<u>(41,858,104)</u>
Total for five years .....	\$ (88,933,918)

Deferral of excess (shortfall) of invested income:

Fiscal year 2020 (80%) .....	\$ (44,225,256)
Fiscal year 2019 (60%) .....	(13,401,577)
Fiscal year 2018 (40%) .....	(90,542)
Fiscal year 2017 (20%) .....	6,153,615
Fiscal year 2016 ( 0%) .....	<u>0</u>
Total deferred for year .....	\$ (51,563,760)

Market value of plan net assets, end of year..... \$ 621,541,786

Preliminary actuarial value of plan assets, end of year ..... \$ 673,105,546

Actuarial value of assets corridor

85% of market value, end of year .....	\$ 528,310,518
115% of market value, end of year .....	\$ 714,773,054

Final actuarial value of plan net assets, end of year ..... \$ 673,105,546



**EXHIBIT IV  
PRESENT VALUE OF FUTURE CONTRIBUTIONS**

Employee Contributions to the Annuity Savings Fund .....	\$	65,395,769
Employer Normal Contributions to the Pension Accumulation Fund.....		213,871,483
Employer Amortization Payments to the Pension Accumulation Fund .....		65,798,853
Funding Deposit Account Credit Balance .....		(10,803,791)
 TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS .....	 \$	 334,262,314

**EXHIBIT V – Schedule A  
CHANGE IN FROZEN UNFUNDED ACTUARIAL ACCRUED LIABILITY**

Prior Year Frozen Unfunded Accrued Liability .....	\$	70,998,546
Interest on Frozen Unfunded Accrued Liability .....	\$	4,792,402
 TOTAL Increase in Unfunded Accrued Liability .....	 \$	 4,792,402
Amortization Payment on Unfunded Accrued Liability.....	\$	9,360,276
Interest on Amortization Payment .....		631,819
Withdrawals From Funding Deposit Account .....		0
 TOTAL Decrease in Unfunded Accrued Liability .....	 \$	 9,992,095
NET Change in Frozen Unfunded Accrued Liability.....	\$	(5,199,693)
 CURRENT YEAR FROZEN UNFUNDED ACCRUED LIABILITY .....	 \$	 65,798,853

**EXHIBIT V – Schedule B  
RECONCILIATION OF CONTRIBUTIONS**

Interest Adjusted Prior Year Employer Normal Cost.....	\$	20,003,426
Interest Adjusted Amortization Payment on Remaining UAL.....		9,992,095
Interest Adjusted Administrative Expenses.....		709,981
 TOTAL Interest Adjusted Actuarially Required Contributions .....	 \$	 30,705,502
Interest Adjusted Direct Employer Contributions .....	\$	19,485,235
Interest Adjusted Ad Valorem Taxes and Revenue Sharing .....		11,957,798
 TOTAL Interest Adjusted Employer Contributions .....	 \$	 31,443,033
CONTRIBUTION SHORTFALL (SURPLUS).....	\$	(737,531)

**EXHIBIT VI**  
**ANALYSIS OF CHANGE IN ASSETS**

Actuarial Value of Assets (June 30, 2019) .....	\$ 655,273,733
<b>INCOME:</b>	
Member Contributions .....	\$ 7,344,588
Employer Contributions .....	18,859,132
Tax Revenue .....	11,573,568
Other Income .....	1,263,838
Total Contributions .....	\$ 39,041,126
Net Depreciation of Investments .....	\$ (17,857,787)
Interest & Dividends .....	8,438,160
Investment Expense .....	(2,826,842)
Net Investment Income .....	\$ (12,246,469)
TOTAL Income .....	\$ 26,794,657
<b>EXPENSES:</b>	
Retirement Benefits .....	\$ 40,705,659
DROP Disbursements .....	4,088,275
Refunds of Contributions .....	871,015
Transfers to Other Systems .....	105,512
Administrative Expenses .....	687,168
TOTAL Expenses .....	\$ 46,457,629
Net Market Value Income for Fiscal 2020 (Income – Expenses) .....	\$ (19,662,972)
Unadjusted Fund Balance as of June 30, 2020 (Fund Balance Previous Year + Net Income) .....	\$ 635,610,761
Adjustment for Actuarial Smoothing .....	\$ 37,494,785
Actuarial Value of Assets: (June 30, 2020) .....	\$ 673,105,546

**EXHIBIT VII  
FUNDING DEPOSIT ACCOUNT**

Funding Deposit Account Balance as of June 30, 2019 .....	\$ 9,429,752
Interest on Opening Balance at 6.75% .....	636,508
Contributions to the Funding Deposit Account .....	737,531
Withdrawals from the Funding Deposit Account .....	0
Funding Deposit Account Balance as of June 30, 2020 .....	\$ 10,803,791

**EXHIBIT VIII – Schedule A  
PENSION BENEFIT OBLIGATION**

Present Value of Credited Projected Benefits Payable to Current Employees.....	\$ 374,795,154
Present Value of Benefits Payable to Terminated Employees .....	17,265,035
Present Value of Benefits Payable to Current Retirees and Beneficiaries .....	446,157,195
TOTAL PENSION BENEFIT OBLIGATION .....	\$ 838,217,384
NET ACTUARIAL VALUE OF ASSETS .....	\$ 673,105,546
Ratio of Net Actuarial Value of Assets to Pension Benefit Obligation.....	80.30%

**EXHIBIT VIII – Schedule B  
ENTRY AGE NORMAL ACCRUED LIABILITIES**

Accrued Liability for Active Employees .....	\$ 382,345,334
Accrued Liability for Terminated Employees .....	17,265,035
Accrued Liability for Current Retirees and Beneficiaries .....	446,157,195
TOTAL ENTRY AGE NORMAL ACCRUED LIABILITY .....	\$ 845,767,564
ACTUARIAL VALUE OF ASSETS .....	\$ 673,105,546
Ratio of Net Actuarial Value of Assets to Entry Age Normal Accrued Liability .....	79.59%

**EXHIBIT IX  
CENSUS DATA**

	<b>Active</b>	<b>Terminated with Funds on Deposit</b>	<b>DROP</b>	<b>Retired</b>	<b>Total</b>
Number of members as of June 30, 2019	2,041	696	155	1,414	4,306
Additions to Census					
Initial membership	193	13			206
Omitted in error last year				8	8
Death of another member					
Adjustment for multiple records				1	1
Change in Status during Year					
Actives terminating service	(80)	80			
Actives who retired	(28)			28	
Actives entering DROP	(49)		49		
Term. members rehired	8	(8)			
Term. members who retire		(9)		9	
Retirees who are rehired					
Refunded who are rehired	2				2
DROP participants retiring			(33)	33	
DROP returned to work	25		(25)		
Omitted in error last year					
Eliminated from Census					
Refund of contributions	(48)	(23)			(71)
Deaths	(1)			(34)	(35)
Included in error last year					
Adjustment for multiple records					
Number of members as of June 30, 2020	2,063	749	146	1,459	4,417

ACTIVES CENSUS BY AGE:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 - 20	3	4	7	25,110	175,770
21 - 25	19	80	99	27,202	2,693,041
26 - 30	30	157	187	30,161	5,640,023
31 - 35	36	207	243	35,185	8,549,890
36 - 40	26	228	254	38,124	9,683,497
41 - 45	40	183	223	45,819	10,217,721
46 - 50	32	194	226	48,245	10,903,284
51 - 55	43	247	290	48,529	14,073,415
56 - 60	43	295	338	51,515	17,412,161
61 - 65	34	161	195	48,770	9,510,102
66 - 70	20	72	92	58,263	5,360,235
71 - 75	13	24	37	56,481	2,089,794
76 - 80	7	6	13	64,370	836,810
81 - 85	1	2	3	111,950	335,850
86 - 90	0	1	1	23,950	23,950
91 - 95	0	1	1	46,318	46,318
TOTAL	347	1,862	2,209	44,161	97,551,861

THE ACTIVE CENSUS INCLUDES 951 ACTIVES WITH VESTED BENEFITS, INCLUDING 146 DROP PARTICIPANTS AND 76 ACTIVE FORMER DROP PARTICIPANTS.

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
36 - 40	1	4	5	12,988	64,939
41 - 45	0	9	9	17,281	155,530
46 - 50	1	18	19	21,090	400,713
51 - 55	6	30	36	23,329	839,852
76 - 80	0	1	1	2,970	2,970
TOTAL	8	62	70	20,914	1,464,004

TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:

Contributions Ranging From	To	Number	Total Contributions
0	- 99	61	2,439
100	- 499	121	34,180
500	- 999	87	65,362
1000	- 1999	82	117,103
2000	- 4999	125	413,145
5000	- 9999	97	687,279
10000	- 19999	71	986,516
20000	- 99999	35	974,599
TOTAL		679	3,280,623

## REGULAR RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
51 - 55	0	4	4	59,344	237,376
56 - 60	18	134	152	35,598	5,410,828
61 - 65	29	240	269	36,312	9,768,032
66 - 70	34	243	277	29,520	8,177,070
71 - 75	42	210	252	26,500	6,677,980
76 - 80	33	141	174	26,469	4,605,683
81 - 85	15	84	99	20,222	2,001,967
86 - 90	12	51	63	16,422	1,034,576
91 - 99	3	21	24	24,197	580,717
TOTAL	186	1,128	1,314	29,295	38,494,229

## DISABILITY RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
46 - 50	0	1	1	10,156	10,156
51 - 55	0	4	4	18,076	72,304
56 - 60	1	3	4	12,199	48,794
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	13	14	13,104	183,461

## SURVIVORS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 25	1	3	4	16,471	65,885
26 - 30	1	0	1	4,408	4,408
31 - 35	1	1	2	11,484	22,967
41 - 45	1	1	2	8,589	17,177
46 - 50	2	2	4	12,553	50,211
51 - 55	1	2	3	25,066	75,199
56 - 60	5	2	7	12,274	85,920
61 - 65	2	3	5	24,668	123,341
66 - 70	12	9	21	31,683	665,352
71 - 75	10	3	13	22,375	290,878
76 - 80	6	9	15	29,446	441,689
81 - 85	2	18	20	17,735	354,702
86 - 90	5	13	18	27,852	501,327
91 - 99	4	12	16	19,027	304,429
TOTAL	53	78	131	22,927	3,003,485

ACTIVE MEMBERS:

Attained Ages	Completed Years of Service											Total	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30&Over		
0 - 20	3	2	2										7
21 - 25	30	32	26	1	7	3							99
26 - 30	31	24	34	28	16	50	4						187
31 - 35	31	25	29	18	13	82	41	4					243
36 - 40	30	23	22	17	13	52	61	33	3				254
41 - 45	16	11	18	11	6	42	33	39	41	6			223
46 - 50	11	10	15	13	13	27	41	33	37	26			226
51 - 55	13	15	9	11	13	42	44	38	52	24	29		290
56 - 60	11	11	13	13	16	45	40	39	52	31	67		338
61 - 65	7	12	3	5	3	42	40	28	23	7	25		195
66 - 70	1		1	3	4	19	23	14	8	8	11		92
71 & Over	4		1		2	7	13	6	5	6	11		55
Totals	188	165	173	120	106	411	340	234	221	108	143		2,209

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	26,328	26,118	22,275	29,758	32,791	33,159							25,110
21 - 25	25,906	27,334	26,246	29,758	29,935	31,245							27,202
26 - 30	27,900	31,245	29,412	30,176	29,935	31,245	34,764						30,161
31 - 35	29,686	33,255	31,891	31,246	34,015	36,217	41,081	53,665					35,185
36 - 40	33,455	31,659	33,455	33,785	37,471	39,197	41,392	43,853	47,981				38,124
41 - 45	31,914	36,470	32,187	41,975	53,178	39,013	53,709	49,690	53,330	68,397			45,819
46 - 50	35,776	33,541	38,590	32,647	44,077	37,952	41,910	60,114	60,679	62,546			48,245
51 - 55	30,058	33,481	40,581	36,941	43,112	46,055	44,424	48,180	53,470	57,958	67,488		48,529
56 - 60	37,215	50,086	31,627	32,811	55,248	49,858	44,926	48,249	56,192	58,048	60,990		51,515
61 - 65	31,854	35,601	40,897	39,889	31,325	38,634	45,017	50,901	54,934	49,389	79,443		48,770
66 - 70	32,394		19,890	33,385	40,206	35,419	49,297	76,590	56,912	70,052	104,747		58,263
71 & Over	35,092		25,863		37,184	40,289	50,031	43,557	44,234	86,676	105,193		60,595
Average	30,558	33,050	31,739	33,584	40,599	39,145	44,634	51,517	55,285	61,604	72,300		44,161

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Attained Ages	Years Until Retirement Eligibility										Total	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29		30&Over
0 - 35												0
36 - 40												5
41 - 45							9					9
46 - 50						19						19
51 - 55	4	9	7	4	12							36
56 - 60												0
61 - 65												0
66 - 70												0
71 - 75												0
76 - 80	1											1
81 & Over												0
Totals	5	9	7	4	12	19	9	5	0	0	0	70

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

Attained Ages	Years Until Retirement Eligibility										Average Benefit	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29		30&Over
0 - 35												0
36 - 40												12,988
41 - 45							17,281					17,281
46 - 50						21,090						21,090
51 - 55	42,832	19,675	19,228	24,016	21,732							23,329
56 - 60												0
61 - 65												0
66 - 70												0
71 - 75												0
76 - 80			2,970									2,970
81 & Over												0
Average	34,860	19,675	19,228	24,016	21,732	21,090	17,281	12,988	0	0	0	20,914



SERVICE RETIREES:

Completed Years Since Retirement

Attained Ages	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 50												0
51 - 55	4											4
56 - 60	37	35	26	27	16	11						152
61 - 65	10	18	24	44	26	142	5					269
66 - 70	12	19	10	22	13	98	98	5				277
71 - 75	5	12	7	13	19	58	66	68	4			252
76 - 80	2	2	5	7	4	28	34	37	48	6	1	174
81 - 85	1	1		1		6	8	27	25	25	5	99
86 - 90						5	6	7	14	6	25	63
91 & Over						1	1	2	5	2	13	24
Totals	71	87	72	114	78	349	218	146	96	39	44	1,314

AVERAGE ANNUAL BENEFITS PAYABLE TO SERVICE RETIREES:

Completed Years Since Retirement

Attained Ages	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 50												0
51 - 55	59,344											59,344
56 - 60	42,081	37,228	36,554	28,779	31,018	29,741						35,598
61 - 65	44,564	44,889	39,398	40,628	47,434	31,240						36,312
66 - 70	32,164	28,971	22,007	38,075	25,064	31,119	22,359					29,520
71 - 75	25,517	19,674	23,300	44,491	34,209	25,708	26,488	42,317				26,500
76 - 80	18,150	34,270	46,229	38,096	28,418	38,512	26,276	24,996	25,461	14,290	10,665	26,469
81 - 85	22,723	17,115		31,082		29,795	24,872	21,848	18,674	19,245	19,214	20,222
86 - 90						14,641	17,404	14,366	15,449	12,637	17,087	16,422
91 & Over						119,141	21,101	24,762	33,569	10,488	15,549	24,197
Average	39,614	34,289	34,865	37,530	36,141	30,812	25,958	23,788	18,809	17,017	16,728	29,295

DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement											Total	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30&Over		
0 - 45													0
46 - 50			1										1
51 - 55					2	1	1						4
56 - 60					1	1		2					4
61 - 65				1		1				1			3
66 - 70													0
71 - 75								1		1			1
76 - 80													1
81 & Over								1					0
Totals	0	0	1	1	3	3	1	3	0	2	0	0	14

AVERAGE ANNUAL BENEFITS PAYABLE TO DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement											Average Benefit	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30&Over		
0 - 45													0
46 - 50			10,156										10,156
51 - 55					23,555	11,993	13,202						18,076
56 - 60					19,170	10,014		9,805					12,199
61 - 65				15,362		11,095				8,298			11,585
66 - 70													0
71 - 75								9,475		7,977			7,977
76 - 80													9,475
81 & Over													0
Average	0	0	10,156	15,362	22,093	11,034	13,202	9,695	0	8,138	0	0	13,104

SURVIVING BENEFICIARIES OF FORMER MEMBERS:

Completed Years Since Retirement

Attained Ages	Completed Years Since Retirement											Total		
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30&Over			
0 - 20			3											3
21 - 25				1										1
26 - 30							1							1
31 - 35							2							2
36 - 40														0
41 - 45						1								2
46 - 50	1					2								4
51 - 55			1					1						3
56 - 60				1					1					7
61 - 65					2									5
66 - 70				3		3								21
71 - 75					3			2						13
76 - 80					1									15
81 - 85						3								20
86 - 90						2								18
91 & Over						1								16
Totals	1	0	4	6	6	24	20	20	17	10	23			131

AVERAGE ANNUAL BENEFITS PAYABLE TO SURVIVORS OF FORMER MEMBERS:

Completed Years Since Retirement

Attained Ages	Completed Years Since Retirement											Average Benefit		
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30&Over			
0 - 20			1,283											1,283
21 - 25				62,037										62,037
26 - 30							4,408							4,408
31 - 35							11,483							11,483
36 - 40														0
41 - 45						6,714								8,589
46 - 50	18,969					12,215								12,553
51 - 55			42,625	29,197				6,813						25,066
56 - 60				5,373										12,274
61 - 65					15,856									24,668
66 - 70					23,664									31,683
71 - 75				72,788										22,375
76 - 80					96,358							15,434		29,446
81 - 85														17,735
86 - 90														27,852
91 & Over														19,027
Average	18,969	0	11,618	52,495	33,177	32,009	26,641	17,781	14,387	18,676	14,609			22,927

## EXHIBIT X YEAR-TO-YEAR COMPARISON

	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017
Number of Active Members	2,209	2,196	2,205	2,164
Number of Retirees & Survivors	1,459	1,414	1,360	1,311
Number of Terminated Due Deferred Benefits	70	78	78	78
Number Terminated Due Refunds	679	618	585	550
Active Lives Payroll	\$ 97,551,861	\$ 95,247,068	\$ 92,738,643	\$ 89,180,971
Retiree Benefits in Payment	\$ 41,681,175	\$ 39,475,815	\$ 37,248,506	\$ 34,679,675
Market Value of Assets	\$ 621,541,786	\$ 641,204,758	\$ 628,437,651	\$ 593,677,582
Entry Age Normal Accrued Liability	\$ 845,767,564	\$ 805,671,731	\$ 777,615,742	\$ 729,009,277
Ratio of AVA to EAN Accrued Liability	79.59%	81.33%	81.22%	81.72%
Actuarial Value of Assets	\$ 673,105,546	\$ 655,273,733	\$ 631,612,601	\$ 595,749,559
Frozen Unfunded Actuarial Accrued Liability	\$ 65,798,853	\$ 70,998,546	\$ 75,869,452	\$ 80,361,839
Present Value of Future Employer Normal Cost	\$ 213,871,483	\$ 180,972,019	\$ 168,433,783	\$ 141,532,146
Present Value of Future Employee Contrib.	\$ 65,395,769	\$ 63,205,970	\$ 60,449,719	\$ 56,483,625
Funding Deposit Account Balance	\$ 10,803,791	\$ 9,429,752	\$ 7,981,218	\$ 9,388,977
Present Value of Future Benefits	\$ 1,007,367,860	\$ 961,020,516	\$ 928,384,337	\$ 864,738,192
	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018
Employee Contribution Rate	8.25%	8.25%	8.25%	8.25%
Estimated Tax Contribution as a % of Payroll	12.17%	11.58%	11.50%	12.00%
Actuarially Required Net Direct Employer Contribution Rate	21.24%	18.99%	18.87%	16.99%
Actual Employer Contribution Rate †	21.00%	19.00%	19.00%	19.00%

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

Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011
2,208	2,234	2,219	2,248	2,269	2,326
1,235	1,173	1,108	1,064	1,000	975
81	78	88	97	92	88
500	471	444	410	387	372
\$ 90,323,689	\$ 89,814,463	\$ 88,522,141	\$ 86,935,230	\$ 87,238,557	\$ 87,403,148
\$ 30,727,570	\$ 28,162,472	\$ 26,301,025	\$ 23,983,008	\$ 21,372,677	\$ 19,981,482
\$ 531,220,994	\$ 535,853,689	\$ 518,993,448	\$ 443,430,781	\$ 390,272,342	\$ 378,083,955
\$ 700,260,558	\$ 669,774,954	\$ 637,131,442	\$ 593,967,044	\$ 568,108,691	\$ 534,191,730
79.81%	78.76%	74.70%	71.28%	70.61%	72.77%
\$ 558,910,784	\$ 527,535,949	\$ 475,945,220	\$ 423,354,992	\$ 401,136,469	\$ 388,757,787
\$ 84,560,331	\$ 86,060,294	\$ 87,052,600	\$ 87,579,997	\$ 87,771,278	\$ 87,493,460
\$ 144,555,899	\$ 141,097,058	\$ 162,356,479	\$ 161,988,761	\$ 156,709,315	\$ 127,887,962
\$ 56,237,290	\$ 55,853,464	\$ 55,197,088	\$ 53,537,913	\$ 52,501,678	\$ 49,250,744
\$ 7,741,426	\$ 3,449,340	\$ 1,739,546	\$ 1,618,182	\$ 1,505,286	\$ 603,658
\$ 836,522,878	\$ 807,097,425	\$ 778,811,841	\$ 724,843,481	\$ 696,613,454	\$ 652,786,295

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Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012
8.25%	8.25%	8.25%	8.25%	8.25%	8.25%
11.76%	11.76%	11.22%	10.72%	9.94%	9.31%
17.27%	14.37%	17.30%	18.43%	18.45%	16.21%
19.00%	19.00%	19.00%	18.50%	17.25%	17.25%

## 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 the prior provisions, 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. In order for the board to grant any of these increases, the system must meet certain criteria detailed in the statutes related to funding status and interest earnings.

## 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: Salary increases include 2.5% inflation and merit increases. The gross rates including inflation and merit increases are as follows:

<u>Years of Service (less than or equal to)</u>	<u>Salary Increase (in the following year)</u>
1 – 5	6.2%
Above 5	5.0%

ACTIVE MEMBER MORTALITY: Pub-2010 Public Retirement Plans Mortality Table for General Employees multiplied by 120% for males and 120% for females, each with full generational projection using the MP2019 scale.

ANNUITANT AND BENEFICIARY MORTALITY: Pub-2010 Public Retirement Plans Mortality Table for General Healthy Retirees multiplied by 120% for males and 120% for females, each with full generational projection using the MP2019 scale

DISABLED LIVES MORTALITY: Pub-2010 Public Retirement Plans Mortality Table for General Disabled Retirees multiplied by 120% for males and 120% for females, each with full generational projection using the MP2019 scale

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. For Tiers 1 and 2, the rates shown are not adjusted for members at first eligibility. For Tier 3 only, the assumed rate of retirement for members at first eligibility is multiplied by 1.5 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 DROP ENTRY: The table of these rates is included later in the report. These rates apply only to those individuals eligible to retire. For Tiers 1 and 2, the rates shown are not adjusted for members at first eligibility. For Tier 3 only, the assumed rate of retirement for members at first eligibility is multiplied by 2.8 times the relevant rate listed in the table of these rates.

**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.

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

<u>Service Duration ≤</u>	<u>Factor</u>	<u>Service Duration ≤</u>	<u>Factor</u>
1	0.180	11	0.040
2	0.130	12	0.030
3	0.100	13	0.030
4	0.080	14	0.030
5	0.070	15	0.030
6	0.070	16	0.030
7	0.070	17	0.030
8	0.060	18	0.030
9	0.050	19 - 23	0.020
10	0.050	>23	0.010

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

**RETIREMENT RATES FOR ACTIVE FORMER DROP PARTICIPANTS:** The rates of retirement for active former DROP participants are included later in this report.

**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 2019 Table F1: Family Households, by Type, Age of Own Children, Age of Family Members, and Age of Householder provided by the U.S. Census Bureau:

<u>Member's Age</u>	<u>% With Children</u>	<u>Number of Children</u>	<u>Average Age</u>	<u>Remarriage Rates</u>
25	60%	1.77	4	0.04566
35	82%	2.11	8	0.02636
45	63%	1.75	11	0.01355
55	11%	1.42	14	N/A
65	2%	1.50	14	N/A

DISABILITY RATES:	55% of the disability rates used for the 27 <sup>th</sup> 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	Tier 1 and 2 Retirement Rates	Tier 3 Retirement Rates	Tier 1 and 2 DROP Entry Rates	Tier 3 DROP Entry Rates	Disability Rates	Tier 1 and 2 Post-DROP Retirement Rates	Tier 3 Post-DROP Retirement Rates
18	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
19	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
20	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
21	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
22	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
23	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
24	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
25	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
26	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
27	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
28	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
29	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
30	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
31	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
32	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
33	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
34	0.00000	0.00000	0.00000	0.00000	0.00066	0.00000	0.00000
35	0.00000	0.00000	0.00000	0.00000	0.00072	0.00000	0.00000
36	0.00000	0.00000	0.00000	0.00000	0.00072	0.00000	0.00000
37	0.00000	0.00000	0.00000	0.00000	0.00072	0.00000	0.00000
38	0.00000	0.00000	0.00000	0.00000	0.00077	0.00000	0.00000
39	0.00000	0.00000	0.00000	0.00000	0.00083	0.00000	0.00000
40	0.00000	0.00000	0.00000	0.00000	0.00088	0.00000	0.00000
41	0.00000	0.00000	0.00000	0.00000	0.00094	0.00000	0.00000
42	0.00000	0.00000	0.00000	0.00000	0.00099	0.00000	0.00000
43	0.00000	0.00000	0.00000	0.00000	0.00110	0.00000	0.00000
44	0.00000	0.00000	0.00000	0.00000	0.00116	0.00000	0.00000
45	0.00000	0.00000	0.00000	0.00000	0.00132	0.00000	0.00000
46	0.00000	0.00000	0.00000	0.00000	0.00143	0.00000	0.00000
47	0.00000	0.00000	0.00000	0.00000	0.00160	0.00000	0.00000
48	0.00000	0.00000	0.00000	0.00000	0.00182	0.00000	0.00000
49	0.00000	0.00000	0.00000	0.00000	0.00209	0.00000	0.00000
50	0.00000	0.00000	0.00000	0.00000	0.00237	0.00000	0.00000
51	0.00000	0.00000	0.00000	0.00000	0.00270	0.00000	0.00000
52	0.00000	0.00000	0.00000	0.00000	0.00314	0.00000	0.00000
53	0.00000	0.00000	0.00000	0.00000	0.00363	0.00000	0.00000
54	0.00000	0.00000	0.00000	0.00000	0.00424	0.00000	0.00000
55	0.12000	0.00000	0.34000	0.00000	0.00495	0.21000	0.00000
56	0.02000	0.00000	0.23000	0.00000	0.00583	0.21000	0.00000
57	0.06000	0.00000	0.17000	0.00000	0.00688	0.21000	0.00000
58	0.08000	0.00000	0.14000	0.00000	0.00814	0.21000	0.00000
59	0.08000	0.00000	0.12000	0.00000	0.00963	0.21000	0.00000
60	0.08000	0.08000	0.12000	0.12000	0.01315	0.23000	0.23000
61	0.07000	0.07000	0.13000	0.13000	0.01601	0.25000	0.25000
62	0.07000	0.07000	0.15000	0.15000	0.01771	0.26000	0.26000
63	0.07000	0.07000	0.17000	0.17000	0.01859	0.26000	0.26000
64	0.08000	0.08000	0.18000	0.18000	0.01414	0.26000	0.26000
65	0.09000	0.09000	0.20000	0.20000	0.01139	0.25000	0.25000
66	0.11000	0.11000	0.22000	0.22000	0.00286	0.24000	0.24000
67	0.13000	0.13000	0.23000	0.23000	0.00286	0.24000	0.24000
68	0.15000	0.15000	0.24000	0.24000	0.00286	0.23000	0.23000
69	0.16000	0.16000	0.25000	0.25000	0.00286	0.23000	0.23000
70	0.17000	0.17000	0.25000	0.25000	0.00286	0.23000	0.23000
71	0.17000	0.17000	0.25000	0.25000	0.00286	0.23000	0.23000
72	0.16000	0.16000	0.24000	0.24000	0.00286	0.24000	0.24000
73	0.15000	0.15000	0.23000	0.23000	0.00286	0.26000	0.26000
74	0.14000	0.14000	0.20000	0.20000	0.00286	0.27000	0.27000
75	0.14000	0.14000	0.17000	0.17000	0.00286	0.27000	0.27000

## PRIOR YEAR ASSUMPTIONS

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.
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.
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.

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

<u>Member's Age</u>	<u>% With Children</u>	<u>Number of Children</u>	<u>Average Age</u>	<u>Remarriage Rates</u>
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 21<sup>st</sup> 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.



## 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

## 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.

**Tier 1** – Members whose first employment making them eligible for membership in the system began on or before June 30, 2006.

**Tier 2** – Members whose first employment making them eligible for membership in the system began on or after July 1, 2006 and on or before December 31, 2010.

**Tier 3** - Members whose first employment making them eligible for membership in the system began on or after January 1, 2011.

**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.