MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL VALUATION AS OF
JUNE 30, 2021

(Revised February 24, 2022)

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December 3, 2021

Board of Trustees
Municipal Employees' Retirement System
7937 Office Park Boulevard
Baton Rouge, Louisiana 70809

Ladies and Gentlemen:

We are pleased to present our report on the actuarial valuation of the Municipal Employees' Retirement System for the fiscal year ending June 30, 2021. 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 Municipal Employees' Retirement System 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, 2022, and to recommend the net direct employer contribution rate for Fiscal 2023. 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 Municipal Employees' Retirement System for a specific limited purpose. It is not for the use or benefit of any third party for any purpose.

In our opinion, all of the assumptions on which this valuation is based are reasonable individually and in the aggregate. Both economic and demographic assumptions are based on our expectations for future experience for the system. 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 actuary is a member of the American Academy of Actuaries, has met the qualification standards for the American Academy of Actuaries to render the actuarial opinions incorporated in this report, and is available to provide further information or answer any questions with respect to this valuation.

Sincerely,

G. S. CURRAN & COMPANY, LTD.

By: Gregory M. Curran

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

TABLE OF CONTENTS

SUMMARY OF VALUATION RESULTS
MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM – PLAN A

Valuation Date:		June 30, 2021	June 30, 2020
Census Summary:	Active Members	4,611	4,783
	Retired Members and Survivors	3,673	3,618
	Terminated Due a Deferred Benefit	243	213
	Terminated Due a Refund	3,455	3,322
Payroll:		$ 185,740,910	$ 188,745,713
Benefits in Payment:		$ 72,508,122	$ 69,264,254
Present Value of Future Benefits:		$ 1,442,696,909	$ 1,403,364,260
Actuarial Accrued Liability (EAN):		$ 1,238,502,345	$ 1,203,027,922
Frozen Unfunded Actuarial Accrued Liability:		$ 58,511,472	$ 62,368,613
Funding Deposit Account Credit Balance:		$ 10,695,893	$ 10,000,835
Actuarial Value of Assets (AVA):		$ 897,366,504	$ 829,419,184
Market Value of Assets (MVA):		$ 975,735,673	$ 786,276,078
Ratio of AVA to Actuarial Accrued Liability (EAN):		72.46%	68.94%

	Fiscal 2021	Fiscal 2020
Market Rate of Return:	23.8%	2.9%
Actuarial Rate of Return:	7.9%	2.9%

	Fiscal 2022	Fiscal 2021
Employers' Normal Cost (Mid-year):	$ 49,724,456	$ 53,772,836
Amortization Cost (Mid-year):	$ 8,227,944	$ 7,921,125
Estimated Administrative Cost:	$ 1,686,436	$ 1,537,946
Projected Ad Valorem Tax Contributions:	$ (7,299,003)	$ (6,820,604)
Projected Revenue Sharing Funds:	$ (113,530)	$ (113,690)
Net Direct Employer Actuarially Required Contributions:	$ 52,226,303	$ 56,297,613
Projected Payroll:	$ 184,598,042	$ 192,910,572
Board Approved Employee Contribution Rate:	10.00%	10.00%
Board Approved Net Direct Employer Contribution Rate:	29.50%	29.50%
Actuarially Required Net Direct Employer Contribution Rate:	28.29%	29.18%

	Fiscal 2023	Fiscal 2022
Minimum Recommended Net Direct Employer Contribution Rate:	28.25%	29.25%

SUMMARY OF VALUATION RESULTS
MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM – PLAN B

Valuation Date:		June 30, 2021	June 30, 2020
Census Summary:	Active Members	1,980	2,037
	Retired Members and Survivors	1,125	1,107
	Terminated Due a Deferred Benefit	110	103
	Terminated Due a Refund	1,745	1,629
Payroll:		$ 75,792,699	$ 76,799,634
Benefits in Payment:		$ 13,509,829	$ 12,823,215
Present Value of Future Benefits:		$ 325,918,391	$ 316,173,970
Actuarial Accrued Liability (EAN):		$ 273,783,925	$ 264,774,249
Funding Deposit Account Credit Balance:		$ 1,869,690	$ 1,748,191
Actuarial Value of Assets (AVA):		$ 204,077,162	$ 187,812,515
Market Value of Assets (MVA):		$ 219,732,397	$ 177,974,097
Ratio of AVA to Actuarial Accrued Liability (EAN):		74.54%	70.93%

	Fiscal 2021	Fiscal 2020
Market Rate of Return:	22.3%	2.8%
Actuarial Rate of Return:	7.7%	3.0%

	Fiscal 2022	Fiscal 2021
Employers' Normal Cost (Mid-year):	$ 13,340,522	$ 14,226,379
Estimated Administrative Cost:	$ 688,160	$ 625,782
Projected Ad Valorem Tax Contributions:	$ (2,978,402)	$ (2,775,268)
Projected Revenue Sharing Funds:	$ (46,327)	$ (46,260)
Net Direct Employer Actuarially Required Contributions:	$ 11,003,953	$ 12,030,633
Projected Payroll:	$ 76,475,851	$ 78,419,765
Board Approved Employee Contribution Rate:	5.00%	5.00%
Board Approved Net Direct Employer Contribution Rate:	15.50%	15.50%
Actuarially Required Net Direct Employer Contribution Rate:	14.39%	15.34%

	Fiscal 2023	Fiscal 2022
Minimum Recommended Net Direct Employer Contribution Rate:	14.50% †	15.25%

† Revised on February 24, 2022 from 14.25% to 14.50% to reflect proper rate as shown on Exhibit XI

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 is nevertheless a reasonable approach to determine the contribution levels which will provide for the future benefits of plan participants.

Prior to the Fiscal 2021 valuation, the determination of projected payroll was based on the assumption of a stable population. The provisions of Act 298 of the 2020 Regular Session provides that certain employees from the Lafayette City-Parish Consolidated Government first employed on or after November 1, 2020 are to be enrolled in the Parochial Employees' Retirement System instead of Plan A of the Municipal Employees' Retirement System. Without new hires from Plan A's largest employer, this change in statute is expected to result in a consistent reduction in overall Plan A active population. For this reason and in recognition of reductions in plan membership prior to the change related to Lafayette, beginning with the Fiscal 2021 valuation we have computed projected payroll based on a recognition of an expected reduction in overall membership. Although Plan B is unaffected by the change related to the Lafayette City-Parish Consolidated Government, a smaller reduction in active membership was incorporated in projected payroll based on the recent reductions in membership levels.

COMMENTS ON DATA

For the valuation, the administrative director of the system furnished a census on electronic media 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 4,611 active members in Plan A, of whom, 1,830 members, including 212 participants in the Deferred Retirement Option Plan (DROP), have vested retirement benefits; 3,673 former Plan A members or their beneficiaries are receiving retirement benefits. An additional 3,698 former members of Plan A have contributions remaining on deposit with the system. This includes 243 former members who have vested rights or have filed reciprocal agreements for future retirement benefits. Census data on members of Plan B may be found in Exhibit XIX. There are 1,980 active members in Plan B, of whom, 802 members, including 82 DROP participants, have vested retirement benefits; 1,125 former members of Plan B or their beneficiaries are receiving retirement benefits. An additional, 1,855 former members of Plan B have contributions remaining on deposit with the system. Of this number, 110 have vested rights for future retirement benefits.

Census data submitted to our office is tested for errors. Several types of census data errors are possible; to ensure that the valuation results are as accurate as possible, a significant effort is made to identify and correct these errors. In order to minimize coverage errors (i.e., missing or duplicated individual records) the records are checked for duplicates, and a comparison of the current year's records to those submitted in prior years is made. Changes in status, new records, and previous records 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 administrative staff for verification and/or correction. Once the identified data has been researched and verified or corrected, it is returned to us for use in the valuation. Occasionally some requested information is either unavailable or impractical to obtain. In such cases, values may be assigned to missing data. The assigned values are based on information from similar records or based on information implied from other data in the record. For this valuation, the number of such records is de minimis.

In addition to the statistical information provided on the system's participants, the system's administrative director furnished general information related to other aspects of the system's expenses, benefits and funding. Except as stated below, 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 Hawthorn, Waymouth, and Carroll, L.L.P. As indicated in the system's audit report, the net market value of Plan A's assets was $975,735,673 as of June 30, 2021. For Plan A, the net investment income for Fiscal 2021 measured on a market value basis amounted to $187,358,760. Contributions to Plan A for the fiscal year totaled $86,188,567; benefits and expenses amounted to $84,087,732.

The net market value of Plan B's assets was $219,732,397 as of June 30, 2021. For Plan B, the net investment income for Fiscal 2021 measured on a market value basis amounted to $39,938,442. Contributions to Plan B for the fiscal year totaled $18,548,784; benefits and expenses amounted to $16,728,926.

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

Prior to Fiscal 2018 both plans' valuations were based on the Frozen Attained Age Normal actuarial cost method with the unfunded actuarial accrued liability frozen as of June 30, 1989. Under the provisions of Louisiana R.S. 11:103 the unfunded accrued liability for Plan A, which was determined to be $48,466,297 as of June 30, 1989, was amortized over forty years with payments increasing at 4.25% per year. The unfunded accrued liability for Plan B, which was determined to be $9,853,175 as of June 30, 1989, was amortized over forty years with payments decreasing at 2% per year. In Plan A, payroll growth less than 4.25% per year will increase future amortization payments as a percent of payroll. In Plan B, prior to the early payoff of the unfunded accrued liability, any payroll growth or payroll decline less than 2% per year would reduce future amortization payments as a percent of payroll. As of June 30, 2018, the remaining balance of the frozen unfunded accrued liability for Plan B was completely offset by a portion of the credit balance in the plan's Funding Deposit Account. With the unfunded accrued liability fully amortized, the actuarial funding method for Plan B has been converted to the Aggregate Funding Method in accordance with R.S. 11:22(D). Under both the Frozen Attained Age Normal Cost Method and the Aggregate Funding 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.

Prior to the June 30, 2009 valuation, in any year in which the net direct employer contribution was set above the actuarially required employer contribution rate, excess funds collected, if any, were used to reduce the frozen unfunded actuarial accrued liability. Effective with the June 30, 2009 valuation, any excess funds collected as a result of a freeze in employer contributions are credited to the Funding Deposit Account. Funds deposited into the Funding Deposit Account can be used to reduce the unfunded accrued liability, reduce future normal costs, fund cost of living increases to retirees, or offset net direct employer contributions as determined by the Board of Trustees.

The current year actuarial assumptions utilized for this report are based on the results of an actuarial experience study for the period July 1, 2013 – June 30, 2018, 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. Details related to the study are contained within the 2019 Municipal Employees' Retirement System Experience Study Report.

Based upon contraction in the capital market assumptions produced by investment consultants and investment market participants, a significant effort has been made since 2017 to reduce the long-term rate of return assumption. During this period, recommendations have been formed based on analysis of the system's target portfolio allocations along with expected long-term rates of return, standard deviations of return, and correlations between asset classes collected from a number of investment consulting firms in addition to the system's investment consultants, Meketa Investment Group. Based on such analyses and after discussions with the Board, the 7.5% valuation interest rate in effect for the Fiscal 2016 actuarial valuation has been lowered each year in order to maintain a valuation interest rate that is within the actuary's reasonable range. The valuation interest rate used in the Fiscal 2020 valuation was 6.95%.

In reviewing the valuation interest rate for Fiscal 2021, consideration was given to several factors. The Fund's target asset allocation was reviewed based upon the G. S. Curran & Company consultant average return study for 2021. The study found that the 6.95% assumed rate of return used in the 2020 valuation remained within the actuary's reasonable range. 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. Despite this fact, the system's actuary recommended that the Board of Trustees consider a further opportunistic reduction in the system's valuation interest rate given the significant positive investment returns generated during fiscal 2021. In July of 2021, the Board of Trustees approved the use of a lower valuation interest rate for Fiscal 2021. In conjunction with the Board's decision, the assumed rate of return for the Fiscal 2021 valuation was set at 6.85% for Plans A and B. For 2021, an assumed rate of inflation of 2.5% was implicit in the assumed rate of return for Plans A and B.

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. No COLAs have been provided since 2009. Furthermore, the Board of Trustees has the right to set aside funds in its Funding Deposit Account for a variety of purposes, including the prefunding of COLAs. 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 Fiscal 2021 valuation was also updated to utilize updated option factors in determining the value of automatic option 2 benefits available to the surviving spouse of certain deceased active members.

The current year actuarial assumptions utilized for the report are outlined at the end of this report. All assumptions other than those mentioned above are based on estimates of future long-term experience for the system as described in the system's 2019 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 will be required to contribution levels. Such differences will be revealed in future actuarial valuations. The net effect of all changes in assumptions was to increase the normal cost accrual rate by 1.0205% in Plan A and 0.6153% in Plan B.

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 assesses 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 contributions slightly exceed annual benefit payments in both Plan A and Plan B. Future net noninvestment cash flows for each plan will be determined based upon both the plan's 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 plan whereas reduced contribution levels resulting from positive experience could lead to negative cash flows. Recent experience includes years in which the system's benefit payments exceeded contribution income. Such negative noninvestment cash flows will likely occur again in the future given the expectation of a lower active population.

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 (such as pandemics like COVID-19) 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 72.46% for Plan A and 74.54% for Plan B as of June 30, 2021. 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. Exhibits X and XX give 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. For this plan, we have determined that based on current assets and demographics, for each percentage under the assumed rate of return on the actuarial value of assets, there will be a corresponding increase in the actuarially required contribution as a percentage of projected payroll of 0.67% for Plan A and 0.38% for Plan B.

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 system, we have estimated the effective liability duration as 9.84 for Plan A and 10.29 for Plan B.

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 2021, this ratio is 39% for Plan A and 18% for Plan B. Ten years ago this ratio was 27% for Plan A and 12% for Plan B.

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 2022 by 7.21% of payroll for Plan A and 6.09% of payroll for Plan B. 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 following changes in plan provisions were enacted during the 2021 Regular Session of the Louisiana Legislature:

Act 36 provides for the purchase of service credit for any period of involuntary furlough due to a reduction-in-force of his employer or was involuntary furloughed or placed on leave without pay due to the COVID-19 pandemic if such service was not credited to his account. The purchase requires a payment to the system of the employee and employer contribution which would have been remitted to the system by his employer if not for the involuntary furlough or leave without pay.

ASSET EXPERIENCE

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

Plan A	Market Value	Actuarial Value
2012	-4.8% †	0.7%
2013	4.3%	0.7%
2014	12.3%	5.8%
2015	-3.1%	3.7%
2016	-2.9%	0.8%
2017	4.7%	2.3%
2018	6.1%	2.8%
2019	4.9%	1.7%
2020	2.9%	2.9%
2021	23.8%	7.9%

Plan B	Market Value	Actuarial Value
2012	-4.7% †	1.0%
2013	4.1%	0.9%
2014	11.7%	5.6%
2015	-3.2%	3.5%
2016	-2.9%	0.7%
2017	4.6%	2.2%
2018	6.0%	2.7%
2019	4.8%	1.9%
2020	2.8%	3.0%
2021	22.3%	7.7%

† Based upon asset values which include an unaudited "best estimate" of the value of a receivable related to the FIA Leveraged Fund.

Geometric Average Market Rates of Return – Plan A

5-year average	(Fiscal 2017 – 2021)	8.2%
10-year average	(Fiscal 2012 – 2021)	4.5%
15-year average	(Fiscal 2007 – 2021)	4.6%
20-year average	(Fiscal 2002 – 2021)	4.8%
25-year average	(Fiscal 1997 – 2021)	5.6%
30-year average	(Fiscal 1992 – 2021)	6.2%

Geometric Average Market Rates of Return – Plan B

5-year average	(Fiscal 2017 – 2021)	7.9%
10-year average	(Fiscal 2012 – 2021)	4.3%
15-year average	(Fiscal 2007 – 2021)	4.4%
20-year average	(Fiscal 2002 – 2021)	4.6%
25-year average	(Fiscal 1997 – 2021)	5.4%
30-year average	(Fiscal 1992 – 2021)	6.1%

The market rate of return gives a measure of investment return on a total return basis and includes realized and unrealized capital gains and losses as well as interest income. This rate of return gives an indication of performance for an actively managed portfolio where securities are bought and sold with the objective of producing the highest total rate of return. During 2021, Plan A earned $1,783,224 and Plan B earned $434,035 of dividends and interest income. In addition, Plan A had net realized and unrealized capital gains on investments of $188,001,369 while the total of such gains for Plan B amounted to $40,020,860. Investment expenses were $2,425,833 for Plan A and $516,453 for Plan B.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 6.95% used for the prior valuation. This rate is calculated based on the smoothed value of assets subject to constraints as given in Exhibit VI for Plan A and Exhibit XVI for Plan B. Investment income used to calculate this yield is based upon a smoothing of investment income above or below the valuation interest rate. 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 valuation interest rate assumption will reduce future costs; yields below the valuation interest rate assumption will increase future costs. For Plan A, the net actuarial investment earnings for Fiscal 2021 were $8,130,074 more than the actuarial assumed earnings rate of 6.950%, and were $1,329,641 more for Plan B. These actuarial gains reduced the normal cost accrual rate by 0.6102% for Plan A and 0.2506% for Plan B.

At the end of each fiscal year, a review of the data is made to identify current members of Plan A and Plan B who have consecutive service credit in both plans that have not been addressed in previous transfers of assets and liabilities between the Plan A and Plan B trust funds pursuant to the provisions of R.S. 11:1862(F). In the course of reviewing data for the June 30, 2021 valuation we found 2 members of Plan A with Plan B service credit and 2 such members of Plan B with Plan A service for whom a transfer must be made. Based upon a valuation of the liabilities for service in the previous plan, we recommend a transfer of $2,996 with accrued interest thereon from June 30, 2021 be made from the Plan B trust to the Plan A trust for Fiscal 2021.

PLAN A – DEMOGRAPHICS AND LIABILITY EXPERIENCE

A reconciliation of the census for the plan is given in Exhibit IX. The average active member is 49 years old with 9.37 years of service and an annual salary of $40,282. The plan’s active membership, inclusive of DROP participants, decreased by 172 members during the fiscal year. The plan has experienced a decrease in the active plan population of 301 members over the last five years. A review of the active census by age indicates that over the last ten years the proportion of the population between age thirty and forty and above age sixty has increased while the proportion of active members between age forty and fifty has decreased. Over the same ten-year period the plan showed an increase in members with less than ten years of service.

The average regular retiree is 71 years old with a monthly benefit of $1,851. The average age at retirement for regular retirees is 60. The number of retirees and beneficiaries receiving benefits from the system increased by 55 during the fiscal year; over the last five years the number of retirees has increased by 328 and benefit payments have increased by $14,612,840.

Plan liability experience for Fiscal 2021 was unfavorable. Retirements and DROP entries were significantly above expected levels. These factors tend to increase costs. Withdrawals above expected levels, disabilities slightly below expected levels and retiree deaths above expected levels partially offset the increase. Salary increases were near projected levels. Overall, plan liability losses increased the normal cost accrual rate by 0.0622%.

PLAN B – DEMOGRAPHICS AND LIABILITY EXPERIENCE

A reconciliation of the census for the plan is given in Exhibit XIX. The average active member is 50 years old with 9.42 years of service and an annual salary of $38,279. The plan’s active membership, inclusive of DROP participants, decreased by 57 members during the fiscal year. The plan has experienced a decrease in the active plan population of 162 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 sixty age group on average has decreased while the proportion of active members over age sixty increased. Over the same ten-year period the plan showed relatively the same number of members at almost all service durations. The average regular retiree is 73 years old with a monthly benefit of $1,097. The average age at retirement for regular retirees is 63. The number of retirees and beneficiaries receiving benefits from the system increased by 18 during the fiscal year; over the last five years the number of retirees has increased by 150 and benefit payments have increased by $3,254,865.

Plan liability experience for Fiscal 2021 was favorable. Withdrawals and retiree deaths were above expected levels, disabilities were below expected levels, and average salary increases were below expected levels. These factors tend to decrease costs. Retirements and DROP entries above projected levels partially offset these savings. Overall, plan liability gains decreased the normal cost accrual rate by 0.1972%.

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. The funding method in use for Plan A includes both normal cost and amortization of an unfunded actuarial accrued liability. The funding method in use for Plan B accounts for the fact that there is no unfunded actuarial accrued liability and therefore no need to account for an amortization payment. Neither funding method accounts for changes in plan experience, benefits, or assumptions within the 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 (if any). 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.

Under the provisions of R.S. 11:103, excess or deficient contributions typically decrease or increase future normal costs. However, if the minimum net direct employer contribution is scheduled to decrease, the Board may maintain the contribution rate at some level above the minimum recommended rate. Pursuant to R. S. 11:105 and R. S. 11:107, such excess contributions are credited to the Funding Deposit Account. In addition, in accordance with R.S. 11:106, the Board may set the employer contribution rate up to 3% more than the minimum required contribution rate; any additional funds collected are credited to the Funding Deposit Account.

For Plan A, the derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The normal cost for Fiscal 2022 adjusted for mid-year payment is $49,724,456. The amortization payment on the plan’s frozen unfunded actuarial accrued liability adjusted for mid-year payment is $8,227,944. The total actuarially required contribution is determined by adding estimated administrative expenses to these two values. As given on line 16 of Exhibit I the gross actuarially required employer contribution for Fiscal 2022 is $59,638,836. When this amount is reduced by projected tax contributions and revenue sharing funds, the resulting employers' minimum net direct actuarially required contribution for Fiscal 2022 is $52,226,303. This is 28.29% of the projected Plan A payroll for Fiscal 2022.

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 would increase required contributions (unless it is offset by a withdrawal from the Funding Deposit Account). 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 cost structure for Plan A are outlined below:

Employer's Normal Cost Accrual Rate – Fiscal 2021	30.1339%
Factors Increasing the Normal Cost Accrual Rate:	
Assumption Changes	1.0205%
Plan Liability Experience Loss	0.0622%
Factors Decreasing the Normal Cost Accrual Rate:	
Asset Experience Gain	0.6102%
Contribution Gain	0.2589%
New Members	2.0087%
Employer's Normal Cost Accrual Rate – Fiscal 2022	28.3388%

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 for Plan A these funds collected in Fiscal 2022 will increase by 0.43% of payroll. We also estimate the amortization payment on the fund's UAL will increase by 0.35% of projected payroll. The net effect of the above changes in the cost structure of the system resulted in a minimum actuarially required net direct employer contribution rate for Fiscal 2022 for Plan A of 28.29%; the board approved employer contribution rate for Fiscal 2022 is 29.50% of payroll. 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 for Plan A of 28.25% for Fiscal 2023.

For Plan B, the derivation of the actuarially required contribution for the current fiscal year is given in Exhibit XI. The normal cost for Fiscal 2022 adjusted for mid-year payment is $13,340,522. Based upon the Board of Trustees' decision to use a portion of the credit balance in the plan's Funding Deposit Account to pay off the remaining balance on the frozen unfunded accrued liability in Fiscal 2018, there is no projected amortization payment in the calculation of the minimum recommended net direct employer contribution rate for Fiscal 2023. The total actuarially required contribution is determined by adding estimated administrative expenses to the normal cost accrual rate. As given on line 12 of Exhibit XI the gross actuarially required employer contribution for Fiscal 2022 is $14,028,682. When this amount is reduced by projected tax contributions and revenue sharing funds, the resulting employers' minimum net direct actuarially required contribution for Fiscal 2022 is $11,003,953. This is 14.39% of the projected Plan B payroll for Fiscal 2022.

The effects of various factors on the cost structure for Plan B are outlined below:

Employer's Normal Cost Accrual Rate – Fiscal 2021	19.7741%
Factors Increasing the Normal Cost Accrual Rate:	
Assumption Changes	0.6153%
Contribution Loss	0.0710%
Factors Decreasing the Normal Cost Accrual Rate:	
Asset Experience Gain	0.2506%
Plan Liability Experience Gain	0.1972%
New Members	1.2083%
Employer's Normal Cost Accrual Rate – Fiscal 2022	18.8043%

We estimate that for Plan B, the funds collected from ad valorem taxes and revenue sharing funds in Fiscal 2022 will increase by 0.36% of payroll. The net effect of the above changes in the cost structure of the system resulted in a minimum actuarially required net direct employer contribution rate for Fiscal 2022 for Plan B of 14.39%; the actual employer contribution rate for Fiscal 2022 is 15.50% of payroll. 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 for Plan B of 14.50% for Fiscal 2023.

Both Plan A and Plan B have Funding Deposit Account Credit Balances. Since neither plan experienced a contribution gain due to a net direct employer contribution rate above the minimum recommended employer contribution rate during Fiscal 2021, no additional funds were credited to the Funding Deposit Account during the year. In accordance with R.S. 11:107.1(D), the balances were adjusted for the accrual of interest at the valuation interest rate. The remaining funds in these accounts may be used to reduce the outstanding unfunded accrued liability, reduce the future normal costs, fund cost of living increases to retirees, or reduce contributions for specified fiscal years.

COST OF LIVING INCREASES

During Fiscal 2021 the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 5.4%. Cost of living provisions for the system are detailed in R.S. 11:1761, R.S. 11:246, and R.S. 11:241. R.S. 11:1761 allows the Board to use interest earnings in excess of the normal requirements to grant annual cost of living increases of 2% of each retiree's original benefit. R.S. 11:246 provides cost of living increases of 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. 11:241 do not repeal provisions relative to cost-of-living adjustments contained within the individual laws governing systems; however, they are to be controlling in cases of conflict.

In addition, Act 113 of the 2008 Regular Legislation Session provides for a COLA of 3% of the normal monthly benefit but not less than $20 per month. Although this COLA is permanent, it may only be granted once. This one-time cost of living increase may only be paid from excess interest earnings.

Based upon the irrevocable election of the Board of Trustees to accept the alternative method for determining eligibility to authorize cost of living increases under Act 170 of the 2013 Legislative Session, the ratio of the plan's assets to benefit obligations must meet the criteria established in R.S. 11:243. Under this section, the system would only be authorized to grant a COLA under R. S. 11:241, R.S. 11:246, or R. S. 11: 1761 in fiscal years in which the rate of return on an actuarial basis exceeds the valuation interest rate and one of the following applies:

1. The system has a funded ratio of 90% or more and has not granted a benefit increase to retirees, survivors, and beneficiaries in the most recent fiscal year.
2. The system has a funded ratio of 80% or more and has not granted a benefit increase to retirees, survivors, and beneficiaries in the two most recent fiscal years.
3. The system has a funded ratio of 70% or more and has not granted a benefit increase to retirees, survivors, and beneficiaries in the three most recent fiscal years.

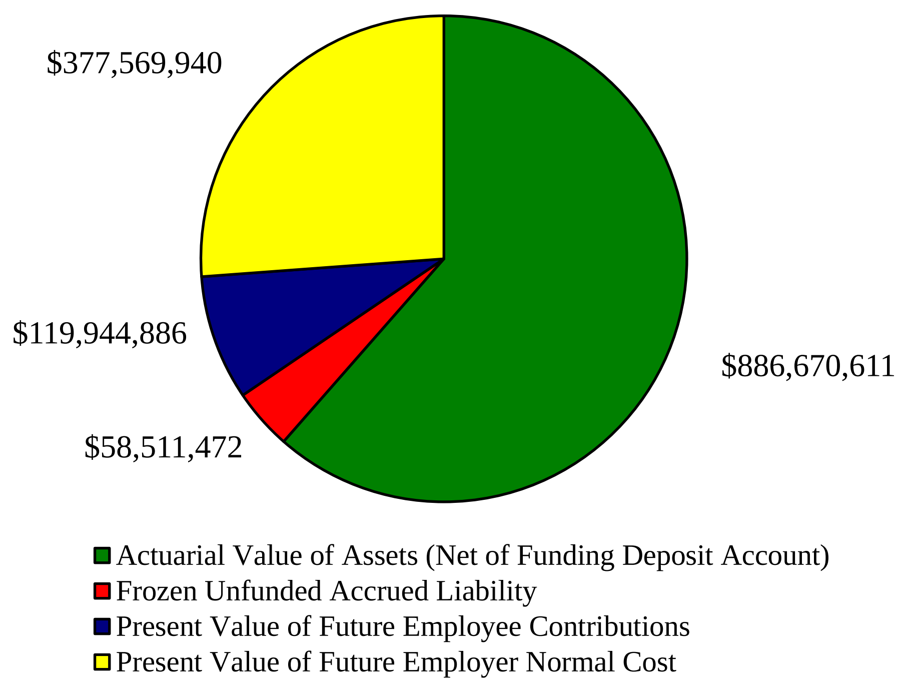
We have determined that for Fiscal 2021, both plans had excess interest earnings. Plan A experienced $8,130,074 and Plan B experienced $1,329,641 in investment earnings in excess of expectations. Therefore, since both Plans meet the provisions of R.S. 11:243 and experienced excess interest earnings, the Board of Trustees is authorized to grant an ad hoc cost-of-living increase even if not paid out of the Funding Deposit Account. Since the level of excess interest earnings is insufficient to cover the full cost-of-living increase under R.S. 11:1761, the Board of Trustees would be required to reduce the benefit payable to allowable pensioners to a level where the present value of the increase does not exceed the excess interest earnings if electing to pay a cost-of-living increase according to this provision.

Below is a summary of applicable cost-of-living increases and their respective costs.

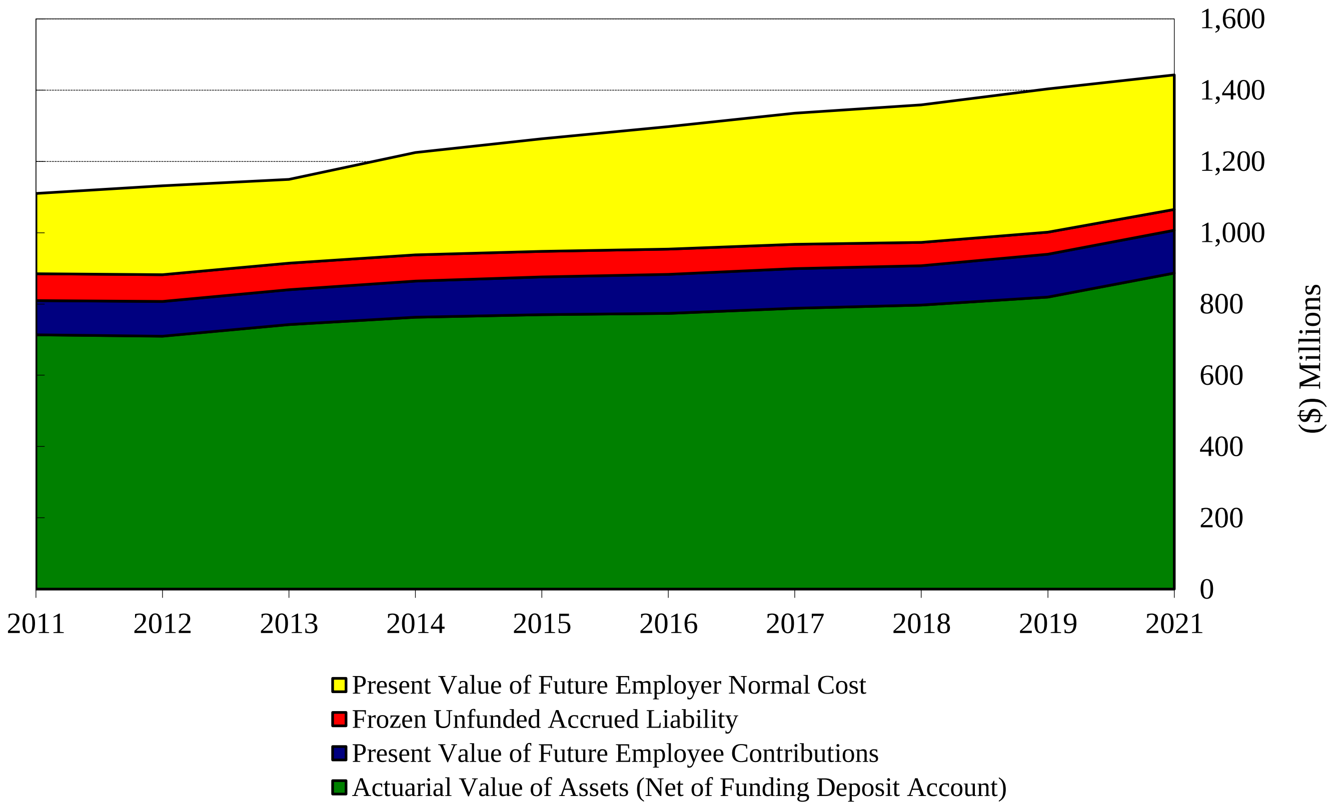
COLA Description	Plan	Increase in Benefits	Present Value Of Increase	Contribution Cost
2% original benefit	A	$ 1,380,576	$ 12,909,972	0.97%
2% original benefit over age 65	A	$ 949,147	$ 7,966,070	0.60%
3% current benefit - $20/mo. min	A	$ 2,181,648	$ 20,110,230	1.51%
2% original benefit	B	$ 255,810	$ 2,267,032	0.43%
2% original benefit over age 65	B	$ 205,292	$ 1,703,393	0.32%
3% current benefit - $20/mo. min	B	$ 435,507	$ 3,781,434	0.71%

Please note that COLAs funded from the Funding Deposit Account are not expected to increase employer contribution rates in the following year's valuation.

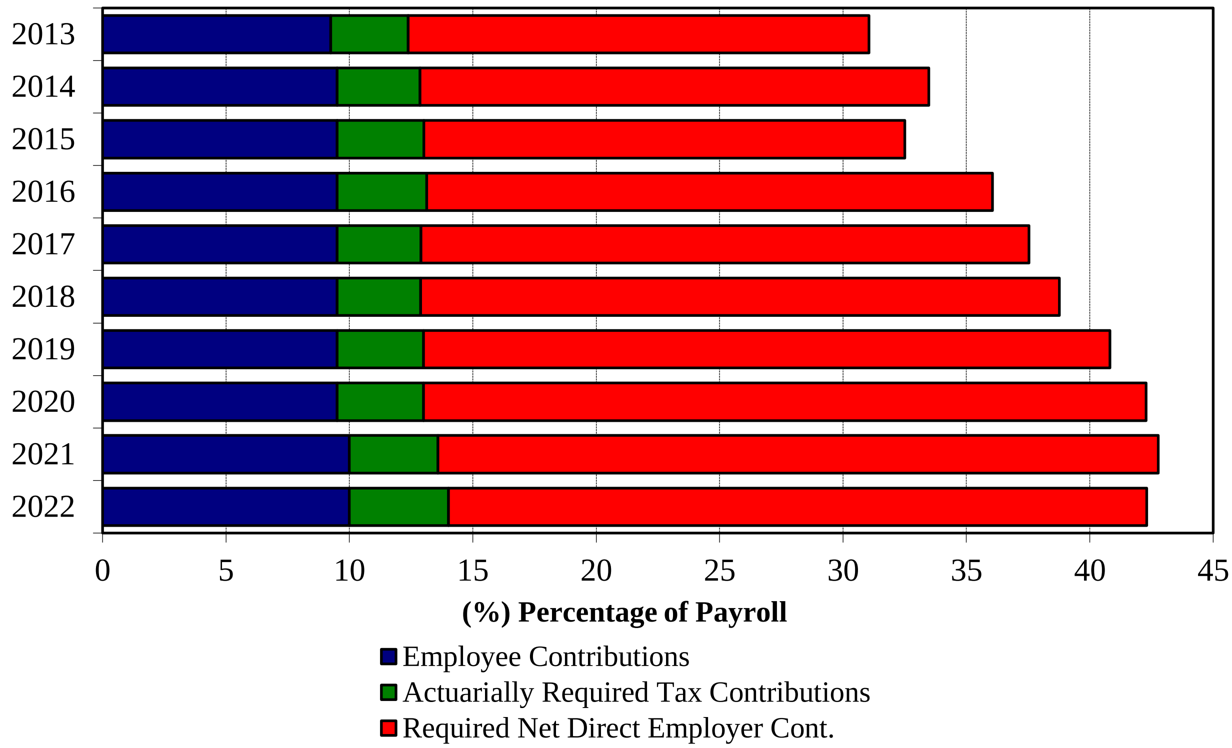
Plan A – Components of Present Value of Future Benefits
June 30, 2021



Plan A – Components of Present Value of Future Benefits

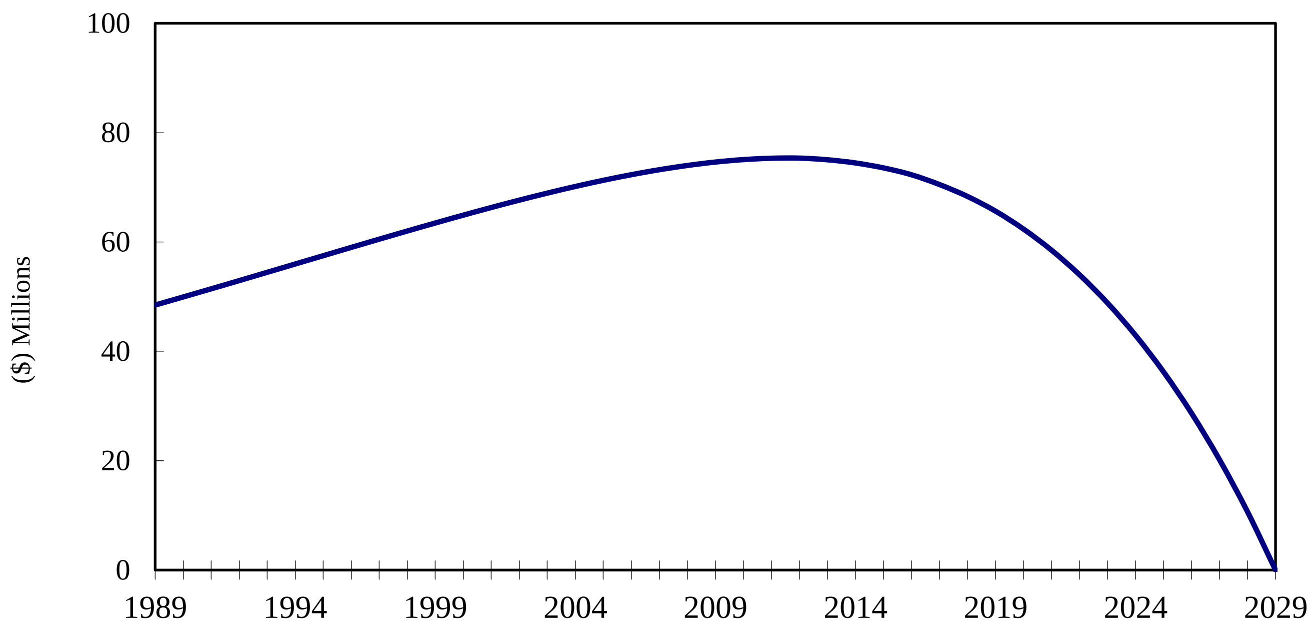


Plan A – Components of Actuarial Funding

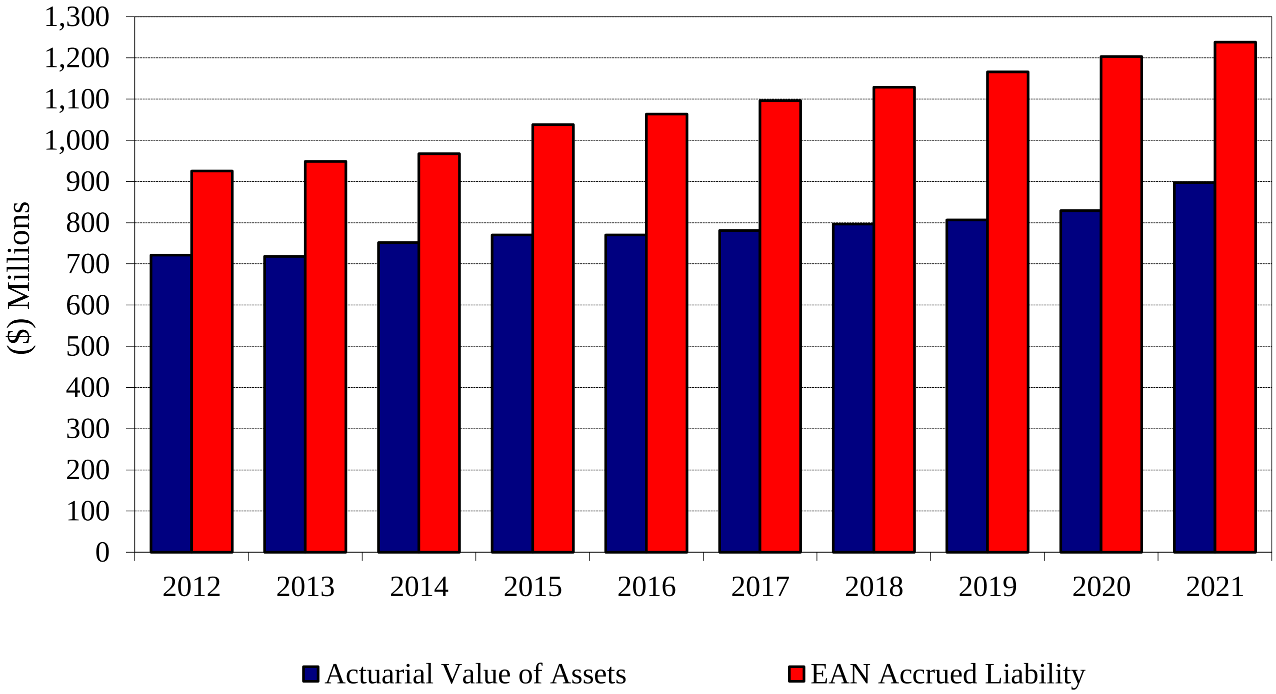


Projected Tax Contributions consist of Projected Ad Valorem and Revenue Sharing Funds as a percent of payroll

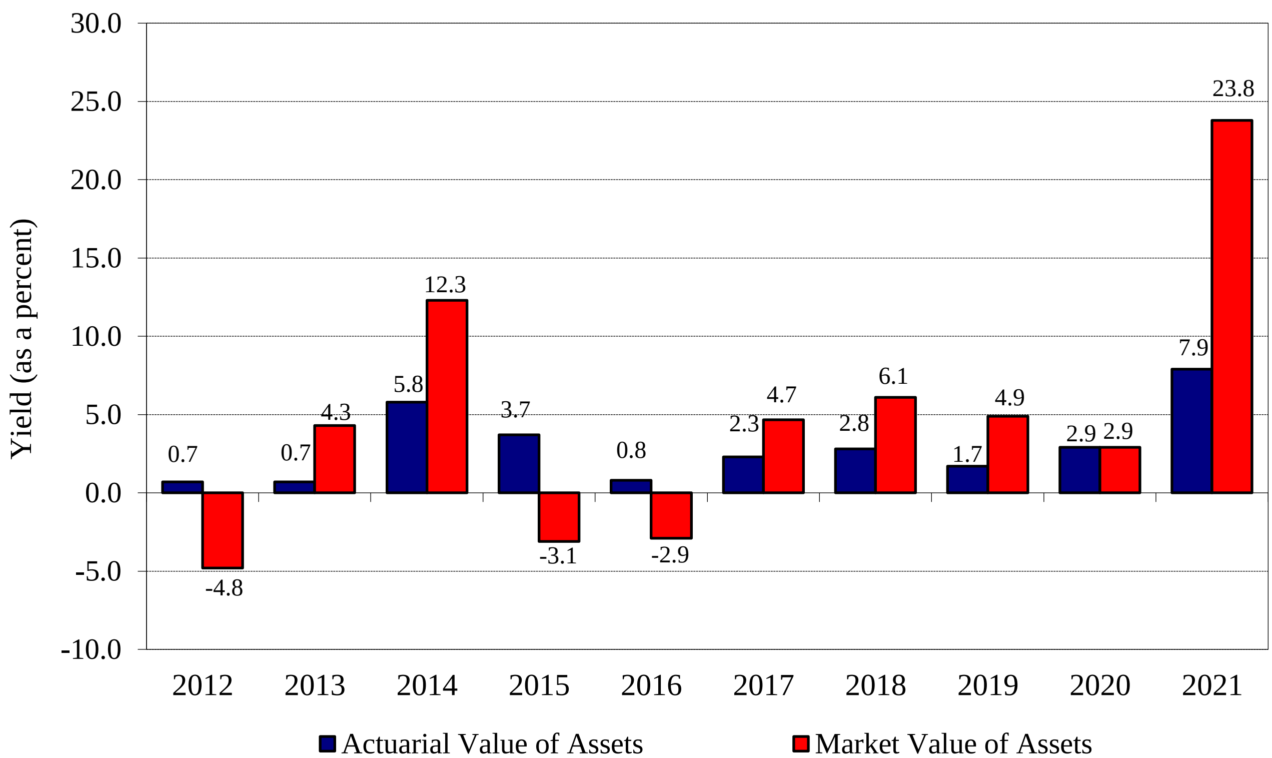
Plan A – Frozen Unfunded Accrued Liability



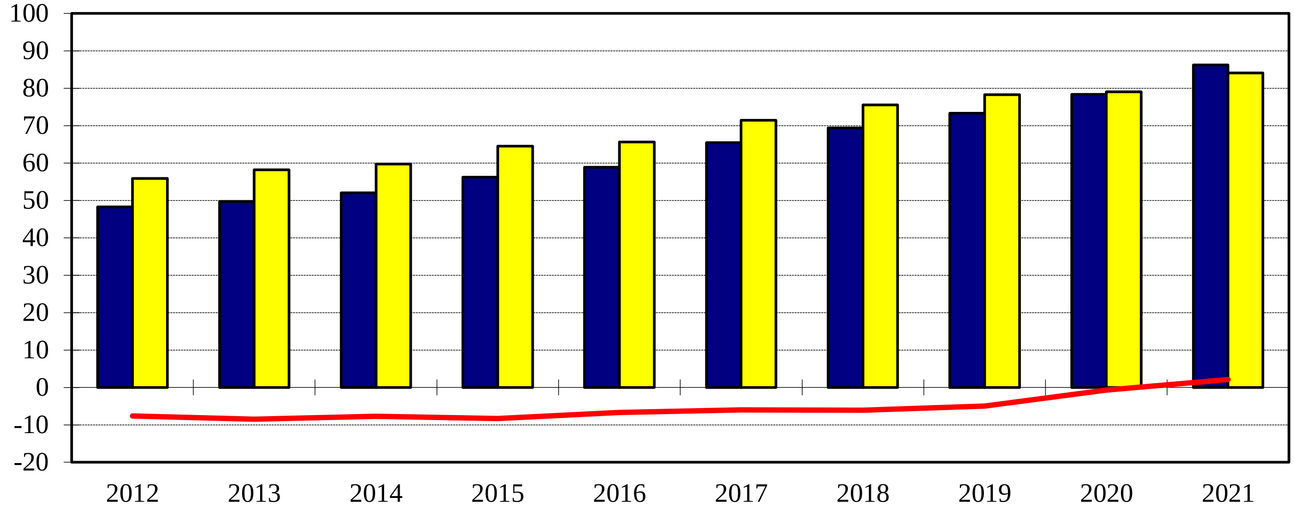
Plan A – Actuarial Value of Assets vs. EAN Accrued Liability



Plan A – Historical Asset Yield



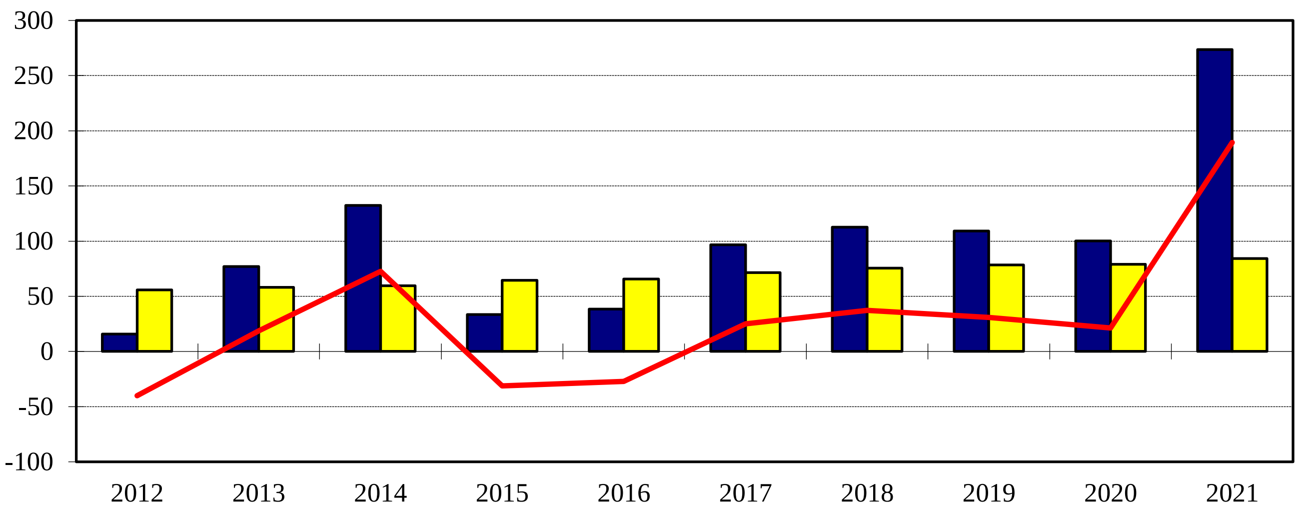
Plan A – Net Non-Investment Income



		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Non-Investment Income ($Mil)		48.3	49.7	52.0	56.2	58.9	65.4	69.4	73.3	78.3	86.2
Benefits and Expenses ($Mil)		55.9	58.2	59.7	64.5	65.6	71.4	74.5	78.3	79.0	84.1
Net Non-Investment Income ($Mil)		-7.6	-8.5	-7.7	-8.3	-6.7	-6.0	-5.1	-5.0	-0.7	2.1

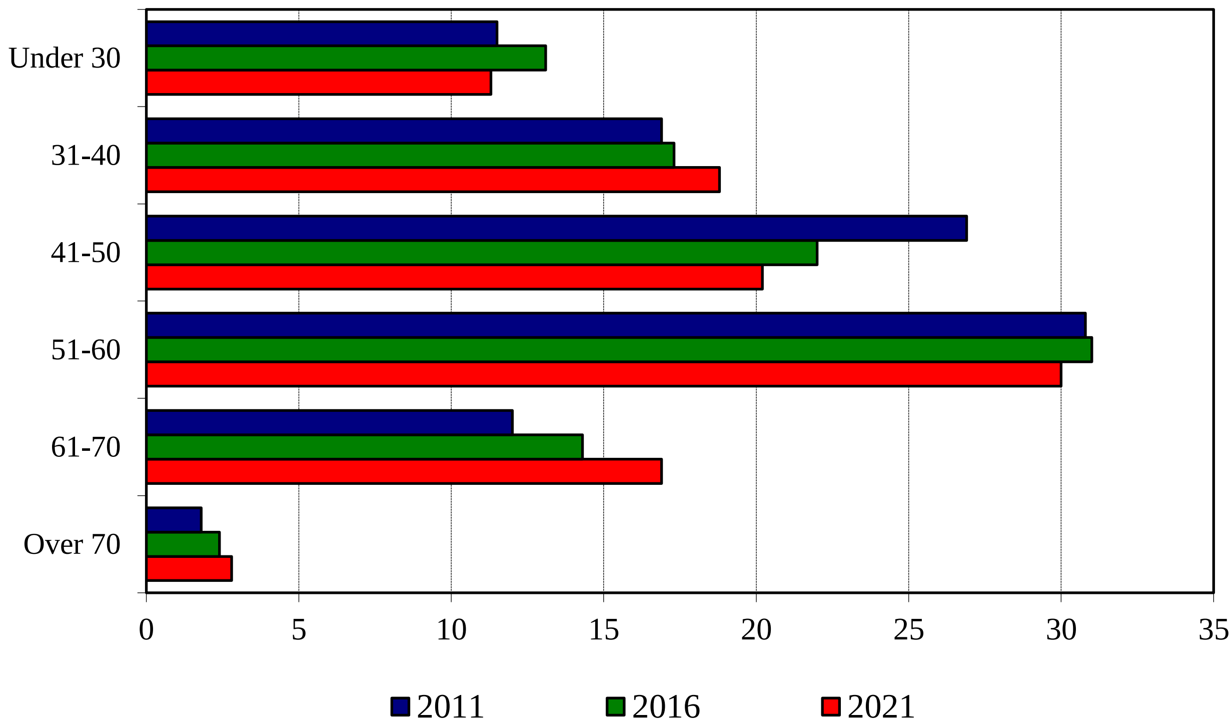
Plan A – Total Income vs. Expenses

(Based on Market Value of Assets)

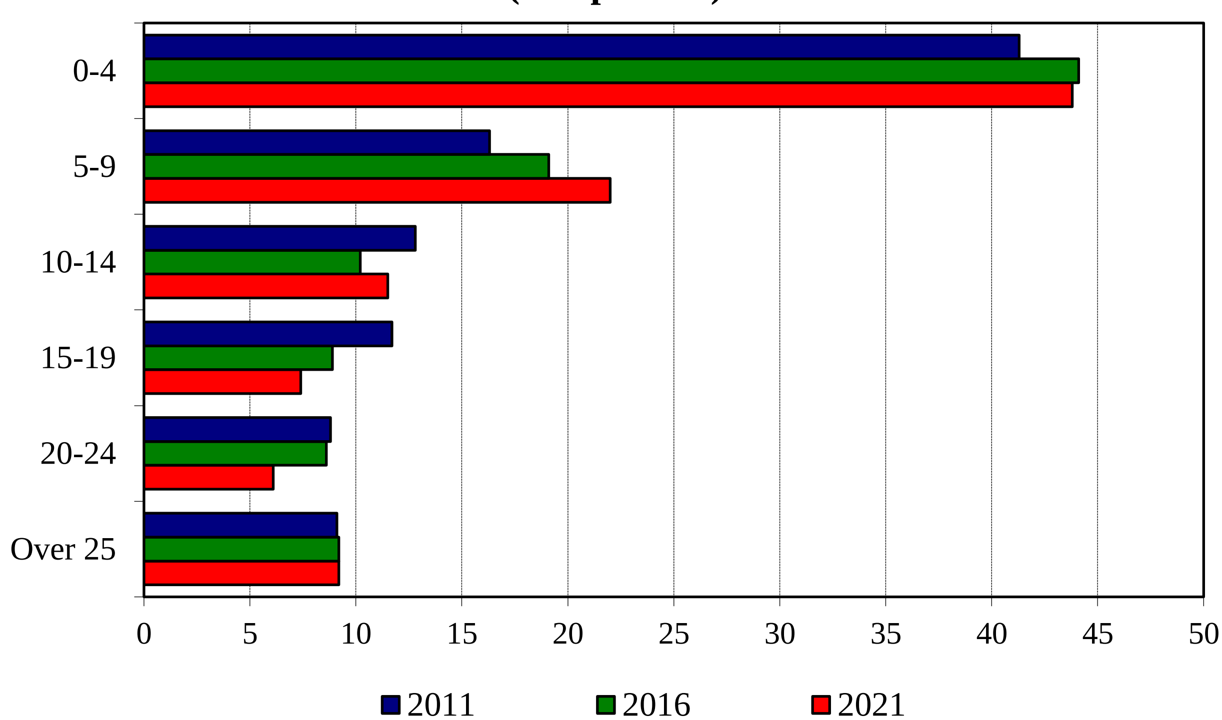


		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total Income ($Mil)		15.8	77.0	132.4	33.4	38.5	96.6	111.7	109.1	100.2	273.5
Benefits and Expenses ($Mil)		55.9	58.2	59.7	64.5	65.6	71.4	74.5	78.3	79.0	84.1
Net Change in MVA ($Mil)		-40.1	18.8	72.7	-31.1	-27.1	25.2	37.2	30.8	21.2	189.4

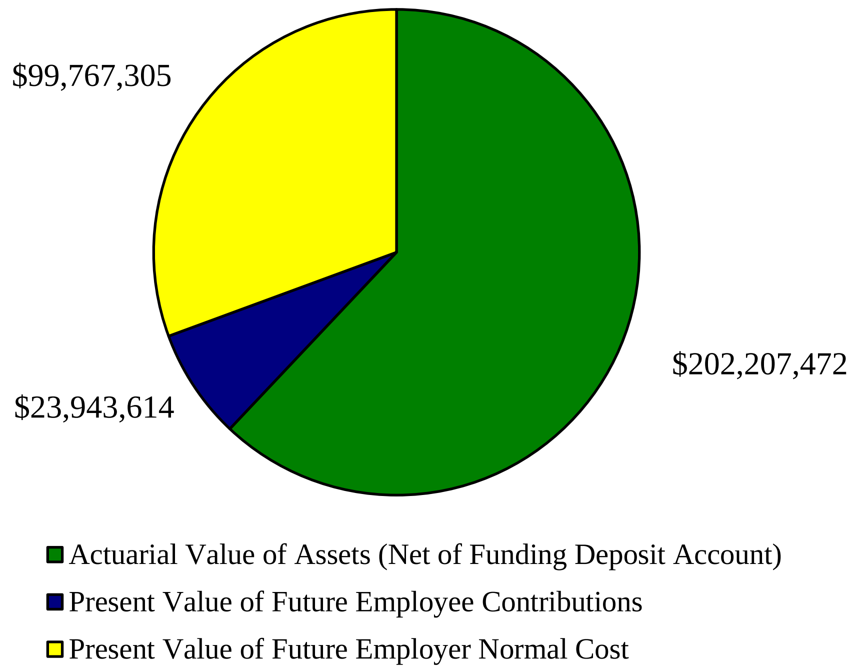
Plan A – Active – Census By Age
(as a percent)



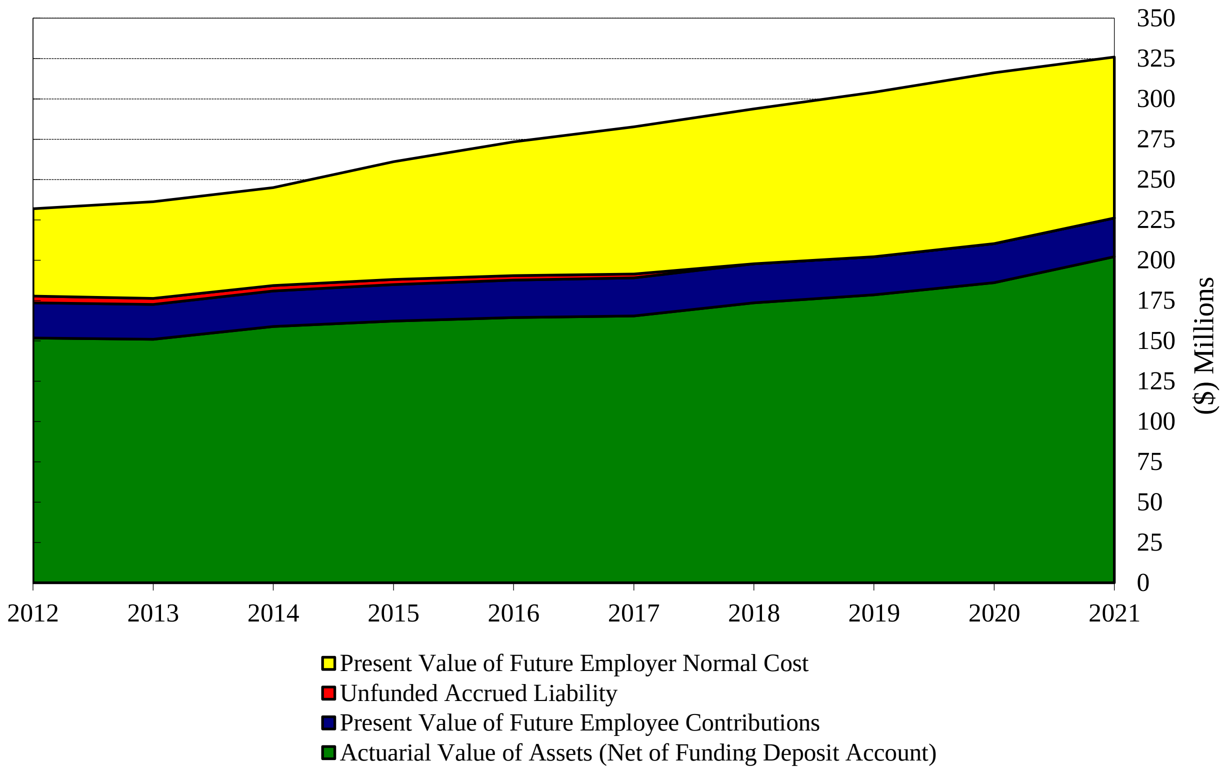
Plan A – Active – Census By Service
(as a percent)



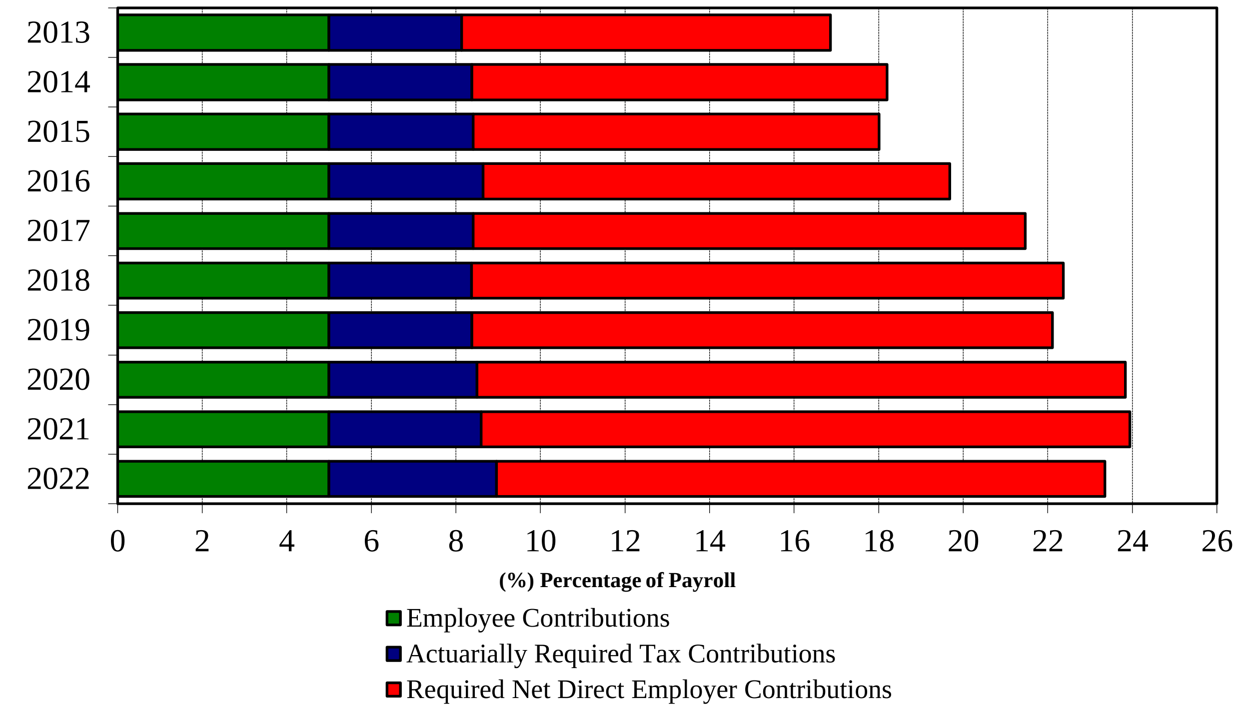
Plan B – Components of Present Value of Future Benefits
June 30, 2021



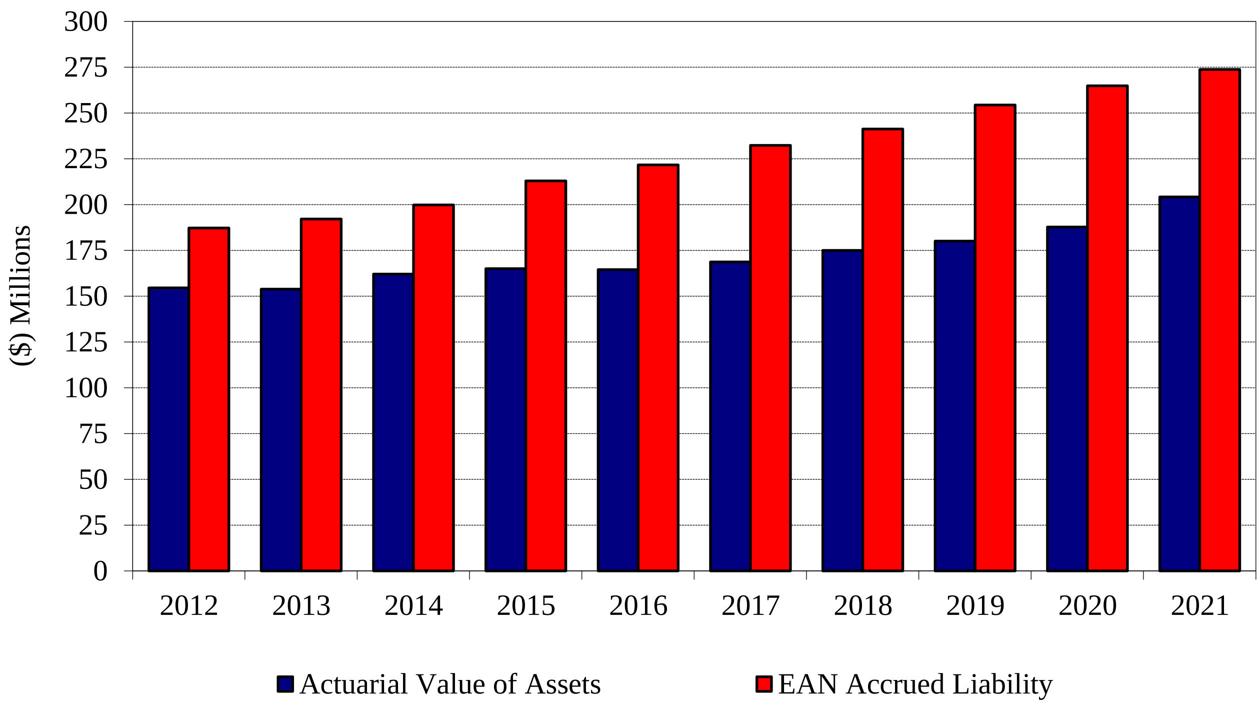
Plan B – Components of Present Value of Future Benefits



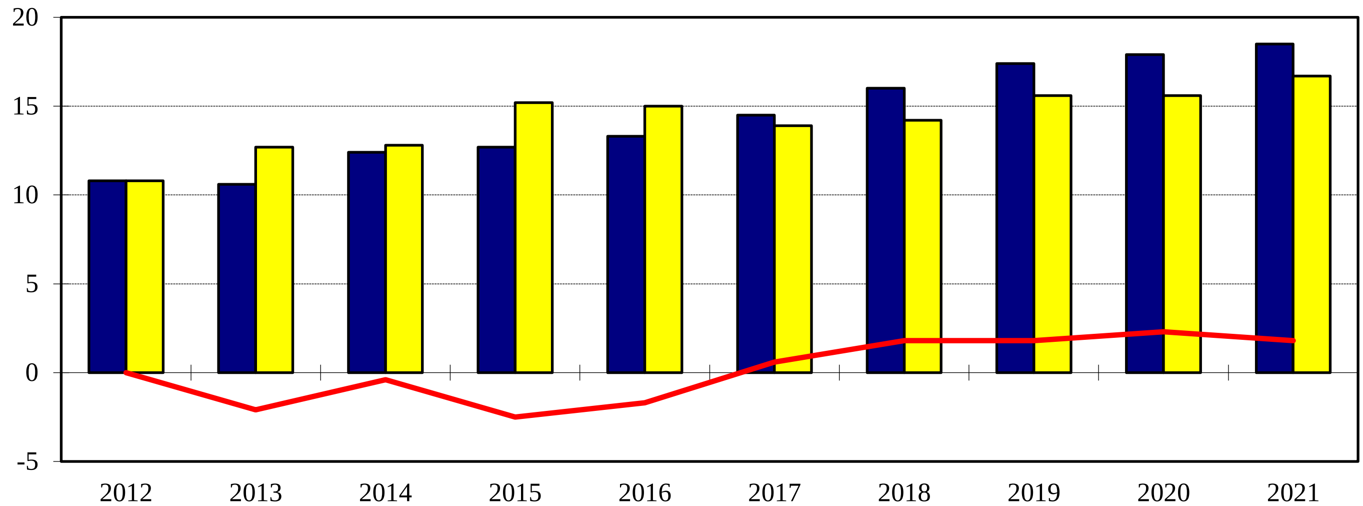
Plan B – Components of Actuarial Funding



Plan B – Actuarial Value of Assets vs. EAN Accrued Liability

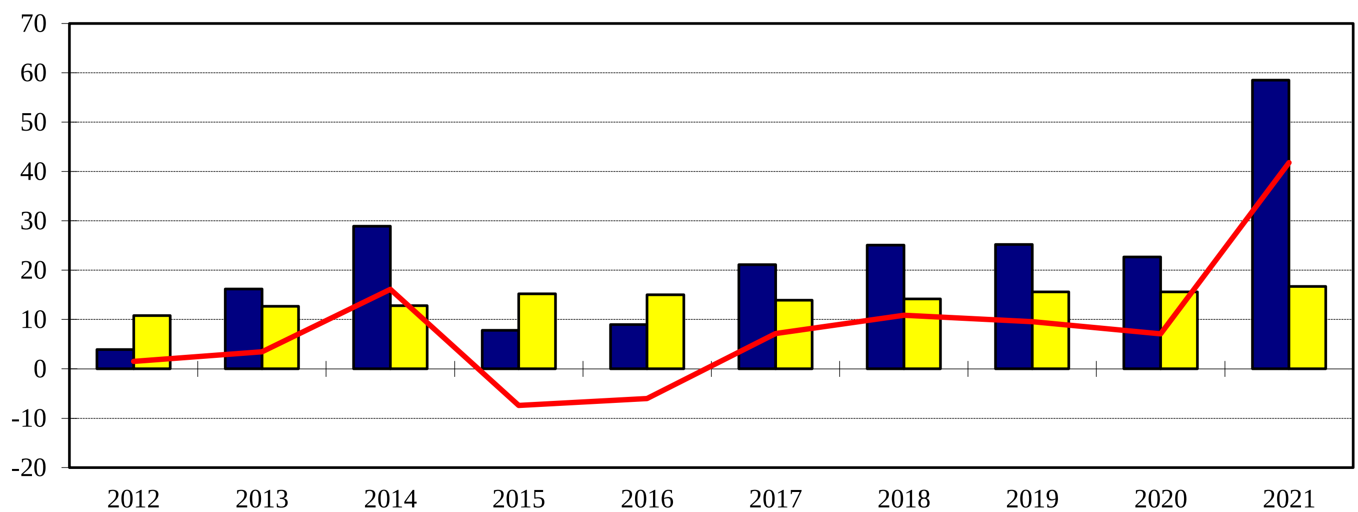


Plan B – Net Non-Investment Income



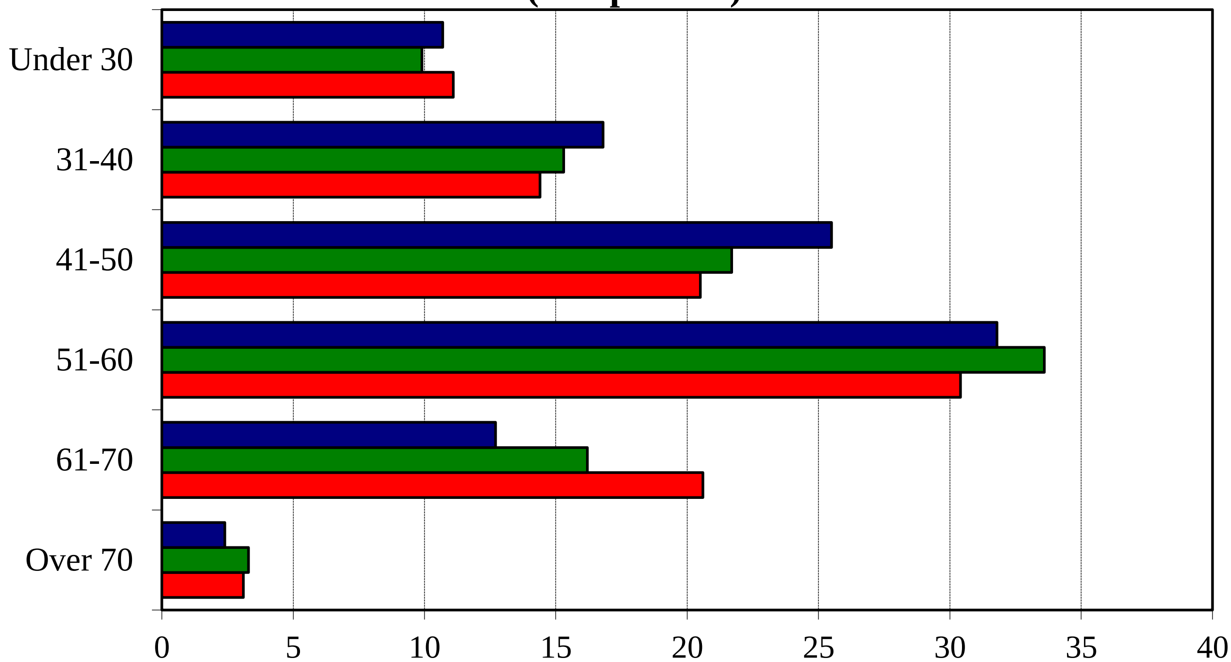
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Non-Investment Income ($Mil)		10.8	10.6	12.4	12.7	13.3	14.5	16.0	17.4	17.9	18.5
Benefits and Expenses ($Mil)		10.8	12.7	12.8	15.2	15.0	13.9	14.2	15.6	15.6	16.7
Net Non-Investment Income ($Mil)		0.0	-2.1	-0.4	-2.5	-1.7	0.6	1.8	1.8	2.3	1.8

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



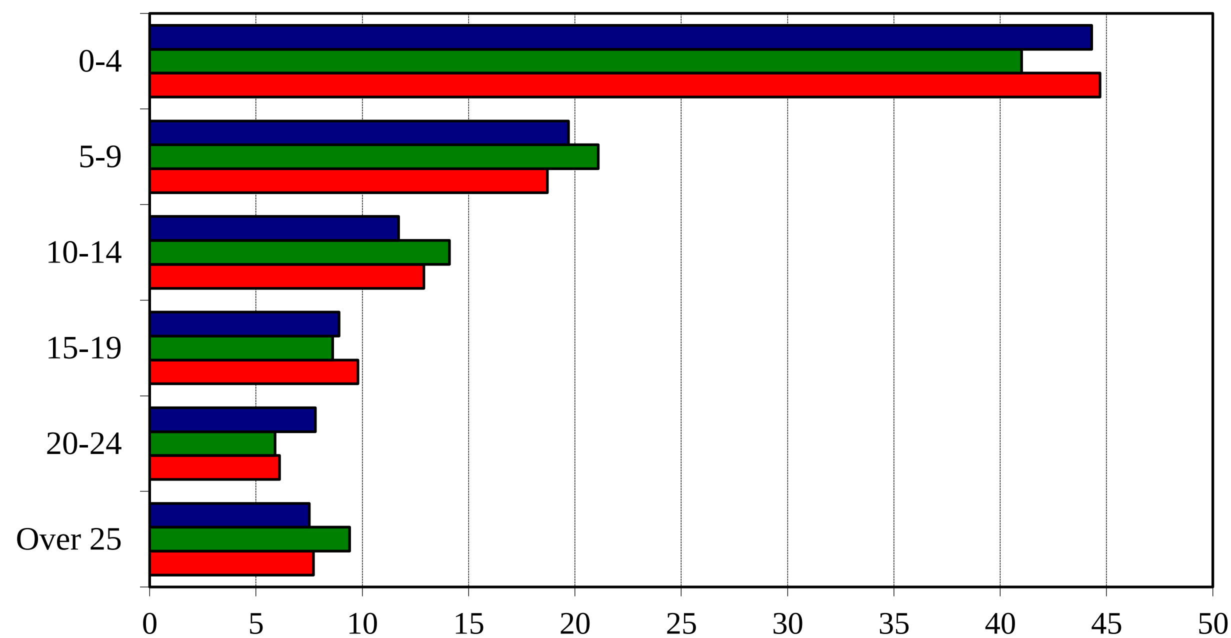
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total Income ($Mil)		3.9	16.2	28.9	7.8	9.0	21.1	25.1	25.2	22.7	58.5
Benefits and Expenses ($Mil)		10.8	12.7	12.8	15.2	15.0	13.9	14.2	15.6	15.6	16.7
Net Change in MVA ($Mil)		1.5	3.5	16.1	-7.4	-6.0	7.2	10.9	9.6	7.1	41.8

Plan B – Active – Census By Age
(as a percent)



2011 2016 2021

Plan B – Active – Census By Service
(as a percent)



2011 2016 2021

Plan B – Historical Asset Yield

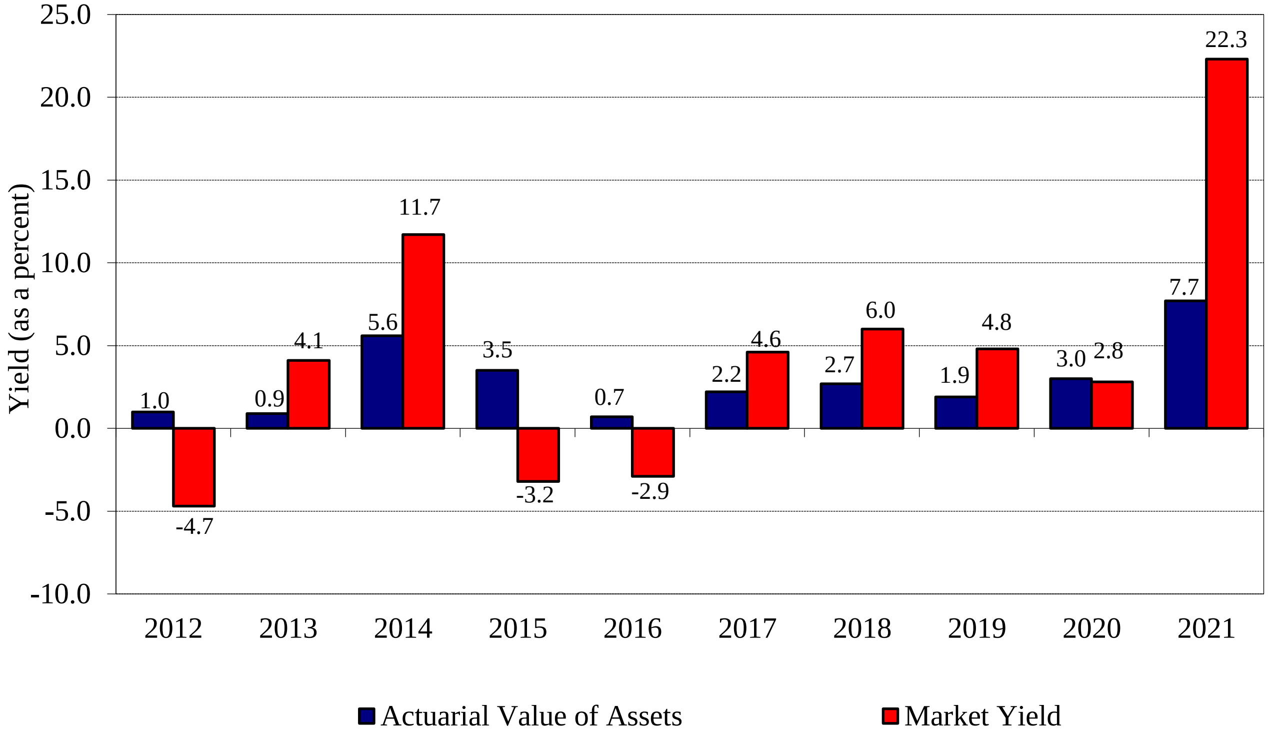


EXHIBIT I
PLAN A: ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1.	Present Value of Future Benefits	$	1,442,696,909
2.	Funding Deposit Account Credit Balance	$	10,695,893
3.	Frozen Unfunded Actuarial Accrued Liability	$	58,511,472
4.	Actuarial Value of Assets	$	897,366,504
5.	Present Value of Future Employee Contributions	$	119,944,886
6.	Present Value of Future Employer Normal Costs (1 + 2 – 3 – 4 – 5)	$	377,569,940
7.	Present Value of Future Salaries	$	1,332,342,656
8.	Employer Normal Cost Accrual Rate (6 ÷ 7)		28.338801%
9.	Projected Fiscal 2022 Salary for Current Membership	$	169,746,686
10.	Employer Normal Cost as of July 1, 2021 (8 × 9)	$	48,104,176
11.	Employer Normal Cost Interest Adjusted for Mid-year Payment	$	49,724,456
12.	Amortization Payment on Frozen Unfunded Accrued Liability with Payments Increasing at 4.25% per year	$	7,959,835
13.	Amortization Payment Interest Adjust for Mid-year Payment	$	8,227,944
14.	TOTAL Employer Normal Cost & Amortization Payment (11 + 13)	$	57,952,400
15.	Estimated Administrative Cost for Fiscal 2022	$	1,686,436
16.	Gross Employer Actuarially Required Contribution for Fiscal 2022 (14 + 15)	$	59,638,836
17.	Projected Ad Valorem Tax Contributions for Fiscal 2022	$	(7,299,003)
18.	Projected Revenue Sharing Funds for Fiscal 2022	$	(113,530)
19.	Employers’ Minimum Net Direct Actuarially Required Contribution for Fiscal 2022 (16 + 17 + 18)	$	52,226,303
20.	Projected Payroll for Fiscal 2022	$	184,598,042
21.	Employers’ Minimum Net Direct Actuarially Required Contribution as a % of Projected Payroll for Fiscal 2022 (19 ÷ 20)		28.29%
22.	Board Approved Employer Contribution Rate for 2022		29.50%
23.	Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2023 (21, Rounded to the nearest 0.25%)		28.25%

EXHIBIT II
PLAN A: PRESENT VALUE OF FUTURE BENEFITS

PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits	$ 582,279,925	
Survivor Benefits	13,202,734	
Disability Benefits	12,889,780	
Vested Termination Benefits	49,415,806	
Refunds of Contributions	24,735,772	
TOTAL Present Value of Future Benefits for Active Members		$ 682,524,017

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement	$ 28,922,246	
Terminated Members with Reciprocals Due Benefits at Retirement	1,074,866	
Terminated Members Due a Refund	6,735,813	
TOTAL Present Value of Future Benefits for Terminated Members		$ 36,732,925

PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees			
Maximum	$ 261,091,988		
Option 2	277,600,208		
Option 3	85,536,014		
Option 4	3,003,472		
TOTAL Regular Retirees		$ 627,231,682	
Disability Retirees		12,509,095	
Survivors		73,133,140	
Reserve for Accrued Retiree DROP Account Balances		10,566,050	
TOTAL Present Value of Future Benefits for Retirees & Survivors			$ 723,439,967
TOTAL Present Value of Future Benefits			$ 1,442,696,909

EXHIBIT III – SCHEDULE A
PLAN A: MARKET VALUE OF ASSETS

CURRENT ASSETS:

Cash in Banks	$	12,045,247		
Contributions and Taxes Receivable		7,331,836		
Accrued Interest and Dividends		14,566		
Due (to) from Other Funds		5,549,348		
Other Current Assets		6,682		
TOTAL CURRENT ASSETS			$	24,947,679
Property, Plant & Equipment			$	1,956,279

INVESTMENTS:

Cash Equivalents	$	4,026,416		
Equities		539,379,061		
Fixed Income		315,825,207		
Real Estate		54,682,749		
Alternative Investments		12,066,982		
Self-Directed Investments		23,621,744		
TOTAL INVESTMENTS			$	949,602,159
TOTAL ASSETS			$	976,506,117

CURRENT LIABILITIES:

Accounts Payable	$	151,036		
Benefits Payable		29,680		
Refunds Payable		252,314		
Due to/(from) Plan B		(2,996)		
Other Post-Employment Benefits		282,145		
Other Current Liabilities		58,265		
TOTAL CURRENT LIABILITIES			$	770,444
MARKET VALUE OF ASSETS			$	975,735,673

EXHIBIT III – SCHEDULE B
PLAN A – ACTUARIAL VALUE OF ASSETS

Excess (Shortfall) of Invested Income
For Current and Previous 4 Years:

Fiscal year 2021	$	132,640,795
Fiscal year 2020		(31,619,883)
Fiscal year 2019		(17,395,262)
Fiscal year 2018		(9,067,158)
Fiscal year 2017		(18,915,901)
Total for Five Years	$	55,642,591

Deferral of Excess (Shortfall) of Invested Income:

Fiscal year 2021 (80%)	$	106,112,636
Fiscal year 2020 (60%)		(18,971,930)
Fiscal year 2019 (40%)		(6,958,105)
Fiscal year 2018 (20%)		(1,813,432)
Fiscal year 2017 (0%)		0
Total Deferred for Year	$	78,369,169

Market Value of Plan Net Assets, End of Year	$	975,735,673
Preliminary Actuarial Value of Plan Assets, End of Year	$	897,366,504

Actuarial Value of Assets Corridor

85% of Market Value, End of Year	$	829,375,322
115% of Market Value, End of Year	$	1,122,096,024

Final Actuarial Value of Plan Net Assets, End of Year	$	897,366,504

EXHIBIT IV
PLAN A: PRESENT VALUE OF FUTURE CONTRIBUTIONS

Employee Contributions to the Annuity Savings Fund	$	119,944,886
Employer Normal Contributions to the Pension Accumulation Fund		377,569,940
Employer Amortization Payments to the Pension Accumulation Fund		58,511,472
Funding Deposit Account Credit Balance		(10,695,893)
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS	$	545,330,405

EXHIBIT V
PLAN A: CHANGE IN FROZEN UNFUNDED ACTUARIAL ACCRUED LIABILITY

Prior Year Frozen Unfunded Accrued Liability			$	62,368,613
Interest on Frozen Unfunded Accrued Liability	$	4,334,619		
TOTAL Interest Adjusted Cost Elements			$	4,334,619
Amortization Payment on the Unfunded Accrued Liability	$	7,659,430		
Interest on Amortization Payment		532,330		
Credited Withdrawals from Funding Deposit Account		0		
TOTAL Interest Adjusted Employer Contributions			$	8,191,760
NET Change in Frozen Unfunded Accrued Liability			$	(3,857,141)
CURRENT YEAR FROZEN UNFUNDED ACCRUED LIABILITY			$	58,511,472

EXHIBIT VI
PLAN A: ANALYSIS OF CHANGE IN ASSETS

Actuarial Value of Assets (June 30, 2020)			$	829,419,184
INCOME:				
Member Contributions	$	18,119,021		
Employer Contributions		59,130,738		
Ad Valorem Taxes and Revenue Sharing		7,461,963		
Transfers from Other Plan/Systems		1,476,845		
Total Contributions			$	86,188,567
Net Appreciation in Fair Value of Investments	$	188,001,369		
Interest & Dividend Income		1,783,224		
Investment Expense		(2,425,833)		
Net Investment Income			$	187,358,760
TOTAL Income			$	273,547,327
EXPENSES:				
Retirement Benefits	$	70,789,300		
DROP Disbursements		4,329,501		
Refunds of Contributions		5,121,224		
Funds Transferred to another System		2,287,158		
Transfer to/(from) Plan B		(2,996)		
Administrative Expenses		1,563,545		
TOTAL Expenses			$	84,087,732
Net Market Value Income for Fiscal 2021 (Income – Expenses)			$	189,459,595
Unadjusted Fund Balance as of June 30, 2021 (Fund Balance Previous Year + Net Income)			$	1,018,878,779
Adjustment for Actuarial Smoothing			$	(121,512,275)
Actuarial Value of Assets: (June 30, 2021)			$	897,366,504

EXHIBIT VII
PLAN A: FUNDING DEPOSIT ACCOUNT

Funding Deposit Account Balance as of June 30, 2020	$	10,000,835
Interest on Opening Balance at 6.950%		695,058
Contributions to the Funding Deposit Account		0
Withdrawals from the Funding Deposit Account		0
Funding Deposit Account Balance as of June 30, 2021	$	10,695,893

EXHIBIT VIII – SCHEDULE A
PLAN A: PENSION BENEFIT OBLIGATION

Present Value of Credited Projected Benefits Payable to Current Employees	$	459,029,978
Present Value of Benefits Payable to Terminated Employees		36,732,925
Present Value of Benefits Payable to Current Retirees and Beneficiaries		723,439,967
TOTAL PENSION BENEFIT OBLIGATION	$	1,219,202,870
NET ACTUARIAL VALUE OF ASSETS	$	897,366,504
Ratio of Net Actuarial Value of Assets to Pension Benefit Obligation		73.60%

EXHIBIT VIII – SCHEDULE B
PLAN A: ENTRY AGE NORMAL ACCRUED LIABILITIES

Accrued Liability for Active Employees	$	478,329,453
Accrued Liability for Terminated Employees		36,732,925
Accrued Liability for Current Retirees and Beneficiaries		723,439,967
TOTAL ENTRY AGE NORMAL ACCRUED LIABILITY	$	1,238,502,345
ACTUARIAL VALUE OF ASSETS	$	897,366,504
Ratio of Net Actuarial Value of Assets to Entry Age Normal Accrued Liability		72.46%

EXHIBIT IX
CENSUS DATA – PLAN A

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2020	4,567	3,535	216	3,618	11,936
Additions to Census					
Initial membership	590	95			685
Omitted in error last year					
Death of another member				54	54
Adjustment for multiple records		3		8	11
Change in Status during Year					
Actives terminating service	(304)	304			
Actives who retired	(121)			121	
Actives entering DROP	(84)		84		
Term. members rehired	32	(32)			
Term. members who retire		(18)		18	
Retirees who are rehired	1	11		(12)	
Refunded who are rehired	16	1			17
DROP participants retiring			(48)	48	
DROP returned to work	38		(38)		
Omitted in error last year					
Eliminated from Census					
Refund of contributions	(321)	(195)			(516)
Deaths	(15)	(5)	(2)	(180)	(202)
Included in error last year		(1)		(2)	(3)
Adjustment for multiple records					
Number of members as of June 30, 2021	4,399	3,698	212	3,673	11,982

PLAN A - ACTIVES CENSUS BY AGE:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 - 20	24	2	26	26,210	681,458
21 - 25	144	33	177	27,644	4,892,926
26 - 30	216	104	320	33,451	10,704,342
31 - 35	244	163	407	36,558	14,879,278
36 - 40	292	166	458	40,209	18,415,638
41 - 45	268	188	456	40,332	18,391,450
46 - 50	307	167	474	40,692	19,287,909
51 - 55	430	216	646	43,837	28,318,672
56 - 60	483	254	737	42,159	31,071,166
61 - 65	362	174	536	43,423	23,274,540
66 - 70	146	98	244	44,002	10,736,417
71 - 75	59	32	91	39,957	3,636,060
76 - 80	21	8	29	38,140	1,106,072
81 - 85	6	3	9	32,774	294,970
86 - 90	0	1	1	50,012	50,012
TOTAL	3,002	1,609	4,611	40,282	185,740,910

THE ACTIVE CENSUS INCLUDES 1,830 ACTIVES WITH VESTED BENEFITS, INCLUDING 212 DROP PARTICIPANTS AND 176 ACTIVE FORMER DROP PARTICIPANTS.

PLAN A - TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	1	2	3	7,649	22,947
36 - 40	10	5	15	13,448	201,720
41 - 45	15	9	24	17,945	430,670
46 - 50	14	12	26	17,042	443,089
51 - 55	37	24	61	16,308	994,778
56 - 60	43	34	77	17,692	1,362,297
61 - 65	12	12	24	13,455	322,928
66 - 70	7	3	10	15,626	156,262
71 - 75	1	0	1	6,038	6,038
76 - 80	1	1	2	2,343	4,686
TOTAL	141	102	243	16,236	3,945,415

PLAN A - TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:

Contributions Ranging From		To	Number	Total Contributions
0	-	99	1,884	100,816
100	-	499	498	131,272
500	-	999	228	160,752
1,000	-	1,999	220	315,092
2,000	-	4,999	282	923,581
5,000	-	9,999	154	1,100,854
10,000	-	19,999	120	1,700,278
20,000	-	99,999	69	2,032,910
		TOTAL	3,455	6,465,555

EXCLUDES $270,258 IN CONTRIBUTION BALANCES OWED TO THE BENEFICIARIES OF DECEASED MEMBERS.

PLAN A - REGULAR RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	2	1	3	24,937	74,811
46 - 50	15	7	22	27,986	615,687
51 - 55	40	15	55	31,925	1,755,868
56 - 60	139	72	211	31,965	6,744,675
61 - 65	303	184	487	27,273	13,281,765
66 - 70	450	192	642	23,816	15,289,662
71 - 75	376	190	566	20,488	11,596,268
76 - 80	272	111	383	16,888	6,468,051
81 - 85	178	67	245	16,183	3,964,873
86 - 90	79	47	126	14,479	1,824,348
91 - 99	39	36	75	12,128	909,610
TOTAL	1,893	922	2,815	22,212	62,525,618

PLAN A - DISABILITY RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	1	2	3	14,503	43,508
46 - 50	7	0	7	16,360	114,522
51 - 55	12	4	16	12,798	204,767
56 - 60	14	3	17	13,163	223,763
61 - 65	17	6	23	12,317	283,281
66 - 70	9	4	13	7,931	103,106
71 - 75	11	4	15	8,107	121,609
76 - 80	2	4	6	7,633	45,800
81 - 85	6	1	7	6,920	48,439
86 - 90	1	0	1	5,992	5,992
TOTAL	80	28	108	11,063	1,194,787

PLAN A - SURVIVORS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 25	5	8	13	11,605	150,868
31 - 35	1	2	3	10,026	30,078
36 - 40	0	6	6	10,047	60,283
41 - 45	3	5	8	9,026	72,208
46 - 50	3	6	9	15,019	135,169
51 - 55	4	19	23	10,184	234,236
56 - 60	8	44	52	11,833	615,298
61 - 65	6	67	73	14,032	1,024,371
66 - 70	8	86	94	14,696	1,381,397
71 - 75	5	85	90	12,563	1,130,714
76 - 80	10	129	139	11,110	1,544,353
81 - 85	7	107	114	10,626	1,211,364
86 - 90	3	76	79	9,703	766,518
91 - 99	0	47	47	9,167	430,860
TOTAL	63	687	750	11,717	8,787,717

PLAN A - ACTIVE MEMBERS:

Attained Ages	Completed Years of Service: 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 20	19	7										26
21 - 25	83	33	32	19	5	5						177
26 - 30	81	54	58	32	29	63	3					320
31 - 35	62	56	46	37	29	134	38	5				407
36 - 40	70	56	35	31	20	144	71	28	3			458
41 - 45	73	42	45	31	29	95	67	45	28	1		456
46 - 50	40	40	54	34	17	90	58	48	51	38	4	474
51 - 55	67	47	51	35	38	131	66	44	61	69	37	646
56 - 60	62	46	53	38	39	168	97	63	52	62	57	737
61 - 65	29	33	41	26	28	102	76	60	48	48	45	536
66 - 70	9	14	15	7	12	62	31	35	27	11	21	244
71 & Over	9	3	9	7	4	22	21	15	11	13	16	130
Totals	604	431	439	297	250	1,016	528	343	281	242	180	4,611

PLAN A - AVERAGE ANNUAL SALARY OF ACTIVE MEMBERS:

Attained Ages	Completed Years of Service: 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Salary
0 - 20	25,132	29,136										26,210
21 - 25	25,003	28,620	28,285	30,859	50,107	26,245						27,644
26 - 30	28,379	32,522	34,621	37,311	36,338	36,173	38,240					33,451
31 - 35	29,431	33,106	35,700	36,512	36,345	40,751	40,184	33,180				36,558
36 - 40	31,631	36,427	34,362	33,887	36,879	43,178	49,778	46,951	34,780			40,209
41 - 45	32,451	40,381	33,342	37,929	40,400	41,517	45,025	50,095	42,661	69,113		40,332
46 - 50	31,956	34,355	35,060	38,732	32,269	40,096	44,076	41,684	46,487	54,787	64,527	40,692
51 - 55	30,216	36,048	36,732	43,633	35,861	39,987	42,479	47,963	51,499	61,459	62,228	43,837
56 - 60	33,916	31,825	36,345	39,741	39,288	39,310	43,118	44,281	46,861	51,827	58,062	42,159
61 - 65	35,597	40,137	43,605	39,159	37,814	39,032	44,368	48,386	46,641	47,336	50,795	43,423
66 - 70	30,549	26,311	38,993	39,466	40,154	43,833	49,851	43,896	43,561	52,891	56,799	44,002
71 & Over	24,717	49,195	36,224	41,092	34,949	32,509	38,793	51,325	38,252	44,359	41,653	39,132
Average	30,123	34,495	35,649	38,026	37,566	40,253	44,445	46,196	46,561	53,866	55,639	40,282

PLAN A - TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Attained Ages	Years Until Retirement Eligibility 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 30												0
31 - 35											3	3
36 - 40									13	2		15
41 - 45								23		1		24
46 - 50	1						25					26
51 - 55	2					57	2					61
56 - 60	16	16	20	11	13	1						77
61 - 65	21		1	1		1						24
66 - 70	10											10
71 - 75	1											1
76 - 80	2											2
81 & Over												0
Totals	53	16	21	12	13	59	27	23	13	3	3	243

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

Attained Ages	Years Until Retirement Eligibility 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 30												0
31 - 35											7,649	7,649
36 - 40									14,619	5,839		13,448
41 - 45								17,997		16,737		17,945
46 - 50	39,439						16,146					17,042
51 - 55	15,513					16,422	13,857					16,308
56 - 60	17,481	19,632	16,103	18,225	18,144	10,083						17,692
61 - 65	13,985		4,797	4,537		19,916						13,455
66 - 70	15,626											15,626
71 - 75	6,038											6,038
76 - 80	2,343											2,343
81 & Over												0
Average	15,298	19,632	15,565	17,084	18,144	16,374	15,976	17,997	14,619	9,472	7,649	16,236

PLAN A - SERVICE RETIREES:

Attained Ages	Completed Years Since Retirement											
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 50	6	3	6	3	2	5						25
51 - 55	10	11	9	8	4	11	2					55
56 - 60	21	10	17	17	18	79	36	11	2			211
61 - 65	66	61	47	48	26	112	85	34	4	2	2	487
66 - 70	45	30	50	40	46	226	117	66	14	5	3	642
71 - 75	20	20	18	21	29	165	175	75	37	4	2	566
76 - 80	9	7	8	4	7	59	118	117	36	16	2	383
81 - 85	1	1	3	3	1	18	39	68	68	26	17	245
86 - 90	2	1		1		8	7	22	39	30	16	126
91 & Over						1	2	4	7	26	35	75
Totals	180	144	158	145	133	684	581	397	207	109	77	2,815

PLAN A - AVERAGE ANNUAL BENEFITS PAYABLE TO SERVICE RETIREES:

Attained Ages	Completed Years Since Retirement											
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 50	31,676	29,759	30,476	20,998	20,495	24,864						27,620
51 - 55	32,670	35,378	28,974	34,518	38,522	26,915	26,478					31,925
56 - 60	39,622	38,935	37,837	26,863	37,143	32,744	25,528	20,712	10,575			31,965
61 - 65	25,573	27,699	28,520	31,282	26,811	31,036	25,767	18,062	14,390	10,317	3,350	27,273
66 - 70	26,467	17,913	21,093	22,927	24,722	24,493	25,460	24,446	18,818	9,139	5,139	23,816
71 - 75	30,754	17,952	25,352	17,159	21,619	20,008	19,040	21,784	22,639	14,622	7,663	20,488
76 - 80	21,547	25,699	30,962	12,558	21,078	17,452	13,154	15,772	21,612	23,827	31,208	16,888
81 - 85	9,118	23,860	11,205	23,742	6,885	11,629	16,361	14,169	15,332	23,289	21,248	16,183
86 - 90	18,251	33,292		34,120		24,939	8,796	11,367	11,010	14,846	20,908	14,479
91 & Over						6,621	15,042	11,682	6,570	15,340	10,896	12,128
Average	28,235	25,631	26,706	25,727	26,161	24,510	20,232	18,123	16,791	17,943	15,285	22,212

PLAN A - DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement: 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 40												0
41 - 45			3									3
46 - 50	1	2			2		1		1			7
51 - 55	2	3		2	1	4	2		2			16
56 - 60		2	2	1	4	3	2		2	1		17
61 - 65	2	1	3	1	1	4	4	5	2			23
66 - 70	1				3	1	2	3	2	1		13
71 - 75						1	5	2	3	2	2	15
76 - 80								2	3	1		6
81 - 85				1		1	1	2		1	1	7
86 - 90										1		1
91 & Over												0
Totals	6	8	8	5	11	14	17	14	15	7	3	108

PLAN A - AVERAGE ANNUAL BENEFITS PAYABLE TO DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement: 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 40												0
41 - 45			14,503									14,503
46 - 50	14,277	24,983			12,570		16,643		8,496			16,360
51 - 55	17,165	12,933		10,064	11,895	12,031	12,191		13,556			12,798
56 - 60		13,365	11,785	22,787	11,444	13,905	21,596		5,919	8,158		13,163
61 - 65	6,374	8,351	11,497	12,972	7,859	13,394	17,407	12,495	10,592			12,317
66 - 70	5,903				6,930	17,537	8,337	8,417	5,442	6,069		7,931
71 - 75						6,473	8,256	5,517	9,106	14,598	3,154	8,107
76 - 80								5,141	7,848	11,974		7,633
81 - 85				4,628		8,368	5,321	7,267		6,435	9,154	6,920
86 - 90										5,992		5,992
91 & Over												0
Average	11,210	15,481	12,696	12,103	10,133	12,556	12,772	8,827	8,692	9,689	5,154	11,063

PLAN A - SURVIVING BENEFICIARIES OF FORMER MEMBERS:

ATTAINED AGES	COMPLETED YEARS SINCE RETIREMENT 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&OVER	TOTAL
0 - 20	2		2	4		4	1					13
21 - 25												0
26 - 30												0
31 - 35		1		1			1					3
36 - 40	2					2	1	1				6
41 - 45	1			1		2	3	1				8
46 - 50	2	1	1		1		1	2		1		9
51 - 55	2		1	1	1	5	5	4	1		3	23
56 - 60	8	1	1	1	3	8	8	9	6	5	2	52
61 - 65	7	1	3	1	2	16	10	15	6	7	5	73
66 - 70	6	3	3	2	1	18	13	21	12	7	8	94
71 - 75	5		2	1		11	17	16	19	13	6	90
76 - 80	9	1				8	26	30	31	20	14	139
81 - 85	1		1		1	2	12	19	27	26	25	114
86 - 90	2		1			1	2	4	24	16	29	79
91 & OVER	1						1	3	5	4	33	47
TOTALS	48	8	15	12	9	77	101	125	131	99	125	750

PLAN A - AVERAGE ANNUAL BENEFITS PAYABLE TO SURVIVORS OF FORMER MEMBERS:

ATTAINED AGES	COMPLETED YEARS SINCE RETIREMENT 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&OVER	AVERAGE BENEFIT
0 - 20	7,800		11,314	11,223		15,399	6,151					11,605
21 - 25												0
26 - 30												0
31 - 35		4,611		17,890			7,577					10,026
36 - 40	15,409					6,046	7,577	9,798				10,047
41 - 45	27,644			4,554		8,440	6,035	5,025				9,026
46 - 50	14,579	40,000	11,479		12,839		19,969	7,235		7,255		15,019
51 - 55	7,958		12,205	15,505	12,034	9,253	6,809	22,763	3,675		1,181	10,184
56 - 60	20,148	17,480	6,261	15,223	16,629	13,291	13,069	9,906	4,669	6,309	2,835	11,833
61 - 65	22,492	22,469	17,425	11,777	13,120	20,074	11,920	12,880	7,781	7,316	4,537	14,032
66 - 70	16,722	15,153	16,129	14,534	12,019	27,279	14,335	12,629	10,354	7,269	3,553	14,696
71 - 75	19,139		10,506	11,249		18,835	12,198	10,518	14,865	8,748	3,957	12,563
76 - 80	13,106	6,245				18,793	11,332	11,775	9,994	11,125	6,401	11,110
81 - 85	2,947		19,062		14,593	6,166	8,013	9,867	12,510	9,210	12,064	10,626
86 - 90	9,582		13,305			7,501	9,951	5,262	7,112	13,767	10,161	9,703
91 & OVER	30,209						7,469	15,860	12,556	8,654	7,521	9,167
AVERAGE	16,751	17,033	13,774	12,513	14,179	18,607	11,179	11,564	10,428	9,813	8,145	11,717

EXHIBIT X
PLAN A: YEAR-TO-YEAR COMPARISON

	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018
Number of Active Members	4,611	4,783	4,795	4,888
Number of Retirees & Survivors	3,673	3,618	3,552	3,468
Number of Terminated Due Deferred Benefits	243	213	199	185
Number Terminated Due Refunds	3,455	3,322	3,191	2,994
Active Lives Payroll	$ 185,740,910	$ 188,745,713	$ 183,483,655	$ 181,786,660
Retiree Benefits in Payment	$ 72,508,122	$ 69,264,254	$ 66,516,731	$ 63,184,393
Market Value of Assets (MVA)	$ 975,735,673	$ 786,276,078	$ 765,059,686	$ 734,226,194
Actuarial Value of Assets (AVA)	$ 897,366,504	$ 829,419,184	$ 806,503,031	$ 797,679,469
Entry Age Normal Accrued Liability	$ 1,238,502,345	$ 1,203,027,922	$ 1,165,954,887	$ 1,129,080,666
Ratio of AVA to EAN Accrued Liability	72.46%	68.94%	69.17%	70.65%
Frozen Unfunded Actuarial Accrued Liability	$ 58,511,472	$ 62,368,613	$ 65,648,756	$ 68,334,864
Present Value of Future Employer Normal Cost	$ 377,569,940	$ 401,841,036	$ 385,947,438	$ 367,352,092
Present Value of Future Employee Contrib.	$ 119,944,886	$ 119,736,262	$ 109,888,429	$ 110,664,765
Funding Deposit Account Balance	$ 10,695,893	$ 10,000,835	$ 9,346,575	$ 8,712,724
Present Value of Future Benefits	$ 1,442,696,909	$ 1,403,364,260	$ 1,358,641,079	$ 1,335,318,466

	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019
Employee Contribution Rate	10.00%	10.00%	9.50%	9.50%
Estimated Tax Contribution as a % of Payroll	4.02%	3.59%	3.50%	3.50%
Actuarially Required Net Direct Employer Contribution Rate	28.29%	29.18%	29.28%	27.53%
Actual Employer Contribution Rate	29.50%	29.50%	27.75%	26.00%

	Fiscal 2017		Fiscal 2016		Fiscal 2015		Fiscal 2014		Fiscal 2013		Fiscal 2012
	4,937		4,912		4,926		4,894		4,939		5,021
	3,417		3,345		3,262		3,177		3,106		3,040
	184		186		182		184		193		181
	1,343		2,826		2,731		2,667		2,672		2,632
$	182,044,919	$	177,777,678	$	172,033,158	$	167,852,836	$	167,422,222	$	167,511,550
$	60,663,715	$	57,895,282	$	54,791,332	$	51,636,071	$	48,994,132	$	46,224,138
$	697,057,939	$	671,876,210	$	698,984,365	$	730,072,543	$	657,723,192	$	639,209,518
$	781,417,434	$	769,849,744	$	770,402,847	$	751,235,484	$	717,816,409	$	721,475,280
$	1,096,616,918	$	1,063,558,257	$	1,038,155,304	$	967,584,136	$	948,970,683	$	925,638,084
	71.26%		72.38%		74.21%		77.64%		75.64%		77.94%
$	70,511,316	$	72,227,730	$	73,553,869	$	74,454,702	$	75,038,341	$	75,337,890
$	344,034,117	$	315,256,488	$	287,312,026	$	235,357,990	$	249,506,497	$	225,090,618
$	109,901,879	$	105,774,692	$	101,854,569	$	97,716,362	$	97,624,041	$	95,445,659
$	8,112,406	$	8,421,235	$	7,833,707	$	8,930,139	$	8,287,832	$	7,691,723
$	1,297,752,340	$	1,254,687,419	$	1,225,289,604	$	1,149,834,399	$	1,131,697,456	$	1,109,657,724

Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013
9.50%	9.50%	9.50%	9.50%	9.50%	9.25%
3.39%	3.40%	3.64%	3.52%	3.36%	3.13%
25.88%	24.64%	22.92%	19.48%	20.62%	18.67%
24.75%	23.25%*	19.75%	20.75%†	18.75%	17.00%

* Includes 0.5% from the Funding Deposit Account
† Includes 1.0% from the Funding Deposit Account

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EXHIBIT XI
PLAN B: ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1.	Present Value of Future Benefits	$	325,918,391
2.	Funding Deposit Account Credit Balance	$	1,869,690
3.	Actuarial Value of Assets	$	204,077,162
4.	Present Value of Future Employee Contributions	$	23,943,614
5.	Present Value of Future Employer Normal Costs (1 + 2 – 3 – 4)	$	99,767,305
6.	Present Value of Future Salaries	$	530,556,194
7.	Employer Normal Cost Accrual Rate (5 ÷ 6)		18.804286%
8.	Projected Fiscal 2022 Salary for Current Membership	$	68,632,327
9.	Employer Normal Cost as of July 1, 2021 (7 × 8)	$	12,905,819
10.	Employer Normal Cost Interest Adjusted for Mid-year Payment	$	13,340,522
11.	Estimated Administrative Cost for Fiscal 2022	$	688,160
12.	Gross Employer Actuarially Required Contribution for Fiscal 2022 (10 + 11)	$	14,028,682
13.	Projected Ad Valorem Tax Contributions for Fiscal 2022	$	(2,978,402)
14.	Projected Revenue Sharing Funds for Fiscal 2022	$	(46,327)
15.	Employers' Minimum Net Direct Actuarially Required Contribution for Fiscal 2022 (12 + 13 + 14)	$	11,003,953
16.	Projected Payroll for Fiscal 2022	$	76,475,851
17.	Employers' Minimum Net Direct Actuarially Required Contribution as a % of Projected Payroll for Fiscal 2022 (15 ÷ 16)		14.39%
18.	Board Approved Employer Contribution Rate for 2022		15.50%
19.	Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2023 (17, Rounded to the nearest 0.25%)		14.50%

EXHIBIT XII
PLAN B: PRESENT VALUE OF FUTURE BENEFITS

PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits	$	159,728,156		
Survivor Benefits		3,437,165		
Disability Benefits		6,685,587		
Vested Termination Benefits		11,370,144		
Refunds of Contributions		4,517,443		
TOTAL Present Value of Future Benefits for Active Members			$	185,738,495

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement	$	8,719,161		
Terminated Members with Reciprocals Due Benefits at Retirement		995,889		
Terminated Members Due a Refund		1,547,413		
TOTAL Present Value of Future Benefits for Terminated Members			$	11,262,463

PRESENT VALUE OF FUTURE BENEFITS FOR PENSIONERS:

Regular Retirees by Option Selected:							
Maximum	$	46,424,453					
Option 2		45,019,706					
Option 3		13,704,533					
TOTAL Regular Retirees			$	105,148,692			
TOTAL Disability Retirees			$	3,883,824			
TOTAL Survivors			$	17,947,055			
Reserve for Accrued Retiree DROP Account Balances			$	1,937,862			
TOTAL Present Value of Future Benefits for Retirees & Survivors						$	128,917,433
TOTAL Present Value of Future Benefits						$	325,918,391

EXHIBIT XIII – SCHEDULE A
PLAN B: MARKET VALUE OF ASSETS

CURRENT ASSETS:				
Cash in Banks	$	13,701,568		
Contributions and Taxes Receivable		1,327,075		
Accrued Interest and Dividends		3,105		
Due (to) from Other Funds		(5,549,348)		
Other Current Assets		111		
TOTAL CURRENT ASSETS			$	9,482,511
Property Plant & Equipment			$	831,420
INVESTMENTS:				
Cash Equivalents	$	8,009,351		
Equities		114,413,741		
Fixed Income		66,993,226		
Real Estate		11,599,371		
Alternative Investments		2,563,067		
Self-Directed Investments		6,145,300		
TOTAL INVESTMENTS			$	209,724,056
TOTAL ASSETS			$	220,037,987
CURRENT LIABILITIES:				
Accounts Payable	$	29,769		
Benefits Payable		8,307		
Refunds Payable		119,212		
Due to/(from) Plan A		2,996		
Other Post-Employment Benefits		114,803		
Other Current Liabilities		30,503		
TOTAL CURRENT LIABILITIES			$	305,590
MARKET VALUE OF ASSETS			$	219,732,397

EXHIBIT XIII – SCHEDULE B
PLAN B – ACTUARIAL VALUE OF ASSETS

Excess (Shortfall) of Invested Income
For Current and Previous 4 Years:

Fiscal year 2021	$	27,507,064
Fiscal year 2020		(7,205,168)
Fiscal year 2019		(4,002,113)
Fiscal year 2018		(2,132,350)
Fiscal year 2017		(4,100,380)
Total for Five Years	$	10,067,053

Deferral of Excess (Shortfall) of Invested Income:

Fiscal year 2021 (80%)	$	22,005,651
Fiscal year 2020 (60%)		(4,323,101)
Fiscal year 2019 (40%)		(1,600,845)
Fiscal year 2018 (20%)		(426,470)
Fiscal year 2017 (0%)		0
Total Deferred for Year	$	15,655,235

Market Value of Plan Net Assets, End of Year	$	219,732,397
Preliminary Actuarial Value of Plan Assets, End of Year	$	204,077,162

Actuarial Value of Assets Corridor

85% of Market Value, End of Year	$	186,772,537
115% of Market Value, End of Year	$	252,692,257

Final Actuarial Value of Plan Net Assets, End of Year	$	204,077,162

EXHIBIT XIV
PLAN B: PRESENT VALUE OF FUTURE CONTRIBUTIONS

Employee Contributions to the Annuity Savings Fund	$	23,943,614
Employer Normal Contributions to the Pension Accumulation Fund		99,767,305
Employer Amortization Payments to the Pension Accumulation Fund		0
Funding Deposit Account Credit Balance		(1,869,690)
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS	$	121,841,229

EXHIBIT XV
PLAN B: RECONCILIATION OF CONTRIBUTIONS

Employer Normal Cost for Prior Year	$ 13,756,374		
Interest on Normal Cost	956,068		
Administrative Expenses	627,038		
Interest on Expenses	21,425		
TOTAL Interest Adjusted Actuarially Required Employer Contributions		$	15,360,905
Direct Employer Contributions	$ 11,989,850		
Interest on Employer Contributions	409,649		
Ad Valorem Taxes and Revenue Sharing Funds	2,499,284		
Interest on Taxes and Revenue Sharing Funds	85,391		
TOTAL Interest Adjusted Employer Contributions		$	14,984,174
CONTRIBUTION SURPLUS (DEFICIENCY)		$	(376,731)

EXHIBIT XVI
PLAN B: ANALYSIS OF CHANGE IN ASSETS

Actuarial Value of Assets (June 30, 2020)			$	187,812,515
INCOME:				
Member Contributions	$	3,663,275		
Employer Contributions		11,989,850		
Irregular Contributions		396,375		
Ad Valorem Taxes and Revenue Sharing		2,499,284		
Total Contributions			$	18,548,784
Net Appreciation in Fair Value of Investments	$	40,020,860		
Interest & Dividend Income		434,035		
Investment Expense		(516,453)		
Net Investment Income			$	39,938,442
TOTAL Income			$	58,487,226
EXPENSES:				
Retirement Benefits	$	13,164,598		
DROP Disbursements		1,312,603		
Refunds of Contributions		1,183,058		
Funds Transferred to another System		438,633		
Transfer to/(from) Plan A		2,996		
Administrative Expenses		627,038		
TOTAL Expenses			$	16,728,926
Net Market Value Income for Fiscal 2021 (Income – Expenses)			$	41,758,300
Unadjusted Fund Balance as of June 30, 2021 (Fund Balance Previous Year + Net Income)			$	229,570,815
Adjustment for Actuarial Smoothing			$	(25,493,653)
Actuarial Value of Assets: (June 30, 2021)			$	204,077,162

EXHIBIT XVII
PLAN B: FUNDING DEPOSIT ACCOUNT

Funding Deposit Account Balance as of June 30, 2020	$	1,748,191
Interest on Opening Balance at 6.950%		121,499
Contributions to the Funding Deposit Account		0
Withdrawals from the Funding Deposit Account		0
Funding Deposit Account Balance as of June 30, 2021	$	1,869,690

EXHIBIT XVIII – SCHEDULE A
PLAN B: PENSION BENEFIT OBLIGATION

Present Value of Credited Projected Benefits Payable to Current Employees	$	125,437,543
Present Value of Benefits Payable to Terminated Employees		11,262,463
Present Value of Benefits Payable to Current Retirees and Beneficiaries		128,917,433
TOTAL PENSION BENEFIT OBLIGATION	$	265,617,439
NET ACTUARIAL VALUE OF ASSETS	$	204,077,162
Ratio of Net Actuarial Value of Assets to Pension Benefit Obligation		76.83%

EXHIBIT XVIII – SCHEDULE B
PLAN B: ENTRY AGE NORMAL ACCRUED LIABILITIES

Accrued Liability for Active Employees	$	133,604,029
Accrued Liability for Terminated Employees		11,262,463
Accrued Liability for Current Retirees and Beneficiaries		128,917,433
TOTAL ENTRY AGE NORMAL ACCRUED LIABILITY	$	273,783,925
ACTUARIAL VALUE OF ASSETS	$	204,077,162
Ratio of Net Actuarial Value of Assets to Entry Age Normal Accrued Liability		74.54%

EXHIBIT XIX
CENSUS DATA – PLAN B

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2020	1,949	1,732	88	1,107	4,876
Additions to Census					
Initial membership	298	71			369
Omitted in error last year					
Death of another member				16	16
Adjustment for multiple records		3		1	4
Change in Status during Year					
Actives terminating service	(169)	169			
Actives who retired	(41)			41	
Actives entering DROP	(29)		29		
Term. members rehired	18	(18)			
Term. members who retire		(10)		10	
Retirees who are rehired					
Refunded who are rehired	6	1			7
DROP participants retiring			(16)	16	
DROP returned to work	17		(17)		
Omitted in error last year					
Eliminated from Census					
Refund of contributions	(146)	(93)			(239)
Deaths	(5)		(2)	(66)	(73)
Included in error last year					
Adjustment for multiple records					
Number of members as of June 30, 2021	1,898	1,855	82	1,125	4,960

PLAN B - ACTIVES CENSUS BY AGE:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 - 20	15	1	16	24,550	392,805
21 - 25	63	15	78	27,844	2,171,868
26 - 30	88	37	125	30,963	3,870,364
31 - 35	92	36	128	33,987	4,350,388
36 - 40	106	52	158	37,206	5,878,591
41 - 45	130	63	193	39,229	7,571,278
46 - 50	135	77	212	39,302	8,332,014
51 - 55	182	94	276	39,772	10,977,020
56 - 60	224	101	325	39,906	12,969,412
61 - 65	189	118	307	40,211	12,344,788
66 - 70	73	28	101	42,477	4,290,217
71 - 75	29	15	44	42,899	1,887,551
76 - 80	12	2	14	44,727	626,174
81 - 85	2	0	2	18,115	36,229
86 - 90	1	0	1	94,000	94,000
TOTAL	1,341	639	1,980	38,279	75,792,699

THE ACTIVE CENSUS INCLUDES 802 ACTIVES WITH VESTED BENEFITS, INCLUDING 82 DROP PARTICIPANTS AND 72 ACTIVE FORMER DROP PARTICIPANTS.

PLAN B - TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	1	0	1	10,581	10,581
36 - 40	4	3	7	9,126	63,879
41 - 45	7	4	11	9,763	107,395
46 - 50	8	6	14	13,284	185,974
51 - 55	12	5	17	11,362	193,152
56 - 60	25	17	42	11,858	498,025
61 - 65	7	2	9	14,734	132,605
66 - 70	5	2	7	8,856	61,990
76 - 80	1	0	1	494	494
86 - 90	1	0	1	630	630
TOTAL	71	39	110	11,407	1,254,725

PLAN B - TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:

Contributions Ranging From		To	Number	Total Contributions
0	-	99	842	26,814
100	-	499	421	104,339
500	-	999	159	114,325
1,000	-	1,999	125	170,720
2,000	-	4,999	122	383,719
5,000	-	9,999	51	355,826
10,000	-	19,999	21	266,328
20,000	-	99,999	4	91,412
		TOTAL	1,745	1,513,483

EXCLUDES $33,930 IN CONTRIBUTION BALANCES OWED TO THE BENEFICIARIES OF DECEASED MEMBERS.

PLAN B - REGULAR RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
51 - 55	1	0	1	39,817	39,817
56 - 60	16	10	26	21,739	565,202
61 - 65	81	47	128	16,006	2,048,794
66 - 70	153	62	215	14,312	3,077,185
71 - 75	123	54	177	12,905	2,284,260
76 - 80	97	38	135	10,657	1,438,754
81 - 85	62	27	89	10,311	917,719
86 - 90	35	19	54	10,588	571,725
91 - 99	9	5	14	6,988	97,838
TOTAL	577	262	839	13,160	11,041,294

PLAN B - DISABILITY RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	1	0	1	6,935	6,935
46 - 50	1	0	1	6,324	6,324
51 - 55	4	1	5	9,026	45,128
56 - 60	7	2	9	10,315	92,838
61 - 65	12	4	16	12,348	197,571
71 - 75	1	0	1	12,210	12,210
TOTAL	26	7	33	10,940	361,006

PLAN B - SURVIVORS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	0	1	1	2,245	2,245
36 - 40	0	1	1	5,423	5,423
41 - 45	1	2	3	5,566	16,699
46 - 50	0	4	4	12,302	49,206
51 - 55	2	3	5	4,216	21,079
56 - 60	2	15	17	7,707	131,014
61 - 65	4	21	25	13,199	329,973
66 - 70	3	37	40	10,277	411,069
71 - 75	3	33	36	7,983	287,381
76 - 80	1	40	41	6,851	280,872
81 - 85	1	35	36	6,833	245,997
86 - 90	1	24	25	7,720	193,006
91 - 99	0	19	19	7,030	133,565
TOTAL	18	235	253	8,330	2,107,529

PLAN B - ACTIVE MEMBERS:

Attained Ages	Completed Years of Service 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 20	11	3	2									16
21 - 25	37	14	16	10	1							78
26 - 30	45	16	16	15	12	21						125
31 - 35	25	23	20	16	5	24	15					128
36 - 40	27	13	12	14	11	41	28	11	1			158
41 - 45	30	21	18	15	10	33	32	19	15			193
46 - 50	32	17	18	14	13	33	23	30	18	13	1	212
51 - 55	26	16	18	20	13	48	44	32	32	18	9	276
56 - 60	39	21	19	23	16	60	52	41	26	10	18	325
61 - 65	25	10	19	11	24	63	36	42	19	15	43	307
66 - 70	5	4	4	9	1	30	17	9	8	5	9	101
71 & Over		3	4	2	2	17	9	10	2	3	9	61
Totals	302	161	166	149	108	370	256	194	121	64	89	1,980

PLAN B - AVERAGE ANNUAL SALARY OF ACTIVE MEMBERS:

Attained Ages	Completed Years of Service 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Salary
0 - 20	22,903	26,252	31,056									24,550
21 - 25	24,204	29,500	31,144	33,597	29,035							27,844
26 - 30	26,003	30,219	34,071	33,866	32,720	36,713						30,963
31 - 35	26,923	39,233	33,798	34,979	39,016	33,707	35,685					33,987
36 - 40	29,303	31,607	31,858	40,207	38,247	35,679	43,305	51,127	72,800			37,206
41 - 45	32,008	31,405	32,150	36,619	30,258	37,482	51,650	49,188	46,445			39,229
46 - 50	28,766	32,138	32,177	41,738	36,175	39,205	50,831	42,317	48,907	43,877	48,235	39,302
51 - 55	26,015	35,890	31,405	32,957	37,120	38,697	43,859	41,537	48,979	45,189	58,024	39,772
56 - 60	28,748	29,502	35,908	34,662	41,987	37,710	42,333	47,080	44,370	56,278	53,713	39,906
61 - 65	34,030	25,005	31,087	27,074	38,186	35,629	34,376	47,538	44,042	46,946	56,264	40,211
66 - 70	24,642	20,241	34,911	37,131	110,257	36,586	40,884	44,534	46,753	58,401	71,391	42,477
71 & Over		44,773	33,274	27,458	44,507	38,518	40,902	58,324	37,622	62,105	40,543	43,344
Average	27,928	32,009	32,727	35,191	37,782	37,002	42,975	46,426	46,751	48,892	55,776	38,279

PLAN B - TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

	Years Until Retirement Eligibility											
Attained Ages	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 30												0
31 - 35										1		1
36 - 40									6	1		7
41 - 45								9	1	1		11
46 - 50							13	1				14
51 - 55						17						17
56 - 60	14	7	9	7	4	1						42
61 - 65	7		2									9
66 - 70	7											7
71 - 75												0
76 - 80	1											1
81 - 85												0
86 - 90	1											1
91 & Over												0
Totals	30	7	11	7	4	18	13	10	7	3	0	110

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

	Years Until Retirement Eligibility											
Attained Ages	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 30												0
31 - 35										10,581		10,581
36 - 40									9,577	6,417		9,126
41 - 45								10,362	7,991	6,148		9,763
46 - 50							13,876	5,581				13,284
51 - 55						11,362						11,362
56 - 60	9,450	13,905	15,935	13,113	7,282	4,053						11,858
61 - 65	17,310		5,718									14,734
66 - 70	8,856											8,856
71 - 75												0
76 - 80	494											494
81 - 85												0
86 - 90	630											630
91 & Over												0
Average	10,553	13,905	14,077	13,113	7,282	10,956	13,876	9,884	9,350	7,715	0	11,407

PLAN B - SERVICE RETIREES:

Attained Ages	Completed Years Since Retirement 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 50												0
51 - 55			1									1
56 - 60	7	2	1	2	3	8	3					26
61 - 65	32	23	20	17	9	14	9	2	1	1		128
66 - 70	20	21	19	31	18	76	22	4	3	1		215
71 - 75	7	12	8	6	15	66	53	7	3			177
76 - 80	1	4	4	4	5	25	45	40	6	1		135
81 - 85	2	1	2	3	2	5	14	29	28	3		89
86 - 90		1		1	1	1	9	4	21	13	3	54
91 & Over								1		7	6	14
Totals	69	64	55	64	53	195	155	87	62	26	9	839

PLAN B - AVERAGE ANNUAL BENEFITS PAYABLE TO SERVICE RETIREES:

Attained Ages	Completed Years Since Retirement 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 50												0
51 - 55			39,817									39,817
56 - 60	15,161	26,536	23,634	26,144	27,790	22,440	22,400					21,739
61 - 65	17,523	14,450	14,036	16,765	15,032	18,862	17,926	9,211	5,821	5,071		16,006
66 - 70	18,146	13,780	15,175	13,422	12,428	14,027	16,039	13,902	5,893	4,605		14,312
71 - 75	11,294	13,290	9,990	9,608	9,606	14,354	12,292	18,231	12,539			12,905
76 - 80	6,626	11,886	9,367	8,628	10,522	11,096	11,176	9,873	13,318	4,850		10,657
81 - 85	6,409	4,879	8,644	7,991	19,529	10,008	12,209	10,393	8,757	17,385		10,311
86 - 90		28,911		13,982	17,448	13,738	5,054	16,817	9,513	11,339	12,569	10,588
91 & Over								1,480		9,034	5,520	6,988
Average	16,351	14,306	13,948	13,805	13,124	14,349	12,595	11,112	9,452	10,667	7,870	13,160

PLAN B - DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement											
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 40												0
41 - 45			1									1
46 - 50							1					1
51 - 55				2		2	1					5
56 - 60				2	2	2	2	1				9
61 - 65			1		1	8	3	2		1		16
66 - 70												0
71 - 75										1		1
76 & Over												0
Totals	0	0	2	4	3	12	7	3	0	2	0	33

PLAN B - AVERAGE ANNUAL BENEFITS PAYABLE TO DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement											
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 40												0
41 - 45			6,935									6,935
46 - 50							6,324					6,324
51 - 55				9,974		9,155	6,872					9,026
56 - 60				11,815	13,036	9,515	8,446	7,217				10,315
61 - 65			6,144		19,062	12,104	17,505	9,128		4,766		12,348
66 - 70												0
71 - 75										12,210		12,210
76 & Over												0
Average	0	0	6,540	10,894	15,044	11,181	11,800	8,491	0	8,488	0	10,940

PLAN B - SURVIVING BENEFICIARIES OF FORMER MEMBERS:

ATTAINED AGES	COMPLETED YEARS SINCE RETIREMENT 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&OVER	TOTAL
0 - 30												0
31 - 35									1			1
36 - 40								1				1
41 - 45						2			1			3
46 - 50	1	1		1					1			4
51 - 55						2		2	1			5
56 - 60	1		1		1	7	2	2	1	1	1	17
61 - 65	3	1	3	1	1	5	5	3	1	1	1	25
66 - 70		1	1	2	2	7	10	9	4	3	1	40
71 - 75	3		1		1	6	8	10	3	3	1	36
76 - 80	2		1	1		5	5	10	11	5	1	41
81 - 85	1		1				1	8	10	11	4	36
86 - 90						2	4	3	4	4	8	25
91 & OVER	1							2	2	2	12	19
TOTALS	12	3	8	5	5	36	35	50	40	30	29	253

PLAN B - AVERAGE ANNUAL BENEFITS PAYABLE TO SURVIVORS OF FORMER MEMBERS:

ATTAINED AGES	COMPLETED YEARS SINCE RETIREMENT 0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&OVER	AVERAGE BENEFIT
0 - 30												0
31 - 35									2,245			2,245
36 - 40								5,423				5,423
41 - 45						6,556			3,588			5,566
46 - 50	15,791	4,474		24,661					4,280			12,302
51 - 55						7,144		2,557	1,677			4,216
56 - 60	5,132		18,880		1,415	10,479	2,873	10,980	2,242	1,386	898	7,707
61 - 65	19,606	15,246	27,596	15,147	10,629	10,361	9,259	8,254	4,056	17,595	2,836	13,199
66 - 70		13,204	7,543	16,685	14,594	12,402	12,971	6,942	7,548	3,894	6,888	10,277
71 - 75	9,196		7,956		12,719	8,099	9,661	5,866	11,681	5,203	3,933	7,983
76 - 80	2,242		7,651	6,876		5,781	6,351	8,633	5,608	9,338	6,493	6,851
81 - 85	2,912		15,935				6,464	8,361	6,972	5,380	6,225	6,833
86 - 90						17,223	6,926	13,026	6,265	5,634	5,523	7,720
91 & OVER	22,845							1,207	2,750	7,685	7,286	7,030
AVERAGE	11,464	10,975	17,594	16,011	10,790	9,759	9,284	7,462	6,132	6,335	6,123	8,330

EXHIBIT XX
PLAN B: YEAR-TO-YEAR COMPARISON

	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018
Number of Active Members	1,980	2,037	2,063	2,128
Number of Retirees & Survivors	1,125	1,107	1,076	1,050
Number of Terminated Due Deferred Benefits	110	103	97	92
Number Terminated Due Refunds	1,745	1,629	1,556	1,419
Active Lives Payroll	$ 75,792,699	$ 76,799,634	$ 75,213,353	$ 74,696,846
Retiree Benefits in Payment	$ 13,509,829	$ 12,823,215	$ 12,223,991	$ 11,522,493
Market Value of Assets (MVA)	$ 219,732,397	$ 177,974,097	$ 170,871,104	$ 161,284,802
Actuarial Value of Assets (AVA)	$ 204,077,162	$ 187,812,515	$ 180,085,046	$ 175,032,415
Entry Age Normal Accrued Liability	$ 273,783,925	$ 264,774,249	$ 254,292,446	$ 241,302,909
Ratio of AVA to EAN Accrued Liability	74.54%	70.93%	70.82%	72.54%
Frozen Unfunded Actuarial Accrued Liability	$ 0	$ 0	$ 0	$ 0
Present Value of Future Employer Normal Cost	$ 99,767,305	$ 105,929,550	$ 102,003,203	$ 95,920,724
Present Value of Future Employee Contrib.	$ 23,943,614	$ 24,180,096	$ 23,628,322	$ 24,253,572
Funding Deposit Account Balance	$ 1,869,690	$ 1,748,191	$ 1,633,823	$ 1,523,023
Present Value of Future Benefits	$ 325,918,391	$ 316,173,970	$ 304,082,748	$ 293,683,688

	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019
Employee Contribution Rate	5.00%	5.00%	5.00%	5.00%
Estimated Tax Contribution as a % of Payroll	3.96%	3.60%	3.50%	3.38%
Actuarially Required Net Direct Employer Contribution Rate	14.39%	15.34%	15.34%	13.73%
Actual Employer Contribution Rate	15.50%	15.50%	14.00%	14.00%

Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012
2,125	2,142	2,200	2,168	2,128	2,155
1,025	975	959	916	900	879
82	71	71	74	61	61
1,331	1,258	1,218	1,170	1,155	1,100
$ 73,275,324	$ 71,918,938	$ 69,909,530	$ 67,939,158	$ 65,928,929	$ 66,409,896
$ 10,946,571	$ 10,254,964	$ 9,917,688	$ 9,141,803	$ 8,793,050	$ 8,285,257
$ 150,467,958	$ 143,201,586	$ 149,268,995	$ 156,659,396	$ 140,744,063	$ 137,164,489
$ 168,698,012	$ 164,516,476	$ 165,154,609	$ 161,992,280	$ 153,851,774	$ 154,451,871
$ 232,425,916	$ 221,633,353	$ 212,961,895	$ 199,762,726	$ 192,160,973	$ 187,178,650
72.58%	74.23%	77.55%	81.09%	80.06%	82.52%
$ 2,382,456	$ 2,742,698	$ 3,088,551	$ 3,421,001	$ 3,740,857	$ 4,049,257
$ 91,249,645	$ 82,911,008	$ 72,948,195	$ 60,613,662	$ 60,012,141	$ 54,153,087
$ 23,664,481	$ 23,119,585	$ 22,770,216	$ 21,982,912	$ 21,589,199	$ 21,845,625
$ 3,286,730	$ 3,233,725	$ 3,008,116	$ 3,126,521	$ 2,901,644	$ 2,692,941
$ 282,707,864	$ 270,056,042	$ 260,953,455	$ 244,883,334	$ 236,292,327	$ 231,806,899

Fiscal 2018	Fiscal 2017	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013
5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
3.37%	3.41%	3.64%	3.41%	3.38%	3.14%
14.00%	13.06%	11.04%	9.60%	9.82%	8.72%
13.25%	11.25%*	9.50%	10.00%†	8.75%	8.00%

* Includes 0.25% from the Funding Deposit Account
† Includes 0.50% from the Funding Deposit Account

SUMMARY OF PRINCIPAL PLAN PROVISIONS

All members of the Municipal Employees' Retirement System are participants in either Plan A or B according to the provisions of the agreement entered into by their employer. All employees of a participating employer must participate in the same plan. The principal provisions of each plan are given below. The following summary of plan provisions is for general informational purposes only and does not constitute a guarantee of benefits.

MEMBERSHIP – All persons who are actively employed by a participating employer on a permanent, regularly scheduled basis of at least an average of thirty-five hours per week are members of this system. Excluded from membership are members of city councils, alderman, town councilmen, and constables; the exclusion does not apply to persons serving in excluded positions on January 1, 1997.

PLAN A PROVISIONS:

CONTRIBUTION RATES – The Board of Trustees may set the employee contribution rate not less than 9.25% nor more than 10.00%. In addition, each sheriff and ex officio tax collector deducts one-fourth of one percent of the aggregate amount of the tax shown to be collected by the tax roll of each respective parish, excepting Orleans Parish, and remits the money to the system on an annual basis. Taxes are apportioned between Plan A and Plan B in proportion to salaries of plan participants. Taxes received from East Baton Rouge Parish are apportioned between the Municipal Employees' Retirement System and the Employees' Retirement System of the City of Baton Rouge. The system also receives revenue sharing funds each year as appropriated by the legislature. The remaining employer contributions are determined according to actuarial requirements and are set annually.

RETIREMENT BENEFITS (Tier 1) – Members with ten years of creditable service may retire at age sixty; members with twenty-five years of service may retire regardless of age. The monthly retirement allowance is equal to three percent of the member's final compensation multiplied by his years of creditable service; elected officials receive an additional one-half percent of final compensation for each year of such elected service. However, the accrued retirement benefits for those employees who were members of only the supplemental plan prior to October 1, 1978, are based on one percent of final compensation plus two dollars per month for each year of service credited prior to October 1, 1978. The retirement allowance may not exceed the greater of final annual salary or one hundred percent of the member's final average compensation. Members with twenty years of service credit, not otherwise eligible for normal retirement, are eligible for a modified actuarially reduced early retirement.

RETIREMENT BENEFITS (Tier 2) – Employees whose first employment making them eligible for membership occurs on or after January 1, 2013 become members of Tier 2. Normal retirement eligibility in Tier 2 is at age 67 with seven years of service credit, at age 62 with ten years of service credit, or age 55 with thirty years of service credit. Members are eligible for an actuarially reduced early retirement at twenty-five years of service credit. Retirement benefits are based on a 3% accrual rate. Employee contributions are set by the Board of Trustees within a range of 8% to 10%.

DISABILITY BENEFITS – Five years of creditable service are required in order to be eligible for disability benefits. Twenty years of creditable service are required in order for a member to have a vested disability benefit. A disabled member receives a normal retirement allowance if eligible under regular retirement provisions; if he is not eligible for a normal retirement, he receives a disability benefit equal to the lesser of:

1) Forty-five percent of his final average compensation or three percent of his final average compensation multiplied by his years of creditable service, whichever is greater; or
2) Three percent of his final average compensation multiplied by his years of creditable service projected to his earliest normal retirement age.

SURVIVOR BENEFITS – Five years of creditable service are required in order to be eligible for survivor benefits. If the member is eligible for normal retirement at the time of death, the surviving spouse receives an automatic option two benefit. If the member is not eligible for a normal retirement, the surviving spouse with minor children receives sixty percent of final compensation payable until no child in her care satisfies the definition of minor child. The surviving spouse with no minor children receives forty percent of final compensation payable upon attainment of age sixty by the spouse, or the actuarial equivalent of this amount payable immediately (such equivalent not to be less than 20% of final compensation). Minor children with no surviving unmarried parent receive thirty percent of final compensation each not to exceed a total of sixty percent of final compensation. Survivor benefits are also payable to the surviving spouses of former members who have not withdrawn their accumulated contributions and who have at least twenty years of creditable service. The benefits payable are the actuarial equivalent of the Option 2 benefits that would have become payable to the surviving spouse at the time the former member would have begun receiving deferred normal retirement benefits, had the member survived until that date, elected Option 2, and died at that time.

PLAN B PROVISIONS:

CONTRIBUTION RATES – The Board of Trustees may set the employee contribution rate not less than 5.00% nor more than 6.00%. In addition, each sheriff and ex officio tax collector deducts one-fourth of one percent of the aggregate amount of the tax shown to be collected by the tax roll of each respective parish, excepting Orleans Parish, and remits the money to the system on an annual basis. Taxes are apportioned between Plan A and Plan B in proportion to salaries of plan participants. Taxes received from East Baton Rouge Parish are apportioned between the Municipal Employees' Retirement System and the Employees' Retirement System of the City of Baton Rouge. The system also receives revenue sharing funds each year as appropriated by the legislature. The remaining employer contributions are determined according to actuarial requirements and are set annually.

RETIREMENT BENEFITS (Tier 1) – Members with ten years of creditable service may retire at age sixty; members with thirty years of service may retire at any age. The monthly retirement allowance is equal to two percent of the member's final compensation multiplied by his years of creditable service; elected officials receive an additional one-half percent of final compensation for each year of such elected service.

RETIREMENT BENEFITS (Tier 2) – Employees whose first employment making them eligible for membership occurs on or after January 1, 2013 will become members of Tier 2. Normal retirement eligibility in Tier 2 is at age 67 with seven years of service credit, at age 62 with ten years of service credit, or age 55 with thirty years of service credit. Members are eligible for an actuarially reduced early retirement at twenty-five years of service credit. Retirement benefits are based on a 2% accrual rate. Employee contributions are set by the Board of Trustees within a range of 4% to 6%.

DISABILITY BENEFITS – Ten years of creditable service are required in order to be eligible for disability benefits. Twenty years of creditable service are required in order for a member to have a vested disability benefit. A disabled member receives a normal retirement allowance if eligible under regular retirement provisions; if he is not eligible for a normal retirement allowance, he receives a disability benefit equal to the lesser of:

1) Thirty percent of his final average compensation or two percent of his final average compensation multiplied by his years of creditable service, whichever is greater; and
2) Two percent of his final average compensation multiplied by his years of creditable service projected to his earliest normal retirement age.

SURVIVOR BENEFITS – The surviving spouse of a member who was eligible for normal retirement at the time of death receives an automatic option two benefit. The surviving spouse of a member with five or more years of creditable service and not eligible for normal retirement at the time of death receives either 30% of the member's final compensation payable to the spouse when they attain age 60 or an actuarial equivalent of 30% of the deceased member's final compensation, but not less than 15% of such final compensation. Survivor benefits are also payable to the surviving spouses of former members who have not withdrawn their accumulated contributions and who have at least twenty years of creditable service. The benefits payable are the actuarial equivalent of the Option 2 benefits that would have become payable to the surviving spouse at the time the former member would have begun receiving deferred normal retirement benefits, had the member survived until that date, elected Option 2, and died at that time.

PROVISIONS APPLICABLE TO BOTH PLAN A AND B:

FINAL AVERAGE COMPENSATION –For a member whose first employment making him eligible for membership in the system began after June 30, 2006, final average compensation is based on the average monthly earnings during the highest sixty consecutive months or joined months if service was interrupted. The earnings to be considered for each twelve month period within the sixty month period may not exceed 115% of the preceding twelve month period.

Effective January 1, 2013, for a member whose first employment making him eligible for membership in the system began before July 1, 2006, final average compensation was redefined to be thirty-six months plus the number of whole months since January 1, 2013 not to exceed sixty months. However, the actual monthly final average compensation used to determine the member's benefit cannot be less than the thirty-six month final average compensation as of January 1, 2013. The earnings to be considered for each twelve month period within the final average compensation period may not exceed 115% of the preceding twelve month period.

UNUSED SICK & ANNUAL LEAVE – All unused sick and annual leave is credited at the time of retirement to the member if the employer so elects for his employees. The actuarial cost of providing this conversion is borne solely by the employer and must be paid to the Board within thirty days of the member's retirement date.

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

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

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

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

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

DEFERRED RETIREMENT OPTION PLAN – In lieu of terminating employment and accepting a service retirement allowance, any member of Plan A or B who is eligible for a normal retirement may elect to participate in the Deferred Retirement Option Plan (DROP) for up to three years and defer the receipt of benefits. Upon commencement of participation in the plan, membership in the system terminates. During participation in the plan, employer contributions are payable but employee contributions cease. The monthly retirement benefits that would have been payable, had the person elected to cease employment and receive a service retirement allowance, are paid into the DROP account. After a member terminates his participation in DROP his account will earn interest at the actual rate of return earned on the funds left on deposit as certified by the custodian of the system's assets. This interest will be credited to the individual member's account balance on a daily basis beginning July 1, 2006. In addition, no cost-of-living increases are payable to participants until employment which made them eligible to become members of the system has been terminated for at least one full year.

Upon termination of employment prior to, or at the end of, the specified period of participation, a participant in the plan may receive, at his option, a lump sum payment from the account equal to the payments into the account, a true annuity based upon his account balance in that fund, or any other method of payment if approved by the Board of Trustees. The monthly benefits that were being paid into the DROP account will begin to be paid to the retiree. If a participant dies during the participation in the plan, a lump sum equal to his account balance in the plan fund shall be paid to his named beneficiary or, if none, to his estate. If employment is not terminated at the end of the three years, payments into the plan fund cease and the person resumes active contributing membership in the system. For any member hired prior to July 1, 2006, additional accrued benefits are based on final average compensation used to calculate the member's original benefit unless the additional period of service is at least thirty-six months. For any member hired on or after July 1, 2006, whose period of additional service after their DROP participation period ends is less than sixty months, the final compensation figure used to calculate the additional benefit will be that used to calculate the original benefit. If their period of additional service is sixty months or more, the final compensation figure used to calculate the additional benefit will be based on their compensation during the period of additional service.

COST OF LIVING INCREASES – The Board of Trustees is authorized to grant retired members, and widows of members, who have been retired for at least one full year an annual cost of living increase of two percent of their original benefit and all retired members and widows who are sixty-five years of age and older a two percent increase in their original benefit (or their benefit as of October 1, 1977, if they retired prior to that time). In order for the Board to grant either of these increases the system must meet certain criteria detailed in the statute related to funding status and interest earnings on investments. 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 that have an impact on the cost of the plan. To the extent that future experience varies from the assumptions selected for valuation, future costs will be either higher or lower than anticipated. The effect of emerging experience on the fund is illustrated by the following chart.

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: Plan A: Frozen Attained Age Normal Actuarial Cost Method with allocation based on earnings. The frozen actuarial accrued liabilities were calculated on the projected unit credit cost method.

Plan B: The Aggregate Actuarial Cost Method with allocation based on earnings. The normal cost is interest adjusted for midyear payment.

ACTUARIAL ASSET VALUES: Invested 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.

VALUATION INTEREST RATE: 6.85% (Net of Investment Expense)

ANNUAL SALARY INCREASE RATE: Salary increases include 2.5% inflation. The gross rates including inflation and merit increases are as follows:

PLAN A

Years of Service (less than or equal to)	Salary Increase (in the following year)
1-4	6.4%
Above 4	4.5%

PLAN B

Years of Service (less than or equal to)	Salary Increase (in the following year)
1-4	7.4%
Above 4	4.9%

ACTIVE MEMBER MORTALITY: 120% of the PubG-2010(B) Employee Tables for males and females, each with each with the full generational MP2018 scale

ANNUITANT, AND BENEFICIARY MORTALITY: 120% of the PubG-2010(B) Healthy Retiree Tables for males and females, each with the full generational MP2018 scale

RETIREE COST OF LIVING INCREASES: The present value of future retirement benefits is based on benefits currently being paid by the system and includes previously granted cost of living increases. The present values 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. Members are assumed to retire no earlier than normal retirement age.

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

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

DROP PARTICIPATION PERIOD: DROP participants are assumed to participate for 3 years. At the end of the DROP participation period, one half of participants are assumed to retire; the other half are assumed to work three additional years.

RETIREMENT RATES FOR ACTIVE FORMER DROP PARTICIPANTS: The table of these rates is included later in the report. These rates apply only to those active participants who were previously in DROP.

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

Service Duration (≤)	Plan A (Tier 1)	Plan A (Tier 2)	Plan B (Tiers 1 & 2)
1	23.00%	23.00%	29.00%
2	20.00%	20.00%	24.00%
3	17.00%	17.00%	19.00%
4	14.00%	14.00%	15.00%
5	12.00%	12.00%	12.00%
6	10.00%	10.00%	10.00%
7	9.00%	9.00%	9.00%
8	9.00%	9.00%	8.00%
9	8.00%	8.00%	7.00%
10	7.00%	7.00%	7.00%
11	6.00%	6.00%	6.00%
12	5.00%	5.00%	6.00%
13	4.00%	4.00%	5.00%
14	4.00%	4.00%	5.00%
15	3.00%	3.00%	4.00%
16	3.00%	3.00%	4.00%
17	3.00%	3.00%	4.00%
18	3.00%	3.00%	4.00%
19	3.00%	3.00%	4.00%
20	3.00%	3.00%	4.00%
21	3.00%	3.00%	4.00%
22	3.00%	3.00%	4.00%
23	4.00%	3.00%	3.00%
24	5.00%	3.00%	3.00%
25	8.00%	3.00%	2.00%
26	0.00%	3.00%	2.00%
27	0.00%	3.00%	1.00%
28	0.00%	3.00%	1.00%
29	0.00%	4.00%	1.00%
30	0.00%	5.00%	1.00%
31 and Over	0.00%	8.00%	1.00%

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

RATES OF DISABILITY – Plan A: 25% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10 – 19 years of service.

RATES OF DISABILITY – Plan B: 50% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10 – 19 years of service.

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

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

Member's Age	% With Children	Number of Children	Average Age
25	70%	1.84	5
35	86%	2.13	9
45	75%	1.70	12
55	22%	1.42	14
65	4%	1.45	15

DISABLED LIVES MORTALITY: 120% of the PubNS-2010(B) Disabled Retiree Tables for males and females, each with each with the full generational MP2018 scale

VESTING ELECTING PERCENTAGE – Plan A: 50% of members with less than 20 years of service are assumed to elect a deferred benefit in lieu of a refund of contributions. 85% of members with 20 or more years of service are assumed to elect the deferred benefit.

VESTING ELECTING PERCENTAGE – Plan B: 66% of members with less than 25 years of service are assumed to elect a deferred benefit in lieu of a refund of contributions. 85% of members with 25 or more years of service are assumed to elect the deferred benefit.

PLAN A – ACTUARIAL TABLES AND RATES

Age	Retirement Rates Tier 1	Retirement Rates Tier 2	DROP Entry Rates Tier 1	DROP Entry Rates Tier 2	Post-DROP Retirement Tier 1	Post-DROP Retirement Tier 2	Disability Rates	Remarriage Rates
18	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.06124
19	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.06124
20	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.06124
21	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.05818
22	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.05524
23	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.05242
24	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.04971
25	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.04566
26	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.04335
27	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.04114
28	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.03902
29	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.03698
30	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.03502
31	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.03314
32	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.03134
33	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.02961
34	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00038	0.02795
35	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00043	0.02636
36	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00048	0.02483
37	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00053	0.02336
38	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00060	0.02195
39	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00068	0.02060
40	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00078	0.01930
41	0.20000	0.00000	0.17000	0.00000	0.04000	0.00000	0.00088	0.01805
42	0.20000	0.00000	0.17000	0.00000	0.04000	0.00000	0.00098	0.01686
43	0.20000	0.00000	0.17000	0.00000	0.04000	0.00000	0.00110	0.01571
44	0.13000	0.00000	0.17000	0.00000	0.04000	0.00000	0.00125	0.01461
45	0.08000	0.00000	0.17000	0.00000	0.04000	0.00000	0.00143	0.01355
46	0.05000	0.00000	0.16000	0.00000	0.04000	0.00000	0.00163	0.01253
47	0.04000	0.00000	0.15000	0.00000	0.04000	0.00000	0.00183	0.01156
48	0.04000	0.00000	0.14000	0.00000	0.04000	0.00000	0.00208	0.01063
49	0.05000	0.00000	0.14000	0.00000	0.04000	0.00000	0.00235	0.00973
50	0.06000	0.00000	0.14000	0.00000	0.07000	0.00000	0.00268	0.00887
51	0.07000	0.00000	0.14000	0.00000	0.10000	0.00000	0.00305	0.00804
52	0.07000	0.00000	0.16000	0.00000	0.12000	0.00000	0.00345	0.00725
53	0.08000	0.00000	0.18000	0.00000	0.14000	0.00000	0.00392	0.00649
54	0.07000	0.00000	0.20000	0.00000	0.16000	0.00000	0.00445	0.00576
55	0.07000	0.07000	0.23000	0.23000	0.18000	0.18000	0.00505	0.00000
56	0.07000	0.07000	0.24000	0.24000	0.19000	0.19000	0.00575	0.00000
57	0.06000	0.06000	0.25000	0.25000	0.19000	0.19000	0.00653	0.00000
58	0.06000	0.06000	0.24000	0.24000	0.20000	0.20000	0.00740	0.00000
59	0.07000	0.07000	0.23000	0.23000	0.21000	0.21000	0.00843	0.00000
60	0.07000	0.07000	0.21000	0.21000	0.21000	0.21000	0.01220	0.00000
61	0.08000	0.08000	0.19000	0.19000	0.22000	0.22000	0.01220	0.00000
62	0.09000	0.09000	0.17000	0.17000	0.22000	0.22000	0.01220	0.00000
63	0.10000	0.10000	0.15000	0.15000	0.22000	0.22000	0.01220	0.00000
64	0.12000	0.12000	0.13000	0.13000	0.22000	0.22000	0.01220	0.00000
65	0.14000	0.14000	0.13000	0.13000	0.21000	0.21000	0.01220	0.00000
66	0.16000	0.16000	0.12000	0.12000	0.20000	0.20000	0.01220	0.00000
67	0.18000	0.18000	0.12000	0.12000	0.18000	0.18000	0.01220	0.00000
68	0.19000	0.19000	0.12000	0.12000	0.17000	0.17000	0.01220	0.00000
69	0.20000	0.20000	0.12000	0.12000	0.15000	0.15000	0.01220	0.00000
70	0.21000	0.21000	0.12000	0.12000	0.14000	0.14000	0.01220	0.00000
71	0.21000	0.21000	0.12000	0.12000	0.13000	0.13000	0.01220	0.00000
72	0.20000	0.20000	0.12000	0.12000	0.13000	0.13000	0.01220	0.00000
73	0.19000	0.19000	0.11000	0.11000	0.13000	0.13000	0.01220	0.00000
74	0.17000	0.17000	0.11000	0.11000	0.13000	0.13000	0.01220	0.00000
75	0.16000	0.16000	0.09000	0.09000	0.13000	0.13000	0.01220	0.00000

PLAN B – ACTUARIAL TABLES AND RATES

Age	Retirement Rates Tier 1	Retirement Rates Tier 2	DROP Entry Rates Tier 1	DROP Entry Rates Tier 2	Post-DROP Retirement Tier 1	Post-DROP Retirement Tier 2	Disability Rates	Remarriage Rates
18	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.06124
19	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.06124
20	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.06124
21	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.05818
22	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.05524
23	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.05242
24	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.04971
25	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.04566
26	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.04335
27	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.04114
28	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.03902
29	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.03698
30	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.03502
31	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.03314
32	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.03134
33	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.02961
34	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00075	0.02795
35	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00085	0.02636
36	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00095	0.02483
37	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00105	0.02336
38	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00120	0.02195
39	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00135	0.02060
40	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00155	0.01930
41	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00175	0.01805
42	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00195	0.01686
43	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00220	0.01571
44	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00250	0.01461
45	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00285	0.01355
46	0.01000	0.00000	0.10000	0.00000	0.15000	0.00000	0.00325	0.01253
47	0.01000	0.00000	0.10000	0.00000	0.15000	0.00000	0.00365	0.01156
48	0.01000	0.00000	0.10000	0.00000	0.15000	0.00000	0.00415	0.01063
49	0.01000	0.00000	0.22000	0.00000	0.15000	0.00000	0.00470	0.00973
50	0.01000	0.00000	0.32000	0.00000	0.15000	0.00000	0.00535	0.00887
51	0.02000	0.00000	0.35000	0.00000	0.15000	0.00000	0.00610	0.00804
52	0.02000	0.00000	0.36000	0.00000	0.15000	0.00000	0.00690	0.00725
53	0.03000	0.00000	0.36000	0.00000	0.15000	0.00000	0.00785	0.00649
54	0.03000	0.00000	0.36000	0.00000	0.14000	0.00000	0.00890	0.00576
55	0.03000	0.03000	0.37000	0.37000	0.12000	0.12000	0.01010	0.00000
56	0.03000	0.03000	0.38000	0.38000	0.10000	0.10000	0.01150	0.00000
57	0.03000	0.03000	0.39000	0.39000	0.08000	0.08000	0.01305	0.00000
58	0.04000	0.04000	0.37000	0.37000	0.07000	0.07000	0.01480	0.00000
59	0.05000	0.05000	0.34000	0.34000	0.06000	0.06000	0.01685	0.00000
60	0.06000	0.06000	0.28000	0.28000	0.06000	0.06000	0.02440	0.00000
61	0.08000	0.08000	0.22000	0.22000	0.07000	0.07000	0.02440	0.00000
62	0.11000	0.11000	0.17000	0.17000	0.09000	0.09000	0.02440	0.00000
63	0.13000	0.13000	0.12000	0.12000	0.12000	0.12000	0.02440	0.00000
64	0.16000	0.16000	0.10000	0.10000	0.15000	0.15000	0.02440	0.00000
65	0.18000	0.18000	0.08000	0.08000	0.18000	0.18000	0.02440	0.00000
66	0.20000	0.20000	0.07000	0.07000	0.20000	0.20000	0.02440	0.00000
67	0.22000	0.22000	0.06000	0.06000	0.22000	0.22000	0.02440	0.00000
68	0.23000	0.23000	0.06000	0.06000	0.24000	0.24000	0.02440	0.00000
69	0.23000	0.23000	0.06000	0.06000	0.25000	0.25000	0.02440	0.00000
70	0.23000	0.23000	0.06000	0.06000	0.25000	0.25000	0.02440	0.00000
71	0.23000	0.23000	0.07000	0.07000	0.25000	0.25000	0.02440	0.00000
72	0.21000	0.21000	0.08000	0.08000	0.24000	0.24000	0.02440	0.00000
73	0.20000	0.20000	0.09000	0.09000	0.24000	0.24000	0.02440	0.00000
74	0.19000	0.19000	0.09000	0.09000	0.23000	0.23000	0.02440	0.00000
75	0.18000	0.18000	0.09000	0.09000	0.21000	0.21000	0.02440	0.00000

PRIOR YEAR ASSUMPTIONS

VALUATION INTEREST RATE: 6.95% (Net of Investment Expense)

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GLOSSARY

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

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

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

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

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

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

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

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

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

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

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

Decrements – Events which result in the termination of membership in the system such as retirement, disability, withdrawal, or death.

Employer Normal Cost – That portion of the normal cost not attributable to employee contributions. It includes both direct contributions made by the employer and contributions from other non-employee sources such as revenue sharing and revenues related to taxes.

Funded Ratio – A measure of the ratio of assets to liabilities of the system according to a specific definition of those two values. Typically, the assets used in the measure are the actuarial value of assets; the liabilities are defined by reference to some recognized actuarial funding method. Thus, the funded ratio of a plan depends not only on the financial strength of the plan but also on the funding method used to determine the liabilities and the asset valuation method used to determine the assets in the ratio.

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

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

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

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

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