2018 Actuarial Report on Louisiana Public Retirement Systems

Actuarial Services Section
July 20, 2020

LOUISIANA LEGISLATIVE AUDITOR
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Under the provisions of state law, this report is a public document. A copy of this report has been submitted to the Governor, to the Retirement Committee Chairmen, and to other public officials. A copy of this report is available for public inspection at the Baton Rouge office of the Louisiana Legislative Auditor. For questions, please call Lowell Good at 225-339-3800.

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LOUISIANA LEGISLATIVE AUDITOR
DARYL G. PURPERA, CPA, CFE

June 30, 2020

The Honorable John Bel Edwards
Governor of the State of Louisiana
Post Office Box 94404
Baton Rouge, Louisiana 70804-9404

The Honorable Patrick "Page" Cortez
President of the Senate
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The Honorable Clay Schexnayder
Speaker of House of Representatives
Post Office Box 94062
Baton Rouge, Louisiana 70804-9062

Re: 2018 Actuarial Report on Louisiana Public Retirement Systems

This report, which is prepared by the Actuarial Services section of my office, is submitted in accordance with Louisiana Revised Statute (La. R.S.) 24:513C(1). This law requires that at least every five years the Legislative Auditor prepare a comparative summary of each system's reported actuarial assumptions and funded ratios, as well as any findings as to the appropriateness of those assumptions. The scope of this report includes actuarial assumptions and funded ratios for valuations performed in 2014, 2015, 2016, 2017, and 2018 for each of the four state and nine statewide retirement systems (Systems).

Our review consisted primarily of the collection of information and data provided by the Systems and approved by the Public Retirement Systems' Actuarial Committee (PRSAC), as well as the organization of this information into a comparative and consolidated format.

This report is not an audit; therefore, it has not been prepared in accordance with auditing standards as set forth by *Government Auditing Standards;* nor do we offer an opinion on the Systems' financial statements or internal controls.

The accompanying report presents a consolidation of information provided by the Systems and is intended primarily for your use and the use of the Systems. It is being made public through the Legislative Auditor's website at www.lla.la.gov.

Respectfully submitted,

Daryl G. Purpera, CPA, CFE
Legislative Auditor

DGP:ch
2018 ACTUARIAL REPORT ON LOUISIANA PUBLIC RETIREMENT SYSTEMS

Introduction

1. Purpose of the Report

The ***2018 Actuarial Report on Louisiana Public Retirement Systems*** has been prepared by the Actuarial Services section of the Louisiana Legislative Auditor (LLA) pursuant to Louisiana Revised Statute (La. R.S.) 24:513C(1) for the legislature, the governor, and other interested parties involved in the retirement systems' decision-making process.

This report summarizes the financial and actuarial history of the 13 state and statewide retirement systems in Louisiana. Specifically, it summarizes actuarial assumptions and funded ratios for valuations performed in 2014, 2015, 2016, 2017, and 2018 for each of the four state and nine statewide retirement systems.

2. Louisiana State and Statewide Retirement Systems

There are four state retirement systems and nine statewide retirement systems in Louisiana. Benefits for participants in the state retirement systems are guaranteed under the Louisiana Constitution. Benefits for participants in the statewide retirement systems are not guaranteed under the Louisiana Constitution.

State Systems

Benefits for participants in the four state systems are guaranteed by the Louisiana Constitution and cannot be diminished or impaired.

LASERS	*Louisiana State Employees' Retirement System*
TRSL	*Teachers' Retirement System of Louisiana*
LSERS	*Louisiana School Employees' Retirement System*
LSPRS	*Louisiana State Police Retirement System*

Statewide Systems

Benefits for participants in the nine statewide systems are not guaranteed by the Louisiana Constitution and may be diminished or impaired.

LARF	*Louisiana Assessors' Retirement Fund*
CCRRF	*Clerks of Court Retirement and Relief Fund*
DARS	*District Attorneys' Retirement System*
FRS	*Firefighters' Retirement System*
MERS	*Municipal Employees' Retirement System (Plans A & B)*
MPERS	*Municipal Police Employees' Retirement System*
PERS	*Parochial Employees' Retirement System (Plans A & B)*
ROVERS	*Registrars of Voters Employees' Retirement System*
LSPRF	*Louisiana Sheriffs' Pension and Relief Fund*

Social Security

Social Security coverage is available to members during their years of participation in the state and statewide retirement systems for members of TRSL Plan B, MERS Plan B, and PERS Plan B. The benefit accrual rate for members covered by Social Security is 2.0% for each year of service. Employee contribution rates for members of these sub-plans range from 3.0% to 5.0%.

Fiscal Year Information

The fiscal year-end for all Louisiana retirement systems except LARF and PERS is June 30. The fiscal year-end for LARF is September 30, and the fiscal year-end for PERS is December 31.

Section I

State Retirement Systems

1. Funding Assessments - Funded Ratio Measurements

General Information

Funded ratio measurements in this report for the four state retirement systems are calculated using valuation assets and the accrued liability according to the Entry Age Normal (EAN) funding method.

Terms relevant to the value shown in this section of the report are defined as follows:

a. **Market Value of Assets (MV)** is the value in cash that could be realized if all system assets were liquidated on the valuation date. Another term for market value is "fair value."

b. **Actuarial Value of Assets (AVA)** is the value of assets determined in accordance with the smoothing technique employed the actuary. Smoothing methods generally diminish and delay the effects of changes in the market value of assets.

c. **Valuation Assets (VA)** is generally the amount of assets available to fund benefits and to determine employer contribution requirements. The state systems each have a side account, called the Experience Account, which is used to finance cost-of-living adjustments. Valuation assets for the state systems are adjusted for the side account.

d. **Accrued Liability (AL)** is equal to the portion of the actuarial present value of future benefit payments allocated to past service determined in accordance with the funding method being used by the actuary. The AL also can be defined as the value of assets the system would have if (1) the current benefit structure had always been in place, (2) current assumptions had always been realized, (3) current actuarial methods had always been used, and (4) actuarially determined required contributions had been made.

e. **Unfunded Accrued Liability (UAL)** is the accrued liability minus the value of assets.

f. **Funded Ratio** is equal to the ratio of assets to the accrued liability. This ratio can vary depending on the type of asset value used in the numerator and the type of liability value used in the denominator.

Funded Ratios Based on Valuation Assets

The actuaries for the state retirement systems have consistently calculated funded ratios based on the actuarial funding method used to determine the system's normal cost.

Beginning with the June 30, 2014 valuations, all four state systems, in compliance with changes to La. R.S. 11:22, have been using the EAN method.

Table I-1 below provides a five-year history of funded ratios for the state retirement systems based on Valuation Assets.

Table I-1
Funded Ratios for the State Retirement Systems Based on Valuation Assets

(Millions of Dollars)

	As of June 30, 2018				2017	2016	2015	2014
	EAN AL	Valuation Assets	Unfunded EAN AL	Funded Ratio	Funded Ratio	Funded Ratio	Funded Ratio	Funded Ratio
LASERS	$19,104	$12,361	$6,743	64.7%	63.7%	62.6%	62.1%	59.3%
TRSL	$30,872	$20,320	$10,552	65.8%	64.5%	62.4%	60.9%	57.4%
LSERS	$2,614	$1,950	$664	74.6%	74.2%	72.5%	70.7%	66.9%
LSPRS	$1,141	$848	$293	74.3%	72.9%	69.5%	68.8%	65.5%
Total	**$53,731**	**$35,478**	**$18,253**	**66.0%**				

Source: Information for Table I-1 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems.

2. Funding Methods

Funding Laws

Contribution rates for active members are fixed by statute. Most of the funding rules are contained in La. R.S. 11:22, 102, 102.1, 102.2, 102.3, 102.4, and 103. Employer contribution rates are determined by the actuaries for the retirement systems, reviewed by Actuarial Services within the office of the LLA and then approved by PRSAC, subject to further review by the legislature.

Employer contributions for each system are determined by performing an annual valuation that calculates the actuarial liability associated with future expected benefit payments. An actuarial funding method allocates this liability between future normal cost payments and amortization payments on the UAL, if any. The goal of all actuarial funding methods is to have contributions plus investment earnings on system assets accumulate to an amount sufficient to provide for future expected benefits and expenses, when due and payable.

Normal Cost

The total normal cost is the portion of the projected actuarial benefit liability allocated under the applicable actuarial cost method to the fiscal year immediately following the valuation date. The employer normal cost is the portion of the total normal cost not funded by member contributions.

Accrued Liability

The portion of the projected actuarial benefit liability not funded by future normal cost payments is the actuarial accrued liability. The accrued liability is the liability attributed to past benefit service by members of the retirement system, including all active and inactive members.

Unfunded Accrued Liability

The unfunded accrued liability (UAL) is the amount by which the actuarial accrued liability of a retirement system exceeds the assets of the system available to pay benefits on the valuation date. The UAL is based on the actuarial value of assets which reflects the market value of assets smoothed to reduce wide fluctuations from year to year and adjusted for assets reserved for other purposes.

The UAL for the state systems consists of the Initial Unfunded Accrued Liability (IUAL) established in 1988 and supplemental liability amounts created annually each year after 1988. Supplemental liability bases originate from actuarial gains or losses, changes in actuarial assumptions or funding methods, and changes to benefit provisions. The UAL is amortized according to payment methods and periods specified by statute.

Funding Methods State Systems

The four state systems are funded in accordance with the Entry Age Normal (EAN) funding method. This method produces a normal cost, an accrued liability, and an unfunded accrued liability.

a. **Normal Cost** – the portion of the overall cost of future benefits allocated to the current fiscal year, which approximates the value of the service credit expected to be earned in the fiscal year. The normal cost for each individual active participant is expected to be level as a percentage of the member's pay throughout his or her career.

b. **Accrued Liability** – the portion of the total actuarial liability not funded by future normal cost payments.

c. **UAL** – the extent to which the assets of the plan are not sufficient to completely fund the accrued liability.

The accrued liability can also be thought of as the asset value the system would have had currently, assuming:

a. Current benefit provisions had always been in place,

b. Current actuarial methods had always been used,

c. Past experience from the plan's inception had been exactly consistent with current actuarial assumptions,

d. Plan investments had always earned the current investment return assumption, and

e. All actuarially determined required contributions had been made.

The difference between the assumed value of assets and the actual value of assets is the unfunded accrued liability.

The UAL is essentially a debt that participating employers owe the retirement system. It reflects contributions that should have been made and investment income that should have been earned. This debt must be paid in order for benefits to be paid as scheduled to participating members. To collect on this debt from employers, the system establishes a payment schedule that amortizes the debt over a period of years. Participating employers are primarily responsible for annual amortization payments.

Illustration of Methods Table I-2 shows the funding method used for each of the state retirement systems.

Table I-2
Actuarial Funding Methods
June 30, 2014 through June 30, 2018

System	Funding Method	Creates UAL?
LASERS	Entry Age Normal	Yes
TRSL	Entry Age Normal	Yes
LSERS	Entry Age Normal	Yes
LSPRS	Entry Age Normal	Yes

Source: Information for Table I-2 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems.

3. Economic Assumptions

Assumed Rate of Inflation

The assumed rate of inflation is a component of the assumed rate of return on investment assets, the discount rate, and the members' salary increase assumption.

Table I-3 shows a five-year history of the assumed rates of inflation used in the actuarial valuations for the state retirement systems and the rates of inflation recommended by the LLA for the 2018 actuarial valuations.

Table I-3
Rates of Inflation for State Retirement Systems

System	LLA Recommended Rate	Actuarial Valuation (as of June 30th)				
	As of June 30, 2018	**2018**	**2017**	**2016**	**2015**	**2014**
LASERS	2.30%	2.750%	2.750%	3.000%	3.000%	3.000%
TRSL	2.30%	2.500%	2.500%	2.500%	2.500%	2.500%
LSERS	2.30%	2.500%	2.625%	2.625%	2.750%	2.750%
LSPRS	2.50%	2.500%	2.500%	2.750%	2.750%	2.750%

Source: Information for Table I-3 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems and the LLA.

Assumed Rate of Return on Investment Assets

The assumed rate of return on investment assets reflects the anticipated return on the fund's current and future assets that will be available to provide future plan benefits. It incorporates various factors, such as the time value of money, inflation rate, credit risk, economic conditions, and growth in earnings.

For two of the state retirement systems, LASERS and TRSL, these future plan benefits include permanent benefit increases funded by investment gains expected to be allocated to the Experience Account. This assumed rate of return is net of investment expenses.

For LSERS and LSPRS the future benefits include future permanent benefit increases funded by investment gains allocated to the Experience Account up to the maximum permissible value of the Account based on current account limitations.

Table I-4 shows a five-year history of the assumed rates of return used in the actuarial valuations for the state retirement systems and the reasonable ranges for rates of return recommended by the LLA for the 2018 actuarial valuations.

Table I-4
Rates of Return on Investment Assets for State Retirement Systems

System	LLA Reasonable Range	Actuarial Valuation (As of June 30th)				
	As of June 30, 2018	**2018**	**2017**	**2016**	**2015**	**2014**
LASERS	6.500% to 7.500%	8.050%	8.250%	8.150%	8.150%	8.150%
TRSL	6.500% to 7.500%	8.050%	8.200%	8.100%	8.100%	8.100%
LSERS	5.800% to 6.800%	7.0625%	7.125%	7.125%	7.000%	7.250%
LSPRS	6.000% to 7.000%	7.000%	7.000%	7.000%	7.000%	7.000%

The assumed rate of investment earnings for LASERS for the June 30, 2015 and 2016 valuations was 8.15%, with 40 basis points used to provide for administrative expenses and allocations to the Experience Account; for the June 30, 2017 valuation was 8.25%, with 55 basis points used to provide for administrative expenses and allocations to the Experience Account; and for the June 30, 2018 valuation was 8.05%, with 40 basis points used to provide for allocations to the Experience Account.

The assumed rate of investment earnings for TRSL for the June 30, 2015 and 2016 valuations was 8.10%, with 35 basis points used to provide for administrative expenses and allocations to the Experience Account; for the June 30, 2017 valuation was 8.20%, with 50 basis points used to provide for administrative expenses and allocations to the Experience Account; and for the June 30, 2018 valuation was 8.05%, with 40 basis points used to provide for allocations to the Experience Account.

LSERS 2014 investment return assumption was lowered to account for administrative expenses. Beginning in 2016 administrative expenses for LSERS were recognized directly in setting the employer contribution rate.

LLA assumptions are based on a mid-term horizon while the assumptions set by the systems' actuaries are based on a long-term horizon.

Source: Information for Table I-4 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems and the LLA. The approach to setting assumptions is different for 1) LASERS and TRSL valuations, 2) LSERS and LSPRS valuations, and 3) valuations performed by the LLA.

Assumed Discount Rate

The assumed discount rate is used to calculate the actuarial accrued liabilities and the contribution rates to fund future plan benefits. For two of the state retirement systems, LASERS and TRSL, it is the assumed rate of return on investment assets adjusted for certain items, including expected allocations of investment gains to the Experience Account for funding permanent benefit increases. According to the actuarial valuation reports prepared by the systems actuaries for LASERS and TRSL, the discount rate represents the expected return to be used to fund regular plan benefits (such as the accrued benefit at retirement) and excludes the return expected to be used for other purposes (such as COLAs). This rate is net of investment expenses. Also, it is net of administrative expenses in years when such expenses were not directly funded.

For LSERS and LSPRS the assumed discount rate is the same as the assumed rate of return on investment assets, and there is no adjustment for expected allocations of investment gains to the Experience Account.

Table I-5 shows a five-year history of the assumed discount rates used in the actuarial valuations for the state retirement systems and the reasonable ranges for discount rates recommended by the LLA for the 2018 actuarial valuations.

Table I-5
Discount Rates for State Retirement Systems

System	LLA Reasonable Range	Actuarial Valuation (As of June 30th)				
	As of June 30, 2018	**2018**	**2017**	**2016**	**2015**	**2014**
LASERS	6.500% to 7.500%	7.650%	7.700%	7.750%	7.750%	7.750%
TRSL	6.500% to 7.500%	7.650%	7.700%	7.750%	7.750%	7.750%
LSERS	5.800% to 6.800%	7.0625%	7.125%	7.125%	7.000%	7.250%
LSPRS	6.000% to 7.000%	7.000%	7.000%	7.000%	7.000%	7.000%

The discount rate for LASERS for the June 30, 2015 and 2016 valuations was 8.15% (the assumed rate of return on investment assets) minus 40 basis points used to provide for administrative expenses and allocations to the Experience Account; for the June 30, 2017 valuation was 8.25% minus 55 basis points used to provide for administrative expenses and allocations to the Experience Account; and for the June 30, 2018 valuation was 8.05% minus 40 basis points used to provide for allocations to the Experience Account.

The discount rate for TRSL for the June 30, 2015 and 2016 valuations was 8.10% (the assumed rate of return on investment assets) minus 35 basis points used to provide for administrative expenses and allocations to the Experience Account; for the June 30, 2017 valuation was 8.20% minus 50 basis points used to provide for administrative expenses and allocations to the Experience Account; and for the June 30, 2018 valuation was 8.05% minus 40 basis points used to provide for allocations to the Experience Account.

Source: Information for Table I-5 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems and the LLA.

Assumed Rate of Salary Increase

The assumed rate of annual salary growth is based on the most recent experience study. The rate includes anticipated productivity growth, merit adjustment, and an inflation component, which is consistent with the inflation component of the assumed rate of return on investment assets.

Table I-6 shows the assumed rates of salary increase used in the actuarial valuations for the state retirement systems and the rates of salary increase recommended by the LLA for the 2018 actuarial valuations.

Table I-6
Rates of Salary Increase
June 30, 2018 Actuarial Valuation

System	LLA Rate	Member Group	Total Expected Increase
LASERS *	5.24%	Regular Members	5.69%
LASERS *	2.55%	Judicial Members	3.00%
LASERS *	6.27%	Hazardous Duty/Wildlife Members	6.72%
TRSL *	3.50%	Regular Teachers	3.70%
TRSL *	3.71%	Higher Education	3.91%
TRSL *	3.22%	Lunch Plans A & B	3.42%
LSERS	3.05%	All Members	3.25%
LSPRS	5.25%	All Members	5.25%

- Composite rate: Individual rates vary by accumulated years of service. The LLA rate differs from the system expected increase by the difference in the assumed rate of inflation shown in Table I-3.

Source: Information for Table I-6 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems and the LLA.

4. Demographic Assumptions

Mortality Rates

The assumed rates of mortality are based on the most recent experience study and are categorized for active employees, healthy annuitants, and disabled retirees.

Table I-7 shows the sources for the rates of mortality used in the actuarial valuations by the actuaries for the state retirement systems and for the LLA.

Table I-7
Mortality Rates
June 30, 2018 Actuarial Valuation

System	LLA Recommendation	Non-disabled Mortality Table	Disabled Mortality Table
LASERS	RP-2014 projected with generational improvement using MP-2017	RP-2000 projected through 2015 using Scale AA	RP-2000 Disabled Retiree
TRSL	Same as adopted by the System based on its most recent experience study	RP-2014 White Collar Employee and Healthy Annuitant, adjusted, and projected with generational improvement using MP-2017	RP-2014 Disabled Retiree, adjusted, and projected with generational improvement using MP-2017
LSERS	Same as adopted by the System based on its most recent experience study	RP-2014 Blue Collar Employee and Healthy Annuitant, adjusted, and projected with generational improvement using MP-2017	RP-2014 Disabled Retiree projected with generational improvement using MP-2017
LSPRS	Same as adopted by the System based on its most recent experience study	RP-2014 Total Dataset Employee and Healthy Annuitant, adjusted, and projected with generational improvement using MP-2017	RP-2014 Disabled Retiree projected with generational improvement using MP-2017

Source: Information for Table I-7 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems and the LLA.

Withdrawal Rates

The assumed rates of withdrawal or termination of employment are based on the most recent experience study and are categorized by member group.

Table I-8 describes the rates of withdrawal used in the actuarial valuations by the actuaries for the state retirement systems and for the LLA.

Table I-8
Withdrawal Rates
June 30, 2018 Actuarial Valuation

System	LLA Recommendation	Rates of Withdrawal/Termination
LASERS	Same as adopted by the System based on its most recent experience study	Rates for Regular members and Corrections/Hazardous Duty members are based on a combination of age and service. Rates for Judges and Wildlife are based on service. For members terminating with vested benefits, it is assumed that 20% will elect to withdraw their accumulated employee contributions, and 80% will receive a benefit beginning at age 60.
TRSL	Same as adopted by the System based on its most recent experience study	Rates for Regular Teachers and Higher Education members are based on a combination of age and service. Rates for Lunch Plans A and B are based on service. For members terminating with vested benefits, it is assumed that 20% will elect to withdraw their accumulated employee contributions, and 80% will receive a benefit beginning at age 60.
LSERS	Same as adopted by the System based on its most recent experience study	Rates ranging from 1% up to 13% are based on completed years of service.
LSPRS	Same as adopted by the System based on its most recent experience study	Rates ranging from .3% up to 3.6% are based on completed years of service.

Source: Information for Table I-8 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems and the LLA.

Disability Rates

The assumed rates of disability incidence are based on the most recent experience study and are categorized by member group.

Table I-9 describes the rates of disability used in the actuarial valuations by the actuaries for the state retirement systems and for the LLA.

Table I-9
Disability Rates
June 30, 2018 Actuarial Valuation

System	LLA Recommendation	Member Group	Rates of Total and Permanent Disability
LASERS	Same as adopted by the System based on its most recent experience study	Regular Members	Rates ranging from 0.00% up to 0.48% are based upon attained age.
LASERS	Same as adopted by the System based on its most recent experience study	Judicial Members	Rates are 0.02% for ages 46 to 69 and 0.00% for all other ages.
LASERS	Same as adopted by the System based on its most recent experience study	Corrections Hazardous Duty Wildlife	Rates ranging from 0.00% up to 0.75% are based upon attained age.
TRSL	Same as adopted by the System based on its most recent experience study	Regular Teachers	Rates ranging from 0.00% up to 0.50% are based upon attained age.
TRSL	Same as adopted by the System based on its most recent experience study	Higher Education	Rates ranging from 0.00% up to 0.08% are based upon attained age.
TRSL	Same as adopted by the System based on its most recent experience study	Lunch Plans A & B	Rates ranging from 0.00% up to 1.00% are based upon attained age.
LSERS	Same as adopted by the System based on its most recent experience study	All Members	55% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.083% up to 2.684% are based upon attained age.
LSPRS	Same as adopted by the System based on its most recent experience study	All Members	55% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.083% up to 2.684% are based upon attained age.

Source: Information for Table I-9 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems and the LLA.

Retirement Rates

The assumed rates of retirement are based on the most recent experience study and are categorized by member group.

Table I-10 describes the rates of retirement used in the actuarial valuations by the actuaries for the state retirement systems and for the LLA.

Table I-10
Retirement Rates
June 30, 2018 Actuarial Valuation

System	LLA Recommendation	Member Group	Rates of Retirement
LASERS	Same as adopted by the System based on its most recent experience study	Regular Members	Rates ranging from 2.0% up to 75.0% vary by age and service after eligibility requirements are met. After age 75 the assumed rate is 100%.
LASERS	Same as adopted by the System based on its most recent experience study	Judicial Members	Rates ranging from 2.0% up to 50.0% vary by age and service after eligibility requirements are met. After age 75 the assumed rate is 100%.
LASERS	Same as adopted by the System based on its most recent experience study	Corrections Hazardous Duty Wildlife	Rates ranging from 10.0% up to 50.0% vary by age and service after eligibility requirements are met. After age 75 the assumed rate is 100%.
TRSL	Same as adopted by the System based on its most recent experience study	Regular Teachers	Rates ranging from 2.0% up to 76.0% vary by age and service after eligibility requirements are met. After age 75 the assumed rate is 100%.
TRSL	Same as adopted by the System based on its most recent experience study	Higher Education	Rates ranging from 3.3% up to 50.0% vary by age and service after eligibility requirements are met. After age 75 the assumed rate is 100%.
TRSL	Same as adopted by the System based on its most recent experience study	Lunch Plans A & B	Rates ranging from 23.0% up to 70.0% vary by age and service after eligibility requirements are met. After age 75 the assumed rate is 100%.
LSERS	Same as adopted by the System based on its most recent experience study	All Members	Rates ranging from 16.0% up to 40.0% vary by age after eligibility requirements are met. After age 80 the assumed rate is 99%.
LSPRS	Same as adopted by the System based on its most recent experience study	All Members	Rates ranging from 10.0% up to 99.0% vary by age after eligibility requirements are met. After age 75 the assumed rate is 100%.

Source: Information for Table I-10 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems and the LLA.

Section II

Statewide Retirement Systems

1. Funding Assessments - Funded Ratio Measurements

General Information

Funded ratio measurements in this report for the nine statewide retirement systems are calculated using valuation assets and the accrued liability according to the Entry Age Normal (EAN) funding method.

Terms relevant to the value shown in this section of the report are defined below.

a. **Market Value of Assets (MV)** is the value in cash that could be realized if all system assets were liquidated on the valuation date. Another term for market value is "fair value."

b. **Actuarial Value of Assets (AVA)** is the value of assets determined in accordance with the smoothing technique employed the actuary. Smoothing methods generally diminish and delay the effects of changes in the market value of assets.

c. **Valuation Assets (VA)** is generally the amount of assets available to fund benefits and to determine employer contribution requirements. For the statewide systems, Valuation Assets and the Actuarial Value of Assets generally have the same value.

d. **Accrued Liability (AL)** is equal to the portion of the actuarial present value of future benefit payments allocated to past service determined in accordance with the funding method being used by the actuary. The Accrued Liability also can be defined as the value of assets the system would have if (1) the current benefit structure had always been in place, (2) current assumptions had always been realized, (3) current actuarial methods had always been used, and (4) actuarially determined required contributions had been made.

e. **Unfunded Accrued Liability (UAL)** is the accrued liability minus the value of assets.

f. **Funded Ratio** is equal to the ratio of assets to the accrued liability. This ratio can vary depending on the type of asset value used in the numerator and the type of liability value used in the denominator.

Systems that Produce an Accrued Liability

Two statewide systems use a funding method that produces an accrued liability: FRS and MPERS. The other systems use the Aggregate method or a variation thereof. The Aggregate method only develops a normal cost and does not produce an accrued liability. In such instances, it is common to determine the accrued liability using the EAN method.

Funded Ratios Based on Valuation Assets

Table II-1 provides a five-year history of funded ratios for the statewide systems calculated using the EAN accrued liability and Valuation Assets.

Table II-1
Funded Ratios for the Statewide Retirement Systems Based on Valuation Assets and the EAN Method

(millions of dollars)

	Fiscal Year End 2018							
	EAN AL	Valuation Assets	Unfunded EAN AL	Funded Ratio	2017 Funded Ratio	2016 Funded Ratio	2015 Funded Ratio	2014 Funded Ratio
LARF*	$427.9	$398.9	$29.0	93.2%	94.0%	92.9%	88.2%	84.8%
CCRRF	$777.6	$631.6	$146.0	81.2%	81.7%	79.8%	78.8%	74.7%
DARS	$454.6	$425.1	$29.5	93.5%	96.2%	98.1%	97.2%	91.6%
FRS	$2,279.3	$1,741.5	$537.8	76.4%	75.8%	75.5%	76.1%	74.7%
MERS A	$1,129.1	$797.7	$331.4	70.6%	71.3%	72.4%	74.2%	77.6%
MERS B	$241.3	$175.0	$66.3	72.5%	72.6%	74.2%	77.6%	81.1%
MPERS	$3,007.2	$2,202.3	$804.9	73.2%	71.4%	70.6%	69.9%	68.1%
PERS A**	$3,908.7	$3,753.4	$155.3	96.0%	99.5%	99.2%	97.1%	96.8%
PERS B**	$329.2	$326.3	$2.9	99.1%	101.1%	100.4%	98.5%	97.5%
ROVERS	$117.6	$99.3	$18.3	84.4%	85.3%	83.2%	82.4%	78.4%
LSPRF	$3,998.8	$3,592.6	$406.2	89.8%	88.3%	86.0%	84.8%	80.3%
Total	**$16,671**	**$14,144**	**$2,528**	**84.8%**				

* The fiscal year end for LARF is September 30th
** The fiscal year end for PERS is December 31st

Source: Information for Table II-1 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems.

2. Funding Methods

Funding Laws

Contribution rates for active members are fixed by statute. Most of the funding rules are contained in La. R.S. 11:22, 102, and 103. Employer contribution rates are determined by the actuaries for the retirement systems, reviewed by Actuarial Services within the office of the LLA, and then approved by PRSAC, subject to further review by the legislature.

Employer contributions for each system are determined by performing an annual valuation that calculates the actuarial liability associated with future expected benefit payments. An actuarial funding method allocates this liability between future normal cost payments and amortization payments on the UAL, if any. The goal of all actuarial funding methods is to have contributions plus investment earnings on system assets accumulate to an amount sufficient to provide for future expected benefits and expenses, when due and payable.

Normal Cost

The total normal cost is the portion of the projected actuarial benefit liability allocated under the applicable actuarial cost method to the fiscal year immediately following the valuation date. The employer normal cost is the portion of the total normal cost not funded by member contributions.

Accrued Liability

The portion of the projected actuarial benefit liability not funded by future normal cost payments is the actuarial accrued liability. The accrued liability is the liability attributed to past benefit service by members of the retirement system, including all active and inactive members.

Unfunded Accrued Liability

The unfunded accrued liability (UAL) is the amount by which the actuarial accrued liability of a retirement system exceeds the assets of the system available to pay benefits on the valuation date. The UAL is based on the actuarial value of assets which reflects the market value of assets smoothed to reduce wide fluctuations from year to year and adjusted for assets reserved for other purposes.

The UAL for the statewide systems varies depending on the funding method used. For the statewide systems that use the Entry Age Normal (EAN) funding method the UAL is developed in a similar manner as for the state systems. This consists of the Initial Unfunded Accrued Liability (IUAL) and supplemental liability amounts created annually each year thereafter. For the statewide systems that do not use the EAN funding method the UAL is described below.

Funding Methods Statewide Systems

Most of the statewide retirement systems use the Aggregate funding method or a variation thereof. Under Aggregate funding, the normal cost percentage is equal to the present value of future benefit payments for all members (active and inactive) less the value of assets divided by the present value of future salaries. The normal cost percentage is then multiplied by the expected annual payroll to obtain the normal cost in dollars. An independent amortization payment schedule is not created.

Mathematically, the normal cost under the Aggregate method can be thought of as the sum of the cost of current year service credits plus amortization of a hypothetical UAL over the average working lifetime of existing active members.

Some of the statewide systems use a variation of the Aggregate method called the Frozen Attained Age Normal funding method. Under this method, the IUAL was measured at a single point in time in the past and an amortization payment schedule was established to pay off the original frozen liability over a specified amortization period. All costs expected to be incurred after the original UAL was measured are funded in accordance with the Aggregate method.

Two systems, FRS and MPERS, use the EAN funding method.

Illustration of Methods

Table II-2 shows the funding method used for each of the statewide retirement systems.

Table II-2
Actuarial Funding Methods
2018 Actuarial Valuation

System	Funding Method	Creates UAL?	Basis for IUAL
LARF	Frozen Attained Age Normal	IUAL Only	PUC
CCRRF	Frozen Attained Age Normal	IUAL Only	PUC
DARS	Aggregate	No	n/a
FRS	Entry Age Normal	Yes	EAN
MERS A	Frozen Attained Age Normal	IUAL Only	PUC
MERS B	Aggregate	No	n/a
MPERS	Entry Age Normal	Yes	EAN
PERS A	Aggregate	No	n/a
PERS B	Aggregate	No	n/a
ROVERS	Aggregate	No	n/a
LSPRF	Frozen Attained Age Normal	IUAL Only	PUC

Source: Information for Table II-2 has been extracted from valuation reports prepared by the actuaries for the Louisiana statewide retirement systems. The Projected Unit Credit (PUC) method was used to establish the IUAL under the Frozen Attained Age Normal funding method.

3. Economic Assumptions

Assumed Rate of Inflation

The assumed rate of inflation is a component of the assumed rate of return on investment assets, the discount rate, and the members' salary increase assumption.

Table II-3 shows a five-year history of the assumed rates of inflation used in the actuarial valuations for the statewide retirement systems and the rates of inflation recommended by the LLA for the 2018 actuarial valuations.

Table II-3
Rates of Inflation for Statewide Retirement Systems

System	LLA Recommended Rate	Actuarial Valuation				
	2018 Actuarial Valuation	**2018**	**2017**	**2016**	**2015**	**2014**
LARF	2.20%	2.200%	2.500%	2.500%	2.500%	2.750%
CCRRF	2.25%	2.500%	2.500%	2.500%	2.500%	2.750%
DARS	2.25%	2.400%	2.500%	2.500%	2.500%	2.750%
FRS	2.25%	2.700%	2.775%	2.875%	2.875%	3.000%
MERS	2.25%	2.600%	2.775%	2.875%	2.875%	3.000%
MPERS	2.25%	2.600%	2.700%	2.875%	2.875%	3.000%
PERS	2.20%	2.400%	2.500%	2.500%	2.500%	3.000%
ROVERS	2.25%	2.400%	2.500%	2.500%	2.500%	2.750%
LSPRF	2.25%	2.600%	2.775%	2.875%	2.875%	3.000%

Source: Information for Table II-3 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems and actuarial reviews prepared by the LLA.

Assumed Rate of Return on Investment Assets/Discount Rate

The assumed rate of return on investment assets is used to calculate the actuarial accrued liabilities and the contribution rates to fund future plan benefits. For the statewide retirement systems expected permanent benefit increases not yet granted are not included in the valuations prepared by the systems actuaries, and this assumed rate of return on investment assets is the same as the discount rate. This rate is net of investment expenses unless otherwise explained in the footnotes below the table.

Table II-4 shows a five-year history of the assumed rates of return (discount rates) used in the actuarial valuations for the statewide retirement systems and the reasonable ranges for rates of return recommended by the LLA for the 2018 actuarial valuations.

Table II-4
Rates of Return on Investment Assets/Discount Rates for Statewide Retirement Systems

System	LLA Reasonable Range	Actuarial Valuation				
	2018 Actuarial Valuation	**2018**	**2017**	**2016**	**2015**	**2014**
LARF	5.250% to 6.250%	6.250%	6.750%	7.000%	7.000%	7.250%
CCRRF	5.500% to 6.500%	6.750%	7.000%	7.000%	7.000%	7.250%
DARS	5.250% to 6.250%	6.500%	6.750%	7.000%	7.000%	7.250%
FRS	5.800% to 6.800%	7.300%	7.400%	7.500%	7.500%	7.500%
MERS	5.300% to 6.300%	7.275%	7.400%	7.500%	7.500%	7.750%
MPERS	6.000% to 7.000%	7.200%	7.325%	7.500%	7.500%	7.500%
PERS	5.750% to 6.750%	6.500%	6.750%	7.000%	7.000%	7.250%
ROVERS	5.000% to 6.000%	6.500%	6.750%	7.000%	7.000%	7.000%
LSPRF	5.000% to 6.000%	7.250%	7.400%	7.500%	7.600%	7.700%

Source: Information for Table II-4 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems and actuarial reviews prepared by the LLA.

Assumed Rate of Salary Increase

The assumed rate of annual salary growth is based on the most recent experience study. The rate includes anticipated productivity growth, merit adjustment, and an inflation component, which is consistent with the inflation component of the assumed rate of return on investment assets.

Table II-5 shows the assumed rates of salary increase used in the actuarial valuations for the statewide retirement systems and the rates of salary increase recommended by the LLA for the 2018 actuarial valuations.

Table II-5
Rates of Salary Increase
2018 Actuarial Valuation

System	LLA Recommended Rate	Expected Increase
LARF	5.45%	5.75%
CCRRF	4.75%	5.00%
DARS	5.25%	5.50%
FRS *	Variable: 14.475% - 4.225%	Variable: 15.00% - 4.75%
MERS A & B	4.475%	5.00%
MPERS *	Variable: 9.30% - 3.80%	Variable: 9.75% - 4.25%
PERS A	4.75%	4.75%
PERS B	4.25%	4.25%
ROVERS	5.75%	6.00%
LSPRF	4.975%	5.50%

* Rates vary by accumulated years of service.

Source: Information for Table II-5 has been extracted from valuation reports prepared by the actuaries for the Louisiana state retirement systems and actuarial reviews prepared by the LLA.

4. Demographic Assumptions

Mortality Rates

The assumed rates of mortality are based on the most recent experience study and are categorized for active employees, healthy annuitants, and disabled retirees.

Table II-6 shows the sources for the rates of mortality used in the actuarial valuations by the actuaries for the statewide retirement systems and recommendations by the LLA.

Table II-6
Mortality Rates
2018 Actuarial Valuation

System	LLA Recommendation	Non-disabled Mortality Table	Disabled Mortality Table
LARF	Apply modern methods of mortality improvement using generational projections	RP-2000 Employee with setbacks and RP-2000 Healthy Annuitant projected through 2030	RP-2000 Disabled Retiree with setbacks
CCRRF	Apply modern methods of mortality improvement using generational projections	RP-2000 Employee with setbacks and RP-2000 Healthy Annuitant projected through 2030	RP-2000 Disabled Retiree with setbacks
DARS	Apply modern methods of mortality improvement using generational projections	RP-2000 Combined Healthy with White Collar adjustment, female setback, projected through 2032	RP-2000 Disabled Retiree with setbacks
FRS	Apply modern methods of mortality improvement using generational projections	RP-2000 Combined Healthy with Blue Collar adjustment projected through 2031 using Scale AA	RP-2000 Disabled Retiree with setbacks
MERS	Apply modern methods of mortality improvement using generational projections	RP-2000 Employee with setbacks and RP-2000 Healthy Annuitant with set forwards projected through 2028 using Scale AA	RP-2000 Disabled Retiree with setbacks
MPERS	Apply modern methods of mortality improvement using generational projections	RP-2000 Employee with setbacks and RP-2000 Combined Healthy with Blue Collar adjustment and setbacks projected through 2029 using Scale AA	RP-2000 Disabled Retiree with setbacks
PERS	Same as adopted by the System based on its most recent experience study	Pub-2010 Public Plans Employee and Healthy Retiree, adjusted, and projected with generational improvement using MP-2018	Pub-2010 Public Plans Disabled Retiree, adjusted, and projected with generational improvement using MP-2018
ROVERS	Apply modern methods of mortality improvement using generational projections	RP-2000 Employee with setbacks and RP-2000 Healthy Annuitant projected through 2030 using Scale AA	RP-2000 Disabled Retiree with setbacks
LSPRF	Apply modern methods of mortality improvement using generational projections	RP-2000 Combined Healthy with Blue Collar adjustment, female set forward, projected through 2028 using Scale AA	RP-2000 Disabled Retiree with setbacks

Source: Information for Table II-6 has been extracted from valuation reports prepared by the actuaries for the Louisiana statewide retirement systems and actuarial reviews prepared by the LLA.

Withdrawal Rates

The assumed rates of withdrawal or termination of employment are based on the most recent experience study.

Table II-7 describes the rates of withdrawal used in the actuarial valuations by the actuaries for the statewide retirement systems and recommendations by the LLA.

Table II-7
Withdrawal Rates
2018 Actuarial Valuation

System	LLA Recommendation	Rates of Withdrawal/Termination
LARF	Same as adopted by the System based on its most recent experience study	Rates ranging from .5% up to 10% are based on completed years of service.
CCRRF	Recommend board's actuary reconcile differences in rates used in the valuation compared to rates published in the most recent experience study	Rates ranging from 1.5% up to 14% are based on completed years of service.
DARS	Same as adopted by the System based on its most recent experience study	Rates ranging from 2.5% up to 9.5% are based on completed years of service.
FRS	Same as adopted by the System based on its most recent experience study	Rates ranging from 1% up to 7.5% are based on completed years of service.
MERS A	Same as adopted by the System based on its most recent experience study	Rates ranging from 2% up to 20% are based on completed years of service.
MERS B	Same as adopted by the System based on its most recent experience study	Rates ranging from 2% up to 23% are based on completed years of service.
MPERS	Same as adopted by the System based on its most recent experience study	Rates ranging from 1% up to 4.5% are based on attained age and completed years of service.
PERS A & B	Same as adopted by the System based on its most recent experience study	Rates ranging from 1% up to 21% are based on completed years of service.
ROVERS	Recommend board's actuary reconcile differences in rates used in the valuation compared to rates published in the most recent experience study	Rates ranging from 1% up to 10% are based on completed years of service.
LSPRF	Same as adopted by the System based on its most recent experience study	Rates ranging from 1% up to 21% are based on completed years of service.

Source: Information for Table II-7 has been extracted from valuation reports prepared by the actuaries for the Louisiana statewide retirement systems and actuarial reviews prepared by the LLA.

Disability Rates

The assumed rates of disability incidence are based on the most recent experience study.

Table II-8 describes the rates of disability used in the actuarial valuations by the actuaries for the statewide retirement systems and recommendations by the LLA.

Table II-8
Disability Rates
2018 Actuarial Valuation

System	LLA Recommendation	Rates of Total and Permanent Disability
LARF	Same as adopted by the System based on its most recent experience study	12% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.018% up to 0.586% are based upon attained age.
CCRRF	Same as adopted by the System based on its most recent experience study	20% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.030% up to 0.976% are based upon attained age.
DARS	Same as adopted by the System based on its most recent experience study	5% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.008% up to 0.244% are based upon attained age.
FRS	Same as adopted by the System based on its most recent experience study	55% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.083% up to 2.684% are based upon attained age.
MERS A	Same as adopted by the System based on its most recent experience study	25% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.038% up to 1.220% are based upon attained age.
MERS B	Same as adopted by the System based on its most recent experience study	60% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.090% up to 2.928% are based upon attained age.
MPERS	Same as adopted by the System based on its most recent experience study	55% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.083% up to 2.684% are based upon attained age.
PERS A & B	Same as adopted by the System based on its most recent experience study	40% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.060% up to 1.952% are based upon attained age.
ROVERS	Same as adopted by the System based on its most recent experience study	15% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.023% up to 0.732% are based upon attained age.
LSPRF	Same as adopted by the System based on its most recent experience study	12% of the disability rates used for the 21st valuation of the Railroad Retirement System for individuals with 10-19 years of service. Rates ranging from 0.018% up to 0.586% are based upon attained age.

Source: Information for Table II-8 has been extracted from valuation reports prepared by the actuaries for the Louisiana statewide retirement systems and actuarial reviews prepared by the LLA.

Retirement Rates

The assumed rates of retirement are based on the most recent experience study.

Table II-9 describes the rates of retirement used in the actuarial valuations by the actuaries for the statewide retirement systems and recommendations by the LLA.

Table II-9
Retirement Rates
2018 Actuarial Valuation

System	LLA Recommendation	Rates of Retirement
LARF	Same as adopted by the System based on its most recent experience study	Rates ranging from 10.0% up to 30.0% vary by age after eligibility requirements are met. After age 81 the assumed rate is 100%.
CCRRF	Same as adopted by the System based on its most recent experience study	Rates ranging from 5.0% up to 10.0% vary by age after eligibility requirements are met. A multiplier of 3.20 is applied to the rate at a member's first year of eligibility for retirement. After age 80 the assumed rate is 100%.
DARS	Same as adopted by the System based on its most recent experience study	Rates ranging from 10.0% up to 25.0% vary by age after eligibility requirements are met. After age 81 the assumed rate is 100%.
FRS	Same as adopted by the System based on its most recent experience study	Rates ranging from 6.0% up to 50.0% vary by age after eligibility requirements are met. After age 76 the assumed rate is 100%.
MERS A	Same as adopted by the System based on its most recent experience study	Rates ranging from 6.0% up to 18.0% vary by age after eligibility requirements are met. After age 86 the assumed rate is 100%.
MERS B	Same as adopted by the System based on its most recent experience study	Rates ranging from 8.0% up to 20.0% vary by age after eligibility requirements are met. After age 86 the assumed rate is 100%.
MPERS	Same as adopted by the System based on its most recent experience study	Rates ranging from 5.0% up to 12.0% vary by age after eligibility requirements are met. After age 75 the assumed rate is 100%.
PERS A	Same as adopted by the System based on its most recent experience study	For Tier 1 rates ranging from 6.0% up to 20.0% vary by age after eligibility requirements are met. For Tier 2 rates ranging from 8.0% up to 20.0% vary by age after eligibility requirements are met. After age 85 the assumed rate is 100%.
PERS B	Same as adopted by the System based on its most recent experience study	For Tier 1 rates ranging from 6.0% up to 21.0% vary by age after eligibility requirements are met. For Tier 2 rates ranging from 6.0% up to 20.0% vary by age after eligibility requirements are met. After age 85 the assumed rate is 100%.
ROVERS	Same as adopted by the System based on its most recent experience study	Rates ranging from 6.0% up to 12.0% vary by age after eligibility requirements are met. After age 80 the assumed rate is 100%.
LSPRF	Same as adopted by the System based on its most recent experience study	For Tier 1 and Tier 2 rates ranging from 5.0% up to 21.0% vary by age after eligibility requirements are met. For Tier 3 rates ranging from 4.5% up to 18.9% vary by age after eligibility requirements are met. After age 80 the assumed rate is 100%.

Source: Information for Table II-9 has been extracted from valuation reports prepared by the actuaries for the Louisiana statewide retirement systems and actuarial reviews prepared by the LLA.

Appendix

1. Glossary

Accrued Liability – The portion of the actuarial present value of future benefit payments allocated to past service determined in accordance with the funding method being used by the actuary. The Accrued Liability also can be defined as the value of assets the system would have if (1) the current benefit structure had always been in place, (2) current assumptions had always been realized, (3) current actuarial methods had always been used, and (4) actuarially determined required contributions had been made.

Actuarial Present Value of Benefits – The value as of the valuation date of all future benefit payments adjusted to reflect the time value of money (discounted using an assumed rate of interest) and the probability of future payment.

Actuarial Value of Assets – The value of assets determined in accordance with the smoothing technique employed the actuary. Smoothing methods generally diminish and delay the effects of changes in the market value of assets.

Aggregate Funding Method – The normal cost percentage is equal to the present value of future benefits for all members (active and inactive) minus the value of assets divided by the present value of future salaries. The normal cost percentage is then multiplied by the expected annual payroll to obtain the normal cost in dollars. An independent amortization payment schedule is not created.

Entry Age Normal Funding Method – This method produces a normal cost and an accrued liability. The normal cost is the portion of the overall cost of future benefits allocated to the current fiscal year, which approximates the value of the service credit expected to be earned in the fiscal year. The normal cost for each individual active participant is expected to be level as a percentage of the member's pay throughout his or her career. The accrued liability is the portion of the actuarial present value of future benefit payments allocated to past service.

Frozen Attained Age Normal Funding Method – The Initial Unfunded Accrued Liability was measured at a single point in time in the past and an amortization payment schedule was established to pay off the original frozen liability over a specified amortization period. All costs expected to be incurred after the original Unfunded Accrued Liability was measured are funded in accordance with the Aggregate method.

Funded Ratio – The ratio of assets to the accrued liability. This ratio can vary depending on the type of asset value used in the numerator and the type of liability value used in the denominator.

Funding Method – Employer contributions for each system are determined by performing an annual valuation that calculates the actuarial liability associated with future expected benefit payments. An actuarial funding method allocates this liability between future normal cost

payments and amortization payments on the UAL, if any. The goal of all actuarial funding methods is to have contributions plus investment earnings on system assets accumulate to an amount sufficient to provide for future expected benefits and expenses, when due and payable.

Market Value of Assets – The value in cash that could be realized if all system assets were liquidated on the valuation date. Another term for market value is "fair value."

Normal Cost – The portion of the actuarial present value of future benefits allocated under the applicable actuarial cost method to the fiscal year immediately following the valuation date. The employer normal cost is the portion of the total normal cost not funded by member contributions.

Unfunded Accrued Liability – The accrued liability minus the value of assets.

Valuation Assets – Generally the amount of assets available to fund benefits and to determine employer contribution requirements.