



October 7, 2016

Board of Trustees Teachers' Retirement System of Louisiana Post Office Box 94123, Capitol Station Baton Rouge, Louisiana 70804-9123

### Ladies and Gentlemen:

This report is prepared for the Board of Trustees of Teachers' Retirement System of Louisiana to present the results of the actuarial valuation of assets and liabilities, as well as funding requirements, as of June 30, 2016. The primary purpose of the report is to determine the actuarially required contribution for fiscal year ending 2017 and the projected actuarially required contribution rate for fiscal year ending 2018. The valuation measures the liability and funding levels and provides other information for financial reporting. Results should not be relied upon for other purposes.

In preparing this valuation, we have relied upon the information provided by the System regarding plan provisions, plan membership data, plan assets and other matters as detailed in the exhibits of this report. In particular, we have relied upon the Statements of Fiduciary Net Position and Changes in Fiduciary Net Position as audited by Duplantier, Hrapmann, Hogan & Maher, LLP, Certified Public Accountants. We did not audit the data or plan assets but reviewed for reasonableness and consistency with prior year data. Our review concluded that the data is reasonable and consistent with the prior year's data.

The present values shown herein have been estimated on the basis of the actuarial cost method specified in Louisiana Revised Statutes Title 11 Section 22(13). All actuarial assumptions have been adopted by the Board of Trustees and are reasonable and appropriate for the purposes of this valuation, unless otherwise stated herein. However, the use of another set of assumptions and methods could also be reasonable and could produce materially different results. Actual results may vary from assumptions used to prepare the valuation.

Exhibit 3 provides disclosures of the Fiduciary Net Position and Net Pension Liabilities required by the Governmental Accounting Standards Board Statements 67/68. This report has been prepared in accordance with actuarial standards of practice, and to the best of our knowledge, fairly reflects the actuarial present value of accrued benefits of the Teachers' Retirement System of Louisiana.

Shelley is an Associate in the Society of Actuaries and Brad is a Fellow in the Society of Actuaries. Shelley and Brad are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

FOSTER & FOSTER INC.

Shelley R. Johnson Shelley R. Johnson, ASA, MAAA

Bradley R. Heinrichs, FSA, EA, MAAA

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### SUMMARY OF VALUATION RESULTS

A brief summary of the more important figures developed in this valuation, with comparable results from previous valuations are as follows:

1		Prior Years		
		June 30, 2016	June 30, 2015	June 30, 2014
I.	Membership Census			
	1) Retirees	75,828	75,259	73,195
	2) Actives	84,068	83,602	82,886
	3) DROP	2,504	2,283	2,291
	4) Terminated Vested	6,687	6,606	6,336
II.	Annual Benefits	\$1,887,454,080	\$1,820,201,496	\$1,744,088,016
III.	Current Payroll			
	Regular Teachers	3,286,545,957	3,236,664,474	3,204,777,925
	Higher Education	559,338,768	554,919,522	534,984,836
	Lunch A	1,061,059	1,237,594	1,582,879
	Lunch B	22,784,240	22,828,072	23,609,087
	Total	3,869,730,024	3,815,649,662	3,764,954,727
IV.	Valuation Assets	18,254,321,142	17,457,243,696	16,145,772,807
V.	Investment Yield			
	Market Value (Total Assets)	1.02%	2.52%	18.44%
	Market Value (Excl LaDROP Assets)	1.04%	2.58%	18.90%
	Actuarial Value	6.67%	11.26%	13.14%
	DROP	6.17%	10.76%	12.64%
VI.	Experience Account	24,977,477	226,356,559	218,148,161
VII.	Total Normal Cost	466,591,480	463,783,246	459,658,120
	Total Normal Cost -% of Payroll	12.06%	12.15%	12.21%
	Employer Normal Cost (% of Payroll)	4.07%	4.17%	4.23%
VIII.	Unfunded Actuarial Accrued Liability	11,018,080,836	11,189,053,201	11,973,763,757
IX.	Funded Percentage	62.4%	60.9%	57.4%
X.	Funding Requirements (Mid-year Pmt)			
1	Employee Contribution <sup>1</sup>	314,143,467	310,300,114	306,132,676
2	) Employer Contribution	1,137,651,636	1,125,876,876	1,158,523,507
	Aggregate Rate (Current Year) <sup>2</sup>	25.8%	25.8%	27.0%
3	) Projected Employer Contribution	1,199,029,516	1,142,698,314	1,162,619,515
	Aggregate Rate (Next Year) <sup>3</sup>	26.4%	25.4%	26.2%

The above funding requirements measure the cost of benefits that were in effect on June 30, 2016, and Acts of the 2016 Regular Legislative Session.

 $<sup>^1</sup>$  Member Contributions: Regular and Higher Ed -8.0% , Lunch Plan A -9.10% , Lunch Plan B -5.00%

<sup>&</sup>lt;sup>2</sup> Reflects the restated aggregate employer contribution rate for the fiscal year following the valuation, as determined by the current year valuation.

Reflects the projected aggregate employer contribution rate for fiscal year that begins one year after the valuation date.

### PROJECTED CONTRIBUTION RATES BY PLAN

Act 716 of 2012 requires the employer contribution rate to be individually determined for each plan type as defined within the Act beginning with Fiscal Year 2012/2013. Per Act 95 of 2016, the Lunch Plan contribution requirements are consolidated with the Regular Techers (K-12) employer contribution rate. The term "plan" is used to define each employer group defined in the Act, and not to imply that each group has a separate plan of benefits. The normal cost portion of each plan's employer contribution rate varies based upon that plan's benefits, member demographics, and the rate contributed by employees. The shared UAL contribution rate is determined in aggregate for all plans. The UAL established due to a specific plan or group of plans due to legislation will be allocated entirely to that plan or those plans. The recommended employer rates by plan are as follows:

		Recommended Employer Rate for FY 17/18					
		Aggregate				Total	
	Total	Employee	Employer	Shared	Particularized	Employer	
	Normal	Normal	Normal	UAL	UAL	Contribution	
	Cost Rate	Cost Rate	Cost Rate	Rate	Rate	Rate	
Regular Teachers, Lunch A & B	12.3%	7.9797%	4.3642%	22.2%	0.0%	26.6%	
Higher Education	11.2%	8.0%	3.2194%	22.2%	0.0%	25.4%	
Aggregate Rate	12.2%	7.9826%	4.1988%	22.2%	0.0%	26.4%	

The variation in normal cost by plan reflects differences in benefits, actuarial assumptions, and member demographics based on the entry age normal cost method. A reconciliation of the change in projected rate from the prior year's projected rate is included below.

### CHANGES IN UAL AND FUNDING REQUIREMENTS

Changes in the required contribution are generally the result of gains or losses resulting from actual experience differing from expected plan experience, expected changes in the UAL payment due to statutory requirements, and changes in actuarial assumptions or methods. Changes in the employer contribution rate are impacted by both the change in the total dollar required contribution and by the total aggregate payroll for active members.

The aggregate employer contribution rate established by the Public Retirement Systems' Actuarial Committee for the 2016/2017 plan year was 25.4%. The restated employer contribution rate determined by this valuation for the 2016/2017 plan year is 25.8%. Therefore, an employer contribution deficit of 0.4% is expected in next year's valuation.

The increase in projected contribution requirements for FY 2017/18 is due mainly to the statutory 6.5% increase in the UAL payments for the OAB and EAAB schedules. Note that this is the last year that statutes require this increase. Future OAB payments will increase by 2% and future EAAB payments will be level, which will result in a smaller likelihood of future employer contribution rate increases. The investment experience loss relative to the discount rate was largely offset by an experience gain relative to all other actuarial assumptions. The current actuarial valuation discloses a decrease in the plan's unfunded accrued liability (UAL) due mainly to UAL amortization payments received. The contribution variance surplus of \$64,452,206 was used to reduce the EAAB rather than reduce employer contribution requirements, per Act 497 of 2009, which would have created a credit to the employer rate of 0.3%.

The change in the projected employer contribution rate and the change unfunded accrued liability are detailed in the tables below. The total of the items contributing to the contribution rate change may not exactly equal the actual contribution rate change due to rounding and since the items impacting the rate do not operate in isolation of each other, hence are not additive.

### Aggregate Contribution Rate Change from FY 16/17 to FY 17/18

Normal Cost	
Member Demographics Change	-0.10%
Discount Rate Change	0.12%
UAL Payment	
Investment Experience Loss	0.33%
Other Experience Gain	-0.28%
Statutory UAL Payment Increase	0.77%
Contribution Variance Payment Change	0.10%
Discount Rate Change	0.27%
Payroll Change	-0.15%
Total	1.06%
Actual Contribution Rate Change	1.00%

### **Change In Unfunded Actuarial Accued Liability**

Unfunded Liability - June 30, 2015	\$ 11,189,053,201
Interest on Unfunded Liability	\$ 867,151,623
<b>Employer Amortization Payment</b>	(1,000,284,318)
Permanent Benefit Increase	216,473,124
<b>Experience Account Disbursement</b>	(216,473,124)
Contribution Variance Surplus	(64,452,206)
Investment Experience Loss	184,298,067
Other Experience Gain	(157,685,531)
Total Change	(170,972,365)
Unfunded Liability - June 30, 2016	\$ 11,018,080,836

### ACTUARIAL ASSETS/VALUATION ASSETS

Because the market value of assets can be volatile from one year to the next, an asset valuation method is generally used to adjust the market value of assets to smooth the effects of short-term volatility. The adjusted asset value is called the actuarial value of assets. The method gradually recognizes investment gains and losses relative to the assumed rate over five years.

The gross actuarial value of assets represents the total assets to fund all liabilities of the pension plan as well as side-fund accounts dedicated for other purposes. The valuation assets exclude the side-fund accounts for purposes of determining the employer contribution rate as illustrated in Exhibit 2.

The side-fund accounts excluded from valuation assets are as follows:

### **Employer Credit Account:**

This account, established by Act 588 of 2004, accumulates the excess contributions based on the statutory minimum employer contribution rate of 15.5% over the actuarially required employer contribution (ARC), as restated in the current valuation. The minimum rate is not currently applicable, and the account continues to have a zero balance.

### **LSU Agriculture and Extension Service Fund:**

Participants of the LSU Agriculture and Extension Service receive supplemental benefits from TRSL equal to the difference between the TRSL benefit formula and the Federal Civil Service formula. The funding is recorded separately in the side-fund with assets co-mingled with the TRSL assets. The current balance is \$2,535,804.

### **Experience Account Fund:**

The account is used to fund permanent benefit increases for retirees. Fifty percent of any excess return above \$200,000,000, indexed to increases in the actuarial value of assets beginning June 30, 2016, are credited to the Experience Account, subject to the restrictions provided in Act 399 of 2014, described in Exhibit 5. Based on the current funded ratio, the account balance is currently restricted to the reserve needed to fund one 1.5% permanent benefit increase. The cost of the 1.5% PBI, per Act 93 of 2016, was disbursed from the fund. The account was credited with interest based on the System's actuarial return. The current balance is \$24,977,477.

### PLAN EXPERIENCE

The actuary is charged with recommending actuarial assumptions based on the best estimate of future plan experience to properly fund future benefits. The results of the actuarial valuation are dependent on the actuarial assumptions used. These assumptions, which are adopted by the Board of Trustees, are detailed in Exhibit 6 of the valuation report. If the actual experience differs from the projected experience, a gain or loss occurs. For the current measurement period, this gain or loss is amortized over a 30 year period with level dollar payments, except for investment gains allocated to the OAB, EAAB, or the Experience Account.

### **Economic/Investment Experience**

For the plan year ending June 30, 2016, the System's actuarial rate of return of 6.67% was less than the 7.75% discount rate, resulting in an investment experience loss of \$184,298,067. The investment experience.

The historical geometric average rates of return on the total actuarial value of assets, net of investment expenses, for plan years ending June 30 are shown below. The discount rate reflects the expected return needed to fund regular plan benefits. The returns shown below are comparable to the discount rate plus returns expected to be used to fund the experience account and administrative expenses, or 8.10%.

	Actuarial Rate		Geometric
	of Return		Average
2012	5.05%	5 Year	9.85%
2013	13.41%	10 Year	6.01%
2014	13.14%	20 Year	7.27%
2015	11.26%	25 Year	7.97%
2016	6.67%	30 Year	8.35%

### **Demographic Experience and Salary Assumptions:**

Demographic assumptions include rates of retirement/DROP, rates at which members become disabled, turnover rates, mortality rates, and several other demographic assumptions. Salary assumptions anticipate future salary increases. During the 2015/2016 plan year, the system incurred an experience gain of \$157,685,531 from plan experience differing from that anticipated by the demographic and salary assumptions. The experience gain includes a reduction for administrative expenses, as described below.

### LEGISLATIVE/PLAN CHANGES

Act 93 of 2016 provides for a 1.5% permanent benefit increase, calculate on the first \$60,000 of a recipient's benefit for eligible members, effective July 1, 2016. All retirees must have been retired by June 30, 2015 to be eligible. Regular retirees must be at least age 60. There is no age requirement for disability retirees. Non-retiree beneficiaries are eligible if the retiree would have attained age 60 by June 30, 2015.

Act 94 of 2016 provides for direct funding by employers of noninvestment-related administrative expenses beginning in the first fiscal year in which the projected aggregate employer contribution rate, calculated without regard to any changes in the board-approved actuarial valuation rate, will not increase.

Act 95 of 2016 amends the funding policy and other provisions as follows:

- o Accelerates the implementation of the reduction in amortization period for most actuarial changes, gains, or losses from 30 years to 20 years. The 20 year amortization will begin once the funded ratio reaches 70%, rather than 85%, as previously required.
- O Accelerates the implementation of the change in amortization of actuarial gains allocated to the experience account. The transfer of gains to the experience account will be amortized as a loss with level payments over a ten-year period, beginning with the first system valuation following June 30, 2015, in which an allocation is made to the system's experience account, rather than beginning on June 30, 2019, as provided by prior law.
- Provides for re-amortization of the OAB with level-dollar payments to 2029 in 2020-2021 Fiscal Year
  or later, when such re-amortization results in annual payments that are not more than the next annual
  payment otherwise required under prior law.
- Provides that until a system is 80% funded, the net remaining liability of the OAB and EAAB shall be re-amortized after application of the hurdle payments in the 2019-2020 Fiscal Year and in every fifth fiscal year thereafter.
- O Accelerates the timing of the review of volatility of payment schedules. Prior law required that the results of the study be reported to the Public Retirement Systems' Actuarial Committee by Nov. 1, 2019. Act 95 requires the review of volatility to be done following the close of Fiscal Year 2016-2017 and the report to be submitted by Nov. 1, 2017.
- o Consolidates all K-12 employee groups at Teachers' into a single plan for rate purposes.

### FUNDING POLICY

TRSL's funding policy is established by Sections 102 and 102.2 of Title 11 of the Louisiana Revised Statutes. TRSL is funded by employee and employer contributions, as a percentage of payroll, plus investment earnings. The basic elements of the annual required contribution are the normal cost, which is the cost of benefits earned by current active employees that is allocated to the current year, plus amortization of the unfunded accrued liability (UAL). Act 55 of 2014, Section 1, appropriates a percentage of nonrecurring revenue in accordance with the Constitution Article VII, Section 10(D)(2)(b)(ii) and requires the funds to be used to reduce the Initial UAL (IUAL). The funds are used to reduce the Original Amortization Base (OAB), which includes the IUAL.

Per State constitutional provisions, the employer contribution rate cannot drop below 11.8%, without regard to employer credits, and without a corresponding adjustment to the employee contribution rate. Per statutory provisions, the employer contribution rate cannot drop below 15.5% until the UAL that existed on June 30, 2004 is fully funded. Amounts paid to the system due to the minimum will be accumulated in the employer credit account to be used exclusively to reduce any UAL created before July 1, 2004.

Employee contribution rates are fixed and established by statutes. Employer contributions are determined using the Entry Age Normal actuarial cost method, as required by statute, and actuarial assumptions regarding future plan experience, such as long-term expected investment rates of return, future salary increases, and demographic assumptions such as rates of retirement, termination, disability, and mortality. The actuarial assumptions utilized in this valuation can be found in Exhibit 6. The cost method is used to determine the normal cost, which is divided into the employee and employer portion, both expressed as a percentage of payroll. The cost method also determines the plan's total actuarial accrued liability. The UAL is determined as the total actuarial accrued liability less the plan's valuation assets, which are developed in Exhibit 2 of this report. The UAL changes annually due to gains or losses that develop as actual plan experience differs from that assumed by the actuarial assumptions, and if applicable, changes in benefits, or actuarial methods and/or assumptions. Statutes provide for the amortization of changes in the UAL.

Benefit changes resulting in an actuarial cost can only be enacted by a two-thirds vote of the legislature and must be paid within 10 years. Non-investment experience gains and losses and investment losses are amortized over 30 years with level payments. Investment gains are first allocated to the OAB and EAAB, without re-amortization, up to the \$200 million threshold amounts, indexed beginning June 30, 2016, as required by Act 399 of 2014. By not re-amortizing, gains applied to these schedules result in earlier pay-off of these schedules. One-half of any remaining gains are credited to the experience account up to the statutory cap. Any remaining gains are then amortized over 30 years with level payments. Beginning in 2016, the full investment gain remaining after the allocation to the OAB and EAAB will be amortized over 30 years, and any gains credited to the experience account will be amortized as an offsetting loss over a 10 year period. Once the fund attains a funded ratio of 70%, future gains or losses that would have otherwise been amortized over 30 years will be amortized over 20 years. The OAB will be re-amortized with level-dollar payments to 2029 in fiscal year 2020/21 or later, when such re-amortization results in annual payments that are not more than the next annual payment otherwise required. If the System is less than 80% funded, the net remaining liability of the OAB and EAAB shall be re-amortized after application of the "threshold allocations" in Fiscal Year 2019-2020 and in every fifth fiscal year thereafter. Once the system attains an 80% funded ratio, the OAB and EAAB will be re-amortized following allocations of "threshold allocations" or contribution variance surpluses.

Future payments to amortize the OAB and Experience Account Amortization Base will increase as shown in the following table, as required by Act 497 of 2010. All other schedules will have level payments.

	Original	Experience Account
Plan Year	Amortization Base	Amortization Base
2016/2017 - 2017/2018	8 6.5%	6.5%
2018/2019 +	2.0%	Level Payments

If aggregate payroll increases at the same rate as the percentage increase in total amortization payments, the employer contribution rate attributable to the amortization payments would maintain a level percentage of payroll. If future aggregate payroll increases at a higher rate than total amortization payments, the employer contribution rate will decrease. Future total UAL amortization payments for all current schedules and the annual percentage change are shown in Exhibit 7-C.

Employers pay the full required employer contribution rate, as recommended to the legislature by the Public Retirement Systems' Actuarial Committee (PRSAC). This rate is determined as the projected actuarially determined contribution divided by the projected payroll. The actual actuarially determined contribution and

actual payroll will vary from the projected amounts, resulting in a contribution variance. Per statutory requirements, contribution surpluses through fiscal year 2039/2040 will be allocated to the EAAB and contribution deficits will be amortized over a five year period with level payments.

The funding policy described above is consistent with the plan accumulating adequate assets to make benefit payments when due and improving the funded status of the plan by fully amortizing the unfunded accrued liability, assuming that the actuarially determined contributions will be paid when due and all actuarial assumptions will be realized.

### ACCELERATED REDUCTION OF OAB AND EAAB

Act 497 of 2009 established the OAB and EAAB and required the application of certain investment gains and contribution variance credits to these schedules. Act 399 modified the provisions of Act 497 and specifies that until the System's funded ratio reaches 85%, the funds applied to these schedules will be used to pay off the schedules early, rather than to reduce employer contributions. Since 2009, \$250,000,000 has been applied to the OAB and \$453,195,808 has been applied to the EAAB. When combined with the surplus dollars appropriated to the System by the legislature, these result in the acceleration of the payoff of the OAB to 2028, one year earlier than the 2029 payoff required by the State Constitution. These funds have resulted in the acceleration of the payoff of the EAAB by 2035, five years earlier than the statutory requirement that this schedule be paid by 2040. A projection of future UAL and UAL payments based on current amortization schedules is shown in Exhibit 7-C. This projection assumes that the actuarially determined contributions will be paid when due and all actuarial assumptions will be realized.

The table below illustrates the impact of Acts 497 and 399 by showing how investment gains and contribution variance surpluses occurring between 2010 and 2016 have been allocated compared to the allocation that would have occurred prior to these Acts. To date, \$546,642,127 million in gains/surpluses have reduced the UAL rather than credit the Experience Account based on the change in funding policy.

		Allocation of G Pre-Acts 4 (If Not E	497/399	Actual Allo Gains/Su Based on Ac	urplus
	Investment Gain and Contribution		Credit Experience		Credit Experience
	Surplus	Reduce UAL	Account	Reduce UAL	Account
2010	0	0	0	0	0
2011	0	0	0	0	0
2012	7,169,301	7,169,301	0	7,169,301	0
2013	639,473,813	319,736,907	319,736,907	419,736,907	219,736,906
2014	734,622,453	387,456,051	347,166,403	564,287,565	170,334,888
2015	630,905,879	361,095,266	269,810,613	630,905,879	0
2016	64,452,206	64,452,206	0	64,452,206	0
Total	2,076,623,652	1,139,909,731	936,713,923	1,686,551,858	390,071,794
Total Gains/Surplus	2,076,623,652	2,076,62	23,654	2,076,62	23,652

### **FUNDED STATUS**

The funded status is a measure of the plan's assets relative to the plan's obligations. The current funded ratio is 62.36%, as measured by the plans valuation assets divided by the total actuarial accrued liability, based on the asset valuation method, actuarial cost method, and actuarial assumptions described above. There were no changes in these assumptions or methods since the prior valuation. The funded status measure is appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's obligations and for assessing the amount of future contributions. This measure would be different if the measure reflected the market value of assets rather than the actuarial value of assets. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements and changes in plan provisions or applicable law. The scope of this report does not include an analysis of the range of such future measurements.

### FUNDING OF ADMINISTRATIVE AND INVESTMENT EXPENSES

The employer contribution rate is determined in accordance with R.S. 11 Section 102, which by omission of language regarding the funding of administrative expenses precludes funding of these expenses by a direct allocation through the employer contribution rate. These expenses are instead funded through the employer rate with the 30 year amortization of the experience loss. Per Actuarial Standard of Practice No. 27, (paragraph 3.8.3.e.) the investment return assumption should be reduced to reflect investment and administrative expenses that are paid from plan assets and not otherwise recognized. The discount rate was developed with a margin of 10 basis points to account for these expenses, therefore these losses are expected to be offset by long-term investment earnings. Exhibit 6 provides further explanation regarding the impact of administrative expenses on plan assumptions/experience.

Act 94 of 2016 provides for direct funding by employers of noninvestment-related administrative expenses beginning in the first fiscal year in which the projected aggregate employer contribution rate, calculated without regard to any changes in the board-approved actuarial valuation rate, will not increase.

Investment manager fees are treated as a direct offset to investment income.

### FUNDING OF FUTURE POST RETIREMENT BENEFIT INCREASES

The liability for previously granted benefit increases is included in the retiree reserve. Louisiana law pertaining to TRSL retiree benefit increases provides for the funding of future increases by requiring the automatic transfer of a portion of excess investment earnings to the Experience Account. The law does not provide for automatic benefit increases. Many conditions must be met before an increase can be granted, as described in the Post Retirement Increases section of the Summary of Plan Provisions in Exhibit 5 of this report. The legislature and governor have the ultimate authority as to whether or not a future increase will be granted. Since a portion of investment earnings will be used to fund these benefits, which are not accrued benefits of the plan, the accrued benefits are discounted using a net discount rate. The net discount rate is determined as the gross expected long-term return less investment and administrative expenses and the expected return used to provide for future retiree benefit increases. This adjustment is made in accordance with Actuarial Standards of Practice No. 27 regarding the selection of economic assumptions, which states that it is appropriate to adjust the economic assumptions to provide for plan provisions that are difficult to measure, such as gain-sharing provisions.

The adjustment for gain-sharing reflects TRSL's specific statutory provisions which require 50% of investment gains, determined using the actuarial value of assets, above the statutory threshold of \$200 million, indexed to increases in the actuarial value of assets. Transfers to the Experience Account are limited based upon the maximum balance of this account, which has been significantly decreased by Act 399 of 2014. While the liabilities in this report do not explicitly include liabilities for future ad hoc retiree benefit increases, the assumptions recognize that investment earnings will be diverted to fund the increases. This disclosure is provided in accordance with Actuarial Standards of Practice No. 4.

### **EXHIBIT 1**

## DEVELOPMENT OF COSTS, LIABILITIES AND CONTRIBUTIONS

Normal Costs and Accrued Liabilities are calculated in accordance with the Entry Age Normal cost method, and the Actuarial Assumptions outlined in Exhibit 6 based on the Provisions of the Plan as summarized in Exhibit 5.

	June 30, 2016		Prior Year June 30, 2015	
	Dollar Amount	% of Salary	Dollar Amount	% of Salary
I. Normal Costs				
Active Members				
a) Retirement Benefits	304,492,745	7.87%	306,147,279	8.02%
b) Disability Benefits	14,365,660	0.37%	14,130,553	0.37%
c) Survivor Benefits	10,964,092	0.28%	10,664,199	0.28%
d) Voluntary Termination	136,768,983	3.53%	132,841,215	3.48%
e) Total	466,591,480	12.06%	463,783,246	12.15%
II. Actuarial Accrued Liability				
a) Active Members				
1) Retirement Benefits	7,703,033,944		7,642,648,734	
2) Disability Benefits	144,592,915		141,698,457	
3) Survivor Benefits	135,025,810		132,277,860	
4) Voluntary Termination	272,396,531		231,997,284	
	8,255,049,200		8,148,622,335	
b) Retired and Inactive Members				
1) Regular Retirees	16,101,366,471		15,700,534,358	
2) Disability Benefits	445,123,589		415,620,096	
3) Survivors	1,057,732,944		1,004,696,859	
4) Vested Deferred <sup>1</sup>	306,722,016		298,144,696	
5) Contributions Refunded <sup>2</sup>	131,749,421		129,177,219	
6) DROP Deferred Benefits	1,873,371,007		1,822,045,328	
7) DROP Account Balances	1,101,287,330		1,127,456,006	
	21,017,352,778		20,497,674,562	
c) Total	29,272,401,978		28,646,296,897	

<sup>&</sup>lt;sup>1</sup> Includes pending Retirement/DROP applications.

<sup>&</sup>lt;sup>2</sup> Includes terminated employee and rehired retiree contributions to be refunded.

# Exhibit 1 (Continued) Costs, Liabilities & Contributions

	June 30, 2016	Prior Year June 30, 2015
II. Actuarial Accrued Liability	29,272,401,978	28,646,296,897
III. Valuation Assets	18,254,321,142	17,457,243,696
IV. Unfunded Actuarial Accrued Liabilitiy 1	11,018,080,836	11,189,053,201
a) Change over prior year	-170,972,365	-784,710,556
b) Funded Percentage	62.4%	60.9%
V. Employer Contributions To Fund Current Plan Year <sup>1</sup>		
a) Employer Portion of Normal Cost	160,360,450	162,236,872
b) Amortization Payments	974,555,726	935,381,362
c) Prior Contribution Variance	2,735,460	28,258,642
Total Required Contribution	1,137,651,636	1,125,876,876
Total Contribution Rate	25.8%	25.8%
PERSAC Approved rate <sup>1</sup>	25.4%	26.2%
Aggregate Employer Normal Cost Rate	4.0749%	4.1731%
VI. Projected Employer Contributions To Fund Next Plan Year <sup>1</sup>		
a) Employer Portion of Normal Cost	170,179,978	167,630,952
b) Amortization Payments	1,021,447,416	972,331,902
c) Prior Contribution Variance	7,402,122	2,735,460
Total Required Contribution	1,199,029,516	1,142,698,314
Total Contribution Rate	26.4%	25.4%
Projected Aggregate Employer Normal Cost Rate <sup>2</sup>	4.1988%	4.1731%
VII. Current Payroll	3,869,730,024	3,815,649,662
Projected Payroll - Mid Year	3,935,352,728	3,887,668,656
Projected Payroll - Next Year	4,053,069,190	4,016,926,538
ORP - Salary Adjustment Factor <sup>2</sup>	1.14294	1.14553

<sup>&</sup>lt;sup>1</sup> Dollar Amounts reflect estimated payments due mid-year on January 1st per Act 81. Constitutional Minimum is ll.8% without regard to the statutory minimum of 15.5%.

Normal costs, normal cost rates, and UAL payments projected for FY 2017/18 were determined using a discount rate

The ORP salary adjustment factor is used to convert amortization payments to percentage of payroll.

### **EXHIBIT 2**

# FINANCIAL SUMMARY STATEMENT OF REVENUES AND EXPENSES FOR FISCAL YEAR ENDING

		Prior Years	
	June 30, 2016	June 30, 2015	June 30, 2014
<b>OPERATING REVENUES:</b>			
1. Contribution Income			
Member	\$ 330,773,316	\$ 324,920,644	\$ 326,007,091
Employer	1,066,521,193	1,120,150,411	1,084,221,275
Legis Appropriations	-	10,384,806	5,578,791
Other Appropriations	34,500	41,721	48,165
ORP - Unfunded	128,543,466	133,771,593	124,874,274
LSU Ag Center Coop. Ext.	1,830,995	1,851,985	2,028,819
Miscellaneous	995,292	928,581	1,265,971
TOTAL CONTRIBUTIONS	1,528,698,762	1,592,049,741	1,544,024,386
2. Investment Income			
Investments	216,567,366	481,866,158	2,853,792,892
Less Advisor Fees	-35,975,157	-36,705,991	-35,729,758
TOTAL INVESTMENT INCOME	180,592,209	445,160,167	2,818,063,134
TOTAL INVESTMENT INCOME	100,392,209	443,100,107	2,010,003,134
3. Total Revenues	1,709,290,971	2,037,209,908	4,362,087,520
OPERATING EXPENSES:			
1. General Administration <sup>1</sup>	17,025,314	18,880,795	17,200,014
Depreciation Expense	407,105	384,426	322,881
2. Benefits Paid			
Pension Benefits	1,999,272,395	1,955,102,582	1,875,366,921
LSU Ag Center Coop. Ext.	1,873,303	1,754,855	1,746,982
Refund of Contributions	49,141,575	51,545,762	57,652,124
TOTAL BENEFITS PAID	2,050,287,273	2,008,403,199	1,934,766,027
	<u></u>	2,000,100,177	1,221,100,021
3. Total Expenses	2,067,719,692	2,027,668,420	1,952,288,922
NET MARKET VALUE INCREASE	-358,428,721	9,541,488	2,409,798,598

The General Administration Operating Expense includes \$1,047,832, \$1,685,836, and -\$24,005 for 2014, 2015, and 2016, Other Post-Employment Benefits (OPEB), respectively and \$2,078,530, and 1,773,559 for 2015 and 2016 GASB 68 Pension Expense, respectively.

### **EXHIBIT 2 (Continued)**

### **Financial Summary**

STATISTICAL DATA

# COMPARATIVE SUMMARY OF REVENUES BY SOURCE AND EXPENSES BY TYPE

Revenues by Source					
Fiscal	Members	Employer	Investment		
Year	Contribution	Contribution <sup>1</sup>	Income	Total	
2007	282,326,101	593,819,853	2,622,473,864	3,498,619,818	
2008	323,678,452	753,661,042 <sup>2</sup>	-793,655,054	283,684,440	
2009	344,547,871	714,703,222	-3,287,852,517	-2,228,601,424	
2010	347,114,632	726,567,699	1,289,304,693	2,362,987,024	
2011	342,323,329	943,678,941	2,945,993,096	4,231,995,366	
2012	333,908,454	1,084,637,731	-56,240,846	1,362,305,339	
2013	327,767,936	1,095,482,766	1,754,983,691	3,178,234,393	
2014	326,007,091	1,218,017,295 <sup>3</sup>	2,818,063,134	4,362,087,520	
2015	324,920,644	1,267,129,097	445,160,167	2,037,209,908	
2016	330,773,315	1,197,925,446	180,592,209	1,709,290,970	

Expenses by Type							
Fiscal	Administrative						
Year	Benefits	Refunds	Expenses	Total			
2007	1,295,552,338	47,579,251	14,370,760	1,357,502,349			
2008	1,383,381,577	34,285,358	18,498,003 4	1,436,164,938			
2009	1,464,106,312	33,939,436	19,321,250	1,517,366,998			
2010	1,532,526,141	40,210,177	19,100,619	1,591,836,937			
2011	1,615,778,191	42,248,487	18,189,491	1,676,216,169			
2012	1,682,528,254	49,139,028	18,864,917	1,750,532,199			
2013	1,800,166,804	59,152,481	17,661,969	1,876,981,254			
2014	1,877,113,902	57,652,124	17,522,895	1,952,288,921			
2015	1,956,857,437	51,545,762	19,265,221	2,027,668,420			
2016	2,001,145,698	49,141,575	17,432,419	2,067,719,692			

<sup>&</sup>lt;sup>1</sup> Includes Miscellaneous Contribution/Income in addition to direct employer contributions.

Includes \$40,000,000 legislative appropriation from Act 7 of 2008 (2<sup>nd</sup> Extraordinary Session).

Includes \$5,578,791 legislative appropriation from Act 55 of 2014.

<sup>&</sup>lt;sup>4</sup> Includes OPEB expense, beginning in 2008.

### **EXHIBIT 2 (Continued)**

### **Financial Summary**

### FINANCIAL SUMMARY STATEMENT OF ASSETS FOR FISCAL YEAR ENDING

			Prior Years			rs
ASSETS:		June 30, 2016		June 30, 2015	•	June 30, 2014
Cash and Cash Equivalents	\$	5,279,450	\$	236,026,000	\$	205,397,273
Short Term Securities		1,307,428,499		990,777,882		871,504,691
Domestic Bonds		1,828,132,715		1,775,656,703		1,770,055,139
International Bonds		1,413,994,202		1,489,882,945		1,667,920,752
Domestic Equities		5,161,381,152		5,478,561,612		5,201,856,937
International Equities		3,166,197,700		3,429,594,486		3,688,369,407
Alternative Investments		4,573,041,477		4,358,084,637		4,312,950,822
Property and Equipment		3,710,875		4,051,370		4,100,275
Receivables less Payables		76,602,964		132,407,761		177,880,162
Deferred Outflows less Deferred Inflows		2,181,921		1,336,282		<u>-</u>
TOTAL ASSETS - Market Value		17,537,950,955		17,896,379,678		17,900,035,458
2014 MVA Adjustment due to Accounting Principle Change						(13,197,268)
Restated 2014 Market Value of Assets					17,883,182,410	

### **ACTUARIAL VALUE OF ASSETS**

The market value of assets gradually recognizes investment gains and losses relative to the net assumed investment return, over a 5 year period in 20% increments. The adjusted asset value is subject to Corridor Limits of 80% to 120% of the Market Value of Assets.

Plan Year	Asset G/L	Deferred %	Deferred \$
2013	603,108,919	20%	120,621,784
2014	1,595,397,918	40%	638,159,167
2015	(923,787,158)	60%	(554,272,295)
2016	(1,185,490,155)	80%	(948,392,124)
			\$ (743,883,468)
Market Value of Ass	sets		\$ 17,537,950,955
Deferred Asset G/L			(743,883,468)
Preliminary Actuaria	al Value of Assets		\$ 18,281,834,423
CORRIDOR LIMITS	S		
Minimum = 80% or	f Market Value		\$ 14,030,360,764
Maximum = 120%	of Market Value		21,045,541,146
Actuarial Value of A	Assets		\$ 18,281,834,423

### **EXHIBIT 2 (Continued)**

### **Financial Summary**

### FINANCIAL SUMMARY STATEMENT OF ASSETS FOR FISCAL YEAR ENDING

---- Prior Years ----

	June 30, 2016		J	June 30, 2015		June 30, 2014	
EMPLOYER CREDIT ACCOUNT <sup>1</sup> :							
Prior Year Ending Balance	\$	_	\$	-	\$	_	
+ Contributions		_		-		-	
- Disbursements		_		_		_	
+ Accumulated Interest		-		-			
Account Balance - Year End		-	-	-	-	-	
LSU AG/EXT SERVICE:							
Prior Year Ending Balance	\$	2,360,090	\$	1,933,057	\$	1,322,042	
+ Contributions		1,830,995		1,851,985		2,028,819	
- Benefit Disbursements		1,873,303		1,754,855		1,746,982	
+ Accumulated Interest		218,022		329,903		329,178	
Account Balance - Year End		2,535,804		2,360,090		1,933,057	
EXPERIENCE ACCOUNT FUND:							
Prior Year Ending Balance	\$	226,356,559	\$	218,148,161	\$	219,736,906	
+ Experience Account Allocation		-		-		170,334,888	
- Benefit Disbursements		216,473,124		-		200,806,602	
+ Accumulated Interest		15,094,042		8,208,398	2	28,882,969	
Fund Balance - Year End		24,977,477		226,356,559		218,148,161	
DEVELOPMENT OF							
VALUATION ASSETS:							
Actuarial Value of Assets	\$ 1	18,281,834,423	\$ 1	17,685,960,345	\$ 1	6,365,854,025	
- Employer Credit Account		-		-		-	
- LSU Ag/Ext Service Account		2,535,804		2,360,090		1,933,057	
- Experience Account Fund		24,977,477		226,356,559		218,148,161	
Valuation Assets	1	18,254,321,142	1	17,457,243,696	1	6,145,772,807	

<sup>&</sup>lt;sup>1</sup> The Employer Credit Account was created by ACT 588 of 2004.

The 2015 Experience Account interest credit was calculated to be \$24,553,922, but the total account balance is limited to \$226,356,559, or the cost of one PBI. The remaining interest was credited to valuation assets to be used for regular plan funding.

### **EXHIBIT 3**

### GASB STATEMENT NO. 67/68 FINANCIAL REPORTING

The Governmental Accounting Standards Board Statements No. 67/68 establish financial reporting standards for state and local governmental pension plans that are administered through trusts or equivalent arrangements. The required actuarial disclosures are illustrated below. The Plan Fiduciary Net Position is the Market Value of Assets used for the funding valuation, excluding assets held for the LSU Agriculture and Extension Service. The Total Pension Liability was developed using the Entry Age Normal cost method.

### SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY

	June 30, 2016		June 30, 2015		June 30, 2014	
Total Pension Liability Plan Fiduciary Net Position <sup>1</sup>	\$ \$	29,272,401,978 17,535,415,151	\$ \$	28,646,296,897 17,894,019,588	\$ \$	28,119,536,563 17,898,102,401
Employers' Net Pension Liability	\$	11,736,986,827	\$	10,752,277,309	\$	10,221,434,162
Plan Fiduciary Net Position as a percentage of Total Pension Liability		59.9%		62.5%		63.7%
Covered Employee Payroll	\$	3,869,730,024	\$	3,815,648,662	\$	3,764,954,727
Net Pension Liability as a percentage of Covered Payroll	7	303.3%	7	281.8%	,	271.5%

		Contributions in			
		Relation to			Contributions
	Actuarial	Actuarial	Contribution		as a % of
Fiscal	Determined	Determined	Deficiency		Covered
Year	Contribution	Contribution	(Excess)	Covered Payroll	Payroll
2007	578,895,501	616,429,526	(37,534,025)	3,224,562,742	19.1%
2008	637,097,695	740,511,169	(103,413,474)	3,675,013,831	20.1%
2009	697,190,561	741,595,487	(44,404,926)	3,912,326,326	19.0%
2010	904,382,657	755,446,587	148,936,070	3,977,819,262	19.0%
2011	1,086,319,774	980,393,924	105,925,850	3,902,646,534	25.1%
2012	1,120,095,898	1,127,265,199	(7,169,301)	3,808,760,594	29.6%
2013	1,149,134,132	1,137,733,532	11,400,600	3,726,325,750	30.5%
2014	1,218,397,771	1,258,687,418	(40,289,647)	3,764,954,727	33.4%
2015	1,212,285,929	1,303,570,582	(91,284,653)	3,815,648,662	34.2%
2016	1,177,993,580	1,242,445,786	(64,452,206)	3,869,730,024	32.1%

<sup>&</sup>lt;sup>1</sup> Plan Fiduciary Net Position excludes side-fund assets held for the LSU Agriculture and Extension Service

# EXHIBIT 3 (Continued) Pension Accounting & Financial Disclosure

### SCHEDULE OF CHANGES IN EMPLOYERS' NET PENSION LIABILITY

	June 30, 2016	June 30, 2015	June 30, 2014
Total Pension Liability			
Service Cost	441,619,569	459,658,120	462,730,192
Interest	2,174,908,690	2,137,096,756	2,086,494,384
Changes of Benefit Terms	216,473,124	-	200,806,602
Diff. Between Expected and Actual	(157,739,253)	(62,489,198)	(122,326,978)
Changes of Assumptions	-	-	-
Retirement Benefits <sup>1</sup>	(1,999,272,395)	(1,955,102,582)	(1,877,113,903)
Refunds/Transfers of Member Contributions	(49,884,654)	(52,402,762)	(58,777,337)
<b>Net Change in Total Pension Liability</b>	626,105,081	526,760,334	691,812,960
Total Pension Liability - Beginning	28,646,296,897	28,119,536,563	27,427,723,603
Total Pension Liability - Ending (a)	\$ 29,272,401,978	\$ 28,646,296,897	\$ 28,119,536,563
	+ ->,->-, ->-,	+,- :-,- :-,- :-,- :-	+,,,
Plan Fiduciary Net Position			
Employer Contributions <sup>1</sup>	1,157,901,123	1,217,466,676	1,176,569,685
Non-Employer Contributions	38,193,328	37,425,629	35,927,881
Employee Contributions	330,773,316	324,920,644	326,007,091
Net Investment Income <sup>1</sup>	177,422,752	443,034,317	2,815,090,995
Other Income	2,951,433	13,866,589	7,880,853
Retirement Benefits <sup>1</sup>	(1,999,272,395)	(1,955,102,582)	(1,877,113,903)
Refunds/Transfers of Member Contributions	(49,884,654)	(52,402,762)	(58,777,337)
Administrative Expense	(16,306,240)	(18,023,794)	(15,026,969)
Other Postemployment Benefit Expenses	24,005	(1,685,836)	(1,047,832)
Depreciation and Amortization Expenses	(407,105)	(384,426)	(322,881)
Accounting Principle Change		(13,197,268)	
<b>Net Change in Plan Fiduciary Net Position</b>	(358,604,437)	(4,082,813)	2,409,187,583
Plan Fiduciary Net Position - Beginning	17,894,019,588	17,898,102,401	15,488,914,818
Plan Fiduciary Net Position - Ending (b)	\$ 17,535,415,151	\$ 17,894,019,588	\$ 17,898,102,401
Net Pension Liability - Ending (a) - (b)	\$ 11,736,986,827	\$ 10,752,277,309	\$ 10,221,434,162
Plan Fiduciary Net Position as a			
Percentage of the Total Pension Liability	59.9%	62.5%	63.7%
referringe of the rotal reason Employ	37.770	02.570	03.770
Covered Employee Payroll	\$ 3,869,730,024	\$ 3,815,648,662	\$ 3,764,954,727
Net Pension Liability as a			
Percentage of Covered Employee Payroll	303.3%	281.8%	271.5%

<sup>&</sup>lt;sup>1</sup> Amounts shown exclude side-fund assets held for the LSU Agriculture and Extension Service and associated contributions and benefits.

### **EXHIBIT 3 (Continued)**

### Pension Accounting & Financial Disclosure

### **Actuarial Assumptions:**

All assumptions used for purposes of GASB Statement 67/68 reporting requirements are described in Exhibit 6, except for administrative expenses and the discount rate. Administrative expenses will be directly reflected in the employer pension expense in the year incurred in the Statement 67/68 reporting. Please see below for a description of the discount rate used for GASB Statement 67/68 reporting.

### **Discount Rate:**

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expenses and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, and by adding expected inflation and an adjustment for the effect of rebalancing/ diversification. The resulting long-term geometrical nominal expected return is 8.23%. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2016 are summarized in the following table:

	Long Term Expected
Asset Class	Real Rate of Return
Domestic Equity	4.50%
International Equity	5.31%
Domestic Fixed Income	2.45%
International Fixed Income	3.28%
Private Equity	6.80%
Other Private Assets	4.82%

The discount rate used to measure the total pension liability was 7.75 percent.

The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

### Sensitivity of the Net Pension Liability to Changes in the Discount Rate:

The following presents the net pension liability calculated using the discount rate of 7.75%, and what the net pension liability would be if it were calculated using a discount rate that is 1% lower or 1% higher.

	1% Decrease	Current Discount Rate	1% Increase
	6.75%	7.75%	8.75%
Employers' Net Pension Liability	14,639,614,986	11,736,986,827	9.267.046.412

The Schedule of Pension Amounts, below, provides employers with amounts to be recognized in the financial statements and note disclosures for GASB 68 reporting. In accordance with GASB Statement 68, changes in total pension liability due to differences between actual and expected experience and changes in assumptions are amortized over a period equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active and inactive employees) determined as of the beginning of the measurement period. The current and prior year's average remaining service life is shown below. Differences between projected and actual investment returns are amortized over a closed 5-year period.

# EXHIBIT 3 (Continued) Pension Accounting & Financial Disclosure

### SCHEDULE OF PENSION AMOUNTS

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning balance	(10,752,277,309)	(1,107,596,057)	740,920,215	
Total Pension Liability Factors:				
Service cost	(463,783,246)			463,783,246
Interest	(2,176,626,375)			2,176,626,375
Changes in benefit terms	(216,473,124)			216,473,124
Differences between expected and actual				
experience	181,620,615	(181,620,615)	-	
Amortization of current year		36,324,123	-	(36,324,123)
Amortization of prior years		36,963,235	-	(36,963,235)
Changes in assumptions	-	-	-	
Amortization of current year		-	-	-
Amortization of prior years		-	-	-
Benefit payments	1,999,272,395			(1,999,272,395)
Refunds/Transfers of Member Contributions	49,884,654			(49,884,654)
Net Change in Total Pension Liability	(626,105,081)	(108,333,257)	-	734,438,338
Plan Fiduciary Net Position:				
Contributions - Employer	1,157,901,123			
Contributions - Non-Empl. Contributing Entities	38,193,328			
Contributions - Employees	330,773,316			(330,773,316)
Expected earnings on pension plan investments	1,366,015,464			(1,366,015,464)
Differences between projected and actual				
earnings on pension plan investments	(1,188,592,712)	-	1,188,592,712	
Amortization of current year		-	(237,718,542)	237,718,542
Amortization of prior years		326,069,504	(185,230,054)	(140,839,450)
Retirement Benefits	(1,999,272,395)			1,999,272,395
Administrative Expense	(16,282,235)			16,282,235
Refunds/Transfers of Member Contributions	(49,884,654)			49,884,654
Other	2,544,328			(2,544,328)
Net Change in Plan Fiduciary Net Position	(358,604,437)	326,069,504	765,644,116	462,985,268
Ending Balance	(11,736,986,827)	(889,859,810)	1,506,564,331	1,197,423,606

2016 Average Remaining S	ervice Life	Plan Year	Amortization Period
Active	9.92	2014	5.0
Active Post-DROP	3.28	2015	5.0
Inactive/Retired	0	2016	5.0
Average	4.32		
Amort. Period (Rounded up)	5.0		

### **EXHIBIT 4**

### **CENSUS DATA**

### **GENERAL COMMENTS**

TRSL provides the data for individual members of the system as of the valuation date. The validity of the results of any actuarial valuation is dependent upon the accuracy of the data base. Our review of submitted information is limited to validation of reasonableness and consistency in several areas, such as age, service, salary, and current benefits. 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. Records identified as containing suspicious data were assumed to possess the same characteristics of "good data" in the same cohort. Suspicious data are not necessarily errors, but data which fall outside the parameters of the editing process for further checking. The assigned values are based on information from similar records or based on historical averages for similarly situated members. 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.

The data contained in this valuation is summarized on the following pages with exceptions noted below. The profile depicted in the cellular graphs represents "error-free data," which serves as the basis for determining costs and liabilities. Active members are allocated to cells based upon attained age and years of service. Retirees and survivors are allocated to cells based upon attained age and years elapsed since retirement or commencement of benefits.

Disability retirees who have reached normal retirement eligibility requirements are considered regular retirees by TRSL but are classified as disability retirees for purposes of the actuarial valuation. Liabilities are calculated accordingly.

Salary data contained in the profiles and valuation report exceed the sums reported by internal audit due to annualized salaries. In the valuation process, membership data with fractional service in the first year of employment annualizes the salary.

The following is a summary by plan of the data submitted for valuation:

	2	2016	2	015
Active Members	Census	Avg. Salary	Census	Avg. Salary
Regular Teachers	71,511	44,339	70,881	43,965
Higher Education	8,792	61,158	8,803	60,338
Lunch Plan A	8	23,638	10	23,922
Lunch Plan B	1,162	19,029	1,192	18,625
Post DROP	2,595	53,576	2,716	53,675
Total	84,068	46,031	83,602	45,641

# EXHIBIT 4 (Continued) Census Data

	2016	2015
Retired and Inactive Members	Census	Census
Regular Retirees	64,593	64,366
Disability Retirees	4,238	4,121
Survivors	6,997	6,772
DROP Participants	2,504	2,283
Vested & Reciprocals	6,687	6,606
Inactive Non-Vested (Due Refunds)	19,842	19,005
Total Retired and Inactive	104,861	103,153
Total Members	188,929	186,755
Less Inactive Non-Vested (Due Refunds)	-19,842	-19,005
Total Active and Vested Inactive Members	169,087	167,750

### MEMBER RECONCILIATION

	Active	Active after	Terminated		Retired, Disabled,	
	(Pre-DROP)	DROP	Vested	In DROP	Survivor	Total
June 30, 2015 Valuation	80,886	2,716	6,606	2,283	75,259	167,750
Additions to Census						
Newly Hired Members	7,782		0			7,782
Change in Status						
New Regular Retirees	(1,473)	(558)	(209)	(505)	2,745	0
New Disability Retirees	(187)		(18)		205	0
New Survivors	(41)	(4)	(5)	(3)	53	0
Active to Terminated Vested	(1,160)		1,160			0
Active to DROP	(899)			899		0
Terminated Vested to Active	498		(498)			0
Disability to Active	1				(1)	0
Terminated Vested to DROP			(2)	2		0
DROP to Active After DROP		437		(437)		0
Eliminated from Census						
Refunded or Due Refund	(3,848)		(364)		(2)	(4,214)
Deceased	(40)	(1)	(19)	(2)	(2,158)	(2,220)
Data Revisions	(46)	5	36	267	(273)	(11)
June 30, 2016 Valuation	81,473	2,595	6,687	2,504	75,828	169,087

# TRSL MEMBERSHIP PROFILE ALL ACTIVE MEMBERS (PRE-DROP)

CELLS DEPICT - MEMBER COUNT VALUATION DATE 6/30/2016
TOTAL SALARY

Age/Years	<1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35+	Total
< 25	665	1,186								1,851
< 25	\$27,123,254	\$48,007,115								\$75,130,369
25 - 29	1,051	5,357	949	2						7,359
25 - 29	\$42,891,612	\$225,075,052	\$42,920,451	\$70,623						\$310,957,738
30 - 34	830	3,936	4,225	1,067	2					10,060
30 - 34	\$35,793,835	\$164,181,859	\$194,651,004	\$53,450,286	\$42,213					\$448,119,197
35 - 39	715	3,126	3,134	3,646	1,036	2				11,659
35 - 39	\$30,210,045	\$124,460,106	\$141,037,354	\$185,814,288	\$56,283,030	\$61,319				\$537,866,142
40 - 44	517	2,386	2,476	2,441	3,096	785	1			11,702
40 - 44	\$22,465,756	\$95,758,068	\$106,630,412	\$117,939,536	\$172,293,981	\$45,337,813	\$32,892			\$560,458,458
45 - 49	449	1,956	2,191	2,139	2,210	2,545	729	4		12,223
45 - 49	\$18,440,938	\$74,864,012	\$88,286,845	\$96,157,536	\$112,683,464	\$149,102,102	\$43,795,055	\$162,953		\$583,492,905
50 - 54	318	1,549	1,774	1,868	1,853	1,781	2,107	106		11,356
50 - 54	\$12,670,358	\$58,169,995	\$69,248,315	\$77,234,481	\$82,444,732	\$90,545,899	\$125,067,141	\$6,768,837		\$522,149,758
55 - 59	249	1,122	1,327	1,445	1,745	1,615	326	122	32	7,983
55 - 59	\$10,737,137	\$42,251,116	\$52,000,011	\$58,145,300	\$74,507,155	\$75,633,111	\$18,134,110	\$7,717,564	\$2,365,910	\$341,491,414
(0. (4	141	584	796	852	845	921	362	137	121	4,759
60 - 64	\$6,780,970	\$23,449,343	\$33,915,283	\$37,358,330	\$37,653,601	\$43,359,607	\$18,952,180	\$10,066,082	\$10,808,651	\$222,344,047
65 - 69	39	217	338	315	287	277	249	114	73	1,909
65 - 69	\$1,284,572	\$8,842,345	\$14,734,491	\$14,347,549	\$13,642,834	\$13,045,967	\$13,517,925	\$8,035,606	\$7,119,201	\$94,570,490
70.	19	46	115	89	71	74	66	71	61	612
70+	\$886,787	\$1,912,691	\$4,515,605	\$4,649,953	\$3,270,842	\$3,377,529	\$3,786,819	\$6,027,982	\$5,690,475	\$34,118,683
Total	4,993	21,465	17,325	13,864	11,145	8,000	3,840	554	287	81,473
Total	\$209,285,266	\$866,971,702	\$747,939,771	\$645,167,882	\$552,821,852	\$420,463,347	\$223,286,122	\$38,779,024	\$25,984,237	\$3,730,699,203

AVERAGES --- Attained Age 44.31 Service Years 10.65 Active Salary \$45,791

# TRSL MEMBERSHIP PROFILE ACTIVE - REGULAR K-12

CELLS DEPICT - MEMBER COUNT TOTAL SALARY

VALUATION DATE 6/30/2016

Age/Years	<1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35+	Total
< 25	558	1,117								1,675
< 25	\$22,823,368	\$45,720,665								\$68,544,033
25 - 29	830	4,875	911	2						6,618
25 - 29	\$32,920,465	\$205,887,352	\$41,191,395	\$70,623						\$280,069,835
20. 24	627	3,297	3,892	1,038	2					8,856
30 - 34	\$24,474,538	\$132,529,153	\$178,643,676	\$51,920,899	\$42,213					\$387,610,479
25 20	564	2,562	2,728	3,405	1,008	2				10,269
35 - 39	\$21,205,749	\$94,947,235	\$118,594,824	\$172,528,529	\$54,695,187	\$61,319				\$462,032,843
40 44	414	1,988	2,165	2,195	2,993	772	1			10,528
40 - 44	\$15,835,341	\$73,567,643	\$89,079,125	\$103,638,679	\$165,614,115	\$44,614,633	\$32,892			\$492,382,428
45 - 49	360	1,655	1,885	1,890	2,065	2,436	715	4		11,010
45 - 49	\$13,263,340	\$59,765,651	\$71,897,988	\$80,674,166	\$103,794,519	\$142,118,288	\$42,885,226	\$162,953		\$514,562,131
50 54	256	1,229	1,465	1,620	1,698	1,676	2,032	95		10,071
50 - 54	\$8,748,133	\$41,946,295	\$53,788,908	\$62,944,378	\$74,763,670	\$84,536,206	\$119,697,700	\$6,266,859		\$452,692,149
55 50	180	857	1,037	1,236	1,581	1,486	258	98	29	6,762
55 - 59	\$6,479,451	\$27,542,716	\$36,370,109	\$46,359,099	\$66,208,668	\$68,245,268	\$14,251,515	\$6,121,830	\$2,254,635	\$273,833,291
(0. (4	97	424	611	696	769	855	304	74	86	3,916
60 - 64	\$3,943,226	\$13,752,563	\$21,933,428	\$27,197,469	\$33,521,088	\$39,256,461	\$14,522,437	\$4,159,177	\$6,788,934	\$165,074,783
(5, (0)	31	146	246	244	237	237	199	73	24	1,437
65 - 69	\$960,475	\$5,098,666	\$8,985,314	\$9,186,166	\$10,536,876	\$10,553,455	\$9,404,998	\$3,729,107	\$1,821,428	\$60,276,485
70.	12	26	73	54	50	58	47	32	17	369
70+	\$362,607	\$920,155	\$2,207,903	\$1,846,412	\$1,906,160	\$2,280,493	\$2,114,594	\$1,416,724	\$564,159	\$13,619,207
T-4-1	3,929	18,176	15,013	12,380	10,403	7,522	3,556	376	156	71,511
Total	\$151,016,692	\$701,678,094	\$622,692,670	\$556,366,420	\$511,082,496	\$391,666,123	\$202,909,362	\$21,856,650	\$11,429,156	\$3,170,697,663

AVERAGES --- Attained Age 44.01 Service Years 10.91

Active Salary \$44,339

# TRSL MEMBERSHIP PROFILE ACTIVE - HIGHER EDUCATION

CELLS DEPICT - MEMBER COUNT TOTAL SALARY

VALUATION DATE 6/30/2016

Age/Years	<1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35+	Total
< 25	98	65								163
< 25	\$4,130,989	\$2,225,264								\$6,356,253
25 - 29	214	467	37							718
25 - 29	\$9,794,635	\$18,924,347	\$1,710,575							\$30,429,557
30 - 34	198	611	320	29						1,158
30 - 34	\$11,192,059	\$31,192,349	\$15,770,462	\$1,529,387						\$59,684,257
35 - 39	146	515	387	233	27					1,308
33 - 39	\$8,921,361	\$28,671,644	\$22,065,955	\$13,129,529	\$1,565,646					\$74,354,135
40 - 44	99	360	284	230	100	12				1,085
40 - 44	\$6,551,620	\$21,535,162	\$17,019,687	\$13,974,816	\$6,618,933	\$709,133				\$66,409,351
45 - 49	76	253	249	218	128	102	12			1,038
43 - 47	\$4,931,335	\$14,303,765	\$15,331,440	\$14,848,608	\$8,501,988	\$6,811,881	\$870,272			\$65,599,289
50 - 54	55	245	235	197	102	85	70	5		994
30 - 34	\$3,793,483	\$14,936,866	\$14,115,813	\$13,275,446	\$6,611,896	\$5,617,250	\$5,261,435	\$354,490		\$63,966,679
55 - 59	52	209	226	165	116	94	43	21	1	927
33 - 37	\$3,857,448	\$13,763,239	\$14,512,265	\$10,932,492	\$7,248,228	\$6,635,152	\$3,315,874	\$1,529,003	\$61,478	\$61,855,179
60 - 64	41	133	157	138	64	59	53	59	34	738
00 - 04	\$2,785,347	\$9,250,322	\$11,483,587	\$9,841,181	\$3,903,525	\$3,872,944	\$4,327,222	\$5,835,046	\$3,989,074	\$55,288,248
65 - 69	5	60	80	67	47	39	48	41	49	436
03 - 07	\$272,192	\$3,571,042	\$5,543,155	\$5,079,269	\$3,052,788	\$2,407,013	\$4,011,476	\$4,306,499	\$5,297,773	\$33,541,207
70+	7	18	35	33	21	16	17	38	42	227
70+	\$524,180	\$966,815	\$2,189,785	\$2,770,537	\$1,364,682	\$1,097,036	\$1,636,543	\$4,592,519	\$5,073,923	\$20,216,020
Total	991	2,936	2,010	1,310	605	407	243	164	126	8,792
Total	\$56,754,648	\$159,340,815	\$119,742,724	\$85,381,265	\$38,867,686	\$27,150,409	\$19,422,822	\$16,617,557	\$14,422,248	\$537,700,174

AVERAGES --- Attained Age 45.79
Service Years 8.64
Active Salary \$61,158

# TRSL MEMBERSHIP PROFILE ACTIVE - LUNCH PLAN A

CELLS DEPICT - MEMBER COUNT TOTAL SALARY

VALUATION DATE 6/30/2016

Age/Years	<1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35+	Total
< 25										
25 - 29										
30 - 34										
35 - 39										
40 - 44										
45 - 49										
50 - 54										
55 - 59									1 \$24,816	1 \$24,816
60 - 64								2 \$34,719	1 \$30,643	3 \$65,362
65 - 69							1 \$27,795	Ψ34,717	φ30,013	1 \$27,795
70+								1 \$18,739	2 \$52,393	3 \$71,132
Total							1 \$27,795	3 \$53,458	4 \$107,852	8 \$189,105

AVERAGES --- Attained Age 64.41 Service Years 33.29

Active Salary \$23,638

# TRSL MEMBERSHIP PROFILE ACTIVE - LUNCH PLAN B

CELLS DEPICT - MEMBER COUNT TOTAL SALARY

VALUATION DATE 6/30/2016

Age/Years	<1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35+	Total
- 25	9	4								13
< 25	\$168,898	\$61,186								\$230,084
25 - 29	7	15	1							23
25 - 29	\$176,513	\$263,353	\$18,481							\$458,347
30 - 34	5	28	13							46
30 - 34	\$127,238	\$460,357	\$236,866							\$824,461
35 - 39	5	49	19	8	1					82
35 - 39	\$82,936	\$841,227	\$376,575	\$156,230	\$22,197					\$1,479,165
40 - 44	4	38	27	16	3	1				89
40 - 44	\$78,795	\$655,263	\$531,600	\$326,041	\$60,933	\$14,047				\$1,666,679
45 - 49	13	48	57	31	17	7	2			175
45 - 49	\$246,264	\$794,596	\$1,057,417	\$634,762	\$386,957	\$171,933	\$39,557			\$3,331,486
50 - 54	7	75	74	51	53	20	5	6		291
30 - 34	\$128,742	\$1,286,834	\$1,343,594	\$1,014,657	\$1,069,166	\$392,443	\$108,006	\$147,488		\$5,490,930
55 - 59	17	56	64	44	48	35	25	3	1	293
55 - 59	\$400,239	\$945,161	\$1,117,637	\$853,709	\$1,050,259	\$752,691	\$566,721	\$66,731	\$24,981	\$5,778,129
60 - 64	3	27	28	18	12	7	5	2		102
00 - 04	\$52,398	\$446,458	\$498,268	\$319,680	\$228,988	\$230,202	\$102,521	\$37,140		\$1,915,655
65 - 69	3	11	12	4	3	1	1			35
05 - 09	\$51,905	\$172,637	\$206,022	\$82,114	\$53,170	\$85,499	\$73,656			\$725,003
70+		2	7	2			2			13
/0+		\$25,721	\$117,917	\$33,004			\$35,682			\$212,324
Total	73	353	302	174	137	71	40	11	1	1,162
1 Otal	\$1,513,926	\$5,952,793	\$5,504,377	\$3,420,197	\$2,871,670	\$1,646,815	\$926,143	\$251,359	\$24,981	\$22,112,261

AVERAGES --- Attained Age 51.25 Service Years 9.41 Active Salary \$19,029

# TRSL MEMBERSHIP PROFILE DROP PARTICIPANTS

CELLS DEPICT - MEMBER COUNT TOTAL BENEFITS

VALUATION DATE 6/30/2016

Age/Years	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 15	15 - 20	20+	Total
< 40										
40 - 44										
45 - 49	3 \$96,408	1 \$20,196								4 \$116,604
50 - 54	211 \$9,456,252	215 \$9,236,736	116 \$4,877,520	4 \$158,568						546 \$23,729,076
55 - 59	458 \$15,827,988	442 \$15,039,636	392 \$14,725,776	15 \$766,956						1,307 \$46,360,356
60 - 64	188 \$3,878,772	217 \$4,640,316	224 \$5,075,436	4 \$120,036						633 \$13,714,560
65 - 69	3 \$17,196	5 \$25,944	4 \$35,796	1 \$20,352						13 \$99,288
70 - 74		1 \$3,168								1 \$3,168
75 - 79										
80 - 84										
85 - 89										
90+										
Total	863 \$29,276,616	881 \$28,965,996	736 \$24,714,528	24 \$1,065,912						2,504 \$84,023,052

AVERAGES --- Attained Age 57.40
Years Retired 1.36
Annual Benefit \$33,556

# TRSL MEMBERSHIP PROFILE ACTIVE AFTER DROP

CELLS DEPICT - MEMBER COUNT

TOTAL BENEFITS
DROP BENEFITS

VALUATION DATE 6/30/2016

Age/Years	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 15	15 - 20	20+	Total
< 44										
45 - 49										
50 - 54	13 \$118,966 \$482,124	4 \$194,865 \$129,900	3 \$99,720 \$71,136	2 \$76,950 \$53,904						22 \$490,501 \$737,064
55 - 59	255 \$7,057,126 \$10,042,380	194 \$11,819,268 \$7,824,672	98 \$5,817,750 \$3,973,920	75 \$4,797,082 \$3,169,812	50 \$2,936,672 \$1,895,124	29 \$1,626,913 \$966,156				701 \$34,054,811 \$27,872,064
60 - 64	139 \$3,240,547 \$3,284,460	163 \$7,191,224 \$3,632,784	125 \$6,860,584 \$4,057,572	136 \$7,853,717 \$4,698,792	106 \$6,923,801 \$4,115,784	363 \$24,471,498 \$13,220,436	12 \$859,936 \$397,608			1044 \$57,401,307 \$33,407,436
65 - 69	2 \$20,600 \$6,996	12 \$439,004 \$116,292	68 \$2,760,890 \$1,143,108	78 \$3,670,791 \$1,621,860	65 \$2,809,140 \$1,070,280	261 \$15,204,238 \$6,859,992	82 \$6,285,950 \$2,809,056	2 \$103,452 \$36,984		570 \$31,294,065 \$13,664,568
70+	2 \$132,761 \$101,544	2 \$46,021 \$8,856	2 \$38,331 \$7,080	4 \$208,521 \$36,480	3 \$115,461 \$19,284	83 \$3,700,399 \$1,205,508	114 \$7,467,744 \$2,725,548	44 \$3,673,479 \$1,304,868	4 \$407,421 \$157,572	258 \$15,790,138 \$5,566,740
Total	411 \$10,570,000 \$13,917,504	375 \$19,690,382 \$11,712,504	296 \$15,577,275 \$9,252,816	295 \$16,607,061 \$9,580,848	224 \$12,785,074 \$7,100,472	736 \$45,003,048 \$22,252,092	208 \$14,613,630 \$5,932,212	46 \$3,776,931 \$1,341,852	4 \$407,421 \$157,572	2595 \$139,030,822 \$81,247,872

AVERAGES ---

Attained Age 63.18
Post Drop Years 4.59
Active Salary \$53,576
Annual Benefit \$31,309

# TRSL MEMBERSHIP PROFILE REGULAR RETIREES

CELLS DEPICT - MEMBER COUNT TOTAL BENEFITS

VALUATION DATE 6/30/2016

Age/Years	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 15	15 - 20	20+	Total
< 40										
40 - 44	30	14	12	4		1		1		62
40 - 44	\$637,524	\$297,804	\$214,164	\$99,840		\$14,904		\$27,276		\$1,291,512
45 - 49	78	91	94	109	64	54	4			494
43 - 49	\$1,793,568	\$2,159,268	\$2,014,464	\$2,392,992	\$1,368,612	\$1,085,136	\$39,744			\$10,853,784
50 - 54	155	160	147	181	132	250	104	3	1	1,133
50 - 54	\$5,081,772	\$4,852,140	\$3,826,272	\$4,440,672	\$3,091,320	\$5,175,336	\$1,618,896	\$14,160	\$1,416	\$28,101,984
55 50	596	675	612	577	353	557	468	176	6	4,020
55 - 59	\$21,625,056	\$24,997,968	\$22,518,108	\$20,940,216	\$12,153,048	\$15,340,224	\$7,815,888	\$2,226,816	\$38,832	\$127,656,156
(0, (4	789	921	1,172	1,336	1,208	3,669	1,338	705	286	11,424
60 - 64	\$20,548,896	\$26,267,448	\$36,917,316	\$44,526,672	\$40,863,624	\$122,816,112	\$31,365,240	\$10,007,736	\$3,298,968	\$336,612,012
65 - 69	497	610	783	1,080	1,094	4,759	4,950	1,064	1,040	15,877
05 - 09	\$12,893,472	\$16,803,204	\$21,603,840	\$30,664,788	\$30,613,548	\$137,743,728	\$150,432,888	\$20,683,056	\$13,938,912	\$435,377,436
70 - 74	88	169	214	259	346	2,156	4,402	2,744	1,385	11,763
/0 - /4	\$2,754,096	\$5,284,008	\$6,502,164	\$7,747,356	\$10,076,664	\$57,620,532	\$114,992,916	\$76,561,836	\$22,810,392	\$304,349,964
75 - 79	38	55	55	73	92	648	2,049	2,889	2,689	8,588
15 - 19	\$1,251,852	\$1,849,680	\$1,865,112	\$2,169,528	\$2,880,264	\$19,223,736	\$49,972,992	\$70,510,200	\$63,108,444	\$212,831,808
90 94	16	15	11	14	19	174	543	1,391	3,934	6,117
80 - 84	\$327,888	\$200,400	\$303,096	\$456,912	\$832,140	\$5,517,984	\$14,495,316	\$32,565,588	\$88,310,448	\$143,009,772
05 00	13	3	3	2	3	40	102	326	2,921	3,413
85 - 89	\$247,728	\$211,536	\$41,568	\$45,120	\$72,228	\$1,608,288	\$2,896,236	\$8,341,836	\$58,155,492	\$71,620,032
00.	2			3	2	5	13	40	1,637	1,702
90+	\$37,980			\$77,268	\$43,212	\$82,344	\$397,560	\$885,660	\$28,230,456	\$29,754,480
Total	2,302	2,713	3,103	3,638	3,313	12,313	13,973	9,339	13,899	64,593
1 otai	\$67,199,832	\$82,923,456	\$95,806,104	\$113,561,364	\$101,994,660	\$366,228,324	\$374,027,676	\$221,824,164	\$277,893,360	\$1,701,458,940

AVERAGES --- Attained Age 70.97
Years Retired 12.85
Annual Benefit \$26,341

# TRSL MEMBERSHIP PROFILE DISABILITY RETIREES

CELLS DEPICT - MEMBER COUNT TOTAL BENEFITS

VALUATION DATE 6/30/2016

Age/Years	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 15	15 - 20	20+	Total
< 40	15	13	7	3	4	7				49
< 40	\$249,516	\$208,860	\$128,544	\$51,768	\$47,472	\$97,428				\$783,588
40 - 44	12	8	11	6	8	23	3			71
40 - 44	\$277,200	\$193,608	\$243,660	\$111,324	\$126,012	\$339,924	\$33,612			\$1,325,340
45 - 49	27	28	27	21	15	40	24	7	2	191
43 - 47	\$620,268	\$732,132	\$560,568	\$459,372	\$373,284	\$649,524	\$303,816	\$64,728	\$22,236	\$3,785,928
50 - 54	48	43	22	39	23	89	42	30	9	345
30 - 34	\$719,568	\$736,572	\$422,664	\$637,128	\$357,864	\$1,494,276	\$472,284	\$299,136	\$94,164	\$5,233,656
55 - 59	54	42	41	44	40	134	117	68	40	580
33 - 37	\$862,428	\$647,100	\$645,840	\$760,176	\$627,912	\$1,818,276	\$1,450,152	\$776,148	\$406,944	\$7,994,976
60 - 64	17	33	40	41	32	185	176	99	126	749
00 - 04	\$252,372	\$496,080	\$594,144	\$691,704	\$429,552	\$2,571,396	\$2,049,708	\$1,080,444	\$1,433,664	\$9,599,064
65 - 69	5	11	10	19	9	165	242	158	231	850
05 - 07	\$89,976	\$160,464	\$167,328	\$234,132	\$154,716	\$2,110,044	\$2,733,432	\$1,629,084	\$2,752,284	\$10,031,460
70 - 74	2	4	1	2	3	36	130	182	263	623
70 - 74	\$22,632	\$72,552	\$11,016	\$18,756	\$31,812	\$489,024	\$1,466,184	\$1,852,632	\$2,932,644	\$6,897,252
75 - 79			1			4	19	95	298	417
15 - 17			\$11,484			\$48,144	\$203,568	\$863,844	\$3,026,940	\$4,153,980
80 - 84							12	9	212	233
00 - 0 <b>-</b>							\$103,932	\$80,304	\$2,201,112	\$2,385,348
85 - 89								3	81	84
03 - 07								\$52,200	\$784,848	\$837,048
90+									46	46
<b>70</b> +									\$497,436	\$497,436
Total	180	182	160	175	134	683	765	651	1,308	4,238
Total	\$3,093,960	\$3,247,368	\$2,785,248	\$2,964,360	\$2,148,624	\$9,618,036	\$8,816,688	\$6,698,520	\$14,152,272	\$53,525,076

# TRSL MEMBERSHIP PROFILE SURVIVOR BENEFITS

CELLS DEPICT - MEMBER COUNT VALUATION DATE 6/30/2016
TOTAL BENEFITS

Age/Years	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 15	15 - 20	20+	Total
< 40	34	45	40	55	27	113	51	27	5	397
< 40	\$446,580	\$569,532	\$519,228	\$711,648	\$345,492	\$1,358,844	\$458,796	\$262,764	\$58,308	\$4,731,192
40 - 44	9	9	13	8	7	22	17	9	5	99
40 - 44	\$132,804	\$97,716	\$157,908	\$129,444	\$154,032	\$297,324	\$246,780	\$123,600	\$56,328	\$1,395,936
45 - 49	18	21	14	13	13	49	33	26	12	199
43 - 49	\$295,548	\$290,820	\$146,592	\$220,860	\$192,996	\$643,452	\$409,140	\$268,632	\$133,788	\$2,601,828
50 - 54	14	15	19	17	13	68	54	39	20	259
50 - 54	\$181,092	\$149,760	\$210,744	\$353,760	\$127,944	\$661,764	\$806,424	\$435,984	\$315,000	\$3,242,472
55 - 59	32	31	29	23	25	108	67	49	31	395
33 - 39	\$602,880	\$560,028	\$427,272	\$307,668	\$473,364	\$1,576,308	\$1,008,816	\$630,996	\$337,056	\$5,924,388
60 - 64	40	39	53	29	41	141	91	73	64	571
00 - 04	\$911,604	\$1,127,544	\$1,641,864	\$699,672	\$927,000	\$2,879,004	\$1,581,012	\$992,832	\$765,780	\$11,526,312
65 - 69	60	77	72	74	50	247	157	101	111	949
03 - 09	\$1,772,424	\$1,775,976	\$1,843,644	\$1,709,556	\$1,154,496	\$5,987,616	\$3,024,288	\$1,795,764	\$1,617,684	\$20,681,448
70 - 74	52	63	64	60	54	207	153	129	153	935
70 - 74	\$1,524,000	\$1,362,552	\$1,671,480	\$1,306,104	\$1,245,816	\$4,660,152	\$3,391,140	\$2,555,544	\$2,399,448	\$20,116,236
75 - 79	90	72	66	64	65	249	189	137	208	1,140
13-19	\$2,025,672	\$1,866,576	\$1,666,404	\$1,491,228	\$1,661,508	\$5,683,260	\$3,946,272	\$3,078,216	\$3,601,020	\$25,020,156
80 - 84	54	63	47	49	69	202	150	134	244	1,012
00 - 0 <del>4</del>	\$1,090,416	\$1,466,496	\$1,254,972	\$1,108,884	\$1,308,012	\$3,694,128	\$3,065,364	\$2,692,620	\$4,104,288	\$19,785,180
85 - 89	37	41	43	38	27	145	102	64	156	653
65 - 69	\$726,336	\$841,584	\$592,944	\$660,768	\$435,300	\$2,548,200	\$1,896,048	\$1,208,172	\$2,621,484	\$11,530,836
90+	14	17	17	18	16	63	66	53	124	388
<del>70+</del>	\$221,316	\$270,408	\$267,180	\$276,984	\$221,268	\$942,000	\$1,014,480	\$822,168	\$1,878,276	\$5,914,080
Total	454	493	477	448	407	1,614	1,130	841	1,133	6,997
10141	\$9,930,672	\$10,378,992	\$10,400,232	\$8,976,576	\$8,247,228	\$30,932,052	\$20,848,560	\$14,867,292	\$17,888,460	\$132,470,064

AVERAGES --- Attained Age 70.43 Years Retired 11.04 Annual Benefit \$18,932

# TRSL MEMBERSHIP PROFILE TERM-VESTED/RECIPROCAL

CELLS DEPICT - MEMBER COUNT TOTAL BENEFITS

VALUATION DATE 6/30/2016

Age/Years	<1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35+	Total
< 20										
20 - 24										
25 - 29			46 \$280,007							46 \$280,007
30 - 34			633 \$4,653,977	14 \$173,101						647 \$4,827,077
35 - 39		2 \$8,750	746 \$5,736,535	237 \$3,355,956	8 \$167,210					993 \$9,268,451
40 - 44	1 \$537	5 \$13,302	711 \$5,180,830	288 \$3,983,019	79 \$1,453,113	3 \$63,556				1,087 \$10,694,356
45 - 49		5 \$18,102	691 \$4,578,069	334 \$4,089,003	107 \$1,949,293	13 \$324,361				1,150 \$10,958,828
50 - 54		4 \$9,016	577 \$3,726,068	363 \$3,943,613	136 \$2,081,894	23 \$534,311	12 \$395,687			1,115 \$10,690,589
55 - 59		4 \$7,638	550 \$3,556,160	416 \$4,315,084	167 \$2,368,877	17 \$403,639	7 \$215,542	1 \$45,975		1,162 \$10,912,915
60 - 64	2 \$490	2 \$3,640	169 \$967,164	94 \$912,597	40 \$547,599	16 \$427,526	5 \$76,347	,		328 \$2,935,362
65 - 69		2 \$1,280	45 \$221,670	29 \$239,343	9 \$124,433	4 \$94,864	2 \$42,582	1 \$40,484		92 \$764,656
70+		,	25 \$133,603	16 \$96,556	9 \$82,687	8 \$210,009	3 \$81,006	4 \$86,618	2 \$63,664	67 \$754,143
Total	3 \$1,027	24 \$61,727	4,193 \$29,034,083	1,791 \$21,108,271	555 \$8,775,106	84 \$2,058,267	29 \$811,164	6 \$173,077	2 \$63,664	6,687 \$62,086,385

AVERAGES --- Attained Age 47.49
Service Years 9.52
Annual Benefit \$9,285

### **EXHIBIT 5**

### SUMMARY OF PLAN PROVISIONS

### **EFFECTIVE DATE:**

August 1, 1936

### **EMPLOYER:**

The State of Louisiana, the parish school board, the city school board, the State Board of Education, the State Board of Supervisors, University or any other agency of and within the State by which a teacher is paid.

### **ELIGIBILITY FOR PARTICIPATION:**

Condition of employment for all teachers

### **CREDITABLE SERVICE:**

Service as a teacher while member of the system.

### ADDITIONAL SERVICE:

- 1. Credit for service canceled by withdrawal of accumulated contributions may be restored by member by paying the amount withdrawn plus interest.
- 2. Service rendered in public school system of another state may be purchased at the actuarial cost of the additional retirement benefit, or at the member's option receive service credit based on the funds actually transferred.
- 3. Credit for service in non-public or parochial schools may be purchased at the actuarial cost of the additional retirement benefit, or at the member's option receive service credit based on the funds actually transferred.
- 4. Maximum of 4 years of credit for military service may be obtained for each member, contingent on payment of actuarial cost.
- 5. Credit for legislative service of former teacher, now legislator, may be purchased at the actuarial cost.
- 6. Conversion of Sick Leave to Membership Service: At retirement, or at death before retirement of member with surviving spouse or dependent or both who are entitled to benefits, unused accumulated sick leave will be added to membership service. Conversion of unused sick and annual leave cannot be used to obtain retirement eligibility. Leave accumulated after January 30, 1990, can be converted to a maximum one year service credit. Leave is converted on the following basis:

#### **Plan Provisions**

Leave Earned Pr	ior to 6/30/88
Accumulated Sick	Fraction of
Days	Year Credit
25-45	0.25 year
46-90	0.50 year
91-135	0.75 year
136-180	1.00 year
181-225	1.25 years
226-270	1.50 years
271-315	1.75 years
316-360	2.00 years

Leave Earned After 6/29/88							
Accumula	Accumulated Sick Days (by Member Classification)						
9 Month	10 Month	11 Month	12 Month	Credit			
10-18	11-20	12-22	13-24	0.1			
19-36	21-40	23-44	25-48	0.2			
37-54	41-60	45-66	49-72	0.3			
55-72	61-80	67-88	73-96	0.4			
73-90	81-100	89-110	97-120	0.5			
91-108	101-120	111-132	121-144	0.6			
109-126	121-140	133-14	145-168	0.7			
127-144	141-160	155-176	169-192	0.8			
145-162	161-180	177-198	193-216	0.9			
163-180	181-200	199-220	217-240	1.0			

#### **EARNABLE COMPENSATION:**

The compensation earned by a member for qualifying service.

#### FINAL AVERAGE COMPENSATION

For members whose first employment makes them eligible for membership in a Louisiana state retirement system on or after January 1, 2011, the average annual earnable compensation is the highest 60 successive months of employment. The average compensation for purposes of computing benefits cannot increase more than 15% per year.

For all other members, the average annual earnable compensation is the highest 36 successive months of employment; the average compensation for purposes of computing benefits cannot increase more than 10% per year.

Per R.S.11:892, if the maximum benefit accrual (100%) is reached, employee contributions are discontinued, average final compensation is not limited to the years for which employee contributions were made. Compensation is limited by the Internal Revenue Code Section 401a(17) compensation limit.

#### **Plan Provisions**

Includes workmen's compensation, and PIP's program in accordance with the following:

	% of Earnings to
Years of Participation	be Included
3	60%
4	80%
5	100%

However, if member completed at least two years and subsequently becomes disabled, he shall receive 40% of such earnings. If he has completed one year and becomes disabled, he shall receive 20% of such earnings.

#### **ACCUMULATED CONTRIBUTIONS:**

Sum of all amounts deducted from compensation of members.

#### **EMPLOYEE CONTRIBUTIONS:**

8% of earnable compensation. Prior to July 1, 1989, 7% of earnable compensation.

#### **EMPLOYER CONTRIBUTIONS:**

Determined in accordance with Louisiana Revised Statutes Sections 102 and 102.2, which require the employer rate to be actuarially determined and set annually, based on the Public Retirement Systems' Actuarial Committee's recommendation to the Legislature.

#### NORMAL RETIREMENT ELIGIBILITY AND BENEFIT:

#### Retirement Eligibility:

- 1. Members whose first employment making them eligible for membership in one of the state systems occurred on or after July 1, 2015 are eligible for a regular retirement benefit at age 62 with five years of service credit. These members may also retire with an actuarial reduction with 20 years of service credit at any age.
- 2. Members whose first employment makes them eligible for membership in a Louisiana state retirement system on or after January 1, 2011 and before July 1, 2015 may retire with a 2.5% accrual rate after attaining age 60 with at least 5 years of service credit. Members are eligible for an actuarially reduced benefit with 20 years of service at any age.

#### 3. For all other members:

If hired on or after July 1, 1999, members are eligible for a 2.5% accrual rate at the earliest of age 60 with five years of service, age 55 with 25 years of service, or at any age with 30 years of service. Members may retire with an actuarially reduced benefit with 20 years of service at any age.

#### **Plan Provisions**

If hired before July 1, 1999, members are eligible for a 2% accrual rate at the earliest of age 60 with five years of service, or at any age with 20 years of service and are eligible for a 2.5% accrual rate at the earliest of age 65 with 20 years of service, age 55 with 25 years of service, or at any age with 30 years of service.

#### Benefit:

Annuity which shall be the actuarial equivalent of accumulated employee contributions at retirement date, and Annual pension, which, together with annuity, provides total allowance equal to the applicable accrual rate times final average compensation times years of creditable service (including unused sick leave). Members hired before June 30, 1986 receive an additional \$300 annual supplemental benefit (Act 608 of 1986).

- A. Annual benefit may not exceed 100% of average earnable compensation.
- B. For Members employed on or after July 1, 1999, the annual pension cannot exceed the maximum benefit provided under Section 415(b) of the Internal Revenue Service Code and related Federal Regulations as adjusted for inflation and form of benefit other than life annuity or qualified joint and survivor annuity for retirement ages as follows:

Age	Maximum	Age	Maximum	Age	Maximum
48	\$ 63,236	56	\$ 123,573	64	210,000
49	68,621	57	134,737	65	210,000
50	74,504	58	147,011	66	210,000
51	80,937	59	160,525	67	210,000
52	87,975	60	175,424	68	210,000
53	95,683	61	191,862	69	210,000
54	104,132	62	210,000	70	210,000
55	113,401	63	210,000		

# POST RETIREMENT INCREASES:

The provisions regarding future permanent benefit increases (PBIs) were substantially changed by Act 399 of 2014. PBIs may be granted, if requested by the Board and approved with a two-thirds vote of both houses of the legislature, provided there are sufficient funds in the Experience Account to fully fund the increase on an actuarial basis.

Experience Account Credits/Debits: After allocation of the first \$200,000,000 to the unfunded accrued liability, the Experience Account is credited with up to 50% of the remaining excess investment income, up to a maximum balance as described below. The \$200,000,000 threshold is indexed based upon the increase in the actuarial value of assets. Excess investment income is investment income for the prior fiscal year in excess of the expected income based on the actuarial valuation rate for that fiscal year. Balances in the experience account accrue interest at the actuarial rate of return during the prior year. All credits are limited as follows:

#### **Plan Provisions**

If the system's funded ratio is less than 80%, the Experience Account is limited to the reserve necessary to grant one PBI. If the funded ratio is at least 80%, the Experience Account is limited to the reserve necessary to fund two PBI's. The Experience Account is debited for the increase in actuarial accrued liability resulting from the increases.

<u>Permanent Benefit Increases:</u> No increase can be granted if the legislature granted an increase in the preceding fiscal year, unless the system is 85% funded or greater. Additionally, PBI's are limited to the lesser of the increase in the CPI-U for the twelve month period ending on the system's valuation date, or an amount determined by the system's funded ratio:

Funded Ratio	PBI Increase Limit
< 55%	0%
55% to <65%	1.5%
65% to <75%	2.0%
75% to <80%	2.5%
80% +	3.0%

Beginning July 1, 2015, any increase is limited to the first \$60,000 of a retiree's annual benefit, increased annually by the CPI-U for the 12 month period ending in June. If the actuarial rate of return for the prior plan year is less than 8.25%, regardless of the discount rate, the increase is limited to the lesser of 2% or the amount described above.

<u>Eligibility Requirements:</u> Benefits are restricted to those retirees who have attained age 60 and have been retired for at least one year. The minimum age of 60 for the receipt of a benefit increase does not apply to disability retirees.

#### **DISABILITY RETIREMENT:**

#### Eligibility:

Members whose first employment makes them eligible for membership in a Louisiana state retirement system on or after January 1, 2011 are eligible with 10 years of service credit. All other members are eligible with 5 years of service; certification of disability by medical board (medical examination required once in every year for the first 5 years of disability retirement, and once in every 3 years thereafter, until age 60 if first employment making member eligible for membership in a state retirement system occurred before July 1, 2015 or until age 62 otherwise.

#### Benefit: Act 572 of 1995

- 1. If ineligible for service retirement at disability, disability pension will be 2.5% of average compensation multiplied by years of service. Benefit is limited to 50% of average compensation, but will not be less than the lesser of 40% of the state minimum salary for a beginning teacher with a bachelor's degree or 75% of average compensation.
- 2. Additional 50% of member's benefit payable if minor child is present, but total amount to family limited to 75% of final average compensation.

#### **Plan Provisions**

- 3. Member will become a regular retiree upon attainment of the earliest age for retirement eligibility as if the member continued in service, without further change in compensation. Benefit is based on years of creditable service but not less than the disability benefit. Benefit for minor children continue as long as the retiree has a minor child.
- 4. Upon death of a disability retiree, surviving spouse, married to retiree at least two years prior to death of the disability retiree, shall receive 75% of disability benefit. Upon death of an unmarried retiree with minor children, the benefit shall equal 50% of disability benefit.
- 5. Upon recovery of disability as determined by the board of trustees, upon advice of the medical board, and returns to active membership for at least three years starting no later than one year after recovery, then he shall be credited with one year of service for each year disabled for purposes of establishing benefit eligibility, but not for computation of benefits.

#### **SURVIVOR'S BENEFITS:**

#### **Eligibility and Benefit:**

- 1. Surviving Spouse with minor children of an active member with 5 years of service with at least 2 years earned immediately prior to death; or a member with 20 years of service regardless of when earned or whether in active service at time of death will receive the greater of:
  - A.) \$600 per month, or
  - B.) 50% of benefit that would have been payable upon service retirement at age 60 had member continued in service to age 60 without change in compensation. 50% of spouse's benefit payable for each minor child (up to two), with total benefit to family at least equal to the Option 2, accrued benefit based on actual service credit. Benefits to spouse cease upon remarriage, but resume upon subsequent divorce or death of new spouse; however, if the member was eligible to retire or had reached age 55 on the date of his death, benefits shall not cease upon remarriage. When minor children are no longer present and the deceased member had at least 10 years of service, the spouse's benefit reverts to the Option 2 retirement benefit for the eligible spouse. If a deceased member had less than 10 years, then the spouse will receive a refund of any remaining member contributions and monthly survivor benefits will cease.
- 2. Surviving Spouse without minor children of either an active member with 10 years of creditable service will receive the greater of:
  - A.) \$600 per month, or
  - B.) Option 2 equivalent of accrued benefit based on actual service. Spouse's benefit payable for life. Benefits to spouse cease upon remarriage, but resumes upon subsequent divorce or death of new spouse; however, if the member was eligible to retire on the date of his death, benefits shall not cease upon remarriage.
- 3. Beneficiaries not eligible for survivor benefits described above will receive a lump-sum refund of the member's accumulated contributions.

**Plan Provisions** 

#### **REFUND OF CONTRIBUTIONS:**

Death prior to retirement - accumulated contributions credited to individual account in annuity savings fund are returnable to designated beneficiary, if any; otherwise, to his estate.

#### TERMINATION WITH VESTED SERVICE:

Any member with credit for 5 years of service who withdraws from service may elect to leave accumulated contributions in system until age 60, when he may apply for retirement and begin receiving a retirement benefit based on the credits he had at date of withdrawal.

#### **OPTIONAL FORMS OF BENEFIT:**

In lieu of receiving normal retirement benefit, member may elect to receive actuarial equivalent of retirement allowance in a reduced form as follows:

- Option 1 If a member dies before receiving present value of annuity in monthly payments, balance paid to designated beneficiary.
- Option 2 Reduced retirement allowance, if member dies, to be continued to designated beneficiary for his lifetime.
- Option 3 One-half of reduced retirement allowance, if member dies, to be continued to designated beneficiary for his lifetime.
- Option 4 Other benefits of equal actuarial value may be elected with approval of board.

Options 2A, 3A, 4A - Same as Options 2, 3, and 4, except that reduced benefit reverts back to maximum if beneficiary predeceases retiree.

<u>Automatic COLA Option</u> – Members may choose an irrevocable election at retirement to receive an actuarially reduced benefit which increases 2.5% annually. The increase begins on the first retirement anniversary date, but not before the retiree attains age 55 or would have attained age 55 in the case of a surviving spouse. This option can be chosen in combination with the above options. (Per Act 270 of 2009, effective July 1, 2009)

<u>Initial Lump Sum Benefit Option</u> - Members who did not participate in DROP may elect an actuarially reduced pension and receive a lump-sum equal to not more than 36 months of the maximum monthly pension.

#### **DEFERRED RETIREMENT OPTION PLAN:**

Instead of terminating employees and accepting a service retirement allowance, any member who has met the eligibility requirements described below may elect to participate in the Deferred Retirement Option Plan (DROP).

#### **Plan Provisions**

# Normal Eligibility:

Members whose first employment making him eligible for membership in one of the state retirement systems occurred on or before December 31, 2010, and who is not covered by Lunch Plan A or Lunch Plan B and who has 30 at any, 25 at 55, or 20 YOS (exclusive of military service other than qualified military service as provided in 26 U.S.C. 414(u) earned on or after December 12, 1994), and is at least age 65 may elect to participate in DROP. A member with 10 YOS exclusive of military service other than qualified military service as provided in 26 U.S.C. 414(u) earned on or after December 12, 1994, and who is at least age 60 may elect to participate in DROP, but all benefits payable at any time shall be calculated using only a 2% benefit formula.

Members whose first employment making him eligible for membership in one of the state retirement systems occurred between January 1, 2011 and June 30, 2015, and not in Lunch Plan A or Lunch Plan B, and who has 5 years at 60 may participate in DROP.

Members whose first employment making him eligible for membership in one of the state retirement system occurred on or before June 30, 2015, who has 30 years at age 55 or 10 years at age 60 may participate in DROP.

Members whose first employment making him eligible for membership in one of the state retirement systems occurred on or after July 1, 2015, who has at least 5 years at age 60 may participate in DROP.

An election to participate may only be made once, for a period not to exceed three years beginning within 60 days of reaching the eligibility described above.

## Benefit:

Upon termination of employment, a participant will receive, at his option:

- (1) Lump sum payment (equal to the payments to the account)
- (2) A true annuity based upon his account, or
- (3) Other methods of payment approved by the Board of Trustees.

If a participant dies during the period of participation in the program, his account balance shall be paid to the beneficiary, or if none, to his estate in any form approved by the Board of Trustees.

If employment is not terminated at the end of DROP participation, payments into the account ceases and account earns interest. The participant resumes active contributing membership and earns an additional retirement benefit based on additional service rendered. The method of computation of the additional benefit is subject to the following:

- (1) If additional service was less than the period used to determine Final Average Compensation, average compensation figure to calculate the additional benefit will be the same as used to calculate initial benefit.
- (2) If additional service was earned for a period greater than the number of months used to determine Final Average Compensation, the average compensation figure used to calculate the additional benefit will be based on compensation during the period of additional service.

DROP Accounts established prior to January 1, 2004, earn interest following termination of DROP at a rate 0.5% below the actuarial rate of the System's investment portfolio. DROP accounts established on or after January 1, 2004 are credited with money market rates.

# Exhibit 5 (Continued) Plan Provisions

# DESCRIPTION OF BENEFITS FOR MERGED LSU EMPLOYEES

#### **GENERAL:**

Eligibility for benefits based on the eligibility requirements of the Teachers' plan, except for deaths and disabilities before 1984. All service, funded and non-funded, is used in determining eligibility.

Final Average Salary was the average of the three highest years, except for academic year employees who retired within three years after January 1, 1979. For this group, any salary used in the Final Average Salary calculation, which was earned before January 1, 1979, was increased by 2/9ths.

The Social Security breakpoint average, for service under the funded LSU plan, was frozen at the December 31, 1978 level. That is, the breakpoint average for funded service was calculated as of December 31, 1978 and kept constant. This produced the following breakpoint averages:

# Social Security Breakpoint Average (for LSU funded service)

Calendar Year of Entry	<b>Breakpoint Average</b>
1971 or before	13,400
1972	13,800
1973	14,600
1974	15,360
1975	15,900
1976	16,500
1977	17,100
1978	17,700

# **RETIREMENT BENEFITS:**

Retirement benefits calculated using LSU funded service with the LSU formula and service after December 31, 1978, with the Teacher's formula. Thus, the "funded" benefit is (1) 1.33% of final average salary under the Social Security breakpoint average plus 2.5% of final average salary over the Social Security breakpoint average, times years of "funded" service with LSU before December 31, 1978, plus (2) 2.5% (or 2% if total service less than 20 years) times final average salary times years since January 1, 1979, plus \$300.

#### SURVIVOR'S BENEFITS:

For deaths after 1983, the provisions of the Teachers' plan apply. However, the benefit is calculated using all service, funded and non-funded, then prorated by service between the funded and non-funded portions. Children's benefits are also prorated into the funded and non-funded portions.

## **DISABILITY BENEFITS:**

For disabilities after 1983, the provisions of the Teachers' plan apply. However, the benefit is calculated using all service, then prorating by service between the funded and non-funded portions. Children's benefits are also prorated.

# **Exhibit 5 (Continued)**

## Plan Provisions

#### **VESTING BENEFITS:**

Benefits for terminated vested members was determined as outlined under "Retirement Benefits."

#### **REFUND OF CONTRIBUTIONS:**

Terminated members are allowed a refund of accumulated contributions as described by the Teachers' plan.

#### **COOPERATIVE EXTENSION PERSONNEL:**

The LSU employees are eligible for the supplemental benefit described in Section 700.2 of Act 643 of 1978. The benefit is equal to 1% for the first five years of service, 3/4% for the next five years, and 1/2% thereafter. The funded benefit is the benefit based on service after September 12, 1975.

#### **OPTIONAL FORMS OF BENEFITS:**

Retiring members may elect options as described by the Teachers' plan.

#### **DEFERRED RETIREMENT OPTION PLAN:**

Eligible members may participate under same requirements as described by the Teachers' plan.

**Plan Provisions** 

# DESCRIPTION OF BENEFITS FOR MERGED SCHOOL LUNCH EMPLOYEES

#### **EFFECTIVE DATE:**

The School Lunch Employees' Retirement System was originally established on January 1, 1953.

On July 1, 1980, the School Lunch Employees' Retirement System was restructured. All individuals who become employed after July 1, 1980, shall become members of Plan A or Plan B as determined by the agreement in effect for each employer.

Plan A: Parishes which had withdrawn from Social Security coverage became known as Plan A parishes. Those participating in both the regular and the supplemental plan or only in the

supplemental plan shall become members of Plan A.

Plan B: Parishes which had not withdrawn from Social Security coverage became known as Plan

B parishes. Those participating only in the regular plan shall become members of Plan B.

Effective July 1, 1983 Plan A and Plan B were merged into TRSL.

**CREDITABLE SERVICE:** Service as an employee while member of the system.

**MILITARY SERVICE:** Maximum of 4 years of credit may be purchased.

## **ADDITIONAL CREDITABLE SERVICE:**

Credit for service canceled by withdrawal of accumulated contributions may be restored by paying into system the amount withdrawn plus regular interest.

#### **EMPLOYEE CONTRIBUTIONS:**

Plan A: 9.10% of monthly earnings Plan B: 5% of monthly earnings

#### **EMPLOYER CONTRIBUTIONS:**

Plan A and Plan B: Actuarial Required Amount (Effective July 1, 1989)

#### **Plan Provisions**

#### SCHOOL LUNCH PLAN A

#### **RETIREMENT BENEFIT:**

Members hired after June 30, 1983 earn regular teachers' benefits. The benefit description below applies to members hired prior to July 1, 1983.

#### **NORMAL RETIREMENT:**

# **Eligibility**:

- 1. Age 60 and 5 years of creditable service.
- 2. Age 55 and 25 years of creditable service.
- 3. 30 years of creditable service, regardless of age.

#### Benefit:

3% of average final compensation times years of creditable service.

Members of only the supplemental plan prior to July 1, 1980 who were age 60 or older at the time the member's employer terminated its agreement with the Department of Health, Education and Welfare, and who became a member of the retirement system because of this termination earned 1% of average final compensation plus \$2 per month for each year of service credited prior to July 1, 1980, plus 3% of average final compensation for each year of service credited after July 1, 1980.

\*These members are eligible to retire upon reaching age 70, with less than 10 years of creditable service.

Members hired before June 30, 1986 receive an additional \$300 annual supplemental benefit.

Benefits are limited to 100% of average final compensation.

#### **DISABILITY RETIREMENT:**

# **Eligibility**:

Five years of creditable service; certification of disability by the State Medical Disability Board.

#### Benefit:

Normal retirement allowance if eligible; otherwise, an amount equal to the normal retirement allowance to which the member would have been entitled had he met eligibility requirements; provided the amount is subject to a minimum of 60% and a maximum of 100% of average final compensation, in the event no optional selection is chosen.

#### **Plan Provisions**

#### SURVIVOR'S BENEFITS:

# **Eligibility**:

- 1. Surviving spouse with minor children of a member with 5 years of service credit with at least 2 years earned immediately prior to death, or 20 years of service credit regardless of when earned or whether the deceased member was in active service at the time of death.
- 2. Surviving spouse with no minor children of member with 10 or more years of service credit with at least 2 years earned immediately prior to death, or 20 years of service credit regardless of when earned or whether the deceased member was in active service at the time of death.
- 3. Beneficiary not eligible for 1 or 2.

# Benefit:

- 1. Greater of:
  - A. \$600 per month, or
  - B. 50% of benefit that would have been payable upon retirement at age 60 had member continued in service to age 60 without change in compensation. 50% of spouse's benefit payable for each minor child (maximum two children), with total benefit to family at least equal to the Option 2 benefit. Accrued Benefit based on actual service credit. Benefits to spouse cease upon remarriage, but will resume upon subsequent death or divorce of new spouse. When minor children are no longer present, spouse's benefit reverts to benefit in (2), if spouse is eligible for such benefit.
- 2. Greater of:
  - A. \$600 per month, or
  - B. Option 2 equivalent of accrued benefit based on actual service. Surviving spouse must have been married to the deceased member at least one year prior to death. If the member had not been eligible for retirement upon date of death, benefits to spouse cease upon remarriage, but resume upon subsequent death or divorce of new spouse.
- 3. Return of member's accumulated contributions.

#### Plan Provisions

#### SCHOOL LUNCH PLAN B

#### **NORMAL RETIREMENT:**

# **Eligibility**:

- 1. Age 60 and 5 years of creditable service.
- 2. Age 55 and 30 years of creditable service.

#### Benefit:

Annual pension which provides total allowance equal to 2% of average final compensation times years of creditable service. Members hired before June 30, 1986 receive an additional \$300 annual supplemental benefit.

# **DISABILITY RETIREMENT:**

# **Eligibility**:

Five years of creditable service; certification of disability by the State Medical Disability Board.

# Benefit:

Normal retirement allowance if eligible therefore; otherwise 2% of average final compensation times years of creditable service; provided amount not less than 30%, nor more than 75% of average final compensation, in the event no optional selection is made.

# **SURVIVOR'S BENEFITS:**

Eligibility: Twenty or more years of creditable service.

Benefit: Option 2 benefit.

Plan Provisions

#### SCHOOL LUNCH PLAN A and PLAN B

#### **OPTIONAL FORMS OF BENEFIT:**

Retiring members may elect options as described by the Teachers' plan.

# **RETURN OF CONTRIBUTIONS:**

Should a member not eligible to retire cease to be an employee, he shall be paid the amount of his accumulated contributions upon demand. Should a member's death occur prior to retirement with no survivors eligible for benefits, his accumulated contributions are returnable to a designated beneficiary, if any; otherwise, to his estate.

#### TERMINATION WITH VESTED SERVICE:

Any member with credit for 5 years of service who withdraws from service may elect to leave accumulated contributions in system until his earliest normal retirement date, when he may apply for retirement and begin receiving a retirement benefit based on average final compensation and creditable service at date of withdrawal.

#### **DEFERRED RETIREMENT OPTION PLAN:**

Retiring members may elect options as described by the Teachers' plan.

#### **EXHIBIT 6**

#### ACTUARIAL COST METHODS AND ASSUMPTIONS

#### **COST METHOD:**

Louisiana Statute, R. S. 11:22, prescribes the Entry Age Normal cost method for funding valuation purposes. This cost method generally produces normal costs that are level as a percentage of the member's projected pay if the composition of the active group with regard to age, sex, and service is stable. Normal costs are attributed from the first period in which a member accrues benefits through all assumed exit ages until retirement.

#### **ASSET VALUATION:**

The market value of assets is adjusted to gradually recognize investment gains and losses relative to the discount rate, over a 5 year period in 20% increments. The adjusted asset value is subject to Corridor Limits of 80% to 120% of the Market Value of Assets.

#### **ACCOUNTING DISCLOSURE:**

The Statements of Fiduciary Net Position and Changes in Fiduciary Net Position provided by the accounting staff were the final drafts prior to publication. Should these Statements differ from the final audited report, a revised actuarial valuation will be issued, but only to the extent that any difference in reporting affects the employer's contribution rate or the yield to the Actuarial Value of Assets.

#### **ADMINISTRATIVE EXPENSES:**

Administrative expenses are not explicitly assumed but rather funded in accordance with R.S. 11:102, which by omission of language regarding the funding of administrative expenses precludes funding of these expenses by a direct allocation through the employer contribution rate. These expenses are instead funded through the employer rate as an experience loss which is amortized over a 30-year period. Per Actuarial Standard of Practice Statement 27, (paragraph 3.8.3.e.) the investment return assumption includes a 10 basis point reduction to reflect administrative expenses that are paid from plan assets and not otherwise recognized. Therefore, these losses are expected to be offset by long-term investment earnings.

#### **ACTUARIAL ASSUMPTIONS:**

Demographic and salary assumptions used in the valuation were adopted by the Board of Trustees following the most recent experience study, effective July 1, 2013. The study was based on an observation period of 2008-2012. The Retirement System is required to conduct an experience study every five years, but the scope of such a study is not necessarily limited to a five year period. The experience was reviewed separately for Regular Teachers, Higher Education, School Lunch Plan A, and School Lunch Plan B. The experience study report, dated March 27, 2013, provides further information regarding the rationale for these assumptions. The current rate tables are illustrated at the end of this exhibit.

**Cost Methods & Assumptions** 

#### **DISCOUNT RATE / INVESTMENT EARNINGS:**

The Board of Trustees adopted a discount rate of 7.75%, effective June 30, 2014. The Board of Trustees adopted a plan to gradually reduce the discount rate to 7.50%, in 0.05% increments annually, beginning July 1, 2017. Therefore, the projected contribution requirements for fiscal year 2017/18 were determined using a discount rate of 7.70%.

The discount rate for funding purposes reflects the assumed investment rate of return, net of investment and administrative expenses, and net of investment gains expected to be deferred to the experience account to fund future permanent benefit increases. Therefore, by excluding investment returns to be used to fund expenses and permanent benefit increases, the discount rate represents the expected return on investments to be used to fund regular plan benefits.

Based on a historical review of administrative expenses relative to pan assets, it is assumed that 10 basis points will be used to offset administrative expenses. Based on a historical review of investment earnings, with modifications for the current statutory provisions regarding transfers to the experience account and future allowable benefit increases, it is expected that a long-term average of approximately 25 basis points will be transferred to the experience account. A forward looking projection using historical volatility and the plan's projected assets confirmed this conclusion. The analysis is supported by the system's expected long-term rate of return based on capital market assumptions provided by the Board's investment consultant, with a 2.50% inflation component, which results in an expected long-term geometric average nominal rate of return of 8.23%. Exhibit 3 of this report provides expected real rates of return by asset class.

# **MORTALITY ASSUMPTIONS:**

The mortality table for non-disabled retirees is based upon the RP-2000 table with mortality improvement projected through 2025 using scale AA. The adjustment for mortality improvement anticipates future improvements in mortality beyond the measurement date, based on actual plan experience. This table was determined to be appropriate relative to actual experience and adopted by the Board following the most recent experience study.

Mortality assumptions for disability benefits are based upon the RP-2000 disability table with no projection of mortality improvement.

# **DISABILITY ASSUMPTION:**

Rates for total and permanent disability, based on attained age, are projected using rates developed from the most recent experience study.

#### **RETIREMENT/DROP ASSUMPTION:**

Eligibility for normal retirement benefits and DROP participation is based on age and service requirements that vary by plan, based on the most recent experience study. Retirement and DROP rates are developed in combination, and include an age and service component.

# **Cost Methods & Assumptions**

#### **TERMINATION ASSUMPTIONS:**

Voluntary termination or withdrawal rates are based on the 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 contribution, and 80% will receive a benefit beginning at age 60.

#### **SALARY GROWTH:**

The rates of annual salary growth are based upon the member's years of service based on the most recent experience study. The rates include anticipated productivity growth, merit adjustments, and a 2.5% inflation component. For valuation purposes, current salaries and projected future salaries are limited to the Section 401(a)(17) limit of the Internal Revenue Code, with future indexed increases.

#### **CONVERTED LEAVE:**

Converted Leave is assumed to increase the accrued benefit at retirement according to the following table, based on the most recent experience study. The reduction from the prior rates to current rates shown below is due to statutory limits placed on the amount of leave earned after June 30, 1990 that can be converted to service credit.

	Prior Rates	Current Rates
Regular Teachers	2.5%	1.5%
Higher Education	2.8%	1.5%
Lunch Plan A	1.5%	1.0%
Lunch Plan B	1.5%	1.0%

#### **FAMILY STATISTICS:**

The composition of the family is based on Current Population Reports published by the United States Census Bureau. Seventy-five percent of the membership is assumed to be married with the wife assumed to be three (3) years younger than the husband. Sample rates are as follows:

	Number of Minor	Years for Youngest Child
Member Age	Children	to Attain Majority
25	1.2	17
30	1.4	15
35	1.7	13
40	1.7	10
45	1.4	8
50	1.1	4

# Actuarial Assumptions, effective July 1, 2013 Regular Teachers

19		DEATH RATES			TERMINATION RATES				RETIR	EMENT RATES	/DROP
18	,			DISABILITY					< 25	25-29	30+
19											YOS
20										0.000	0.000
21											0.000
22											0.000
23											0.000
24											0.000
25											0.000
26											0.000
27         0.00035         0.00017         0.0001         0.190         0.126         0.095         0.060         0.000         0.000           28         0.00035         0.00017         0.0001         0.190         0.126         0.095         0.053         0.000         0.000           30         0.00036         0.00018         0.0001         0.190         0.126         0.095         0.053         0.000         0.000           31         0.00044         0.00025         0.0003         0.190         0.120         0.109         0.053         0.000         0.000           32         0.00056         0.00029         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           33         0.00056         0.00031         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           34         0.00062         0.00034         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           35         0.00068         0.00038         0.0010         0.180         0.117         0.095         0.040         0.000           36         0.00074											0.000
28         0.00035         0.00017         0.0001         0.190         0.126         0.095         0.055         0.000         0.000           29         0.00036         0.00018         0.0001         0.190         0.126         0.095         0.053         0.000         0.000           31         0.00044         0.00025         0.0003         0.190         0.120         0.109         0.053         0.000         0.000           32         0.00050         0.00029         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           34         0.00056         0.00031         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           34         0.00062         0.00034         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           35         0.00068         0.00036         0.0006         0.180         0.117         0.095         0.040         0.000         0.000           36         0.00074         0.00038         0.0010         0.180         0.117         0.095         0.040         0.000         0.000           37											0.000
29											0.000
30											0.000
31         0.00044         0.00025         0.0003         0.190         0.120         0.109         0.050         0.000         0.000           32         0.00050         0.00029         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           34         0.00062         0.00034         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           35         0.00068         0.00034         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           36         0.00074         0.00038         0.0010         0.180         0.117         0.095         0.040         0.000         0.000           37         0.00080         0.00040         0.0007         0.180         0.117         0.095         0.040         0.000         0.000           38         0.00086         0.00044         0.0011         0.180         0.117         0.095         0.040         0.000         0.000           40         0.00086         0.00048         0.0011         0.165         0.123         0.090         0.037         0.040         0.000           41											0.000
32         0.00056         0.00029         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           33         0.00056         0.00031         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           34         0.00062         0.00034         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           35         0.00068         0.00036         0.0006         0.180         0.117         0.095         0.040         0.000         0.000           36         0.00074         0.00038         0.0010         0.180         0.117         0.095         0.040         0.000         0.000           37         0.00080         0.00040         0.0007         0.180         0.117         0.095         0.040         0.000         0.000           38         0.00083         0.00044         0.0011         0.180         0.117         0.095         0.040         0.050         0.000           40         0.00088         0.00044         0.0011         0.165         0.123         0.090         0.037         0.040         0.000           41											0.000
33         0.00056         0.00031         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           34         0.00062         0.00034         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           35         0.00068         0.00036         0.0006         0.180         0.117         0.095         0.040         0.000         0.000           36         0.00074         0.00038         0.0010         0.180         0.117         0.095         0.040         0.000         0.000           37         0.00080         0.00042         0.0007         0.180         0.117         0.095         0.040         0.000         0.000           38         0.00083         0.00042         0.0007         0.180         0.117         0.095         0.040         0.040         0.000           39         0.0086         0.00044         0.0011         0.180         0.117         0.095         0.040         0.040         0.000           40         0.00088         0.00048         0.0011         0.165         0.123         0.090         0.037         0.025         0.000           41											0.000
34         0.00062         0.00034         0.0003         0.190         0.120         0.109         0.045         0.000         0.000           35         0.00068         0.00036         0.0006         0.180         0.117         0.095         0.040         0.000         0.000           36         0.00074         0.00038         0.0010         0.180         0.117         0.095         0.040         0.000         0.000           37         0.00080         0.00040         0.0007         0.180         0.117         0.095         0.040         0.000         0.000           38         0.00086         0.00044         0.0011         0.180         0.117         0.095         0.040         0.050         0.000           40         0.0088         0.00044         0.0011         0.165         0.123         0.095         0.040         0.040         0.000           41         0.00091         0.00053         0.0013         0.165         0.123         0.090         0.037         0.042         0.000           42         0.00095         0.00058         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           44		0.0000									0.000
35         0.00068         0.00036         0.0006         0.180         0.117         0.095         0.040         0.000         0.000           36         0.00074         0.00038         0.0010         0.180         0.117         0.095         0.040         0.000         0.000           37         0.00080         0.00040         0.0007         0.180         0.117         0.095         0.040         0.000         0.000           38         0.00083         0.00042         0.0007         0.180         0.117         0.095         0.040         0.050         0.000           40         0.00088         0.00044         0.0011         0.180         0.117         0.095         0.040         0.000           40         0.00088         0.00048         0.0011         0.165         0.123         0.090         0.037         0.040         0.000           41         0.00091         0.00053         0.0015         0.165         0.123         0.090         0.037         0.025         0.000           42         0.00099         0.00058         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           43         0.00199											0.000
36         0.00074         0.00038         0.0010         0.180         0.117         0.095         0.040         0.000         0.000           37         0.00080         0.00040         0.0007         0.180         0.117         0.095         0.040         0.000         0.000           38         0.00083         0.00044         0.0011         0.180         0.117         0.095         0.040         0.050         0.000           40         0.00088         0.00044         0.0011         0.180         0.117         0.095         0.040         0.040         0.000           41         0.00091         0.00053         0.0011         0.165         0.123         0.090         0.037         0.040         0.000           41         0.00091         0.00053         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           42         0.00095         0.00058         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           43         0.00099         0.00064         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           44											0.000
38         0.00083         0.00042         0.0007         0.180         0.117         0.095         0.040         0.050         0.000           39         0.00086         0.00044         0.0011         0.180         0.117         0.095         0.040         0.040         0.000           40         0.00088         0.00048         0.0011         0.165         0.123         0.090         0.037         0.025         0.000           41         0.00091         0.00053         0.0013         0.165         0.123         0.090         0.037         0.025         0.000           42         0.00095         0.00058         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           43         0.00099         0.00064         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           44         0.00103         0.00075         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           45         0.00114         0.00080         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           47	36		0.00038	0.0010	0.180	0.117	0.095	0.040	0.000	0.000	0.000
38         0.00083         0.00042         0.0007         0.180         0.117         0.095         0.040         0.050         0.000           39         0.00086         0.00044         0.0011         0.180         0.117         0.095         0.040         0.040         0.000           40         0.00088         0.00048         0.0011         0.165         0.123         0.090         0.037         0.025         0.000           41         0.00091         0.00053         0.0013         0.165         0.123         0.090         0.037         0.025         0.000           42         0.00095         0.00058         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           43         0.00099         0.00064         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           44         0.00103         0.00075         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           46         0.00114         0.00080         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           47						0.117		0.040	0.000	0.000	0.000
40         0.00088         0.00048         0.0011         0.165         0.123         0.090         0.037         0.040         0.000           41         0.00091         0.00053         0.0013         0.165         0.123         0.090         0.037         0.025         0.000           42         0.00095         0.00068         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           43         0.00099         0.00064         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           44         0.00103         0.00071         0.0016         0.165         0.123         0.090         0.040         0.025         0.000           45         0.00109         0.00075         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           46         0.00114         0.00080         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           47         0.00119         0.00084         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           48	38	0.00083	0.00042	0.0007	0.180	0.117	0.095	0.040	0.050	0.000	0.000
41         0.00091         0.00053         0.0013         0.165         0.123         0.090         0.037         0.025         0.000           42         0.00095         0.00068         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           43         0.00099         0.00064         0.0016         0.165         0.123         0.090         0.034         0.025         0.000           44         0.00103         0.00071         0.0016         0.165         0.123         0.090         0.040         0.025         0.000           45         0.00109         0.00075         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           46         0.00114         0.00080         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           47         0.00119         0.00084         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           48         0.00124         0.00091         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           50	39	0.00086	0.00044	0.0011	0.180	0.117	0.095	0.040	0.040	0.000	0.000
42         0.00095         0.00058         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           43         0.00099         0.00064         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           44         0.00103         0.00071         0.0016         0.165         0.123         0.090         0.040         0.025         0.000           45         0.00109         0.00075         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           46         0.00114         0.00084         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           47         0.00119         0.00084         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           48         0.00124         0.00091         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           50         0.00136         0.00199         0.0022         0.163         0.099         0.090         0.040         0.030         0.050           51	40	0.00088	0.00048	0.0011	0.165	0.123	0.090	0.037	0.040	0.000	0.000
43         0.00099         0.00064         0.0016         0.165         0.123         0.090         0.037         0.025         0.000           44         0.00103         0.00071         0.0016         0.165         0.123         0.090         0.040         0.025         0.000           45         0.00109         0.00075         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           46         0.00114         0.00080         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           47         0.00119         0.00084         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           48         0.00124         0.00091         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           49         0.00130         0.00098         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           50         0.00136         0.00109         0.0025         0.175         0.112         0.090         0.040         0.030         0.170           51	41	0.00091	0.0000	0.0013	0.165	0.123	0.090	0.037	0.025	0.000	0.000
44         0.00103         0.00071         0.0016         0.165         0.123         0.090         0.040         0.025         0.000           45         0.00109         0.00075         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           46         0.00114         0.00080         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           47         0.00119         0.00084         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           48         0.00124         0.00091         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           49         0.00130         0.00098         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           50         0.00136         0.00109         0.0025         0.175         0.112         0.090         0.040         0.030         0.050           51         0.00152         0.00124         0.0025         0.175         0.112         0.090         0.040         0.030         0.170           52	42		0.00058		0.165			0.037	0.025	0.000	0.000
45         0.00109         0.00075         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           46         0.00114         0.00080         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           47         0.00119         0.00084         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           48         0.00124         0.00091         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           49         0.00130         0.00098         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           50         0.00136         0.00109         0.0025         0.175         0.112         0.090         0.040         0.030         0.050           51         0.00152         0.00124         0.0025         0.175         0.112         0.090         0.040         0.030         0.170           52         0.00161         0.00142         0.0025         0.175         0.112         0.090         0.040         0.100         0.280           53											0.000
46         0.00114         0.00080         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           47         0.00119         0.00084         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           48         0.00124         0.00091         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           49         0.00130         0.00098         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           50         0.00136         0.00109         0.0025         0.175         0.112         0.090         0.040         0.030         0.050           51         0.00152         0.00124         0.0025         0.175         0.112         0.090         0.040         0.030         0.170           52         0.00161         0.00142         0.0025         0.175         0.112         0.090         0.040         0.030         0.280           53         0.00176         0.00163         0.0030         0.175         0.112         0.090         0.040         0.100         0.280           54											0.000
47         0.00119         0.00084         0.0022         0.163         0.099         0.090         0.040         0.025         0.020           48         0.00124         0.00091         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           49         0.00130         0.00098         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           50         0.00136         0.00109         0.0025         0.175         0.112         0.090         0.040         0.030         0.050           51         0.00152         0.00124         0.0025         0.175         0.112         0.090         0.040         0.030         0.170           52         0.00161         0.00142         0.0025         0.175         0.112         0.090         0.040         0.030         0.280           53         0.00176         0.00163         0.0030         0.175         0.112         0.090         0.040         0.100         0.280           54         0.00193         0.00189         0.0030         0.175         0.112         0.090         0.040         0.150         0.280           55											0.000
48         0.00124         0.00091         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           49         0.00130         0.00098         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           50         0.00136         0.00109         0.0025         0.175         0.112         0.090         0.040         0.030         0.050           51         0.00152         0.00124         0.0025         0.175         0.112         0.090         0.040         0.030         0.170           52         0.00161         0.00163         0.0025         0.175         0.112         0.090         0.040         0.030         0.280           53         0.00176         0.00163         0.0030         0.175         0.112         0.090         0.040         0.100         0.280           54         0.00193         0.00189         0.0030         0.175         0.112         0.090         0.040         0.150         0.280           55         0.00224         0.00222         0.0040         0.175         0.116         0.090         0.040         0.150         0.750           56											0.000
49         0.00130         0.00098         0.0022         0.163         0.099         0.090         0.040         0.030         0.020           50         0.00136         0.00109         0.0025         0.175         0.112         0.090         0.040         0.030         0.050           51         0.00152         0.00124         0.0025         0.175         0.112         0.090         0.040         0.030         0.170           52         0.00161         0.00142         0.0025         0.175         0.112         0.090         0.040         0.030         0.280           53         0.00176         0.00163         0.0030         0.175         0.112         0.090         0.040         0.030         0.280           54         0.00193         0.00189         0.0030         0.175         0.112         0.090         0.040         0.150         0.450           55         0.00224         0.00222         0.0040         0.175         0.106         0.090         0.040         0.150         0.750           56         0.00266         0.0050         0.175         0.106         0.090         0.040         0.150         0.330           57         0.00306											0.000
50         0.00136         0.00109         0.0025         0.175         0.112         0.090         0.040         0.030         0.050           51         0.00152         0.00124         0.0025         0.175         0.112         0.090         0.040         0.030         0.170           52         0.00161         0.00142         0.0025         0.175         0.112         0.090         0.040         0.030         0.280           53         0.00176         0.00163         0.0030         0.175         0.112         0.090         0.040         0.100         0.280           54         0.00193         0.00189         0.0030         0.175         0.112         0.090         0.040         0.150         0.450           55         0.00224         0.00222         0.0040         0.175         0.106         0.090         0.040         0.150         0.750           56         0.00267         0.00266         0.0050         0.175         0.106         0.090         0.040         0.150         0.330           57         0.00306         0.00307         0.0055         0.155         0.106         0.090         0.040         0.150         0.250           58											0.700
51         0.00152         0.00124         0.0025         0.175         0.112         0.090         0.040         0.030         0.170           52         0.00161         0.00142         0.0025         0.175         0.112         0.090         0.040         0.030         0.280           53         0.00176         0.00163         0.0030         0.175         0.112         0.090         0.040         0.100         0.280           54         0.00193         0.00189         0.0030         0.175         0.112         0.090         0.040         0.150         0.450           55         0.00224         0.00222         0.0040         0.175         0.106         0.090         0.040         0.150         0.750           56         0.00267         0.00266         0.0050         0.175         0.106         0.090         0.040         0.150         0.330           57         0.00306         0.00307         0.0055         0.155         0.106         0.090         0.040         0.150         0.250           58         0.00352         0.00346         0.0055         0.200         0.106         0.090         0.040         0.250         0.250           59											0.300
52         0.00161         0.00142         0.0025         0.175         0.112         0.090         0.040         0.030         0.280           53         0.00176         0.00163         0.0030         0.175         0.112         0.090         0.040         0.100         0.280           54         0.00193         0.00189         0.0030         0.175         0.112         0.090         0.040         0.150         0.450           55         0.00224         0.00222         0.0040         0.175         0.106         0.090         0.040         0.150         0.750           56         0.00267         0.00266         0.0050         0.175         0.106         0.090         0.040         0.150         0.330           57         0.00306         0.00307         0.0055         0.155         0.106         0.090         0.040         0.150         0.250           58         0.00352         0.00346         0.0055         0.200         0.106         0.090         0.040         0.250         0.250           59         0.00397         0.00392         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           60											0.600
53         0.00176         0.00163         0.0030         0.175         0.112         0.090         0.040         0.100         0.280           54         0.00193         0.00189         0.0030         0.175         0.112         0.090         0.040         0.150         0.450           55         0.00224         0.00222         0.0040         0.175         0.106         0.090         0.040         0.150         0.750           56         0.00267         0.00266         0.0050         0.175         0.106         0.090         0.040         0.150         0.330           57         0.00306         0.00307         0.0055         0.155         0.106         0.090         0.040         0.150         0.250           58         0.00352         0.00346         0.0055         0.200         0.106         0.090         0.040         0.250         0.250           59         0.00397         0.00392         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           60         0.00451         0.00446         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           61											0.600
54         0.00193         0.00189         0.0030         0.175         0.112         0.090         0.040         0.150         0.450           55         0.00224         0.00222         0.0040         0.175         0.106         0.090         0.040         0.150         0.750           56         0.00267         0.00266         0.0050         0.175         0.106         0.090         0.040         0.150         0.330           57         0.00306         0.00307         0.0055         0.155         0.106         0.090         0.040         0.150         0.250           58         0.00352         0.00346         0.0055         0.200         0.106         0.090         0.040         0.250         0.250           59         0.00397         0.00392         0.0055         0.200         0.106         0.090         0.040         0.250         0.250           59         0.00397         0.00392         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           60         0.00451         0.00446         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           61											0.500
55         0.00224         0.00222         0.0040         0.175         0.106         0.090         0.040         0.150         0.750           56         0.00267         0.00266         0.0050         0.175         0.106         0.090         0.040         0.150         0.330           57         0.00306         0.00307         0.0055         0.155         0.106         0.090         0.040         0.150         0.250           58         0.00352         0.00346         0.0055         0.200         0.106         0.090         0.040         0.250         0.250           59         0.00397         0.00392         0.0055         0.200         0.106         0.090         0.040         0.250         0.250           60         0.00451         0.00446         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           61         0.00526         0.00513         0.0050         0.200         0.106         0.090         0.040         0.150         0.300           62         0.00600         0.00587         0.0050         0.200         0.106         0.090         0.040         0.150         0.170           63											0.400
56         0.00267         0.00266         0.0050         0.175         0.106         0.090         0.040         0.150         0.330           57         0.00306         0.00307         0.0055         0.155         0.106         0.090         0.040         0.150         0.250           58         0.00352         0.00346         0.0055         0.200         0.106         0.090         0.040         0.250         0.250           59         0.00397         0.00392         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           60         0.00451         0.00446         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           61         0.00526         0.00513         0.0050         0.200         0.106         0.090         0.040         0.150         0.300           62         0.00600         0.00587         0.0050         0.200         0.106         0.090         0.040         0.150         0.220           63         0.00704         0.00675         0.0050         0.200         0.106         0.090         0.040         0.150         0.170           64		0.00224								0.750	0.300
58         0.00352         0.00346         0.0055         0.200         0.106         0.090         0.040         0.250         0.250           59         0.00397         0.00392         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           60         0.00451         0.00446         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           61         0.00526         0.00513         0.0050         0.200         0.106         0.090         0.040         0.150         0.300           62         0.00600         0.00587         0.0050         0.200         0.106         0.090         0.040         0.150         0.220           63         0.00704         0.00675         0.0050         0.200         0.106         0.090         0.040         0.150         0.170           64         0.00793         0.00760         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           65         0.00895         0.00856         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           66			0.00266	0.0050				0.040	0.150		0.200
59         0.00397         0.00392         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           60         0.00451         0.00446         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           61         0.00526         0.00513         0.0050         0.200         0.106         0.090         0.040         0.150         0.300           62         0.00600         0.00587         0.0050         0.200         0.106         0.090         0.040         0.150         0.220           63         0.00704         0.00675         0.0050         0.200         0.106         0.090         0.040         0.150         0.220           64         0.00793         0.00760         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           65         0.00895         0.00856         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           66         0.01039         0.00966         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           67	57	0.00306		0.0055	0.155	0.106	0.090	0.040	0.150	0.250	0.200
60         0.00451         0.00446         0.0055         0.200         0.106         0.090         0.040         0.250         0.300           61         0.00526         0.00513         0.0050         0.200         0.106         0.090         0.040         0.150         0.300           62         0.00600         0.00587         0.0050         0.200         0.106         0.090         0.040         0.150         0.220           63         0.00704         0.00675         0.0050         0.200         0.106         0.090         0.040         0.150         0.170           64         0.00793         0.00760         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           65         0.00895         0.00856         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           66         0.01039         0.00966         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           67         0.01159         0.01073         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           68	58	0.00352	0.00346	0.0055	0.200	0.106	0.090	0.040	0.250	0.250	0.200
61         0.00526         0.00513         0.0050         0.200         0.106         0.090         0.040         0.150         0.300           62         0.00600         0.00587         0.0050         0.200         0.106         0.090         0.040         0.150         0.220           63         0.00704         0.00675         0.0050         0.200         0.106         0.090         0.040         0.150         0.170           64         0.00793         0.00760         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           65         0.00895         0.00856         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           66         0.01039         0.00966         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           67         0.01159         0.01073         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           68         0.01256         0.01186         0.0020         0.200         0.106         0.090         0.040         0.200         0.300								0.040	0.250	0.300	0.200
62         0.00600         0.00587         0.0050         0.200         0.106         0.090         0.040         0.150         0.220           63         0.00704         0.00675         0.0050         0.200         0.106         0.090         0.040         0.150         0.170           64         0.00793         0.00760         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           65         0.00895         0.00856         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           66         0.01039         0.00966         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           67         0.01159         0.01073         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           68         0.01256         0.01186         0.0020         0.200         0.106         0.090         0.040         0.200         0.300											0.200
63         0.00704         0.00675         0.0050         0.200         0.106         0.090         0.040         0.150         0.170           64         0.00793         0.00760         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           65         0.00895         0.00856         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           66         0.01039         0.00966         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           67         0.01159         0.01073         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           68         0.01256         0.01186         0.0020         0.200         0.106         0.090         0.040         0.200         0.300											0.200
64         0.00793         0.00760         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           65         0.00895         0.00856         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           66         0.01039         0.00966         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           67         0.01159         0.01073         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           68         0.01256         0.01186         0.0020         0.200         0.106         0.090         0.040         0.200         0.300											0.250
65         0.00895         0.00856         0.0035         0.200         0.106         0.090         0.040         0.200         0.200           66         0.01039         0.00966         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           67         0.01159         0.01073         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           68         0.01256         0.01186         0.0020         0.200         0.106         0.090         0.040         0.200         0.300											0.150
66         0.01039         0.00966         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           67         0.01159         0.01073         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           68         0.01256         0.01186         0.0020         0.200         0.106         0.090         0.040         0.200         0.300											0.300
67         0.01159         0.01073         0.0020         0.200         0.106         0.090         0.040         0.200         0.200           68         0.01256         0.01186         0.0020         0.200         0.106         0.090         0.040         0.200         0.300											0.300
<b>68</b> 0.01256 0.01186 0.0020 0.200 0.106 0.090 0.040 0.200 0.300											0.300
											0.300
1 112   0.01222   0.01211   0.0020   0.200   0.100   0.070   0.070   0.700   0.700											0.300
											0.400
											0.200
											0.250
											0.250
											0.250

DUR	SALARY INCREASE
0	0.0575
1	0.0575
2	0.0575
3	0.0575
4	0.0575
5	0.0500
6	0.0500
7	0.0500
8	0.0500
9	0.0500
10	0.0475
11	0.0475
12	0.0475
13	0.0475
14	0.0475
15	0.0450
16	0.0450
17	0.0450
18	0.0450
19	0.0450
20	0.0400
21	0.0400
22	0.0400
23	0.0400
24	0.0400
25	0.0375
26	0.0375
27	0.0375
28	0.0375
29	0.0375
30	0.0425
31	0.0425
32	0.0425
	0.0425
34	0.0425 0.0425
	0.0425
36	0.0425
38	0.0425
39	0.0425
40	0.0425
41	0.0425
42	0.0425
43	0.0425
44	0.0425
45	0.0425
46	0.0425
47	0.0425
48	0.0425
49	0.0425
50	0.0425
51	0.0425
52	0.0425
53	0.0425
54	0.0425
55	0.0425
56	0.0425

# Actuarial Assumptions, effective July 1, 2013 Higher Education

								RETIR	EMENT	/DROP
	DEAT	TH RATES			TERMINAT				RATES	
ACE	MALE	EENALE	DISABILITY	<1 YEAR	1-2	2-3	4+	< 25	25-29 XOS	30+ VOC
AGE 18	0.00020	<b>FEMALE</b> 0.00013	0.0000	0.250	<b>YEARS</b> 0.250	<b>YEARS</b> 0.170	<b>YEARS</b> 0.120	<b>YOS</b> 0.000	<b>YOS</b> 0.000	YOS 0.000
19	0.00020	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000
20	0.00021	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000
21	0.00021	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000
22	0.00023	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000
23	0.00024	0.00013	0.0001	0.250	0.250	0.170	0.120	0.000	0.000	0.000
24	0.00027	0.00013	0.0001	0.250	0.250	0.170	0.120	0.000	0.000	0.000
25	0.00029	0.00011	0.0001	0.250	0.250	0.170	0.120	0.000	0.000	0.000
26	0.00033	0.00016	0.0001	0.210	0.250	0.170	0.120	0.000	0.000	0.000
27	0.00034	0.00017	0.0001	0.210	0.220	0.170	0.120	0.000	0.000	0.000
28	0.00035	0.00017	0.0001	0.220	0.220	0.170	0.120	0.000	0.000	0.000
29	0.00036	0.00018	0.0001	0.240	0.220	0.170	0.120	0.000	0.000	0.000
30	0.00039	0.00021	0.0001	0.250	0.160	0.170	0.180	0.000	0.000	0.000
31	0.00044	0.00025	0.0001	0.220	0.178	0.170	0.100	0.000	0.000	0.000
32	0.00050	0.00029	0.0001	0.220	0.190	0.160	0.100	0.000	0.000	0.000
33	0.00056	0.00031	0.0001	0.190	0.170	0.150	0.120	0.000	0.000	0.000
34	0.00062	0.00034	0.0001	0.230	0.155	0.100	0.120	0.000	0.000	0.000
35	0.00068	0.00036	0.0001	0.220	0.175	0.130	0.120	0.000	0.000	0.000
36	0.00074	0.00038	0.0001	0.220	0.160	0.150	0.120	0.000	0.000	0.000
37	0.00080	0.00040	0.0001	0.220	0.108	0.150	0.120	0.000	0.000	0.000
38	0.00083	0.00042	0.0001	0.190	0.180	0.150	0.100	0.100	0.080	0.600
39	0.00086	0.00044	0.0001	0.190	0.140	0.150	0.100	0.100	0.080	0.600
40	0.00088	0.00048	0.0001	0.230	0.185	0.150	0.100	0.100	0.080	0.600
41	0.00091	0.00053	0.0001	0.165	0.108	0.150	0.100	0.100	0.080	0.600
42	0.00095	0.00058	0.0001	0.230	0.115	0.150	0.100	0.100	0.080	0.600
43	0.00099	0.00064	0.0001	0.155	0.168	0.150	0.100	0.070	0.080	0.600
44	0.00103	0.00071	0.0001	0.195	0.135	0.150	0.100	0.070	0.080	0.600
45	0.00109	0.00075	0.0001	0.190	0.116	0.150	0.100	0.070	0.080	0.600
46	0.00114	0.00080	0.0008	0.162	0.170	0.150	0.080	0.070	0.080	0.600
47	0.00119	0.00084	0.0008	0.210	0.140	0.150	0.090	0.070	0.080	0.600
48	0.00124	0.00091	0.0008	0.135	0.180	0.150	0.090	0.070	0.080	0.600
49	0.00130	0.00098	0.0008	0.135	0.125	0.150	0.090	0.070	0.080	0.600
50	0.00136	0.00109	0.0008	0.185	0.108	0.060	0.090	0.070	0.080	0.600
51	0.00152	0.00124	0.0008	0.145	0.070	0.050	0.090	0.070	0.160	0.600
52	0.00161	0.00142	0.0008	0.155	0.110	0.095	0.090	0.070	0.160	0.600
53	0.00176	0.00163	0.0008	0.220	0.130	0.125	0.090	0.070	0.160	0.600
54 55	0.00193 0.00224	0.00189 0.00222	0.0008	0.220	0.075	0.017	0.090	0.150	0.280	0.400
					0.104 0.122	0.140		0.150		0.200
56 57	0.00267 0.00306	0.00266	0.0020 0.0020	0.135	0.122	0.100 0.140	0.080	0.150	0.200	0.050
58	0.00300	0.00346	0.0020	0.230	0.033	0.140	0.100	0.150	0.130	0.050
59	0.00332	0.00340	0.0020	0.100	0.113	0.200	0.080	0.150	0.130	0.050
60	0.00357	0.00446	0.0005	0.150	0.160	0.090	0.060	0.150	0.130	0.050
61	0.00526	0.00513	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	0.120
62	0.00600	0.00587	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	0.120
63	0.00704	0.00675	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	0.120
64	0.00793	0.00760	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	0.120
65	0.00895	0.00856	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.200
66	0.01039	0.00966	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.180
67	0.01159	0.01073	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.180
68	0.01256	0.01186	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.180
69	0.01392	0.01311	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.280
70	0.01522	0.01477	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.280
71	0.01684	0.01598	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	0.200
72	0.01870	0.01778	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	0.200
73	0.02083	0.01927	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	0.200
74	0.02323	0.02136	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	0.200
							-			

	SALARY
DUR	INCREASE
0	0.100
1	0.100
2	0.090
3	0.080
4	0.040
5	0.070
7	0.050
8	0.070 0.070
9	0.070
10	0.045
11	0.045
12	0.045
13	0.045
14	0.040
15	0.040
16	0.040
17	0.040
18	0.040
19	0.040
20	0.040
21	0.040
22	0.040
23	0.040
24	0.040
25	0.040
26	0.040
27	0.035
28	0.035
29	0.035
30	0.035
31	0.035
32	0.035
33	0.035
34	0.035
35	0.035
36	0.035 0.035
38	0.035
39	0.035
40	0.035
41	0.035
42	0.035
43	0.035
44	0.035
45	0.035
46	0.035
47	0.035
48	0.035
49	0.035
50	0.035
51	0.035
52	0.035
53	0.035
54	0.035
55	0.035
56	0.035

# Actuarial Assumptions, effective July 1, 2013 Lunch Plan A

	DEATH RATES			RETIREMENT/DROP RATES			
	DENTI		DISABILITY	101	>= 30		
AGE	MALE	FEMALE	RATES	< 30 YOS	YOS		
18	0.00020	0.00013	0.0000	0.000	0.000		
19	0.00021	0.00013	0.0000	0.000	0.000		
20	0.00021	0.00013	0.0000	0.000	0.000		
21	0.00023	0.00013	0.0000	0.000	0.000		
22	0.00024	0.00013	0.0000	0.000	0.000		
23	0.00026	0.00013	0.0000	0.000	0.000		
24	0.00027	0.00014	0.0000	0.000	0.000		
25	0.00029	0.00015	0.0000	0.000	0.000		
26	0.00033	0.00016	0.0000	0.000	0.000		
27	0.00034	0.00017	0.0000	0.000	0.000		
28	0.00035	0.00017	0.0000	0.000	0.000		
29	0.00036	0.00018	0.0000	0.000	0.000		
30	0.00039	0.00021	0.0000	0.000	0.000		
31	0.00044	0.00025	0.0001	0.000	0.000		
32	0.00050	0.00029	0.0001	0.000	0.000		
33	0.00056	0.00031	0.0001	0.000	0.000		
34	0.00062	0.00034	0.0001	0.000	0.000		
35	0.00068	0.00036	0.0001	0.000	0.000		
36	0.00074	0.00038	0.0001	0.000	0.000		
37	0.00080	0.00040	0.0001	0.000	0.000		
38	0.00083	0.00042	0.0001	0.600	0.300		
39	0.00086	0.00044	0.0001	0.600	0.300		
40	0.00088	0.00048	0.0001	0.600	0.300		
41	0.00091	0.00053	0.0001	0.600	0.300		
42	0.00095	0.00058	0.0001	0.600	0.300		
43	0.00099	0.00064	0.0001	0.600	0.300		
44	0.00103	0.00071	0.0001	0.600	0.300		
45	0.00109	0.00075	0.0001	0.600	0.300		
46	0.00114	0.00080	0.0001	0.600	0.300		
47	0.00119	0.00084	0.0001	0.600	0.300		
48	0.00124	0.00091	0.0001	0.600	0.300		
49	0.00130	0.00098	0.0100	0.600	0.300		
50	0.00136	0.00109	0.0100	0.600	0.300		
51	0.00152	0.00124	0.0100	0.600	0.300		
52	0.00161	0.00142	0.0150	0.600	0.700		
53	0.00176	0.00163	0.0175	0.600	0.700		
54	0.00193	0.00189	0.0175	0.600	0.700		
55	0.00224	0.00222	0.0175	0.800	0.700		
56	0.00267	0.00266	0.0002	0.350	0.700		
57	0.00306	0.00307	0.0002	0.350	0.700		
58	0.00352	0.00346	0.0002	0.350	0.700		
59	0.00397	0.00392	0.0002	0.600	0.700		
60	0.00451	0.00446	0.0002	0.450	0.700		
61	0.00526	0.00513	0.0002	0.200	0.500		
62	0.00600	0.00587	0.0002	0.200	0.500		
63	0.00704	0.00675	0.0002	0.350	0.500		
64	0.00793	0.00760	0.0002	0.100	0.500		
65	0.00895	0.00856	0.0002	0.100	0.500		
66	0.01039	0.00966	0.0002	0.100	0.250		
67	0.01159	0.01073	0.0002	0.200	0.250		
68	0.01256	0.01186	0.0002	0.200	0.250		
69	0.01392	0.01311	0.0000	0.200	0.250		
70	0.01522	0.01477	0.0000	0.200	0.250		
71	0.01684	0.01598	0.0000	0.200	0.250		
72	0.01870	0.01778	0.0000	0.200	0.250		
73	0.02083	0.01927	0.0000	0.200	0.250		
74	0.02323	0.02136	0.0000	0.200	0.250		

	TERMINATION	SALARY
DUR	RATES	INCREASE
0	0.14	0.06
1	0.14	0.06
2	0.14	0.06
3	0.14	0.06
4	0.14	0.06
5	0.14	0.06
6	0.14	0.06
7	0.14	0.06
8	0.14 0.14	0.06
		0.06
10	0.14	0.06
11 12	0.14	0.06
	0.14	0.05
13	0.14	0.05
14 15	0.14	0.05
	0.14	0.06
16	0.14	0.06
17	0.14	0.07
18	0.14	0.07
19	0.14	0.04
20	0.14	0.04
21 22	0.14	0.04
	0.14	0.04
23	0.14	0.06
24	0.14	0.06
25	0.14	0.04
26 27	0.14 0.14	0.04 0.04
28	0.14	0.04
29		0.04
30	0.14 0.14	0.04
31	0.14	0.04
32	0.14	0.04
33	0.14	0.04
34	0.14	0.04
35	0.14	0.04
36	0.14	0.04
37	0.14	0.04
38	0.14	0.04
39	0.14	0.04
40	0.14	0.04
41	0.14	0.04
42	0.14	0.04
43	0.14	0.04
44	0.14	0.04
45	0.14	0.04
46	0.14	0.04
47	0.14	0.04
48	0.14	0.04
49	0.14	0.04
50	0.14	0.04
51	0.14	0.04
52	0.14	0.04
53	0.14	0.04
54	0.14	0.04
55	0.14	0.04
56	0.14	0.04
		·

# Actuarial Assumptions, effective July 1, 2013 Lunch Plan B

	DEATH RATES		DISABILITY	RETIREMENT/DROP		
AGE	MALE	FEMALE	RATES	RATES		
18	0.00020	0.00013	0.0000	0.00		
19	0.00021	0.00013	0.0000	0.00		
20	0.00021	0.00013	0.0000	0.00		
21	0.00023	0.00013	0.0000	0.00		
22	0.00024	0.00013	0.0000	0.00		
23	0.00026	0.00013	0.0000	0.00		
24	0.00027	0.00014	0.0000	0.00		
25	0.00029	0.00015	0.0000	0.00		
26	0.00033	0.00016	0.0000	0.00		
27	0.00034	0.00017	0.0000	0.00		
28	0.00035	0.00017	0.0000	0.00		
29	0.00036	0.00018	0.0000	0.00		
30	0.00039	0.00021	0.0000	0.00		
31	0.00044	0.00025	0.0000	0.00		
32	0.00050	0.00029	0.0000	0.00		
33	0.00056	0.00031	0.0000	0.00		
34	0.00062	0.00034	0.0000	0.00		
35	0.00068	0.00036	0.0000	0.00		
36	0.00074	0.00038	0.0010	0.00		
37	0.00080	0.00040	0.0010	0.00		
38	0.00083	0.00042	0.0010	0.00		
39	0.00086	0.00044	0.0010	0.00		
40	0.00088	0.00048	0.0050	0.00		
41	0.00091	0.00053	0.0050	0.00		
42	0.00095	0.00058	0.0050	0.00		
43	0.00099	0.00064	0.0050	0.00		
44	0.00103	0.00071	0.0050	0.00		
45	0.00109	0.00075	0.0050	0.00		
46	0.00114	0.00080	0.0050	0.00		
47	0.00119	0.00084	0.0050	0.00		
48	0.00124	0.00091	0.0050	0.00		
49	0.00130	0.00098	0.0050	0.00		
50	0.00136	0.00109	0.0130	0.00		
51	0.00152	0.00124	0.0130	0.00		
52	0.00161	0.00142	0.0130	0.00		
53	0.00176	0.00163	0.0130	0.00		
54	0.00193	0.00189	0.0130	0.00		
55	0.00224	0.00222	0.0175	0.80		
56	0.00267	0.00266	0.0175	0.80		
57	0.00306	0.00307	0.0225	0.80		
58	0.00352	0.00346	0.0225	0.80		
59	0.00397	0.00392	0.0150	0.60		
60	0.00451	0.00446	0.0050	0.50		
61	0.00526	0.00513	0.0050	0.25		
62	0.00600	0.00587	0.0050	0.25		
63	0.00704	0.00675	0.0050	0.25		
64	0.00793	0.00760 0.00856	0.0010 0.0010	0.25 0.15		
66	0.00895 0.01039	0.00856	0.0010	0.15		
67	0.01039	0.01073	0.0010	0.13		
68	0.01139	0.01073	0.0010	0.30		
69	0.01230	0.01180	0.0010	0.43		
70	0.01592	0.01311	0.0010	0.20		
71	0.01322	0.01477	0.0010	0.20		
72	0.01870	0.01338	0.0010	0.20		
73	0.02083	0.01778	0.0010	0.20		
74	0.02083	0.01927	0.0010	0.20		
/4	0.02323	0.02130	0.0010	0.20		

	TERMINATION	SALARY
DUR	RATES	INCREASE
0	0.100	0.055
1	0.090	0.055
2	0.080	0.055
3	0.070	0.055
4	0.060	0.055
5	0.050	0.055
6	0.050	0.055
7	0.045	0.055
8	0.045	0.055
9	0.045	0.055
10	0.045	0.055
11	0.045	0.045
12	0.040	0.045
13	0.030	0.045
14	0.030	0.045
15	0.030	0.045
16	0.050	0.050
17	0.050	0.050
18	0.050	0.050
19	0.030	0.040
20	0.040	0.040
21	0.040	0.040
22	0.040	0.040
23	0.040	0.040
24	0.040	0.040
25	0.040	0.040
26	0.040	0.040
27	0.040	0.040
28	0.040	0.040
29	0.040	0.040
30	0.040	0.040
31	0.040	0.040
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50	0.040	0.040
51	0.040	0.040
52	0.040	0.040
53	0.040	0.040
54	0.040	0.040
55	0.040	0.040
56	0.040	0.040
	-	-

Exhibit 7-A

AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
June 30, 2016

		Amtz.	Amtz.	Initial	Years		Mid-Year
Date	Description	Method	Period	Liability	Remain	<b>Remaining Balance</b>	Payment
2014	OAB	Note 1	15	2,537,864,619	13	2,315,374,153	261,202,822
2014	EAAB	Note 2,3	26	3,996,568,647	24	3,694,542,686	344,217,565
2014	2009 Experience G/L	L	25	2,830,242,246	23	2,746,828,480	249,988,498
2014	2010 Experience G/L	L	26	1,106,465,512	24	1,076,594,214	96,461,424
2014	2011 Experience G/L	L	27	(170,316,807)	25	(166,100,327)	(14,671,243)
2014	2012 Experience G/L	L	28	123,507,827	26	120,701,146	10,522,700
2014	2013 Experience G/L	L	29	(246,366,627)	27	(241,222,916)	(20,779,159)
2014	2013 Assump/Method Change	L	29	838,527,326	54	821,020,320	70,723,428
2014	2014 Investment Experience	L	5	(423,997,917)	3	(273,099,957)	(101,629,570)
2014	2014 Assump/Meth Change	L	30	1,452,120,642	28	1,424,243,499	121,343,619
2014	2014 Other Experience G/L	L	30	(162, 364, 784)	28	(159,247,780)	(13,567,695)
2015	2015 Experience G/L	L	30	(376,727,393)	29	(373,246,171)	(31,480,487)
2016	2016 Experience G/L	L	30	26,612,533	30	26,612,533	2,223,824
	<b>Total Outstanding Balance</b>					\$ 11,012,999,880	\$ 974,555,726
Employ	vers Credit Balance						
2014	2012 Contribution Variance	Note 3	-	-	-	-	-
2014	2013 Contribution Variance	L	4	9,457,295	2	5,080,956	2,735,460
2014	2014 Contribution Variance	Note 3	-	-	-	-	-
2015	2015 Contribution Variance	Note 3	-	-	-	-	-
2016	2016 Contribution Variance	Note 3	-	-	-		
	<b>Total Credit Balance</b>					\$ 5,080,956	\$ 2,735,460
	<b>Total Unfunded Actuarial Accr</b>	ued Liabili	ity			\$ 11,018,080,836	\$ 977,291,186

See Exhibit 7-D for Notes.

Exhibit 7-B

AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
June 30, 2017 - Projected

		Amtz.	Amtz.		Years			Mid-Year
Date	Description	Method	Period	<b>Initial Liability</b>	Remain	Re	maining Balance	Payment
2017	OAB	Note 1	12	2,223,680,075	12		2,223,680,075	277,558,112
2017	EAAB	Note 2,3	23	3,669,519,961	23		3,623,562,627	365,395,967
2017	2009 Experience G/L	L	22	2,700,212,883	22		2,700,212,883	249,046,832
2017	2010 Experience G/L	L	23	1,059,900,706	23		1,059,900,706	96,087,157
2017	2011 Experience G/L	L	24	(163,743,956)	24		(163,743,956)	(14,612,723)
2017	2012 Experience G/L	L	25	119,132,639	25		119,132,639	10,479,627
2017	2013 Experience G/L	L	26	(238,348,365)	26		(238,348,365)	(20,692,015)
2017	2013 Assump/Method Chg	L	26	811,236,568	26		811,236,568	70,426,828
2017	2014 Investment Experience	L	2	(188,770,969)	2		(188,770,969)	(101,583,287)
2017	2014 Assump/Method Change	L	27	1,408,664,420	27		1,408,664,420	120,823,022
2017	2014 Other Experience G/L	L	27	(157,505,849)	27		(157,505,849)	(13,509,486)
2017	2015 Experience G/L	L	28	(369,495,154)	28		(369,495,154)	(31,342,513)
2017	2016 Experience G/L	L	29	26,366,615	29		26,366,615	2,213,880
2017	2017 DR Change	L	30	134,115,300	30		134,115,300	11,156,015
	<b>Total Outstanding Balance</b>					\$	10,989,007,540	\$ 1,021,447,416
Employ	vers Credit Balance							
2017	2013 Contribution Variance	L	1	2,635,249	1		2,635,249	2,734,825
2017	2014 Contribution Variance	Note 3	-	-	-		_	-
2017	2015 Contribution Variance	Note 3	_	-	_		-	-
2017	2016 Contribution Variance	Note 3	-	-	-		-	-
2017	2017 Contribution Variance	L	5	19,493,198	5		19,493,198	4,667,297
	<b>Total Credit Balance</b>					\$	22,128,447	\$ 7,402,122
	<b>Total Unfunded Actuarial Acc</b>	rued Liabi	lity			\$	11,011,135,987	\$ 1,028,849,538

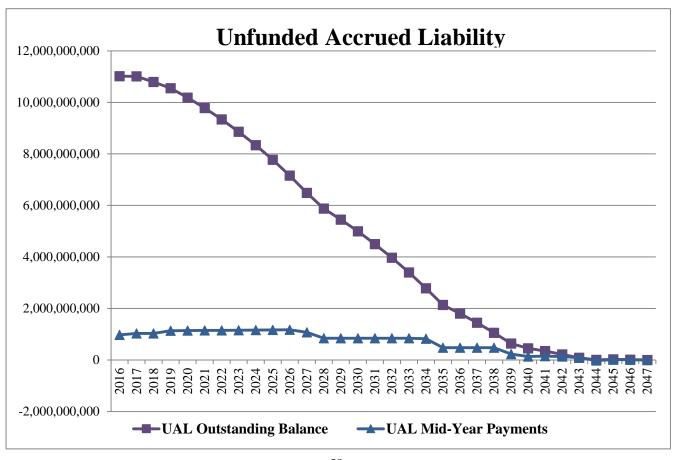
See Exhibit 7-D for Notes.

Exhibit 7-C

UAL Outstanding Balance and Payment Schedule
Based on June 30, 2017 Projected UAL Schedules\*

FY	UAL Outstanding Balance	UAL Mid-Year Payments	Payment %	FY	UAL Outstanding Balance	UAL Mid- Year Payments	Payment %
Beginning	(Millions)	(Millions)	Change	Beginning	(Millions)	(Millions)	Change
2016	11,018	977	1.4%	2032	3,968	845	0.0%
2017	11,011	1,029	5.3%	2033	3,396	845	0.0%
2018	10,791	1,032	0.3%	2034	2,781	825	-2.4%
2019	10,552	1,139	10.4%	2035	2,138	480	-41.8%
2020	10,182	1,145	0.5%	2036	1,804	480	0.0%
2021	9,778	1,151	0.5%	2037	1,445	480	0.0%
2022	9,337	1,152	0.1%	2038	1,058	480	0.0%
2023	8,861	1,158	0.5%	2039	642	231	-51.9%
2024	8,341	1,164	0.5%	2040	451	135	-41.6%
2025	7,775	1,171	0.5%	2041	346	150	10.8%
2026	7,159	1,177	0.6%	2042	217	139	-7.0%
2027	6,488	1,072	-8.9%	2043	90	89	-35.8%
2028	5,875	845	-21.1%	2044	4	-18	-120.1%
2029	5,450	845	0.0%	2045	23	13	-174.4%
2030	4,992	845	0.0%	2046	11	11	-16.6%
2031	4,499	845	0.0%	2047	0	0	-100.0%

<sup>\*</sup> Includes the projected 2017 contribution variance and amortized with 7.70% discount rate



#### Exhibit 7-D

#### **Amortization Schedule Notes**

Act 497 of 2009 consolidated all schedules established prior to 2009 into two amortization schedules, the Original Amortization Base (OAB) and the Experience Account Amortization Base (EAAB). The OAB consists of the outstanding balance of the Initial Unfunded Accrued Liability and schedules with negative outstanding balances. The outstanding balance of this schedule was credited with funds from the Initial UAL account, excluding the subaccount of this fund, and the balance of the Employer Credit Account. The OAB payment schedule is prescribed by statute, as described in Note 1 below. The EAAB consists of the 2004 schedule and all remaining schedules. The outstanding balance of this schedule was credited with the balance of funds from the Initial UAL subaccount, which were transferred from the Employee Experience Account on June 30, 2009. The EAAB payment schedule is prescribed by statute, as described in Note 2 below.

All schedules shown in Exhibit 7-A were re-amortized on July, 1, 2014, using a rate of 7.75%. All schedules shown in Exhibit 7-B, projected for July 1, 2017, were re-amortized as of July 1, 2017 using a discount rate of 7.70%.

**Note 1:** Act 497 of 2009 created the Original Amortization Base, effective July 1, 2010, which combines the following schedules: 1993-1996, 1998-2000, and 2005-2008. The combined balance was reduced by applying funds from the IUAL Fund, excluding the subaccount of this fund. In addition to regular payments, the schedule was reduced by \$100 million on June 30, 2013 and re-amortized, by \$50 million and \$100 million on June 30, 2014 and 2015, respectively, and not re-amortized, per Act 399 of 2014. The schedule was credited appropriations from Act 55 of 2014 and Act 56 of 2015. Future payments will increase by 6.5% for 3 years, then by 2.0% until paid off in 2029.

**Note 2**: Act 497 of 2009 created the Experience Account Amortization Base, which combines the following schedules shown in Exhibit A-1: 1997, 2001-2003, 2004 (the liability resulting from Act 588 of 2004 which zeroed out the Experience Account), and 2008. The combined balance was reduced by applying funds from the subaccount of the IUAL Fund, which were transferred from the Experience Account on June 30, 2009. In addition to regular payments and contribution variance credits, the schedule was reduced by investment gains up to the annual "thresholds" created by Act 497 of 2009 and Act 399 of 2014. Future payments will increase by 6.5% for 3 years and then will be level until paid off in 2040.

**Note 3:** The 2012 contribution variance surplus of \$7,169,301 was used to reduce and re-amortize the EAAB, per Act 497 of 2009. The 2014, 2015, and 2016 contribution variance surpluses of \$40,289,648, \$91,284,653, and \$64,452,206, respectively, were used to reduce the EAAB, with no re-amortization, per Act 399 of 2014.

Exhibit 7-E

Components of Original Amortization Base
(Dollar amounts in millions)

	Annual Outstanding Balance						Annu	al Paym	ents	
	Employer								Employer	
		Other	IUAL	Credit	Total		Other IUAL Credi		Credit	Total
	IUAL	Schedules	Acct	Account	OAB	IUAL	Schedules	Acct	Account	OAB
2016	6,424.5	(3,622.0)	(389.5)	(97.6)	2,315.4	724.8	(408.6)	(43.9)	(11.0)	261.2
2017	6,170.1	(3,478.6)	(374.1)	(93.8)	2,223.7	771.9	(435.2)	(46.8)	(11.7)	278.2
2018	5,847.1	(3,296.4)	(354.5)	(88.9)	2,107.3	787.3	(443.9)	(47.7)	(12.0)	283.7
2019	5,483.0	(3,091.2)	(332.4)	(83.3)	1,976.0	803.1	(452.7)	(48.7)	(12.2)	289.4
2020	5,074.3	(2,860.8)	(307.7)	(77.1)	1,828.8	819.1	(461.8)	(49.7)	(12.4)	295.2
2021	4,617.3	(2,603.1)	(279.9)	(70.2)	1,664.0	835.5	(471.0)	(50.7)	(12.7)	301.1
2022	4,107.8	(2,315.9)	(249.1)	(62.4)	1,480.4	852.2	(480.5)	(51.7)	(13.0)	307.1
2023	3,541.6	(1,996.7)	(214.7)	(53.8)	1,276.4	869.3	(490.1)	(52.7)	(13.2)	313.3
2024	2,913.7	(1,642.7)	(176.7)	(44.3)	1,050.1	886.6	(499.9)	(53.8)	(13.5)	319.5
2025	2,219.2	(1,251.1)	(134.6)	(33.7)	799.8	904.4	(509.9)	(54.8)	(13.7)	325.9
2026	1,452.4	(818.8)	(88.1)	(22.1)	523.4	922.5	(520.1)	(55.9)	(14.0)	332.5
2027	607.4	(342.5)	(36.8)	(9.2)	218.9	630.5	(355.5)	(38.2)	(9.6)	227.2
2028	-	-	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-	_	-	-

#### **GLOSSARY**

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

**Actuarial Accrued Liability** – Computed differently under different funding methods, the actuarial accrued liability generally represents the portion of the actuarial present value of benefits attributable to service credit earned (or accrued) as of the valuation date.

**Actuarial Present Value of Benefits** – Amount which, together with future interest, is expected to be sufficient to pay all benefits to be paid in the future, regardless of when earned, as determined by the application of a particular set of actuarial assumptions; equivalent to the actuarial accrued liability plus 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 investment earnings, changes in compensation, rates of mortality, withdrawal, disablement, and retirement as well as statistics related to marriage and family composition.

**Actuarial Cost Method** – A method of determining the portion of the cost of a pension plan to be allocated to each year; sometimes referred to as the "actuarial funding method." Each cost method allocates a certain portion of the actuarial present value of benefits between the actuarial accrued liability and future normal costs.

**Actuarial Equivalence** – Series of payments with equal actuarial present values on a given date when valued using the same set of actuarial assumptions.

**Actuarial Present Value** - The amount of funds required as of a specified date to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payments between the specified date and the expected date of payment.

**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 market value of assets, or some modification using an asset valuation method to reduce the volatility of asset values.

**Actuarially Reduced** – The method of adjusting a benefit received at an early date, or paid in a form other than the lifetime of the member so that the expected total cost to the retirement system is equivalent to the cost if the benefit did not begin until later, or was paid for the lifetime of the member.

**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** – Paying off an interest-discounted amount with periodic payments of interest and (generally) principal, as opposed to paying off with a lump sum payment.

**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 Variance** – The difference between actuarially required contribution and the actual amount received based upon a projected contribution rate. Results in an increase or decrease to future required contributions.

**Discount Rate** – The interest rate used in developing present values to reflect the time value of money.

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

**Employer Normal Cost** – Portion of the normal cost, excluding administrative expenses, not paid by employee contributions.

**Entry Age Normal (EAN) Funding Method** – A standard actuarial funding method whereby each member's normal costs (service costs) are generally level as a percentage of pay from entry age until retirement. The annual cost of benefits is comprised of the normal cost plus an amortization payment to reduce the UAL.

**Experience Gain (Loss)** – The difference between actual unfunded actuarial accrued liabilities and anticipated unfunded actuarial accrued liabilities during the period between two valuation dates. It is a measurement of the difference between actual and expected experience, and may be related to investment earnings above (or below) those expected or changes in the liability due to fewer (or greater) than expected numbers of retirements, deaths, disabilities, or withdrawals, or variances in pay increases relative to assumed pay increases. The effect of such gains (or losses) is to decrease (or increase) future costs.

Experience Account Amortization Base (EAAB) – Amortization base created in 2010 by Act 497 of 2009. Consolidated and re-amortized schedules created in the following valuation years, which existed prior to Act 497: 1997, 2001-2003, 2004 (the liability resulting from Act 588 of 2004 which zeroed out the experience account), and 2008. The new combined balance was credited with funds from the sub-account of the IUAL Fund, which were transferred from the Experience Account on June 30, 2009. See Note 2 on Exhibit 7-D for additional details.

**Funded Ratio** – A measure of the ratio of the actuarial value of assets to liabilities of the system. Typically the assets used in the measure are the actuarial value of assets as determined by the asset valuation method adopted by the Board of Trustees; the liabilities are determined using the actuarial funding method specified by Louisiana statute. Thus the funded ratio depends not only on the financial strength of the plan but also on the asset valuation method used to determine the assets and on the funding method used to determine the liabilities.

Governmental Accounting Standards Board (GASB) – Governmental agency that sets the accounting standards for state and local government operations.

Market Value of Assets (MVA) – The value of assets as they would trade on an open market.

**Normal Cost** – Computed differently under different funding methods, generally that portion of the actuarial present value of benefits allocated to the current plan year.

**Original Amortization Base (OAB)** – Amortization base created in 2010 by Act 497 of 2009. Consolidated and re-amortized schedules created in the following valuation years, which existed prior to Act 497: 1993 (Initial Unfunded Accrued Liability), 1993 (Change in Liability), 1994-1996, 1998-2000, and 2005-2008. See Note 1 on Exhibit 7-D for additional details.

**Permanent Benefit Increase** – An increase in specified current retiree benefits authorized by statutes.

**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.

**Projected Unit Credit (PUC) Funding Method** – A standard actuarial funding method whereby the actuarial present value of projected benefits of each individual is accumulated from the participant's attained age to anticipated retirement. The portion attributable to current year benefit accruals is called the normal cost. The actuarial present value of future benefits in proportion to service accrued on the date of valuation is called the actuarial accrued liability. The annual cost of benefits is comprised of the normal cost plus an amortization payment to reduce the unfunded actuarial accrued liability.

**Public Retirement Systems' Actuarial Committee (PRSAC)** – A committee created by state law within the Louisiana Department of the Treasury to insure orderly and consistent strategies for continuing development and growth that will attain and maintain the soundness of the public retirement systems, plans and funds and to report all findings and recommendations to the House and Senate committees on retirement and the Joint Legislative Committee on the Budget.

**Side-Fund Assets** – Assets held in the trust for purposes other than for paying the accrued benefits or administrative expenses of the plan.

**Unfunded Actuarial Accrued Liability (UAAL or UAL)** – The excess of the actuarial accrued liability over the valuation assets; sometimes referred to as "unfunded past service liability". UAL increases (decreases) each time an actuarial loss (gain) occurs and when new benefits are added without being fully funded initially.

**Valuation Assets** – The actuarial value of assets less side-fund assets; represents the portion of the actuarial value of assets available to pay the accrued benefits of the plan.

**Vested Benefit** – Benefits that the members are entitled to regardless of employment status.