

**TEACHERS' RETIREMENT  
SYSTEM OF LOUISIANA**

**JUNE 30, 2017**

**ACTUARIAL VALUATION**



October 6, 2017

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

Dear Board Members:

This report is prepared for the Board of Trustees of Teachers' Retirement System of Louisiana (TRSL) to present the results of the actuarial valuation of assets and liabilities and funding requirements, as of June 30, 2017. The primary purpose of the report is to provide a measure of the plan's liability and funding levels and to determine the actuarially required contribution for fiscal year ending 2018 and the projected actuarially required contribution rate for fiscal year ending 2019. Section IV provides disclosures of the Fiduciary Net Position and Net Pension Liabilities required by the Governmental Accounting Standards Board Statements 67/68. 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, plan assets and other matters as detailed in 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 liabilities and normal costs 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, other sets of assumptions and methods could also be reasonable and could produce materially different results. Actual results may vary from the assumptions used to prepare the valuation.

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.

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 Pat is a Fellow in the Society of Actuaries. Shelley and Pat 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, ASA, MAAA



D. Patrick McDonald, FSA, EA, MAAA, FCA

**TABLE OF CONTENTS**

<b>SECTION</b>	<b>TITLE</b>	<b>PAGE</b>
	<b>LETTER OF CERTIFICATION</b>	i
<b>I</b>	<b>PRESENTATION OF VALUATION RESULTS</b>	
	Summary of Valuation Results	1
	Projected Contribution Rates by Plan	2
	Changes Since Prior Valuation	2
	Change in Funding Requirements	2
	Change in Unfunded Accrued Liability	3
	Plan Experience	4
	Actuarial Assets/Valuation Assets	5
	Legislative/Plan Changes	6
	Accelerated Reduction of OAB and EAAB	6
	Funded Status	7
<b>II</b>	<b>ASSETS/FINANCIAL SUMMARY</b>	8 – 11
<b>III</b>	<b>DEVELOPMENT OF COSTS, LIABILITIES &amp; CONTRIBUTIONS</b>	12 - 13
<b>IV</b>	<b>GASB STATEMENTS 67/68 REPORTING</b>	14 - 17
 <b>APPENDIX</b>		
<b>A</b>	<b>MEMBERSHIP DATA</b>	18 - 30
<b>B</b>	<b>SUMMARY OF PLAN PROVISIONS</b>	31 – 45
<b>C</b>	<b>FUNDING POLICY</b>	46 – 47
<b>D</b>	<b>ACTUARIAL COST METHODS AND ASSUMPTIONS</b>	48 – 55
<b>E</b>	<b>AMORTIZATION SCHEDULES</b>	
	June 30, 2017	56
	June 30, 2018 – Projected	57
	UAL Amortization Schedule Notes	58
	Table and Graph of UAL and Payment Schedule	59
	Components of Original Amortization Base	60
	<b>GLOSSARY</b>	61 – 63

**PRESENTATION OF VALUATION RESULTS**

**SUMMARY OF VALUATION RESULTS**

		----- Prior Years -----		
		June 30, 2017	June 30, 2016	June 30, 2015
I.	Membership Census			
	Retirees	77,258	75,828	75,259
	Actives	84,228	84,068	83,602
	DROP	2,478	2,504	2,283
	Terminated Vested	6,941	6,687	6,606
II.	Annual Benefits	\$1,939,661,208	\$1,887,454,080	\$1,820,201,496
III.	Current Payroll			
	Regular Teachers, Lunch Plans	3,316,780,178	3,310,391,256	3,260,730,140
	Higher Education	584,847,614	559,338,768	554,919,522
	Total	<u>3,901,627,792</u>	<u>3,869,730,024</u>	<u>3,815,649,662</u>
IV.	Market Value of Assets	19,513,345,675	17,537,950,955	17,896,379,678
	Valuation Assets	19,210,425,004	18,254,321,142	17,457,243,696
V.	Investment Yield			
	Market Value (Total Assets)	15.19%	1.02%	2.52%
	Market Value (Excl LaDROP Assets)	15.55%	1.04%	2.58%
	Actuarial Value	9.15%	6.67%	11.26%
	DROP	8.65%	6.17%	10.76%
VI.	Experience Account	37,154,395	24,977,477	226,356,559
VII.	Total Normal Cost	473,025,011	466,591,480	463,783,246
	Total Normal Cost % of Payroll	12.12%	12.06%	12.15%
	Employer Normal Cost % of Payroll	4.14%	4.07%	4.17%
VIII.	Unfunded Actuarial Accrued Liability	10,552,198,909	11,018,080,836	11,189,053,201
IX.	Funded Percentage	64.5%	62.4%	60.9%
X.	Funding Requirements (Mid-year Pmt)			
	1) Discount rate (Current Year)	7.70%	7.75%	7.75%
	Discount rate (Next Year)	7.65%	7.70%	7.75%
	2) Employee Contribution <sup>1</sup>	317,192,109	314,143,467	310,300,114
	3) Employer Contribution	1,172,121,854	1,137,651,636	1,125,876,876
	Aggregate Rate (Current Year) <sup>2</sup>	26.4%	25.8%	25.8%
	4) Projected Employer Contribution	1,211,871,889	1,199,029,516	1,142,698,314
	Aggregate Rate (Next Year) <sup>3</sup>	26.5%	26.4%	25.4%

The above funding requirements measure the cost of benefits that were in effect on June 30, 2017.

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

<sup>2</sup> Reflects the restated aggregate employer contribution rate for the fiscal year following the valuation.

<sup>3</sup> 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 Teachers (K-12) employer contribution rate. The term “plan” refers to each employer group specified in the Act, rather than each plan referring to 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 for a specific plan or group of plans by specific legislation will be allocated entirely to that plan or those plans. The recommended employer rates by plan are as follows:

	<b>Recommended Employer Rate for FY 18/19</b>					
	Total Normal Cost Rate	Aggregate Employee Normal Cost Rate	Employer Normal Cost Rate	Administrative Expense Rate	Shared UAL Rate	<b>Total Employer Contribution Rate</b>
Regular Teachers, Lunch A & B	12.4%	7.9805%	4.4498%	0.45%	21.8%	<b>26.7%</b>
Higher Education	11.2%	8.0%	3.2187%	0.45%	21.8%	<b>25.5%</b>
Aggregate Rate	12.2%	7.9834%	4.2653%	0.45%	21.8%	<b>26.5%</b>

The variation in normal cost by plan reflects differences in benefits, actuarial assumptions, and member demographics based on the entry age normal cost method.

**CHANGES SINCE PRIOR VALUATION**

**The discount rate was reduced from 7.75% to 7.70%, effective July 1, 2017**, in accordance with the Board’s adopted plan to reduce the discount rate to 7.50% in 0.05% annual increments. This change was anticipated in the prior valuation when determining the projected contribution requirements for Fiscal Year 2017/2018. **The discount rate used to determine the projected contribution requirements for Fiscal Year 2018/2019 was reduced to 7.65%.**

The requirements of Act 94 of 2016 were met, resulting in a change in how noninvestment-related administrative expenses are funded. The projected contribution requirements for Fiscal Year 2018/2019 decreased, triggering the provisions of the Act. **Beginning July 1, 2018, anticipated administrative expenses will be directly funded through the employer contribution, rather than as a reduction to expected investment returns.**

**CHANGE IN FUNDING REQUIREMENTS**

The aggregate employer contribution rate established by the Public Retirement Systems' Actuarial Committee for the 2017/2018 plan year was 26.4%. The restated employer contribution rate determined by this valuation for the 2017/2018 plan year is 26.4%. Therefore, a minimal contribution surplus or deficit is expected next year.

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.

**Section I**  
**PRESENTATION OF VALUATION RESULTS**

**TRSL Actuarial Valuation**  
**June 30, 2017**

The projected aggregate employer contribution rate increased from 26.4% to 26.5% from Fiscal Year 2017/2018 to Fiscal Year 2018/2019. The reasons for the change are detailed 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 are not additive and may overlap.

Normal Cost	
Demographic Shift	-0.06%
Discount Rate Change (7.70% to 7.65%)	0.12%
Normal Cost Total Change	0.06%
UAL Payment	
Investment Experience Gain	-0.04%
Other Experience Gain	-0.35%
Experience Account Allocation (10 year amortization)	0.03%
Statutory UAL Payment Increase	0.12%
Contribution Variance Payment Change	-0.06%
Discount Rate Change (7.70% to 7.65%)	0.17%
Total UAL Payment Change	-0.13%
Payroll Change	-0.18%
Administrative Expenses	0.45%
Total	0.20%
Actual Contribution Rate Change	0.10%

Projected contribution rate for Fiscal Year 2017/2018	26.4%
Projected contribution rate for Fiscal Year 2018/2019	
Prior to assumption/method changes:	25.8%
Direct funding of administrative expenses	+ 0.45%
Projected contribution rate with direct funding of administrative expenses	26.25%
Discount rate change	+ 0.29%
Projected contribution rate with all changes	26.5%

Prior to the changes to direct funding of administrative expenses and to the discount rate, the contribution rate would have decreased by 0.7% due mainly to the non-investment experience gain. Direct funding of administrative expenses increases the contribution rate to 26.2%, which is less than the projected contribution rate for Fiscal Year 2017/2018, allowing for the change to direct funding, per Act 94 of 2016. The final aggregate projected contribution rate increases slightly due to the change to direct funding of administrative expenses and the change in the discount rate.

**CHANGE IN UNFUNDED ACCRUED LIABILITY**

The plan's unfunded accrued liability (UAL) decreased mainly due to a reduction in principal following receipt of the prior year's UAL payment and an experience gain from investment and non-investment actuarial assumptions.

**Section I**  
**PRESENTATION OF VALUATION RESULTS**

**TRSL Actuarial Valuation**  
**June 30, 2017**

Unfunded Liability - June 30, 2016		\$ 11,018,080,836
Interest on Unfunded Liability	853,901,265	
Employer Amortization Payment	(1,014,454,613)	
Contribution Variance Surplus	(15,672,044)	
Investment Experience Gain	(237,471,810)	
Experience Account Allocation	9,891,500	
Other Experience Gain	(197,209,070)	
Discount Rate Change (7.75% to 7.70%)	135,132,845	
<u>Total Change</u>		\$ (465,881,927)
Unfunded Liability - June 30, 2017		\$ 10,552,198,909

**PLAN EXPERIENCE**

The actuarial assumptions represent the best estimate of future experience in order to properly fund 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 Appendix D of the valuation report. A gain or loss occurs if the actual experience differs from the prior year's projected plan measurements. The funding policy, in Appendix D, describes how investment and non-investment gains are amortized or allocated for other purposes.

Demographic and Salary Assumption Experience

Demographic assumptions include rates of retirement/DROP, rates at which members become disabled, turnover rates, mortality rates, and several other assumptions. Salary assumptions anticipate future salary increases. During the 2016/2017 plan year, the system incurred an experience gain of \$197,209,070 from plan experience differing from that anticipated by the demographic and salary assumptions. The experience gain includes a reduction for administrative expenses to the extent not directly funded. The gain is amortized over 30 years with level payments.

Investment Assumption Experience

For the plan year ending June 30, 2017, the System's actuarial rate of return of 9.15% exceeded the 7.75% discount rate, resulting in an investment experience gain of \$237,471,810. The gain, up to the \$200,000,000 threshold, indexed based on the increase in the actuarial value of assets, is first allocated to the OAB and EAAB. **The threshold is currently \$217,688,810.** The threshold amounts and remaining gain are allocated and/or amortized as follows:

Allocated to OAB (no employer credit until reamortize)	\$ 108,844,405
Allocated to EAAB (no employer credit until reamortize)	\$ 108,844,405
Amortized as Employer Credit (30 years, level payment)	\$ 19,783,000
Experience Account (EA) Allocation	\$ 9,891,500
<u>UAL Increase due to EA Allocation (10 years, level payment)</u>	<u>\$ (9,891,500)</u>
Total	\$ 237,471,810



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 allocated to the Experience Account and administrative expenses (when not directly funded), which is currently 8.20% for Fiscal Year 2017/2018 and 8.05% for Fiscal Year 2018/2019.

	Actuarial Rate of Return		Geometric Average
2012	5.05%	5 Year	10.70%
2013	13.41%	10 Year	5.44%
2014	13.14%	15 Year	6.52%
2015	11.26%	20 Year	7.09%
2016	6.67%	25 Year	7.94%
2017	9.15%	30 Year	8.08%

DROP accounts for members eligible for DROP prior to January 1, 2004 are credited with interest following termination of DROP at the System’s actuarial rate of return less a 0.5% expense adjustment, but not below zero. The DROP interest rate for the period July 1, 2016 through June 30, 2017 after the expense adjustment is 8.65%. DROP accounts for members eligible for DROP after are January 1, 2004 are invested in money market accounts.

**ACTUARIAL ASSETS/VALUATION ASSETS**

The gross actuarial value of assets, developed in Section II, are determined based on the market value of assets, with gradual recognition of gains and losses relative to the discount rate over a five-year period in order to smooth the effects of short-term market volatility. Valuation assets are determined as the gross actuarial value of assets less the assets held in side-fund accounts. Valuation assets are used to determine the employer contribution rate (see Section III).

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 \$2,598,899.

Experience Account Fund: The account is used to fund permanent benefit increases for retirees. Fifty percent of any excess return above the statutory threshold will be credited to the Experience Account. The current year allocation is \$9,891,500. The account was credited with interest based on the System’s actuarial return. 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 current balance is \$37,154,395.

## LEGISLATIVE/PLAN CHANGES

There were no Acts of the 2017 Legislative Session that modified the benefit or funding provisions. A summary of provisions to be implemented in future actuarial valuations, once certain triggers are met, per Acts 94 and 95 of the 2016 Legislative Session is provided below.

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. These requirements have been met, so direct funding will be implemented beginning July 1, 2018.

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

- 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.
- 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 Fiscal Year 2020/2021 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 Fiscal Year 2019/2020 and in every fifth fiscal year thereafter.
- 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 November 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 November 1, 2017.

## 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 of 2014 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, \$358,844,405 has been applied to the OAB and \$577,712,257 has been applied to the EAAB. When combined with the surplus dollars appropriated to the System by the legislature, the result is acceleration of the payoff of the OAB to 2027, two years earlier than the 2029 payoff required by the State Constitution, and acceleration of the payoff of the EAAB by 2034, six 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 Appendix E. 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 2017 have been allocated compared to the allocation that would have occurred prior to these Acts. To date, \$655,486,533 in gains/surpluses have reduced the UAL rather than credited to the Experience Account based on the change in funding policy. When including the funds transferred from the Experience Account to reduce the UAL in 2010, per Act 497, the total is \$949,515,837.

**Section I**  
**PRESENTATION OF VALUATION RESULTS**

**TRSL Actuarial Valuation**  
**June 30, 2017**

	Investment Gain and Contribution Surplus	Allocation of Gains/Surplus Pre-Acts 497/399 (If Not Enacted)		Actual Allocation of Gains/Surplus Based on Acts 497/399	
		(A) Reduce UAL	Credit Experience Account	(B) Reduce UAL	Credit Experience Account
2012	7,169,301	7,169,301	0	7,169,301	0
2013	639,473,813	319,736,906	319,736,907	419,736,907	219,736,906
2014	734,622,453	387,456,051	347,166,402	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
2017	253,143,854	134,407,949	118,735,905	243,252,354	9,891,500
<b>Total</b>	<b>2,329,767,506</b>	<b>1,274,317,679</b>	<b>1,055,449,827</b>	<b>1,929,804,212</b>	<b>399,963,294</b>

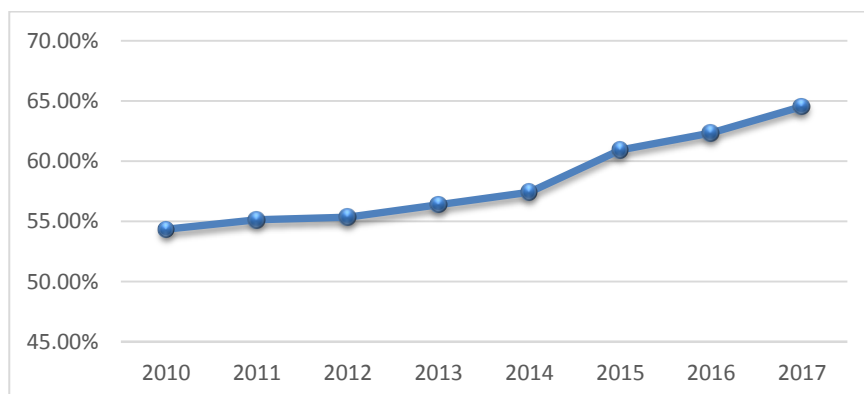
<b>Total</b>			
Gains/Surplus	2,329,767,506	2,329,767,506	2,329,767,506

Gains used to reduce UAL rather than credit Experience Account (B) - (A)	655,486,533
Funds transferred from the Experience Account to reduce the UAL in 2010, per Act 497:	294,029,304
<b>Total</b>	<b>949,515,837</b>

**FUNDED STATUS**

The funded status is a measure of the plan’s assets relative to the plan’s obligations. The current funded ratio is 64.55%, 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 in Appendix D. The funded ratio reflects the change in the discount rate to 7.70%. 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.

The financial crisis of 2008, and gradual recognition of the losses, resulted in a funded ratio of 54.36% in 2010. The chart below shows the recovery to date as exhibited by the steady increase in the funded ratio through June 30, 2017, based on the actuarial value of assets.



**ASSETS/FINANCIAL SUMMARY**  
**STATEMENT OF REVENUES AND EXPENSES**

	----- Prior Years -----		
	June 30, 2017	June 30, 2016	June 30, 2015
<b><u>OPERATING REVENUES:</u></b>			
<b>1. Contribution Income</b>			
Member	\$ 328,541,240	\$ 330,773,316	\$ 324,920,644
Employer	1,037,915,514	1,066,521,193	1,120,150,411
Legis Appropriations	-	-	10,384,806
Other Appropriations	28,103	34,500	41,721
ORP - Unfunded	122,560,251	128,543,466	133,771,593
LSU Ag Center Coop. Ext.	1,754,855	1,830,995	1,851,985
Miscellaneous	536,662	995,292	928,581
<b>TOTAL CONTRIBUTIONS</b>	<b>1,491,336,625</b>	<b>1,528,698,762</b>	<b>1,592,049,741</b>
<b>2. Investment Income</b>			
Investments	2,650,391,172	216,567,366	481,866,158
Less Advisor Fees	(34,883,417)	(35,975,157)	(36,705,991)
<b>TOTAL INVESTMENT INCOME</b>	<b>2,615,507,755</b>	<b>180,592,209</b>	<b>445,160,167</b>
<b>3. Total Revenues</b>	<b>4,106,844,380</b>	<b>1,709,290,971</b>	<b>2,037,209,908</b>
<b><u>OPERATING EXPENSES:</u></b>			
<b>1. General Administration <sup>1</sup></b>			
Depreciation Expense	17,762,132	17,025,314	18,880,795
	432,238	407,105	384,426
<b>2. Benefits Paid</b>			
Pension Benefits	2,061,454,295	1,999,272,395	1,955,102,582
LSU Ag Center Coop. Ext.	1,995,075	1,873,303	1,754,855
Refund of Contributions	49,805,920	49,141,575	51,545,762
<b>TOTAL BENEFITS PAID</b>	<b>2,113,255,290</b>	<b>2,050,287,273</b>	<b>2,008,403,199</b>
<b>3. Total Expenses</b>	<b>2,131,449,660</b>	<b>2,067,719,692</b>	<b>2,027,668,420</b>
<b><u>NET MARKET VALUE INCREASE</u></b>	<b>1,975,394,720</b>	<b>(358,428,721)</b>	<b>9,541,488</b>

<sup>1</sup> The General Administration Operating Expense includes \$1,685,836, \$(24,005), and \$586,166 for 2015, 2016, and 2017, Other Post-Employment Benefits (OPEB), respectively and \$2,078,530, \$1,773,559, and \$2,807,080 for 2015, 2016, and 2017 GASB 68 Pension Expense, respectively.

**COMPARATIVE SUMMARY OF REVENUES BY SOURCE  
AND EXPENSES BY TYPE**

Revenues by Source				
Fiscal Year	Members Contribution	Employer Contribution <sup>1</sup>	Investment Income	Total
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
2017	328,541,240	1,162,795,385	2,615,507,755	4,106,844,380

Expenses by Type				
Fiscal Year	Benefits	Refunds	Administrative Expenses	Total
2008	1,383,381,577	34,285,358	18,498,003	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
2017	2,063,449,370	49,805,920	18,194,370	2,131,449,660

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

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

<sup>3</sup> Includes \$5,578,791 legislative appropriation from Act 55 of 2014.

**STATEMENT OF ASSETS**

ASSETS:	June 30, 2017	----Prior Years---	
		June 30, 2016	June 30, 2015
1. Short-term Assets			
Cash and Cash Equivalents	\$ 216,603,032	\$ 5,279,450	\$ 236,026,000
Short Term Securities	1,033,090,820	1,307,428,499	990,777,882
2. Bonds			
Domestic Bonds	1,913,773,495	1,828,132,715	1,775,656,703
International Bonds	1,568,601,507	1,413,994,202	1,489,882,945
3. Equities			
Domestic Equities	5,927,969,405	5,161,381,152	5,478,561,612
International Equities	3,465,254,946	3,166,197,700	3,429,594,486
4. Other Assets			
Alternative Investments	5,296,424,434	4,573,041,477	4,358,084,637
Property and Equipment	3,430,912	3,710,875	4,051,370
Receivables less Payables	84,413,700	76,602,964	132,407,761
Deferred Outflows less Deferred Inflows	3,783,424	2,181,921	1,336,282
<b>TOTAL ASSETS - Market Value</b>	<b>19,513,345,675</b>	<b>17,537,950,955</b>	<b>17,896,379,678</b>

**ACTUARIAL VALUE OF ASSETS**

The market value of assets is adjusted to gradually recognize 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 \$
2014	1,595,397,918	20%	319,079,583
2015	(923,787,158)	40%	(369,514,863)
2016	(1,185,490,155)	60%	(711,294,093)
2017	1,281,120,936	80%	1,024,896,749
			\$ 263,167,376
Market Value of Assets			\$ 19,513,345,675
Deferred Asset G/L			263,167,376
Preliminary Actuarial Value of Assets			\$ 19,250,178,299
<b>CORRIDOR LIMITS</b>			
Minimum = 80% of Market Value			\$ 15,610,676,540
Maximum = 120% of Market Value			23,416,014,810
Actuarial Value of Assets			\$ 19,250,178,299

**SIDE ACCOUNTS AND  
DEVELOPMENT OF VALUATION ASSETS**

	---- Prior Years ----		
	June 30, 2017	June 30, 2016	June 30, 2015
<b>EMPLOYER CREDIT ACCOUNT<sup>1</sup>:</b>			
Prior Year Ending Balance	\$ -	\$ -	\$ -
+ Contributions	-	-	-
- Disbursements	-	-	-
+ Accumulated Interest	-	-	-
Account Balance - Year End	-	-	-
<b>LSU AG/EXT SERVICE:</b>			
Prior Year Ending Balance	\$ 2,535,804	\$ 2,360,090	\$ 1,933,057
+ Contributions	1,754,855	1,830,995	1,851,985
- Benefit Disbursements	1,995,075	1,873,303	1,754,855
+ Accumulated Interest	303,315	218,022	329,903
Account Balance - Year End	2,598,899	2,535,804	2,360,090
<b>EXPERIENCE ACCOUNT FUND:</b>			
Prior Year Ending Balance	\$ 24,977,477	\$ 226,356,559	\$ 218,148,161
+ Experience Account Allocation	9,891,500	-	-
- Benefit Disbursements	-	216,473,124	-
+ Accumulated Interest	2,285,418	15,094,042	8,208,398
Fund Balance - Year End	37,154,395	24,977,477	226,356,559
<b>DEVELOPMENT OF VALUATION ASSETS:</b>			
Actuarial Value of Assets	\$ 19,250,178,299	\$ 18,281,834,423	\$ 17,685,960,345
- Employer Credit Account	-	-	-
- LSU Ag/Ext Service Account	2,598,899	2,535,804	2,360,090
- Experience Account Fund	37,154,395	24,977,477	226,356,559
Valuation Assets	\$ 19,210,425,005	\$ 18,254,321,142	\$ 17,457,243,696

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

<sup>2</sup> 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.

**DEVELOPMENT OF COSTS,  
LIABILITIES AND CONTRIBUTIONS**

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

	<b>June 30, 2017</b>		<b>---- Prior Year ---- June 30, 2016</b>	
	<u>Dollar Amount</u>	<u>% of Salary</u>	<u>Dollar Amount</u>	<u>% of Salary</u>
Discount Rate	7.70%		7.65%	
<b>I. Normal Costs</b>				
Active Members				
a) Retirement Benefits	305,135,968	7.82%	304,492,745	7.87%
b) Disability Benefits	14,558,297	0.37%	14,365,660	0.37%
c) Survivor Benefits	11,324,442	0.29%	10,964,092	0.28%
d) Voluntary Termination	142,006,304	3.64%	136,768,983	3.53%
e) Total	<u>473,025,011</u>	12.12%	<u>466,591,480</u>	12.06%
<b>II. Actuarial Accrued Liability</b>				
a) Active Members				
1) Retirement Benefits	7,725,929,420		7,703,033,944	
2) Disability Benefits	146,890,693		144,592,915	
3) Survivor Benefits	137,955,169		135,025,810	
4) Voluntary Termination	313,899,689		272,396,531	
	<u>8,324,674,971</u>		<u>8,255,049,200</u>	
b) Retired and Inactive Members				
1) Regular Retirees	16,459,826,669		16,101,366,471	
2) Disability Benefits	455,327,086		445,123,589	
3) Survivors	1,105,159,843		1,057,732,944	
4) Vested Deferred <sup>1</sup>	327,107,035		306,722,016	
5) Contributions Refunded <sup>2</sup>	135,466,985		131,749,421	
6) DROP Deferred Benefits	1,855,657,127		1,873,371,007	
7) DROP Account Balances	1,099,404,197		1,101,287,330	
	<u>21,437,948,942</u>		<u>21,017,352,778</u>	
c) Total	29,762,623,913		29,272,401,978	

<sup>1</sup> Includes pending Retirement/DROP applications.

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



**Section III**  
**DEVELOPMENT OF COSTS, LIABILITIES, AND CONTRIBUTIONS**

**TRSL Actuarial Valuation**  
**June 30, 2017**

	<b>June 30, 2017</b>	<b>---- Prior Year ---- June 30, 2016</b>
II. Actuarial Accrued Liability	29,762,623,913	29,272,401,978
Discount Rate	7.70%	7.75%
III. Valuation Assets	19,210,425,004	18,254,321,142
IV. Unfunded Actuarial Accrued Liability <sup>1</sup>	10,552,198,909	11,018,080,836
a) Change over prior year	-465,881,927	-170,972,365
b) Funded Percentage	64.5%	62.4%
V. Employer Contributions		
To Fund Current Plan Year <sup>1</sup>		
a) Employer Portion of Normal Cost	164,503,573	160,360,450
b) Amortization Payments	1,004,883,456	974,555,726
c) Prior Contribution Variance	2,734,825	2,735,460
Total Required Contribution	1,172,121,854	1,137,651,636
Total Contribution Rate	26.4%	25.8%
PR SAC Approved rate <sup>1</sup>	26.4%	25.4%
Aggregate Employer Normal Cost Rate	4.1404%	4.0749%
VI. Projected Employer Contributions		
Discount Rate	7.65%	7.70%
To Fund Next Plan Year <sup>1</sup>		
a) Employer Portion of Normal Cost	174,935,810	170,179,978
b) Administrative Expenses <sup>2</sup>	18,500,000	-
b) Amortization Payments	1,018,353,936	1,021,447,416
c) Prior Contribution Variance	82,143	7,402,122
Total Required Contribution	1,211,871,889	1,199,029,516
Total Contribution Rate	26.5%	26.4%
Projected Aggregate Employer Normal Cost Rate <sup>3</sup>	4.2653%	4.1988%
VII. Current Payroll	3,901,627,792	3,869,730,024
Projected Payroll - Mid Year	3,973,145,635	3,935,352,728
Projected Payroll - Next Year	4,101,385,050	4,053,069,190
Optional Retirement Plan (ORP) Salary Adjustment Factor <sup>4</sup>	1.13883	1.14294

<sup>1</sup> Dollar Amounts reflect estimated payments due mid-year on January 1st per Act 81. Constitutional Minimum is 11.8% without regard to the statutory minimum of 15.5%.

<sup>2</sup> Direct funding of administrative expenses begins in FY 2018/2019, per the provisions of Act 94 of 2016.

<sup>3</sup> Normal costs, normal cost rates, and UAL payments projected for FY 2018/2019 were determined using a discount rate of 7.65%.

<sup>4</sup> Amortization payments are paid as a percentage of payroll for plan members and ORP members. The ORP salary adjustment factor is used to convert amortization payments to percentage of payroll.

**GASB STATEMENT NO. 67/68 REPORTING**

The Governmental Accounting Standards Board Statements No. 67/68 establish financial reporting standards for state and local governmental pension plans and their plan sponsors 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**

	<u>June 30, 2017</u>	<u>June 30, 2016</u>	<u>June 30, 2015</u>
Total Pension Liability	\$ 29,762,623,913	\$ 29,272,401,978	\$ 28,646,296,897
Plan Fiduciary Net Position <sup>1</sup>	\$ 19,510,746,776	\$ 17,535,415,151	\$ 17,894,019,588
Employers' Net Pension Liability	\$ 10,251,877,137	\$ 11,736,986,827	\$ 10,752,277,309
Plan Fiduciary Net Position as a percentage of Total Pension Liability	65.6%	59.9%	62.5%
Covered Employee Payroll	\$ 3,901,627,792	\$ 3,869,730,024	\$ 3,815,648,662
Net Pension Liability as a percentage of Covered Payroll	262.8%	303.3%	281.8%

**SCHEDULE OF EMPLOYER CONTRIBUTIONS**

Fiscal Year	Actuarial Determined Contribution	Contributions in Relation to Actuarial Determined Contribution	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a % of Covered Payroll
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%
2017	1,188,962,275	1,204,634,319	(15,672,044)	3,901,627,792	30.9%

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

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

	<u>June 30, 2017</u>	<u>June 30, 2016</u>	<u>June 30, 2015</u>
<b>Total Pension Liability</b>			
Service Cost	466,591,480	463,783,246	459,658,120
Interest	2,222,960,660	2,176,626,375	2,137,096,756
Changes of Benefit Terms	-	216,473,124	-
Diff. Between Expected and Actual	(223,202,835)	(181,620,615)	(62,489,198)
Changes of Assumptions	135,132,845	-	-
Retirement Benefits <sup>1</sup>	(2,061,454,295)	(1,999,272,395)	(1,955,102,582)
Refunds/Transfers of Member Contributions	(49,805,920)	(49,884,654)	(52,402,762)
<b>Net Change in Total Pension Liability</b>	<u>490,221,935</u>	<u>626,105,081</u>	<u>526,760,334</u>
<b>Total Pension Liability - Beginning</b>	<u>29,272,401,978</u>	<u>28,646,296,897</u>	<u>28,119,536,563</u>
<b>Total Pension Liability - Ending (a)</b>	<u>\$ 29,762,623,913</u>	<u>\$ 29,272,401,978</u>	<u>\$ 28,646,296,897</u>
<b>Plan Fiduciary Net Position</b>			
Employer Contributions <sup>1</sup>	1,122,277,562	1,157,901,123	1,217,466,676
Non-Employer Contributions	38,762,968	38,193,328	37,425,629
Employee Contributions	328,541,240	330,773,316	324,920,644
Net Investment Income <sup>1</sup>	2,612,231,923	177,422,752	443,034,317
Other Income	2,972,517	2,951,433	13,866,589
Retirement Benefits <sup>1</sup>	(2,061,454,295)	(1,999,272,395)	(1,955,102,582)
Refunds/Transfers of Member Contributions	(49,805,920)	(49,884,654)	(52,402,762)
Administrative Expense	(17,175,966)	(16,306,240)	(18,023,794)
Other Postemployment Benefit Expenses	(586,166)	24,005	(1,685,836)
Depreciation and Amortization Expenses	(432,238)	(407,105)	(384,426)
Accounting Principle Change	-	-	(13,197,268)
<b>Net Change in Plan Fiduciary Net Position</b>	<u>1,975,331,625</u>	<u>(358,604,437)</u>	<u>(4,082,813)</u>
<b>Plan Fiduciary Net Position - Beginning</b>	<u>17,535,415,151</u>	<u>17,894,019,588</u>	<u>17,898,102,401</u>
<b>Plan Fiduciary Net Position - Ending (b)</b>	<u>\$ 19,510,746,776</u>	<u>\$ 17,535,415,151</u>	<u>\$ 17,894,019,588</u>
<b>Net Pension Liability - Ending (a) - (b)</b>	<u>\$ 10,251,877,137</u>	<u>\$ 11,736,986,827</u>	<u>\$ 10,752,277,309</u>
<b>Plan Fiduciary Net Position as a Percentage of the Total Pension Liability</b>	65.6%	59.9%	62.5%
<b>Covered Employee Payroll</b>	\$ 3,901,627,792	\$ 3,869,730,024	\$ 3,815,648,662
<b>Net Pension Liability as a Percentage of Covered Employee Payroll</b>	262.8%	303.3%	281.8%

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

**Actuarial Assumptions:**

All assumptions used for purposes of GASB Statement 67/68 reporting requirements are described in Appendix D. Administrative expenses will be directly reflected in the employer pension expense in the year incurred in the Statement 67/68 reporting, rather than with an explicit reduction in the discount rate. A description of the discount rate used for GASB Statement 67/68 reporting is provided below.

**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 8.33%. Best estimates of real rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2017, are summarized in the following table:

Asset Class	Long Term Expected Real Rate of Return
Domestic Equity	4.28%
International Equity	4.96%
Domestic Fixed Income	1.98%
International Fixed Income	2.75%
Private Equity	8.47%
Other Private Assets	3.51%

The discount rate used to measure the total pension liability was 7.70 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 7.70%, 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 6.70%	Current Discount Rate 7.70%	1% Increase 8.70%
Employers' Net Pension Liability	13,209,777,658	10,251,877,137	7,735,662,651

The Schedule of Pension Amounts, that follows, 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 average remaining service life, when rounded up to the next higher whole number, remains at 5 years. Differences between projected and actual investment returns are amortized over a closed 5-year period.

**SCHEDULE OF PENSION AMOUNTS**

	<b>Net Pension Liability</b>	<b>Deferred Inflows</b>	<b>Deferred Outflows</b>	<b>Pension Expense</b>
<b>Beginning balance</b>	(11,736,986,827)	(883,859,810)	1,506,564,331	
<b>Total Pension Liability Factors:</b>				
Service cost	(466,591,480)			466,591,480
Interest	(2,222,960,660)			2,222,960,660
Changes in benefit terms	-			-
Differences between expected and actual experience	223,202,835	(223,202,835)	-	
Amortization of current year		44,640,567	-	(44,640,567)
Amortization of prior years		73,287,358	-	(73,287,358)
Changes in assumptions	(135,132,845)	-	135,132,845	
Amortization of current year		-	(27,026,569)	27,026,569
Amortization of prior years		-	-	-
Benefit payments	2,061,454,295			(2,061,454,295)
Refunds/Transfers of Member Contributions	49,805,920			(49,805,920)
<b>Net Change in Total Pension Liability</b>	(490,221,935)	(105,274,910)	108,106,276	487,390,569
<b>Plan Fiduciary Net Position:</b>				
Contributions - Employer	1,122,277,562			
Contributions - Non-Empl. Contributing Entities	38,762,968			
Contributions - Employees	328,541,240			(328,541,240)
Expected earnings on pension plan investments	1,334,314,788			(1,334,314,788)
Diff. between projected and actual investment earnings	1,277,917,135	(1,277,917,135)		
Amortization of current year		255,583,427	-	(255,583,427)
Amortization of prior years		326,069,504	(422,948,596)	96,879,092
Retirement Benefits	(2,061,454,295)			2,061,454,295
Administrative Expense	(17,762,132)			17,762,132
Refunds/Transfers of Member Contributions	(49,805,920)			49,805,920
Other	2,540,279			(2,540,279)
<b>Net Change in Plan Fiduciary Net Position</b>	1,975,331,625	(696,264,204)	(422,948,596)	304,921,705
<b>Ending Balance</b>	(10,251,877,137)	(1,685,398,924)	1,191,722,011	792,312,274

**MEMBERSHIP DATA**

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 provided. Our review of submitted data is limited to validation of reasonableness and consistency in several areas, such as age, service, salary, and current benefits. Our review includes checks for duplicate records and a comparison of the current year records to those submitted in prior years. Records identified as containing suspicious data were assigned values based on information from similar records or based on historical averages for similarly situated members. Suspicious data are not necessarily errors, but data which fall outside the normal parameters. 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. The data summarized in the tables that follow serve as the basis for determining costs and liabilities. Salary data contained in the profiles and valuation report exceed the amount reported by internal audit for members with less than one year of service. In the valuation process, salaries are annualized for members with fractional service in the first year of employment. 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.

Active Members	2017		2016	
	Members	Avg. Salary	Members	Avg. Salary
Regular Teachers	71,458	44,531	71,511	44,339
Higher Education	9,186	61,466	8,792	61,158
Lunch Plan A	6	24,731	8	23,638
Lunch Plan B	1,121	18,898	1,162	19,029
Subtotal Actives	81,771	46,080	81,473	45,791
Post DROP	2,457	54,376	2,595	53,576
Total Active	84,228	46,322	84,068	46,031

Retired and Inactive Members	2017	2016
	Members	Members
Regular Retirees	65,749	64,593
Disability Retirees	4,280	4,238
Survivors	7,229	6,997
DROP Participants	2,478	2,504
Vested & Reciprocals	6,941	6,687
Inactive Non-Vested (Due Refunds)	20,980	19,842
Total Retired and Inactive	107,657	104,861
Total Members	191,885	188,929
Less Inactive Non-Vested (Due Refunds)	-20,980	-19,842
Total Active and Vested Inactive Members	170,905	169,087

**MEMBER RECONCILIATION**

	<b>Active (Pre- DROP)</b>	<b>Active after DROP</b>	<b>Terminated Vested</b>	<b>In DROP</b>	<b>Retired, Disabled, Survivor</b>	<b>Total</b>
<b>June 30, 2016</b>	81,473	2,595	6,687	2,504	75,828	169,087
<b>Additions to Census</b>						
Newly Hired Members	7,803					7,803
<b>Change in Status</b>						
New Regular Retirees	(1,495)		(193)		1,688	0
New Disability Retirees	(180)		(16)		196	0
New Survivors	(35)		(11)		46	0
Active to Terminated Vested	(1,199)		1,199			0
Active to DROP	(951)			951		0
Terminated Vested to Active	414		(414)			0
Disability to Active/TV	1		1		(2)	0
DROP to Active After DROP		434		(434)		0
Act aft DROP to Ret/Srv		(571)			571	0
Terminated Vested to DROP			(4)	4		0
DROP to Ret/Srv				(542)	542	0
<b>Eliminated from Census</b>						
Refunded or Due Refund	(3,993)		(330)			(4,323)
Deceased	(49)	(2)	(20)	(5)	(1,664)	(1,740)
Data Revisions	(18)	1	42	0	53	78
<b>June 20, 2017</b>	81,771	2,457	6,941	2,478	77,258	170,905

**Appendix A**  
**MEMBERSHIP DATA**

**TRSL Actuarial Valuation**  
**June 30, 2017**

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

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2017

Age/Years	<1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35+	Total
< 25	807 \$34,770,588	947 \$37,942,879	1 \$16,744							1,755 \$72,730,211
25 - 29	1,201 \$51,039,520	5,253 \$219,807,631	978 \$44,618,163	1 \$21,999						7,433 \$315,487,313
30 - 34	965 \$43,126,365	3,935 \$163,175,329	3,866 \$179,963,440	1,125 \$56,355,467	1 \$26,455					9,892 \$442,647,056
35 - 39	840 \$35,847,876	3,189 \$127,495,133	2,928 \$133,301,797	3,831 \$194,578,267	1,044 \$56,766,332	2 \$53,943				11,834 \$548,043,348
40 - 44	626 \$27,115,977	2,453 \$98,413,490	2,234 \$99,767,020	2,548 \$123,195,019	3,151 \$175,234,848	788 \$45,654,737	1 \$33,352			11,801 \$569,414,443
45 - 49	491 \$20,614,670	2,015 \$77,721,956	2,058 \$85,846,402	2,229 \$100,003,483	2,304 \$119,530,679	2,616 \$153,550,631	697 \$42,360,322			12,410 \$599,628,143
50 - 54	399 \$17,206,076	1,464 \$53,531,085	1,568 \$63,647,574	1,881 \$78,014,784	1,856 \$83,919,475	1,749 \$90,333,352	2,131 \$127,055,267	94 \$6,327,429	2 \$118,726	11,144 \$520,153,768
55 - 59	288 \$12,142,015	1,163 \$44,077,021	1,187 \$48,661,548	1,481 \$59,525,265	1,698 \$72,318,553	1,637 \$75,574,093	321 \$16,759,318	117 \$8,472,453	32 \$2,108,817	7,924 \$339,639,083
60 - 64	157 \$6,761,034	615 \$24,733,434	744 \$30,430,223	928 \$39,532,965	891 \$39,145,084	966 \$45,352,554	323 \$17,059,374	113 \$7,997,052	112 \$10,038,876	4,849 \$221,050,596
65 - 69	73 \$2,732,899	215 \$8,505,977	291 \$13,019,811	341 \$15,285,291	295 \$14,370,153	311 \$14,712,432	258 \$13,099,794	118 \$8,579,410	76 \$7,114,555	1,978 \$97,420,322
70+	27 \$1,490,654	79 \$3,143,889	111 \$4,937,479	122 \$5,730,012	91 \$4,881,076	74 \$3,325,317	87 \$4,437,754	80 \$5,744,783	80 \$8,119,713	751 \$41,810,677
<b>Total</b>	5,874 \$252,847,674	21,328 \$858,547,824	15,966 \$704,210,201	14,487 \$672,242,552	11,331 \$566,192,655	8,143 \$428,557,059	3,818 \$220,805,181	522 \$37,121,127	302 \$27,500,687	81,771 \$3,768,024,960

AVERAGES --- Attained Age 44.38  
Service Years 10.65  
Active Salary \$46,080



**Appendix A**  
**MEMBERSHIP DATA**

**TRSL Actuarial Valuation**  
**June 30, 2017**

**TRSL MEMBERSHIP PROFILE**  
**ACTIVE - REGULAR K-12**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2017

Age/Years	<1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35+	Total
< 25	659 \$28,011,356	881 \$35,786,635	1 \$16,744							1,541 \$63,814,735
25 - 29	941 \$38,940,875	4,760 \$199,959,932	928 \$42,327,941	1 \$21,999						6,630 \$281,250,747
30 - 34	718 \$29,045,523	3,315 \$132,615,673	3,529 \$163,384,534	1,079 \$53,847,545	1 \$26,455					8,642 \$378,919,730
35 - 39	649 \$24,717,136	2,653 \$98,157,236	2,528 \$111,035,566	3,559 \$179,443,920	1,013 \$55,007,909	2 \$53,943				10,404 \$468,415,710
40 - 44	478 \$18,238,108	2,058 \$75,943,782	1,934 \$81,571,641	2,255 \$105,838,379	3,034 \$167,857,359	773 \$44,680,668	1 \$33,352			10,533 \$494,163,289
45 - 49	367 \$13,667,928	1,712 \$61,745,132	1,759 \$68,954,920	1,961 \$84,070,742	2,158 \$110,078,775	2,516 \$146,599,994	678 \$41,104,322			11,151 \$526,221,813
50 - 54	307 \$11,267,042	1,202 \$40,191,087	1,289 \$48,706,552	1,624 \$63,417,503	1,696 \$75,521,200	1,627 \$83,439,898	2,057 \$122,294,894	83 \$5,524,700	2 \$118,726	9,887 \$450,481,602
55 - 59	219 \$7,960,874	901 \$29,540,634	932 \$34,565,297	1,241 \$46,145,988	1,529 \$63,115,617	1,510 \$68,735,169	267 \$13,972,354	101 \$7,114,562	26 \$1,824,657	6,726 \$272,975,152
60 - 64	117 \$4,626,489	451 \$14,976,024	547 \$18,958,599	764 \$29,351,226	798 \$33,753,822	896 \$41,079,333	271 \$13,085,301	62 \$3,279,059	77 \$6,268,116	3,983 \$165,377,969
65 - 69	50 \$1,675,748	150 \$4,923,953	206 \$7,903,375	272 \$10,136,000	240 \$10,594,233	266 \$11,918,479	213 \$9,732,228	74 \$3,944,991	30 \$2,080,767	1,501 \$62,909,774
70+	15 \$508,472	48 \$1,518,787	71 \$2,241,227	72 \$2,601,093	56 \$2,138,345	58 \$2,340,711	68 \$2,982,874	45 \$1,765,759	27 \$1,435,233	460 \$17,532,501
<b>Total</b>	4,520 \$178,659,552	18,131 \$695,358,875	13,724 \$579,666,396	12,828 \$574,874,395	10,525 \$518,093,715	7,648 \$398,848,195	3,555 \$203,205,325	365 \$21,629,071	162 \$11,727,499	71,458 \$3,182,063,023

AVERAGES --- Attained Age 44.11  
Service Years 10.95  
Active Salary \$44,531

**Appendix A**  
**MEMBERSHIP DATA**

**TRSL Actuarial Valuation**  
**June 30, 2017**

**TRSL MEMBERSHIP PROFILE**  
**ACTIVE - HIGHER EDUCATION**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2017

Age/Years	<1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35+	Total
< 25	144 \$6,691,095	61 \$2,080,897								205 \$8,771,992
25 - 29	252 \$11,952,966	476 \$19,561,500	50 \$2,290,222							778 \$33,804,688
30 - 34	237 \$13,873,337	595 \$30,106,555	328 \$16,424,667	45 \$2,490,561						1,205 \$62,895,120
35 - 39	176 \$10,876,936	501 \$28,719,823	381 \$21,908,222	264 \$14,978,225	29 \$1,689,717					1,351 \$78,172,923
40 - 44	138 \$8,692,099	363 \$21,925,388	279 \$17,806,847	276 \$17,011,397	115 \$7,340,327	13 \$935,850				1,184 \$73,711,908
45 - 49	108 \$6,649,462	261 \$15,262,596	262 \$16,193,796	233 \$15,235,669	133 \$9,163,353	97 \$6,872,943	18 \$1,237,953			1,112 \$70,615,772
50 - 54	78 \$5,671,362	202 \$12,301,603	214 \$13,786,985	204 \$13,504,994	116 \$7,513,902	99 \$6,353,756	67 \$4,615,785	6 \$673,409		986 \$64,421,796
55 - 59	56 \$3,934,375	201 \$13,419,839	207 \$13,317,401	185 \$12,333,762	125 \$8,344,175	83 \$5,859,014	31 \$2,294,785	15 \$1,329,590	4 \$235,645	907 \$61,068,586
60 - 64	36 \$2,068,973	140 \$9,351,064	155 \$10,743,102	143 \$9,821,489	78 \$5,072,015	61 \$4,016,503	49 \$3,900,312	48 \$4,665,868	33 \$3,719,450	743 \$53,358,776
65 - 69	20 \$1,004,157	54 \$3,411,211	75 \$4,939,574	66 \$5,097,702	53 \$3,729,453	44 \$2,777,153	43 \$3,265,918	43 \$4,619,552	46 \$5,033,788	444 \$33,878,508
70+	12 \$982,181	28 \$1,575,994	35 \$2,608,793	43 \$3,019,497	33 \$2,707,789	16 \$984,606	17 \$1,419,889	35 \$3,979,024	52 \$6,650,719	271 \$23,928,492
<b>Total</b>	1,257 \$72,396,944	2,882 \$157,716,470	1,986 \$120,019,609	1,459 \$93,493,296	682 \$45,560,731	413 \$27,799,825	225 \$16,734,642	147 \$15,267,443	135 \$15,639,602	9,186 \$564,628,562

AVERAGES --- Attained Age 45.58  
Service Years 8.45  
Active Salary \$61,466

**Appendix A**  
**MEMBERSHIP DATA**

TRSL Actuarial Valuation  
June 30, 2017

**TRSL MEMBERSHIP PROFILE**  
**ACTIVE - LUNCH PLAN A**

CELLS DEPICT -

MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2017

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 \$24,401	1 \$24,401
60 - 64								2 \$32,826	1 \$30,128	3 \$62,954
65 - 69							1 \$27,270			1 \$27,270
70+									1 \$33,761	1 \$33,761
<b>Total</b>							1 \$27,270	2 \$32,826	3 \$88,290	6 \$148,386

AVERAGES --- Attained Age 63.7  
Service Years 34.68  
Active Salary \$24,731

**Appendix A**  
**MEMBERSHIP DATA**

**TRSL Actuarial Valuation**  
**June 30, 2017**

**TRSL MEMBERSHIP PROFILE**  
**ACTIVE - LUNCH PLAN B**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2017

Age/Years	<1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35+	Total
< 25	4 \$68,137	5 \$75,347								9 \$143,484
25 - 29	8 \$145,678	17 \$286,199								25 \$431,877
30 - 34	10 \$207,505	25 \$453,101	9 \$154,239	1 \$17,361						45 \$832,206
35 - 39	15 \$253,804	35 \$618,074	19 \$358,009	8 \$156,122	2 \$68,706					79 \$1,454,715
40 - 44	10 \$185,770	32 \$544,320	21 \$388,532	17 \$345,243	2 \$37,162	2 \$38,219				84 \$1,539,246
45 - 49	16 \$297,279	42 \$714,228	37 \$697,686	35 \$697,072	13 \$288,551	3 \$77,694	1 \$18,047			147 \$2,790,557
50 - 54	14 \$267,672	60 \$1,038,395	65 \$1,154,037	53 \$1,092,287	44 \$884,373	23 \$539,698	7 \$144,588	5 \$129,320		271 \$5,250,370
55 - 59	13 \$246,766	61 \$1,116,548	48 \$778,850	55 \$1,045,515	44 \$858,761	44 \$979,910	23 \$492,179	1 \$28,301	1 \$24,114	290 \$5,570,944
60 - 64	4 \$65,571	24 \$406,346	42 \$728,522	21 \$360,250	15 \$319,247	9 \$256,718	3 \$73,761	1 \$19,299	1 \$21,182	120 \$2,250,896
65 - 69	3 \$52,995	11 \$170,813	10 \$176,862	3 \$51,589	2 \$46,467	1 \$16,800	1 \$74,378	1 \$14,867		32 \$604,771
70+		3 \$49,108	5 \$87,459	7 \$109,422	2 \$34,942		2 \$34,991			19 \$315,922
<b>Total</b>	97 \$1,791,178	315 \$5,472,479	256 \$4,524,196	200 \$3,874,861	124 \$2,538,209	82 \$1,909,039	37 \$837,944	8 \$191,787	2 \$45,296	1,121 \$21,184,989

AVERAGES --- Attained Age 51.59  
Service Years 9.45  
Active Salary \$18,898

**Appendix A**  
**MEMBERSHIP DATA**

TRSL Actuarial Valuation  
June 30, 2017

**TRSL MEMBERSHIP PROFILE**  
**DROP PARTICIPANTS**

CELLS DEPICT -

MEMBER COUNT  
TOTAL BENEFITS

VALUATION DATE 6/30/2017

Age/Years	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 15	15 - 20	20+	Total
< 40										
40 - 44										
45 - 49	1 \$33,828	2 \$52,140								3 \$85,968
50 - 54	271 \$11,767,308	173 \$7,579,608	113 \$4,677,648	9 \$449,952						566 \$24,474,516
55 - 59	470 \$16,649,268	443 \$16,121,016	414 \$15,090,528	13 \$543,660						1,340 \$48,404,472
60 - 64	162 \$3,556,572	194 \$4,377,540	189 \$4,290,480	5 \$152,136						550 \$12,376,728
65 - 69	6 \$44,316	3 \$17,196	7 \$42,552							16 \$104,064
70 - 74	1 \$9,024		1 \$3,168							2 \$12,192
75 - 79	1 \$5,316									1 \$5,316
80 - 84										
85 - 89										
90+										
<b>Total</b>	912 \$32,065,632	815 \$28,147,500	724 \$24,104,376	27 \$1,145,748						2,478 \$85,463,256

AVERAGES ---

Attained Age 57.22  
Years Retired 1.33  
Annual Benefit \$34,489

**Appendix A**  
**MEMBERSHIP DATA**

**TRSL Actuarial Valuation**  
**June 30, 2017**

**TRSL MEMBERSHIP PROFILE**  
**ACTIVE AFTER DROP**

CELLS DEPICT - MEMBER COUNT  
TOTAL BENEFITS  
DROP BENEFITS

VALUATION DATE 6/30/2017

Age/Years	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 15	15 - 20	20+	Total
< 44										
45 - 49										
50 - 54	17 \$612,708 \$723,084	3 \$111,883 \$82,452								20 \$724,591 \$805,536
55 - 59	217 \$7,467,868 \$8,275,644	185 \$11,632,254 \$7,551,864	79 \$5,272,499 \$3,560,100	62 \$3,523,916 \$2,352,780	38 \$2,398,301 \$1,588,980	24 \$1,264,660 \$781,788				605 \$31,559,498 \$24,111,156
60 - 64	176 \$4,672,888 \$4,281,612	134 \$6,777,387 \$3,269,208	149 \$8,035,709 \$4,804,968	100 \$5,496,332 \$3,347,424	128 \$7,547,773 \$4,576,368	331 \$21,862,231 \$12,368,520	4 \$292,106 \$144,624			1022 \$54,684,426 \$32,792,724
65 - 69	4 \$116,439 \$36,600	3 \$115,667 \$30,000	66 \$2,522,955 \$943,020	63 \$2,788,922 \$1,194,096	71 \$3,356,219 \$1,486,968	248 \$14,090,954 \$6,491,904	93 \$7,408,887 \$3,418,560			548 \$30,400,043 \$13,601,148
70+		2 \$135,271 \$101,544	4 \$88,620 \$15,924	1 \$21,546 \$4,092	3 \$153,035 \$25,164	86 \$3,862,132 \$1,274,328	112 \$7,195,700 \$2,696,928	47 \$4,088,168 \$1,461,312	7 \$689,803 \$257,496	262 \$16,234,275 \$5,836,788
<b>Total</b>	414 \$12,869,903 \$13,316,940	327 \$18,772,462 \$11,035,068	298 \$15,919,783 \$9,324,012	226 \$11,830,716 \$6,898,392	240 \$13,455,328 \$7,677,480	689 \$41,079,977 \$20,916,540	209 \$14,896,693 \$6,260,112	47 \$4,088,168 \$1,461,312	7 \$689,803 \$257,496	2457 \$133,602,833 \$77,147,352

AVERAGES --- Attained Age 63.38  
Post Drop Years 4.68  
Active Salary \$54,376  
Annual Benefit \$31,399

**Appendix A**  
**MEMBERSHIP DATA**

**TRSL Actuarial Valuation**  
**June 30, 2017**

**TRSL MEMBERSHIP PROFILE**  
**REGULAR RETIREES**

CELLS DEPICT - MEMBER COUNT  
TOTAL BENEFITS

VALUATION DATE 6/30/2017

Age/Years	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 15	15 - 20	20+	Total
< 40										
40 - 44	36 \$819,444	20 \$430,284	7 \$156,072	1 \$7,740	1 \$13,248					65 \$1,426,788
45 - 49	90 \$2,303,940	85 \$1,846,884	84 \$1,933,872	84 \$1,780,716	85 \$1,886,136	70 \$1,433,664	1 \$11,880			499 \$11,197,092
50 - 54	158 \$5,114,988	127 \$3,859,788	119 \$3,431,628	119 \$2,963,700	161 \$3,812,256	309 \$6,769,524	105 \$1,645,284		1 \$1,416	1,099 \$27,598,584
55 - 59	578 \$21,314,844	581 \$21,328,752	537 \$19,639,524	488 \$17,599,932	457 \$15,855,060	586 \$16,552,620	407 \$7,088,016	148 \$1,909,044	5 \$25,224	3,787 \$121,313,016
60 - 64	823 \$20,972,304	887 \$25,011,708	924 \$28,076,628	1,149 \$37,087,164	1,228 \$41,840,808	3,683 \$126,255,252	1,221 \$27,012,216	671 \$9,474,756	274 \$3,106,536	10,860 \$318,837,372
65 - 69	466 \$12,301,344	613 \$16,950,756	737 \$19,975,872	883 \$24,409,212	1,191 \$34,964,580	4,815 \$140,895,792	4,952 \$154,027,332	1,039 \$20,495,844	1,005 \$13,320,936	15,701 \$437,341,668
70 - 74	130 \$3,727,116	163 \$4,805,484	224 \$7,037,508	293 \$8,798,964	388 \$11,356,596	2,549 \$70,843,608	4,693 \$125,181,156	3,018 \$84,117,108	1,470 \$24,061,368	12,928 \$339,928,908
75 - 79	41 \$1,199,736	47 \$1,654,836	69 \$2,117,556	72 \$2,499,480	91 \$2,676,600	720 \$21,648,516	2,131 \$53,019,420	3,109 \$75,762,804	2,883 \$68,261,364	9,163 \$228,840,312
80 - 84	20 \$287,664	7 \$324,516	16 \$304,260	16 \$406,860	19 \$599,184	157 \$5,422,164	592 \$15,806,124	1,393 \$32,213,184	4,006 \$92,346,504	6,226 \$147,710,460
85 - 89	7 \$137,628	1 \$13,740	4 \$219,804	5 \$77,112	4 \$101,748	47 \$1,977,012	112 \$3,245,244	320 \$8,680,560	3,109 \$64,282,308	3,609 \$78,735,156
90+	4 \$84,084				3 \$77,268	5 \$146,256	18 \$446,076	48 \$1,212,828	1,734 \$30,586,548	1,812 \$32,553,060
<b>Total</b>	2,353 \$68,263,092	2,531 \$76,226,748	2,721 \$82,892,724	3,110 \$95,630,880	3,628 \$113,183,484	12,941 \$391,944,408	14,232 \$387,482,748	9,746 \$233,866,128	14,487 \$295,992,204	65,749 \$1,745,482,416

AVERAGES --- Attained Age 71.27  
Years Retired 13.08  
Annual Benefit \$26,548

**Appendix A**  
**MEMBERSHIP DATA**

**TRSL Actuarial Valuation**  
**June 30, 2017**

**TRSL MEMBERSHIP PROFILE**  
**DISABILITY RETIREES**

CELLS DEPICT - MEMBER COUNT  
TOTAL BENEFITS

VALUATION DATE 6/30/2017

Age/Years	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 15	15 - 20	20+	Total
< 40	9 \$156,972	15 \$223,584	9 \$147,972	4 \$73,092	1 \$16,752	5 \$70,908				43 \$689,280
40 - 44	15 \$282,552	12 \$249,504	7 \$142,476	11 \$238,164	7 \$129,588	27 \$388,920	7 \$80,280			86 \$1,511,484
45 - 49	25 \$586,020	28 \$699,960	26 \$667,452	21 \$435,984	17 \$344,976	39 \$729,744	16 \$169,152	8 \$71,736	2 \$22,236	182 \$3,727,260
50 - 54	39 \$619,116	42 \$672,264	41 \$791,976	24 \$450,480	36 \$604,968	86 \$1,471,740	44 \$515,448	21 \$206,904	12 \$116,916	345 \$5,449,812
55 - 59	45 \$610,884	68 \$1,135,584	38 \$597,192	34 \$545,160	48 \$841,824	133 \$1,851,408	105 \$1,282,332	72 \$775,812	29 \$317,340	572 \$7,957,536
60 - 64	26 \$392,724	26 \$361,020	32 \$447,204	44 \$626,796	40 \$648,756	166 \$2,325,312	176 \$2,182,476	124 \$1,343,124	109 \$1,132,932	743 \$9,460,344
65 - 69	7 \$100,560	10 \$132,516	17 \$251,844	11 \$179,232	23 \$290,064	160 \$2,225,928	224 \$2,641,152	151 \$1,595,040	230 \$2,800,956	833 \$10,217,292
70 - 74	3 \$43,272	3 \$46,632	6 \$108,324	1 \$11,016	2 \$18,756	32 \$419,292	144 \$1,683,444	179 \$1,823,592	266 \$2,938,404	636 \$7,092,732
75 - 79	1 \$10,428			1 \$11,484		4 \$64,284	22 \$260,472	104 \$1,021,104	323 \$3,241,128	455 \$4,608,900
80 - 84							7 \$58,668	20 \$193,704	218 \$2,258,364	245 \$2,510,736
85 - 89							1 \$8,928	3 \$18,516	97 \$966,564	101 \$994,008
90+									39 \$385,104	39 \$385,104
<b>Total</b>	170 \$2,802,528	204 \$3,521,064	176 \$3,154,440	151 \$2,571,408	174 \$2,895,684	652 \$9,547,536	746 \$8,882,352	682 \$7,049,532	1,325 \$14,179,944	4,280 \$54,604,488

AVERAGES --- Attained Age 65.77  
Years Retired 15.04  
Annual Benefit \$12,758



**Appendix A**  
**MEMBERSHIP DATA**

**TRSL Actuarial Valuation**  
**June 30, 2017**

**TRSL MEMBERSHIP PROFILE**  
**SURVIVOR BENEFITS**

CELLS DEPICT - MEMBER COUNT  
TOTAL BENEFITS

VALUATION DATE 6/30/2017

Age/Years	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 15	15 - 20	20+	Total
< 40	41 \$648,000	41 \$464,592	44 \$587,244	39 \$556,320	50 \$666,720	112 \$1,264,572	54 \$589,356	24 \$175,440	7 \$100,896	412 \$5,053,140
40 - 44	8 \$85,020	10 \$159,576	6 \$51,768	7 \$104,988	8 \$149,868	20 \$328,644	22 \$351,708	11 \$121,476	5 \$46,584	97 \$1,399,632
45 - 49	17 \$189,264	22 \$334,884	16 \$203,556	18 \$191,532	14 \$186,708	47 \$743,880	33 \$351,312	26 \$313,980	13 \$164,940	206 \$2,680,056
50 - 54	17 \$365,616	15 \$222,432	19 \$238,764	18 \$199,188	15 \$345,828	64 \$636,072	56 \$677,172	38 \$457,056	21 \$290,904	263 \$3,433,032
55 - 59	27 \$581,736	32 \$565,608	25 \$430,236	23 \$331,188	20 \$285,444	98 \$1,488,204	66 \$1,062,144	43 \$593,292	39 \$496,584	373 \$5,834,436
60 - 64	35 \$779,088	40 \$697,260	40 \$1,139,304	53 \$1,446,852	33 \$698,532	168 \$3,182,604	92 \$1,587,060	62 \$784,740	68 \$797,460	591 \$11,112,900
65 - 69	63 \$1,694,760	66 \$1,925,592	52 \$1,135,068	59 \$1,630,836	61 \$1,497,708	233 \$5,568,564	147 \$3,155,820	106 \$1,893,048	107 \$1,504,356	894 \$20,005,752
70 - 74	76 \$1,938,240	60 \$1,789,320	74 \$1,670,556	67 \$1,762,032	64 \$1,396,092	224 \$5,173,380	164 \$3,680,928	127 \$2,480,844	165 \$2,535,984	1,021 \$22,427,376
75 - 79	81 \$2,120,916	88 \$2,056,140	73 \$1,882,404	63 \$1,614,660	60 \$1,463,400	250 \$5,863,608	190 \$4,072,740	132 \$2,879,124	235 \$4,144,404	1,172 \$26,097,396
80 - 84	72 \$1,679,076	71 \$1,420,884	63 \$1,506,624	60 \$1,454,352	47 \$1,025,556	208 \$4,442,736	178 \$3,596,076	136 \$2,868,696	247 \$4,172,208	1,082 \$22,166,208
85 - 89	35 \$783,840	43 \$849,216	38 \$875,112	33 \$550,752	38 \$737,448	167 \$2,883,468	104 \$2,030,628	87 \$1,512,864	165 \$2,943,396	710 \$13,166,724
90+	11 \$125,064	14 \$233,340	19 \$292,944	20 \$275,436	23 \$333,540	65 \$1,031,208	71 \$1,064,844	53 \$767,376	132 \$2,073,900	408 \$6,197,652
<b>Total</b>	483 \$10,990,620	502 \$10,718,844	469 \$10,013,580	460 \$10,118,136	433 \$8,786,844	1,656 \$32,606,940	1,177 \$22,219,788	845 \$14,847,936	1,204 \$19,271,616	7,229 \$139,574,304

AVERAGES --- Attained Age 70.70  
Years Retired 11.09  
Annual Benefit \$19,308

**Appendix A**  
**MEMBERSHIP DATA**

TRSL Actuarial Valuation  
June 30, 2017

**TRSL MEMBERSHIP PROFILE**  
**TERM-VESTED/RECIPROCAL**

CELLS DEPICT -

MEMBER COUNT  
TOTAL BENEFITS

VALUATION DATE 6/30/2017

Age/Years	<1	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35+	Total
< 20										
20 - 24										
25 - 29			32 \$182,446							32 \$182,446
30 - 34			611 \$4,559,448	23 \$307,029						634 \$4,866,478
35 - 39		2 \$8,750	814 \$6,412,099	236 \$3,336,932	10 \$221,290					1,062 \$9,979,071
40 - 44	1 \$537	4 \$10,530	699 \$5,243,676	308 \$4,418,556	94 \$1,850,926	4 \$73,403				1,110 \$11,597,629
45 - 49		4 \$13,474	751 \$5,063,361	363 \$4,452,898	114 \$2,119,063	15 \$365,773	2 \$123,731			1,249 \$12,138,301
50 - 54		6 \$16,416	616 \$4,093,897	345 \$3,936,407	131 \$2,035,870	26 \$641,886	7 \$242,441			1,131 \$10,966,917
55 - 59		4 \$7,790	560 \$3,662,651	421 \$4,443,511	160 \$2,284,704	23 \$514,446	6 \$163,887	2 \$107,862		1,176 \$11,184,850
60 - 64	1 \$388	3 \$6,303	188 \$1,148,265	104 \$991,683	47 \$701,081	13 \$305,507	7 \$162,473			363 \$3,315,700
65 - 69		4 \$7,756	68 \$393,711	26 \$246,901	8 \$120,962	4 \$105,684	3 \$54,110			113 \$929,123
70+			28 \$137,076	18 \$97,704	9 \$72,804	7 \$206,984	3 \$78,385	3 \$70,036	3 \$131,043	71 \$794,033
<b>Total</b>	2 \$925	27 \$71,018	4,367 \$30,896,631	1,844 \$22,231,621	573 \$9,406,700	92 \$2,213,683	28 \$825,027	5 \$177,898	3 \$131,043	6,941 \$65,954,547

AVERAGES --- Attained Age 47.63  
Service Years 9.51  
Annual Benefit \$9,502

## **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:

<b>Leave Earned Prior to 6/30/88</b>	
Accumulated Sick Days	Fraction of 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

<b>Leave Earned After 6/29/88</b>				Fraction of Year Credit
Accumulated Sick Days (by Member Classification)				
9 Month	10 Month	11 Month	12 Month	
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	133-154	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.

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

<u>Years of Participation</u>	<u>% of Earnings to be Included</u>
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 11:102 and 11:102.2, 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.

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).

1. Annual benefit may not exceed 100% of average earnable compensation.
2. 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 Code and related Federal Regulations as adjusted for inflation and form of benefit other than life annuity or qualified joint and survivor annuity.

**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:

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 PBIs. The Experience Account is debited for the increase in actuarial accrued liability resulting from the increases.

Permanent Benefit Increases: 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, PBIs 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.

Eligibility Requirements: 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.
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, members returning to active membership for at least three years, starting no later than one year after recovery, 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 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 resume 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.

**REFUND OF CONTRIBUTIONS:**

Members who terminate employment in all positions eligible for TRSL membership are entitled to a full refund of member contributions. If membership ceases due to death prior to retirement, accumulated member contributions are returnable to a designated beneficiary, if any; or to the member's 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 the Board of Trustees.



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

Automatic COLA Option – 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.)

Initial Lump Sum Benefit Option - 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).

#### 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 years of service (YOS) at any age, 25 YOS 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 of service 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 before June 30, 2015, who has 30 years of service at age 55 or 10 years of service 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 of service 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 cease 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.

**DESCRIPTION OF BENEFITS  
FOR MERGED LSU EMPLOYEES**

**GENERAL:**

Eligibility for benefits is 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)**

<u>Calendar Year of Entry</u>	<u>Breakpoint Average</u>
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 are 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 the sum of (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; (2) 2.5% (or 2% if total service less than 20 years) of final average salary for years since January 1, 1979; and (3) \$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.

**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.

**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)

**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.

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.

**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.

**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; 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.



**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.

## **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 Appendix D. 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 Section II. 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 to increases in the actuarial value of assets, 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 2020/2021 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.

Plan Year	Original Amortization Base	Experience Account Amortization Base
2017/2018	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 Appendix E.

Employers pay the full required employer contribution rate, as recommended to the legislature by the Public Retirement Systems’ Actuarial Committee (PR SAC). 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.

## **ACTUARIAL COST METHODS AND ASSUMPTIONS**

### **ACTUARIAL COST METHOD:**

Louisiana, 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 Louisiana 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 part of the total experience gain/loss which is amortized over a 30-year period. The investment return assumption is reduced by 10 basis points to reflect administrative expenses that are paid from plan assets and not otherwise recognized. Therefore, these expenses and the resulting experience losses are expected to be offset by long-term investment earnings. The adjustment to the discount rate is in accordance with Actuarial Standard of Practice Statement 27, (paragraph 3.8.3.e.).

Act 94 of 2016 requires direct funding of administrative expenses to begin in the first fiscal year in which the projected aggregate employer contribution rate does not increase, without regard to any changes in the board-approved actuarial valuation rate. The projected aggregate employer rate for Fiscal Year 2018/2019 meets the requirements provided by Act 94. Therefore, the projected funding required for Fiscal Year 2018/2019, determined by the June 30, 2017 actuarial valuation, includes expected administrative expenses.

### **POST RETIREMENT BENEFIT INCREASES:**

The actuarial accrued liability includes previously granted post-retirement benefit increases. 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 Appendix B of

this report. The legislature and governor have the ultimate authority as to whether 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. The liabilities in this report were not developed to include future ad hoc retiree benefit increases. However, the assumptions include an adjustment to recognize that investment earnings will be allocated to the Experience Account to fund potential future increases, in accordance with Actuarial Standard of Practice No. 27 (paragraph 3.5.1).

#### **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 appendix.

#### **INFLATION ASSUMPTION:**

The salary and expected investment earnings were developed using a 2.50% inflation assumption, as adopted by the Board of Trustees following the most recent Experience Study.

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

A discount rate of 7.70% was used for the June 30, 2017 valuation. The Board adopted a plan to reduce the discount rate in 0.05% increments beginning July 1, 2017. Therefore, the discount rate was reduced from 7.75% to 7.70%. The projected contribution requirements for Fiscal Year 2018/2019 were determined using a discount rate of 7.65%. Investment manager fees are treated as a direct offset to investment income.

June 30, 2017 Funding Valuation Assumptions: 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 allocated to the Experience Account to fund future permanent benefit increases. Therefore, by excluding returns expected to be used for purposes other than funding plan benefits, the discount rate represents the expected returns to be used to fund regular plan benefits.

The analysis is supported by capital market assumptions provided by the Board's investment consultants, with a 2.50% inflation component, which results in an expected long-term geometric average nominal rate of return of 8.33%. After adjusting for gain-sharing (40 basis points) and administrative expenses (10 basis points), the net return available to fund regular plan benefits is 7.83%, which supports the 7.70% discount rate.

Based on a historical review of administrative expenses relative to plan assets, it is assumed that 10 basis points will be used to offset administrative expenses. A long-term (30-year) average of approximately 40 basis points is assumed to be transferred to the Experience Account annually. This estimate is based upon one hundred 30-year projections of annual market returns based upon TRSL's target portfolio allocation, provided by AON Hewitt. Annual investment gains and losses are projected for each scenario with the resulting experience gains allocated to the Experience Account, according to current statutory provisions.

June 30 2017 GASB Assumptions: A discount rate of 7.70% is used for GASB reporting purposes. Section IV of this report provides expected real rates of return by asset class. Using an inflation assumption of 2.50%, the corresponding long-term nominal rate of return is 8.33%, which supports the 7.70% long-term expected rate of return used for GASB reporting purposes.

June 30, 2018 Funding Valuation Assumptions: A 7.65% discount rate was used to determine the projected Fiscal Year 2018/2019 funding requirements, in accordance with the Board's plan to reduce the discount rate to 7.50% in 0.05% annual increments. Since administrative expenses will be directly funded beginning July 1, 2018, the reasonableness of the discount rate is measured relative to the long-term expected return net of investment gains expected to be deferred to the Experience Account to fund future permanent benefit increases, with no further reduction for administrative expenses. Adjusting the 8.33% expected investment return described above by 40 basis points for gain sharing results in an expected return of 7.93% to be used to fund regular plan benefits. Therefore, we conclude that the 7.65% discount rate is reasonable.

#### **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. Retirement and DROP rates are developed in combination, based on the most recent experience study, and include an age and service component.

**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:

Member Age	Number of Minor Children	Years for Youngest Child 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**

AGE	DEATH RATES		DISABILITY RATES	TERMINATION RATES				RETIREMENT/DROP RATES			DUR	SALARY INCREASE
	MALE	FEMALE		< 1 YEAR	1-2 YEARS	2-3 YEARS	4+ YEARS	< 25 YOS	25-29 YOS	30+ YOS		
18	0.00020	0.00013	0.0000	0.200	0.200	0.095	0.180	0.000	0.000	0.000	0	0.0575
19	0.00021	0.00013	0.0000	0.200	0.200	0.095	0.180	0.000	0.000	0.000	1	0.0575
20	0.00021	0.00013	0.0000	0.200	0.200	0.095	0.180	0.000	0.000	0.000	2	0.0575
21	0.00023	0.00013	0.0000	0.200	0.200	0.095	0.180	0.000	0.000	0.000	3	0.0575
22	0.00024	0.00013	0.0000	0.200	0.200	0.095	0.180	0.000	0.000	0.000	4	0.0575
23	0.00026	0.00013	0.0001	0.200	0.200	0.095	0.180	0.000	0.000	0.000	5	0.0500
24	0.00027	0.00014	0.0001	0.200	0.200	0.095	0.180	0.000	0.000	0.000	6	0.0500
25	0.00029	0.00015	0.0001	0.180	0.126	0.095	0.090	0.000	0.000	0.000	7	0.0500
26	0.00033	0.00016	0.0001	0.180	0.126	0.095	0.060	0.000	0.000	0.000	8	0.0500
27	0.00034	0.00017	0.0001	0.190	0.126	0.095	0.060	0.000	0.000	0.000	9	0.0500
28	0.00035	0.00017	0.0001	0.190	0.126	0.095	0.055	0.000	0.000	0.000	10	0.0475
29	0.00036	0.00018	0.0001	0.190	0.126	0.095	0.053	0.000	0.000	0.000	11	0.0475
30	0.00039	0.00021	0.0001	0.190	0.120	0.109	0.053	0.000	0.000	0.000	12	0.0475
31	0.00044	0.00025	0.0003	0.190	0.120	0.109	0.050	0.000	0.000	0.000	13	0.0475
32	0.00050	0.00029	0.0003	0.190	0.120	0.109	0.045	0.000	0.000	0.000	14	0.0475
33	0.00056	0.00031	0.0003	0.190	0.120	0.109	0.045	0.000	0.000	0.000	15	0.0450
34	0.00062	0.00034	0.0003	0.190	0.120	0.109	0.045	0.000	0.000	0.000	16	0.0450
35	0.00068	0.00036	0.0006	0.180	0.117	0.095	0.040	0.000	0.000	0.000	17	0.0450
36	0.00074	0.00038	0.0010	0.180	0.117	0.095	0.040	0.000	0.000	0.000	18	0.0450
37	0.00080	0.00040	0.0007	0.180	0.117	0.095	0.040	0.000	0.000	0.000	19	0.0450
38	0.00083	0.00042	0.0007	0.180	0.117	0.095	0.040	0.050	0.000	0.000	20	0.0400
39	0.00086	0.00044	0.0011	0.180	0.117	0.095	0.040	0.040	0.000	0.000	21	0.0400
40	0.00088	0.00048	0.0011	0.165	0.123	0.090	0.037	0.040	0.000	0.000	22	0.0400
41	0.00091	0.00053	0.0013	0.165	0.123	0.090	0.037	0.025	0.000	0.000	23	0.0400
42	0.00095	0.00058	0.0016	0.165	0.123	0.090	0.037	0.025	0.000	0.000	24	0.0400
43	0.00099	0.00064	0.0016	0.165	0.123	0.090	0.037	0.025	0.000	0.000	25	0.0375
44	0.00103	0.00071	0.0016	0.165	0.123	0.090	0.040	0.025	0.000	0.000	26	0.0375
45	0.00109	0.00075	0.0022	0.163	0.099	0.090	0.040	0.025	0.020	0.000	27	0.0375
46	0.00114	0.00080	0.0022	0.163	0.099	0.090	0.040	0.025	0.020	0.000	28	0.0375
47	0.00119	0.00084	0.0022	0.163	0.099	0.090	0.040	0.025	0.020	0.000	29	0.0375
48	0.00124	0.00091	0.0022	0.163	0.099	0.090	0.040	0.030	0.020	0.700	30	0.0425
49	0.00130	0.00098	0.0022	0.163	0.099	0.090	0.040	0.030	0.020	0.600	31	0.0425
50	0.00136	0.00109	0.0025	0.175	0.112	0.090	0.040	0.030	0.050	0.300	32	0.0425
51	0.00152	0.00124	0.0025	0.175	0.112	0.090	0.040	0.030	0.170	0.600	33	0.0425
52	0.00161	0.00142	0.0025	0.175	0.112	0.090	0.040	0.030	0.280	0.600	34	0.0425
53	0.00176	0.00163	0.0030	0.175	0.112	0.090	0.040	0.100	0.280	0.500	35	0.0425
54	0.00193	0.00189	0.0030	0.175	0.112	0.090	0.040	0.150	0.450	0.400	36	0.0425
55	0.00224	0.00222	0.0040	0.175	0.106	0.090	0.040	0.150	0.750	0.300	37	0.0425
56	0.00267	0.00266	0.0050	0.175	0.106	0.090	0.040	0.150	0.330	0.200	38	0.0425
57	0.00306	0.00307	0.0055	0.155	0.106	0.090	0.040	0.150	0.250	0.200	39	0.0425
58	0.00352	0.00346	0.0055	0.200	0.106	0.090	0.040	0.250	0.250	0.200	40	0.0425
59	0.00397	0.00392	0.0055	0.200	0.106	0.090	0.040	0.250	0.300	0.200	41	0.0425
60	0.00451	0.00446	0.0055	0.200	0.106	0.090	0.040	0.250	0.300	0.200	42	0.0425
61	0.00526	0.00513	0.0050	0.200	0.106	0.090	0.040	0.150	0.300	0.200	43	0.0425
62	0.00600	0.00587	0.0050	0.200	0.106	0.090	0.040	0.150	0.220	0.250	44	0.0425
63	0.00704	0.00675	0.0050	0.200	0.106	0.090	0.040	0.150	0.170	0.150	45	0.0425
64	0.00793	0.00760	0.0035	0.200	0.106	0.090	0.040	0.200	0.200	0.300	46	0.0425
65	0.00895	0.00856	0.0035	0.200	0.106	0.090	0.040	0.200	0.200	0.300	47	0.0425
66	0.01039	0.00966	0.0020	0.200	0.106	0.090	0.040	0.200	0.200	0.300	48	0.0425
67	0.01159	0.01073	0.0020	0.200	0.106	0.090	0.040	0.200	0.200	0.200	49	0.0425
68	0.01256	0.01186	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.300	50	0.0425
69	0.01392	0.01311	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.300	51	0.0425
70	0.01522	0.01477	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.400	52	0.0425
71	0.01684	0.01598	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.200	53	0.0425
72	0.01870	0.01778	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.250	54	0.0425
73	0.02083	0.01927	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.250	55	0.0425
74	0.02323	0.02136	0.0020	0.200	0.106	0.090	0.040	0.200	0.300	0.250	56	0.0425



**Actuarial Assumptions, effective July 1, 2013**  
**Higher Education**

AGE	DEATH RATES		DISABILITY RATES	TERMINATION RATES				RETIREMENT/DROP RATES			DUR	SALARY INCREASE
	MALE	FEMALE		< 1 YEAR	1-2 YEARS	2-3 YEARS	4+ YEARS	< 25 YOS	25-29 YOS	30+ YOS		
18	0.00020	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000	0	0.100
19	0.00021	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000	1	0.100
20	0.00021	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000	2	0.090
21	0.00023	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000	3	0.080
22	0.00024	0.00013	0.0000	0.250	0.250	0.170	0.120	0.000	0.000	0.000	4	0.040
23	0.00026	0.00013	0.0001	0.250	0.250	0.170	0.120	0.000	0.000	0.000	5	0.070
24	0.00027	0.00014	0.0001	0.250	0.250	0.170	0.120	0.000	0.000	0.000	6	0.050
25	0.00029	0.00015	0.0001	0.250	0.250	0.170	0.120	0.000	0.000	0.000	7	0.070
26	0.00033	0.00016	0.0001	0.210	0.250	0.170	0.120	0.000	0.000	0.000	8	0.070
27	0.00034	0.00017	0.0001	0.210	0.220	0.170	0.120	0.000	0.000	0.000	9	0.045
28	0.00035	0.00017	0.0001	0.220	0.220	0.170	0.120	0.000	0.000	0.000	10	0.045
29	0.00036	0.00018	0.0001	0.240	0.220	0.170	0.120	0.000	0.000	0.000	11	0.045
30	0.00039	0.00021	0.0001	0.250	0.160	0.170	0.180	0.000	0.000	0.000	12	0.045
31	0.00044	0.00025	0.0001	0.220	0.178	0.170	0.100	0.000	0.000	0.000	13	0.045
32	0.00050	0.00029	0.0001	0.220	0.190	0.160	0.100	0.000	0.000	0.000	14	0.040
33	0.00056	0.00031	0.0001	0.190	0.170	0.150	0.120	0.000	0.000	0.000	15	0.040
34	0.00062	0.00034	0.0001	0.230	0.155	0.100	0.120	0.000	0.000	0.000	16	0.040
35	0.00068	0.00036	0.0001	0.220	0.175	0.130	0.120	0.000	0.000	0.000	17	0.040
36	0.00074	0.00038	0.0001	0.220	0.160	0.150	0.120	0.000	0.000	0.000	18	0.040
37	0.00080	0.00040	0.0001	0.220	0.108	0.150	0.120	0.000	0.000	0.000	19	0.040
38	0.00083	0.00042	0.0001	0.190	0.180	0.150	0.100	0.100	0.080	0.600	20	0.040
39	0.00086	0.00044	0.0001	0.190	0.140	0.150	0.100	0.100	0.080	0.600	21	0.040
40	0.00088	0.00048	0.0001	0.230	0.185	0.150	0.100	0.100	0.080	0.600	22	0.040
41	0.00091	0.00053	0.0001	0.165	0.108	0.150	0.100	0.100	0.080	0.600	23	0.040
42	0.00095	0.00058	0.0001	0.230	0.115	0.150	0.100	0.100	0.080	0.600	24	0.040
43	0.00099	0.00064	0.0001	0.155	0.168	0.150	0.100	0.070	0.080	0.600	25	0.040
44	0.00103	0.00071	0.0001	0.195	0.135	0.150	0.100	0.070	0.080	0.600	26	0.040
45	0.00109	0.00075	0.0001	0.190	0.116	0.150	0.100	0.070	0.080	0.600	27	0.035
46	0.00114	0.00080	0.0008	0.162	0.170	0.150	0.080	0.070	0.080	0.600	28	0.035
47	0.00119	0.00084	0.0008	0.210	0.140	0.150	0.090	0.070	0.080	0.600	29	0.035
48	0.00124	0.00091	0.0008	0.135	0.180	0.150	0.090	0.070	0.080	0.600	30	0.035
49	0.00130	0.00098	0.0008	0.135	0.125	0.150	0.090	0.070	0.080	0.600	31	0.035
50	0.00136	0.00109	0.0008	0.185	0.108	0.060	0.090	0.070	0.080	0.600	32	0.035
51	0.00152	0.00124	0.0008	0.145	0.070	0.050	0.090	0.070	0.160	0.600	33	0.035
52	0.00161	0.00142	0.0008	0.155	0.110	0.095	0.090	0.070	0.160	0.600	34	0.035
53	0.00176	0.00163	0.0008	0.220	0.130	0.125	0.090	0.070	0.160	0.600	35	0.035
54	0.00193	0.00189	0.0008	0.220	0.075	0.017	0.090	0.150	0.280	0.400	36	0.035
55	0.00224	0.00222	0.0008	0.200	0.104	0.140	0.090	0.150	0.350	0.200	37	0.035
56	0.00267	0.00266	0.0020	0.135	0.122	0.100	0.080	0.150	0.200	0.050	38	0.035
57	0.00306	0.00307	0.0020	0.250	0.055	0.140	0.080	0.150	0.130	0.050	39	0.035
58	0.00352	0.00346	0.0020	0.100	0.115	0.200	0.100	0.150	0.130	0.050	40	0.035
59	0.00397	0.00392	0.0005	0.100	0.210	0.125	0.080	0.150	0.130	0.050	41	0.035
60	0.00451	0.00446	0.0005	0.150	0.160	0.090	0.060	0.150	0.130	0.050	42	0.035
61	0.00526	0.00513	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	0.120	43	0.035
62	0.00600	0.00587	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	0.120	44	0.035
63	0.00704	0.00675	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	0.120	45	0.035
64	0.00793	0.00760	0.0005	0.150	0.160	0.090	0.060	0.120	0.120	0.120	46	0.035
65	0.00895	0.00856	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.200	47	0.035
66	0.01039	0.00966	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.180	48	0.035
67	0.01159	0.01073	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.180	49	0.035
68	0.01256	0.01186	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.180	50	0.035
69	0.01392	0.01311	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.280	51	0.035
70	0.01522	0.01477	0.0005	0.150	0.160	0.090	0.060	0.120	0.160	0.280	52	0.035
71	0.01684	0.01598	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	0.200	53	0.035
72	0.01870	0.01778	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	0.200	54	0.035
73	0.02083	0.01927	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	0.200	55	0.035
74	0.02323	0.02136	0.0000	0.150	0.160	0.090	0.060	0.120	0.160	0.200	56	0.035

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

AGE	DEATH RATES		DISABILITY RATES	RETIREMENT/DROP RATES		DUR	TERMINATION RATES	SALARY INCREASE
	MALE	FEMALE		< 30 YOS	>= 30 YOS			
18	0.00020	0.00013	0.0000	0.000	0.000	0	0.14	0.06
19	0.00021	0.00013	0.0000	0.000	0.000	1	0.14	0.06
20	0.00021	0.00013	0.0000	0.000	0.000	2	0.14	0.06
21	0.00023	0.00013	0.0000	0.000	0.000	3	0.14	0.06
22	0.00024	0.00013	0.0000	0.000	0.000	4	0.14	0.06
23	0.00026	0.00013	0.0000	0.000	0.000	5	0.14	0.06
24	0.00027	0.00014	0.0000	0.000	0.000	6	0.14	0.06
25	0.00029	0.00015	0.0000	0.000	0.000	7	0.14	0.06
26	0.00033	0.00016	0.0000	0.000	0.000	8	0.14	0.06
27	0.00034	0.00017	0.0000	0.000	0.000	9	0.14	0.06
28	0.00035	0.00017	0.0000	0.000	0.000	10	0.14	0.06
29	0.00036	0.00018	0.0000	0.000	0.000	11	0.14	0.06
30	0.00039	0.00021	0.0000	0.000	0.000	12	0.14	0.05
31	0.00044	0.00025	0.0001	0.000	0.000	13	0.14	0.05
32	0.00050	0.00029	0.0001	0.000	0.000	14	0.14	0.05
33	0.00056	0.00031	0.0001	0.000	0.000	15	0.14	0.06
34	0.00062	0.00034	0.0001	0.000	0.000	16	0.14	0.06
35	0.00068	0.00036	0.0001	0.000	0.000	17	0.14	0.07
36	0.00074	0.00038	0.0001	0.000	0.000	18	0.14	0.07
37	0.00080	0.00040	0.0001	0.000	0.000	19	0.14	0.04
38	0.00083	0.00042	0.0001	0.600	0.300	20	0.14	0.04
39	0.00086	0.00044	0.0001	0.600	0.300	21	0.14	0.04
40	0.00088	0.00048	0.0001	0.600	0.300	22	0.14	0.04
41	0.00091	0.00053	0.0001	0.600	0.300	23	0.14	0.06
42	0.00095	0.00058	0.0001	0.600	0.300	24	0.14	0.06
43	0.00099	0.00064	0.0001	0.600	0.300	25	0.14	0.04
44	0.00103	0.00071	0.0001	0.600	0.300	26	0.14	0.04
45	0.00109	0.00075	0.0001	0.600	0.300	27	0.14	0.04
46	0.00114	0.00080	0.0001	0.600	0.300	28	0.14	0.04
47	0.00119	0.00084	0.0001	0.600	0.300	29	0.14	0.04
48	0.00124	0.00091	0.0001	0.600	0.300	30	0.14	0.04
49	0.00130	0.00098	0.0100	0.600	0.300	31	0.14	0.04
50	0.00136	0.00109	0.0100	0.600	0.300	32	0.14	0.04
51	0.00152	0.00124	0.0100	0.600	0.300	33	0.14	0.04
52	0.00161	0.00142	0.0150	0.600	0.700	34	0.14	0.04
53	0.00176	0.00163	0.0175	0.600	0.700	35	0.14	0.04
54	0.00193	0.00189	0.0175	0.600	0.700	36	0.14	0.04
55	0.00224	0.00222	0.0175	0.800	0.700	37	0.14	0.04
56	0.00267	0.00266	0.0002	0.350	0.700	38	0.14	0.04
57	0.00306	0.00307	0.0002	0.350	0.700	39	0.14	0.04
58	0.00352	0.00346	0.0002	0.350	0.700	40	0.14	0.04
59	0.00397	0.00392	0.0002	0.600	0.700	41	0.14	0.04
60	0.00451	0.00446	0.0002	0.450	0.700	42	0.14	0.04
61	0.00526	0.00513	0.0002	0.200	0.500	43	0.14	0.04
62	0.00600	0.00587	0.0002	0.200	0.500	44	0.14	0.04
63	0.00704	0.00675	0.0002	0.350	0.500	45	0.14	0.04
64	0.00793	0.00760	0.0002	0.100	0.500	46	0.14	0.04
65	0.00895	0.00856	0.0002	0.100	0.500	47	0.14	0.04
66	0.01039	0.00966	0.0002	0.100	0.250	48	0.14	0.04
67	0.01159	0.01073	0.0002	0.200	0.250	49	0.14	0.04
68	0.01256	0.01186	0.0002	0.200	0.250	50	0.14	0.04
69	0.01392	0.01311	0.0000	0.200	0.250	51	0.14	0.04
70	0.01522	0.01477	0.0000	0.200	0.250	52	0.14	0.04
71	0.01684	0.01598	0.0000	0.200	0.250	53	0.14	0.04
72	0.01870	0.01778	0.0000	0.200	0.250	54	0.14	0.04
73	0.02083	0.01927	0.0000	0.200	0.250	55	0.14	0.04
74	0.02323	0.02136	0.0000	0.200	0.250	56	0.14	0.04

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

AGE	DEATH RATES		DISABILITY RATES	RETIREMENT/DROP RATES	DUR	TERMINATION RATES	SALARY INCREASE
	MALE	FEMALE					
18	0.00020	0.00013	0.0000	0.00	0	0.100	0.055
19	0.00021	0.00013	0.0000	0.00	1	0.090	0.055
20	0.00021	0.00013	0.0000	0.00	2	0.080	0.055
21	0.00023	0.00013	0.0000	0.00	3	0.070	0.055
22	0.00024	0.00013	0.0000	0.00	4	0.060	0.055
23	0.00026	0.00013	0.0000	0.00	5	0.050	0.055
24	0.00027	0.00014	0.0000	0.00	6	0.050	0.055
25	0.00029	0.00015	0.0000	0.00	7	0.045	0.055
26	0.00033	0.00016	0.0000	0.00	8	0.045	0.055
27	0.00034	0.00017	0.0000	0.00	9	0.045	0.055
28	0.00035	0.00017	0.0000	0.00	10	0.045	0.055
29	0.00036	0.00018	0.0000	0.00	11	0.045	0.045
30	0.00039	0.00021	0.0000	0.00	12	0.040	0.045
31	0.00044	0.00025	0.0000	0.00	13	0.030	0.045
32	0.00050	0.00029	0.0000	0.00	14	0.030	0.045
33	0.00056	0.00031	0.0000	0.00	15	0.030	0.045
34	0.00062	0.00034	0.0000	0.00	16	0.050	0.050
35	0.00068	0.00036	0.0000	0.00	17	0.050	0.050
36	0.00074	0.00038	0.0010	0.00	18	0.050	0.050
37	0.00080	0.00040	0.0010	0.00	19	0.030	0.040
38	0.00083	0.00042	0.0010	0.00	20	0.040	0.040
39	0.00086	0.00044	0.0010	0.00	21	0.040	0.040
40	0.00088	0.00048	0.0050	0.00	22	0.040	0.040
41	0.00091	0.00053	0.0050	0.00	23	0.040	0.040
42	0.00095	0.00058	0.0050	0.00	24	0.040	0.040
43	0.00099	0.00064	0.0050	0.00	25	0.040	0.040
44	0.00103	0.00071	0.0050	0.00	26	0.040	0.040
45	0.00109	0.00075	0.0050	0.00	27	0.040	0.040
46	0.00114	0.00080	0.0050	0.00	28	0.040	0.040
47	0.00119	0.00084	0.0050	0.00	29	0.040	0.040
48	0.00124	0.00091	0.0050	0.00	30	0.040	0.040
49	0.00130	0.00098	0.0050	0.00	31	0.040	0.040
50	0.00136	0.00109	0.0130	0.00	32	0.040	0.040
51	0.00152	0.00124	0.0130	0.00	33	0.040	0.040
52	0.00161	0.00142	0.0130	0.00	34	0.040	0.040
53	0.00176	0.00163	0.0130	0.00	35	0.040	0.040
54	0.00193	0.00189	0.0130	0.00	36	0.040	0.040
55	0.00224	0.00222	0.0175	0.80	37	0.040	0.040
56	0.00267	0.00266	0.0175	0.80	38	0.040	0.040
57	0.00306	0.00307	0.0225	0.80	39	0.040	0.040
58	0.00352	0.00346	0.0225	0.80	40	0.040	0.040
59	0.00397	0.00392	0.0150	0.60	41	0.040	0.040
60	0.00451	0.00446	0.0050	0.50	42	0.040	0.040
61	0.00526	0.00513	0.0050	0.25	43	0.040	0.040
62	0.00600	0.00587	0.0050	0.25	44	0.040	0.040
63	0.00704	0.00675	0.0050	0.25	45	0.040	0.040
64	0.00793	0.00760	0.0010	0.25	46	0.040	0.040
65	0.00895	0.00856	0.0010	0.15	47	0.040	0.040
66	0.01039	0.00966	0.0010	0.15	48	0.040	0.040
67	0.01159	0.01073	0.0010	0.30	49	0.040	0.040
68	0.01256	0.01186	0.0010	0.45	50	0.040	0.040
69	0.01392	0.01311	0.0010	0.20	51	0.040	0.040
70	0.01522	0.01477	0.0010	0.20	52	0.040	0.040
71	0.01684	0.01598	0.0010	0.20	53	0.040	0.040
72	0.01870	0.01778	0.0010	0.20	54	0.040	0.040
73	0.02083	0.01927	0.0010	0.20	55	0.040	0.040
74	0.02323	0.02136	0.0010	0.20	56	0.040	0.040

**AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY**  
**June 30, 2017**

<b>Date</b>	<b>Description</b>	<b>Amtz. Method</b>	<b>Amtz. Period</b>	<b>Initial Liability</b>	<b>Years Remain</b>	<b>Remaining Balance</b>	<b>Mid-Year Payment</b>
2017	OAB	Note 1	12	2,223,680,075	12	2,114,835,670	277,558,112
2017	EAAB	Note 2,3	23	3,623,562,627	23	3,499,046,178	365,395,967
2017	2009 Experience G/L	L	22	2,700,212,881	22	2,700,212,881	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	26,366,616	29	26,366,616	2,213,880
2017	2017 DR Change	L	30	135,132,845	30	135,132,845	11,240,656
2017	2017 Experience G/L	L	30	(216,992,070)	30	(216,992,070)	(18,049,892)
2017	2017 Experience Acct Allocation	L	10	9,891,500	10	9,891,500	1,401,291
<b>Total Outstanding Balance</b>						<b>\$ 10,549,563,660</b>	<b>\$ 1,004,883,456</b>
<b>Employers Credit Balance</b>							
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	Note 3	-	-	-	-	-
<b>Total Credit Balance</b>						<b>\$ 2,635,249</b>	<b>\$ 2,734,825</b>
<b>Total Unfunded Actuarial Accrued Liability</b>						<b>\$ 10,552,198,909</b>	<b>\$ 1,007,618,281</b>

See UAL Amortization Schedule Notes within this Appendix.

**AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY**  
**June 30, 2018 - Projected**

<b>Date</b>	<b>Description</b>	<b>Amtz. Method</b>	<b>Amtz. Period</b>	<b>Initial Liability</b>	<b>Years Remain</b>	<b>Remaining Balance</b>	<b>Mid-Year Payment</b>
2018	OAB	Note 1	11	1,989,632,065	11	1,989,632,065	282,566,960
2018	EAAB	Note 2,3	22	3,389,269,876	22	3,389,269,876	364,315,496
2018	2009 Experience G/L	L	21	2,649,671,933	21	2,649,671,933	248,135,823
2018	2010 Experience G/L	L	22	1,041,795,144	22	1,041,795,144	95,724,314
2018	2011 Experience G/L	L	23	(161,187,360)	23	(161,187,360)	(14,555,880)
2018	2012 Experience G/L	L	24	117,430,241	24	117,430,241	10,437,714
2018	2013 Experience G/L	L	25	(235,227,303)	25	(235,227,303)	(20,607,080)
2018	2013 Assump/Method Chg	L	25	800,613,800	25	800,613,800	70,137,746
2018	2014 Investment Experience	L	1	(97,884,609)	1	(97,884,609)	(101,559,704)
2018	2014 Assump/Method Change	L	26	1,391,743,126	26	1,391,743,126	120,314,857
2018	2014 Other Experience G/L	L	26	(155,613,842)	26	(155,613,842)	(13,452,667)
2018	2015 Experience G/L	L	27	(365,419,456)	27	(365,419,456)	(31,207,645)
2018	2016 Experience G/L	L	28	26,099,311	28	26,099,311	2,204,147
2018	2017 DR Change	L	29	133,872,677	29	133,872,677	11,190,233
2018	2017 Experience G/L	L	29	(214,968,532)	29	(214,968,532)	(17,968,924)
2018	2017 EA Allocation	L	9	9,198,905	9	9,198,905	1,398,683
2018	2018 DR Change	L	30	136,226,953	30	136,226,953	11,279,863
<b>Total Outstanding Balance</b>						<b>\$ 10,455,252,929</b>	<b>\$ 1,018,353,936</b>
<b>Employers Credit Balance</b>							
2018	2014 Contribution Variance	Note 3	-	-	-	-	-
2018	2015 Contribution Variance	Note 3	-	-	-	-	-
2018	2016 Contribution Variance	Note 3	-	-	-	-	-
2018	2017 Contribution Variance	Note 3	-	-	-	-	-
2018	2018 Contribution Variance	L	5	343,449	5	343,449	82,143
<b>Total Credit Balance</b>						<b>\$ 343,449</b>	<b>\$ 82,143</b>
<b>Total Unfunded Actuarial Accrued Liability</b>						<b>\$ 10,455,596,378</b>	<b>\$ 1,018,436,079</b>

See UAL Amortization Schedule Notes within this Appendix.

### **UAL 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 were re-amortized effective July 1, 2017, using a discount rate of 7.70%. Projected July 1, 2018 schedules are based on a 7.65% discount rate.

**Note 1:** Act 497 of 2009 created the Original Amortization Base, effective July 1, 2010, which combined 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 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. The schedule was credited appropriations from Act 55 of 2014 and Act 56 of 2015. Future payments will increase by 2.0% until paid off in or before 2029.

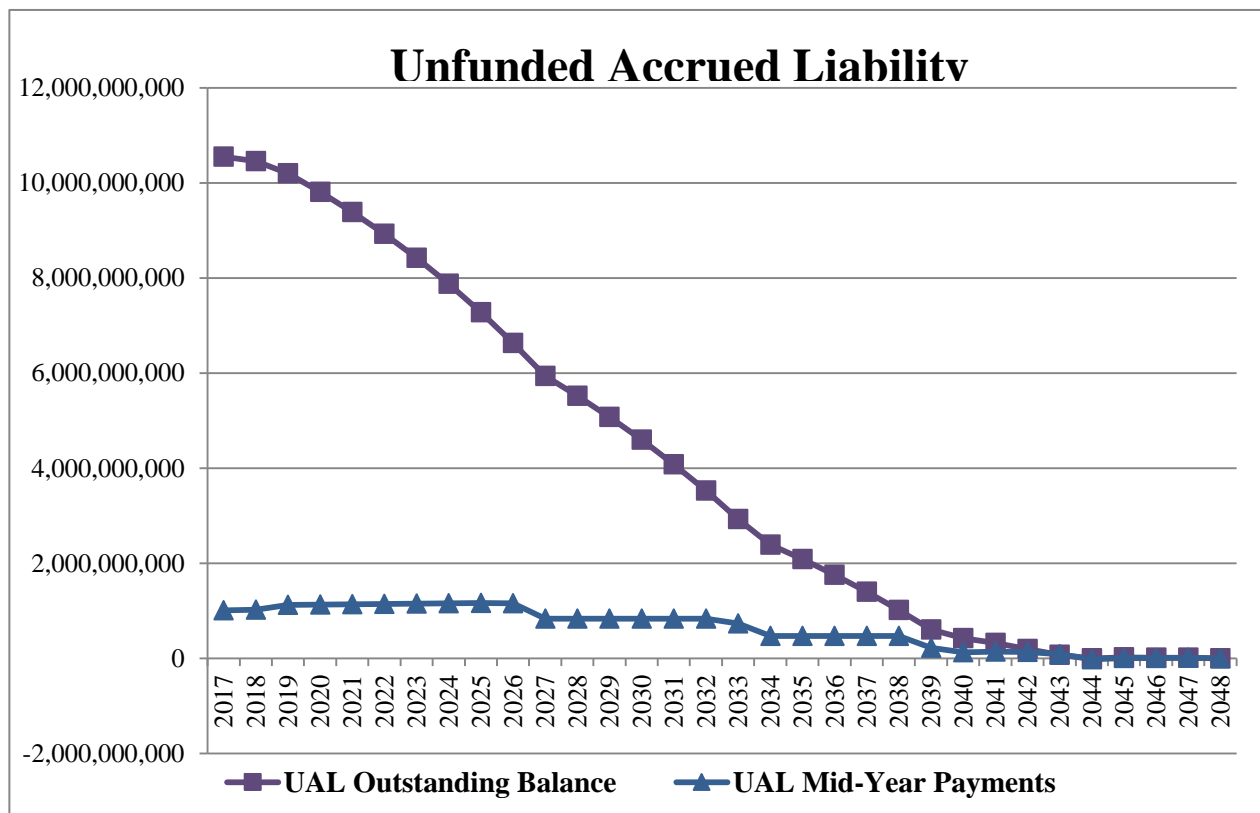
**Note 2:** Act 497 of 2009 created the Experience Account Amortization Base, which combined the following schedules: 1997, 2001-2003, 2004 (the liability resulting from Act 588 of 2004 which zeroed out the Experience Account), and 2008. The combined balance was reduced by applying funds from the subaccount 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 be level until paid off in or before 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, 2016, and 2017 contribution variance surpluses of \$40,289,648, \$91,284,653, \$64,452,206, and \$15,672,044 respectively, were used to reduce the EAAB, with no re-amortization, per Act 399 of 2014.

**UAL Outstanding Balance and Payment Schedule**  
**Based on June 30, 2018 Projected UAL Schedules\***

<b>FY Beginning</b>	<b>UAL Outstanding Balance (Millions)</b>	<b>UAL Mid-Year Payments (Millions)</b>	<b>Payment % Change</b>	<b>FY Beginning</b>	<b>UAL Outstanding Balance (Millions)</b>	<b>UAL Mid-Year Payments (Millions)</b>	<b>Payment % Change</b>
2017	10,552	1,008		2033	2,928	733	-12.3%
2018	10,456	1,018	1.1%	2034	2,391	472	-35.7%
2019	10,199	1,126	10.5%	2035	2,084	472	0.0%
2020	9,811	1,131	0.5%	2036	1,755	472	0.0%
2021	9,388	1,137	0.5%	2037	1,399	472	0.0%
2022	8,926	1,143	0.5%	2038	1,017	472	0.0%
2023	8,423	1,149	0.5%	2039	606	223	-52.6%
2024	7,874	1,156	0.5%	2040	420	128	-42.8%
2025	7,278	1,162	0.6%	2041	320	142	11.4%
2026	6,629	1,159	-0.3%	2042	196	132	-7.3%
2027	5,934	836	-27.9%	2043	75	82	-37.6%
2028	5,520	836	0.0%	2044	-5	-25	-129.8%
2029	5,075	836	0.0%	2045	20	7	-127.4%
2030	4,596	836	0.0%	2046	14	5	-32.9%
2031	4,081	836	0.0%	2047	11	11	150.6%
2032	3,526	836	0.0%	2048	0	0	-100.0%

\* Includes the projected 2018 contribution variance and amortized with 7.65% discount rate.



**Components of Original Amortization Base**  
**(Dollar amounts in millions)**

	Annual Outstanding Balance					Annual Payments				
		Other	IUAL	Employer	Total		Other	IUAL	Employer	Total
	IUAL	Schedules	Acct	Account	OAB	IUAL	Schedules	Acct	Account	OAB
2017	6,061.3	(3,478.6)	(374.1)	(93.8)	2,114.8	795.5	(456.5)	(49.1)	(12.3)	277.6
2018	5,702.4	(3,272.6)	(351.9)	(88.2)	1,989.6	811.4	(465.7)	(50.1)	(12.6)	283.1
2019	5,299.4	(3,041.4)	(327.1)	(82.0)	1,849.0	827.6	(475.0)	(51.1)	(12.8)	288.8
2020	4,848.6	(2,782.6)	(299.3)	(75.0)	1,691.7	844.2	(484.5)	(52.1)	(13.1)	294.5
2021	4,345.8	(2,494.1)	(268.2)	(67.2)	1,516.3	861.1	(494.2)	(53.1)	(13.3)	300.4
2022	3,786.9	(2,173.3)	(233.7)	(58.6)	1,321.3	878.3	(504.1)	(54.2)	(13.6)	306.4
2023	3,167.0	(1,817.5)	(195.5)	(49.0)	1,105.0	895.9	(514.1)	(55.3)	(13.9)	312.6
2024	2,481.1	(1,423.9)	(153.1)	(38.4)	865.7	913.8	(524.4)	(56.4)	(14.1)	318.8
2025	1,723.8	(989.3)	(106.4)	(26.7)	601.5	932.1	(534.9)	(57.5)	(14.4)	325.2
2026	889.3	(510.4)	(54.9)	(13.8)	310.3	922.9	(529.7)	(57.0)	(14.3)	322.0
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-	-	-	-

This table has changed from previously published tables due to the change in discount rate and application of gains applied without re-amortization.



## 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.

**GLOSSARY**

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**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.

**GLOSSARY**

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**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 ensure 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.