

**LOUISIANA STATE EMPLOYEES'  
RETIREMENT SYSTEM**

**JUNE 30, 2019**

**ACTUARIAL VALUATION**





September 26, 2019

Board of Trustees  
Louisiana State Employees' Retirement System  
Post Office Box 44213  
Baton Rouge, Louisiana 70804-4213

Ladies and Gentlemen:

This report is prepared for the Louisiana State Employees' Retirement System (LASERS) Board of Trustees to present the results of the actuarial valuation of assets and liabilities, as well as funding requirements, as of June 30, 2019. 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 2020 and the projected actuarially required contribution rate for fiscal year ending 2021. 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 Statement of Fiduciary Net Position and Statement of Changes in Fiduciary Net Position as audited by Postlethwaite & Netterville, 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 methods as specified in Louisiana Revised Statutes Title 11 Section 22(6). All actuarial assumptions and methods have been approved by the Board of Trustees and are reasonable and appropriate for the purposes of this valuation. 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.

Appendix D has been added to comply with the guidance provided by Actuarial Standard of Practice, No 51, applicable to valuations on or after November 1, 2018. 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 Louisiana State Employees' Retirement System.

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 opinions contained herein.

Respectfully submitted,

FOSTER & FOSTER INC.



Shelley R. Johnson, ASA, MAAA



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

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**PRESENTATION OF VALUATION RESULTS**

SUMMARY OF VALUATION RESULTS

		----- Prior Years -----	
	June 30, 2019	June 30, 2018	June 30, 2017
I. Membership Census			
Retirees	49,269	49,006	48,679
Actives	39,533	39,293	39,055
DROP	1,354	1,398	1,520
Terminated Vested	3,744	3,720	3,794
II. Annual Benefits	\$1,300,064,580	\$1,274,954,448	\$1,248,400,896
III. Total Payroll	1,952,495,777	1,864,035,191	1,821,943,975
IV. Market Value of Assets	12,282,698,991	12,283,713,118	11,753,275,850
Valuation Assets	12,520,853,360	12,360,520,632	11,976,792,982
V. Experience Account	11,824,506	11,241,902	10,455,340
VI. Investment Yield			
Market Value (Total Assets)	3.76%	8.79%	14.51%
Market Value (Excl. Self Directed, ORP)	3.81%	9.01%	15.18%
Actuarial Value	5.18%	7.52%	7.62%
DROP	4.68%	7.02%	7.12%
VII. Total Normal Cost	220,437,301	218,865,385	214,222,176
Total Normal Cost (% of Payroll)	11.29%	11.74%	11.76%
Employer Normal Cost (% of Payroll)	3.24%	3.72%	3.75%
VIII. Unfunded Actuarial Accrued Liability	7,006,758,935	6,743,119,532	6,815,312,579
IX. Funded Percentage	64.1%	64.7%	63.7%
X. Funding Requirements (Mid-Year)			
1) Discount Rate/Expected ROR (Current Year) <sup>1</sup>	7.60% / 8.00%	7.65% / 8.05%	7.70% / 8.25%
Discount Rate/Expected ROR (Next Year) <sup>1</sup>	7.55% / 7.95%	7.60% / 8.00%	7.65% / 8.05%
2) Employee Contribution	157,280,757	150,134,207	148,230,786
Avg. Employee Contribution Rate	8.05%	8.02%	8.01%
3) Employer Contribution	781,987,406	712,043,577	704,203,905
Aggregate Rate (Current Year) <sup>2</sup>	40.0%	38.0%	38.1%
4) Projected Employer Contribution	791,545,988	765,437,787	716,802,120
Proj. Aggregate Rate (Next Year) <sup>2</sup>	40.6%	40.8%	37.9%

The above funding requirements measure the cost of benefits in effect on June 30, 2019, including Acts of the 2019 Regular Legislative Session, except where otherwise noted.

<sup>1</sup> The discount rate is the long-term expected return on investments less 40 basis points for gain-sharing, and 15 basis points in 2017 for administrative expenses (see Discussion of Risk Section, Investment Risk)

<sup>2</sup> Aggregate employer contribution rate for all plans, net of special sub-plan direct UAL payments.

**PROJECTED CONTRIBUTION RATES BY PLAN**

Act 1026 of the 2010 Legislative Session requires the employer contribution rate to be determined separately for each plan as shown in the table below. The normal cost portion of each plan’s employer contribution rate varies based upon that plan’s benefits, member demographics, and the rate contributed by employees. The shared UAL contribution rate is determined in aggregate for all plans. The UAL established due to a specific plan or group of plans due to legislation will be allocated entirely to that plan or those plans. The Rank and File Employer Contribution Rate is applicable to Appellate Law Clerks, as determined by the Public Retirement Systems’ Actuarial Committee (PRSAC) and was developed by including Appellate Law Clerk normal costs and payroll. The variation in normal cost rate by plan reflects differences in benefits, actuarial assumptions, and member demographics. The dollar amounts of the aggregate funding requirements for LASERS are shown in Section III.

Projected Cost for Fiscal Year 2020/2021								
Plan	Plan Status	Total	Employee	Employer	Admin	Shared	Plan	Total
	on July 1, 2019	Normal Cost % (A)	NC % (B)	NC % (A)-(B)	Expense %	UAL %	Specific UAL %	Employer Contribution %
Rank & File, App. Law Clerks	Open	10.6%	7.8%	2.8%	0.93%	36.34%	0.00%	40.1%
Judges and Court Officers	Closed	16.7%	11.5%	5.2%	0.93%	36.34%	0.00%	42.5%
Legislators	Closed	10.8%	11.5%	-0.7%	0.93%	36.34%	0.00%	36.5%
Special Legislative	Closed	10.8%	9.5%	1.3%	0.93%	36.34%	0.00%	38.5%
Corrections - Primary	Closed	9.9%	9.0%	0.9%	0.93%	36.34%	0.57%	38.7%
Corrections - Secondary	Closed	14.5%	9.0%	5.5%	0.93%	36.34%	0.18%	43.0%
Wildlife	Closed	22.7%	9.5%	13.2%	0.93%	36.34%	0.05%	50.5%
Peace Officers	Closed	12.6%	9.0%	3.6%	0.93%	36.34%	0.05%	40.9%
Alcohol Tobacco Control	Closed	9.8%	9.0%	0.8%	0.93%	36.34%	0.04%	38.1%
Bridge Police	Closed	9.6%	8.4%	1.2%	0.93%	36.34%	0.07%	38.5%
Judges (Act 992)	Open	19.3%	13.0%	6.3%	0.93%	36.34%	0.00%	43.6%
Hazardous Duty (Act 992)	Open	17.1%	9.5%	7.6%	0.93%	36.34%	0.14%	45.0%
Harbor Police Plan	Closed	16.6%	9.0%	7.6%	0.93%	3.50%	0.07%	12.1%
Aggregate LASERS Plans		11.4%	8.1%	3.3%	0.93%	36.34%	0.02%	40.6%

**FUNDING REQUIREMENTS SPECIFIC TO INDIVIDUAL SUB-PLANS**

**Peace Officers** - Act 414 of 2007 increased the accrual rate for certain Peace Officers. The resulting UAL increase is funded with annual payments over 30 years from the Department of Public Safety Peace Officers Fund.

**Rank & File** – Act 992 of 2010 changed the retirement eligibility for members hired on or after July 1, 2006. The increase in UAL is amortized over 30 years with level payments. Both payments are allocated only to employers of rank and file members.

**Hazardous Duty Plan** - Act 992 of 2010 changed the normal form of benefit for prior members joining the hazardous duty plan prospectively. The increase in UAL is funded with level payments over a period of 10 years. This payment is allocated only to employers of members of the Hazardous Duty Plan.

**Adult Probation and Parole** –Act 852 of 2014 increased the accrual rate for certain members of the Corrections Primary sub-plan. The increase in UAL has been fully funded by appropriations from the Adult Probation and Parole Officer Retirement Fund (APPOR Fund). No further payments from this fund are due.



**Harbor Police Plan** – Act 648 of 2014 provides for the transfer of the members, assets, and liabilities of the Harbor Police Retirement System into LASERS, effective July 1, 2015. Per the cooperative endeavor agreement which established the terms of the transfer, the employer contribution rate established for members of the Harbor Police sub-plan will not include any payment for LASERS shared UAL existing on July 1, 2015 until the earlier of July 1, 2022 or the date that all sums owed, as established by the cooperative endeavor agreement, have been paid to LASERS.

**All Public Safety Plans** – Act 224 of 2018 provides for a 100 percent survivor benefit for any member eligible for Hazardous Duty Plan membership, if killed in the line of duty by an intentional act of violence. The benefit increase resulted in a UAL increase for the following plans: Corrections Primary, Corrections Secondary, Wildlife, Peace Officers, Alcohol Tobacco Control, Bridge Police, Hazardous Duty, and Harbor Police. The UAL payment is amortized over 10 years with level payments and paid by employers of members in each applicable plan via the plan specific UAL payment.

Act 595 provides for a disability benefit equal to 100 percent of final average compensation for members of the Hazardous Duty, Corrections Primary and Secondary, Wildlife and Harbor Police plans who are totally and permanently disabled in the line of duty by an intentional act of violence. The change is prospective for current members and retrospective for any eligible retirees. The UAL increase for members approved by the Board during the fiscal year ending 2019 to receive retrospective benefit increases was determined by this valuation. The UAL increase resulting from the prospective change was amortized beginning June 30, 2018. The amortization of the increase in UAL for current eligible retirees began June 30, 2019. The payments for the increase in UAL will be amortized over 10 years.

#### CHANGES SINCE PRIOR VALUATION

The discount rate was reduced from 7.65% to 7.60%, effective July 1, 2019, 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 2019/2020. The discount rate used to determine the projected contribution requirements for Fiscal Year 2020/2021 was reduced to 7.55%.

#### CHANGE IN FUNDING REQUIREMENTS

The aggregate employer contribution rate established by the Public Retirement Systems' Actuarial Committee for the 2019/20 plan year was 40.8%. The restated employer contribution rate determined by this valuation for the 2019/20 plan year is 40.0%. Therefore, an employer contribution surplus of 0.8% of payroll 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.

The projected aggregate employer contribution rate decreased from 40.8% for Fiscal Year 2019/2020 to 40.6% for Fiscal Year 2020/2021. 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.

**Employer Contribution Rate Reconciliation**

Normal Cost	
Demographic Shift	-0.18%
Discount Rate Change	0.09%
<u>Other Assumption Change</u>	<u>-0.41%</u>
Normal Cost Total Change	-0.49%
UAL Payment	
Investment Experience Loss	1.26%
Other Experience Loss	0.42%
Statutory UAL Payment Change *	-0.12%
Contribution Variance Payment Change	-0.02%
Other Assumption Change	-0.07%
<u>Discount Rate Change</u>	<u>0.27%</u>
Total UAL Payment Change	1.72%
Payroll Change	-1.42%
<u>Administrative Expenses</u>	<u>0.00%</u>
Total	-0.19%
Actual Contribution Rate Change	-0.20%

\* Includes the change in the impact of the 2019 reamortization of the OAB and EAAB (2019 actual versus 2018 projected) due to the 2019 contribution variance surplus and Act 50 legislative appropriation.

**CHANGE IN UNFUNDED ACCRUED LIABILITY**

Below is a reconciliation of the change in the plan's unfunded accrued liability (UAL).

Unfunded Accrued Liability - June 30, 2018		\$ 6,743,119,532
Interest on Unfunded Liability	\$ 515,848,644	
Amortization Payments	(648,891,423)	
Legislative Acts Income *	(9,479,319)	
Investment Experience Loss	285,779,820	
Other Experience Loss	95,572,390	
Employer Contribution Surplus	(44,735,711)	
Other Assumption Change	(17,177,631)	
Discount Rate Change (to 7.60%)	85,847,012	
<u>Legislative Change (Acts 595)</u>	<u>875,621</u>	
Total Change		263,639,403
Unfunded Accrued Liability - June 30, 2019		\$ 7,006,758,935

\* Includes \$1,135 in litter fines and \$9,478,184 from Act 50 of 2019

PLAN EXPERIENCE

The actuarial assumptions represent the best estimate of future plan 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 E 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 C, describes how investment and non-investment gains are amortized, or allocated for other purposes.

Demographic and Salary 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 2018/19 plan year, the system incurred a \$95,572,390 experience loss due to plan experience differing from that anticipated by the demographic and salary assumptions. The loss is amortized over 30 years with level payments.

A breakdown of the non-investment experience gain/(loss) is provided below:

Active Member Decrements	(\$63,588,899)
Active Member Salaries	(\$50,112,772)
Inactive Mortality	\$26,100,060
Administrative Expenses	(\$607,490)
Other	(\$7,363,289)
<u>Total Change</u>	<u>(\$95,572,390)</u>

Investment Experience

The market value of assets and actuarial value of assets include funds from the Optional Retirement Plan (ORP) and DROP accounts with member-directed investments. The rate of return on the actuarial value of assets is determined for trust assets net of these accounts, and in total, as shown below.

	Actuarial Value of Assets	ORP and Self - Directed DROP	Net Actuarial Value of Assets
Beginning Assets	12,371,762,534	572,309,487	11,799,453,047
Contributions	943,020,458	64,207,140	878,813,318
Benefits Payments and Expenses	1,396,948,902	65,163,664	1,331,785,238
Investment Income	614,843,776	15,328,253	599,515,523
Ending Asset Value	12,532,677,866	586,681,216	11,945,996,650
Net AVA Rate of Return			5.18%

For the plan year ending June 30, 2019, the realized actuarial rate of return based upon the actuarial value of assets is 5.18%. Since this is less than the 7.65% discount rate, which is the assumed rate of return expected to fund regular plan benefits, the result is an investment experience loss of \$285,779,820. Investment experience losses are amortized over 30 years with level payments. Investment experience gains up to the threshold amounts, are allocated to the Original Amortization Base and Experience Account Allocation Base. The remaining gain is amortized over 30 years with level payments. One-half of the remaining gain is allocated to the experience account, up to the statutory cap, to be used to fund future permanent benefit increases not yet granted and is amortized over ten years as a loss.

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

**LASERS Actuarial Valuation**  
**June 30, 2019**

<b>Development of Investment Gain/(Loss)</b>	
A. Beginning Net Actuarial Value of Assets (AVA)	11,799,453,047
B. Total Contributions	878,813,318
C. Benefits Payments and Expenses	1,331,785,238
D. Ending Net Actuarial Value of Assets (AVA)	11,945,996,650
E. Investment Income (D - A - B + C)	599,515,523
Investment Rate of Return	5.18%
F. Expected Investment Income	885,295,343
Expected Rate of Return	7.65%
G. Investment Gain/(Loss) (E - F)	(285,779,820)
<b>Current Allocation of Gain Threshold to OAB/EAAB</b>	
H. \$100,000,000 Indexed by AVA Increase	109,532,109

The historical geometric average rates of return on the actuarial value of assets, net of investment expenses, for plan years ending June 30 are shown below. The discount rate reflects the expected return assumed to fund regular plan benefits. The returns below are comparable to the discount rate plus returns expected to be allocated to the experience account, currently 8.00% for Fiscal Year 2019/2020 and 7.95% for Fiscal Year 2020/2021.

	Actuarial Rate of Return		Geometric Average
2014	13.45%	5 Year	7.26%
2015	10.64%	10 Year	7.61%
2016	5.43%	15 Year	7.62%
2017	7.62%	20 Year	6.24%
2018	7.52%	25 Year	7.44%
2019	5.18%	30 Year	7.79%

DROP accounts for members eligible for DROP prior to January 1, 2004 are credited with interest 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, 2018 through June 30, 2019 after the expense adjustment is 4.68%. DROP accounts for members eligible for DROP after January 1, 2004 are invested in self-directed accounts approved by the Board of Trustees.

The Harbor Police Retirement System Annual DROP Interest Rate is the three-year average (calculated as the compound average of 36 months) investment return of the plan assets for the period ending the June 30th immediately preceding that given date. This average rate is reduced by a “contingency” adjustment of 0.5 percentage points, but not to below zero. The Harbor Police Retirement System Annual DROP Interest Rate for the period July 1, 2019 through June 30, 2020 after the “contingency” adjustment is 9.2968%.

## 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 minimum employer contribution rate of 15.5%, over the actuarially determined employer contribution, as restated in the current valuation. The minimum rate is not currently applicable. The account continues to have a zero balance.

Experience Account: The account is used to fund permanent benefit increases for retirees. Fifty percent of any excess return above \$100,000,000 (indexed to increases in the actuarial value of assets, beginning June 30, 2016) will be credited to the Experience Account, subject to the restrictions provided in Act 399 of 2014, as described in the Summary of Plan Provisions (Appendix B). The fund currently has a balance of \$11,824,506.

## LEGISLATIVE/PLAN CHANGES

The following provisions of Act 95 of 2016 are being implemented in this valuation, or will be implemented in future actuarial valuations once certain triggers are met, as noted below:

- 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 Fiscal Year 2019/2020 and in every fifth fiscal year thereafter. Note, the projected impact of the re-amortization was included in the Fiscal Year 2019/2020 projected contribution rate. The actual impact is determined as part of the June 30, 2019 valuation, and is included in the aggregate current year (Fiscal Year 2019/2020) contribution rate determined by this valuation.
- 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.
- 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.

Act 595 of 2018 provides for a disability benefit equal to 100 percent of final average compensation for members of the Hazardous Duty, Corrections Primary and Secondary, Wildlife and Harbor Police plans who are totally and permanently disabled in the line of duty by an intentional act of violence. The change is prospective for current members and retrospective for any eligible retirees. The prospective change results in a minimal increase in unfunded accrued liability, which will be paid by the member's employer via the plan specific UAL payment, and a minimal increase in future normal cost. Amortization of this increase begin July 1, 2018. The June 30, 2019 valuation includes the impact of five eligible retirees with retrospective benefit impact. The increase in unfunded accrued liability for eligible current retirees, which is expected to be minimal, will be paid by the employing agency within ten years.

The following changes were enacted during the 2019 Legislative Session:

- Act 50 of 2019 provided a supplemental appropriation of \$9,478,184 to LASERS to be applied to the IUAL, which is a component of the Original Amortization Base.

#### ACCELERATED REDUCTION AND REAMORTIZATION 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, \$165,972,060 has been applied to the OAB and \$204,876,602 has been applied to the EAAB. When combined with the surplus dollars appropriated to the System by the legislature, the OAB is paid-off in 2028, one year earlier than the 2029 payoff required by the State Constitution. These funds resulted in the acceleration of the payoff of the EAAB by 2037, three years earlier than the statutory requirement that this schedule be paid by 2040.

Per Act 94 of 2016, the OAB and EAAB amortization payments for fiscal year 2019/2020 were determined by re-amortizing the schedules to their respective original pay-off dates. The re-amortized UAL schedules are shown in Appendix F.

#### FUNDED STATUS

The funded status is a measure of the plan's assets relative to the plan's obligations. The current funded ratio is 64.1%, as measured by the plan's valuation assets divided by the total actuarial accrued liability, based on the asset valuation method, actuarial cost method, and actuarial assumptions described in Appendix E. The funded ratio reflects the change in discount rate. 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. Appendix D includes a 10-year history of the plan's funded status.

**ASSETS/FINANCIAL SUMMARY**

**STATEMENT OF REVENUES AND EXPENSES**

	----- Prior Years -----		
	<u>June 30, 2019</u>	<u>June 30, 2018</u>	<u>June 30, 2017</u>
<b><u>Operating Income:</u></b>			
1. Contribution Income			
Member	\$ 160,338,556	\$ 152,189,709	\$ 149,931,242
Employer	759,779,744	725,417,532	675,166,965
ORP	370,705	385,339	416,785
2. Other Income			
Legislative Acts Income <sup>1</sup>	9,479,319	3,676,833	250
Transfers/Purchases	9,685,337	11,370,988	9,989,730
Miscellaneous	3,366,797	3,827,744	4,059,275
Total Non-Investment Income	943,020,458	896,868,145	839,564,247
3. Investment Income			
Investments	541,659,901	1,088,981,821	1,596,128,574
Less Investment Expenses	(88,745,584)	(77,444,313)	(75,527,875)
Net Investment Income	452,914,317	1,011,537,508	1,520,600,699
4. Total Income	1,395,934,775	1,908,405,653	2,360,164,946
<b><u>Operating Expenses:</u></b>			
1. General Administration	16,785,776	14,732,258	17,074,984
Other Post Employment Benefits <sup>2</sup>	538,097	9,525,495	904,975
Depreciation Expenses	783,617	883,799	556,901
2. Benefits Paid			
Pension Benefits	1,343,892,705	1,317,635,325	1,274,461,022
Return of Contributions	34,948,707	35,191,508	37,606,040
Total Benefits Paid	1,378,841,412	1,352,826,833	1,312,067,062
3. Total Expenses	\$ 1,396,948,902	\$ 1,377,968,385	\$ 1,330,603,922
<b><u>Net Income:</u></b>	<b>\$ (1,014,127)</b>	<b>\$ 530,437,268</b>	<b>\$ 1,029,561,024</b>

<sup>1</sup> The amount of Legislative Acts Income for 2019 includes \$1,135 in litter fines and \$9,478,184 in appropriations from Act 50 of 2019; 2018 is appropriations from Act 59 of 2018; 2017 is litter fines;

<sup>2</sup> Other Postemployment Benefits for 2018 include a \$9,123,873 adjusting entry related to GASB 75 implementation.

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

**Revenues by Source**

<b>Plan Year</b>	<b>Member Contribution</b>	<b>Employer Contribution<sup>1</sup></b>	<b>Investment Income<sup>4</sup></b>	<b>Total</b>
2010	205,328,033	503,391,304	1,139,301,483 <sup>3</sup>	1,848,020,820 <sup>3</sup>
2011	197,825,267	572,255,877	1,854,312,621	2,624,393,765
2012	192,795,057	669,727,178	(9,610,468)	852,911,767
2013	173,357,802	682,836,602	1,106,494,873	1,962,689,277
2014	152,993,052	635,974,701	1,770,521,381	2,559,489,134
2015	153,281,097	739,607,123	152,809,130	1,045,697,350
2016	152,233,771	744,582,736	(296,729,233)	600,087,274
2017	149,931,242	689,633,005	1,520,600,699	2,360,164,946
2018	152,189,709	744,678,436	1,011,537,508	1,908,405,653
2019	160,338,556	782,681,902	452,914,317	1,395,934,775

**Expenses by Type**

<b>Plan Year</b>	<b>Benefits</b>	<b>Refunds</b>	<b>Administrative Expenses<sup>2,4</sup></b>	<b>Total</b>
2010	829,236,652	35,676,509	18,897,997	883,811,158
2011	915,840,721	41,553,896	18,181,272	975,575,889
2012	978,971,262	43,221,742	18,441,062	1,040,634,066
2013	1,070,410,859	61,522,162	18,932,247	1,150,865,268
2014	1,167,477,166	77,118,765	17,638,128	1,262,234,059
2015	1,199,079,252	38,308,757	18,011,841	1,255,399,850
2016	1,238,507,932	35,997,261	17,018,181	1,291,523,374
2017	1,274,461,022	37,606,040	18,536,860	1,330,603,922
2018	1,317,635,325	35,191,508	25,141,552	1,377,968,385
2019	1,343,892,705	34,948,707	18,107,490	1,396,948,902

<sup>1</sup> Includes transfers and purchases and the annual employer contribution, and any legislative appropriations.

<sup>2</sup> Includes other expenses, not related to administration.

<sup>3</sup> Amounts shown reflect values used in the 2010 actuarial valuation, rather than the restated 2010 Statement of Assets.

<sup>4</sup> Investment Income and Administrative Expenses do not tie to LASERS financial statements for 2010-2013 because Investment Administrative Expenses were transferred from Administrative Expenses to Investment Income per instructions from GASB.



**STATEMENT OF ASSETS**

	----Prior Years----		
	June 30, 2019	June 30, 2018	June 30, 2017
ASSETS (Market Value)			
1. Short-Term Assets			
Cash/Cash Equivalencies	\$ 134,308,012	\$ 176,067,072	\$ 197,912,884
Short-Term Investments	128,453,941	122,387,383	142,663,861
2. Bonds			
Domestic Issues	1,358,261,609	1,444,284,614	1,388,750,646
International Issues	917,116,972	501,059,453	447,375,296
3. Equities			
Domestic Stock	2,567,937,341	2,909,424,470	2,666,613,896
International Stock	3,772,924,328	3,903,379,731	3,798,051,961
4. Other Assets			
Fixed Assets	5,853,457	5,936,548	3,855,740
Real Estate & Alternative Assets	3,333,310,490	3,132,410,258	3,048,043,546
5. Receivables - Payables	65,654,038	89,598,187	59,897,298
6. Securities Lending Assets - Liabilities	61,853	54,554	110,722
7. Deferred Outflows & Inflows	(1,183,050)	(889,152)	-
<b>TOTAL ASSETS - Market Value</b>	<b>12,282,698,991</b>	<b>12,283,713,118</b>	<b>11,753,275,850</b>
Cost Value	10,441,713,527	10,156,020,491	9,574,374,375

**ACTUARIAL VALUE OF ASSETS**

The actuarial value of assets (AVA) is determined as the market value of assets (MVA) adjusted to gradually recognize investment gains and losses relative to the net assumed investment return, over a 5-year period in 20% increments. The actuarial value of assets is subject to Corridor Limits of 80% to 120% of the Market Value of Assets. The tables below show the development of the actuarial value of assets and the amount of deferred gains and losses to be recognized in future years.

<b>Plan Year</b>	<b>Market Value</b>		<b>Deferred Gain/(Loss)</b>
	<b>Gain/(Loss)</b>	<b>Deferred %</b>	
2016	(1,166,526,680)	20%	(233,305,336)
2017	708,540,587	40%	283,416,235
2018	125,269,563	60%	75,161,738
2019	(469,064,390)	80%	(375,251,512)
			(249,978,875)
Market Value of Assets			12,282,698,991
Deferred Asset Gain/(Loss)			(249,978,875)
Preliminary Actuarial Value of Assets			12,532,677,866
<b>CORRIDOR LIMITS</b>			
Minimum = 80% of Market Value			9,826,159,193
Maximum = 120% of Market Value			14,739,238,789
Actuarial Value of Assets			12,532,677,866

**Deferred Gain/Loss to be Recognized in Actuarial Value of Assets in Future Years**

<b>Plan Year</b>	<b>Deferred Gain/(Loss)</b>	<b>2020</b>				<b>2021</b>				<b>2022</b>				<b>2023</b>			
2016	(233,305,336)	(233,305,336)															
2017	283,416,235	141,708,118				141,708,117											
2018	75,161,738	25,053,913				25,053,913				25,053,912							
2019	(375,251,512)	(93,812,878)				(93,812,878)				(93,812,878)				(93,812,878)			
	(249,978,875)	(160,356,183)				72,949,152				(68,758,966)				(93,812,878)			

**SIDE FUNDS AND DEVELOPMENT OF  
ACTUARIAL VALUE OF ASSETS**

	---- Prior Years ----		
	June 30, 2019	June 30, 2018	June 30, 2017
<b><u>EMPLOYER CREDIT ACCOUNT</u><sup>1</sup>:</b>			
Prior Year Ending Balance	\$ -	\$ -	\$ -
+ Current Year Allocation	-	-	-
- Current Year Disbursements	-	-	-
+ Accumulated Interest	-	-	-
Total Fund Balance - Year End	-	-	-
<b><u>INITIAL UAL AMORTIZATION FUND:</u></b>			
Prior Year Ending Balance	\$ -	\$ -	\$ -
+ Current Year Allocation	-	-	-
- Current Year Disbursements	-	-	-
+ Accumulated Interest	-	-	-
Total Fund Balance - Year End	-	-	-
<b><u>EXPERIENCE ACCOUNT FUND:</u></b>			
Prior Year Ending Balance	\$ 11,241,902	\$ 10,455,340	\$ 9,714,942
+ Experience Account Allocation	-	-	-
- Benefit Disbursements	-	-	-
+ Accumulated Interest	582,604	786,562	740,398
Fund Balance - Year End	11,824,506	11,241,902	10,455,340
<b><u>DEVELOPMENT OF VALUATION ASSETS:</u></b>			
Actuarial Value of Assets	\$ 12,532,677,866	\$ 12,371,762,534	\$ 11,987,248,322
- Employer Credit Account	-	-	-
- Initial UAL Fund	-	-	-
- Experience Account Fund	11,824,506	11,241,902	10,455,340
Valuation Assets	\$ 12,520,853,360	\$ 12,360,520,632	\$ 11,976,792,982

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

**DEVELOPMENT OF COSTS,  
LIABILITIES AND CONTRIBUTIONS**

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

	<b>June 30, 2019</b>		<b>---- Prior Year ---- June 30, 2018</b>	
	<b>Dollar Amount</b>	<b>% of Salary</b>	<b>Dollar Amount</b>	<b>% of Salary</b>
Discount Rate	7.60%		7.65%	
<b>I. Normal Costs</b>				
Active Members with Complete Data				
a) Retirement Benefits	137,647,297	7.05%	143,523,566	7.70%
b) Disability Benefits	3,648,146	0.19%	5,075,789	0.27%
c) Survivor Benefits	4,149,560	0.21%	4,926,929	0.26%
d) Voluntary Termination	74,992,298	3.84%	65,339,101	3.51%
TOTAL	220,437,301	11.29%	218,865,385	11.74%
<b>II. Actuarial Accrued Liability</b>				
a) Active Members				
1) Retirement/Termination Benefits	4,917,887,771		4,730,023,979	
2) Disability Benefits	47,248,327		65,800,686	
3) Survivor Benefits	60,473,784		63,833,114	
	5,025,609,882		4,859,657,779	
b) Retired and Inactive Members				
1) Regular Retirees	10,729,423,319		10,539,868,192	
2) Disability	254,329,668		262,055,351	
3) Survivors	804,460,494		793,829,147	
4) Terminated Vested	403,524,960		360,624,770	
5) Contributions Refunded	84,317,813		84,882,058	
6) DROP Deferred Benefits	1,128,687,112		1,111,246,937	
7) DROP Account Balances	1,091,758,883		1,086,044,790	
8) ORP Account Balances	5,500,164		5,431,140	
	14,502,002,413		14,243,982,385	
c) Total	19,527,612,295		19,103,640,164	

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

**LASERS Actuarial Valuation**  
**June 30, 2019**

	<u>June 30, 2019</u>	<u>---- Prior Year ---- June 30, 2018</u>
II. Actuarial Accrued Liability	19,527,612,295	19,103,640,164
Discount Rate	7.60%	7.65%
III. Valuation Assets	12,520,853,360	12,360,520,632
IV. Unfunded Actuarial Accrued Liability - Entry Age Normal <sup>1</sup>	7,006,758,935	6,743,119,532
a) Change over prior year	263,639,403	(72,193,047)
b) Funded Percentage	64.1%	64.7%
V. Employer Contributions To Fund Current Plan Year <sup>1</sup>		
a) Employer Portion of Normal Cost	63,303,591	69,623,619
b) Administrative Expenses	18,100,000	17,500,000
c) Amortization Payments	694,473,150	594,667,047
d) Prior Contribution Variance Amort. Pmt	6,567,883	30,743,236
TOTAL Required Contribution	<u>782,444,624</u>	<u>712,533,902</u>
Less direct UAL payments <sup>2</sup>	<u>457,218</u>	<u>490,325</u>
NET contribution required	781,987,406	712,043,577
	40.0%	38.0%
PR SAC Approved rate <sup>3</sup>	40.8%	37.9%
VI. Projected Employer Contributions		
Discount Rate	7.55%	7.60%
To Fund Next Plan Year <sup>1</sup>		
a) Employer Portion of Normal Cost	64,957,113	71,776,929
b) Administrative Expenses	18,100,000	17,500,000
c) Amortization Payments	702,380,184	669,586,164
d) Prior Contribution Variance Amort. Pmt	6,564,886	7,031,912
TOTAL Required Contribution	<u>792,002,183</u>	<u>765,895,005</u>
Less direct UAL payments <sup>2</sup>	<u>456,195</u>	<u>457,218</u>
NET contribution required	791,545,988	765,437,787
	40.6%	40.8%
Projected Rank and File Employer Normal Cost Rate	2.8300%	3.7100%
Projected Aggregate Employer Normal Cost Rate	3.3300%	3.8256%
VII. Current Payroll	1,952,495,777	1,864,035,191
Projected Payroll - Mid Year	1,953,798,224	1,871,997,592
Projected Payroll - Next Year	1,949,477,354	1,876,219,242

<sup>1</sup> Dollar amounts reflect estimated payments due mid-year on January 1st per Act 81.

<sup>2</sup> Direct UAL payments for Act 414 and Harbor Police are not included in the employer contribution rate.

<sup>3</sup> Constitutional Minimum is 12% without regard to Employer Credits.

**GASB STATEMENTS 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 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. The Total Pension Liability was developed using the Entry Age Normal cost method.

**SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY**

	<u>June 30, 2019</u>	<u>June 30, 2018</u>	<u>June 30, 2017</u>
Total Pension Liability	\$ 19,527,612,295	\$ 19,103,640,164	\$ 18,792,105,561
<u>Plan Fiduciary Net Position</u>	<u>\$ 12,282,698,991</u>	<u>\$ 12,283,713,118</u>	<u>\$ 11,753,275,850</u>
Net Pension Liability	\$ 7,244,913,304	\$ 6,819,927,046	\$ 7,038,829,711
 Plan Fiduciary Net Position as a percentage of Total Pension Liability	 62.9%	 64.3%	 62.5%
 Covered Employee Payroll	 \$ 1,952,495,777	 \$ 1,864,035,191	 \$ 1,821,943,975
 Net Pension Liability as percentage of Covered Employee Payroll	 371.1%	 365.9%	 386.3%

**SCHEDULE OF EMPLOYER CONTRIBUTIONS**

Fiscal Year	Actuarially Determined Contribution (ADC) <sup>1</sup>	Contributions in Relation to ADC <sup>1</sup>	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a % of Covered Payroll
2010	562,524,589	491,237,641	71,286,948	2,546,456,790	19.3%
2011	651,770,540	558,183,107	93,587,433	2,408,839,604	23.2%
2012	687,019,184	637,285,920	49,733,264	2,341,703,286	27.2%
2013	724,391,420	649,029,708	75,361,712	1,951,987,750	33.2%
2014	709,799,409	612,698,414	97,100,995	1,813,759,357	33.8%
2015	697,377,899	722,137,361	(24,759,462)	1,856,735,292	38.9%
2016	694,091,525	718,606,514	(24,514,989)	1,842,286,184	39.0%
2017	701,906,777	675,583,750	26,323,027	1,821,943,975	37.1%
2018	707,672,002	725,802,871	(18,130,869)	1,864,035,191	38.9%
2019	717,033,569	760,150,449	(43,116,880)	1,952,495,777	38.9%

<sup>1</sup> Contributions shown are not interest adjusted. Actual contributions tie to financial statements.

**STATEMENT OF CHANGES IN NET PENSION LIABILITY**

	<b>2019</b>	<b>2018</b>	<b>2017</b>
<b>Total Pension Liability (TPL)</b>			
Service Cost	218,865,385	214,222,176	219,475,741
Interest	1,425,430,990	1,411,403,403	1,405,827,435
Changes of Benefit Terms - PBI	-	-	-
Changes of Benefit Terms <sup>1</sup>	875,621	657,700	-
Differences Between Expected and Actual	88,972,166	(45,163,231)	(139,108,937)
Changes of Assumptions	68,669,381	83,241,388	41,711,761
Retirement Benefits	(1,343,892,705)	(1,317,635,325)	(1,274,461,022)
Refunds and Transfers of Member Contributions	(34,948,707)	(35,191,508)	(37,606,040)
<b>Net Change in Total Pension Liability</b>	<b>423,972,131</b>	<b>311,534,603</b>	<b>215,838,938</b>
<b>Total Pension Liability - Beginning</b>	<b>19,103,640,164</b>	<b>18,792,105,561</b>	<b>18,576,266,623</b>
<b>Total Pension Liability - Ending (a)</b>	<b>19,527,612,295</b>	<b>\$ 19,103,640,164</b>	<b>\$ 18,792,105,561</b>
<b>Plan Fiduciary Net Position</b>			
Employer Contributions	769,629,768	729,479,704	675,583,750
Employee Contributions	160,338,556	152,189,709	149,931,242
Net Investment Income	452,914,317	1,011,537,508	1,520,600,699
Other Income	13,052,134	15,198,732	14,049,255
Retirement Benefits	(1,343,892,705)	(1,317,635,325)	(1,274,461,022)
Refunds and Transfers of Member Contributions	(34,948,707)	(35,191,508)	(37,606,040)
Administrative Expense	(16,785,776)	(14,732,258)	(17,074,984)
Other Postemployment Benefit Expenses <sup>2</sup>	(538,097)	(9,525,495)	(904,975)
Depreciation and Amortization Expenses	(783,617)	(883,799)	(556,901)
<b>Net Change in Plan Fiduciary Net Position</b>	<b>(1,014,127)</b>	<b>530,437,268</b>	<b>1,029,561,024</b>
<b>Plan Fiduciary Net Position - Beginning</b>	<b>12,283,713,118</b>	<b>11,753,275,850</b>	<b>10,723,714,826</b>
<b>Plan Fiduciary Net Position - Ending (b)</b>	<b>12,282,698,991</b>	<b>\$ 12,283,713,118</b>	<b>\$ 11,753,275,850</b>
<b>Ending Net Pension Liability (NPL) (a) - (b)</b>	<b>7,244,913,304</b>	<b>\$ 6,819,927,046</b>	<b>\$ 7,038,829,711</b>
<b>Plan Fiduciary Net Position as a Percentage of the Total Pension Liability</b>	<b>62.9%</b>	<b>64.3%</b>	<b>62.5%</b>
<b>Covered Employee Payroll</b>	<b>\$ 1,952,495,777</b>	<b>\$ 1,864,035,191</b>	<b>\$ 1,821,943,975</b>
<b>Net Pension Liability as a Percentage of Covered Employee Payroll</b>	<b>371.1%</b>	<b>365.9%</b>	<b>386.3%</b>

<sup>1</sup> Increase in Net Pension Liability resulting from Acts 224 and 595 of 2018.

<sup>2</sup> Other Postemployment Benefit Expenses reported in 2018 include a \$9,123,873 adjusting entry related to GASB 75 implementation.

**Actuarial Assumptions:**

All assumptions used for purposes of GASB Statement 67/68 reporting requirements are described in Appendix E, except for the discount rate. Please see below for a description of the discount rate used for GASB Statement 67/68 reporting.

**Discount Rate:**

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expenses and inflation) are developed for each major asset class. These ranges are combined to produce the long term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adjusting for expected inflation of 2.50% and an adjustment for the effect of rebalancing/diversification. The resulting expected long-term nominal rate of return is 8.74%. Best estimates of geometric real rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2019 are summarized in the following table:

<u>Asset Class</u>	<u>Long Term Expected Real Rate of Return</u>
Cash	0.24%
Domestic Equity	4.83%
International Equity	5.83%
Domestic Fixed Income	2.79%
International Fixed Income	4.49%
Alternatives	8.32%
<u>Risk Parity</u>	<u>5.06%</u>
Total Fund	6.09%

The discount rate used to measure the total pension liability was 7.60 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.

	1% Decrease	Current Discount Rate	1% Increase
	6.60%	7.60%	8.60%
2019 Employers' Net Pension Liability	9,144,004,495	7,244,913,304	5,640,818,554

The Schedule of Pension Amounts, below, provides employers with amounts to be recognized in the financial statements and note disclosures for GASB 68 reporting. In accordance with GASB Statement 68, changes in total pension liability due to differences between actual and expected experience and changes in assumptions are amortized over a period equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active and inactive employees) determined as of the beginning of the measurement period. The current average remaining service life, when rounded up to the next higher whole number changed from 3 years to 2 years in 2019. Differences between projected and actual investment returns are amortized over a closed 5-year period.



<b>2019 Active Remaining Service Life:</b>	<b># Years</b>	<b>Plan Year</b>	<b>Amortization Period</b>
Active	7.29	2014	3.00
Active After DROP	3.81	2015	3.00
Supplemental	3.83	2016	3.00
DROP	0	2017	3.00
Term Vested	0	2018	3.00
Term Non-vested	0	2019	2.00
Retired	0		
<hr/>			
Weighted Average	1.90		
Amortization Period (Rounded Up)	2.0 Years		

**SCHEDULE OF PENSION AMOUNTS**

	<u>Net Pension Liability</u>	<u>Deferred Inflows</u>	<u>Deferred Outflows</u>	<u>Pension Expense</u>
<b>Beginning balance</b>	(6,819,927,046)	(601,441,562)	682,793,111	
<b>Total Pension Liability Factors:</b>				
Service cost	(218,865,385)			(218,865,385)
Interest	(1,425,430,990)			(1,425,430,990)
Changes in benefit terms	(875,621)			(875,621)
Differences between expected and actual	(88,972,166)	-	88,972,166	
Amortization of current year		-	(44,486,083)	44,486,083
Amortization of prior years		61,424,056		(61,424,056)
Changes in assumptions	(68,669,381)	-	68,669,381	
Amortization of current year		-	(34,334,691)	34,334,691
Amortization of prior years		-	(41,651,050)	41,651,050
Benefit payments	1,343,892,705			(1,343,892,705)
Refunds and Transfers of Member	34,948,707			(34,948,707)
<b>Net Change in Total Pension Liability</b>	<u>(423,972,131)</u>	<u>61,424,056</u>	<u>37,169,723</u>	<u>325,378,352</u>
<b>Plan Fiduciary Net Position:</b>				
Employer Contributions	769,629,768			
Employee Contributions	160,338,556			(160,338,556)
Expected earnings on pension plan investments	922,029,262			(922,029,262)
Differences between projected and actual				
earnings on pension plan investments	(469,114,945)	-	469,114,945	
Amortization of current year		-	(93,822,989)	93,822,989
Amortization of prior years		166,667,803	(380,089,595)	213,421,792
Retirement Benefits	(1,343,892,705)			1,343,892,705
Administrative Expense	(16,785,776)			16,785,776
Refunds and Transfers of Member	(34,948,707)			34,948,707
Other	11,730,420			(11,730,420)
<b>Net Change in Plan Fiduciary Net Position</b>	<u>(1,014,127)</u>	<u>166,667,803</u>	<u>(4,797,639)</u>	<u>608,773,731</u>
<b>Ending Balance</b>	<u>(7,244,913,304)</u>	<u>(373,349,703)</u>	<u>715,165,195</u>	<u>934,152,083</u>

**MEMBERSHIP DATA**

LASERS 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 LASERS but are classified as disability retirees for purposes of the actuarial valuation. Liabilities are calculated accordingly.

**ACTIVE MEMBERS BY PLAN**

	<b>2019</b>	<b>2018</b>	<b>2017</b>
Rank and File, Appellate Law Clerks	32,807	32,587	32,352
Legislators	7	7	7
Judges, Prior to 2011	182	197	214
Judges, Post 2011	120	107	95
Wildlife	138	147	157
Corrections Primary	126	160	192
Corrections Secondary	1,405	1,528	1,701
Peace Officers	40	49	51
Alcohol Tobacco Control	10	11	12
Bridge Police	3	5	5
Hazardous Duty Plan	3,006	2,823	2,624
Harbor Police	22	23	27
<b>Subtotal</b>	<b>37,866</b>	<b>37,644</b>	<b>37,437</b>
Post DROP	1,667	1,649	1,618
<b>Total Active Members</b>	<b>39,533</b>	<b>39,293</b>	<b>39,055</b>

**TOTAL MEMBERS**

	<b>2019</b>	<b>2018</b>	<b>2017</b>
Active Members	39,533	39,293	39,055
DROP Participants	1,354	1,398	1,520
Regular Retirees	41,117	40,832	40,482
Disability Retirees	2,175	2,234	2,325
Survivors	5,977	5,940	5,872
Terminated Vested	3,744	3,720	3,794
<b>Subtotal</b>	<b>93,900</b>	<b>93,417</b>	<b>93,048</b>
Terminated, Due Refund	55,280	54,370	53,573
<b>Total Members</b>	<b>149,180</b>	<b>147,787</b>	<b>146,621</b>

**MEMBER RECONCILIATION**

	<b>Active Pre-DROP</b>	<b>Active after DROP</b>	<b>Terminated Vested</b>	<b>In DROP</b>	<b>Retired, Disabled, Survivors</b>	<b>Total</b>
<b>June 30, 2018</b>	37,644	1,649	3,720	1,398	49,006	93,417
<b>Additions</b>						
Initial Membership	4,441					4,441
Non-Vested Rehire	563					563
Data Revisions		1	39	1	28	69
<b>Change in Status</b>						
Active to Terminated Vested	(517)		517			
Active to In DROP	(482)			482		
Active to Retired	(842)				842	
Disabled to Active						
Terminated Vested to Active	129		(129)			
Terminated Vested to Retiree			(182)		182	
Terminated Vested to DROP			(3)	3		
In DROP to Active after DROP		295		(295)		
In DROP to Retiree				(234)	234	
Active After DROP to Retiree		(299)			299	
Data Revisions		25			(25)	
<b>Eliminated from Census</b>						
Refunded	(1,404)		(180)			(1,584)
Terminated, Due Refund	(1,614)		(17)			(1,631)
Deceased	(29)	(3)	(12)	(1)	(1,235)	(1,280)
Data Revisions	(23)	(1)	(9)		(62)	(95)
<b>June 30, 2019</b>	<b>37,866</b>	<b>1,667</b>	<b>3,744</b>	<b>1,354</b>	<b>49,269</b>	<b>93,900</b>

**LASERS MEMBERSHIP PROFILE**  
**Regular Members Before July 2006**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Age	Credited Service									Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	
<b>&lt; 25</b>										
Avg. Pay										
<b>25 - 29</b>	3									3
Avg. Pay	\$84,453									\$84,453
<b>30 - 34</b>	3	4	2	40	18					67
Avg. Pay	\$61,590	\$80,473	\$55,351	\$1,660,380	\$804,159					\$2,661,953
<b>35 - 39</b>	3	6	21	410	370	32	1			843
Avg. Pay	\$74,580	\$155,979	\$896,291	\$22,517,257	\$19,558,264	\$1,896,517	\$76,187			\$45,175,075
<b>40 - 44</b>	7	17	26	380	943	376	22			1771
Avg. Pay	\$246,224	\$667,195	\$1,205,615	\$20,732,895	\$54,617,696	\$21,758,974	\$1,381,052			\$100,609,651
<b>45 - 49</b>	5	13	24	282	814	901	357	10		2406
Avg. Pay	\$101,333	\$505,114	\$1,225,292	\$14,949,828	\$46,513,908	\$55,305,013	\$22,990,127	\$962,162		\$142,552,777
<b>50 - 54</b>	5	17	20	268	706	856	976	90	6	2944
Avg. Pay	\$259,430	\$663,511	\$962,252	\$12,969,488	\$38,612,890	\$50,704,981	\$64,350,233	\$7,591,100	\$410,870	\$176,524,755
<b>55 - 59</b>	5	15	18	277	725	747	292	108	55	2242
Avg. Pay	\$126,421	\$556,159	\$700,058	\$13,849,566	\$36,589,562	\$40,582,285	\$20,006,126	\$9,020,867	\$3,506,124	\$124,937,168
<b>60 - 64</b>		6	9	171	351	238	172	86	60	1093
Avg. Pay		\$244,239	\$416,389	\$9,337,774	\$18,427,487	\$13,569,935	\$11,538,923	\$6,471,033	\$4,062,136	\$64,067,916
<b>65 - 69</b>	1	1	7	60	136	140	74	44	43	506
Avg. Pay	\$27,973	\$70,174	\$297,703	\$3,117,443	\$7,111,545	\$8,542,841	\$4,566,794	\$3,594,507	\$3,893,477	\$31,222,457
<b>70+</b>		1	1	15	68	58	43	25	21	232
Avg. Pay		\$30,699	\$99,710	\$731,739	\$3,588,962	\$3,394,851	\$2,497,669	\$1,413,094	\$1,277,375	\$13,034,099
<b>Total</b>	32	80	128	1903	4131	3348	1937	363	185	12107
	\$982,004	\$2,973,543	\$5,858,661	\$99,866,370	\$225,824,473	\$195,755,397	\$127,407,111	\$29,052,763	\$13,149,982	\$700,870,304

Averages ----- Attained Age 51.83  
Service Years 20.27  
Active Salary \$57,890

**LASERS MEMBERSHIP PROFILE**  
**Regular Members After July 2006**

CELLS DEPICT -

MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Age	Credited Service									Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	
< 25	683	629	15							1327
Avg. Pay	\$16,475,784	\$18,295,282	\$496,284							\$35,267,350
25 - 29	761	1699	316	4						2780
Avg. Pay	\$21,943,205	\$59,829,967	\$12,836,271	\$134,005						\$94,743,448
30 - 34	559	1512	1005	286	4					3366
Avg. Pay	\$16,792,236	\$59,840,544	\$47,699,341	\$13,325,022	\$238,568					\$137,895,711
35 - 39	487	1243	846	780	12					3368
Avg. Pay	\$15,428,607	\$51,111,291	\$42,357,761	\$41,671,530	\$810,965					\$151,380,154
40 - 44	364	936	621	593	19	5	1			2539
Avg. Pay	\$12,493,829	\$38,194,875	\$31,384,651	\$31,794,281	\$1,392,811	\$217,063	\$47,574			\$115,525,084
45 - 49	322	834	540	488	23	6				2213
Avg. Pay	\$10,799,352	\$35,527,498	\$26,418,855	\$25,698,800	\$1,895,740	\$481,748				\$100,821,993
50 - 54	263	730	524	458	17	3	5			2000
Avg. Pay	\$8,571,879	\$30,721,653	\$25,512,756	\$23,372,034	\$1,228,806	\$166,938	\$259,871			\$89,833,937
55 - 59	177	556	490	456	19	11	3			1712
Avg. Pay	\$5,907,208	\$23,039,976	\$23,662,671	\$22,073,315	\$1,210,037	\$710,267	\$228,862			\$76,832,336
60 - 64	62	242	302	295	15	2		1		919
Avg. Pay	\$2,293,434	\$10,451,395	\$14,119,281	\$14,034,217	\$1,273,573	\$196,909		\$58,816		\$42,427,625
65 - 69	17	57	95	119	3					291
Avg. Pay	\$785,053	\$2,625,989	\$4,851,119	\$6,237,717	\$265,345					\$14,765,223
70+	2	22	24	28	1					77
Avg. Pay	\$37,940	\$801,533	\$1,466,587	\$1,597,396	\$97,052					\$4,000,508
<b>Total</b>	3697	8460	4778	3507	113	27	9	1		20592
	\$111,528,527	\$330,440,003	\$230,805,577	\$179,938,317	\$8,412,897	\$1,772,925	\$536,307	\$58,816		\$863,493,369

Averages ----- Attained Age 40.85  
Service Years 4.94  
Active Salary \$41,933

**LASERS MEMBERSHIP PROFILE**  
**Appellate Law Clerks**

CELLS DEPICT -

MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Age	Credited Service									Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	
<b>&lt; 25</b>										
Avg. Pay										
<b>25 - 29</b>										
Avg. Pay										
<b>30 - 34</b>			1							1
Avg. Pay			\$66,763							\$66,763
<b>35 - 39</b>			4	2						6
Avg. Pay			\$269,045	\$129,146						\$398,191
<b>40 - 44</b>				11	5	1				17
Avg. Pay				\$824,714	\$370,553	\$67,102				\$1,262,369
<b>45 - 49</b>			1	8	5	5				19
Avg. Pay			\$61,870	\$581,421	\$373,359	\$387,521				\$1,404,171
<b>50 - 54</b>			2	3	4	7	7	2		25
Avg. Pay			\$172,545	\$282,044	\$335,064	\$651,599	\$614,405	\$166,955		\$2,222,612
<b>55 - 59</b>				3	5	3	3	9		23
Avg. Pay				\$241,306	\$442,287	\$246,137	\$331,772	\$939,203		\$2,200,705
<b>60 - 64</b>				2	5	2	1	1	1	12
Avg. Pay				\$139,761	\$445,155	\$164,321	\$78,364	\$99,006	\$99,006	\$1,025,613
<b>65 - 69</b>				1	1	1				3
Avg. Pay				\$68,969	\$74,370	\$85,794				\$229,133
<b>70+</b>				1				1		2
Avg. Pay				\$86,151				\$101,214		\$187,365
<b>Total</b>			8	31	25	19	11	13	1	108
			\$570,223	\$2,353,512	\$2,040,788	\$1,602,474	\$1,024,541	\$1,306,378	\$99,006	\$8,996,922

Averages ----- Attained Age 51.98  
Service Years 19.1  
Active Salary \$83,305

**LASERS MEMBERSHIP PROFILE**  
**Participating Legislators**

CELLS DEPICT -

MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Age	Credited Service									Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	
< 25										
Avg. Pay										
25 - 29										
Avg. Pay										
30 - 34										
Avg. Pay										
35 - 39										
Avg. Pay										
40 - 44										
Avg. Pay										
45 - 49										
Avg. Pay										
50 - 54										
Avg. Pay										
55 - 59					1					1
Avg. Pay					\$39,109					\$39,109
60 - 64				1						1
Avg. Pay				\$126,426						\$126,426
65 - 69							1	1	1	3
Avg. Pay							\$37,341	\$36,187	\$35,537	\$109,065
70+					2					2
Avg. Pay					\$126,092					\$126,092
<b>Total</b>				1	3		1	1	1	7
				\$126,426	\$165,201		\$37,341	\$36,187	\$35,537	\$400,692

Averages ----- Attained Age 66.19  
Service Years 22.74  
Active Salary \$57,242



**LASERS MEMBERSHIP PROFILE**  
**Active Judges Pre 2011**

CELLS DEPICT -

MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Age	Credited Service									Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	
<b>&lt; 25</b>										
Avg. Pay										
<b>25 - 29</b>										
Avg. Pay										
<b>30 - 34</b>										
Avg. Pay										
<b>35 - 39</b>										
Avg. Pay										
<b>40 - 44</b>			1	1						2
Avg. Pay			\$143,325	\$30,379						\$173,704
<b>45 - 49</b>		1	4	9	4					18
Avg. Pay		\$158,747	\$472,884	\$1,312,640	\$442,833					\$2,387,104
<b>50 - 54</b>			1	9	11	2	1			24
Avg. Pay			\$158,747	\$1,276,697	\$1,517,129	\$311,290	\$148,154			\$3,412,017
<b>55 - 59</b>				20	7	9	5	1		42
Avg. Pay				\$3,036,992	\$996,106	\$1,376,306	\$778,961	\$152,475		\$6,340,840
<b>60 - 64</b>		2	1	8	10	16	5	3		45
Avg. Pay		\$304,975	\$152,475	\$1,198,047	\$1,446,137	\$2,490,486	\$730,625	\$457,323		\$6,780,068
<b>65 - 69</b>				3	6	7	10	1		27
Avg. Pay				\$463,833	\$826,364	\$1,073,699	\$1,543,337	\$152,543		\$4,059,776
<b>70+</b>				2	6	7	6	3		24
Avg. Pay				\$310,153	\$890,281	\$1,078,655	\$908,700	\$446,076		\$3,633,865
<b>Total</b>		3	7	52	44	41	27	8		182
		\$463,722	\$927,431	\$7,628,741	\$6,118,850	\$6,330,436	\$4,109,777	\$1,208,417		\$26,787,374

Averages ----- Attained Age 60.36  
Service Years 18.29  
Active Salary \$147,183

**LASERS MEMBERSHIP PROFILE**  
**Active Judges Post 2011**

CELLS DEPICT -

MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Age	Credited Service									Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	
<b>&lt; 25</b>										
Avg. Pay										
<b>25 - 29</b>										
Avg. Pay										
<b>30 - 34</b>										
Avg. Pay										
<b>35 - 39</b>	2	4								6
Avg. Pay	\$298,136	\$497,163								\$795,299
<b>40 - 44</b>	2	16	1	1						20
Avg. Pay	\$305,384	\$2,275,367	\$152,543	\$152,543						\$2,885,837
<b>45 - 49</b>	3	11	8							22
Avg. Pay	\$339,641	\$1,598,121	\$1,157,836							\$3,095,598
<b>50 - 54</b>	5	19	8		3					35
Avg. Pay	\$720,412	\$2,898,794	\$1,190,406		\$456,158					\$5,265,770
<b>55 - 59</b>	1	6	6			1				14
Avg. Pay	\$144,986	\$915,258	\$920,962			\$152,543				\$2,133,749
<b>60 - 64</b>	1	8	4		1					14
Avg. Pay	\$144,638	\$1,232,752	\$616,376		\$152,543					\$2,146,309
<b>65 - 69</b>		5	3							8
Avg. Pay		\$752,348	\$457,629							\$1,209,977
<b>70+</b>		1								1
Avg. Pay		\$110,997								\$110,997
<b>Total</b>	14	70	30	1	4	1				120
	\$1,953,196	\$10,280,800	\$4,495,752	\$152,543	\$608,701	\$152,543				\$17,643,535

Averages ----- Attained Age 52.03  
Service Years 4.81  
Active Salary \$147,029

**LASERS MEMBERSHIP PROFILE**  
**Hazardous Duty**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Age	Credited Service									Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	
< 25	272	193	4							469
Avg. Pay	\$7,390,668	\$6,401,917	\$142,911							\$13,935,496
25 - 29	168	330	65							563
Avg. Pay	\$5,139,845	\$12,030,601	\$2,778,919							\$19,949,365
30 - 34	116	202	115	12						445
Avg. Pay	\$3,786,407	\$7,708,988	\$5,061,038	\$569,160						\$17,125,593
35 - 39	87	189	80	38	15	1				410
Avg. Pay	\$2,681,556	\$7,251,738	\$3,459,594	\$1,986,628	\$793,389	\$73,746				\$16,246,651
40 - 44	59	131	48	22	28	10	1			299
Avg. Pay	\$1,883,703	\$5,023,349	\$2,051,556	\$1,152,022	\$1,643,540	\$676,268	\$59,216			\$12,489,654
45 - 49	44	109	72	24	20	19	5			293
Avg. Pay	\$1,566,320	\$4,411,352	\$3,411,368	\$1,225,331	\$1,212,656	\$1,144,090	\$308,520			\$13,279,637
50 - 54	37	111	63	13	14	16	4	1		259
Avg. Pay	\$1,074,516	\$4,476,211	\$2,784,335	\$664,716	\$756,760	\$907,517	\$245,150	\$139,372		\$11,048,577
55 - 59	25	76	42	15	8	6	2	1		175
Avg. Pay	\$928,799	\$3,315,959	\$2,090,902	\$745,876	\$398,171	\$348,536	\$104,052	\$69,952		\$8,002,247
60 - 64	8	31	20	2	3	1	2			67
Avg. Pay	\$512,541	\$1,292,252	\$952,467	\$102,862	\$189,622	\$76,061	\$123,205			\$3,249,010
65 - 69	4	8	5	2						19
Avg. Pay	\$120,115	\$370,034	\$226,022	\$123,705						\$839,876
70+	1	4	1	1						7
Avg. Pay	\$16,960	\$154,720	\$71,557	\$35,918						\$279,155
<b>Total</b>	821	1384	515	129	88	53	14	2		3006
	\$25,101,430	\$52,437,121	\$23,030,669	\$6,606,218	\$4,994,138	\$3,226,218	\$840,143	\$209,324		\$116,445,261

Averages ----- Attained Age 37.18  
Service Years 3.98  
Active Salary \$38,738

**LASERS MEMBERSHIP PROFILE**  
**Corrections Primary**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

		Credited Service								
Age	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
<b>&lt; 25</b>										
Avg. Pay										
<b>25 - 29</b>										
Avg. Pay										
<b>30 - 34</b>										
Avg. Pay										
<b>35 - 39</b>										
Avg. Pay										
						1				1
						\$74,693				\$74,693
<b>40 - 44</b>										
Avg. Pay										
		2			3	7				12
		\$67,834			\$171,362	\$384,961				\$624,157
<b>45 - 49</b>										
Avg. Pay										
	1			1	9	16		1		28
	\$28,000			\$54,278	\$445,346	\$881,944	\$63,878			\$1,473,446
<b>50 - 54</b>										
Avg. Pay										
					4	8		4	2	18
					\$200,332	\$472,974	\$262,874	\$194,839		\$1,131,019
<b>55 - 59</b>										
Avg. Pay										
					15	14		3	2	34
					\$782,664	\$833,198	\$190,791	\$141,443		\$1,948,096
<b>60 - 64</b>										
Avg. Pay										
					8	8		5	2	23
					\$381,307	\$427,586	\$302,394	\$115,105		\$1,226,392
<b>65 - 69</b>										
Avg. Pay										
					2	5			1	1
					\$97,022	\$255,826		\$76,435	\$53,456	\$482,739
<b>70+</b>										
Avg. Pay										
								1		1
							\$57,690			\$57,690
<b>Total</b>										
	1	2		1	41	59	14	7	1	126
	\$28,000	\$67,834		\$54,278	\$2,078,033	\$3,331,182	\$877,627	\$527,822	\$53,456	\$7,018,232

Averages ----- Attained Age 55.11  
Service Years 21.63  
Active Salary \$55,700

**LASERS MEMBERSHIP PROFILE**  
**Corrections Secondary**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Credited Service										
Age	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
< 25										
Avg. Pay										
<b>25 - 29</b>			4	4						8
Avg. Pay			\$164,651	\$170,879						\$335,530
<b>30 - 34</b>			26	66	3					95
Avg. Pay			\$1,145,319	\$2,943,064	\$183,095					\$4,271,478
<b>35 - 39</b>		1	22	109	73	7				212
Avg. Pay		\$36,558	\$961,137	\$5,333,646	\$3,833,189	\$382,836				\$10,547,366
<b>40 - 44</b>	1	1	12	68	110	67	3			262
Avg. Pay	\$13,757	\$18,886	\$475,982	\$3,149,007	\$6,267,432	\$4,067,929	\$209,928			\$14,202,921
<b>45 - 49</b>			10	61	74	131	18	1		295
Avg. Pay			\$528,809	\$2,898,167	\$4,259,921	\$8,437,410	\$1,341,264	\$101,848		\$17,567,419
<b>50 - 54</b>		2	10	54	75	69	46	9	1	266
Avg. Pay		\$67,990	\$415,345	\$2,373,647	\$3,880,050	\$4,147,866	\$3,527,073	\$732,366	\$79,983	\$15,224,320
<b>55 - 59</b>		1	10	52	56	37	11	3	1	171
Avg. Pay		\$42,334	\$434,253	\$2,307,083	\$2,863,621	\$2,148,194	\$772,149	\$260,541	\$105,006	\$8,933,181
<b>60 - 64</b>			10	18	22	6	2	2	1	61
Avg. Pay			\$416,316	\$763,863	\$1,085,552	\$370,249	\$130,804	\$161,776	\$73,242	\$3,001,802
<b>65 - 69</b>			2	8	9	5	1	1	1	27
Avg. Pay			\$84,870	\$382,484	\$418,244	\$362,728	\$57,671	\$79,257	\$53,456	\$1,438,710
<b>70+</b>			1	2	1	3	1			8
Avg. Pay			\$34,571	\$77,277	\$91,799	\$182,364	\$45,445			\$431,456
<b>Total</b>	1	5	107	442	423	325	82	16	4	1405
	\$13,757	\$165,768	\$4,661,253	\$20,399,117	\$22,882,903	\$20,099,576	\$6,084,334	\$1,335,788	\$311,687	\$75,954,183

Averages ----- Attained Age 47.28  
Service Years 17.03  
Active Salary \$54,060

**LASERS MEMBERSHIP PROFILE**  
**Wildlife**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Credited Service										
Age	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
<b>&lt; 25</b>										
Avg. Pay										
<b>25 - 29</b>										
Avg. Pay										
<b>30 - 34</b>			7	7						14
Avg. Pay			\$421,148	\$443,809						\$864,957
<b>35 - 39</b>			2	28	5	1				36
Avg. Pay			\$118,950	\$1,856,228	\$371,794	\$75,577				\$2,422,549
<b>40 - 44</b>			1	8	18	5				32
Avg. Pay			\$61,431	\$516,518	\$1,299,198	\$407,142				\$2,284,289
<b>45 - 49</b>				5	14	14	1			34
Avg. Pay				\$338,309	\$1,087,807	\$1,189,287	\$115,302			\$2,730,705
<b>50 - 54</b>				2	2	9	1			14
Avg. Pay				\$141,949	\$151,018	\$783,096	\$85,796			\$1,161,859
<b>55 - 59</b>				2	2		3		1	8
Avg. Pay				\$150,823	\$170,437		\$331,620		\$143,941	\$796,821
<b>60 - 64</b>										
Avg. Pay										
<b>65 - 69</b>										
Avg. Pay										
<b>70+</b>										
Avg. Pay										
<b>Total</b>			10	52	41	29	5		1	138
			\$601,529	\$3,447,636	\$3,080,254	\$2,455,102	\$532,718		\$143,941	\$10,261,180

Averages ----- Attained Age 43.36  
Service Years 16.65  
Active Salary \$74,356

**LASERS MEMBERSHIP PROFILE**  
**Peace Officers**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Credited Service										
Age	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
<b>&lt; 25</b>										
Avg. Pay										
<b>25 - 29</b>										
Avg. Pay										
<b>30 - 34</b>				1						1
Avg. Pay				\$49,401						\$49,401
<b>35 - 39</b>				2	1	1				4
Avg. Pay				\$132,752	\$60,292	\$50,518				\$243,562
<b>40 - 44</b>				5	1	4	1			11
Avg. Pay				\$267,760	\$48,752	\$210,700	\$63,671			\$590,883
<b>45 - 49</b>			1	2	2	1	1			7
Avg. Pay			\$37,469	\$114,357	\$119,272	\$48,754	\$51,161			\$371,013
<b>50 - 54</b>				1	1	2	9			13
Avg. Pay				\$38,469	\$52,024	\$124,567	\$635,014			\$850,074
<b>55 - 59</b>							1			1
Avg. Pay							\$75,678			\$75,678
<b>60 - 64</b>				1						1
Avg. Pay				\$78,914						\$78,914
<b>65 - 69</b>				1						1
Avg. Pay				\$86,664						\$86,664
<b>70+</b>			1							1
Avg. Pay			\$70,382							\$70,382
<b>Total</b>			2	13	5	8	12			40
			\$107,851	\$768,317	\$280,340	\$434,539	\$825,524			\$2,416,571

Averages ----- Attained Age 48.38  
Service Years 19.81  
Active Salary \$60,414

**LASERS MEMBERSHIP PROFILE**  
**Alcohol Tobacco Control**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Credited Service										
Age	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
<b>&lt; 25</b>										
Avg. Pay										
<b>25 - 29</b>										
Avg. Pay										
<b>30 - 34</b>										
Avg. Pay										
<b>35 - 39</b>										
Avg. Pay										
<b>40 - 44</b>										
Avg. Pay										
<b>45 - 49</b>										
Avg. Pay										
<b>50 - 54</b>										
Avg. Pay										
<b>55 - 59</b>										
Avg. Pay										
<b>60 - 64</b>										
Avg. Pay										
<b>65 - 69</b>										
Avg. Pay										
<b>70+</b>										
Avg. Pay										
<b>Total</b>										
Avg. Pay										

Averages ----- Attained Age 44.95  
Service Years 19.06  
Active Salary \$67,183



**LASERS MEMBERSHIP PROFILE**  
**Bridge Police**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Credited Service										
Age	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
< 25										
Avg. Pay										
25 - 29										
Avg. Pay										
30 - 34										
Avg. Pay										
35 - 39			1							1
Avg. Pay			\$47,937							\$47,937
40 - 44					1					1
Avg. Pay					\$64,401					\$64,401
45 - 49										
Avg. Pay										
50 - 54										
Avg. Pay										
55 - 59								1		1
Avg. Pay								\$66,536		\$66,536
60 - 64										
Avg. Pay										
65 - 69										
Avg. Pay										
70+										
Avg. Pay										
<b>Total</b>			1		1			1		3
			\$47,937		\$64,401			\$66,536		\$178,874

Averages ----- Attained Age 44.71  
Service Years 19.70  
Active Salary \$59,625

**LASERS MEMBERSHIP PROFILE**  
**Harbor Police**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Credited Service										
Age	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
<b>&lt; 25</b>										
Avg. Pay										
<b>25 - 29</b>			1							1
Avg. Pay										
			\$42,164							\$42,164
<b>30 - 34</b>			1	1						2
Avg. Pay										
			\$47,852	\$47,913						\$95,765
<b>35 - 39</b>			2	1						3
Avg. Pay										
			\$96,914	\$50,192						\$147,106
<b>40 - 44</b>			1	1	3					5
Avg. Pay										
			\$40,758	\$50,753	\$197,446					\$288,957
<b>45 - 49</b>			1		1	2				4
Avg. Pay										
			\$44,682		\$55,561	\$128,785				\$229,028
<b>50 - 54</b>					1	1	1			3
Avg. Pay										
					\$53,918	\$57,445	\$71,895			\$183,258
<b>55 - 59</b>						1	2			3
Avg. Pay										
						\$55,079	\$130,612			\$185,691
<b>60 - 64</b>										
Avg. Pay										
<b>65 - 69</b>						1				1
Avg. Pay										
						\$54,950				\$54,950
<b>70+</b>										
Avg. Pay										
<b>Total</b>			6	3	5	5	3			22
Avg. Pay										
			\$272,370	\$148,858	\$306,925	\$296,259	\$202,507			\$1,226,919

Averages ----- Attained Age 45.43  
Service Years 16.11  
Active Salary 55,769

**LASERS MEMBERSHIP PROFILE**  
**Active After DROP**

CELLS DEPICT - MEMBER COUNT  
TOTAL SALARY  
TOTAL BENEFIT

VALUATION DATE 06/30/2019

Credited Service									
Age	<1	1	2	3	4	5-9	10-14	15-20	Total
<b>40-44</b>									
Pay									
Benefit									
<b>45-49</b>	1								1
Pay	\$28,780								\$28,780
Benefit	\$52,572								\$52,572
<b>50-54</b>	22	29	9	7	3		2		72
Pay	\$1,149,523	\$1,882,284	\$714,856	\$460,141	\$201,426		\$215,816		\$4,624,046
Benefit	\$945,276	\$1,212,480	\$419,304	\$273,828	\$113,280		\$48,504		\$3,012,672
<b>55-59</b>	108	93	50	42	39	49	6	1	388
Pay	\$6,266,053	\$6,144,484	\$3,344,781	\$2,981,943	\$2,704,128	\$3,315,302	\$523,773	\$152,543	\$25,433,007
Benefit	\$4,642,476	\$3,876,816	\$2,095,200	\$1,745,592	\$1,693,536	\$1,804,524	\$114,588	\$86,664	\$16,059,396
<b>60 - 64</b>	141	145	73	47	63	147	15	4	635
Pay	\$6,711,388	\$8,122,116	\$5,107,580	\$2,960,976	\$4,655,772	\$10,281,689	\$1,092,657	\$385,117	\$39,317,296
Benefit	\$3,594,852	\$3,714,600	\$2,880,180	\$1,681,968	\$2,702,700	\$5,684,448	\$359,112	\$72,192	\$20,690,052
<b>65 - 69</b>	7	13	89	61	57	106	47	10	390
Pay	\$193,057	\$786,453	\$5,130,948	\$3,878,997	\$3,957,882	\$6,787,136	\$4,343,911	\$749,528	\$25,827,912
Benefit	\$64,176	\$232,476	\$1,916,916	\$1,546,632	\$1,612,116	\$3,006,276	\$1,462,164	\$211,440	\$10,052,196
<b>70+</b>	3	3	3	7	6	59	68	32	181
Pay	\$142,189	\$224,288	\$152,762	\$359,595	\$372,672	\$3,290,584	\$5,521,988	\$2,240,539	\$12,304,617
Benefit	\$72,564	\$80,160	\$27,072	\$68,232	\$127,728	\$977,616	\$1,628,880	\$713,952	\$3,696,204
<b>Total</b>	282	283	224	164	168	361	138	47	1667
Pay	\$14,490,990	\$17,159,625	\$14,450,927	\$10,641,652	\$11,891,880	\$23,674,711	\$11,698,145	\$3,527,727	\$107,535,658
Benefit	\$9,371,916	\$9,116,532	\$7,338,672	\$5,316,252	\$6,249,360	\$11,472,864	\$3,613,248	\$1,084,248	\$53,563,092

Averages ----- Attained Age 63.48  
Service Years 4.45  
Active Salary \$64,508  
Annual Benefit \$32,131

**LASERS MEMBERSHIP PROFILE**  
**DROP Participants**

CELLS DEPICT - MEMBER COUNT VALUATION DATE 6/30/2019  
TOTAL BENEFITS

Age	Years Retired						Total
	<1	1 - 2	2-3	3 - 4	4-5	5+	
<b>&lt; 40</b>							
<b>40-44</b>							
<b>45-49</b>	8 \$408,576	1 \$42,024	9 \$422,628				18 \$873,228
<b>50-54</b>	83 \$3,910,452	56 \$2,488,392	41 \$1,648,980				180 \$8,047,824
<b>55-59</b>	209 \$8,023,776	194 \$8,151,996	182 \$6,996,780				585 \$23,172,552
<b>60-64</b>	172 \$3,841,296	210 \$5,267,544	183 \$4,110,540	1 \$29,124			566 \$13,248,504
<b>65-69</b>		2 \$17,892					2 \$17,892
<b>70-74</b>	2 \$12,708	1 \$122,352					3 \$135,060
<b>75-79</b>							
<b>80-84</b>							
<b>85-90</b>							
<b>90+</b>							
<b>Total</b>	474 \$16,196,808	464 \$16,090,200	415 \$13,178,928	1 \$29,124			1354 \$45,495,060

Averages -----  
Attained Age 58.32  
Years Retired 1.46  
Average Benefit \$33,600

**LASERS MEMBERSHIP PROFILE**  
**Post Retirement Service**

CELLS DEPICT -

MEMBER COUNT  
TOTAL SALARY

VALUATION DATE 6/30/2019

Credited Service										
Age	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
<b>&lt; 25</b>										
Avg. Pay										
<b>25 - 29</b>										
Avg. Pay										
<b>30 - 34</b>										
Avg. Pay										
<b>35 - 39</b>										
Avg. Pay										
<b>40 - 44</b>	1									1
Avg. Pay	\$33,743									\$33,743
<b>45 - 49</b>	1									1
Avg. Pay	\$26,600									\$26,600
<b>50 - 54</b>	2	6	1							9
Avg. Pay	\$76,866	\$448,893	\$50,452							\$576,211
<b>55 - 59</b>	11	12	10	5	1					39
Avg. Pay	\$697,897	\$728,485	\$644,389	\$364,689	\$62,883					\$2,498,343
<b>60 - 64</b>	18	23	9	4	1					55
Avg. Pay	\$1,236,498	\$1,349,064	\$650,481	\$202,870	\$109,597					\$3,548,510
<b>65 - 69</b>	21	28	7							56
Avg. Pay	\$958,419	\$1,537,779	\$561,828							\$3,058,026
<b>70+</b>	20	24	10	5	2					61
Avg. Pay	\$811,167	\$1,220,993	\$399,326	\$251,500	\$170,458					\$2,853,444
<b>Total</b>	74	93	37	14	4					222
	\$3,841,190	\$5,285,214	\$2,306,476	\$819,059	\$342,938					\$12,594,877

Averages ----- Attained Age 66.46  
Service Years 3.43  
Active Salary \$56,734

**LASERS MEMBERSHIP PROFILE**  
**Regular Retirees**

CELLS DEPICT - MEMBER COUNT  
TOTAL BENEFITS

VALUATION DATE 6/30/2019

Age	Years Retired									Total
	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 14	15 - 19	20+	
< 40	1				1	1				3
	\$17,688				\$16,848	\$8,232				\$42,768
40-44	16	2	8	3	2	4				35
	\$404,988	\$53,952	\$132,864	\$64,584	\$53,652	\$50,688				\$760,728
45-49	30	35	34	19	17	111	1			247
	\$1,025,052	\$1,282,836	\$1,096,932	\$539,460	\$432,984	\$1,785,192	\$9,312			\$6,171,768
50-54	89	76	82	75	112	466	31	4		935
	\$3,486,240	\$3,292,272	\$3,048,744	\$2,997,480	\$3,871,752	\$11,466,324	\$626,700	\$86,484		\$28,875,996
55-59	194	188	198	262	301	1906	325	144	21	3539
	\$8,265,708	\$7,888,620	\$8,273,472	\$10,518,000	\$11,060,232	\$66,226,464	\$8,647,944	\$2,640,156	\$417,624	\$123,938,220
60-64	452	441	477	522	518	3076	1705	419	171	7781
	\$10,582,284	\$10,171,596	\$11,183,292	\$13,827,084	\$13,359,276	\$116,476,692	\$54,512,388	\$8,527,596	\$2,930,088	\$241,570,296
65-69	167	205	200	259	285	3583	3113	1449	338	9599
	\$4,198,176	\$5,653,668	\$5,625,780	\$6,550,332	\$7,513,584	\$95,138,064	\$102,710,604	\$43,927,572	\$7,092,108	\$278,409,888
70-74	61	68	88	91	129	1269	2639	2571	1049	7965
	\$1,992,288	\$1,715,364	\$2,593,992	\$2,126,724	\$3,901,368	\$29,480,256	\$58,136,460	\$77,526,528	\$28,984,056	\$206,457,036
75-79	11	10	19	28	31	316	579	1953	1894	4841
	\$405,024	\$176,208	\$440,520	\$806,736	\$1,407,324	\$8,211,588	\$10,279,176	\$37,512,924	\$52,379,688	\$111,619,188
80-84	4	5	4	7	7	71	146	447	2620	3311
	\$76,644	\$206,448	\$131,016	\$130,980	\$254,076	\$1,685,532	\$3,238,548	\$8,003,496	\$56,254,140	\$69,980,880
85-90			1			19	29	104	1643	1796
			\$2,940			\$671,340	\$620,268	\$2,225,448	\$30,785,136	\$34,305,132
90+					4	2	16	1043		1065
					\$88,020	\$66,528	\$231,072	\$17,116,860		\$17,502,480
<b>Total</b>	1025	1030	1111	1266	1403	10826	8570	7107	8779	41117
	\$30,454,092	\$30,440,964	\$32,529,552	\$37,561,380	\$41,871,096	\$331,288,392	\$238,847,928	\$180,681,276	\$195,959,700	\$1,119,634,380

Averages -----  
Attained Age 70.13  
Years Retired 13.45  
Average Benefit \$27,230

**LASERS MEMBERSHIP PROFILE**  
**Disability Retirees**

CELLS DEPICT - MEMBER COUNT  
TOTAL BENEFITS

VALUATION DATE 06/30/2019

Age	Years Retired									Total
	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 14	15 - 19	20+	
<b>&lt; 40</b>		3	1	1	1	2				8
		\$72,480	\$13,116	\$7,992	\$6,984	\$23,736				\$114,308
<b>40-44</b>		4	2	4	4	7				21
		\$65,388	\$18,084	\$82,800	\$85,596	\$114,408				\$366,276
<b>45-49</b>	7	4	4	5	3	18	7			48
	\$138,252	\$134,304	\$106,848	\$58,032	\$64,080	\$340,320	\$129,756			\$971,592
<b>50-54</b>	8	4	5	14	10	68	35	10		154
	\$148,392	\$56,088	\$125,784	\$280,836	\$246,708	\$1,193,796	\$549,552	\$103,548		\$2,704,704
<b>55-59</b>	11	10	8	13	17	102	45	49	12	267
	\$134,256	\$173,004	\$130,728	\$184,512	\$280,920	\$2,098,464	\$723,360	\$618,132	\$87,780	\$4,431,156
<b>60-64</b>	2	5	4	8	13	133	126	93	61	445
	\$37,248	\$64,164	\$44,352	\$129,456	\$161,160	\$2,640,744	\$2,190,924	\$1,344,972	\$640,644	\$7,253,664
<b>65-69</b>						48	116	128	153	445
						\$838,080	\$1,881,828	\$1,995,804	\$1,779,504	\$6,495,216
<b>70-74</b>						1	44	110	175	330
						\$66,960	\$654,084	\$1,561,956	\$2,160,396	\$4,443,396
<b>75-79</b>							2	30	199	231
							\$17,748	\$323,076	\$2,248,884	\$2,589,708
<b>80-84</b>							1		131	132
							\$58,092		\$1,300,128	\$1,358,220
<b>85-90</b>								1	70	71
								\$52,608	\$701,208	\$753,816
<b>90+</b>									23	23
									\$216,336	\$216,336
<b>Total</b>	28	30	24	45	48	379	376	421	824	2175
	\$458,148	\$565,428	\$438,912	\$743,628	\$845,448	\$7,316,508	\$6,205,344	\$6,000,096	\$9,134,880	\$31,708,392

Averages ----- Attained Age 67.13  
Years Retired 17.56  
Average Benefit \$14,579

**LASERS MEMBERSHIP PROFILE**  
**Survivor Benefits**

CELLS DEPICT - MEMBER COUNT  
TOTAL BENEFITS

VALUATION DATE 06/30/2019

Age	Years Retired									Total
	<1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10 - 14	15 - 19	20+	
< 40	10	12	17	13	15	76	96	94	134	467
	\$269,352	\$288,324	\$570,552	\$423,516	\$457,032	\$1,899,288	\$2,182,884	\$1,708,740	\$1,925,568	\$9,725,256
40-44				4	1	10	15	14	55	99
				\$52,512	\$34,116	\$138,264	\$321,048	\$288,012	\$774,780	\$1,608,732
45-49	3	8	1		4	14	19	18	40	107
	\$85,872	\$133,704	\$31,944		\$83,556	\$237,672	\$302,208	\$240,360	\$579,888	\$1,695,204
50-54	1	3	2	4	1	25	17	21	31	105
	\$13,416	\$50,700	\$81,060	\$111,432	\$23,268	\$615,180	\$182,484	\$386,184	\$457,008	\$1,920,732
55-59	3	4	6	5	5	55	55	43	52	228
	\$71,508	\$53,208	\$129,480	\$162,156	\$113,124	\$1,316,196	\$1,116,900	\$676,308	\$621,420	\$4,260,300
60-64		2	11	6	14	78	94	80	102	387
		\$30,360	\$294,360	\$126,852	\$260,892	\$1,906,128	\$1,899,528	\$1,408,932	\$1,623,324	\$7,550,376
65-69	1	3	4	8	8	109	160	158	207	658
	\$29,124	\$51,432	\$64,200	\$266,904	\$141,108	\$2,333,892	\$3,333,228	\$3,289,932	\$3,435,192	\$12,945,012
70-74		1	4	5	4	52	147	215	396	824
		\$15,348	\$205,656	\$126,648	\$145,740	\$1,242,216	\$2,876,940	\$4,748,988	\$7,077,312	\$16,438,848
75-79	1		2	2	2	20	62	165	674	928
	\$8,148		\$25,848	\$85,332	\$33,120	\$636,252	\$1,061,220	\$2,830,200	\$11,362,104	\$16,042,224
80-84	1	2	1		1	11	28	79	821	944
	\$55,152	\$65,820	\$12,588		\$2,868	\$239,544	\$465,564	\$1,221,264	\$12,204,468	\$14,267,268
85-90						2	5	19	694	720
						\$36,972	\$138,600	\$320,112	\$9,592,632	\$10,088,316
90+							1	3	506	510
							\$6,264	\$52,752	\$6,625,464	\$6,684,480
<b>Total</b>	20	35	48	47	55	452	699	909	3712	5977
	\$532,572	\$688,896	\$1,415,688	\$1,355,352	\$1,294,824	\$10,601,604	\$13,886,868	\$17,171,784	\$56,279,160	\$103,226,748

Averages -----  
Attained Age 71.99  
Years Retired 23.28  
Average Benefit \$17,271



**LASERS MEMBERSHIP PROFILE**  
**Terminated Vested**

CELLS DEPICT - MEMBER COUNT  
TOTAL BENEFITS

VALUATION DATE 06/30/2019

Age	Credited Service										
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total	
<20	0	0	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
20-24	0	0	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25-29	0	0	30	2	0	0	0	0	0	0	32
	\$0	\$0	\$447,768	\$45,072	\$0	\$0	\$0	\$0	\$0	\$0	\$492,840
30-34	0	0	180	27	0	0	0	0	0	0	207
	\$0	\$0	\$2,330,088	\$714,324	\$0	\$0	\$0	\$0	\$0	\$0	\$3,044,412
35-39	1	4	272	143	17	0	0	0	0	0	437
	\$216	\$19,572	\$3,303,300	\$3,043,584	\$442,656	\$0	\$0	\$0	\$0	\$0	\$6,809,328
40-44	0	0	167	270	59	5	0	0	0	0	501
	\$0	\$0	\$1,967,448	\$5,253,180	\$1,820,532	\$223,188	\$0	\$0	\$0	\$0	\$9,264,348
45-49	1	3	130	324	150	18	4	0	0	0	630
	\$360	\$17,484	\$1,651,428	\$6,150,036	\$4,249,392	\$959,148	\$218,892	\$0	\$0	\$0	\$13,246,740
50-54	0	3	125	356	167	54	17	4	0	0	726
	\$0	\$11,112	\$1,650,108	\$6,376,860	\$4,394,412	\$2,049,384	\$727,392	\$269,460	\$0	\$0	\$15,478,728
55-59	1	2	123	418	225	60	12	0	0	0	841
	\$1,080	\$8,208	\$1,582,716	\$7,358,256	\$5,551,668	\$1,595,532	\$716,088	\$0	\$0	\$0	\$16,813,548
60-64	0	4	45	134	52	7	3	0	1	0	246
	\$0	\$32,568	\$442,200	\$1,875,132	\$1,171,800	\$195,204	\$435,228	\$0	\$51,348	\$0	\$4,203,480
65-69	1	0	13	39	13	8	3	0	0	0	77
	\$516	\$0	\$309,024	\$402,804	\$189,252	\$140,856	\$107,532	\$0	\$0	\$0	\$1,149,984
70+	1	0	2	30	8	2	3	1	0	0	47
	\$348	\$0	\$1,596	\$145,428	\$77,808	\$19,680	\$10,404	\$29,844	\$0	\$0	\$285,108
<b>Total</b>	<b>5</b>	<b>16</b>	<b>1087</b>	<b>1743</b>	<b>691</b>	<b>154</b>	<b>42</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>3744</b>
	<b>\$2,520</b>	<b>\$88,944</b>	<b>\$13,685,676</b>	<b>\$31,364,676</b>	<b>\$17,897,520</b>	<b>\$5,182,992</b>	<b>\$2,215,536</b>	<b>\$299,304</b>	<b>\$51,348</b>	<b>\$0</b>	<b>\$70,788,516</b>

Averages ----- Attained Age 49.8  
Service Years 11.98  
Average Benefit \$18,907

## **SUMMARY OF PLAN PROVISIONS**

### **EFFECTIVE DATE:**

July 1, 1947

### **EMPLOYEE:**

Any person legally occupying a position in state service.

### **EMPLOYER:**

The State of Louisiana or any of its boards, commissions, departments, agencies and courts which are contributing members and those approved for membership by the legislature from which any employee receives his compensation.

### **ELIGIBILITY FOR PARTICIPATION:**

Condition of employment in state service except the following: elected or appointed officials or employees who are contributing members of any other state system; public officials and state employees who receive a per diem in lieu of compensation; persons employed on or after July 1, 1991, who work on a part-time basis except those with ten or more years of service in the system; patient or inmate help in state charitable, penal or correctional institutions; part-time students, interns and resident physicians; independent contractors; retirees of the retirement system who return to work under certain conditions; judges in office prior to October 2, 1976 who did not elect to become members prior to October 2, 1976; civilian employees who on November 1, 1981, were within five years of retirement eligibility in the Federal Civil Service Retirement and Disability Fund; certain unclassified, temporary seasonal employees of the Department of Revenue excluding the Louisiana Tax Commission; Employees of the New Orleans City Park Improvement Association, certain employees of political subdivisions.

### **CREDITABLE SERVICE:**

For service prior to January 1, 1973: 1/4 year granted for each 89 day interval of service, not to exceed one credit per fiscal year. Minimum 15 days required for 1st Quarter credit.

For service on or after January 1, 1973, a member shall receive credit based on the ratio of actual pay to the annual base per calendar year. Fractional service shall be rounded to the next highest 1/10th, not to exceed 100 percent per year.

### **ADDITIONAL CREDITABLE SERVICE:**

1. Credit for service canceled by withdrawal of accumulated contributions may be restored by member by paying into system the amount withdrawn plus interest at the Actuarial Valuation rate.
2. Maximum of four years of credit for military service may be obtained for each member with at least two years of service, contingent on payment of Actuarial Cost.

3. Credit for service which was classified as a job appointment or emergency appointment where the intended duration of employment exceeds two years of service.
4. At retirement, all accumulated unused sick and annual leave shall be credited based on the following schedule:

1 - 26 Days	10% of a Year
27 - 52 Days	20% of a Year
53 - 78 Days	30% of a Year
79 - 104 Days	40% of a Year
105 - 130 Days	50% of a Year
131 - 156 Days	60% of a Year
157 - 182 Days	70% of a Year
183 - 208 Days	80% of a Year
209 - 234 Days	90% of a Year
235 - 260 Days	100% of a Year

Service credit for unused leave can be used for computation purpose only, not for eligibility. An actuarial equivalent lump sum is available after August 15, 1993.

**EARNABLE COMPENSATION:**

The base pay earned by an employee for a given pay period as reported by the employing agency. This includes the full amount earned by an employee, overtime, and per diem earned by an employee of the House of Representatives, the Senate, or an agency of the legislature, and expense allowances and per diem paid to members of the legislature, the clerk, or sergeant at arms of the House of Representatives and president and secretary or sergeant at arms of the Senate.

**AVERAGE FINAL COMPENSATION  
FOR BENEFIT PURPOSES:**

The average annual earned compensation for the 36 highest months of successive employment, or the highest 36 successive joined months where interruption of service occurred; part-time employees use the base pay the part-time employee would have received had employment been full-time. Per Act 75 of 2005, average final compensation for Regular members, Bridge Police, and Appellate Law Clerks hired on or after July, 1, 2006, is determined as the 60 highest months of successive employment. Per Act 992 of 2010, average final compensation for Judges hired on or after January 1, 2011 and all members of the Hazardous Duty Plan is based on the highest 60 months. Compensation is limited by the 401a(17) compensation limit of the Internal Revenue Code for certain members.

**ACCUMULATED CONTRIBUTIONS:**

The sum of all amounts deducted from earned compensation and credited to the individual account in the employee's savings account, plus regular interest credited prior to July 1971.

**EMPLOYER CONTRIBUTIONS:**

Determined in accordance with Louisiana Revised Statutes Sections 102 and 102.1, 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.

**EMPLOYEE CONTRIBUTIONS:**

Plan	Current Contribution
Regular Employees, Appellate Law Clerks, Optional Retirement Plan	
Pre-Act 75 (hired before 7/1/2006)	7.5%
Post-Act 75 (hired after 6/30/2006)	8.0%
Legislators	11.5%
Special Legislative	9.5%
Judges hired before 1/1/2011	11.5%
Judges hired after 12/31/2010	13.0%
Corrections Primary and Secondary	9.0%
Wildlife and Fisheries, Hazardous Duty	9.5%
Peace Officers/Alcohol Tobacco Control	9.0%
Bridge Police	8.5%
Harbor Police	9.0%

**NORMAL RETIREMENT ELIGIBILITY AND BENEFIT:**

Members whose first LASERS eligible employment occurs on or after July 1, 2015:

1. Regular Plan: Eligible with 5 years at age 62. Benefit accrual rate is 2.5%.
2. Judges: Eligible with 5 years at age 62. Benefit accrual is 3.5%, plus regular plan benefits for prior service.
3. Hazardous Duty Plan: Eligible with 12 years at age 55 or 25 years at any age. Benefit accrual rate is 3.33% for service earned in the Hazardous Duty Plan if the last 10 years of service was earned in a hazardous duty position; otherwise, the accrual rate is 2.5%.

Members whose first LASERS eligible employment occurs during January 1, 2011 to June 30, 2015:

1. Regular Plan: Eligible with 5 years at age 60. Benefit accrual rate is 2.5%.
2. Judges: Eligible with 5 years at age 60. Benefit accrual is 3.5% plus regular plan benefits for prior service.
3. Hazardous Duty Plan: Eligible with 12 years at age 55 or 25 years at any age. Benefit accrual rate is 3.33% for service earned in the Hazardous Duty Plan if the last 10 years of service was earned in a hazardous duty position; otherwise, the accrual rate is 2.5%.

Members whose first LASERS eligible employment occurs prior to January 1, 2011:

1. Regular members hired prior to July 1, 2006: Eligible with 10 years at age 60, or 25 years at age 55, or 30 years at any age. Regular members hired on or after July 1, 2006 are eligible with 5 years at age 60. Benefit accrual rate is 2.5% for all years of service.
2. Judges, Court Officers, and Appellate Law Clerks: Eligible with 18 years at any age, 10 years at age 65, 20 total years with at least 12 years as a judge or court officer at age 50, 12 years at age 55, or age 70 regardless of service. Judges and Court Officers earn 3.5% for year of service, plus regular plan benefits for prior service. Appellate Law Clerks earn 2.5% for all years of service.

3. Members of the legislature, governor, lieutenant governor and state treasurer: Eligible with 16 years of service at any age, 20 total years with at least 12 years as a member of this class at age 50, or 12 years at age 55. Members earn 3.5% per year of service, plus regular plan benefits for prior service.
4. Plans for certain employees of the Department of Public Safety and Corrections:
  - a. Corrections Primary, hired before August 15, 1986: Eligible with 10 years at age 60 or 20 years at any age. Benefit accrual rate is 2.5%.
  - b. Corrections Primary, hired August 15, 1986 to December 31, 2001: Eligible with 10 years at age 60 or 20 years at age 50. Benefit accrual rate is 2.5%.
  - c. Corrections Primary, hired prior to January 1, 2002, and employed as a probation and parole officers in the office of adult services of the Department of Corrections: Eligible as stated above. Benefit accrual rate is 3.0% for service earned prior to July 1, 2014 and 3.33% for service earned after June 30, 2014.
  - d. Corrections Secondary Plan, hired after January 1, 2002, or transferred from Corrections Primary Plan: Eligible with 10 years at age 60 or 25 years at any age. Benefit accrual rate is 3.33%.
5. Wildlife and Fisheries:
  - a. Members hired before July 1, 2003: 10 years at age 55, or 20 years at any age. Benefit accrual is 3.0% for service earned prior to July 1, 2003 and 3.33% for service earned after June 30, 2003.
  - b. Members hired on or after July 1, 2003: 10 years at age 60, or 25 years at any age. Benefit accrual is 3.33%.
6. Peace Officers: Eligible with 10 years of service and age 60 or at 25 years at age 55, or 30 years at any age. Benefit accrual is 3.33%.
7. Alcohol Tobacco Control: Eligible with 10 years of service and age 60 or at 25 years of service at any age. Benefit accrual is 3.33%.
8. Bridge Police: Eligible with 10 years at age 60, or 25 years at any age. Benefit accrual is 2.5%.

Members originally enrolled in the Harbor Police Retirement System who transferred to LASERS and elected not to enroll in the Hazardous Duty Plan are eligible with 25 years at any age, 10 years at age 60, 12 years at age 55, or 20 years at age 45. Benefit accrual is 3.33%.

NOTES:

- A. Benefits are limited to 100% of final average compensation.
- B. Retirees who return to work will continue to receive unreduced benefits if compensation does not exceed 50% of the annual benefit during the fiscal year. Earnings above this limit will result in a corresponding reduction to benefits. Retirees who return to work may choose to suspend their retirement benefits and resume making contributions in the system. Upon subsequent retirement, benefit will resume. If post-retirement employment is at least 36 months, a supplemental benefit will be calculated. Otherwise, employee contributions will be refunded.
- C. A \$300 annual supplemental benefit is provided to persons who become members of the retirement system prior to July 1, 1986 (Act 608 of 1986).
- D. For members employed after January 1, 1990, the annual pension paid from the trust cannot exceed the maximum benefit provided under Section 415(b) of the Internal Revenue Code, and related Section 415 regulations, as adjusted for inflation and form of benefit other than life annuity or qualified joint and survivor annuity for retirement ages.

**ACTUARIALLY REDUCED RETIREMENT:**

Members with 20 years of service credit at any age are eligible for an actuarially reduced benefit from the earliest date member would be eligible if employment had continued, to the earliest normal retirement date, based on service earned to date. This does not apply to the correctional secondary plan members, wildlife agents hired on or after July 1, 2003, or harbor police plan members.

**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 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 \$100,000,000 to the unfunded accrued liability, the Experience Account is credited with 50% of the remaining excess investment income, up to a maximum balance as described below. The \$100,000,000 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 earned 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 PBI’s. 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, PBI’s are limited to the lesser of the increase in the Consumer Price Index, U.S. city average for all urban consumers (CPI-U) for the twelve-month period ending on the system’s valuation date, or by a percentage increase 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 twelve-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 60 for the receipt of a benefit increase does not apply to disability retirees.

**MINIMUM BENEFITS:**

Effective September 1, 2001, retirees and beneficiaries receiving retirement benefits shall be entitled to a minimum benefit which is not less than \$30.00 per month for each year of creditable service. The minimum benefit is adjusted for the option elected at retirement.

**DISABILITY RETIREMENT:**

Eligibility:

Ten years of creditable service and certification of disability by medical board. (Medical examination may be required once per year for the first five years of disability retirement, and once every three years thereafter, until age 60.) No minimum service requirement for judges hired before January 1, 2011. Five years of service for members of the harbor police plan.

Benefit:

1. The disability retirement annuity shall be equivalent to the regular retirement formula without reduction due to age for all classes of membership.
2. For judges and court officers, the benefit in (1) but not less than 50% of current salary.
3. Corrections Primary Plan: When the disability is incurred in the line of duty, the retirement annuity is 60% of their final average compensation. When incurred in the line of duty and caused by an intentional act of violence, the retirement annuity is 100% of final average compensation. Otherwise, benefits paid per (1) above.
4. Corrections Secondary Plan: When the disability is incurred in the line of duty, the retirement annuity is 40% of final average compensation. If the member has 10 or more years of service, the benefit will be the greater of 40% of final average compensation or the benefit determined by (1) above. When incurred in the line of duty and caused by an intentional act of violence, the retirement annuity is 100% of final average compensation. Disabilities not incurred in the line of duty determined per (1) above.
5. For certain Wildlife agents: When partially disabled and not eligible for (1) above, the retirement annuity is 75% of the annuity in (1); When totally disabled while in the line of duty, the retirement annuity is 60% of final average compensation. When the disability is incurred in the line of duty and caused by an intentional act of violence, the retirement annuity is 100% of final average compensation.
6. Hazardous Duty Plan: When the disability is incurred in the line of duty, the retirement annuity is 75% of their final average compensation. When incurred in the line of duty and caused by an intentional act of violence, the retirement annuity is 100% of final average compensation. Disabilities not incurred in the line of duty paid per (1) above.
7. Harbor Police Plan: When the disability is incurred in the line of duty, the retirement annuity is 60% of final average compensation. When incurred in the line of duty and caused by an intentional act of violence, the retirement annuity is 100% of final average compensation. When not incurred in the line of duty, the retirement annuity is 40% of final average compensation if under age 55, and is the regular retirement annuity if age 55 or greater.

**SURVIVOR'S BENEFITS:**

Members whose first LASERS eligible employment occurs on or after January 1, 2011, or members of the Hazardous Duty Plan regardless of when hired:

Eligibility and Benefit:

1. Regular Members and Judges:
  - a. Surviving spouse with minor children of a deceased member with five years of service credit, two of which were earned immediately prior to death, or 20 years of service will receive 50% of the retirement benefit that would have been due to the member, or \$600 per month if greater. Each qualifying child will receive 50% of the spouse's benefit, up to 2 children. The total spouse and children benefit is subject to a minimum based on the Option 2A equivalent for the surviving spouse.
  - b. Surviving spouse, legally married one year prior to death, of a deceased member with 10 years of service credit, two of which were earned immediately prior to death, or 20 years of service regardless of date earned will receive the Option 2A equivalent of the retirement benefit that would have been due to the member, or \$600 per month if greater.
  - c. Surviving minor children will each (up to two) receive 50% of the benefit paid to a surviving spouse with children. This amount will be divided equally among all eligible children.
  - d. Surviving physically handicapped or mentally disabled children continue to receive a minor child's benefit described above in (1) or (3), whichever is applicable.
2. Hazardous Duty Members:
  - a. Surviving spouse and children of members who did not die in the line of duty receive benefits described for non-Hazardous Duty members.
  - b. Surviving spouse and children of members who died in the line of duty receive 80% of the member's final average compensation, or 100% if the death was caused by an intentional act of violence. The benefit is shared equally.
  - c. Surviving spouse of a retired member will receive 75% of members' monthly benefit. If no spouse, then surviving children receive (1.c.) above.
3. If no one is eligible to receive a survivor benefit, named beneficiary receives accumulated contributions.

Members whose first LASERS eligible employment occurs prior to January 1, 2011:

Eligibility and Benefit:

1. Regular members:
  - a. Surviving spouse, legally married one year prior to death, of a deceased member with 10 years of service credit, two of which were earned immediately prior to death, or 20 years of service, receive the greater of 50% of member's average compensation or \$200 per month.
  - b. If member with no spouse has surviving minor child, and 5 years of service credit, two of which were earned immediately prior to death, or 20 years of service, minor children receive the greater of 75% of member's average compensation or \$300 per month.
  - c. For surviving spouse with minor children, the spouse must be eligible per (a) above and the children per (b) above to receive these benefits. If either one is ineligible, then the criteria in (a) or (b) would apply accordingly.



- d. Surviving physically handicapped or mentally disabled children continue to receive a minor child's benefit described above in (a) or (c) whichever is applicable.
2. Surviving spouse of a judge or court officer receive survivor's benefit described in (1a) or (1b), but not less than the greater of 1/3 the member's current compensation, 50% of the retirement pay which such member was entitled or receiving prior to death, or 50% of the member's final average compensation (if the provisions of R.S. 11:471 are met). Benefit limited to 75% of average compensation.
3. Corrections
  - a. In the line of duty:
    - i. Surviving spouse with no minor children: 60% of average compensation if member had less than 25 years of service, or 75% of average compensation with 25 or more years of service.
    - ii. Minor children or disabled children and no spouse: 60% of average compensation if member had less than 5 years of service (25 years for Secondary Plan), or 75% of average compensation if member had 5 or more years of service (25 years for Secondary Plan).
    - iii. Surviving spouse with minor children: 60% of average compensation if member had less than 5 years of service (25 years for secondary plan) and benefit divided 1/3 to spouse and 2/3 to minor children equally. 75% of average compensation with 5 or more years of service (25 years for Secondary Plan) and benefit divided 1/3 to spouse and 2/3 to minor children equally.
  - b. Not in the line of duty: Benefits in accordance with the provisions for regular members.
4. Wildlife agents
  - a. In the line of duty:
    - i. Surviving spouse receives 75% of average compensation if member has 25 or more years of service, otherwise, spouse receives 60% of compensation. Spouse receives 100% if the death was caused by an intentional act of violence. Benefits cease upon remarriage.
    - ii. Minor children: one child – 30% of average compensation, 2 children – 40%, 3 children – 50%, 4 or more children – 60%, divided equally among children.
  - b. Not in the line of duty benefit to surviving spouse and children: Surviving spouse receives a benefit as if the member retired on the date of death, until remarried. If member dies prior to age 55 with at least 15 years of service, benefit computed based on years of service without regard to age.
  - c. Survivors of retired wildlife agents will receive 75% of the retiree benefit in priority order: surviving spouse (until remarriage), minor children, parents who derive main support from retiree.
5. If no one is eligible to receive a survivor benefit, then the named beneficiary will receive the member's accumulated contributions.
6. Harbor Police
  - a. In line of duty benefit to surviving spouse is 60% of average compensation, regardless of years of service or 100% if the death was caused by an intentional act of violence. Benefits cease upon remarriage. Benefits continue to minor children until age 18.
  - b. Not in the line of duty benefit to surviving spouse with children is 60% of final average compensation, until remarried and children attain age 18. If no children, surviving spouse receives 40% of final average compensation, until remarried.

**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(ies).

Option 2 - 100% of reduced retirement allowance, if member dies, continued for designated beneficiary's lifetime.

Option 3 - 50% of reduced retirement allowance, if member dies, continued for designated beneficiary's lifetime.

Option 4 - Other benefits of equal actuarial value may be elected with approval of board.

A. 90% of the maximum retirement allowance to member; when member dies, 55% of the maximum retirement allowance continued to beneficiary.

B. 55% of the reduced retirement allowance, if member dies, continued for designated beneficiary's lifetime.

Member's reduced benefit reverts to the maximum if the beneficiary predeceases the annuitant.

If divorced after retirement, optional benefit can revert to maximum benefit with actuarial adjustment.

Automatic COLA Option – An irrevocable retirement option which permits the member to receive an actuarially reduced benefit with a 2.5% annual benefit COLA (Cost of Living Adjustment) beginning 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.

Initial Benefit Option - Maximum benefit actuarially reduced for partial lump sum equal to not more than 36 months of maximum monthly pension.

**REFUND OF CONTRIBUTIONS:**

If a member ceases to be a member, except by death or retirement, he shall be paid in full or partially at his option, the amount of the accumulated contributions credited to his individual account in annuity savings fund plus any accumulated interest thereon as of June 30, 1971; if member of legislature, no interest. No interest credited after June 30, 1971. Death prior to retirement - accumulated contributions credited to individual account in annuity savings fund are returnable to a designated beneficiary or to member's estate.

**DEFERRED RETIREMENT OPTION PLAN:**

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

Normal Eligibility: Any member who is eligible for unreduced service retirement allowance may begin participation on the first retirement eligibility date for a period not to exceed the third anniversary of retirement eligibility.

- 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, then:

1. Payment into account shall cease;
2. Payment from account only upon termination of employment; and
3. The participant shall resume active contributing membership.

Upon termination of employment, the benefit payments indicated above shall be paid. The participant shall receive an additional retirement benefit based on additional service rendered since termination of DROP participation, usually the normal method of computation of benefit subject to the following:

1. If additional service was less than the period used to determine the average compensation, then the average compensation figure used to calculate the additional benefit shall be based on compensation used to determine the initial benefit.
2. If additional service was greater than the period used to determine the average compensation, the average compensation figure used to calculate the additional benefit shall be based on compensation earned during the period of additional service.

DROP accounts for members who become eligible for retirement prior to January 1, 2004, and participate in DROP shall earn interest, following termination of DROP, at a rate of 0.5% below the actuarial rate of the System's investment portfolio. Members eligible for retirement on or after January 1, 2004, must invest their DROP accounts in self-directed accounts approved by the Board of Trustees.

The annual DROP interest rate for the Harbor Police plan is the three-year average investment return of the plan assets (calculated as the compound average of 36 months) for the period ending the June 30th immediately preceding that given date. This rate determined by LASERS is reduced by a 0.5% "contingency" adjustment, but not to below zero. DROP interest is forfeited if member does not cease employment after DROP participation.

## **FUNDING POLICY**

LASERS' funding policy is established by Sections 102 and 102.1 of Title 11 of the Louisiana Revised Statutes. LASERS 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 IUAL. The funds are used to reduce the Original Amortization Base (OAB), which includes the Initial Unfunded Accrued Liability (IUAL).

Per State constitutional provisions, the employer contribution rate cannot drop below 12%, 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 contributions 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 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 report can be found in Appendix E of this report. The cost method is used to determine the normal cost, which is divided into the employee portion and the employer portion, both expressed as a percentage of payroll. The cost method also determines the plans total actuarial accrued liability. The Unfunded Accrued Liability (UAL) is determined as the total actuarial accrued liability less the plan's valuation assets, which are developed in Section II of this report. The UAL changes annually due to plan experience gains or losses, which develop as actual plan experience will differ 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 \$100 million threshold amounts, indexed beginning June 30, 2016, as required by Act 399 of 2014. By not re-amortizing, gains applied to these schedules result in earlier pay-off of these schedules. One-half of any remaining gains are credited to the Experience Account up to the statutory cap. Any remaining gains are then amortized over 30 years with level payments. Beginning in 2016, the full investment gain remaining after the allocation to the OAB and EAAB will be amortized over 30 years, and any gains credited to the Experience Account will be amortized as an offsetting loss over a 10-year period. Once the fund attains a funded ratio of 70%, future gains or losses (investment and non-investment) that would have otherwise been amortized over 30 years will be amortized over 20 years.

The OAB will be re-amortized with level-dollar payments to 2029 in fiscal year 2020/21 or later, when such re-amortization results in annual payments less 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 will increase by 2.0%. All other schedules will have level payments.

If aggregate payroll increases at the same rate as the increase in amortization payments, the employer contribution rate attributable to the amortization payments will maintain a level percentage of payroll. If future aggregate payroll increases at a higher rate than the total amortization payments, the employer contribution will decrease. A table and graph showing future UAL amortization payments in aggregate for all current schedules are shown in Appendix F.

Employers pay the full required employer contribution rate, as recommended to the legislature by the Public Retirement Systems' Actuarial Committee (PRSAC). This rate is determined as the projected actuarially determined contribution divided by the projected payroll. The actual actuarially determined contribution and actual payroll will vary from the projected amounts, resulting in a contribution variance. Per statutory requirements, contribution surpluses through fiscal year 2016/2017 will be allocated to the OAB. Contribution surpluses between fiscal years 2017/2018 and 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 the actuarially determined contributions will be paid when due and all actuarial assumptions will be realized.

## **DISCUSSION OF RISK**

Measuring pension obligations and calculating actuarially determined contributions require the use of assumptions regarding future economic and demographic experience. It should be noted that the liabilities and the corresponding funded status presented in this report would differ if a different assumption set were utilized. Future plan experience may differ from the assumptions used in this valuation resulting in actuarial gains and losses. The extent of these differences will impact the plan's future financial condition, the volatility of future plan measurements, and the volatility of future required contributions. Actuarial losses on assets and liabilities will lead to higher contribution amounts, while actuarial gains on assets and liabilities will lead to lower contribution amounts. Because these risks may not be apparent to the reader, we have included a summary of the key risk factors that should be considered.

### **Investment Risk**

For most plans, investment returns are a significant portion of the assets used to fund plan benefits. Therefore, current plan liabilities are developed by discounting future expected benefits based on the expected returns that will be used to fund those benefits.

Statutory funding policy provides that a portion of investment gains will be transferred to the experience account to fund future Permanent Benefit Increases, should the legislature grant them. The guidance provided in Actuarial Standard of Practice No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, makes it clear that the discount rate is not necessarily the same as the expected investment return assumption. Section 3.5.1 states that the actuary may determine that it is appropriate to adjust the economic assumptions for provisions that are difficult to measure, of which the definition includes gain-sharing provisions. Therefore, in accordance with this guidance, the reasonableness of the discount rate is evaluated against the expected investment return less the portion of returns that are expected to be transferred to the experience account rather than fund regular plan benefits. We have determined that 0.40% is a reasonable expected margin for gain-sharing.

Due to the nature of investments, long-term expectations are not a guarantee and actual average long-term returns may be above or below the assumed investment return. Investment experience gains and losses will develop from two sources: (1) the extent to which the actual long-term rate of return used to fund regular plan benefits differs from the discount rate, and (2) the extent to which transfers to the experience account differ from the margin described above. Short-term volatility in actual returns is expected and will result in year-over-year fluctuations in financial metrics. Prolonged periods of investment performance below the assumed rate of return can result in a decrease in funded status (i.e. increases unfunded liabilities) and an increase in contributions required in future years. Of course, the opposite is also true. Therefore, as part of the annual valuation process, the expected return is evaluated in comparison to LASERS investment consultant's expected return for LASERS portfolio and industry-average long-term capital market assumptions to determine if the return assumption continues to be reasonable.

### **Demographic Risk**

The results in this report assume demographic characteristics of the plan will follow a pattern consistent with assumptions disclosed for termination of employment, incidence of disabilities, timing of retirement, and duration of payments throughout retirement. Actuarial assumptions are applied to large groups of individuals to reasonably estimate plan liabilities and are not necessarily intended to be applied on an individual basis. As actual demographic experience will differ from the assumptions, future experience gains and losses will develop.

### **Payroll Risk**

Individual Salary - Total plan liabilities include the estimated impact of future salary increases on future benefits for individual plan participants. To the extent that future salary increases differ from plan assumptions, gains and losses will develop.

Aggregate Plan Payroll - The valuation determines the Actuarially Determined Contribution for the year immediately following the valuation date and projects the Actuarially Determined Contribution for the following year. The employer contribution rate for the second fiscal year following the valuation date, which is the rate actually paid by the employer, is determined as the projected actuarially determined contribution divided by projected aggregate payroll. If actual aggregate payroll for the projected period exceeds expected aggregate payroll, a contribution surplus will develop. Conversely, if actual aggregate payroll for the projected period is less than expected aggregate payroll, a contribution deficit will develop.

### **Contribution Risk**

This risk results from the potential that actual employer contributions may deviate from actuarially determined contributions, which are determined in accordance with statutory funding policy. The funding policy provides contribution requirements that will result in a reasonable expectation that assets will accumulate to be sufficient to pay plan benefits when due, and eventually reach a 100% funded status if actuarial assumptions are realized in the aggregate. The Louisiana Constitutional requirements set forth in Article 10 Section 29(E) further reduce contribution risk.

### **Other Considerations**

Significant legislative changes have been enacted since 2009, which reduced the plan's risk of not accumulating sufficient assets to pay plan benefits when due. Highlights of these changes are listed below:

- Restructuring of UAL payment schedules. The Original Amortization Base payments increase by 2% annually. All other schedules are amortized with level payments.
- Dedication of significantly more investment experience gains to the reduction of UAL debt before credits can be made to the Experience Account to fund future Permanent Benefit Increases (PBIs).
- Reduction in the maximum PBI percentage that can be granted, until funded status reaches 80%.
- Limitations on frequency of potential for Board to request that future PBI's be granted.
- Introduction of a trigger to implement shorter future amortization schedules, from 30 years to 20 years.
- Requirement that contribution variance surpluses and a portion of investment experience gains be used to reduce the UAL without an immediate reduction to employer contributions.
- Requirement of direct funding of administrative expenses, included in the employer contribution rate, rather than with investment returns.
- Constitutional requirement that benefit provisions enacted by the legislature that have an actuarial cost be amortized over a 10-year period.

### **Impact of Plan Maturity on Risk**

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared among active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on the risk characteristics and risk tolerance of the plan. For example, plans with a large amount of liability attributable to retirees have a shorter time horizon to recover from losses (such as investment experience losses due to lower than expected investment returns) than plans where the majority of the liability is attributable to active members. For this reason, highly

mature plans with a substantial liability due to retirees and inactive members have less tolerance for risk. Similarly, mature plans paying substantial retirement benefits resulting in a small positive or negative net cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the plan and assessing risk, we have provided some relevant metrics and discuss the highlights of information derived from these metrics below.

\* Asterisks in tables in this section denote dollar values shown in millions.

	(A) Total Active Members	(B) DROD Members	(C) Inactive Members	(D) Inactive Accrued Liability *	(E) Total Accrued Liability *	(F) Valuation Assets *	(F)/(E) Funded Ratio	(A)/(B+C) Support Ratio	(D)/(E) Accrued Liability Ratio
2010	58,881	2,629	41,366	\$9,419	\$14,764	\$8,512	57.7%	133.8%	63.8%
2011	54,930	2,596	43,267	\$10,158	\$15,221	\$8,763	57.6%	119.8%	66.7%
2012	52,352	2,577	44,944	\$11,030	\$16,158	\$9,026	55.9%	110.2%	68.3%
2013	44,111	2,092	49,587	\$11,981	\$16,182	\$9,741	60.2%	85.4%	74.0%
2014	40,321	1,838	51,498	\$13,073	\$17,878	\$10,606	59.3%	75.6%	73.1%
2015	40,194	1,682	51,596	\$13,327	\$18,217	\$11,318	62.1%	75.4%	73.2%
2016	39,284	1,609	52,066	\$13,692	\$18,576	\$11,631	62.6%	73.2%	73.7%
2017	39,055	1,520	52,473	\$13,978	\$18,792	\$11,977	63.7%	72.3%	74.4%
2018	39,293	1,398	52,726	\$14,244	\$19,104	\$12,361	64.7%	72.6%	74.6%
2019	39,533	1,354	53,013	\$14,502	\$19,528	\$12,521	64.1%	72.7%	74.3%

**Funded Ratio:** The funded ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has increased from 57.7% to 64.1% over the last ten years. This ratio generally reflects the financial health of the plan but should not be considered in isolation since changes in methods and assumptions may reduce the funded ratio but reduce future potential losses and resulting contribution rate increases. For example, during this time period, LASERS has reduced the discount rate from 8.25% to 7.60% and changed the actuarial cost method from projected unit credit to entry age normal which in total have increased the unfunded accrued liability by \$1.6 billion. If not for these changes, the funded ratio would be almost 70%. However, these changes have improved the financial stability of the plan by reducing the potential for future contribution rate increases. If all actuarial assumptions are realized, the funded ratio is expected to increase as unfunded liabilities are amortized in accordance with the plan's funding policy.

**Support Ratio:** The support ratio is determined as the ratio of active to inactive members. Active membership, which includes Active After DROD members, decreased substantially due in part to State lay-offs between 2012 and 2013 but has been fairly level since 2014. Inactive membership, which includes retirees, survivors, and terminated vested members, increased substantially from 2010 to 2014 but has remained fairly stable since 2014. The support ratio has decreased substantially from 133.8% to 72.7%, over the last ten years. This should be closely monitored by the investment staff to be sure no cash-flow issues develop that would require pre-mature liquidation of assets, which could result in investment experience losses.

**Accrued Liability Ratio:** The accrued liability ratio, which is a measure of the proportion of total liability attributable to inactive members, increased between 2010 and 2013 as the number of active members sharply decreased but has remained steady since 2013 at approximately 74%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors should be amortized over a shorter time horizon than for a less mature plan. The legislature has enacted a provision that will reduce the amortization period from 30 years to 20 years once the funded ratio reaches 70%



	(A) Market Value of Assets *	(B) Total Payroll *	(A)/(B) Asset Volatility Ratio
2010	\$8,065	\$2,546	316.7%
2011	\$9,703	\$2,409	402.8%
2012	\$9,516	\$2,342	406.4%
2013	\$10,328	\$1,952	529.1%
2014	\$11,625	\$1,814	640.9%
2015	\$11,415	\$1,857	614.8%
2016	\$10,724	\$1,842	582.1%
2017	\$11,753	\$1,822	645.1%
2018	\$12,284	\$1,864	659.0%
2019	\$12,283	\$1,952	629.1%

Asset Volatility Ratio: The asset volatility ratio, determined as the ratio of the market value of assets to Total Payroll, is a measure of the impact of investment volatility on employer contributions which are paid as a percentage of payroll. Although MVA growth that exceeds payroll growth may contribute to the financial stability of the plan, the amortization of changes in these higher asset values have a greater impact on contribution volatility as this ratio increases. Since 2010, the asset volatility ratio has increased from 316.7% to 629.1%

	(A) Contributions*	(B) Benefits*	(A)-(B) Contributions less Benefits*	(C) Market Value of Assets*	(B)/(C) Benefits/ MVA	[(A)-(B)]/(C)
2010	\$709	\$884	(\$175)	\$8,065	11.0%	-2.2%
2011	\$770	\$976	(\$205)	\$9,703	10.1%	-2.1%
2012	\$863	\$1,041	(\$178)	\$9,516	10.9%	-1.9%
2013	\$856	\$1,151	(\$295)	\$10,328	11.1%	-2.9%
2014	\$789	\$1,262	(\$473)	\$11,625	10.9%	-4.1%
2015	\$893	\$1,255	(\$363)	\$11,415	11.0%	-3.2%
2016	\$897	\$1,292	(\$395)	\$10,724	12.0%	-3.7%
2017	\$840	\$1,331	(\$491)	\$11,753	11.3%	-4.2%
2018	\$897	\$1,378	(\$481)	\$12,284	11.2%	-3.9%
2019	\$943	\$1,397	(\$454)	\$12,283	11.4%	-3.7%

Cash Flow Measures: Mature plans paying substantial retirement benefits resulting in small positive or negative cash flows may be more sensitive to near term investment volatility. Note investment returns result in significant asset growth despite the negative cash flow.

	(A) Investment Experience Gains/(Losses)*	(B) Other Experience Gains/(Losses)*	(A)+(B) Total Experience Gain/(Loss)*
2010	(\$495)	(\$136)	(\$631)
2011	(\$233)	\$146	(\$87)
2012	(\$255)	(\$40)	(\$295)
2013	\$321	\$429	\$750
2014	\$473	\$61	\$534
2015	\$281	(\$28)	\$253
2016	(\$250)	\$81	(\$169)
2017	(\$14)	\$100	\$86
2018	(\$20)	\$18	(\$2)
2019	(\$286)	(\$96)	(\$382)

Experience Gains and Losses: As plan experience differs from actuarial assumptions, experience gains and losses will develop. If assumptions are appropriately determined, gains and losses are expected to offset over time. Consistent gains or losses may be an indication that actuarial assumptions need to be re-evaluated. LASERS' consistent "other" experience gains result primarily from salary and mortality assumptions. Recent changes following the experience study are expected to more closely mirror actual experience.

The risks identified and discussed above are the most significant risks based on the characteristics of the plan, however this is not an exhaustive list of potential risks that could be considered. Advanced modelling, as well as the identification of additional risks, can be helpful and can be provided upon request of the Board.

## **ACTUARIAL COST METHODS AND ASSUMPTIONS**

### **ACTUARIAL COST METHOD:**

Louisiana Statutes, 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 Statement of Changes in Fiduciary Net Position provided by the accounting staff were the final drafts prior to publication. If these statements differ from the final audit report by a margin that affects the employer contribution rate or the yield to the actuarial value of assets, a revised actuarial report will be issued, but only to the extent that any changes affect the employer's contribution rate or the return on the Actuarial Value of Assets.

### **ADMINISTRATIVE EXPENSES:**

Administrative expenses are funded directly by employers as a percentage of projected payroll beginning July 1, 2018, in accordance with Act 94 of 2016. Projected administrative expenses are determined based on prior year actual expenses with consideration of any expected variations provided by LASERS Fiscal Division.

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

The accrued actuarial liability includes previously granted post-retirement benefit increases. Louisiana law pertaining to LASERS' 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. 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 expenses and the expected return used to fund 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 LASERS' specific statutory provisions which require 50% of investment gains, determined using the actuarial value of assets, above the statutory threshold of \$100 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 Standards 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. The Retirement System is required to conduct an experience study every five years. An experience study was completed for the observation period of July 1, 2013 through June 30, 2018. The recommended assumption changes based on this study were adopted by the Board, effective July 1, 2019. The experience study report, dated January 23, 2019, provides further information regarding the rationale for these assumptions. The current rate tables are illustrated at the end of this appendix.

**INFLATION:**

The Board of Trustees adopted a change in the inflation assumption from 2.75% to 2.50%, effective July 1, 2019.

**DISCOUNT RATE / INVESTMENT EARNINGS:**

A discount rate of 7.60% was used for the June 30, 2019 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 7.65% to 7.60%. The projected contribution requirements for Fiscal Year 2020/2021 were determined using a discount rate of 7.55%. Investment manager fees are treated as a direct offset to investment income.

June 30, 2019 Funding Valuation Assumptions: The discount rate for funding purposes reflects the assumed investment rate of return, net of investment 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 regular plan benefits, the discount rate represents the expected returns to be used to fund regular plan benefits.

A long-term (30-year) average of approximately 40 basis points is assumed to be transferred to the Experience Account annually. Therefore, the gross expected return inherent in the valuation, which is the sum of the discount rate and investment return expected to be allocated to the Experience Account, is 8.00%. The expected return inherent in the valuation is supported by capital market assumptions provided by the Board's investment consultant and by the average expected returns by asset class provided in the Horizon Actuarial Service Survey of Capital Market Assumptions, 2019 edition.

June 30, 2019 GASB Assumptions: A discount rate of 7.60% is used for GASB reporting purposes. Section IV of this report provides expected real rates of return by asset class.

**MORTALITY ASSUMPTIONS:**

Mortality rates were revised based on the 2014-2018 experience study as follows:

General Active Employees

Males RP-2014 Blue Collar Employee \*0.978  
Females RP-2014 Blue Collar Employee \* 1.144

Public Safety Active Employees

Males RP-2014 Blue Collar Employee \*1.005  
Females RP-2014 Blue Collar Employee \* 1.129

General Retiree/Inactive Employees

Males RP-2014 Blue Collar Annuitant \* 1.280  
Females RP-2014 White Collar Annuitant \* 1.417

Public Safety Retiree/Inactive Employees

Males RP-2014 Blue Collar Annuitant \*1.185  
Females RP-2014 Blue Collar Annuitant \* 1.017

Disability Retirees

Males RP-2000 Disability Retiree \* 1.009  
Females RP-2000 Disability Retiree \* 1.043

Mortality assumptions for active and regular retirees include adjustments for expected future mortality improvement using the MP-2018 Generational Improvement Scale. Mortality assumptions for Disability Retirees include no adjustments for expected future mortality improvement, based on plan experience. Previously, the RP-2000 mortality tables projected to 2015 with Scale AA were used for non-disabled members and the RP-2000 Disabled mortality tables without projection were used for disabled members.

**DISABILITY ASSUMPTION:**

Rates of total and permanent disability vary based upon attained age and vary by plan, based upon the 2014-2018 experience study.

**RETIREMENT/DROP ASSUMPTION:**

Eligibility for normal retirement benefits and DROP participation is based on age and service requirements that vary by plan, based on the 2014-2018 experience study.

**TERMINATION ASSUMPTIONS:**

Voluntary termination or withdrawal rates are based on the 2014-2018 experience study. Rates for Regular members and Corrections/Hazardous Duty members are based on a combination of age and service. Rates for Wildlife employees are based on service. The expected withdrawal rate for Judges is a flat rate of 1.20%. 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 and are based on the 2014-2018 experience study. The rates include anticipated productivity growth, merit adjustments, and a 2.50% inflation component, which is consistent with the inflation assumptions used to develop the discount rate. For valuation purposes, current salaries and projected future salaries are limited to the Section 401(a)(17) limit of the Internal Revenue Service Code, with future indexed increases.

**FAMILY STATISTICS:**

The composition of the family is based upon Current Population Reports published by the United States Census Bureau. Seventy-five percent of the membership is assumed to be married. The wife is assumed to be three years younger than the husband. Sample rates for the assumed number of minor children are as follows:

Age of Member	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

**CONVERTED LEAVE:**

Leave credit is accrued throughout a member’s career and converted to service credit or paid as a lump sum. Converted leave rates below represent the percentage increase in a retiree’s accrued benefit upon conversion of the leave to benefits. Prior and new rates are shown below. The prior rates were based on the prior experience study. The current rates are based on the 2014-2018 experience study.

	Prior Assumptions	
	Regular Retirement	Disability
Regular Members	3.5%	1.5%
Judicial Members	1.0%	1.0%
Corrections	5.0%	3.0%
Wildlife	6.0%	3.0%

	New Assumptions	
	Regular Retirement	Disability
Regular Members	5.0%	1.5%
Judicial Members	0.5%	1.0%
Corrections	9.0%	3.0%
Wildlife	9.0%	3.0%
Rehired Retirees	7.5%	N/A

**Prior Actuarial Assumptions, effective July 1, 2014**  
**Regular Members**

AGE	DEATH RATES		DISABILITY RATES	TERMINATION RATES								
	MALE	FEMALE		< 1 YEAR	1 YEAR	2-3 YEARS	4-5 YEARS	6 YEARS	7 YEARS	8 YEARS	9 YEARS	10+ YEARS
18	0.00024	0.00015	0.0000	0.450	0.300	0.220	0.140	0.100	0.080	0.070	0.060	0.050
19	0.00025	0.00015	0.0000	0.450	0.300	0.220	0.140	0.100	0.080	0.070	0.060	0.050
20	0.00026	0.00015	0.0000	0.450	0.300	0.220	0.140	0.100	0.080	0.070	0.060	0.050
21	0.00027	0.00015	0.0000	0.400	0.300	0.220	0.140	0.100	0.080	0.070	0.060	0.050
22	0.00028	0.00015	0.0000	0.350	0.250	0.220	0.140	0.100	0.080	0.070	0.060	0.050
23	0.00030	0.00016	0.0000	0.290	0.250	0.220	0.130	0.100	0.080	0.070	0.060	0.050
24	0.00031	0.00016	0.0000	0.290	0.210	0.210	0.120	0.100	0.080	0.070	0.060	0.050
25	0.00032	0.00017	0.0000	0.290	0.207	0.200	0.118	0.100	0.080	0.070	0.060	0.050
26	0.00035	0.00018	0.0000	0.290	0.204	0.200	0.116	0.100	0.080	0.070	0.060	0.050
27	0.00035	0.00019	0.0000	0.290	0.201	0.190	0.114	0.100	0.080	0.070	0.060	0.050
28	0.00037	0.00020	0.0000	0.290	0.198	0.180	0.112	0.100	0.080	0.070	0.060	0.050
29	0.00038	0.00021	0.0001	0.290	0.195	0.170	0.110	0.100	0.080	0.070	0.060	0.050
30	0.00041	0.00023	0.0001	0.290	0.192	0.170	0.108	0.100	0.080	0.070	0.060	0.050
31	0.00046	0.00027	0.0001	0.290	0.189	0.160	0.106	0.100	0.080	0.070	0.060	0.050
32	0.00052	0.00031	0.0001	0.290	0.186	0.150	0.104	0.100	0.080	0.070	0.060	0.050
33	0.00059	0.00034	0.0001	0.290	0.183	0.130	0.102	0.100	0.080	0.070	0.060	0.050
34	0.00065	0.00037	0.0001	0.290	0.180	0.130	0.100	0.100	0.080	0.070	0.060	0.050
35	0.00072	0.00040	0.0004	0.290	0.177	0.130	0.098	0.100	0.080	0.070	0.060	0.050
36	0.00078	0.00043	0.0004	0.285	0.174	0.130	0.096	0.100	0.080	0.070	0.060	0.050
37	0.00084	0.00046	0.0004	0.280	0.171	0.120	0.094	0.100	0.080	0.070	0.060	0.050
38	0.00088	0.00048	0.0004	0.275	0.168	0.120	0.092	0.100	0.080	0.070	0.060	0.050
39	0.00092	0.00052	0.0004	0.270	0.165	0.120	0.090	0.100	0.080	0.070	0.060	0.050
40	0.00096	0.00056	0.0004	0.265	0.162	0.110	0.088	0.100	0.080	0.070	0.060	0.050
41	0.00100	0.00062	0.0014	0.260	0.159	0.110	0.086	0.100	0.080	0.070	0.060	0.050
42	0.00105	0.00068	0.0014	0.255	0.156	0.110	0.084	0.100	0.080	0.070	0.060	0.050
43	0.00110	0.00075	0.0014	0.250	0.153	0.080	0.082	0.080	0.070	0.060	0.050	0.040
44	0.00117	0.00082	0.0014	0.245	0.150	0.080	0.080	0.080	0.070	0.060	0.050	0.040
45	0.00124	0.00088	0.0022	0.240	0.147	0.080	0.078	0.080	0.070	0.060	0.050	0.040
46	0.00131	0.00095	0.0022	0.235	0.144	0.080	0.076	0.080	0.070	0.060	0.050	0.040
47	0.00138	0.00101	0.0022	0.230	0.141	0.080	0.074	0.080	0.070	0.060	0.050	0.040
48	0.00146	0.00109	0.0028	0.225	0.138	0.080	0.072	0.080	0.070	0.060	0.050	0.040
49	0.00154	0.00118	0.0028	0.220	0.135	0.080	0.070	0.080	0.070	0.060	0.050	0.040
50	0.00163	0.00130	0.0028	0.215	0.132	0.080	0.068	0.080	0.070	0.060	0.050	0.040
51	0.00184	0.00145	0.0028	0.210	0.129	0.080	0.066	0.080	0.070	0.060	0.050	0.040
52	0.00197	0.00163	0.0036	0.205	0.126	0.080	0.064	0.080	0.070	0.060	0.050	0.040
53	0.00215	0.00184	0.0036	0.200	0.123	0.080	0.062	0.080	0.070	0.060	0.050	0.040
54	0.00236	0.00209	0.0036	0.195	0.120	0.080	0.060	0.080	0.070	0.060	0.050	0.040
55	0.00272	0.00241	0.0036	0.190	0.117	0.080	0.058	0.080	0.070	0.060	0.050	0.040
56	0.00320	0.00282	0.0036	0.185	0.114	0.080	0.056	0.080	0.070	0.060	0.050	0.040
57	0.00363	0.00323	0.0048	0.180	0.111	0.080	0.054	0.080	0.070	0.060	0.050	0.040
58	0.00414	0.00364	0.0048	0.175	0.108	0.080	0.052	0.080	0.070	0.060	0.050	0.040
59	0.00467	0.00412	0.0040	0.170	0.105	0.080	0.050	0.080	0.070	0.060	0.050	0.040
60	0.00530	0.00469	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
61	0.00612	0.00539	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
62	0.00698	0.00618	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
63	0.00810	0.00709	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
64	0.00913	0.00800	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
65	0.01031	0.00900	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
66	0.01184	0.01016	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
67	0.01321	0.01128	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
68	0.01446	0.01247	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
69	0.01603	0.01378	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
70	0.01770	0.01553	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
71	0.01959	0.01698	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
72	0.02175	0.01888	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
73	0.02422	0.02067	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040
74	0.02702	0.02291	0.0000	0.165	0.102	0.080	0.048	0.080	0.070	0.060	0.050	0.040

**Prior Actuarial Assumptions, effective July 1, 2014**  
**Regular Members**

AGE	RETIREMENT/DROP RATES					DUR	SALARY INCREASE *
	< 10 YOS	10-19 YOS	20-24 YOS	25-29 YOS	30+ YOS		
18	0.000	0.000	0.020	0.030	0.000	0	0.1275
19	0.000	0.000	0.020	0.030	0.000	1	0.0775
20	0.000	0.000	0.020	0.030	0.000	2	0.0675
21	0.000	0.000	0.020	0.030	0.000	3	0.0625
22	0.000	0.000	0.020	0.030	0.000	4	0.0575
23	0.000	0.000	0.020	0.030	0.000	5	0.0550
24	0.000	0.000	0.020	0.030	0.000	6	0.0530
25	0.000	0.000	0.020	0.030	0.000	7	0.0515
26	0.000	0.000	0.020	0.030	0.000	8	0.0505
27	0.000	0.000	0.020	0.030	0.000	9	0.0495
28	0.000	0.000	0.020	0.030	0.000	10	0.0485
29	0.000	0.000	0.020	0.030	0.000	11	0.0475
30	0.000	0.000	0.020	0.030	0.000	12	0.0465
31	0.000	0.000	0.020	0.030	0.000	13	0.0455
32	0.000	0.000	0.020	0.030	0.000	14	0.0445
33	0.000	0.000	0.020	0.030	0.000	15	0.0435
34	0.000	0.000	0.020	0.030	0.000	16	0.0425
35	0.000	0.000	0.020	0.030	0.000	17	0.0415
36	0.000	0.000	0.020	0.030	0.000	18	0.0405
37	0.000	0.000	0.020	0.030	0.000	19	0.0395
38	0.000	0.000	0.020	0.030	0.000	20	0.0385
39	0.000	0.000	0.020	0.030	0.000	21	0.0375
40	0.000	0.000	0.020	0.030	0.000	22	0.0375
41	0.000	0.000	0.020	0.030	0.000	23	0.0375
42	0.000	0.000	0.020	0.030	0.000	24	0.0375
43	0.000	0.000	0.020	0.030	0.000	25	0.0375
44	0.000	0.000	0.020	0.030	0.000	26	0.0375
45	0.000	0.000	0.020	0.030	0.030	27	0.0375
46	0.000	0.000	0.020	0.030	0.030	28	0.0375
47	0.000	0.000	0.020	0.030	0.500	29	0.0375
48	0.000	0.000	0.020	0.060	0.500	30	0.0375
49	0.000	0.000	0.020	0.070	0.500	31	0.0375
50	0.000	0.000	0.030	0.070	0.430	32	0.0375
51	0.000	0.000	0.030	0.070	0.400	33	0.0375
52	0.000	0.000	0.030	0.080	0.470	34	0.0375
53	0.000	0.000	0.030	0.120	0.440	35	0.0375
54	0.000	0.000	0.060	0.280	0.470	36	0.0375
55	0.000	0.000	0.080	0.550	0.300	37	0.0375
56	0.000	0.000	0.080	0.320	0.250	38	0.0375
57	0.000	0.000	0.080	0.300	0.220	39	0.0375
58	0.000	0.000	0.080	0.280	0.200	40	0.0375
59	0.000	0.000	0.250	0.350	0.180	41	0.0375
60	0.100	0.330	0.550	0.300	0.240	42	0.0375
61	0.250	0.180	0.210	0.180	0.220	43	0.0375
62	0.250	0.160	0.200	0.180	0.250	44	0.0375
63	0.250	0.160	0.150	0.250	0.250	45	0.0375
64	0.250	0.170	0.150	0.180	0.250	46	0.0375
65	0.250	0.240	0.250	0.250	0.250	47	0.0375
66	0.250	0.160	0.250	0.200	0.300	48	0.0375
67	0.250	0.230	0.300	0.180	0.350	49	0.0375
68	0.250	0.230	0.100	0.180	0.200	50	0.0375
69	0.250	0.230	0.250	0.400	0.200	51	0.0375
70	0.750	0.230	0.250	0.350	0.250	52	0.0375
71	0.750	0.230	0.250	0.350	0.250	53	0.0375
72	0.750	0.230	0.250	0.350	0.250	54	0.0375
73	0.750	0.230	0.250	0.350	0.250	55	0.0375
74	0.750	0.230	0.250	0.350	0.250	56	0.0375

\* The salary scale for all plans was reduced by 0.25 for all durations, effective July 1, 2017, based on the reduction in the inflation assumption from 3.00% to 2.75%.



**Prior Actuarial Assumptions, effective July 1, 2014**  
**Judges**

AGE	DEATH RATES		DISABILITY RATES	RETIREMENT/DROP			DUR	TERMINATION RATES	SALARY INCREASE *
	MALE	FEMALE		< 15 YOS	15-19 YOS	20+ YOS			
18	0.00024	0.00015	0.0000	0.000	0.000	0.000	0	0.000	0.0525
19	0.00025	0.00015	0.0000	0.000	0.000	0.000	1	0.030	0.0275
20	0.00026	0.00015	0.0000	0.000	0.000	0.000	2	0.040	0.0275
21	0.00027	0.00015	0.0000	0.000	0.000	0.000	3	0.030	0.0275
22	0.00028	0.00015	0.0000	0.000	0.000	0.000	4	0.020	0.0275
23	0.00030	0.00016	0.0000	0.000	0.000	0.000	5	0.010	0.0275
24	0.00031	0.00016	0.0000	0.000	0.000	0.000	6	0.010	0.0275
25	0.00032	0.00017	0.0000	0.000	0.000	0.000	7	0.010	0.0275
26	0.00035	0.00018	0.0000	0.000	0.000	0.000	8	0.010	0.0275
27	0.00035	0.00019	0.0000	0.000	0.000	0.000	9	0.010	0.0275
28	0.00037	0.00020	0.0000	0.000	0.000	0.000	10	0.010	0.0275
29	0.00038	0.00021	0.0000	0.000	0.000	0.000	11	0.010	0.0275
30	0.00041	0.00023	0.0000	0.000	0.000	0.000	12	0.010	0.0275
31	0.00046	0.00027	0.0000	0.000	0.000	0.000	13	0.010	0.0275
32	0.00052	0.00031	0.0000	0.000	0.000	0.000	14	0.010	0.0275
33	0.00059	0.00034	0.0000	0.000	0.000	0.000	15	0.010	0.0275
34	0.00065	0.00037	0.0000	0.000	0.000	0.000	16	0.010	0.0275
35	0.00072	0.00040	0.0000	0.000	0.000	0.000	17	0.010	0.0275
36	0.00078	0.00043	0.0000	0.000	0.000	0.000	18	0.010	0.0275
37	0.00084	0.00046	0.0000	0.000	0.000	0.000	19	0.010	0.0275
38	0.00088	0.00048	0.0000	0.000	0.000	0.000	20	0.010	0.0275
39	0.00092	0.00052	0.0000	0.000	0.000	0.000	21	0.010	0.0275
40	0.00096	0.00056	0.0000	0.000	0.000	0.000	22	0.010	0.0275
41	0.00100	0.00062	0.0000	0.000	0.000	0.000	23	0.010	0.0275
42	0.00105	0.00068	0.0000	0.000	0.000	0.000	24	0.010	0.0275
43	0.00110	0.00075	0.0000	0.000	0.000	0.000	25	0.010	0.0275
44	0.00117	0.00082	0.0000	0.000	0.000	0.000	26	0.010	0.0275
45	0.00124	0.00088	0.0000	0.000	0.000	0.000	27	0.010	0.0275
46	0.00131	0.00095	0.0002	0.000	0.200	0.000	28	0.010	0.0275
47	0.00138	0.00101	0.0002	0.000	0.200	0.000	29	0.010	0.0275
48	0.00146	0.00109	0.0002	0.000	0.200	0.000	30	0.010	0.0275
49	0.00154	0.00118	0.0002	0.000	0.200	0.050	31	0.010	0.0275
50	0.00163	0.00130	0.0002	0.000	0.200	0.050	32	0.010	0.0275
51	0.00184	0.00145	0.0002	0.000	0.100	0.050	33	0.010	0.0275
52	0.00197	0.00163	0.0002	0.000	0.100	0.050	34	0.010	0.0275
53	0.00215	0.00184	0.0002	0.000	0.100	0.050	35	0.010	0.0275
54	0.00236	0.00209	0.0002	0.000	0.200	0.050	36	0.010	0.0275
55	0.00272	0.00241	0.0002	0.050	0.200	0.100	37	0.010	0.0275
56	0.00320	0.00282	0.0002	0.050	0.100	0.060	38	0.010	0.0275
57	0.00363	0.00323	0.0002	0.100	0.020	0.060	39	0.010	0.0275
58	0.00414	0.00364	0.0002	0.050	0.020	0.060	40	0.010	0.0275
59	0.00467	0.00412	0.0002	0.050	0.020	0.080	41	0.010	0.0275
60	0.00530	0.00469	0.0002	0.100	0.020	0.080	42	0.010	0.0275
61	0.00612	0.00539	0.0002	0.100	0.020	0.120	43	0.010	0.0275
62	0.00698	0.00618	0.0002	0.200	0.020	0.120	44	0.010	0.0275
63	0.00810	0.00709	0.0002	0.200	0.020	0.060	45	0.010	0.0275
64	0.00913	0.00800	0.0002	0.150	0.100	0.060	46	0.010	0.0275
65	0.01031	0.00900	0.0002	0.500	0.100	0.060	47	0.010	0.0275
66	0.01184	0.01016	0.0002	0.100	0.100	0.110	48	0.010	0.0275
67	0.01321	0.01128	0.0002	0.100	0.100	0.100	49	0.010	0.0275
68	0.01446	0.01247	0.0002	0.100	0.100	0.100	50	0.010	0.0275
69	0.01603	0.01378	0.0002	0.100	0.100	0.100	51	0.010	0.0275
70	0.01770	0.01553	0.0000	0.100	0.100	0.100	52	0.010	0.0275
71	0.01959	0.01698	0.0000	0.050	0.400	0.400	53	0.010	0.0275
72	0.02175	0.01888	0.0000	0.050	0.400	0.400	54	0.010	0.0275
73	0.02422	0.02067	0.0000	0.050	0.400	0.400	55	0.010	0.0275
74	0.02702	0.02291	0.0000	0.050	0.400	0.400	56	0.010	0.0275

**Prior Actuarial Assumptions, effective July 1, 2014**  
**Corrections/Hazardous Duty**

AGE	DEATH RATES		DISABILITY RATES	RETIREMENT/DROP RATES		TERMINATION RATES		DUR	SALARY INCREASE *
	MALE	FEMALE		< 25 YOS	>= 25 YOS	< 10 YOS	>10 YOS		
18	0.00024	0.00015	0.0000	0.200	0.250	0.50	0.00	0	0.1425
19	0.00025	0.00015	0.0000	0.200	0.250	0.50	0.00	1	0.0810
20	0.00026	0.00015	0.0000	0.200	0.250	0.46	0.00	2	0.0675
21	0.00027	0.00015	0.0000	0.200	0.250	0.42	0.00	3	0.0665
22	0.00028	0.00015	0.0000	0.200	0.250	0.38	0.00	4	0.0615
23	0.00030	0.00016	0.0000	0.200	0.250	0.35	0.10	5	0.0605
24	0.00031	0.00016	0.0000	0.200	0.250	0.32	0.10	6	0.0600
25	0.00032	0.00017	0.0000	0.200	0.250	0.29	0.10	7	0.0595
26	0.00035	0.00018	0.0000	0.200	0.250	0.27	0.10	8	0.0590
27	0.00035	0.00019	0.0000	0.200	0.250	0.25	0.10	9	0.0585
28	0.00037	0.00020	0.0000	0.200	0.250	0.23	0.10	10	0.0580
29	0.00038	0.00021	0.0000	0.200	0.250	0.21	0.10	11	0.0575
30	0.00041	0.00023	0.0000	0.200	0.250	0.20	0.10	12	0.0570
31	0.00046	0.00027	0.0000	0.200	0.250	0.20	0.10	13	0.0565
32	0.00052	0.00031	0.0000	0.200	0.250	0.20	0.10	14	0.0560
33	0.00059	0.00034	0.0000	0.200	0.250	0.20	0.08	15	0.0555
34	0.00065	0.00037	0.0000	0.200	0.250	0.20	0.08	16	0.0550
35	0.00072	0.00040	0.0020	0.200	0.250	0.20	0.08	17	0.0545
36	0.00078	0.00043	0.0020	0.200	0.250	0.18	0.06	18	0.0540
37	0.00084	0.00046	0.0020	0.200	0.250	0.18	0.06	19	0.0535
38	0.00088	0.00048	0.0020	0.200	0.250	0.18	0.06	20	0.0530
39	0.00092	0.00052	0.0020	0.200	0.250	0.18	0.06	21	0.0525
40	0.00096	0.00056	0.0025	0.200	0.250	0.18	0.05	22	0.0525
41	0.00100	0.00062	0.0025	0.200	0.250	0.18	0.05	23	0.0520
42	0.00105	0.00068	0.0025	0.200	0.250	0.18	0.05	24	0.0520
43	0.00110	0.00075	0.0025	0.200	0.250	0.18	0.05	25	0.0525
44	0.00117	0.00082	0.0025	0.200	0.250	0.18	0.06	26	0.0525
45	0.00124	0.00088	0.0025	0.200	0.250	0.17	0.06	27	0.0435
46	0.00131	0.00095	0.0025	0.200	0.250	0.17	0.06	28	0.0435
47	0.00138	0.00101	0.0025	0.200	0.250	0.17	0.06	29	0.0430
48	0.00146	0.00109	0.0025	0.200	0.250	0.17	0.06	30	0.0335
49	0.00154	0.00118	0.0030	0.200	0.250	0.17	0.07	31	0.0335
50	0.00163	0.00130	0.0030	0.350	0.200	0.13	0.07	32	0.0335
51	0.00184	0.00145	0.0030	0.100	0.250	0.13	0.07	33	0.0335
52	0.00197	0.00163	0.0050	0.250	0.350	0.13	0.07	34	0.0335
53	0.00215	0.00184	0.0050	0.250	0.350	0.13	0.07	35	0.0335
54	0.00236	0.00209	0.0050	0.300	0.350	0.13	0.10	36	0.0335
55	0.00272	0.00241	0.0075	0.300	0.350	0.13	0.10	37	0.0335
56	0.00320	0.00282	0.0075	0.300	0.350	0.13	0.10	38	0.0335
57	0.00363	0.00323	0.0075	0.300	0.350	0.13	0.10	39	0.0335
58	0.00414	0.00364	0.0075	0.300	0.350	0.13	0.10	40	0.0335
59	0.00467	0.00412	0.0075	0.300	0.350	0.13	0.10	41	0.0335
60	0.00530	0.00469	0.0000	0.450	0.500	0.13	0.10	42	0.0335
61	0.00612	0.00539	0.0000	0.400	0.500	0.13	0.10	43	0.0335
62	0.00698	0.00618	0.0000	0.400	0.500	0.13	0.10	44	0.0335
63	0.00810	0.00709	0.0000	0.400	0.500	0.13	0.10	45	0.0335
64	0.00913	0.00800	0.0000	0.400	0.500	0.13	0.10	46	0.0335
65	0.01031	0.00900	0.0000	0.350	0.500	0.13	0.10	47	0.0335
66	0.01184	0.01016	0.0000	0.350	0.500	0.13	0.10	48	0.0335
67	0.01321	0.01128	0.0000	0.350	0.500	0.13	0.10	49	0.0335
68	0.01446	0.01247	0.0000	0.350	0.500	0.13	0.10	50	0.0335
69	0.01603	0.01378	0.0000	0.350	0.500	0.13	0.10	51	0.0335
70	0.01770	0.01553	0.0000	0.500	0.500	0.13	0.10	52	0.0335
71	0.01959	0.01698	0.0000	0.500	0.500	0.13	0.10	53	0.0335
72	0.02175	0.01888	0.0000	0.500	0.500	0.13	0.10	54	0.0335
73	0.02422	0.02067	0.0000	0.500	0.500	0.13	0.10	55	0.0335
74	0.02702	0.02291	0.0000	0.500	0.500	0.13	0.10	56	0.0335

**Prior Actuarial Assumptions, effective July 1, 2014**  
**Wildlife**

AGE	DEATH RATES		DISABILITY RATES	RETIREMENT/DROP RATES		DUR	TERMINATION RATES	SALARY INCREASE *
	MALE	FEMALE		< 25 YOS	>= 25 YOS			
18	0.00024	0.00015	0.0000	0.200	0.250	0	0.080	0.1425
19	0.00025	0.00015	0.0000	0.200	0.250	1	0.080	0.0810
20	0.00026	0.00015	0.0000	0.200	0.250	2	0.080	0.0675
21	0.00027	0.00015	0.0000	0.200	0.250	3	0.080	0.0665
22	0.00028	0.00015	0.0000	0.200	0.250	4	0.050	0.0615
23	0.00030	0.00016	0.0000	0.200	0.250	5	0.050	0.0605
24	0.00031	0.00016	0.0000	0.200	0.250	6	0.030	0.0600
25	0.00032	0.00017	0.0000	0.200	0.250	7	0.030	0.0595
26	0.00035	0.00018	0.0000	0.200	0.250	8	0.030	0.0590
27	0.00035	0.00019	0.0000	0.200	0.250	9	0.030	0.0585
28	0.00037	0.00020	0.0000	0.200	0.250	10	0.030	0.0580
29	0.00038	0.00021	0.0000	0.200	0.250	11	0.030	0.0575
30	0.00041	0.00023	0.0000	0.200	0.250	12	0.030	0.0570
31	0.00046	0.00027	0.0000	0.200	0.250	13	0.030	0.0565
32	0.00052	0.00031	0.0000	0.200	0.250	14	0.030	0.0560
33	0.00059	0.00034	0.0000	0.200	0.250	15	0.030	0.0555
34	0.00065	0.00037	0.0000	0.200	0.250	16	0.030	0.0550
35	0.00072	0.00040	0.0020	0.200	0.250	17	0.030	0.0545
36	0.00078	0.00043	0.0020	0.200	0.250	18	0.030	0.0540
37	0.00084	0.00046	0.0020	0.200	0.250	19	0.030	0.0535
38	0.00088	0.00048	0.0020	0.200	0.250	20	0.030	0.0530
39	0.00092	0.00052	0.0020	0.200	0.250	21	0.030	0.0525
40	0.00096	0.00056	0.0025	0.200	0.250	22	0.030	0.0525
41	0.00100	0.00062	0.0025	0.200	0.250	23	0.030	0.0520
42	0.00105	0.00068	0.0025	0.200	0.250	24	0.030	0.0520
43	0.00110	0.00075	0.0025	0.200	0.250	25	0.030	0.0525
44	0.00117	0.00082	0.0025	0.200	0.250	26	0.030	0.0525
45	0.00124	0.00088	0.0025	0.200	0.250	27	0.030	0.0435
46	0.00131	0.00095	0.0025	0.200	0.250	28	0.030	0.0435
47	0.00138	0.00101	0.0025	0.200	0.250	29	0.030	0.0430
48	0.00146	0.00109	0.0025	0.200	0.250	30	0.030	0.0335
49	0.00154	0.00118	0.0030	0.200	0.250	31	0.030	0.0335
50	0.00163	0.00130	0.0030	0.350	0.200	32	0.030	0.0335
51	0.00184	0.00145	0.0030	0.100	0.250	33	0.030	0.0335
52	0.00197	0.00163	0.0050	0.250	0.350	34	0.030	0.0335
53	0.00215	0.00184	0.0050	0.250	0.350	35	0.030	0.0335
54	0.00236	0.00209	0.0050	0.300	0.350	36	0.030	0.0335
55	0.00272	0.00241	0.0075	0.300	0.350	37	0.030	0.0335
56	0.00320	0.00282	0.0075	0.300	0.350	38	0.030	0.0335
57	0.00363	0.00323	0.0075	0.300	0.350	39	0.030	0.0335
58	0.00414	0.00364	0.0075	0.300	0.350	40	0.030	0.0335
59	0.00467	0.00412	0.0075	0.300	0.350	41	0.030	0.0335
60	0.00530	0.00469	0.0000	0.450	0.500	42	0.030	0.0335
61	0.00612	0.00539	0.0000	0.400	0.500	43	0.030	0.0335
62	0.00698	0.00618	0.0000	0.400	0.500	44	0.030	0.0335
63	0.00810	0.00709	0.0000	0.400	0.500	45	0.030	0.0335
64	0.00913	0.00800	0.0000	0.400	0.500	46	0.030	0.0335
65	0.01031	0.00900	0.0000	0.350	0.500	47	0.030	0.0335
66	0.01184	0.01016	0.0000	0.350	0.500	48	0.030	0.0335
67	0.01321	0.01128	0.0000	0.350	0.500	49	0.030	0.0335
68	0.01446	0.01247	0.0000	0.350	0.500	50	0.030	0.0335
69	0.01603	0.01378	0.0000	0.350	0.500	51	0.030	0.0335
70	0.01770	0.01553	0.0000	0.500	0.500	52	0.030	0.0335
71	0.01959	0.01698	0.0000	0.500	0.500	53	0.030	0.0335
72	0.02175	0.01888	0.0000	0.500	0.500	54	0.030	0.0335
73	0.02422	0.02067	0.0000	0.500	0.500	55	0.030	0.0335
74	0.02702	0.02291	0.0000	0.500	0.500	56	0.030	0.0335

**Actuarial Assumptions, effective July 1, 2019**  
**Regular Members**

AGE	DISABILITY RATES	TERMINATION RATES					
		< 1 YEAR	1 YEAR	2-3 YEARS	4-6 YEARS	7-9 YEARS	10+ YEARS
18	0.0000	0.500	0.550	0.330	0.230	0.105	0.080
19	0.0000	0.500	0.550	0.330	0.230	0.105	0.080
20	0.0000	0.500	0.380	0.330	0.230	0.105	0.080
21	0.0001	0.500	0.320	0.330	0.230	0.105	0.080
22	0.0001	0.440	0.300	0.240	0.230	0.105	0.080
23	0.0001	0.380	0.300	0.240	0.230	0.105	0.080
24	0.0001	0.325	0.270	0.200	0.230	0.105	0.080
25	0.0001	0.325	0.270	0.200	0.160	0.105	0.080
26	0.0001	0.325	0.270	0.200	0.160	0.105	0.080
27	0.0001	0.290	0.270	0.200	0.160	0.105	0.080
28	0.0001	0.290	0.270	0.200	0.160	0.105	0.080
29	0.0001	0.290	0.230	0.180	0.160	0.105	0.080
30	0.0001	0.290	0.230	0.180	0.133	0.105	0.080
31	0.0001	0.290	0.230	0.180	0.133	0.080	0.080
32	0.0001	0.290	0.230	0.180	0.133	0.080	0.080
33	0.0001	0.290	0.230	0.180	0.133	0.080	0.080
34	0.0001	0.290	0.220	0.180	0.133	0.080	0.055
35	0.0005	0.290	0.220	0.180	0.133	0.080	0.055
36	0.0005	0.290	0.220	0.180	0.133	0.080	0.055
37	0.0005	0.290	0.220	0.150	0.133	0.080	0.055
38	0.0005	0.290	0.180	0.150	0.130	0.080	0.055
39	0.0005	0.280	0.180	0.150	0.130	0.080	0.055
40	0.0010	0.280	0.180	0.150	0.130	0.080	0.055
41	0.0010	0.280	0.180	0.150	0.130	0.080	0.055
42	0.0010	0.280	0.180	0.140	0.125	0.080	0.055
43	0.0010	0.250	0.180	0.140	0.125	0.080	0.055
44	0.0010	0.250	0.180	0.140	0.125	0.080	0.055
45	0.0015	0.250	0.180	0.140	0.125	0.080	0.050
46	0.0015	0.250	0.180	0.140	0.125	0.075	0.050
47	0.0015	0.250	0.180	0.125	0.115	0.075	0.050
48	0.0015	0.250	0.180	0.125	0.115	0.075	0.050
49	0.0015	0.250	0.180	0.125	0.115	0.075	0.050
50	0.0022	0.250	0.180	0.125	0.115	0.075	0.050
51	0.0022	0.250	0.180	0.125	0.115	0.070	0.050
52	0.0022	0.250	0.180	0.115	0.115	0.070	0.050
53	0.0022	0.250	0.180	0.115	0.115	0.070	0.050
54	0.0022	0.250	0.180	0.115	0.085	0.070	0.050
55	0.0030	0.200	0.180	0.115	0.085	0.070	0.050
56	0.0030	0.200	0.180	0.115	0.085	0.070	0.050
57	0.0030	0.200	0.180	0.115	0.085	0.070	0.050
58	0.0030	0.200	0.180	0.115	0.085	0.070	0.050
59	0.0030	0.200	0.180	0.115	0.085	0.070	0.050
60	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
61	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
62	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
63	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
64	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
65	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
66	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
67	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
68	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
69	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
70	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
71	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
72	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
73	0.0000	0.200	0.180	0.115	0.085	0.070	0.050
74	0.0000	0.200	0.180	0.115	0.085	0.070	0.050

**Actuarial Assumptions, effective July 1, 2019**  
**Regular Members**

AGE	RETIREMENT/DROP RATES					DUR	SALARY INCREASE *
	< 10 YOS	10-19 YOS	20-24 YOS	25-29 YOS	30+ YOS		
18	0.000	0.000	0.000	0.000	0.000	0	0.1300
19	0.000	0.000	0.000	0.000	0.000	1	0.0710
20	0.000	0.000	0.000	0.000	0.000	2	0.0635
21	0.000	0.000	0.000	0.000	0.000	3	0.0560
22	0.000	0.000	0.000	0.000	0.000	4	0.0535
23	0.000	0.000	0.000	0.000	0.000	5	0.0510
24	0.000	0.000	0.000	0.000	0.000	6	0.0480
25	0.000	0.000	0.000	0.000	0.000	7	0.0450
26	0.000	0.000	0.000	0.000	0.000	8	0.0420
27	0.000	0.000	0.000	0.000	0.000	9	0.0410
28	0.000	0.000	0.000	0.000	0.000	10	0.0380
29	0.000	0.000	0.000	0.000	0.000	11	0.0380
30	0.000	0.000	0.000	0.000	0.000	12	0.0380
31	0.000	0.000	0.000	0.000	0.000	13	0.0350
32	0.000	0.000	0.000	0.000	0.000	14	0.0340
33	0.000	0.000	0.000	0.000	0.000	15	0.0340
34	0.000	0.000	0.000	0.000	0.000	16	0.0340
35	0.000	0.000	0.000	0.000	0.000	17	0.0340
36	0.000	0.000	0.000	0.000	0.000	18	0.0330
37	0.000	0.000	0.000	0.000	0.000	19	0.0320
38	0.000	0.050	0.050	0.050	0.000	20	0.0320
39	0.000	0.050	0.050	0.050	0.000	21	0.0320
40	0.000	0.050	0.050	0.050	0.000	22	0.0320
41	0.000	0.050	0.050	0.050	0.000	23	0.0320
42	0.000	0.050	0.050	0.050	0.000	24	0.0320
43	0.000	0.050	0.050	0.050	0.000	25	0.0320
44	0.000	0.050	0.050	0.050	0.000	26	0.0320
45	0.000	0.050	0.050	0.050	0.000	27	0.0320
46	0.000	0.050	0.050	0.050	0.000	28	0.0320
47	0.000	0.050	0.050	0.050	0.000	29	0.0320
48	0.000	0.080	0.080	0.080	0.200	30	0.0320
49	0.000	0.080	0.080	0.080	0.200	31	0.0320
50	0.000	0.100	0.100	0.100	0.200	32	0.0320
51	0.000	0.100	0.100	0.100	0.200	33	0.0320
52	0.000	0.100	0.100	0.100	0.200	34	0.0320
53	0.000	0.100	0.100	0.100	0.200	35	0.0320
54	0.000	0.250	0.250	0.250	0.250	36	0.0320
55	0.000	0.180	0.180	0.600	0.600	37	0.0320
56	0.000	0.180	0.180	0.200	0.200	38	0.0320
57	0.000	0.180	0.180	0.200	0.200	39	0.0320
58	0.000	0.180	0.180	0.200	0.200	40	0.0320
59	0.000	0.180	0.180	0.200	0.200	41	0.0320
60	0.350	0.350	0.350	0.350	0.350	42	0.0320
61	0.180	0.180	0.180	0.180	0.180	43	0.0320
62	0.170	0.170	0.170	0.170	0.170	44	0.0320
63	0.150	0.150	0.150	0.150	0.150	45	0.0320
64	0.170	0.170	0.170	0.170	0.170	46	0.0320
65	0.200	0.200	0.200	0.200	0.200	47	0.0320
66	0.180	0.180	0.180	0.180	0.180	48	0.0320
67	0.180	0.180	0.180	0.180	0.180	49	0.0320
68	0.180	0.180	0.180	0.180	0.180	50	0.0320
69	0.180	0.180	0.180	0.180	0.180	51	0.0320
70	0.180	0.180	0.180	0.180	0.180	52	0.0320
71	0.180	0.180	0.180	0.180	0.180	53	0.0320
72	0.180	0.180	0.180	0.180	0.180	54	0.0320
73	0.180	0.180	0.180	0.180	0.180	55	0.0320
74	0.180	0.180	0.180	0.180	0.180	56	0.0320

**Actuarial Assumptions, effective July 1, 2019**  
**Judges**

AGE	DISABILITY RATES	RETIREMENT/DROP			DUR	SALARY INCREASE *
		< 12 YOS	12-17 YOS	18+ YOS		
18	0.0000	0.000	0.000	0.000	0	0.0525
19	0.0000	0.000	0.000	0.000	1	0.0275
20	0.0000	0.000	0.000	0.000	2	0.0275
21	0.0000	0.000	0.000	0.000	3	0.0275
22	0.0000	0.000	0.000	0.000	4	0.0275
23	0.0000	0.000	0.000	0.000	5	0.0275
24	0.0000	0.000	0.000	0.000	6	0.0275
25	0.0000	0.000	0.000	0.000	7	0.0275
26	0.0000	0.000	0.000	0.000	8	0.0275
27	0.0000	0.000	0.000	0.000	9	0.0275
28	0.0000	0.000	0.000	0.000	10	0.0275
29	0.0000	0.000	0.000	0.000	11	0.0275
30	0.0000	0.000	0.000	0.000	12	0.0275
31	0.0000	0.000	0.000	0.000	13	0.0275
32	0.0000	0.000	0.000	0.000	14	0.0275
33	0.0000	0.000	0.000	0.000	15	0.0275
34	0.0000	0.000	0.000	0.000	16	0.0275
35	0.0000	0.000	0.000	0.000	17	0.0275
36	0.0000	0.000	0.000	0.000	18	0.0275
37	0.0000	0.000	0.000	0.000	19	0.0275
38	0.0000	0.000	0.000	0.068	20	0.0275
39	0.0000	0.000	0.000	0.068	21	0.0275
40	0.0000	0.000	0.000	0.068	22	0.0275
41	0.0000	0.000	0.000	0.068	23	0.0275
42	0.0000	0.000	0.000	0.068	24	0.0275
43	0.0000	0.000	0.000	0.068	25	0.0275
44	0.0000	0.000	0.000	0.068	26	0.0275
45	0.0002	0.000	0.000	0.068	27	0.0275
46	0.0002	0.000	0.000	0.068	28	0.0275
47	0.0002	0.000	0.000	0.068	29	0.0275
48	0.0002	0.000	0.000	0.068	30	0.0275
49	0.0002	0.000	0.000	0.068	31	0.0275
50	0.0002	0.000	0.000	0.068	32	0.0275
51	0.0002	0.000	0.000	0.068	33	0.0275
52	0.0002	0.000	0.000	0.068	34	0.0275
53	0.0002	0.000	0.000	0.068	35	0.0275
54	0.0002	0.000	0.000	0.068	36	0.0275
55	0.0002	0.000	0.208	0.115	37	0.0275
56	0.0002	0.000	0.090	0.115	38	0.0275
57	0.0002	0.000	0.090	0.115	39	0.0275
58	0.0002	0.000	0.090	0.115	40	0.0275
59	0.0002	0.000	0.090	0.115	41	0.0275
60	0.0002	0.108	0.090	0.238	42	0.0275
61	0.0002	0.108	0.090	0.173	43	0.0275
62	0.0002	0.108	0.090	0.173	44	0.0275
63	0.0002	0.108	0.090	0.173	45	0.0275
64	0.0002	0.108	0.090	0.173	46	0.0275
65	0.0002	0.108	0.182	0.173	47	0.0275
66	0.0002	0.108	0.105	0.122	48	0.0275
67	0.0002	0.108	0.105	0.122	49	0.0275
68	0.0002	0.108	0.105	0.122	50	0.0275
69	0.0002	0.108	0.105	0.122	51	0.0275
70	0.0000	0.108	0.105	0.122	52	0.0275
71	0.0000	0.108	0.105	0.122	53	0.0275
72	0.0000	0.108	0.105	0.545	54	0.0275
73	0.0000	0.108	0.105	0.545	55	0.0275
74	0.0000	0.108	0.105	0.545	56	0.0275

**Actuarial Assumptions, effective July 1, 2019**  
**Corrections/Hazardous Duty & Wildlife**

AGE	DISABILITY RATES	RETIREMENT/DROP RATES		TERMINATION RATES (Excluding Wildlife),							SALARY INCREASE*	
		< 10 YOS	10+ YOS	< 1 YOS	1 YOS	2 YOS	3-4 YOS	5-7 YOS	8-9 YOS	10+ YOS	DUR	
18	0.0000	0.000	0.000	0.580	0.500	0.300	0.370	0.155	0.064	0.028	0	0.1400
19	0.0000	0.000	0.000	0.580	0.500	0.300	0.370	0.155	0.064	0.028	1	0.0800
20	0.0001	0.000	0.000	0.580	0.390	0.300	0.370	0.155	0.064	0.028	2	0.0650
21	0.0001	0.000	0.000	0.580	0.390	0.300	0.370	0.155	0.064	0.028	3	0.0625
22	0.0001	0.000	0.000	0.580	0.390	0.300	0.370	0.155	0.064	0.028	4	0.0600
23	0.0001	0.000	0.000	0.480	0.360	0.300	0.240	0.155	0.064	0.028	5	0.0575
24	0.0001	0.000	0.000	0.480	0.305	0.300	0.240	0.155	0.064	0.028	6	0.0575
25	0.0001	0.000	0.000	0.480	0.305	0.300	0.240	0.155	0.064	0.028	7	0.0500
26	0.0001	0.000	0.000	0.467	0.305	0.240	0.205	0.155	0.064	0.028	8	0.0500
27	0.0001	0.000	0.000	0.467	0.305	0.240	0.205	0.155	0.064	0.028	9	0.0500
28	0.0001	0.000	0.000	0.467	0.305	0.240	0.205	0.135	0.064	0.028	10	0.0500
29	0.0001	0.000	0.000	0.467	0.305	0.240	0.200	0.135	0.064	0.028	11	0.0500
30	0.0005	0.000	0.000	0.435	0.255	0.240	0.200	0.135	0.064	0.028	12	0.0500
31	0.0005	0.000	0.000	0.435	0.255	0.240	0.200	0.100	0.064	0.028	13	0.0450
32	0.0005	0.000	0.000	0.435	0.255	0.200	0.200	0.100	0.064	0.028	14	0.0400
33	0.0005	0.000	0.000	0.435	0.255	0.200	0.200	0.100	0.064	0.028	15	0.0375
34	0.0005	0.000	0.000	0.435	0.255	0.200	0.200	0.100	0.064	0.028	16	0.0375
35	0.0013	0.000	0.000	0.435	0.255	0.200	0.200	0.100	0.064	0.028	17	0.0375
36	0.0013	0.000	0.000	0.410	0.255	0.200	0.155	0.100	0.064	0.028	18	0.0375
37	0.0013	0.000	0.110	0.410	0.255	0.200	0.155	0.100	0.064	0.028	19	0.0375
38	0.0013	0.000	0.110	0.410	0.255	0.200	0.155	0.100	0.064	0.028	20	0.0375
39	0.0013	0.000	0.110	0.410	0.210	0.200	0.155	0.100	0.064	0.028	21	0.0375
40	0.0017	0.000	0.110	0.410	0.210	0.200	0.155	0.090	0.064	0.028	22	0.0375
41	0.0017	0.000	0.110	0.410	0.210	0.200	0.155	0.090	0.064	0.028	23	0.0375
42	0.0017	0.000	0.235	0.320	0.210	0.200	0.155	0.090	0.064	0.028	24	0.0375
43	0.0017	0.000	0.235	0.320	0.170	0.200	0.155	0.090	0.064	0.028	25	0.0375
44	0.0017	0.000	0.235	0.320	0.170	0.200	0.155	0.090	0.064	0.028	26	0.0375
45	0.0028	0.000	0.235	0.320	0.170	0.120	0.155	0.090	0.064	0.028	27	0.0375
46	0.0028	0.000	0.235	0.320	0.170	0.120	0.155	0.090	0.064	0.028	28	0.0375
47	0.0028	0.000	0.235	0.320	0.170	0.120	0.100	0.090	0.064	0.028	29	0.0375
48	0.0028	0.000	0.235	0.320	0.170	0.120	0.100	0.090	0.064	0.028	30	0.0375
49	0.0028	0.000	0.235	0.275	0.170	0.120	0.100	0.090	0.064	0.028	31	0.0375
50	0.0055	0.000	0.235	0.275	0.170	0.120	0.100	0.090	0.064	0.028	32	0.0375
51	0.0055	0.000	0.235	0.275	0.170	0.120	0.100	0.090	0.064	0.028	33	0.0375
52	0.0055	0.000	0.235	0.275	0.170	0.120	0.100	0.090	0.064	0.028	34	0.0375
53	0.0055	0.000	0.235	0.275	0.170	0.090	0.100	0.090	0.064	0.028	35	0.0375
54	0.0055	0.000	0.235	0.275	0.170	0.090	0.100	0.090	0.064	0.028	36	0.0375
55	0.0080	0.000	0.235	0.275	0.170	0.090	0.100	0.090	0.064	0.028	37	0.0375
56	0.0080	0.000	0.235	0.190	0.170	0.090	0.100	0.090	0.064	0.028	38	0.0375
57	0.0080	0.000	0.289	0.190	0.170	0.090	0.100	0.090	0.064	0.028	39	0.0375
58	0.0080	0.000	0.289	0.190	0.170	0.090	0.100	0.090	0.064	0.028	40	0.0375
59	0.0080	0.500	0.369	0.190	0.170	0.090	0.100	0.090	0.064	0.028	41	0.0375
60	0.0000	0.500	0.240	0.190	0.170	0.090	0.100	0.090	0.064	0.028	42	0.0375
61	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	43	0.0375
62	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	44	0.0375
63	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	45	0.0375
64	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	46	0.0375
65	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	47	0.0375
66	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	48	0.0375
67	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	49	0.0375
68	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	50	0.0375
69	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	51	0.0375
70	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	52	0.0375
71	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	53	0.0375
72	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	54	0.0375
73	0.0000	0.325	0.196	0.190	0.170	0.090	0.100	0.090	0.064	0.028	55	0.0375
74	0.0000	0.000	0.000	0.190	0.170	0.090	0.100	0.090	0.064	0.028	56	0.0375

**Actuarial Assumptions, effective July 1, 2019**  
**Mortality Tables**

	Adjusted RP-2014 Base Table			Projected 2020 Table			Projected 2050 Table		
	Age	Male	Female	Age	Male	Female	Age	Male	Female
<b>General Active Member Mortality</b>	20	0.000513	0.000208	20	0.000532	0.000220	20	0.000411	0.000172
	30	0.000572	0.000279	30	0.000666	0.000319	30	0.000521	0.000251
	40	0.000795	0.000508	40	0.000909	0.000561	40	0.000746	0.000455
	50	0.002134	0.001414	50	0.002046	0.001377	50	0.001618	0.001077
	60	0.005934	0.003133	60	0.006024	0.003264	60	0.004510	0.002473
<b>Public Safety Active Member Mortality</b>	Age	Male	Female	Age	Male	Female	Age	Male	Female
	20	0.000528	0.000205	20	0.000547	0.000217	20	0.000423	0.000169
	30	0.000588	0.000275	30	0.000685	0.000315	30	0.000536	0.000247
	40	0.000817	0.000501	40	0.000934	0.000553	40	0.000767	0.000449
	50	0.002193	0.001395	50	0.002102	0.001359	50	0.001663	0.001062
60	0.006097	0.003092	60	0.006189	0.003221	60	0.004634	0.002440	
<b>General Non-Disabled Retiree Mortality</b>	Age	Male	Female	Age	Male	Female	Age	Male	Female
	50	0.005202	0.002942	50	0.004987	0.002866	50	0.003945	0.002241
	60	0.010824	0.005514	60	0.010988	0.005744	60	0.008226	0.004352
	70	0.025199	0.014955	70	0.024699	0.014237	70	0.018928	0.010935
	80	0.066380	0.043104	80	0.063142	0.041450	80	0.047371	0.030847
90	0.187405	0.141993	90	0.180033	0.138271	90	0.137459	0.106224	
<b>Public Safety Non-Disabled Retiree Mortality</b>	Age	Male	Female	Age	Male	Female	Age	Male	Female
	50	0.004816	0.002870	50	0.004617	0.002796	50	0.003653	0.002186
	60	0.010020	0.005832	60	0.010172	0.006075	60	0.007615	0.004603
	70	0.023329	0.014203	70	0.022866	0.013521	70	0.017523	0.010385
	80	0.061453	0.038813	80	0.058455	0.037324	80	0.043855	0.027776
90	0.173496	0.113767	90	0.166671	0.110785	90	0.127257	0.085108	
<b>General and Public Safety Disabled Mortality</b>	Age	Male	Female	Age	Male	Female	Age	Male	Female
	30	0.022774	0.007770	30	0.022774	0.007770	30	0.022774	0.007770
	40	0.022774	0.007770	40	0.022774	0.007770	40	0.022774	0.007770
	50	0.029236	0.012031	50	0.029236	0.012031	50	0.029236	0.012031
	60	0.042420	0.022778	60	0.042420	0.022778	60	0.042420	0.022778
70	0.063146	0.039253	70	0.063146	0.039253	70	0.063146	0.039253	
80	0.110356	0.075421	80	0.110356	0.075421	80	0.110356	0.075421	



**AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY**  
**June 30, 2019 (7.60% Discount Rate)**

<b>Date</b>	<b>Description</b>	<b>Notes *</b>	<b>Amtz. Period</b>	<b>Initial Liability</b>	<b>Years Remain</b>	<b>Remaining Balance</b>	<b>Mid-Year Payment</b>
2019	OAB	Note 1	10	1,394,030,659	10	1,394,030,659	181,772,229
2019	EAAB	Note 2	21	2,220,012,773	21	2,220,012,773	207,136,904
2019	2009 Change in Assumptions		20	(192,766,126)	20	(192,766,126)	(18,367,696)
2019	2009 Experience Loss		20	1,202,189,487	20	1,202,189,487	114,550,473
2019	2010 Experience Loss		21	559,830,949	21	559,830,949	52,234,677
2019	2011 Experience Loss		22	78,618,601	22	78,618,601	7,196,446
2019	2012 Assumption Change		23	328,555,047	23	328,555,047	29,554,156
2019	2012 Experience Loss		23	250,559,129	23	250,559,129	22,538,273
2019	2013 Change in Asset Val Method		24	(79,380,575)	24	(79,380,575)	(7,027,399)
2019	2013 Experience Gain		24	(503,517,863)	24	(503,517,863)	(44,575,399)
2019	2014 Change in Assumptions		25	685,926,267	25	685,926,267	59,843,210
2019	2014 Change in Cost Method		25	588,287,748	25	588,287,748	51,324,798
2019	2014 Non-Inv Experience Gain		25	(57,869,658)	25	(57,869,658)	(5,048,802)
2019	2015 Experience Gain		26	(147,169,044)	26	(147,169,044)	(12,668,959)
2019	2016 Experience Loss		27	163,856,276	27	163,856,276	13,933,301
2019	2017 Discount Rate/Salary Chg		28	40,900,176	28	40,900,176	3,438,883
2019	2017 Experience Gain		28	(83,615,178)	28	(83,615,178)	(7,030,356)
2019	2018 Experience Loss		29	2,205,638	29	2,205,638	183,537
2019	2018 Discount Rate Change		29	82,458,021	29	82,458,021	6,861,536
2019	2019 Discount Rate/Assumptions		30	68,669,381	30	68,669,381	5,659,882
2019	2019 Experience Loss		30	381,352,210	30	381,352,210	31,431,894
<b>Plan Specific UAL</b>							
2019	Act 414		18	3,019,311	18	3,019,311	302,015
2019	Act 992 - 2010 Chg in Lia	Note 3	1	692,144	1	692,144	717,964
2019	Act 992 - 2011 Chg in Lia	Note 4	2	119,585	2	119,585	64,294
2019	Act 992 - 2012 Chg in Lia	Note 5	3	203,928	3	203,928	75,735
2019	Harbor Police	Note 6	3	417,906	3	417,906	155,203
2019	Acts 224 and 595 (2018)	Note 7	9	611,539	9	611,539	92,811
2019	Act 595 (2019)	Note 7	10	875,621	10	875,621	123,540
<b>Total Outstanding Balance</b>						<b>6,989,073,952</b>	<b>694,473,150</b>
<b>Employers Credit Balance</b>							
2019	2015 Contribution Variance	Note 8	1	-	1	-	-
2019	2016 Contribution Variance	Note 8	2	-	2	-	-
2019	2017 Contribution Variance		3	17,684,983	3	17,684,983	6,567,883
2019	2018 Contribution Variance	Note 8	4	-	4	-	-
2019	2019 Projected Cont. Variance	Note 8	5	-	5	-	-
<b>Total Contribution Variance Balance</b>						<b>\$ 17,684,983</b>	<b>\$ 6,567,883</b>
<b>Total Unfunded Actuarial Accrued Liability</b>						<b>\$ 7,006,758,935</b>	<b>\$ 701,041,033</b>

\* See UAL Amortization Schedule Notes within this Appendix.

**AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY**  
**June 30, 2020 - Projected (7.55% Discount Rate)**

<b>Date</b>	<b>Description</b>	<b>Notes *</b>	<b>Amtz. Period</b>	<b>Initial Liability</b>	<b>Years Remain</b>	<b>Remaining Balance</b>	<b>Mid-Year Payment</b>
2020	OAB	Note 1	9	1,311,423,893	9	1,311,423,893	185,050,681
2020	EAAB	Note 2	20	2,157,656,299	20	2,157,656,299	206,410,000
2020	2009 Change in Assumptions		19	(188,363,464)	19	(188,363,464)	(18,304,826)
2020	2009 Experience Loss		19	1,174,732,202	19	1,174,732,202	114,158,386
2020	2010 Experience Loss		20	548,194,852	20	548,194,852	52,049,169
2020	2011 Experience Loss		21	77,128,711	21	77,128,711	7,169,996
2020	2012 Assumption Change		22	322,868,581	22	322,868,581	29,441,999
2020	2012 Experience Loss		22	246,222,577	22	246,222,577	22,452,742
2020	2013 Change in Asset Val Method		23	(78,123,948)	23	(78,123,948)	(6,999,921)
2020	2013 Experience Gain		23	(495,546,972)	23	(495,546,972)	(44,401,106)
2020	2014 Change in Assumptions		24	675,981,051	24	675,981,051	59,602,585
2020	2014 Change in Cost Method		24	579,758,189	24	579,758,189	51,118,425
2020	2014 Non-Inv Experience Gain		24	(57,030,608)	24	(57,030,608)	(5,028,501)
2020	2015 Experience Gain		25	(145,212,327)	25	(145,212,327)	(12,616,667)
2020	2016 Experience Loss		26	161,856,281	26	161,856,281	13,874,362
2020	2017 Discount Rate/Salary Chg		27	40,441,422	27	40,441,422	3,423,997
2020	2017 Experience Gain		27	(82,677,314)	27	(82,677,314)	(6,999,924)
2020	2018 Experience Loss		28	2,182,883	28	2,182,883	182,725
2020	2018 Discount Rate Change		28	81,607,330	28	81,607,330	6,831,185
2020	2019 Discount Rate/Assumptions		29	68,017,234	29	68,017,234	5,634,332
2020	2019 Experience Loss		29	377,730,543	29	377,730,543	31,290,001
2020	2020 Discount Rate Change		30	88,105,141	30	88,105,141	7,228,405

**Plan Specific UAL**

2020	Act 414		17	2,935,498	17	2,935,498	301,063
2020	Act 992 - 2011 Chg in Lia	Note 4	1	61,981	1	61,981	64,278
2020	Act 992 - 2012 Chg in Lia	Note 5	2	140,866	2	140,866	75,701
2020	Harbor Police	Note 6	2	288,674	2	288,674	155,132
2020	Acts 224 and 595 (2018)	Note 7	8	561,743	8	561,743	92,655
2020	Acts 595 (2019)	Note 7	9	814,019	9	814,019	123,310
<b>Total Outstanding Balance</b>						<b>6,871,755,337</b>	<b>702,380,184</b>

**Employers Credit Balance**

2020	2016 Contribution Variance	Note 8	1	-	1	-	-
2020	2017 Contribution Variance		2	12,216,149	2	12,216,149	6,564,886
2020	2018 Contribution Variance	Note 8	3	-	3	-	-
2020	2019 Contribution Variance	Note 8	4	-	4	-	-
2020	2020 Projected Cont. Variance	Note 8	5	-	5	-	-
<b>Total Contribution Variance Balance</b>						<b>\$ 12,216,149</b>	<b>\$ 6,564,886</b>

**Total Unfunded Actuarial Accrued Liability** **\$6,883,971,486** **\$708,945,070**

\* See UAL Amortization Schedule Notes within this Appendix.

**UAL AMORTIZATION SCHEDULES NOTES**

Act 497 of 2009 consolidated all LASERS amortization schedules established on or before July 1, 2008, except those established due to benefit changes for a specific plan, into two schedules: the Original Amortization Base (OAB) and the Experience Account Amortization Base (EAAB). The OAB, which consists of the outstanding balance of the Initial Unfunded Accrued Liability (IUAL) and other schedules with negative outstanding balances, was credited with the balance of funds from the IUAL fund. The EAAB consists of the 2004 schedule and all other remaining schedules. The outstanding balance of this schedule was credited with funds from the IUAL subaccount, which were originally 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, 2019, using a rate of 7.60%. Projected July 1, 2020 schedules are amortized using a 7.55% rate.

**Note 1:** The Original Amortization Base includes the Initial Unfunded Accrued Liability (IUAL) and certain negative bases that existed prior to 2009: The new combined balance was credited with funds from IUAL Account. The OAB was reduced by \$50 million on June 30, 2013 and re-amortized. The OAB was reduced by \$250 in fiscal year 2016/2017 due to litter fines paid to LASERS, per Act 368 of 2015, by \$3,676,833 in fiscal year 2017/2018 due to an appropriation per Act 59 of 2018, by \$1,135 due to litter fines and \$9,478,184 due to an appropriation per Act 50 of 2019 in fiscal year 2018/2019. This schedule was re-amortized to its original pay-off date of 2029 on June 30, 2019, per Act 95 of 2016. Future payments will increase by 2% per year until paid off in 2029 or before.

**Note 2:** The Experience Account Amortization Base includes the liability resulting from Act 588 of 2004 which zeroed out the Experience Account, and certain other positive schedules that existed prior to 2009. 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. The EAAB was reduced by \$50 million on June 30, 2013 and re-amortized. This schedule was re-amortized to its original pay-off date of 2040 on June 30, 2019, per Act 95 of 2016. Future payments will remain level until paid off in 2040 or before.

**Note 3:** Act 992 - 2010 Increase in Accrued Liability - Change in retirement eligibility for Act 75 members.

**Notes 4 and 5:** Act 992 – 2011 and 2012 Increase in Accrued Liability - Change in normal form of benefit for prior members joining the Hazardous Duty Plan prospectively between January 1, 2011 and June 30, 2011, and between July 1, 2011 and June 30, 2012, respectively.

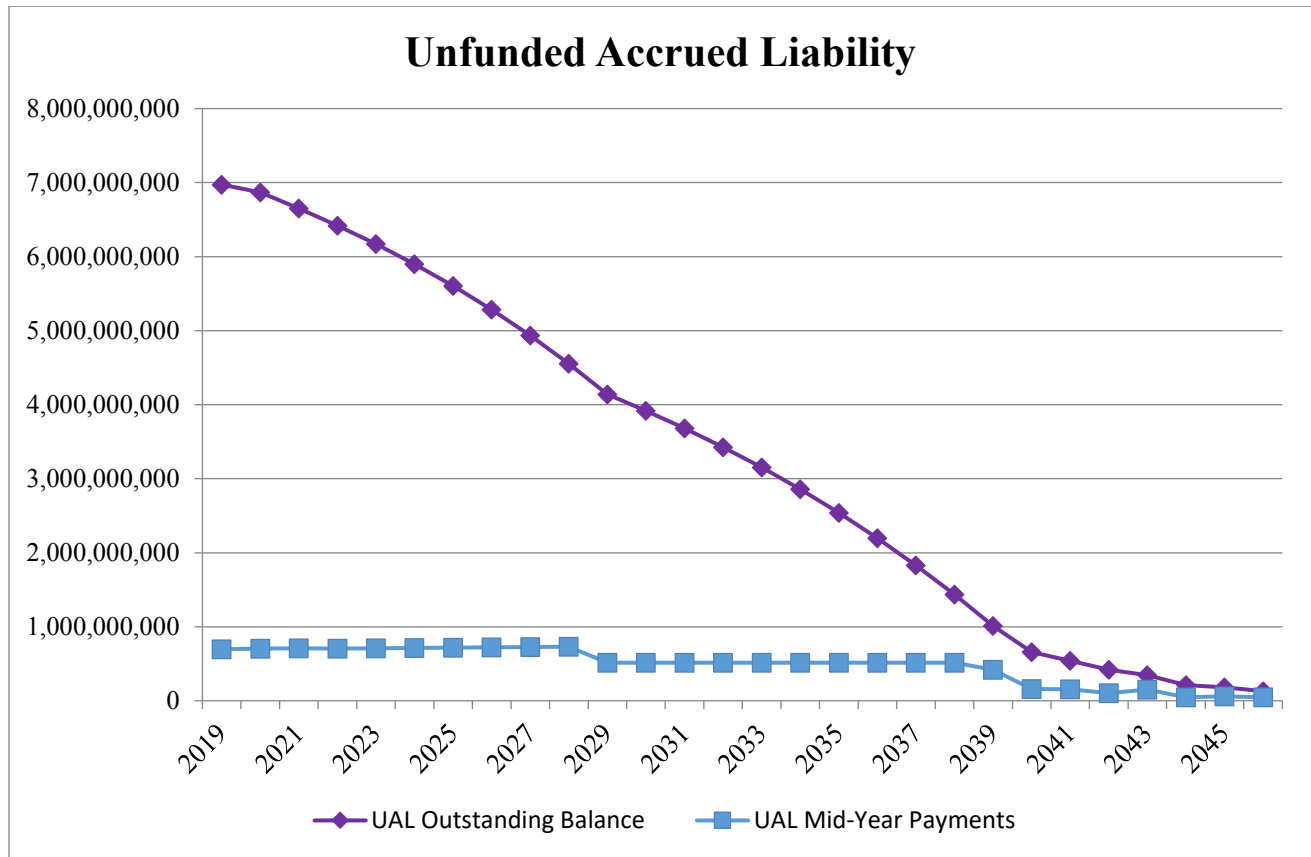
**Note 6:** The Harbor Police “established UAL” per the Cooperative Endeavor Agreement is paid by quarterly payments. The June 30, 2016 UAL was reduced substantially by a \$6,000,000 payment received by LASERS on December 31, 2016. The balance will be paid with level quarterly payments. The balance and payments as of June 30, 2017, are adjusted to include one quarterly payment that was paid in June 2017, but not due until July 2017. An additional payment of \$1,828,006, received on March 29, 2018, was applied to this schedule.

**Note 7:** Acts 224 and 595 of 2018 Increase in Accrued Liability – Increase in disability and survivor benefits for members disabled or killed in the line of duty. The resulting amortization payments are allocated to the plan specific UAL payment for each affected plan.

**Note 8:** Per Act 399 of 2014, the 2015 and 2016 contribution variance surpluses of \$25,700,989 and \$15,271,071, respectively were used to reduce the OAB. The 2018, 2019, and projected 2020 contribution variance surpluses of \$16,983,851, \$44,735,711, and \$16,213,465 respectively, were used to reduce the EAAB. Schedules were not re-amortized following these credits until 2019, per Act 94 of 2016.

**UAL Outstanding Balance and Payment Schedule**  
**Based on Projected June 30, 2020 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>
2019	7,007	701	N/A	2035	2,509	517	0.0%
2020	6,884	709	1.1%	2036	2,162	517	0.0%
2021	6,668	713	0.5%	2037	1,790	517	-0.1%
2022	6,433	710	-0.4%	2038	1,389	517	0.0%
2023	6,183	713	0.5%	2039	958	353	-31.6%
2024	5,910	717	0.6%	2040	664	162	-54.1%
2025	5,612	721	0.6%	2041	546	155	-4.4%
2026	5,288	725	0.6%	2042	427	103	-33.5%
2027	4,935	730	0.6%	2043	352	155	49.8%
2028	4,550	734	0.6%	2044	218	49	-68.4%
2029	4,133	517	-29.6%	2045	184	61	25.8%
2030	3,909	517	0.0%	2046	134	48	-22.6%
2031	3,668	517	0.0%	2047	95	51	7.5%
2032	3,409	517	0.0%	2048	49	44	-13.7%
2033	3,131	517	0.0%	2049	7	7	-83.6%
2034	2,831	517	0.0%	2050	0	0	



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

	Annual Outstanding Balance					Annual Payments				
	IUAL	IUAL Acct	Net IUAL	Other Schedules	Total OAB	IUAL	IUAL Acct	Net IUAL	Other Schedules	Total OAB
2019	2,239.5	-73.1	2,166.4	-772.3	1,394.0	292.0	-9.5	282.5	-100.7	181.8
2020	2,106.8	-68.8	2,038.0	-726.6	1,311.4	297.9	-9.7	288.1	-102.7	185.4
2021	1,957.9	-63.9	1,894.0	-675.2	1,218.8	303.8	-9.9	293.9	-104.8	189.1
2022	1,791.6	-58.5	1,733.1	-617.9	1,115.2	309.9	-10.1	299.8	-106.9	192.9
2023	1,606.3	-52.5	1,553.8	-554.0	999.9	316.1	-10.3	305.8	-109.0	196.8
2024	1,400.5	-45.7	1,354.8	-483.0	871.8	322.4	-10.5	311.9	-111.2	200.7
2025	1,172.5	-38.3	1,134.2	-404.4	729.9	328.9	-10.7	318.1	-113.4	204.7
2026	920.5	-30.1	890.4	-317.4	573.0	335.4	-11.0	324.5	-115.7	208.8
2027	642.5	-21.0	621.5	-221.6	399.9	342.1	-11.2	331.0	-118.0	213.0
2028	336.4	-11.0	325.4	-116.0	209.4	349.0	-11.4	337.6	-120.4	217.2
2029	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

This table has changed from previously published tables due to legislative appropriation allocated to the IUAL, the change in discount rate from 7.65% to 7.60%, and the re-amortization of the OAB to its original required payoff date of 2029.

## GLOSSARY

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

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

**Actuarial Present Value of Benefits** – Amount which, together with future interest, is expected to be sufficient to pay all benefits to be paid in the future, regardless of when earned, as determined by the application of a particular set of actuarial assumptions; equivalent to the actuarial accrued liability plus the present value of future normal costs attributable to the members.

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

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

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

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

**Actuarial Value of Assets** – The value of cash, investments, and other property belonging to the pension plan as used by the actuary for the purpose of the actuarial valuation. This may correspond to market value of assets, or some modification using an asset valuation method to reduce the volatility of asset values.

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

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

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

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

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

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

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

**Employer Normal Cost** – Portion of the normal cost 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: 1996, 1999 - 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.

**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, 1995, 1997, 1998, 2005, 2006, and 2007 (excluding schedules established to amortize liability resulting from Acts 414, 262, and 740).

**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 within the Department of the Treasury by Louisiana Public Retirement Law to insure orderly and consistent strategies for continuing development and growth that will attain and maintain the soundness of the public retirement systems, plans and funds and report to the House and Senate committees on retirement and the Joint Legislative Committee on the Budget all findings and recommendations.

**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 each time an actuarial loss occurs and when new benefits are added without being fully funded initially and decreases when actuarial gains occur.

**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.