# LOUISIANA STATE EMPLOYEES' RETIREMENT SYSTEM 

JUNE 30, 2016

## ACTUARIAL VALUATION

September 23, 2016

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

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

The present values shown herein have been estimated on the basis of the actuarial cost 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, the use of another set of assumptions and methods could also be reasonable and could produce materially different results. Actual results may vary from assumptions used to prepare the valuation.

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

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

Respectfully submitted,
FOSTER \& FOSTER INC.

Shelley R. Johnson, ASA, MAAA


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## TABLE OF CONTENTS

Page
LETTER OF CERTIFICATION
ACTUARIAL VALUATION RESULTS
Summary of Valuation Results ..... 2
Projected Contribution Rates by Plan ..... 3
Funding Requirements Specific to Individual Sub-plans ..... 3
Changes in UAL and Funding Requirements ..... 4
Funding Policy ..... 5
Accelerated Reduction of OAB and EAAB ..... 7
Funded Status ..... 7
Legislative/Plan Changes ..... 7
Actuarial Assets/Valuation Assets ..... 8
Plan Experience ..... 8
Funding of Investment and Administrative Expenses ..... 9
Funding of Future Post Retirement Benefit Increases ..... 10
EXHIBIT 1 DEVELOPMENT OF COSTS, LIABILITIES \& CONTRIBUTIONS ..... $11-12$Provides detail by benefit type of the cost to accrue annual pensionbenefits, liabilities accrued to date, and funding requirements
EXHIBIT 2 FINANCIAL SUMMARY ..... $13-16$
Contains the statement of revenue and expenses as well as assetsavailable to pay pension benefits
EXHIBIT 3 FINANCIAL REPORTING FOR PENSION PLANS ..... 17-20
GASB Statement No. 67/68 ReportingEXHIBIT 4 CENSUS DATA21-43Describes the employee data, data processing for valuationpurposes, member reconciliation, and depicts employee profiles byclassification, age and service
EXHIBIT 5 SUMMARY OF PLAN PROVISIONS ..... 44-53Restates in summary outline form the basic plan provisions whichwere incorporated in the projected retirement pension benefit
EXHIBIT 6 ACTUARIAL COST METHODS AND ASSUMPTIONS ..... 54-61
Discloses rates of mortality, disability, retirement termination and other assumptions which are presumed to reflect the experience of the retirement system in aggregate
EXHIBIT 7 AMORTIZATION SCHEDULE ..... 62-66Exhibit 7-A - June 30, 2016Exhibit 7-B - June 30, 2017 - ProjectedExhibit 7-C - UAL Outstanding Balance and Payment ScheduleExhibit 7-D - Amortization Schedule NotesExhibit 7-E - Components of Original Amortization Base

## SUMMARY OF VALUATION RESULTS

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

| I. | Membership Census |  | ------- Prior Years ------- |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | June 30, 2016 | June 30, 2015 | June 30, 2014 |
|  | 1) Retirees | 48,201 | 47,643 | 46,940 |
|  | 2) Actives | 39,284 | 40,194 | 40,321 |
|  | 3) DROP | 1,609 | 1,682 | 1,838 |
|  | 4) Terminated Vested | 3,865 | 3,953 | 4,558 |
| II. | Annual Benefits | \$1,217,858,640 | \$1,170,269,160 | \$1,074,358,980 |
| III. | Total Payroll | 1,842,286,184 | 1,856,735,292 | 1,813,759,357 |
| IV. | Valuation Assets | 11,630,816,397 | 11,318,433,014 | 10,606,474,675 |
| V. | Experience Account | 9,714,942 | 123,579,684 | 117,093,356 |
| VI. | Investment Yield |  |  |  |
|  | Market Value (Total Assets) | -2.64\% | 1.34\% | 17.55\% |
|  | Market Value (Excl. Self Directed, ORP) | -2.86\% | 1.30\% | 18.19\% |
|  | Actuarial Value | 5.43\% | 10.64\% | 13.45\% |
|  | DROP | 4.93\% | 10.14\% | 12.95\% |
| VII. | Total Normal Cost | 219,475,741 | 222,225,784 | 208,898,813 |
|  | Total Normal Cost (\% of Payroll) | 11.91\% | 11.97\% | 11.52\% |
|  | Employer Normal Cost (\% of Payroll) | 3.93\% | 4.00\% | 3.56\% |
| VIII. | Unfunded Actuarial Accrued Liability | 6,945,450,226 | 6,898,227,442 | 7,271,270,270 |
| IX. | Funded Percentage | 62.6\% | 62.1\% | 59.3\% |
|  | Funding Requirements (Mid-year payment) |  |  |  |
|  | ) Employee Contribution | 149,440,502 | 150,093,960 | 146,448,588 |
|  | Avg. Employee Contribution Rate | 7.980\% | 7.970\% | 7.953\% |
|  | ) Employer Contribution | 700,058,533 | 691,893,177 | 693,094,712 |
|  | Aggregate Rate (Current Year) ${ }^{1}$ | 37.4\% | 36.7\% | 37.6\% |
|  | Projected Employer Contribution | 724,363,377 | 689,209,421 | 697,562,314 |
|  | Proj. Aggregate Rate (Next Year) ${ }^{1}$ | 37.8\% | 35.8\% | 37.0\% |

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

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## PROJECTED CONTRIBUTION RATES BY PLAN:

The aggregate funding requirements for LASERS are shown in Exhibit 1. 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 by plan reflects differences in benefits, actuarial assumptions, and member demographics.

| Projected Cost for Fiscal Year 2017/2018 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Plan | Plan <br> Status on July 1, 2017 | Normal <br> Cost (excl <br> Admin) \% <br> (A) | Employee <br> NC \% <br> (B) | Employer <br> NC \% <br> (A)-(B) | Shared <br> UAL <br> \% | Plan Specific UAL \% | Total Employer Contribution \% |
| Rank \& File, App. Law Clerks | Open | 11.7\% | 7.7\% | 4.0\% | 33.8\% | 0.100\% | 37.9\% |
| Judges and Court Officers | Closed | 17.8\% | 11.5\% | 6.3\% | 33.8\% | 0.0\% | 40.1\% |
| Legislators | Closed | 19.4\% | 11.5\% | 7.9\% | 33.8\% | 0.0\% | 41.7\% |
| Special Legislative | Closed | 19.4\% | 9.5\% | 9.9\% | 33.8\% | 0.0\% | 43.7\% |
| Corrections - Primary | Closed | 8.4\% | 9.0\% | -0.6\% | 33.8\% | 0.0\% | 33.2\% |
| Corrections - Secondary | Closed | 12.8\% | 9.0\% | 3.8\% | 33.8\% | 0.0\% | 37.6\% |
| Wildlife | Closed | 22.3\% | 9.5\% | 12.8\% | 33.8\% | 0.0\% | 46.6\% |
| Peace Officers | Closed | 11.9\% | 9.0\% | 2.9\% | 33.8\% | 0.0\% | 36.7\% |
| Alcohol Tobacco Control | Closed | 7.9\% | 9.0\% | -1.1\% | 33.8\% | 0.0\% | 32.7\% |
| Bridge Police | Closed | 11.0\% | 8.3\% | 2.7\% | 33.8\% | 0.0\% | 36.5\% |
| Judges (Act 992) | Open | 18.8\% | 13.0\% | 5.8\% | 33.8\% | 0.0\% | 39.6\% |
| Hazardous Duty (Act 992) | Open | 13.9\% | 9.5\% | 4.4\% | 33.8\% | 0.100\% | 38.3\% |
| Harbor Police Plan | Closed | 13.6\% | 9.0\% | 4.6\% | 1.5\% | 0.0\% | 6.1\% |
| Aggregate LASERS Plans |  | 12.0\% | 8.0\% | 4.0\% | 33.8\% | 0.0\% | 37.8\% |

## FUNDING REQUIREMENTS SPECIFIC TO INDIVIDUAL SUB-PLANS

Rank \& File - Act 262 of 2008 increased the disability accrual rate for members hired on or after July 1, 2006. The cost is amortized over 10 years with level payments. 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.

Alcohol Tobacco Control - Act 740 of 2008 modified the eligibility requirements for enforcement personnel of the Alcohol Tobacco Control office. The resulting increase in UAL is funded with annual payments over 10 years from the Department of Revenue Alcohol and Tobacco Control Officers Fund.

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.

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 and annual normal costs are funded by appropriations from the Adult Probation and Parole Officer Retirement Fund (APPOR Fund). The first payment in the amount of $\$ 1$ million, as required by the Act, paid the first year increase in normal cost and the remaining balance was applied to the UAL created by the Act. The remaining UAL balance will be paid over nine years with level payments, so that the total increase will be paid off within 10 years. Beginning April 1, 2016 and annually thereafter, funds will be allocated to LASERS to fund the increase in normal cost and UAL according to the amount established in the actuarial valuation for the prior fiscal year. In addition, not less than quarterly, any balance of the APPOR Fund exceeding $\$ 50,000$, shall be transferred to LASERS and held in a separate account to be used as follows: 1) to fund the next fiscal year's UAL payment or normal cost payment, if funds are sufficient to make such payment, or 2 ) to make an additional payment toward the UAL created by this Act.

Normal Cost, mid-year
UAL Payment, mid-year
Total mid-year
Interest adjusted to April 1, 2017
\$53,563
\$721,309
\$774,872
\$789,376

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. A cooperative endeavor agreement established the terms of the transfer. Effective July 1, 2014, new hires of the Harbor Police Department of the Port of New Orleans are enrolled in the Hazardous Duty Plan. Existing retirees and active members of the HPRS were transferred to LASERS, effective July 1, 2015, and retained current benefits. Members of the Harbor Police sub-plan that have not participated in the Deferred Retirement Option Program (DROP) may apply to transfer to the Hazardous Duty Plan. 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.

## CHANGES IN UAL AND FUNDING REQUIREMENTS

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

The increase in contribution requirements and the plan's unfunded accrued liability (UAL) is due mainly to an investment experience loss relative to the discount rate. The loss was partially offset by an experience gain from other actuarial assumptions.

The aggregate employer contribution rate established by the Public Retirement Systems' Actuarial Committee for the 2016/17 plan year was $35.8 \%$. The restated employer contribution rate determined by this valuation for the 2016/17 plan year is $37.4 \%$. Therefore, an employer contribution deficit of $1.6 \%$ of payroll is expected next year.

The change in the projected employer contribution rate and unfunded accrued liability is detailed in the tables below. The total of the items contributing to the contribution rate change may not exactly equal the actual contribution rate change due to rounding and since the items impacting the rate are not additive and may overlap.

# Aggregate Contribution Rate Change from Fiscal Year 16/17 to Fiscal Year 17/18 

| Normal Cost (demographic shift) | $-0.06 \%$ |
| :--- | ---: |
| Normal Cost (discount rate change) | $0.11 \%$ |
| UAL Payment |  |
| $\quad$ Investment Experience Loss | $1.09 \%$ |
| Other Experience Gain | $-0.31 \%$ |
| Statutory UAL Payment Increase | $1.05 \%$ |
| Contribution Variance Payment Change | $-0.25 \%$ |
| Discount Rate Change | $0.31 \%$ |
| Payroll Change | $0.18 \%$ |
| Total | $2.12 \%$ |
| Actual Contribution Rate Change | $2.10 \%$ |

## Change in Unfunded Actuarial Accrued Liability

| Unfunded Liability - June 30, 2015 |  | $\$ 6,898,227,442$ |  |
| :--- | :---: | :---: | :---: |
| Interest on Unfunded Liability | $\$$ | $534,612,627$ |  |
| Amortization Payments | $(644,434,960)$ |  |  |
| Investment Experience Loss | $249,797,072$ |  |  |
| Other Experience Gain | $(80,839,358)$ |  |  |
| 2016 COLA | $120,572,581$ |  |  |
| Experience Account Disbursement | $(120,572,581)$ |  |  |
| Employer Contribution Surplus | $(15,271,071)$ |  |  |
| Harbor Police | $3,358,474$ |  |  |
| Total Change |  |  | $47,222,784$ |
| Unfunded Liability - June 30, 2016 |  | $\$$ | $6,945,450,226$ |

## 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 plan experience, such as long-term expected investment rates of return, future salary increases, and demographic assumptions such as rates of retirement, termination, disability, and mortality. The actuarial assumptions utilized in this report can be found in Exhibit 6 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 Exhibit 2 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 that are not more than the next annual payment otherwise required. If the System is less than $80 \%$ funded, the net remaining liability of the OAB and EAAB shall be re-amortized after application of the "threshold allocations" in Fiscal Year 2019-2020 and in every fifth fiscal year thereafter. Once the system attains an $80 \%$ funded ratio, the OAB and EAAB will be re-amortized following allocations of "threshold allocations" or contribution variance surpluses.

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

| Fiscal Year | Original <br> Amortization Base | Experience Account <br> Amortization Base |
| :---: | :---: | :---: |
| $2016 / 2017-2017 / 2018$ | $5.0 \%$ | $5.0 \%$ |
| $2018 / 2019+$ | $2.0 \%$ | Level Payments |

If aggregate payroll increases at the same rate as the increase in amortization payments, this would allow the employer contribution rate attributable to the amortization payments to 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. Future UAL amortization payments in aggregate for all current schedules are shown in Exhibit 7-C.

Employers pay the full required employer contribution rate, as recommended to the legislature by the Public Retirement Systems’ Actuarial Committee (PRSAC). This rate is determined as the projected actuarially determined contribution divided by the projected payroll. The actual actuarially determined contribution and actual payroll will vary from the projected amounts, resulting in a contribution variance. Per statutory requirements, contribution surpluses through fiscal year 2016/2017 will be allocated to the OAB and contribution deficits will be amortized over a five year period with level payments.

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

## ACCELERATED REDUCTION OF OAB AND EAAB

Act 497 of 2009 established the OAB and EAAB and required the application of certain investment gains and contribution variance credits to these schedules. Act 399 modified the provisions of Act 497 and specifies that until the System's funded ratio reaches $85 \%$, the funds applied to these schedules will be used to pay off the schedules early, rather than to reduce employer contributions. Since 2009, $\$ 150,761,073$ has been applied to the OAB and $\$ 125,000,000$ has been applied to the EAAB. When combined with the surplus dollars appropriated to the System by the legislature, these result in the acceleration of the payoff of the OAB to 2028, one year earlier than the 2029 payoff required by the State Constitution. These funds have resulted in the acceleration of the payoff of the EAAB by 2038, two years earlier than the statutory requirement that this schedule be paid by 2040 . A projection of future UAL and UAL payments based on current amortization schedules is shown in Exhibit 7-C. This projection assumes that the actuarially determined contributions will be paid when due and all actuarial assumptions will be realized.

## FUNDED STATUS

The funded status is a measure of the plan's assets relative to the plan's obligations. The current funded ratio is $62.61 \%$, as measured by the plans valuation assets divided by the total actuarial accrued liability, based on the asset valuation method, actuarial cost method, and actuarial assumptions described above. There were no changes in these assumptions or methods since the prior valuation. The funded status measure is appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s obligations and for assessing the amount of future contributions. This measure would be different if the measure reflected the market value of assets rather than the actuarial value of assets. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements and changes in plan provisions or applicable law. The scope of this report does not include an analysis of the range of such future measurements.

## LEGISLATIVE/PLAN CHANGES

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

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

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

- Accelerates the implementation of the reduction in amortization period for most actuarial changes, gains, or losses from 30 years to 20 years. The 20 year amortization will begin once the funded ratio reaches $70 \%$, rather than $85 \%$, as previously required.
- Accelerates the implementation of the change in amortization of actuarial gains allocated to the experience account. The transfer of gains to the experience account will be amortized as a loss with level payments over a ten-year period, beginning with the first system valuation following June 30, 2015, in which an allocation is made to the system's experience account, rather than beginning on June 30, 2019, as provided by prior law.
- Provides for re-amortization of the OAB with level-dollar payments to 2029 in Fiscal Year 20202021 or later, when such re-amortization results in annual payments that are not more than the next annual payment otherwise required under prior law.
- Provides that until a system is $80 \%$ funded, the net remaining liability of the OAB and EAAB shall be re-amortized after application of the hurdle payments in Fiscal Year 2019-2020 and in every fifth fiscal year thereafter.
- Accelerates the timing of the review of volatility of payment schedules. Prior law required that the results of the study be reported to the Public Retirement Systems' Actuarial Committee by Nov. 1, 2019. Act 95 requires the review of volatility to be done following the close of Fiscal Year 20162017 and the report to be submitted by Nov. 1, 2017.


## ACTUARIAL ASSETS/VALUATION ASSETS

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

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

The side-fund accounts excluded from valuation assets are as follows:
Employer Credit Account: This account, established by Act 588 of 2004, accumulates the excess contributions based on the 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 and 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 Exhibit 5 of this report. Funds were disbursed from the account to fund the cost of the permanent benefit increase provided by Act 93 of 2016, which totaled $\$ 120,572,581$. The fund currently has a balance of $\$ 9,714,942$.

## PLAN EXPERIENCE

The actuary is charged with recommending actuarial assumptions based on the best estimate of future plan experience 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 Exhibit 6 of the valuation report. A gain or loss occurs if the actual experience differs from the projected plan measurements. For the current measurement period, this gain or loss is amortized over a 30 year period with level dollar payments, except for investment gains allocated to the OAB, EAAB, or the Experience Account.

## Demographic and Salary Experience

Demographic assumptions include rates of retirement/DROP, rates at which members become disabled, turnover rates, mortality rates, and several other demographic assumptions. Salary assumptions

Anticipate future salary increases. During the 2015/16 plan year, the system incurred a $\$ 80,839,358$ experience gain from plan experience differing from that anticipated by the demographic and salary assumptions. The experience loss includes administrative expenses, as described below.

## Investment Experience

For the plan year ending June 30, 2016, the realized actuarial rate of return based upon the actuarial value of assets is $5.43 \%$. Since this is less than the $7.75 \%$ discount rate, the result is an investment experience loss of $\$ 249,797,072$ relative to projected investment income.

The historical geometric average rates of return on the actuarial value of assets, net of investment expenses, for plan years ending June 30 are as follows.

|  | Actuarial Rate <br> of Return |  | Geometric <br> Average |
| :---: | :---: | :---: | :---: |
| 2012 | $5.20 \%$ | 5 Year | $9.69 \%$ |
| 2013 | $14.05 \%$ | 10 Year | $6.95 \%$ |
| 2014 | $13.45 \%$ | 20 Year | $7.20 \%$ |
| 2015 | $10.64 \%$ | 25 Year | $7.72 \%$ |
| 2016 | $5.43 \%$ | 30 Year | $8.13 \%$ |

DROP accounts for members eligible for DROP prior to January 1, 2004 are credited with interest following termination of DROP at a rate of $0.5 \%$ below the System's actuarial rate of return, but not to below zero. The DROP interest rate for the period July 1, 2015 through June 30, 2016 after the expense adjustment is $4.93 \%$. DROP accounts for members eligible for DROP after are January 1, 2004 are invested 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. The average rate so determined is to be reduced by a "contingency" adjustment of $0.5 \%$, but not to below zero. The Harbor Police Retirement System Annual DROP Interest Rate for the period July 1, 2016 through June 30, 2017 after the "contingency" adjustment is $1.8684 \%$, as determined by LASERS.

## FUNDING OF ADMINISTRATIVE AND INVESTMENT EXPENSES

The employer contribution rate is determined in accordance with R.S. 11 Section 102, which by omission of language regarding the funding of administrative expenses precludes funding of these expenses by a direct allocation through the employer contribution rate. These expenses are instead funded through the employer rate with the 30 year amortization of the experience loss. Per Actuarial Standard of Practice Statement 27, (paragraph 3.8.3.e.) the investment return assumption should be reduced to reflect investment and administrative expenses that are paid from plan assets and not otherwise recognized. The discount rate was developed with a margin of 15 basis points to account for these expenses, therefore these losses are expected to be offset by long-term investment earnings. Investment manager fees are treated as a direct offset to investment income.

## FUNDING OF FUTURE POST RETIREMENT BENEFIT INCREASES:

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

The adjustment for gain-sharing reflects 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. Since the liabilities in this report were not developed to include liabilities for future ad hoc retiree benefit increases, the assumptions were developed to include an adjustment to recognize that investment earnings will be diverted to fund the increases, in accordance with Actuarial Standards of Practice No. 27 (paragraph 3.5.1). See Exhibit 6 for a description of all plan assumptions.

## EXHIBIT 1

## DEVELOPMENT OF

 COSTS, LIABILITIES AND CONTRIBUTIONSNormal Costs and Accrued Liabilities are calculated in accordance with the Entry Age Normal Cost Method, and the Actuarial Assumptions outlined in Exhibit 6 based on the Provisions of the Plan as summarized in Exhibit 5.

| I. Normal Costs | June 30, 2016 |  | ---- Prior Year ---- <br> June 30, 2015 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Dollar Amount | \% of <br> Salary | Dollar Amount | \% of <br> Salary |
| Active Members with Complete Data |  |  |  |  |
| a) Retirement Benefits | 145,514,864 | 7.90\% | 148,042,083 | 7.97\% |
| b) Disability Benefits | 4,882,098 | 0.27\% | 4,892,162 | 0.26\% |
| c) Survivor Benefits | 4,918,829 | 0.27\% | 4,980,945 | 0.27\% |
| d) Voluntary Termination | 64,159,950 | 3.49\% | 64,310,594 | 3.46\% |
| TOTAL | 219,475,741 | 11.91\% | 222,225,784 | 11.97\% |

II. Actuarial Accrued Liability
a) Active Members

1) Retirement/Termination Benefits

| $4,753,870,537$ | $4,757,741,824$ |
| ---: | ---: |
| $66,748,699$ | $67,414,732$ |
| $63,974,141$ | $64,156,256$ |
| $4,884,593,377$ | $4,889,312,812$ |

b) Retired and Inactive Members

1) Regular Retirees

| $10,036,518,989$ |
| ---: |
| $281,290,589$ |
| $738,363,611$ |
| $335,171,682$ |
| $85,071,016$ |
| $1,172,501,053$ |
| $1,037,139,136$ |
| $5,617,170$ |
| $13,691,673,246$ |

$$
\begin{array}{r}
9,650,771,799 \\
282,699,394 \\
722,670,033
\end{array}
$$

3) Survivors
4) Terminated Vested
5) Contributions Refunded
6) DROP Deferred Benefits
7) DROP Account Balances
8) ORP Account Balances
c) Total

18,576,266,623
18,216,660,456

## Exhibit 1 (Continued)

## Costs, Liabilities \& Contributions

|  | June 30, 2016 | ---- Prior Year ---- <br> June 30, 2015 |
| :---: | :---: | :---: |
| II. Actuarial Accrued Liability | 18,576,266,623 | 18,216,660,456 |
| III. Valuation Assets | 11,630,816,397 | 11,318,433,014 |
| IV. Unfunded Actuarial Accrued Liability - Entry Age Normal ${ }^{1}$ | 6,945,450,226 | 6,898,227,442 |
| a) Change over prior year <br> b) Funded Percentage | $\begin{array}{r} 47,222,784 \\ 62.6 \% \end{array}$ | $(373,042,828)$ $62.1 \%$ |

V. Employer Contributions
To Fund Current Plan Year ${ }^{1}$

| a) Employer Portion of Normal Cost | 73,655,746 | 75,302,489 |
| :---: | :---: | :---: |
| b) Amortization Payments | 573,048,893 | 539,009,230 |
| c) Prior Contribution Variance Amort. Pmt | 55,209,450 | 78,801,967 |
| TOTAL Required Contribution | 701,914,089 | 693,113,686 |
| Less Act 852 direct Normal Cost payment | 53,563 | 57,980 |
| Less direct UAL payments ${ }^{2}$ | 1,801,993 | 1,162,529 |
| NET contribution required | 700,058,533 | 691,893,177 |
|  | 37.4\% | 36.7\% |
| PRSAC Approved rate ${ }^{3}$ | 35.8\% | 37.0\% |

VI. Projected Employer Contributions

To Fund Next Plan Year ${ }^{1}$

| a) Employer Portion of Normal Cost | 77,387,492 | 76,924,675 |
| :---: | :---: | :---: |
| b) Amortization Payments | 598,273,174 | 558,235,696 |
| c) Prior Contribution Variance Amort. Pmt | 50,410,755 | 55,209,450 |
| TOTAL Required Contribution | 726,071,421 | 690,369,821 |
| Less Act 852 direct Normal Cost payment | 49,201 | 52,983 |
| Less direct UAL payments ${ }^{2}$ | 1,658,843 | 1,107,417 |
| NET contribution required | 724,363,377 | 689,209,421 |
|  | 37.8\% | 35.8\% |
| Projected Aggregate Employer Normal Cost Rate | 4.0389\% | 3.9955\% |
| Projected Rank and File Employer Normal Cost Rate | 3.9596\% | 3.9615\% |
| Current Payroll | 1,842,286,184 | 1,856,735,292 |
| Projected Payroll - Mid Year | 1,872,687,991 | 1,883,236,638 |
| Projected Payroll - Next Year | 1,914,031,733 | 1,923,962,135 |

[^1]
## EXHIBIT 2

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

----- Prior Years -----

June 30, 2016
June 30, 2015
June 30, 2014

## Operating Income:

1. Contribution Income

| Member | $\$$ | $152,233,771$ | $\$$ | $153,281,097$ | $\$$ |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Employer |  | $718,163,026$ |  | $721,640,155$ |  |
| ORP | 443,488 |  | 497,206 |  | $612,224,076$ |
| OR |  | 474,338 |  |  |  |

2. Other Income

| Legislative Acts Income | $10,790,721$ | $4,540,773$ | $2,465,608$ |
| :--- | ---: | ---: | ---: |
| Transfers/Purchases | $10,578,354$ | $9,341,467$ | $16,656,246$ |
| Miscellaneous | $4,607,147$ | $3,587,522$ | $4,154,433$ |
| Total Non-Investment Income | $896,816,507$ | $892,888,220$ | $788,967,753$ |

3. Investment Income

| Investments | $(229,507,349)$ | $226,006,463$ | $1,844,550,284$ |
| :--- | ---: | ---: | ---: |
| Less Investment Expenses | $(67,221,884)$ | $(73,197,333)$ | $(74,028,903)$ |
| Net Investment Income | $(296,729,233)$ | $152,809,130$ | $1,770,521,381$ |

4. Total Income 600,087,274 1,045,697,350 2,559,489,134

## Operating Expenses:

1. General Administration

| $15,615,605$ | $15,877,682$ | $14,810,539$ |
| ---: | ---: | ---: |
| 982,858 | 940,845 | $1,103,488$ |
| 419,718 | $1,193,314$ | $1,724,101$ |

2. Benefits Paid

|  | Pension Benefits | $1,238,507,932$ | $1,199,079,252$ | $1,167,477,166$ |  |
| :--- | ---: | ---: | ---: | ---: | ---: |
|  | Return of Contributions | $35,997,261$ | $38,308,757$ | $77,118,765$ |  |
| Total Benefits Paid |  | $1,274,505,193$ | $1,237,388,009$ | $1,244,595,931$ |  |
| 3. Total Expenses | $\$ 1,291,523,374$ | $\$ 1,255,399,850$ | $\$$ | $1,262,234,059$ |  |
| Net Income: | $\$$ | $(691,436,100)$ | $\$(209,702,500)$ | $\$$ | $1,297,255,075$ |

## EXHIBIT 2 (Continued)

## Financial Summary

## FINANCIAL SUMMARY COMPARATIVE SUMMARY OF REVENUES BY SOURCE AND EXPENSES BY TYPE

| Revenues by Source |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Fiscal <br> Year | Members <br> Contribution | Employer <br> Contribution ${ }^{1}$ | Investment <br> Income ${ }^{4}$ | Total |
| 2007 | $167,957,870$ | $428,614,645$ | $1,472,840,599$ | $2,069,413,114$ |
| 2008 | $192,412,444$ | $542,186,406$ | $-357,912,195$ | $376,686,655$ |
| 2009 | $203,050,933$ | $500,503,088$ | $-1,739,762,198$ | $-1,036,208,177$ |
| 2010 | $205,328,033$ | $503,391,304$ | $1,139,301,483^{3}$ | $1,848,020,820$ |
| 2011 | $197,825,267$ | $572,255,877$ | $1,854,312,621$ | $2,624,393,765^{3}$ |
| 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 | $152,233,771$ | $744,582,736$ | $-296,729,233$ | $600,087,274$ |


| Expenses by Type |  |  |  |  |
| :---: | :---: | :---: | ---: | :---: |
| Fiscal <br> Year | Benefits | Refunds | Administrative <br> Expenses 2,4 | Total |
| 2007 | $673,617,033$ | $38,030,600$ | $15,125,457$ | $726,773,090$ |
| 2008 | $718,303,319$ | $32,149,383$ | $19,493,731$ | $769,946,433$ |
| 2009 | $771,408,255$ | $30,314,007$ | $19,623,966$ | $821,346,228$ |
| 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 | $1,238,507,932$ | $35,997,261$ | $17,018,181$ | $1,291,523,374$ |

${ }^{1}$ Includes transfers and purchases and the annual employer contribution, and any legislative appropriations.
${ }^{2}$ Includes other expenses, not related to administration. Beginning in 2008, includes the net OPEB obligation.
${ }^{3}$ Amounts shown reflect values used in the 2010 actuarial valuation, rather than the restated 2010 Statement of Assets.
${ }^{4}$ Investment Income and Administrative Expenses does not tie to LASERS financial statements for 2006-2013 because Investment Administrative Expenses were transferred from Administrative Expenses to Investment Income per instructions from GASB.

## EXHIBIT 2 (Continued)

## Financial Summary

## FINANCIAL SUMMARY <br> STATEMENT OF ASSETS FOR FISCAL YEAR ENDING

| ASSETS (Market Value) | June 30, 2016 |  | ----Prior Years--- |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | June 30, $2015{ }^{1}$ |  | June 30, 2014 |  |
| 1. Short-Term Assets |  |  |  |  |  |  |
| Cash/Cash Equivalencies | \$ | 52,222,180 | \$ | 72,437,860 | \$ | 77,729,832 |
| Short-Term Investments |  | 317,630,817 |  | 356,969,322 |  | 335,913,441 |
| 2. Bonds |  |  |  |  |  |  |
| Domestic Issues |  | 1,302,223,446 |  | 1,304,120,351 |  | 1,255,247,855 |
| International Issues |  | 343,290,464 |  | 295,597,356 |  | 323,150,997 |
| 3. Equities |  |  |  |  |  |  |
| Domestic Stock |  | 2,432,754,709 |  | 2,863,226,182 |  | 2,958,498,467 |
| International Stock |  | 3,202,542,903 |  | 3,288,387,047 |  | 3,361,787,006 |
| 4. Other Assets |  |  |  |  |  |  |
| Fixed Assets |  | 4,331,820 |  | 4,304,276 |  | 5,127,676 |
| Real Estate \& Alternative Assets |  | 3,040,659,840 |  | 3,182,457,173 |  | 3,271,799,216 |
| 5. Receivables(-)Payables |  | 28,699,953 |  | 48,844,979 |  | 38,325,176 |
| 6. Securities Lending Assets - Liabilities |  | $(641,306)$ |  | (1,193,620) |  | (2,726,240) |
| TOTAL ASSETS - Market Value |  | 10,723,714,826 |  | 11,415,150,926 |  | 11,624,853,426 |
| Cost Value |  | 9,464,823,588 |  | 9,466,953,138 |  | 9,199,432,394 |

## ACTUARIAL VALUE OF ASSETS

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

| Plan Year |  | Asset G/L | Deferred \% | Deferred \$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 2013 | \$ | 357,019,760 | 20\% | \$ | 71,403,953 |
| 2014 | \$ | 963,342,789 | 40\% | \$ | 385,337,116 |
| 2015 | \$ | (733,893,730) | 60\% | \$ | $(440,336,238)$ |
| 2016 | \$ | $(1,166,526,680)$ | 80\% | \$ | (933,221,344) |
|  |  |  |  | \$ | (916,816,513) |
| Market Value of Assets |  |  |  | \$ | 10,723,714,826 |
| Deferred Asset Gain/Loss |  |  |  |  | (916,816,513) |
| Preliminary Actuarial Value of Assets |  |  |  | \$ | 11,640,531,339 |
| CORRIDOR LIMITS |  |  |  |  |  |
| Minimum $=80 \%$ of Market Value |  |  |  | \$ | 8,578,971,861 |
| Maximum $=120 \%$ of Market Value |  |  |  |  | 12,868,457,791 |
| Actuarial Value of Assets |  |  |  | \$ | 11,640,531,339 |

${ }^{1}$ Differs from June 30, 2015 valuation due to LASERS reclassification of assets.

## EXHIBIT 2 (Continued)

## Financial Summary

## FINANCIAL SUMMARY <br> STATEMENT OF ASSETS FOR FISCAL YEAR ENDING

|  | June 30, 2016 |  | ---- Prior Years ---- |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | June 30, 2015 |  | June 30, 2014 |  |
| EMPLOYER CREDIT ACCOUNT ${ }^{1}$ : |  |  |  |  |  |  |
| Prior Year Ending Balance | \$ | - | \$ | - | \$ | - |
| + Current Year Allocation |  | - |  | - |  | - |
| - Current Year Disbursements |  | - |  | - |  | - |
| + Accumulated Interest |  | - |  | - |  | - |
| Total Fund Balance - Year End |  | - |  | - |  | - |
| INITIAL UAL AMORTIZATION FUND: |  |  |  |  |  |  |
| Prior Year Ending Balance | \$ | - | \$ | - | \$ | - |
| + Current Year Allocation |  | - |  | - |  | - |
| - Current Year Disbursements |  | - |  | - |  | - |
| + Accumulated Interest |  | - |  | - |  | - |
| Total Fund Balance - Year End |  | - |  | - |  | - |
| EXPERIENCE ACCOUNT FUND: |  |  |  |  |  |  |
| Prior Year Ending Balance | \$ | 123,579,684 | \$ | 117,093,356 | \$ | 195,623,963 |
| + Experience Account Allocation |  | - |  | - |  | 4,590,124 |
| - Benefit Disbursements |  | $(120,572,581)$ |  | - |  | $(109,427,066)$ |
| + Accumulated Interest |  | 6,707,839 |  | 6,486,328 |  | 26,306,335 |
| Fund Balance - Year End |  | 9,714,942 |  | 123,579,684 |  | 117,093,356 |

## DEVELOPMENT OF

VALUATION ASSETS:

Actuarial Value of Assets

- Employer Credit Account
- Initial UAL Fund
- Experience Account Fund

Valuation Assets
\$ 11,640,531,339 \$11,442,012,698 \$10,723,568,031

| - | - | - |
| ---: | ---: | ---: |
| - | - | - |
| $9,714,942$ | $123,579,684$ | $117,093,356$ |
| $11,630,816,397$ | $11,318,433,014$ | $10,606,474,675$ |

1 The Employer Credit Account was created by ACT 588 of 2004.
2 The 2015 Experience Account interest credit was calculated to be $\$ 12,456,899$, but the total account balance was limited to $\$ 123,579,684$, or the cost of one PBI. The remaining interest was credited to valuation assets to be used for regular plan funding.

## EXHIBIT 3

## GASB STATEMENT NO. 67/68 FINANCIAL REPORTING

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

## SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY

|  | June 30, 2016 |  | June 30, 2015 |  | June 30, 2014 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total Pension Liability | \$ | 18,576,266,623 | \$ | 18,216,660,456 | \$ | 17,877,744,945 |
| Plan Fiduciary Net Position | \$ | 10,723,714,826 | \$ | 11,415,150,926 | \$ | 11,624,853,426 |
| Net Pension Liability | \$ | 7,852,551,797 | \$ | 6,801,509,530 | \$ | 6,252,891,519 |
| Plan Fiduciary Net Position as a percentage of Total Pension Liability |  | 57.7\% |  | 62.7\% |  | 65.0\% |
| Covered Employee Payroll | \$ | 1,842,286,184 | \$ | 1,856,735,292 | \$ | 1,813,759,357 |
| Net Pension Liability as percentage of Covered Employee Payroll |  | 426.2\% |  | 366.3\% |  | 344.7\% |

## SCHEDULE OF EMPLOYER CONTRIBUTIONS

| Fiscal Year | Actuarially Determined Contribution $(\mathrm{ADC})^{1}$ | Contributions in Relation to ADC ${ }^{1}$ | Contribution Deficiency (Excess) | Covered Payroll | Contributions as a \% of Covered Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 2007 | 417,899,955 | 417,059,370 | 840,585 | 2,175,366,607 | 19.2\% |
| 2008 | 438,991,628 | 506,484,759 | $(67,493,131)$ | 2,436,955,566 | 20.8\% |
| 2009 | 473,267,523 | 487,353,901 | $(14,086,378)$ | 2,562,575,942 | 19.0\% |
| 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\% |

## EXHIBIT 3 (Continued)

## Pension Accounting \& Financial Disclosure

## STATEMENT OF CHANGES IN NET PENSION LIABILITY

|  | 2016 | 2015 | 2014 |
| :---: | :---: | :---: | :---: |
| Total Pension Liability |  |  |  |
| Service Cost | 222,458,027 | 208,898,813 | 228,140,255 |
| Interest | 1,379,644,606 | 1,353,766,106 | 1,334,400,080 |
| Changes of Benefit Terms - PBI | 120,572,581 | - | 114,705,590 |
| Changes of Benefit Terms - Harbor Police Transfer | 20,680,250 | - | - |
| Experience | $(109,244,104)$ | 13,638,601 | $(167,128,306)$ |
| Changes of Assumptions | - | - | - |
| Retirement Benefits | (1,238,507,932) | (1,199,079,252) | (1,167,477,166) |
| Refunds and Transfers of Member Contributions | $(35,997,261)$ | $(38,308,757)$ | (77,118,765) |
| Net Change in Total Pension Liability | 359,606,167 | 338,915,511 | 265,521,688 |
| Total Pension Liability - Beginning | 18,216,660,456 | 17,877,744,945 | 17,612,223,257 |
| Total Pension Liability - Ending (a) | \$ 18,576,266,623 | \$ 18,216,660,456 | \$ 17,877,744,945 |
| Plan Fiduciary Net Position |  |  |  |
| Employer Contributions | 718,606,514 | 726,678,134 | 615,164,022 |
| Employee Contributions | 152,233,771 | 153,281,097 | 152,993,052 |
| Harbor Police Transfer | 10,790,721 | - |  |
| Net Investment Income | $(296,729,233)$ | 152,809,130 | 1,770,521,381 |
| Other Income | 15,185,501 | 12,928,989 | 20,810,679 |
| Retirement Benefits | (1,238,507,932) | $(1,199,079,252)$ | (1,167,477,166) |
| Refunds and Transfers of Member Contributions | $(35,997,261)$ | $(38,308,757)$ | $(77,118,765)$ |
| Administrative Expense | $(15,615,605)$ | $(15,877,682)$ | $(14,810,539)$ |
| Other Postemployment Benefit Expenses | $(982,858)$ | $(940,845)$ | $(1,103,488)$ |
| Depreciation and Amortization Expenses | $(419,718)$ | $(1,193,314)$ | $(1,724,101)$ |
| Net Change in Plan Fiduciary Net Position | (691,436,100) | $(209,702,500)$ | 1,297,255,075 |
| Plan Fiduciary Net Position - Beginning | 11,415,150,926 | 11,624,853,426 | 10,327,598,351 |
| Plan Fiduciary Net Position - Ending (b) | \$ 10,723,714,826 | \$ 11,415,150,926 | \$ 11,624,853,426 |
| Net Pension Liability - Ending (a) - (b) | \$ 7,852,551,797 | \$ 6,801,509,530 | \$ 6,252,891,519 |
| Plan Fiduciary Net Position as a |  |  |  |
| Percentage of the Total Pension Liability | 57.7\% | 62.7\% | 65.0\% |
| Covered Employee Payroll | \$ 1,842,286,184 | \$ 1,856,735,292 | \$ 1,813,759,357 |
| Net Pension Liability as a |  |  |  |
| Percentage of Covered Employee Payroll | 426.2\% | 366.3\% | 344.7\% |

## EXHIBIT 3 (Continued)

## Pension Accounting \& Financial Disclosure

## Actuarial Assumptions:

All assumptions used for purposes of GASB Statement 67/68 reporting requirements are described in Exhibit 6, except for 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 $3.0 \%$ and an adjustment for the effect of rebalancing/diversification. The resulting expected long-term nominal rate of return is $8.46 \%$. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2016 are summarized in the following table:

| Asset Class | Long Term Expected <br> Real Rate of Return |
| :--- | :---: |
| Cash | $-0.24 \%$ |
| Domestic Equity | $4.31 \%$ |
| International Equity | $5.48 \%$ |
| Domestic Fixed Income | $1.63 \%$ |
| International Fixed Income | $2.47 \%$ |
| Alternative Investments | $7.42 \%$ |
| Global Asset Allocation | $2.92 \%$ |
| Total Fund | $5.30 \%$ |

The discount rate used to measure the total pension liability was 7.75 percent.
The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

|  | Current Discount |  |  |
| :--- | :---: | :---: | :---: |
|  | 1\% Decrease | Rate | 1\% Increase |
| 2016 Employers' Net Pension Liability | $6.75 \%$ | $7.75 \%$ | $8.75 \%$ |
|  | $9,647,586,676$ | $7,852,551,797$ | $6,327,334,933$ |

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 amortization 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. Current and prior year's average remaining service life is shown below. Differences between projected and actual investment returns are amortized over a closed 5-year period.

## EXHIBIT 3 (Continued)

## Pension Accounting \& Financial Disclosure

$\left.\begin{array}{cccc}\text { 2016 Average Remaining Service Life } & & & \text { Plan Year }\end{array} \begin{array}{c}\text { Amortization } \\ \text { Period }\end{array}\right]$

## SCHEDULE OF PENSION AMOUNTS

|  | Net Pension Liability | Deferred Inflows | Deferred <br> Outflows | Pension Expense |
| :---: | :---: | :---: | :---: | :---: |
| Beginning balance | (6,801,509,530) | (648,997,377) | - |  |
| Total Pension Liability Factors: |  |  |  |  |
| Service cost | $(222,458,027)$ |  |  | 222,458,027 |
| Interest | $(1,379,644,606)$ |  |  | 1,379,644,606 |
| Changes in benefit terms - PBI | $(120,572,581)$ |  |  | 120,572,581 |
| Changes in benefit terms - Harbor Police | $(20,680,250)$ |  |  | 20,680,250 |
| Differences between expected and actual experience | 109,244,104 | $(109,244,104)$ | - |  |
| Amortization of current year |  | 36,414,701 | - | $(36,414,701)$ |
| Amortization of prior years |  | 55,709,435 | $(4,546,200)$ | $(51,163,235)$ |
| Changes in assumptions | - | - | - |  |
| Amortization of current year |  | - | - | - |
| Amortization of prior years |  | - | - | - |
| Benefit payments | 1,238,507,932 |  |  | (1,238,507,932) |
| Refunds and Transfers of Member Contributions | 35,997,261 |  |  | $(35,997,261)$ |
| Net Change in Total Pension Liability | (359,606,167) | $(17,119,968)$ | $(4,546,200)$ | 381,272,335 |
| Plan Fiduciary Net Position: |  |  |  |  |
| Employer Contributions | 718,606,514 |  |  |  |
| Employee Contributions | 152,233,771 |  |  | $(152,233,771)$ |
| Harbor Police Asset Transfer | 10,790,721 |  |  | $(10,790,721)$ |
| Expected earnings on pension plan investments | 869,797,446 |  |  | (869,797,446) |
| Differences between projected and actual earnings on pension plan investments | $(1,166,526,679)$ |  | 1,166,526,679 |  |
| Amortization of current year |  | - | $(233,305,336)$ | 233,305,336 |
| Amortization of prior years |  | 197,762,647 | $(146,784,259)$ | $(50,978,388)$ |
| Retirement Benefits | $(1,238,507,932)$ |  |  | 1,238,507,932 |
| Administrative Expense | $(15,615,605)$ |  |  | 15,615,605 |
| Refunds and Transfers of Member Contributions | $(35,997,261)$ |  |  | 35,997,261 |
| Other | 13,782,925 |  |  | $(13,782,925)$ |
| Net Change in Plan Fiduciary Net Position | (691,436,100) | 197,762,647 | 786,437,084 | 425,842,883 |
| Ending Balance | $(7,852,551,797)$ | $(468,354,698)$ | 781,890,884 | 807,115,218 |

## EXHIBIT 4

## CENSUS 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 base. Our review of submitted data is limited to validation of reasonableness and consistency in several areas, such as age, service, salary, and current benefits. In order to minimize coverage errors (i.e., missing or duplicated individual records) the records are checked for duplicates, and a comparison of the current year's records to those submitted in prior years is made. Records identified as containing suspicious data were assumed to possess the same characteristics of "good data" in the same cohort. Suspicious data are not necessarily errors, but data which fall outside the parameters of the editing process for further checking. The assigned values are based on information from similar records or based on historical averages for similarly situated members. Notwithstanding our efforts to review both census and financial data for apparent errors, we must rely upon the system's administrative staff and accountants to provide accurate information.

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

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

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

|  | $\mathbf{2 0 1 6}$ | $\mathbf{2 0 1 5}$ | $\mathbf{2 0 1 4}$ |
| :--- | ---: | ---: | ---: |
| Rank and File, Appellate Law Clerks | 32,481 | 33,271 | 33,397 |
| Legislators | 8 | 10 | 12 |
| Judges, Prior to 2011 | 219 | 229 | 273 |
| Judges, Post 2011 | 88 | 81 | 30 |
| Wildlife | 160 | 169 | 180 |
| Corrections Primary | 237 | 266 | 306 |
| Corrections Secondary | 1,895 | 2,060 | 2,314 |
| Peace Officers | 57 | 62 | 67 |
| Alcohol Tobacco Control | 12 | 12 | 16 |
| Bridge Police | 5 | 5 | 7 |
| Hazardous Duty Plan | 2,440 | 2,272 | 1,969 |
| Harbor Police | 32 | 0 | 0 |
| Post DROP | 1,650 | 1,757 | 1,750 |
| Total Active Members | 39,284 | 40,194 | 40,321 |

## EXHIBIT 4 (Continued)

Census Data

## TOTAL MEMBERS

|  | $\mathbf{2 0 1 6}$ | $\mathbf{2 0 1 5}$ | $\mathbf{2 0 1 4}$ |
| :--- | ---: | ---: | ---: |
| Active Members | 39,284 | 40,194 | 40,321 |
| DROP Participants | 1,609 | 1,682 | 1,838 |
| Regular Retirees | 39,998 | 39,352 | 38,675 |
| Disability Retirees | 2,401 | 2,457 | 2,506 |
| Survivors | 5,802 | 5,834 | 5,759 |
| Terminated Vested | 3,865 | 3,953 | 4,558 |
| Subtotal | 92,959 | 93,472 | 93,657 |
| Terminated, Due Refund | 52,837 | 52,193 | 52,042 |
| Total Members | 145,796 | $\mathbf{1 4 5 , 6 6 5}$ | $\mathbf{1 4 5 , 6 9 9}$ |

## MEMBER RECONCILIATION

\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \& \begin{tabular}{l}
Active \\
Pre-DROP
\end{tabular} \& \[
\begin{gathered}
\hline \text { Active } \\
\text { after } \\
\text { DROP }
\end{gathered}
\] \& Terminated Vested \& In DROP \& Retired, Disabled, Survivors \& Total \\
\hline June 30, 2015 \& 38,437 \& 1,757 \& 3,953 \& 1,682 \& 47,643 \& 93,472 \\
\hline \multicolumn{7}{|l|}{Additions to Census} \\
\hline Initial Membership Rehired Member Data Revisions \& \[
\begin{array}{r}
3,792 \\
487
\end{array}
\] \& 8 \& 5 \& \& 129 \& \[
\begin{array}{r}
3,792 \\
487 \\
142 \\
\hline
\end{array}
\] \\
\hline Change in Status \& \& \& \& \& \& 0 \\
\hline Active to Terminated Vested Active to In DROP Active to Retired Disabled to Active Terminated Vested to Active Terminated Vested to Retiree In DROP to Active after DROP In DROP to Retiree Active After DROP to Retiree Data Revisions \& \begin{tabular}{l}
(568) \\
(536) \\
(918) \\
119 \\
(1)
\end{tabular} \& \begin{tabular}{l}
292 \\
(413) \\
12
\end{tabular} \& \begin{tabular}{l}
568 \\
(119) \\
(185)
\end{tabular} \& 536

(292)
(311)

2 \& | 918 |
| :--- |
| 185 |
| 311 |
| 413 |
| (11) | \& 0

0
0
0
0
0
0
0
0
2 <br>
\hline \multicolumn{7}{|l|}{Eliminated from Census} <br>

\hline | Refunded |
| :--- |
| Terminated, Due Refund |
| Deceased |
| Data Revisions | \& \[

$$
\begin{array}{r}
(1,633) \\
(1,498) \\
(29) \\
(18) \\
\hline
\end{array}
$$

\] \& \[

$$
\begin{aligned}
& (3) \\
& (3) \\
& \hline
\end{aligned}
$$

\] \& \[

$$
\begin{array}{r}
(247) \\
(8) \\
(102) \\
\hline
\end{array}
$$
\] \& (1)

(7) \& $$
\begin{array}{r}
(1,264) \\
(123) \\
\hline
\end{array}
$$ \& \[

$$
\begin{array}{r}
(1,880) \\
(1,498) \\
(1,305) \\
(253) \\
\hline
\end{array}
$$
\] <br>

\hline June 30, 2016 \& 37,634 \& 1,650 \& 3,865 \& 1,609 \& 48,201 \& 92,959 <br>
\hline
\end{tabular}

Regular Members Before July 2006

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

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| $\begin{gathered} <25 \\ \text { Avg. Pay } \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |
| 25-29 |  | 1 | 1 | 7 |  |  |  |  |  | 9 |
| Avg. Pay |  | \$19,188 | \$19,386 | \$265,661 |  |  |  |  |  | \$304,235 |
| 30-34 | 2 | 9 | 30 | 365 | 26 |  |  |  |  | 432 |
| Avg. Pay | \$50,600 | \$257,442 | \$1,134,331 | \$16,184,592 | \$1,156,105 |  |  |  |  | \$18,783,070 |
| 35-39 | 7 | 21 | 70 | 1087 | 405 | 32 | 2 |  |  | 1624 |
| Avg. Pay | \$168,260 | \$706,730 | \$3,271,076 | \$53,519,085 | \$19,943,931 | \$1,843,829 | \$98,857 |  |  | \$79,551,768 |
| 40-44 | 2 | 25 | 48 | 823 | 936 | 347 | 23 |  |  | 2204 |
| Avg. Pay | \$19,608 | \$1,027,079 | \$2,098,918 | \$40,362,916 | \$51,271,632 | \$18,945,722 | \$1,596,462 |  |  | \$115,322,337 |
| 45-49 | 5 | 12 | 44 | 731 | 924 | 873 | 477 | 9 |  | 3075 |
| Avg. Pay | \$80,623 | \$423,967 | \$1,891,071 | \$35,951,368 | \$49,311,122 | \$51,381,045 | \$29,410,976 | \$966,595 |  | \$169,416,767 |
| 50-54 | 3 | 13 | 37 | 719 | 844 | 870 | 904 | 144 | 19 | 3553 |
| Avg. Pay | \$75,857 | \$531,750 | \$1,579,625 | \$32,275,385 | \$42,699,574 | \$48,360,305 | \$56,654,676 | \$10,056,977 | \$1,318,156 | \$193,552,305 |
| 55-59 | 3 | 12 | 27 | 765 | 738 | 806 | 273 | 111 | 64 | 2799 |
| Avg. Pay | \$78,489 | \$476,072 | \$958,478 | \$35,019,323 | \$34,820,943 | \$42,859,631 | \$17,675,118 | \$7,988,205 | \$4,155,146 | \$144,031,405 |
| 60-64 | 2 | 9 | 29 | 392 | 327 | 211 | 131 | 79 | 65 | 1245 |
| Avg. Pay | \$59,992 | \$338,580 | \$1,218,053 | \$19,428,782 | \$16,437,376 | \$12,359,037 | \$8,422,611 | \$6,290,515 | \$5,064,772 | \$69,619,718 |
| 65-69 |  | 2 | 6 | 125 | 158 | 108 | 79 | 31 | 35 | 544 |
| Avg. Pay |  | \$137,524 | \$227,847 | \$6,062,099 | \$8,090,468 | \$6,160,718 | \$4,578,238 | \$2,147,943 | \$2,794,929 | \$30,199,766 |
| 70+ | 1 |  | 2 | 39 | 37 | 42 | 30 | 14 | 13 | 178 |
| Avg. Pay | \$11,048 |  | \$53,256 | \$1,668,417 | \$1,948,275 | \$2,664,015 | \$1,627,045 | \$810,424 | \$706,639 | \$9,489,119 |
| Total | 25 | 104 | 294 | 5053 | 4395 | 3289 | 1919 | 388 | 196 | 15663 |
|  | \$544,476 | \$3,918,332 | \$12,452,041 | \$240,737,628 | \$225,679,426 | \$184,574,302 | \$120,063,983 | \$28,260,659 | \$14,039,642 | \$830,270,489 |


| Averages | ----- | Attained Age | 50.51 |
| :--- | ---: | :--- | ---: |
|  |  | Service Years | 18.26 |
|  |  | Active Salary | $\$ 53,008$ |

## LASERS MEMBERSHIP PROFILE <br> Regular Members After July 2006

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

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| < 25 | 545 | 485 | 9 |  |  |  |  |  |  | 1039 |
| Avg. Pay | \$21,080 | \$12,375,657 | \$26,956 |  |  |  |  |  |  | \$23,202 |
| 25-29 | 680 | 1543 | 311 | 1 |  |  |  |  |  | 2535 |
| Avg. Pay | \$18,182,336 | \$51,467,821 | \$11,474,543 | \$49,295 |  |  |  |  |  | \$81,173,995 |
| 30-34 | 528 | 1459 | 1175 | 18 | 1 |  |  |  |  | 3181 |
| Avg. Pay | \$15,179,472 | \$53,869,433 | \$53,233,528 | \$907,280 | \$27,364 |  |  |  |  | \$123,217,077 |
| 35-39 | 379 | 1017 | 1014 | 28 | 5 |  |  |  |  | 2443 |
| Avg. Pay | \$11,895,385 | \$39,092,748 | \$46,881,031 | \$1,579,684 | \$353,594 |  |  |  |  | \$99,802,442 |
| 40-44 | 286 | 753 | 773 | 38 | 9 | 1 |  |  |  | 1860 |
| Avg. Pay | \$9,003,497 | \$30,546,513 | \$35,669,203 | \$2,437,694 | \$504,862 | \$50,502 |  |  |  | \$78,212,271 |
| 45-49 | 265 | 749 | 717 | 31 | 5 | 2 | 1 |  |  | 1770 |
| Avg. Pay | \$9,331,330 | \$30,474,801 | \$32,963,052 | \$1,755,752 | \$230,868 | \$92,932 | \$49,185 |  |  | \$74,897,920 |
| 50-54 | 223 | 652 | 760 | 31 | 13 | 3 | 2 |  |  | 1684 |
| Avg. Pay | \$7,355,928 | \$24,666,672 | \$34,176,401 | \$1,767,947 | \$600,452 | \$149,823 | \$108,372 |  |  | \$68,825,595 |
| 55-59 | 148 | 453 | 688 | 27 | 9 | 5 | 1 |  |  | 1331 |
| Avg. Pay | \$4,594,355 | \$17,506,831 | \$29,005,533 | \$1,721,918 | \$597,231 | \$372,000 | \$55,526 |  |  | \$53,853,394 |
| 60-64 | 35 | 183 | 379 | 20 | 2 | 2 | 1 |  |  | 622 |
| Avg. Pay | \$1,428,237 | \$7,862,113 | \$16,803,301 | \$1,286,351 | \$206,420 | \$149,980 | \$70,848 |  |  | \$27,807,250 |
| 65-69 | 12 | 46 | 108 | 4 | 1 |  |  |  |  | 171 |
| Avg. Pay | \$572,239 | \$2,066,128 | \$5,690,763 | \$316,983 | \$125,609 |  |  |  |  | \$8,771,722 |
| 70+ | 2 | 15 | 20 | 2 |  |  |  |  |  | 39 |
| Avg. Pay | \$49,571 | \$670,923 | \$1,219,870 | \$128,586 |  |  |  |  |  | \$2,068,950 |
| Total | 3103 | 7355 | 5954 | 200 | 45 | 13 | 5 |  |  | 16675 |
|  | \$89,081,007 | \$270,599,640 | \$267,359,832 | \$11,951,490 | \$2,646,400 | \$815,237 | \$283,931 |  |  | \$642,737,537 |


| Averages ----- | Attained Age | 40.15 |
| :--- | :--- | ---: |
|  | Service Years | 4.22 |
|  | Active Salary | $\$ 38,545$ |

## LASERS MEMBERSHIP PROFILE

## Appellate Law Clerks

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

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| $<25$ |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 30-34 |  |  | 6 |  |  |  |  |  |  | 6 |
| Avg. Pay |  |  | \$374,331 |  |  |  |  |  |  | \$374,331 |
| 35-39 |  |  | 8 | 4 |  |  |  |  |  | 12 |
| Avg. Pay |  |  | \$539,272 | \$281,442 |  |  |  |  |  | \$820,714 |
| 40-44 |  | 1 | 3 | 9 | 7 | 1 |  |  |  | 21 |
| Avg. Pay |  | \$62,015 | \$202,670 | \$629,554 | \$501,017 | \$66,294 |  |  |  | \$1,461,550 |
| 45-49 |  |  | 5 | 6 | 17 | 5 |  |  |  | 33 |
| Avg. Pay |  |  | \$384,145 | \$425,759 | \$1,354,771 | \$429,276 |  |  |  | \$2,593,951 |
| 50-54 |  |  | 3 | 4 | 5 | 5 | 6 | 1 |  | 24 |
| Avg. Pay |  |  | \$227,027 | \$358,794 | \$407,151 | \$416,237 | \$552,281 | \$87,839 |  | \$2,049,329 |
| 55-59 |  |  | 2 | 6 | 7 | 2 | 6 | 5 | 1 | 29 |
| Avg. Pay |  |  | \$135,691 | \$467,178 | \$569,253 | \$179,696 | \$576,785 | \$507,141 | \$113,858 | \$2,549,602 |
| 60-64 |  |  | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 13 |
| Avg. Pay |  |  | \$65,415 | \$107,621 | \$159,924 | \$163,433 | \$170,384 | \$210,033 | \$311,414 | \$1,188,224 |
| 65-69 |  |  | 1 | 2 |  |  | 1 |  |  | 4 |
| Avg. Pay |  |  | \$65,432 | \$151,746 |  |  | \$96,024 |  |  | \$313,202 |
| 70+ |  |  |  | 1 |  |  |  |  |  | 1 |
| Avg. Pay |  |  |  | \$68,841 |  |  |  |  |  | \$68,841 |
| Total |  | 1 | 29 | 33 | 38 | 15 | 15 | 8 | 4 | 143 |
|  |  | \$62,015 | \$1,993,983 | \$2,490,935 | \$2,992,116 | \$1,254,936 | \$1,395,474 | \$805,013 | \$425,272 | \$11,419,744 |


| Averages | ----- | Attained Age | 50.27 |
| :--- | :--- | :--- | ---: |
|  |  | Service Years | 17.06 |
|  | Active Salary | $\$ 79,858$ |  |

## LASERS MEMBERSHIP PROFILE

## Participating Legislators

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


| Averages | ---- | Attained Age |
| :--- | :--- | ---: |
|  | Service Years | 62.38 |
|  | Active Salary | $\$ 59,245$ |

## LASERS MEMBERSHIP PROFILE

## Active Judges Pre 2011

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

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| $\begin{gathered} <25 \\ \text { Avg. Pay } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} 25-29 \\ \text { Avg. Pay } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} 30-34 \\ \text { Avg. Pay } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} 35-39 \\ \text { Avg. Pay } \\ \hline \end{gathered}$ |  |  | $\begin{array}{r} 1 \\ \$ 119,503 \end{array}$ |  |  |  |  |  |  | 1 $\$ 119,503$ |
| 40-44 |  |  | 6 | 2 |  |  |  |  |  | 8 |
| Avg. Pay |  |  | \$745,802 | \$167,773 |  |  |  |  |  | \$913,575 |
| 45-49 |  |  | 16 | 4 | 6 | 2 |  |  |  | 28 |
| Avg. Pay |  |  | \$2,183,588 | \$522,394 | \$877,361 | \$248,190 |  |  |  | \$3,831,533 |
| 50-54 |  |  | 14 | 10 | 10 | 9 | 1 |  |  | 44 |
| Avg. Pay |  |  | \$1,958,509 | \$1,377,861 | \$1,424,076 | \$1,347,351 | \$148,108 |  |  | \$6,255,905 |
| 55-59 |  | 1 | 12 | 13 | 9 | 13 | 5 |  |  | 53 |
| Avg. Pay |  | \$148,108 | \$1,719,545 | \$1,872,204 | \$1,320,314 | \$1,963,980 | \$735,330 |  |  | \$7,759,481 |
| 60-64 |  |  | 5 | 5 | 14 | 14 | 8 |  |  | 46 |
| Avg. Pay |  |  | \$746,491 | \$660,553 | \$2,113,802 | \$2,108,856 | \$1,138,898 |  |  | \$6,768,600 |
| 65-69 |  |  |  | 7 | 6 | 10 | 7 |  |  | 30 |
| Avg. Pay |  |  |  | \$1,041,867 | \$900,550 | \$1,484,812 | \$1,016,679 |  |  | \$4,443,908 |
| 70+ |  |  |  | 3 |  | 1 | 3 | 1 | 1 | 9 |
| Avg. Pay |  |  |  | \$419,486 |  | \$154,059 | \$457,978 | \$148,108 | \$154,059 | \$1,333,690 |
| Total |  | 1 | 54 | 44 | 45 | 49 | 24 | 1 | 1 | 219 |
|  |  | \$148,108 | \$7,473,438 | \$6,062,138 | \$6,636,103 | \$7,307,248 | \$3,496,993 | \$148,108 | \$154,059 | \$31,426,195 |


| Averages | ---- | Attained Age | 57.71 |
| :--- | :--- | ---: | ---: |
|  | Service Years | 15.76 |  |
|  | Active Salary | $\$ 143,499$ |  |

## LASERS MEMBERSHIP PROFILE

## Active Judges Post 2011

CELLS DEPICT - MEMBER COUNT V/30/2016
TOTAL SALARY

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| $\begin{gathered} <25 \\ \text { Avg. Pay } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{gathered} 25-29 \\ \text { Avg. Pay } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |
| 30-34 |  | 1 |  |  |  |  |  |  |  | 1 |
| Avg. Pay |  | \$154,801 |  |  |  |  |  |  |  | \$154,801 |
| 35-39 | 2 | 5 | 1 | 1 |  |  |  |  |  | 9 |
| Avg. Pay | \$207,106 | \$724,457 | \$148,108 | \$148,108 |  |  |  |  |  | \$1,227,779 |
| 40-44 | 1 | 15 |  |  |  |  |  |  |  | 16 |
| Avg. Pay | \$62,191 | \$2,162,591 |  |  |  |  |  |  |  | \$2,224,782 |
| 45-49 | 1 | 19 | 1 | 2 |  |  |  |  |  | 23 |
| Avg. Pay | \$95,094 | \$2,716,440 | \$147,934 | \$292,546 |  |  |  |  |  | \$3,252,014 |
| 50-54 | 2 | 15 |  |  |  |  |  |  |  | 17 |
| Avg. Pay | \$276,234 | \$2,203,081 |  |  |  |  |  |  |  | \$2,479,315 |
| 55-59 |  | 5 | 1 |  | 1 |  |  |  |  | 7 |
| Avg. Pay |  | \$746,491 | \$148,108 |  | \$148,108 |  |  |  |  | \$1,042,707 |
| 60-64 | 1 | 8 | 2 |  |  |  |  |  |  | 11 |
| Avg. Pay | \$148,108 | \$1,189,563 | \$302,167 |  |  |  |  |  |  | \$1,639,838 |
| 65-69 |  | 3 |  |  |  |  |  |  |  | 3 |
| Avg. Pay |  | \$443,683 |  |  |  |  |  |  |  | \$443,683 |
| 70+ |  | 1 |  |  |  |  |  |  |  | 1 |
| Avg. Pay |  | \$103,986 |  |  |  |  |  |  |  | \$103,986 |
| Total | 7 | 72 | 5 | 3 | 1 |  |  |  |  | 88 |
|  | \$788,733 | \$10,445,093 | \$746,317 | \$440,654 | \$148,108 |  |  |  |  | \$12,568,905 |

Averages -----

| Attained Age | 49.97 |
| :--- | ---: |
| Service Years | 2.79 |
| Active Salary | $\$ 142,828$ |

## LASERS MEMBERSHIP PROFILE <br> Hazardous Duty

CELLS DEPICT
MEMBER COUNT
TOTAL SALARY

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| < 25 | 266 | 216 | 1 |  |  |  |  |  |  | 483 |
| Avg. Pay | \$22,201 | \$6,403,153 | \$33,426 |  |  |  |  |  |  | \$25,553 |
| 25-29 | 179 | 282 | 18 | 1 |  |  |  |  |  | 480 |
| Avg. Pay | \$4,756,397 | \$9,321,590 | \$650,138 | \$41,784 |  |  |  |  |  | \$14,769,909 |
| 30-34 | 115 | 202 | 39 | 11 |  |  |  |  |  | 367 |
| Avg. Pay | \$3,225,143 | \$6,769,786 | \$1,561,965 | \$485,553 |  |  |  |  |  | \$12,042,447 |
| 35-39 | 67 | 154 | 27 | 24 | 13 | 3 |  |  |  | 288 |
| Avg. Pay | \$1,760,857 | \$5,279,343 | \$1,134,553 | \$1,227,898 | \$714,458 | \$174,083 |  |  |  | \$10,291,192 |
| 40-44 | 41 | 119 | 31 | 17 | 17 | 7 |  |  |  | 232 |
| Avg. Pay | \$1,198,582 | \$4,358,789 | \$1,417,405 | \$867,201 | \$983,428 | \$429,729 |  |  |  | \$9,255,134 |
| 45-49 | 51 | 119 | 21 | 18 | 21 | 17 | 5 |  |  | 252 |
| Avg. Pay | \$1,448,083 | \$4,335,598 | \$874,396 | \$918,349 | \$1,080,000 | \$915,471 | \$392,320 |  |  | \$9,964,217 |
| 50-54 | 24 | 101 | 19 | 8 | 14 | 7 | 2 |  |  | 175 |
| Avg. Pay | \$832,777 | \$3,825,467 | \$772,731 | \$395,765 | \$608,958 | \$373,703 | \$217,170 |  |  | \$7,026,571 |
| 55-59 | 26 | 57 | 12 | 3 | 11 | 5 | 4 |  |  | 118 |
| Avg. Pay | \$824,058 | \$2,135,729 | \$563,010 | \$173,704 | \$462,582 | \$247,916 | \$241,082 |  |  | \$4,648,081 |
| 60-64 | 8 | 20 | 1 | 3 | 1 |  | 1 |  |  | 34 |
| Avg. Pay | \$194,964 | \$824,845 | \$32,051 | \$164,526 | \$77,120 |  | \$46,058 |  |  | \$1,339,564 |
| 65-69 | 3 | 5 | 1 |  | 1 |  |  |  |  | 10 |
| Avg. Pay | \$89,430 | \$171,087 | \$31,990 |  | \$41,559 |  |  |  |  | \$334,066 |
| 70+ |  | 1 |  |  |  |  |  |  |  | 1 |
| Avg. Pay |  | \$67,605 |  |  |  |  |  |  |  | \$67,605 |
| Total | 780 | 1276 | 170 | 85 | 78 | 39 | 12 |  |  | 2440 |
|  | \$20,235,626 | \$43,492,992 | \$7,071,665 | \$4,274,780 | \$3,968,105 | \$2,140,902 | \$896,630 |  |  | \$82,080,699 |


| Averages | ----- | Attained Age |
| :--- | :--- | ---: |
|  | Service Years | 35.83 |
|  | Active Salary | $\$ 33,640$ |

## LASERS MEMBERSHIP PROFILE

## Corrections Primary

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

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| $\begin{aligned} & <25 \\ & \text { Avg. Pay } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| 25-29 <br> Avg. Pay |  |  |  |  |  |  |  |  |  |  |
| $30-34$ <br> Avg. Pay |  |  |  |  |  |  |  |  |  |  |
| 35-39 |  | 1 |  | 1 | 6 |  |  |  |  | 8 |
| Avg. Pay |  | \$29,240 |  | \$38,709 | \$309,666 |  |  |  |  | \$377,615 |
| 40-44 |  |  |  | 2 | 19 | 5 | 1 |  |  | 27 |
| Avg. Pay |  |  |  | \$85,931 | \$943,101 | \$265,893 | \$75,712 |  |  | \$1,370,637 |
| 45-49 |  |  |  |  | 21 | 12 |  |  |  | 33 |
| Avg. Pay |  |  |  |  | \$1,030,453 | \$687,764 |  |  |  | \$1,718,217 |
| 50-54 |  |  |  | 2 | 40 | 12 | 7 | 2 |  | 63 |
| Avg. Pay |  |  |  | \$94,081 | \$2,034,248 | \$647,198 | \$464,934 | \$205,525 |  | \$3,445,986 |
| 55-59 |  |  |  | 3 | 47 | 12 | 7 | 2 |  | 71 |
| Avg. Pay |  |  |  | \$131,800 | \$2,352,882 | \$685,943 | \$440,809 | \$101,522 |  | \$3,712,956 |
| 60-64 |  |  |  | 1 | 17 | 8 | 2 | 1 |  | 29 |
| Avg. Pay |  |  |  | \$45,173 | \$790,465 | \$451,399 | \$138,986 | \$54,576 |  | \$1,480,599 |
| 65-69 |  |  |  |  | 3 | 1 | 1 |  |  | 5 |
| Avg. Pay |  |  |  |  | \$136,813 | \$50,586 | \$54,576 |  |  | \$241,975 |
| 70+ |  |  |  |  |  | 1 |  |  |  | 1 |
| Avg. Pay |  |  |  |  |  | \$54,576 |  |  |  | \$54,576 |
| Total |  | 1 |  | 9 | 153 | 51 | 18 | 5 |  | 237 |
|  |  | \$29,240 |  | \$395,694 | \$7,597,628 | \$2,843,359 | \$1,175,017 | \$361,623 |  | \$12,402,561 |


| Averages | ---- | Attained Age |
| :--- | :--- | ---: |
|  | Service Years | 53.34 |
|  | Active Salary | $\$ 52,331$ |

## LASERS MEMBERSHIP PROFILE

## Corrections Secondary

CELLS DEPICT - MEMBER COUNT TOTAL SALARY

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| < 25 |  |  | 2 |  |  |  |  |  |  | 2 |
| Avg. Pay |  |  | \$34,695 |  |  |  |  |  |  | \$34,695 |
| 25-29 |  | 6 | 51 | 1 |  |  |  |  |  | 58 |
| Avg. Pay |  | \$172,853 | \$1,865,527 | \$35,516 |  |  |  |  |  | \$2,073,896 |
| 30-34 | 2 | 3 | 129 | 84 | 4 |  |  |  |  | 222 |
| Avg. Pay | \$33,339 | \$91,694 | \$5,004,648 | \$3,645,525 | \$187,853 |  |  |  |  | \$8,963,059 |
| 35-39 |  | 2 | 90 | 107 | 90 | 7 |  |  |  | 296 |
| Avg. Pay |  | \$64,280 | \$3,533,590 | \$4,962,532 | \$4,500,681 | \$410,458 |  |  |  | \$13,471,541 |
| 40-44 |  | 3 | 65 | 86 | 131 | 63 | 9 |  |  | 357 |
| Avg. Pay |  | \$64,831 | \$2,536,881 | \$4,095,398 | \$7,119,163 | \$3,915,630 | \$675,913 |  |  | \$18,407,816 |
| 45-49 |  |  | 58 | 78 | 106 | 130 | 30 | 1 |  | 403 |
| Avg. Pay |  |  | \$2,298,130 | \$3,369,943 | \$5,537,417 | \$8,147,277 | \$2,178,825 | \$79,844 |  | \$21,611,436 |
| 50-54 |  | 1 | 68 | 65 | 67 | 41 | 34 | 5 |  | 281 |
| Avg. Pay |  | \$29,240 | \$2,517,776 | \$2,729,482 | \$3,386,125 | \$2,418,773 | \$2,328,294 | \$423,629 |  | \$13,833,319 |
| 55-59 |  | 1 | 38 | 50 | 42 | 19 | 9 |  |  | 159 |
| Avg. Pay |  | \$31,619 | \$1,473,152 | \$2,125,069 | \$2,214,128 | \$1,160,025 | \$605,448 |  |  | \$7,609,441 |
| 60-64 |  |  | 31 | 20 | 21 | 5 | 5 | 3 | 2 | 87 |
| Avg. Pay |  |  | \$1,218,803 | \$849,675 | \$1,143,500 | \$294,049 | \$302,467 | \$195,296 | \$145,164 | \$4,148,954 |
| 65-69 |  |  | 8 | 9 | 5 | 3 |  |  |  | 25 |
| Avg. Pay |  |  | \$294,484 | \$460,979 | \$275,122 | \$152,768 |  |  |  | \$1,183,353 |
| 70+ |  |  | 3 | 2 |  |  |  |  |  | 5 |
| Avg. Pay |  |  | \$106,822 | \$75,258 |  |  |  |  |  | \$182,080 |
| Total | 2 | 16 | 543 | 502 | 466 | 268 | 87 | 9 | 2 | 1895 |
|  | \$33,339 | \$454,517 | \$20,919,203 | \$22,349,377 | \$24,363,989 | \$16,498,980 | \$6,090,947 | \$698,769 | \$145,164 | \$91,554,285 |


| Averages | ----- | Attained Age | 45.24 |
| :--- | :--- | :--- | ---: |
|  |  | Service Years | 14.44 |
|  | Active Salary | $\$ 48,314$ |  |

## LASERS MEMBERSHIP PROFILE <br> Wildlife

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

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| $\begin{aligned} & <25 \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| 25-29 |  |  | 3 |  |  |  |  |  |  | 3 |
| Avg. Pay |  |  | \$145,496 |  |  |  |  |  |  | \$145,496 |
| 30-34 |  |  | 21 | 12 |  |  |  |  |  | 33 |
| Avg. Pay |  |  | \$1,087,318 | \$670,525 |  |  |  |  |  | \$1,757,843 |
| 35-39 |  |  | 12 | 17 | 9 |  |  |  |  | 38 |
| Avg. Pay |  |  | \$621,782 | \$1,029,075 | \$622,676 |  |  |  |  | \$2,273,533 |
| 40-44 |  |  | 2 | 10 | 27 | 2 |  |  |  | 41 |
| Avg. Pay |  |  | \$97,667 | \$636,067 | \$1,969,061 | \$150,906 |  |  |  | \$2,853,701 |
| 45-49 |  |  | 1 | 6 | 8 | 9 | 3 |  |  | 27 |
| Avg. Pay |  |  | \$59,041 | \$353,703 | \$625,987 | \$720,139 | \$238,785 |  |  | \$1,997,655 |
| 50-54 |  |  | 2 | 3 | 3 | 5 | 2 |  |  | 15 |
| Avg. Pay |  |  | \$120,907 | \$200,468 | \$218,550 | \$406,085 | \$183,869 |  |  | \$1,129,879 |
| 55-59 |  |  |  |  |  | 1 | 1 | 1 |  | 3 |
| Avg. Pay |  |  |  |  |  | \$111,266 | \$122,779 | \$127,449 |  | \$361,494 |
| $60-64$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \text { 65-69 } \\ & \text { Avg. Pay } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \text { 70+ } \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| Total |  |  | 41 | 48 | 47 | 17 | 6 | 1 |  | 160 |
|  |  |  | \$2,132,211 | \$2,889,838 | \$3,436,274 | \$1,388,396 | \$545,433 | \$127,449 |  | \$10,519,601 |


| Averages | ---- | Attained Age |
| :--- | :--- | ---: |
|  | Service Years | 40.93 |
|  | Active Salary | $\$ 65,743$ |

## LASERS MEMBERSHIP PROFILE

## Peace Officer

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

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| $\begin{aligned} & <25 \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \hline 25-29 \\ & \text { Avg. Pay } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| 30-34 |  |  | 1 | 3 |  |  |  |  |  | 4 |
| Avg. Pay |  |  | \$43,595 | \$144,249 |  |  |  |  |  | \$187,844 |
| 35-39 |  |  | 3 | 4 | 2 |  |  |  |  | 9 |
| Avg. Pay |  |  | \$132,761 | \$178,809 | \$98,629 |  |  |  |  | \$410,199 |
| 40-44 |  |  | 2 | 3 | 2 | 5 |  |  |  | 12 |
| Avg. Pay |  |  | \$75,264 | \$175,580 | \$117,390 | \$262,434 |  |  |  | \$630,668 |
| 45-49 |  |  |  | 3 | 3 | 2 | 5 |  |  | 13 |
| Avg. Pay |  |  |  | \$135,376 | \$156,091 | \$104,929 | \$334,868 |  |  | \$731,264 |
| 50-54 |  |  |  | 1 | 1 | 5 | 4 |  |  | 11 |
| Avg. Pay |  |  |  | \$49,242 | \$58,210 | \$324,283 | \$268,498 |  |  | \$700,233 |
| 55-59 |  |  |  | 2 |  | 1 | 1 |  |  | 4 |
| Avg. Pay |  |  |  | \$112,777 |  | \$71,006 | \$58,790 |  |  | \$242,573 |
| 60-64 |  |  | 1 |  | 1 |  |  |  |  | 2 |
| Avg. Pay |  |  | \$81,527 |  | \$75,578 |  |  |  |  | \$157,105 |
| 65-69 |  |  | 1 | 1 |  |  |  |  |  | 2 |
| Avg. Pay |  |  | \$65,749 | \$39,699 |  |  |  |  |  | \$105,448 |
| $\begin{aligned} & \hline 70+ \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| Total |  |  | 8 | 17 | 9 | 13 | 10 |  |  | 57 |
|  |  |  | \$398,896 | \$835,732 | \$505,898 | \$762,652 | \$662,156 |  |  | \$3,165,334 |


| Averages | ----- | Attained Age |
| :--- | :--- | ---: |

## LASERS MEMBERSHIP PROFILE

## Alcohol Tobacco Control

CELLS DEPICT - MEMBER COUNT TOTAL SALARY

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| $\begin{aligned} & \hline<\mathbf{2 5} \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \hline \text { 25-29 } \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & 30-34 \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  | $\begin{array}{r} 1 \\ \$ 39,456 \end{array}$ | $\begin{array}{r} 1 \\ \$ 52,728 \\ \hline \end{array}$ |  |  |  |  |  | $\begin{array}{r} 2 \\ \$ 92,184 \end{array}$ |
| $\begin{aligned} & \text { 35-39 } \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  | $\begin{array}{r} 1 \\ \$ 54,850 \end{array}$ | $\begin{array}{r} 1 \\ \$ 46,842 \end{array}$ |  |  |  |  |  | $\begin{array}{r} 2 \\ \$ 101,692 \end{array}$ |
| 40-44 |  |  | 1 | 2 |  | 1 |  |  |  | 4 |
| Avg. Pay |  |  | \$49,417 | \$112,299 |  | \$49,504 |  |  |  | \$211,220 |
| $\begin{aligned} & 45-49 \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  | $\begin{array}{r} 1 \\ \$ 55,185 \end{array}$ |  |  |  | $\begin{array}{r} 1 \\ \$ 55,185 \\ \hline \end{array}$ |
| $\begin{aligned} & \hline \mathbf{5 0 - 5 4} \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  | $\begin{array}{r} 1 \\ \$ 95,897 \end{array}$ |  |  | $\begin{array}{r} 1 \\ \$ 95,897 \end{array}$ |
| $\begin{aligned} & 55-59 \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  | $\begin{array}{r} 1 \\ \$ 61,069 \end{array}$ | $\begin{array}{r} 1 \\ \$ 69,638 \\ \hline \end{array}$ |  |  | $\begin{array}{r} 2 \\ \$ 130,707 \end{array}$ |
| $\begin{aligned} & \mathbf{6 0 - 6 4} \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| 65-69 <br> Avg. Pay |  |  |  |  |  |  |  |  |  |  |
| 70+ <br> Avg. Pay |  |  |  |  |  |  |  |  |  |  |
| Total |  |  | $\begin{array}{r} 3 \\ \$ 143,723 \end{array}$ | $\begin{array}{r} 4 \\ \$ 211,869 \\ \hline \end{array}$ |  | $\begin{array}{r} 3 \\ \$ 165,758 \end{array}$ | 2 $\$ 165,535$ |  |  | $\begin{array}{r} 12 \\ \$ 686,885 \end{array}$ |


| Averages | ---- | Attained Age |
| :--- | :--- | ---: |
|  | Service Years | 43.78 |
|  | Active Salary | $\$ 57,240$ |

## LASERS MEMBERSHIP PROFILE

## Bridge Police

| CELLS DEPICT | MEMBER COUNT |
| :--- | :--- |
|  | TOTAL SALARY |


| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| $\begin{aligned} & <25 \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & 25-29 \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & 30-34 \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  | $\begin{array}{r} 1 \\ \$ 45,498 \\ \hline \end{array}$ |  |  |  |  |  |  | $\begin{array}{r} 1 \\ \$ 45,498 \\ \hline \end{array}$ |
| $\begin{aligned} & 35-39 \\ & \text { Avg. Pay } \end{aligned}$ |  |  | $\begin{array}{r} 1 \\ \$ 47,639 \end{array}$ | $\begin{array}{r} 2 \\ \$ 104,317 \end{array}$ |  |  |  |  |  | $\begin{array}{r} 3 \\ \$ 151,956 \end{array}$ |
| $\begin{aligned} & \text { 40-44 } \\ & \text { Avg. Pay } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \text { 45-49 } \\ & \text { Avg. Pay } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $50-54$ <br> Avg. Pay |  |  |  |  |  |  | $\begin{array}{r} 1 \\ \$ 63,971 \end{array}$ |  |  | $\begin{array}{r} 1 \\ \$ 63,971 \end{array}$ |
| $\begin{aligned} & \text { 55-59 } \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{array}{\|l\|} \hline \text { 60-64 } \\ \text { Avg. Pay } \\ \hline \end{array}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \hline 65-69 \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \text { 70+ } \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| Total |  |  | $\begin{array}{r} 2 \\ \$ 93,137 \end{array}$ | $\begin{array}{r} 2 \\ \$ 104,317 \\ \hline \end{array}$ |  |  | 1 $\$ 63,971$ |  |  | $\begin{array}{r} 5 \\ \$ 261,425 \end{array}$ |


| Averages | ----- | Attained Age |
| :--- | :--- | ---: |
|  | Service Years | 39.72 |
|  | Active Salary | $\$ 52,86$ |
|  |  |  |

## LASERS MEMBERSHIP PROFILE

Harbor Police


| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| < 25 |  | 1 |  |  |  |  |  |  |  | 1 |
| Avg. Pay |  | \$39,279 |  |  |  |  |  |  |  | \$39,279 |
| 25-29 |  | 1 |  |  |  |  |  |  |  | 1 |
| Avg. Pay |  | \$42,506 |  |  |  |  |  |  |  | \$42,506 |
| 30-34 |  | 2 | 2 |  |  |  |  |  |  | 4 |
| Avg. Pay |  | \$82,296 | \$91,011 |  |  |  |  |  |  | \$173,307 |
| 35-39 |  |  |  |  | 3 |  |  |  |  | 3 |
| Avg. Pay |  |  |  |  | \$155,585 |  |  |  |  | \$155,585 |
| 40-44 |  | 1 | 2 | 3 | 2 |  |  |  |  | 8 |
| Avg. Pay |  | \$39,630 | \$88,030 | \$155,334 | \$104,372 |  |  |  |  | \$387,366 |
| 45-49 |  |  |  | 1 | 4 | 1 | 1 |  |  | 7 |
| Avg. Pay |  |  |  | \$51,600 | \$220,603 | \$61,018 | \$77,712 |  |  | \$410,933 |
| 50-54 |  |  |  |  | 1 | 1 | 2 |  |  | 4 |
| Avg. Pay |  |  |  |  | \$49,232 | \$66,609 | \$135,163 |  |  | \$251,004 |
| 55-59 |  |  |  |  | 1 |  | 1 |  |  | 2 |
| Avg. Pay |  |  |  |  | \$63,132 |  | \$57,665 |  |  | \$120,797 |
| 60-64 |  |  |  | 1 | 1 |  |  |  |  | 2 |
| Avg. Pay |  |  |  | \$61,511 | \$52,395 |  |  |  |  | \$113,906 |
| 65-69 |  |  |  |  |  |  |  |  |  |  |
| Avg. Pay |  |  |  |  |  |  |  |  |  |  |
| 70+ <br> Avg. Pay |  |  |  |  |  |  |  |  |  |  |
| Total |  | 5 | 4 | 5 | 12 | 2 | 4 |  |  | 32 |
|  |  | \$203,711 | \$179,041 | \$268,445 | \$645,319 | \$127,627 | \$270,540 |  |  | \$1,694,683 |


| Averages | ---- | Attained Age | 44.40 |
| :--- | :--- | :--- | ---: |
|  | Service Years | 14.89 |  |
|  | Active Salary | 52,959 |  |

## LASERS MEMBERSHIP PROFILE <br> DROP Participants

## CELLS DEPICT

MEMBER COUNT TOTAL BENEFITS


| Averages | ---- | Attained Age | 58.16 |
| :--- | :--- | :--- | ---: |
|  | Years Retired | 1.48 |  |
|  | Average Benefit | $\$ 32,888$ |  |

## LASERS MEMBERSHIP PROFILE

Active After DROP

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

| Credited Service |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1 | 2 | 3 | 4 | 5-9 | 10-14 | 15-20 | Total |
| $<39$ <br> Pay <br> Benefit |  |  |  |  |  |  |  |  |  |
| $40-44$ <br> Pay <br> Benefit |  |  |  |  |  |  |  |  |  |
| 45-49 <br> Pay <br> Benefit | $\begin{array}{r} 1 \\ \$ 32,480 \\ \$ 32,268 \\ \hline \end{array}$ |  |  | $\begin{array}{r} 1 \\ \$ 65,549 \\ \$ 36,516 \\ \hline \end{array}$ |  |  |  |  | $\begin{array}{r} 2 \\ \$ 98,029 \\ \$ 68,784 \\ \hline \end{array}$ |
| 50-54 | 43 | 41 | 23 | 11 | 2 | 9 | 5 |  | 134 |
| Pay | \$2,309,094 | \$2,617,511 | \$1,541,656 | \$624,125 | \$134,769 | \$738,919 | \$358,809 |  | \$8,324,883 |
| Benefit | \$1,730,592 | \$1,717,968 | \$971,400 | \$378,432 | \$68,280 | \$233,376 | \$88,788 |  | \$5,188,836 |
| 55-59 | 105 | 130 | 80 | 58 | 33 | 50 | 7 | 1 | 464 |
| Pay | \$5,652,143 | \$8,745,556 | \$5,132,090 | \$3,649,589 | \$2,192,817 | \$3,254,571 | \$628,247 | \$91,374 | \$29,346,387 |
| Benefit | \$4,082,820 | \$5,544,888 | \$3,228,828 | \$2,233,212 | \$1,238,256 | \$1,537,764 | \$142,824 | \$13,584 | \$18,022,176 |
| 60-64 | 101 | 116 | 78 | 66 | 53 | 119 | 25 | 3 | 561 |
| Pay | \$4,483,578 | \$6,953,114 | \$5,017,727 | \$3,874,941 | \$3,577,182 | \$7,535,536 | \$1,807,408 | \$234,898 | \$33,484,384 |
| Benefit | \$2,134,272 | \$3,160,452 | \$2,949,288 | \$2,215,068 | \$1,881,372 | \$3,778,332 | \$624,504 | \$38,244 | \$16,781,532 |
| 65-69 | 14 | 15 | 48 | 41 | 34 | 129 | 48 | 4 | 333 |
| Pay | \$651,935 | \$733,219 | \$2,892,091 | \$2,083,338 | \$1,798,769 | \$8,494,904 | \$3,961,959 | \$400,780 | \$21,016,995 |
| Benefit | \$178,296 | \$238,824 | \$1,095,948 | \$772,224 | \$654,444 | \$3,346,176 | \$1,587,660 | \$91,296 | \$7,964,868 |
| 70+ | 4 | 4 | 1 | 3 | 5 | 65 | 53 | 21 | 156 |
| Pay | \$151,154 | \$149,147 | \$72,059 | \$132,234 | \$268,610 | \$4,025,360 | \$2,984,348 | \$1,427,318 | \$9,210,230 |
| Benefit | \$38,088 | \$32,676 | \$11,352 | \$29,772 | \$55,476 | \$1,168,848 | \$793,848 | \$416,448 | \$2,546,508 |
| Total | 268 | 306 | 230 | 180 | 127 | 372 | 138 | 29 | 1650 |
| Pay | \$13,280,383 | \$19,198,547 | \$14,655,623 | \$10,429,776 | \$7,972,147 | \$24,049,290 | \$9,740,771 | \$2,154,370 | \$101,480,907 |
| Benefit | \$8,196,336 | \$10,694,808 | \$8,256,816 | \$5,665,224 | \$3,897,828 | \$10,064,496 | \$3,237,624 | \$559,572 | \$50,572,704 |


| Averages | ----- | Attained Age | 62.49 |
| :--- | :--- | :--- | ---: |
|  | Service Years | 4.26 |  |
|  | Active Salary | $\$ 61,504$ |  |
|  | Annual Benefit | $\$ 30,650$ |  |

## LASERS MEMBERSHIP PROFILE

## Post Retirement Service

## CELLS DEPICT <br> $$
\begin{aligned} & \text { MEMBER COUNT } \\ & \text { TOTAL SALARY } \end{aligned}
$$

| Credited Service |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| $\begin{aligned} & <25 \\ & \text { Avg. Pay } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \text { 25-29 } \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & 30-34 \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \hline 35-39 \\ & \text { Avg. Pay } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \text { 40-44 } \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ |  | $\begin{array}{r} 1 \\ \$ 31,685 \end{array}$ |  |  |  |  |  |  |  | $\begin{array}{r} 1 \\ \$ 31,685 \end{array}$ |
| $\begin{aligned} & \text { 45-49 } \\ & \text { Avg. Pay } \end{aligned}$ | $\begin{array}{r} 1 \\ \$ 55,000 \end{array}$ | $\begin{array}{r} 4 \\ \$ 247,878 \end{array}$ |  |  |  |  |  |  |  | $\begin{array}{r} 5 \\ \$ 302,878 \\ \hline \end{array}$ |
| $\begin{aligned} & 50-54 \\ & \text { Avg. Pay } \\ & \hline \end{aligned}$ | $\begin{array}{r} 6 \\ \$ 210,000 \end{array}$ | $\begin{array}{r} 11 \\ \$ 608,941 \end{array}$ | $\begin{array}{r} 7 \\ \$ 409,843 \end{array}$ |  |  |  |  |  |  | $\begin{array}{r} 24 \\ \$ 1,228,784 \end{array}$ |
| 55-59 | 7 | 21 | 7 | 5 |  |  |  |  |  | 40 |
| Avg. Pay | \$268,000 | \$1,126,604 | \$338,087 | \$251,566 |  |  |  |  |  | \$1,984,257 |
| 60-64 | 19 | 12 | 7 | 5 | 2 |  |  |  |  | 45 |
| Avg. Pay | \$685,000 | \$966,124 | \$447,733 | \$293,323 | \$150,069 |  |  |  |  | \$2,542,249 |
| 65-69 | 14 | 22 | 5 | 3 |  |  |  |  |  | 45 |
| Avg. Pay | \$573,000 | \$1,166,738 | \$327,453 | \$167,499 |  |  |  |  |  | \$2,269,690 |
| 70+ | 19 | 19 | 13 | 4 | 1 |  |  |  |  | 56 |
| Avg. Pay | \$688,000 | \$830,113 | \$519,122 | \$198,836 | \$116,979 |  |  |  |  | \$2,353,050 |
| Total | 67 | 90 | 39 | 17 | 3 |  |  |  |  | 216 |
|  | \$2,514,000 | \$4,978,083 | \$2,042,238 | \$911,224 | \$267,048 |  |  |  |  | \$10,712,593 |


| Averages | ---- | Attained Age |
| :--- | :--- | ---: |
|  | Service Years | 64.65 |
|  | Active Salary | 3.65 |
|  |  | $\$ 49,595$ |

## LASERS MEMBERSHIP PROFILE

## Regular Retirees

| Years Retired |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-2 | 2-3 | 3-4 | 4-5 | 5-10 | 10-14 | 15-19 | 20+ | Total |
| < 40 | 1 | 2 | 1 |  |  |  |  |  |  | 4 |
|  | \$24,576 | \$21,900 | \$8,232 |  |  |  |  |  |  | \$13,680 |
| 40-44 | 8 | 5 | 20 | 19 |  |  |  |  |  | 52 |
|  | \$262,680 | \$146,496 | \$256,608 | \$236,652 |  |  |  |  |  | \$902,436 |
| 45-49 | 37 | 49 | 103 | 140 | 26 | 18 | 5 |  |  | 378 |
|  | \$1,258,692 | \$1,274,616 | \$2,214,444 | \$2,657,340 | \$679,416 | \$390,936 | \$126,420 |  |  | \$8,601,864 |
| 50-54 | 102 | 127 | 275 | 399 | 220 | 292 | 94 | 20 |  | 1529 |
|  | \$3,842,484 | \$4,367,544 | \$7,696,776 | \$11,518,200 | \$7,587,432 | \$8,285,256 | \$1,663,716 | \$398,592 |  | \$45,360,000 |
| 55-59 | 180 | 208 | 406 | 690 | 655 | 1712 | 393 | 188 | 6 | 4438 |
|  | \$6,690,996 | \$7,311,816 | \$13,099,296 | \$24,385,032 | \$26,866,152 | \$58,028,484 | \$8,158,812 | \$2,915,832 | \$116,784 | \$147,573,204 |
| 60-64 | 457 | 489 | 621 | 766 | 631 | 3014 | 1698 | 410 | 103 | 8189 |
|  | \$9,951,432 | \$11,454,456 | \$14,859,444 | \$21,839,820 | \$19,077,456 | \$107,233,200 | \$51,750,972 | \$7,929,156 | \$1,976,832 | \$246,072,768 |
| 65-69 | 162 | 195 | 224 | 436 | 422 | 3188 | 3259 | 1246 | 216 | 9348 |
|  | \$4,319,952 | \$5,018,340 | \$4,985,688 | \$10,190,292 | \$10,122,816 | \$73,179,828 | \$99,545,484 | \$35,546,136 | \$5,120,052 | \$248,028,588 |
| 70-74 | 39 | 57 | 51 | 126 | 115 | 725 | 2298 | 1767 | 789 | 5967 |
|  | \$1,049,016 | \$2,440,524 | \$1,280,232 | \$3,371,592 | \$2,867,988 | \$14,437,536 | \$45,052,236 | \$50,751,204 | \$21,169,944 | \$142,420,272 |
| 75-79 | 11 | 14 | 16 | 26 | 17 | 200 | 544 | 1867 | 1639 | 4334 |
|  | \$279,840 | \$533,064 | \$434,256 | \$699,780 | \$400,188 | \$4,588,500 | \$9,209,916 | \$34,516,476 | \$42,032,280 | \$92,694,300 |
| 80-84 | 1 | 3 | 3 | 7 | 8 | 61 | 118 | 580 | 2224 | 3005 |
|  | \$7,596 | \$113,904 | \$76,404 | \$262,176 | \$229,920 | \$1,682,412 | \$2,274,024 | \$10,709,952 | \$44,049,264 | \$59,405,652 |
| 85-90 |  |  |  | 1 | 1 | 10 | 20 | 137 | 1644 | 1813 |
|  |  |  |  | \$18,792 | \$10,224 | \$261,276 | \$387,696 | \$2,500,704 | \$28,951,308 | \$32,130,000 |
| 90+ |  |  |  |  |  |  | 4 | 23 | 914 | 941 |
|  |  |  |  |  |  |  | \$120,720 | \$376,632 | \$13,825,440 | \$14,322,792 |
| Total | 998 | 1149 | 1720 | 2610 | 2095 | 9220 | 8433 | 6238 | 7535 | 39998 |
|  | \$27,687,264 | \$32,682,660 | \$44,911,380 | \$75,179,676 | \$67,841,592 | \$268,087,428 | \$218,289,996 | \$145,644,684 | \$157,241,904 | \$1,037,566,584 |


| Averages | ---- | Attained Age | 69.09 |
| :--- | :--- | :--- | ---: |
|  | Years Retired | 12.48 |  |
|  | Average Benefit | $\$ 25,940$ |  |

## LASERS MEMBERSHIP PROFILE

Disability Retirees

CELLS DEPICT - MEMBER COUNT TOTAL BENEFITS

| Years Retired |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35+ | Total |
| < 40 | 2 | 4 | 3 | 1 | 2 |  |  |  |  | 12 |
|  | \$13,548 | \$57,576 | \$12,876 | \$20,652 | \$14,124 |  |  |  |  | \$14,352 |
| 40-44 | 7 | 2 | 4 | 2 | 4 | 8 | 2 |  |  | 29 |
|  | \$130,512 | \$50,052 | \$53,364 | \$14,208 | \$75,072 | \$106,296 | \$21,948 |  |  | \$451,452 |
| 45-49 | 11 | 6 | 8 | 7 | 12 | 33 | 9 |  |  | 86 |
|  | \$234,972 | \$158,148 | \$143,952 | \$104,364 | \$222,720 | \$545,220 | \$126,240 |  |  | \$1,535,616 |
| 50-54 | 11 | 15 | 10 | 33 | 18 | 68 | 41 | 14 | 3 | 213 |
|  | \$161,256 | \$295,440 | \$153,132 | \$673,248 | \$367,596 | \$1,210,512 | \$565,128 | \$148,716 | \$19,032 | \$3,594,060 |
| 55-59 | 16 | 19 | 22 | 25 | 30 | 112 | 85 | 41 | 23 | 373 |
|  | \$249,216 | \$254,148 | \$386,460 | \$500,124 | \$539,832 | \$2,076,612 | \$1,333,380 | \$534,732 | \$193,140 | \$6,067,644 |
| 60-64 | 1 | 3 | 10 | 24 | 28 | 140 | 142 | 107 | 64 | 519 |
|  | \$10,800 | \$40,368 | \$206,364 | \$621,684 | \$515,976 | \$2,290,344 | \$2,484,324 | \$1,508,112 | \$637,104 | \$8,315,076 |
| 65-69 |  |  |  |  |  | 40 | 141 | 130 | 129 | 440 |
|  |  |  |  |  |  | \$644,100 | \$2,066,388 | \$1,810,956 | \$1,527,360 | \$6,048,804 |
| 70-74 |  |  |  |  |  |  | 48 | 91 | 175 | 314 |
|  |  |  |  |  |  |  | \$602,580 | \$1,161,936 | \$1,865,772 | \$3,630,288 |
| 75-79 |  |  |  |  |  | 1 |  | 35 | 189 | 225 |
|  |  |  |  |  |  | \$58,092 |  | \$384,936 | \$1,948,404 | \$2,391,432 |
| 80-84 |  |  |  |  |  |  |  | 1 | 119 | 120 |
|  |  |  |  |  |  |  |  | \$52,608 | \$1,107,012 | \$1,159,620 |
| 85-90 |  |  |  |  |  |  |  |  | 46 | 46 |
|  |  |  |  |  |  |  |  |  | \$448,944 | \$448,944 |
| 90+ |  |  |  |  |  |  |  |  | 24 | 24 |
|  |  |  |  |  |  |  |  |  | \$222,624 | \$222,624 |
| Total | 48 | 49 | 57 | 92 | 94 | 402 | 468 | 419 | 772 | 2401 |
|  | \$813,852 | \$855,732 | \$981,912 | \$1,934,280 | \$1,749,444 | \$6,931,176 | \$7,199,988 | \$5,601,996 | \$7,969,392 | \$34,037,772 |


| Averages | ----- | Attained Age | 65.40 |
| :--- | :--- | :--- | ---: |
|  |  | Years Retired | 15.75 |
|  | Average Benefit | $\$ 14,176$ |  |

## LASERS MEMBERSHIP PROFILE

## Survivor Benefits

CELLS DEPICT - MEMBER COUNT
TOTAL BENEFITS

| Years Retired |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | <1 | 1-2 | 2-3 | 3-4 | 4-5 | 5-10 | 10-14 | 15-19 | 20+ | Total |
| < 40 | 10 | 13 | 10 | 14 | 22 | 91 | 118 | 97 | 122 | 497 |
|  | \$28,212 | \$404,148 | \$22,176 | \$30,048 | \$25,092 | \$27,360 | \$19,512 | \$17,568 | \$13,668 | \$20,208 |
| 40-44 | 2$\$ 33,072$ |  |  | 2 | 1 | 14 | 19 | 10 | 43 | 91 |
|  |  |  |  | \$74,736 | \$19,788 | \$294,864 | \$248,868 | \$138,312 | \$598,752 | \$1,408,392 |
| 45-49 | 1 | 2 | 5 |  | 2 | 15 | 10 | 12 | 31 | 78 |
|  | \$71,076 | \$45,240 | \$84,540 | \$60,048 |  | \$217,188 | \$123,600 | \$244,836 | \$403,752 | \$1,250,280 |
| 50-54 | 1 |  | 9 | 4 | 6 | 27 | 25 | 24 | 21 | 117 |
|  | \$67,560 | \$255,276 |  | \$66,048 | \$101,472 | \$504,660 | \$458,748 | \$279,888 | \$300,384 | \$2,034,036 |
| 55-59 | 1$\$ 25,992$ | 7 | 4 | 12 | 4 | 58 | 49 | 41 | 53 | 229 |
|  |  | \$158,964 | \$124,248 | \$354,888 | \$113,916 | \$1,256,796 | \$747,444 | \$615,600 | \$654,732 | \$4,052,580 |
| 60-64 | 4 | 9 | 13 | 13 | 13 | 84 | 120 | 76 | 96 | 428 |
|  | \$75,804 | \$186,300 | \$253,608 | \$386,628 | \$195,120 | \$2,034,288 | \$2,526,372 | \$1,357,056 | \$1,486,992 | \$8,502,168 |
| 65-69 | 5 | 4 | 4 | 6 | 13 | 92 | 170 | 136 | 188 | 618 |
|  | \$169,656 | \$137,052 | \$42,060 | \$137,868 | \$255,384 | \$1,813,224 | \$3,620,664 | \$2,932,596 | \$2,863,416 | \$11,971,920 |
| 70-74 | 1 | 1 | 1 |  | 2 | 47 | 121 | 185 | 411 | 769 |
|  | \$27,168 | \$23,616 \$19,752 |  |  | \$50,388 | \$1,067,940 | \$2,321,100 | \$3,445,920 | \$6,382,224 | \$13,338,108 |
| 75-79 | 1 |  | 1 |  | 2 | 21 | 54 | 161 | 656 | 896 |
|  | \$58,164 | \$23,172 |  |  | \$64,380 | \$372,180 | \$1,012,176 | \$2,432,376 | \$9,747,696 | \$13,710,144 |
| 80-84 |  |  | 1 |  | 1 | 4 | 13 | 85 | 786 | 890 |
|  |  | \$19,908 |  |  | \$25,788 | \$65,004 | \$175,176 | \$1,143,012 | \$10,641,492 | \$12,070,380 |
| 85-90 |  |  | 1 |  |  | 2 | 7 | 22 | 682 | 714 |
|  |  | \$17,292 |  |  |  | \$42,324 | \$122,664 | \$312,708 | \$8,691,396 | \$9,186,384 |
| 90+ |  |  |  |  |  |  |  | 3 | 472 | 475 |
|  |  |  |  |  |  |  |  | \$68,520 | \$5,699,532 | \$5,768,052 |
| Total | 24 | 38 | 49 | 51 | 66 | 455 | 706 | 852 | 3561 | 5802 |
|  | \$777,528 | \$988,392 | \$1,061,580 | \$1,440,756 | \$1,438,272 | \$10,158,408 | \$13,659,648 | \$14,675,172 | \$49,137,588 | \$93,337,344 |


| Averages | ----- | Attained Age | 71.46 |
| :--- | :--- | :--- | ---: |
|  |  | Years Retired | 22.71 |
|  |  | Average Benefit | $\$ 16,087$ |

## LASERS MEMBERSHIP PROFILE

Terminated Vested

CELLS DEPICT - MEMBER COUNT
TOTAL BENEFITS


| Averages | ----- | Attained Age |
| :--- | :--- | ---: |
|  | Service Years | 50.31 |
|  | Average Benefit | $\$ 12.57$ |
|  |  |  |

## EXHIBIT 5

## 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 do 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 $1 / 10$ th, 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.

## EXHIBIT 5 (Continued)

## Summary of Plan Provisions

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 the earned compensation of a member and credited to the individual account in the employee's savings account, together with regular interest credited prior to July 1971.

## EXHIBIT 5 (Continued)

## Summary of Plan Provisions

EMPLOYEE CONTRIBUTIONS:

| Plan | Current Contribution |
| :--- | :---: |
| Regular Employees and Appellate Law Clerks |  |
| 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 | $13 \%$ |
| 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 | $9.0 \%$ |

## 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.

## NORMAL RETIREMENT ELIGIBILITY AND BENEFIT:

Members whose first employment which makes them eligible for membership in a Louisiana state retirement system 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 employment which makes them eligible for membership in a Louisiana state retirement system occurs between January 1, 2011 and 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 $2.5 \%$.

## EXHIBIT 5 (Continued)

## Summary of Plan Provisions

Members whose first employment which makes them eligible for membership in a Louisiana state retirement system 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 8/15/1986: Eligible with 10 years at age 60 or 20 years at any age. Benefit accrual rate is $2.5 \%$.
b. Corrections Primary, hired between $8 / 15 / 1986$ and $12 / 31 / 2001$ : 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 $12 / 31 / 2001$, 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 $6 / 1 / 2014$ and $3.33 \%$ for service earned after 6/30/2014.
d. Corrections Secondary Plan, hired after 1/1/2002, 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 July 1, 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.

## EXHIBIT 5 (Continued)

## Summary of Plan Provisions

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 Service 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 as follows:

| Age | Maximum | Age | Maximum | Age |  | Maximum |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 48 | $\$ 62,674$ | 56 | $\$ 122,937$ | 64 | $\$$ | 210,000 |
| 49 | 68,035 | 57 | 134,139 | 65 |  | 210,000 |
| 50 | 73,895 | 58 | 146,473 | 66 | 210,000 |  |
| 51 | 80,309 | 59 | 160,071 | 67 | 210,000 |  |
| 52 | 87,329 | 60 | 175,083 | 68 | 210,000 |  |
| 53 | 95,025 | 61 | 191,670 | 69 | 210,000 |  |
| 54 | 103,469 | 62 | 210,000 | 70 | 210,000 |  |
| 55 | 112,745 | 63 | 210,000 |  |  |  |

## 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 during the prior year. All credits are limited as follows:

## EXHIBIT 5 (Continued)

## Summary of Plan Provisions

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

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 CPI-U for the twelve-month period ending on the system's valuation date, or an amount determined by the system's funded ratio:

| Funded Ratio | PBI Increase Limit |
| :---: | :---: |
| $<55 \%$ | $0 \%$ |
| $55 \%$ to $<65 \%$ | $1.5 \%$ |
| $65 \%$ to $<75 \%$ | $2.0 \%$ |
| $75 \%$ to $<80 \%$ | $2.5 \%$ |
| $80 \%+$ | $3.0 \%$ |

Beginning July 1, 2015, any increase is limited to the first $\$ 60,000$ of a retiree's annual benefit, increased annually by the CPI-U for the 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 $1 / 1 / 2011$. 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 by reason of 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: disabilities incurred in the line of duty may retire with $60 \%$ of their final average compensation, regardless of years of service. Otherwise, benefits paid according to (1) above.

## EXHIBIT 5 (Continued)

## Summary of Plan Provisions

4) Members of the Corrections Secondary Plan with disabilities incurred in the line of duty may retire with $40 \%$ of their final average compensation regardless of service. 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. Disabilities incurred not in the line of duty determined according to (1) above.
5) For certain Wildlife agents; partial disabilities not eligible for (1) above receive $75 \%$ of the benefit in (1); members totally disabled while in the line of duty receive $60 \%$ of average compensation.
6) Members of the Hazardous Duty Plan with disabilities incurred in the line of duty may retire with $75 \%$ of their final average compensation, regardless of years of service Disabilities incurred not in the line of duty paid according to (1) above.
7) Members of the Harbor Police Plan with disabilities incurred in the line of duty receive $60 \%$ of final average compensation. Disabilities incurred not in the line of duty pay $40 \%$ of final average compensation if under age 55, and regular retirement allowance if age 55 or greater.

## SURVIVOR'S BENEFITS:

Members whose first employment which makes them eligible for membership in a Louisiana state retirement system 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 spouses 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 handicapped or mentally retarded 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. 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 eligible to receive a survivor benefit, named beneficiary receives accumulated contributions.

## EXHIBIT 5 (Continued)

## Summary of Plan Provisions

Members whose first employment which makes them eligible for membership in a Louisiana state retirement system 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 regardless of date earned, 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 regardless of date earned, 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 handicapped or mentally retarded children continue to receive a minor child's benefit described above in (1a) or (1c) 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 members 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 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. 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.

## EXHIBIT 5 (Continued)

## Summary of Plan Provisions

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. 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.

## EXHIBIT 5 (Continued)

## Summary of Plan Provisions

## 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 is 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.

## EXHIBIT 6

## 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 Statement of Assets and Statement of Revenue and Expenses provided by the accounting staff was the final draft prior to publication. If these statements differ from the final audit report by a margin that affects employer contribution rate or the yield to the actuarial value of assets, a revised actuarial report will be issued.

## ADMINISTRATIVE EXPENSES:

Administrative expenses are not explicitly assumed but rather funded in accordance with R.S. 11 Section 102, which by omission of language regarding the funding of administrative expenses precludes funding of these expenses by a direct allocation through the employer contribution rate. These expenses are instead funded through the employer rate as an experience loss which is amortized over a 30 -year period. The investment return assumption is reduced by 15 basis points to reflect administrative expenses that are paid from plan assets and not otherwise recognized. Therefore these expenses and the resulting experience losses are expected to be offset by long-term investment earnings. The adjustment to the discount rate is in accordance with Actuarial Standard of Practice Statement 27, (paragraph 3.8.3.e.)

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

## 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 2009-2013. The recommended assumption changes based on this study were adopted by the Board, effective July 1, 2014. The experience study report, dated January 16, 2014, provides further information regarding the rationale for these assumptions. The current rate tables are illustrated at the end of this exhibit.

## EXHIBIT 6 (Continued)

## Cost Methods \& Assumptions

## DISCOUNT RATE / INVESTMENT EARNINGS:

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

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

Based on a historical review of administrative expenses relative to plan assets, it is assumed that 15 basis points will be used to offset administrative expenses. Based on a historical review of investment earnings, with modifications for the current statutory provisions regarding transfers to the experience account and future allowable benefit increases, it is expected that a long-term average of approximately 25 basis points will be transferred to the experience account. A forward looking projection using historical volatility and the plan's projected assets confirmed this conclusion. The analysis is supported by the system's expected long-term rate of return on alternative investments, and capital market assumptions provided by the Board's investment consultant for all other assets, with a $3.0 \%$ inflation component, which results in an expected long-term geometric average nominal rate of return of $8.46 \%$. After adjusting for gain-sharing and administrative expenses, this return is expected to provide $8.06 \%$ for regular plan funding. Exhibit 3 of this report provides expected real rates of return by asset class.

## MORTALITY ASSUMPTIONS:

The mortality table for non-disabled retirees is based upon the RP-2000 table with mortality improvement projected through 2015 using scale AA, based on plan experience. The adjustment for mortality improvement anticipates future improvements in mortality beyond the measurement date. This table was determined to be appropriate relative to actual experience and adopted by the Board following the most recent experience study.

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

## DISABILITY ASSUMPTION:

Rates of total and permanent disability, based upon attained age, are projected in accordance with the most recent experience study.

## RETIREMENT/DROP ASSUMPTION:

Eligibility for normal retirement benefits and DROP participation is based on age and service requirements that vary by plan.

## EXHIBIT 6 (Continued)

## Cost Methods \& Assumptions

## TERMINATION ASSUMPTIONS:

Voluntary termination or withdrawal rates are based on the most recent experience study. Rates for Regular members and Corrections/Hazardous Duty members are based on a combination of age and service. Rates for Judges and Wildlife are based on service. For members terminating with vested benefits, it is assumed that $20 \%$ will elect to withdraw their accumulated employee 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 most recent experience study. The rates include anticipated productivity growth, merit adjustments, and a $3 \%$ 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 <br> Member | Number of <br> Minor <br> Children | Years for Youngest <br> Child to Attain <br> 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. The rates, shown below, are based on the most recent experience study.

|  | Regular <br> Retirement | Disability |
| :--- | :---: | :---: |
| Regular Members | $3.5 \%$ | $1.5 \%$ |
| Judicial Members | $1.0 \%$ | $1.0 \%$ |
| Corrections | $5.0 \%$ | $3.0 \%$ |
| Wildlife | $6.0 \%$ | $3.0 \%$ |

## Actuarial Assumptions, effective July 1, 2014 Regular Members

|  | DEATH RATES |  | $\begin{aligned} & \text { DISABILITY } \\ & \text { RATES } \end{aligned}$ | TERMINATION RATES |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| AGE | MALE | FEMALE |  | $\begin{gathered} <1 \\ \text { YEAR } \end{gathered}$ | $\begin{gathered} \hline 1 \\ \text { YEAR } \end{gathered}$ | $\begin{gathered} 2-3 \\ \text { YEARS } \end{gathered}$ | $\begin{gathered} \hline 4-5 \\ \text { YEARS } \end{gathered}$ | $\begin{gathered} 6 \\ \text { YEARS } \end{gathered}$ | $\begin{gathered} 7 \\ \text { YEARS } \end{gathered}$ | $\begin{gathered} \hline 8 \\ \text { YEARS } \end{gathered}$ | $\begin{gathered} 9 \\ \text { YEARS } \end{gathered}$ | $\begin{gathered} 10+ \\ \text { YEARS } \end{gathered}$ |
| 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 |

## Actuarial Assumptions, effective July 1, 2014 Regular Members

| AGE | RETIREMENT/DROP RATES |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | < 10 | 10-19 | 20-24 | 25-29 | 30+ |
|  | YOS | YOS | YOS | YOS | YOS |
| 18 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 19 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 20 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 21 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 22 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 23 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 24 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 25 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 26 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 27 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 28 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 29 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 30 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 31 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 32 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 33 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 34 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 35 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 36 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 37 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 38 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 39 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 40 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 41 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 42 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 43 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 44 | 0.000 | 0.000 | 0.020 | 0.030 | 0.000 |
| 45 | 0.000 | 0.000 | 0.020 | 0.030 | 0.030 |
| 46 | 0.000 | 0.000 | 0.020 | 0.030 | 0.030 |
| 47 | 0.000 | 0.000 | 0.020 | 0.030 | 0.500 |
| 48 | 0.000 | 0.000 | 0.020 | 0.060 | 0.500 |
| 49 | 0.000 | 0.000 | 0.020 | 0.070 | 0.500 |
| 50 | 0.000 | 0.000 | 0.030 | 0.070 | 0.430 |
| 51 | 0.000 | 0.000 | 0.030 | 0.070 | 0.400 |
| 52 | 0.000 | 0.000 | 0.030 | 0.080 | 0.470 |
| 53 | 0.000 | 0.000 | 0.030 | 0.120 | 0.440 |
| 54 | 0.000 | 0.000 | 0.060 | 0.280 | 0.470 |
| 55 | 0.000 | 0.000 | 0.080 | 0.550 | 0.300 |
| 56 | 0.000 | 0.000 | 0.080 | 0.320 | 0.250 |
| 57 | 0.000 | 0.000 | 0.080 | 0.300 | 0.220 |
| 58 | 0.000 | 0.000 | 0.080 | 0.280 | 0.200 |
| 59 | 0.000 | 0.000 | 0.250 | 0.350 | 0.180 |
| 60 | 0.100 | 0.330 | 0.550 | 0.300 | 0.240 |
| 61 | 0.250 | 0.180 | 0.210 | 0.180 | 0.220 |
| 62 | 0.250 | 0.160 | 0.200 | 0.180 | 0.250 |
| 63 | 0.250 | 0.160 | 0.150 | 0.250 | 0.250 |
| 64 | 0.250 | 0.170 | 0.150 | 0.180 | 0.250 |
| 65 | 0.250 | 0.240 | 0.250 | 0.250 | 0.250 |
| 66 | 0.250 | 0.160 | 0.250 | 0.200 | 0.300 |
| 67 | 0.250 | 0.230 | 0.300 | 0.180 | 0.350 |
| 68 | 0.250 | 0.230 | 0.100 | 0.180 | 0.200 |
| 69 | 0.250 | 0.230 | 0.250 | 0.400 | 0.200 |
| 70 | 0.750 | 0.230 | 0.250 | 0.350 | 0.250 |
| 71 | 0.750 | 0.230 | 0.250 | 0.350 | 0.250 |
| 72 | 0.750 | 0.230 | 0.250 | 0.350 | 0.250 |
| 73 | 0.750 | 0.230 | 0.250 | 0.350 | 0.250 |
| 74 | 0.750 | 0.230 | 0.250 | 0.350 | 0.250 |


|  |  |
| :---: | :---: |
| DUR | SALARY <br> INCREASE |
| $\mathbf{0}$ | 0.1300 |
| $\mathbf{1}$ | 0.0800 |
| $\mathbf{2}$ | 0.0700 |
| $\mathbf{3}$ | 0.0650 |
| $\mathbf{4}$ | 0.0600 |
| $\mathbf{5}$ | 0.0575 |
| $\mathbf{6}$ | 0.0555 |
| $\mathbf{7}$ | 0.0540 |
| $\mathbf{8}$ | 0.0530 |
| $\mathbf{9}$ | 0.0520 |
| $\mathbf{1 0}$ | 0.0510 |
| $\mathbf{1 1}$ | 0.0500 |
| $\mathbf{1 2}$ | 0.0490 |
| $\mathbf{1 3}$ | 0.0480 |
| $\mathbf{1 4}$ | 0.0470 |
| $\mathbf{1 5}$ | 0.0460 |
| $\mathbf{1 6}$ | 0.0450 |
| $\mathbf{1 7}$ | 0.0440 |
| $\mathbf{1 8}$ | 0.0430 |
| $\mathbf{1 9}$ | 0.0420 |
| $\mathbf{2 0}$ | 0.0410 |
| $\mathbf{2 1}$ | 0.0400 |
| $\mathbf{2 2}$ | 0.0400 |
| $\mathbf{2 3}$ | 0.0400 |
| $\mathbf{2 4}$ | 0.0400 |
| $\mathbf{2 5}$ | 0.0400 |
| $\mathbf{2 6}$ | 0.0400 |
| $\mathbf{2 7}$ | 0.0400 |
| $\mathbf{2 8}$ | 0.0400 |
| $\mathbf{2 9}$ | 0.0400 |
| $\mathbf{3 0}$ | 0.0400 |
| $\mathbf{3 1}$ | 0.0400 |
| $\mathbf{3 2}$ | 0.0400 |
| $\mathbf{3 3}$ | 0.0400 |
| $\mathbf{3 4}$ | 0.0400 |
| $\mathbf{3 5}$ | 0.0400 |
| $\mathbf{3 6}$ | 0.0400 |
| $\mathbf{3 7}$ | 0.0400 |
| $\mathbf{3 8}$ | 0.0400 |
| $\mathbf{3 9}$ | 0.0400 |
| $\mathbf{4 0}$ | 0.0400 |
| $\mathbf{4 1}$ | 0.0400 |
| $\mathbf{4 2}$ | 0.0400 |
| $\mathbf{4 3}$ | 0.0400 |
| $\mathbf{4 4}$ | 0.0400 |
| $\mathbf{4 5}$ | 0.0400 |
| $\mathbf{4 6}$ | 0.0400 |
| $\mathbf{4 7}$ | 0.0400 |
| $\mathbf{4 8}$ | 0.0400 |
| $\mathbf{4 9}$ | 0.0400 |
| $\mathbf{5 0}$ | 0.0400 |
| $\mathbf{5 1}$ | 0.0400 |
| $\mathbf{5 3}$ | 0.0400 |
| $\mathbf{5 4}$ | 0.0400 |
| $\mathbf{5 5}$ | 0.0400 |
| $\mathbf{5 6}$ | 0.0400 |
|  |  |

## Actuarial Assumptions, effective July 1, 2014 Judges

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


| DUR | TERMINATION RATES | SALARY INCREASE |
| :---: | :---: | :---: |
| 0 | 0.000 | 0.055 |
| 1 | 0.030 | 0.030 |
| 2 | 0.040 | 0.030 |
| 3 | 0.030 | 0.030 |
| 4 | 0.020 | 0.030 |
| 5 | 0.010 | 0.030 |
| 6 | 0.010 | 0.030 |
| 7 | 0.010 | 0.030 |
| 8 | 0.010 | 0.030 |
| 9 | 0.010 | 0.030 |
| 10 | 0.010 | 0.030 |
| 11 | 0.010 | 0.030 |
| 12 | 0.010 | 0.030 |
| 13 | 0.010 | 0.030 |
| 14 | 0.010 | 0.030 |
| 15 | 0.010 | 0.030 |
| 16 | 0.010 | 0.030 |
| 17 | 0.010 | 0.030 |
| 18 | 0.010 | 0.030 |
| 19 | 0.010 | 0.030 |
| 20 | 0.010 | 0.030 |
| 21 | 0.010 | 0.030 |
| 22 | 0.010 | 0.030 |
| 23 | 0.010 | 0.030 |
| 24 | 0.010 | 0.030 |
| 25 | 0.010 | 0.030 |
| 26 | 0.010 | 0.030 |
| 27 | 0.010 | 0.030 |
| 28 | 0.010 | 0.030 |
| 29 | 0.010 | 0.030 |
| 30 | 0.010 | 0.030 |
| 31 | 0.010 | 0.030 |
| 32 | 0.010 | 0.030 |
| 33 | 0.010 | 0.030 |
| 34 | 0.010 | 0.030 |
| 35 | 0.010 | 0.030 |
| 36 | 0.010 | 0.030 |
| 37 | 0.010 | 0.030 |
| 38 | 0.010 | 0.030 |
| 39 | 0.010 | 0.030 |
| 40 | 0.010 | 0.030 |
| 41 | 0.010 | 0.030 |
| 42 | 0.010 | 0.030 |
| 43 | 0.010 | 0.030 |
| 44 | 0.010 | 0.030 |
| 45 | 0.010 | 0.030 |
| 46 | 0.010 | 0.030 |
| 47 | 0.010 | 0.030 |
| 48 | 0.010 | 0.030 |
| 49 | 0.010 | 0.030 |
| 50 | 0.010 | 0.030 |
| 51 | 0.010 | 0.030 |
| 52 | 0.010 | 0.030 |
| 53 | 0.010 | 0.030 |
| 54 | 0.010 | 0.030 |
| 55 | 0.010 | 0.030 |
| 56 | 0.010 | 0.030 |

## Actuarial Assumptions, effective July 1, 2014 Corrections/Hazardous Duty

| AGE | DEATH RATES |  | $\begin{aligned} & \text { DISABILITY } \\ & \text { RATES } \\ & \hline \end{aligned}$ | RETIREMENT/DROP RATES |  | $\begin{aligned} & \hline \text { TERMINATION } \\ & \text { RATES } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 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 |
| 19 | 0.00025 | 0.00015 | 0.0000 | 0.200 | 0.250 | 0.50 | 0.00 |
| 20 | 0.00026 | 0.00015 | 0.0000 | 0.200 | 0.250 | 0.46 | 0.00 |
| 21 | 0.00027 | 0.00015 | 0.0000 | 0.200 | 0.250 | 0.42 | 0.00 |
| 22 | 0.00028 | 0.00015 | 0.0000 | 0.200 | 0.250 | 0.38 | 0.00 |
| 23 | 0.00030 | 0.00016 | 0.0000 | 0.200 | 0.250 | 0.35 | 0.10 |
| 24 | 0.00031 | 0.00016 | 0.0000 | 0.200 | 0.250 | 0.32 | 0.10 |
| 25 | 0.00032 | 0.00017 | 0.0000 | 0.200 | 0.250 | 0.29 | 0.10 |
| 26 | 0.00035 | 0.00018 | 0.0000 | 0.200 | 0.250 | 0.27 | 0.10 |
| 27 | 0.00035 | 0.00019 | 0.0000 | 0.200 | 0.250 | 0.25 | 0.10 |
| 28 | 0.00037 | 0.00020 | 0.0000 | 0.200 | 0.250 | 0.23 | 0.10 |
| 29 | 0.00038 | 0.00021 | 0.0000 | 0.200 | 0.250 | 0.21 | 0.10 |
| 30 | 0.00041 | 0.00023 | 0.0000 | 0.200 | 0.250 | 0.20 | 0.10 |
| 31 | 0.00046 | 0.00027 | 0.0000 | 0.200 | 0.250 | 0.20 | 0.10 |
| 32 | 0.00052 | 0.00031 | 0.0000 | 0.200 | 0.250 | 0.20 | 0.10 |
| 33 | 0.00059 | 0.00034 | 0.0000 | 0.200 | 0.250 | 0.20 | 0.08 |
| 34 | 0.00065 | 0.00037 | 0.0000 | 0.200 | 0.250 | 0.20 | 0.08 |
| 35 | 0.00072 | 0.00040 | 0.0020 | 0.200 | 0.250 | 0.20 | 0.08 |
| 36 | 0.00078 | 0.00043 | 0.0020 | 0.200 | 0.250 | 0.18 | 0.06 |
| 37 | 0.00084 | 0.00046 | 0.0020 | 0.200 | 0.250 | 0.18 | 0.06 |
| 38 | 0.00088 | 0.00048 | 0.0020 | 0.200 | 0.250 | 0.18 | 0.06 |
| 39 | 0.00092 | 0.00052 | 0.0020 | 0.200 | 0.250 | 0.18 | 0.06 |
| 40 | 0.00096 | 0.00056 | 0.0025 | 0.200 | 0.250 | 0.18 | 0.05 |
| 41 | 0.00100 | 0.00062 | 0.0025 | 0.200 | 0.250 | 0.18 | 0.05 |
| 42 | 0.00105 | 0.00068 | 0.0025 | 0.200 | 0.250 | 0.18 | 0.05 |
| 43 | 0.00110 | 0.00075 | 0.0025 | 0.200 | 0.250 | 0.18 | 0.05 |
| 44 | 0.00117 | 0.00082 | 0.0025 | 0.200 | 0.250 | 0.18 | 0.06 |
| 45 | 0.00124 | 0.00088 | 0.0025 | 0.200 | 0.250 | 0.17 | 0.06 |
| 46 | 0.00131 | 0.00095 | 0.0025 | 0.200 | 0.250 | 0.17 | 0.06 |
| 47 | 0.00138 | 0.00101 | 0.0025 | 0.200 | 0.250 | 0.17 | 0.06 |
| 48 | 0.00146 | 0.00109 | 0.0025 | 0.200 | 0.250 | 0.17 | 0.06 |
| 49 | 0.00154 | 0.00118 | 0.0030 | 0.200 | 0.250 | 0.17 | 0.07 |
| 50 | 0.00163 | 0.00130 | 0.0030 | 0.350 | 0.200 | 0.13 | 0.07 |
| 51 | 0.00184 | 0.00145 | 0.0030 | 0.100 | 0.250 | 0.13 | 0.07 |
| 52 | 0.00197 | 0.00163 | 0.0050 | 0.250 | 0.350 | 0.13 | 0.07 |
| 53 | 0.00215 | 0.00184 | 0.0050 | 0.250 | 0.350 | 0.13 | 0.07 |
| 54 | 0.00236 | 0.00209 | 0.0050 | 0.300 | 0.350 | 0.13 | 0.10 |
| 55 | 0.00272 | 0.00241 | 0.0075 | 0.300 | 0.350 | 0.13 | 0.10 |
| 56 | 0.00320 | 0.00282 | 0.0075 | 0.300 | 0.350 | 0.13 | 0.10 |
| 57 | 0.00363 | 0.00323 | 0.0075 | 0.300 | 0.350 | 0.13 | 0.10 |
| 58 | 0.00414 | 0.00364 | 0.0075 | 0.300 | 0.350 | 0.13 | 0.10 |
| 59 | 0.00467 | 0.00412 | 0.0075 | 0.300 | 0.350 | 0.13 | 0.10 |
| 60 | 0.00530 | 0.00469 | 0.0000 | 0.450 | 0.500 | 0.13 | 0.10 |
| 61 | 0.00612 | 0.00539 | 0.0000 | 0.400 | 0.500 | 0.13 | 0.10 |
| 62 | 0.00698 | 0.00618 | 0.0000 | 0.400 | 0.500 | 0.13 | 0.10 |
| 63 | 0.00810 | 0.00709 | 0.0000 | 0.400 | 0.500 | 0.13 | 0.10 |
| 64 | 0.00913 | 0.00800 | 0.0000 | 0.400 | 0.500 | 0.13 | 0.10 |
| 65 | 0.01031 | 0.00900 | 0.0000 | 0.350 | 0.500 | 0.13 | 0.10 |
| 66 | 0.01184 | 0.01016 | 0.0000 | 0.350 | 0.500 | 0.13 | 0.10 |
| 67 | 0.01321 | 0.01128 | 0.0000 | 0.350 | 0.500 | 0.13 | 0.10 |
| 68 | 0.01446 | 0.01247 | 0.0000 | 0.350 | 0.500 | 0.13 | 0.10 |
| 69 | 0.01603 | 0.01378 | 0.0000 | 0.350 | 0.500 | 0.13 | 0.10 |
| 70 | 0.01770 | 0.01553 | 0.0000 | 0.500 | 0.500 | 0.13 | 0.10 |
| 71 | 0.01959 | 0.01698 | 0.0000 | 0.500 | 0.500 | 0.13 | 0.10 |
| 72 | 0.02175 | 0.01888 | 0.0000 | 0.500 | 0.500 | 0.13 | 0.10 |
| 73 | 0.02422 | 0.02067 | 0.0000 | 0.500 | 0.500 | 0.13 | 0.10 |
| 74 | 0.02702 | 0.02291 | 0.0000 | 0.500 | 0.500 | 0.13 | 0.10 |


|  |  |
| :---: | :---: |
| DUR | SALARY |
| INCREASE |  |$|$| $\mathbf{0}$ | 0.1450 |
| :---: | :---: |
| $\mathbf{1}$ | 0.0835 |
| $\mathbf{2}$ | 0.0700 |
| $\mathbf{3}$ | 0.0690 |
| $\mathbf{4}$ | 0.0640 |
| $\mathbf{5}$ | 0.0630 |
| $\mathbf{6}$ | 0.0625 |
| $\mathbf{7}$ | 0.0620 |
| $\mathbf{8}$ | 0.0615 |
| $\mathbf{9}$ | 0.0610 |
| $\mathbf{1 0}$ | 0.0605 |
| $\mathbf{1 1}$ | 0.0600 |
| $\mathbf{1 2}$ | 0.0595 |
| $\mathbf{1 3}$ | 0.0590 |
| $\mathbf{1 4}$ | 0.0585 |
| $\mathbf{1 5}$ | 0.0580 |
| $\mathbf{1 6}$ | 0.0575 |
| $\mathbf{1 7}$ | 0.0570 |
| $\mathbf{1 8}$ | 0.0565 |
| $\mathbf{1 9}$ | 0.0560 |
| $\mathbf{2 0}$ | 0.0555 |
| $\mathbf{2 1}$ | 0.0550 |
| $\mathbf{2 2}$ | 0.0550 |
| $\mathbf{2 3}$ | 0.0545 |
| $\mathbf{2 4}$ | 0.0545 |
| $\mathbf{2 5}$ | 0.0550 |
| $\mathbf{2 6}$ | 0.0550 |
| $\mathbf{2 7}$ | 0.0460 |
| $\mathbf{2 8}$ | 0.0460 |
| $\mathbf{2 9}$ | 0.0455 |
| $\mathbf{3 0}$ | 0.0360 |
| $\mathbf{3 1}$ | 0.0360 |
| $\mathbf{3 2}$ | 0.0360 |
| $\mathbf{3 3}$ | 0.0360 |
| $\mathbf{3 4}$ | 0.0360 |
| $\mathbf{3 5}$ | 0.0360 |
| $\mathbf{3 6}$ | 0.0360 |
| $\mathbf{3 7}$ | 0.0360 |
| $\mathbf{3 8}$ | 0.0360 |
| $\mathbf{3 9}$ | 0.0360 |
| $\mathbf{4 0}$ | 0.0360 |
| $\mathbf{4 1}$ | 0.0360 |
| $\mathbf{4 2}$ | 0.0360 |
| $\mathbf{4 3}$ | 0.0360 |
| $\mathbf{4 4}$ | 0.0360 |
| $\mathbf{4 5}$ | 0.0360 |
| $\mathbf{4 6}$ | 0.0360 |
| $\mathbf{4 7}$ | 0.0360 |
| $\mathbf{4 8}$ | 0.0360 |
| $\mathbf{4 9}$ | 0.0360 |
| $\mathbf{5 0}$ | 0.0360 |
| $\mathbf{5 3}$ | 0.0360 |
| $\mathbf{5 4}$ | 0.0360 |
| $\mathbf{5 5}$ | 0.0360 |
|  | 0.0360 |
|  |  |

## Actuarial Assumptions, effective July 1, 2014

 Wildife| AGE | DEATH RATES |  | $\begin{array}{\|c\|} \hline \text { DISABILITY } \\ \text { RATES } \\ \hline \end{array}$ | RETIREMENT/DROP RATES |  | DUR | TERMINATIONRATES | SALARY INCREASE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MALE | FEMALE |  | <25 YOS | >= 25 YOS |  |  |  |
| 18 | 0.00024 | 0.00015 | 0.0000 | 0.200 | 0.250 | 0 | 0.080 | 0.1450 |
| 19 | 0.00025 | 0.00015 | 0.0000 | 0.200 | 0.250 | 1 | 0.080 | 0.0835 |
| 20 | 0.00026 | 0.00015 | 0.0000 | 0.200 | 0.250 | 2 | 0.080 | 0.0700 |
| 21 | 0.00027 | 0.00015 | 0.0000 | 0.200 | 0.250 | 3 | 0.080 | 0.0690 |
| 22 | 0.00028 | 0.00015 | 0.0000 | 0.200 | 0.250 | 4 | 0.050 | 0.0640 |
| 23 | 0.00030 | 0.00016 | 0.0000 | 0.200 | 0.250 | 5 | 0.050 | 0.0630 |
| 24 | 0.00031 | 0.00016 | 0.0000 | 0.200 | 0.250 | 6 | 0.030 | 0.0625 |
| 25 | 0.00032 | 0.00017 | 0.0000 | 0.200 | 0.250 | 7 | 0.030 | 0.0620 |
| 26 | 0.00035 | 0.00018 | 0.0000 | 0.200 | 0.250 | 8 | 0.030 | 0.0615 |
| 27 | 0.00035 | 0.00019 | 0.0000 | 0.200 | 0.250 | 9 | 0.030 | 0.0610 |
| 28 | 0.00037 | 0.00020 | 0.0000 | 0.200 | 0.250 | 10 | 0.030 | 0.0605 |
| 29 | 0.00038 | 0.00021 | 0.0000 | 0.200 | 0.250 | 11 | 0.030 | 0.0600 |
| 30 | 0.00041 | 0.00023 | 0.0000 | 0.200 | 0.250 | 12 | 0.030 | 0.0595 |
| 31 | 0.00046 | 0.00027 | 0.0000 | 0.200 | 0.250 | 13 | 0.030 | 0.0590 |
| 32 | 0.00052 | 0.00031 | 0.0000 | 0.200 | 0.250 | 14 | 0.030 | 0.0585 |
| 33 | 0.00059 | 0.00034 | 0.0000 | 0.200 | 0.250 | 15 | 0.030 | 0.0580 |
| 34 | 0.00065 | 0.00037 | 0.0000 | 0.200 | 0.250 | 16 | 0.030 | 0.0575 |
| 35 | 0.00072 | 0.00040 | 0.0020 | 0.200 | 0.250 | 17 | 0.030 | 0.0570 |
| 36 | 0.00078 | 0.00043 | 0.0020 | 0.200 | 0.250 | 18 | 0.030 | 0.0565 |
| 37 | 0.00084 | 0.00046 | 0.0020 | 0.200 | 0.250 | 19 | 0.030 | 0.0560 |
| 38 | 0.00088 | 0.00048 | 0.0020 | 0.200 | 0.250 | 20 | 0.030 | 0.0555 |
| 39 | 0.00092 | 0.00052 | 0.0020 | 0.200 | 0.250 | 21 | 0.030 | 0.0550 |
| 40 | 0.00096 | 0.00056 | 0.0025 | 0.200 | 0.250 | 22 | 0.030 | 0.0550 |
| 41 | 0.00100 | 0.00062 | 0.0025 | 0.200 | 0.250 | 23 | 0.030 | 0.0545 |
| 42 | 0.00105 | 0.00068 | 0.0025 | 0.200 | 0.250 | 24 | 0.030 | 0.0545 |
| 43 | 0.00110 | 0.00075 | 0.0025 | 0.200 | 0.250 | 25 | 0.030 | 0.0550 |
| 44 | 0.00117 | 0.00082 | 0.0025 | 0.200 | 0.250 | 26 | 0.030 | 0.0550 |
| 45 | 0.00124 | 0.00088 | 0.0025 | 0.200 | 0.250 | 27 | 0.030 | 0.0460 |
| 46 | 0.00131 | 0.00095 | 0.0025 | 0.200 | 0.250 | 28 | 0.030 | 0.0460 |
| 47 | 0.00138 | 0.00101 | 0.0025 | 0.200 | 0.250 | 29 | 0.030 | 0.0455 |
| 48 | 0.00146 | 0.00109 | 0.0025 | 0.200 | 0.250 | 30 | 0.030 | 0.0360 |
| 49 | 0.00154 | 0.00118 | 0.0030 | 0.200 | 0.250 | 31 | 0.030 | 0.0360 |
| 50 | 0.00163 | 0.00130 | 0.0030 | 0.350 | 0.200 | 32 | 0.030 | 0.0360 |
| 51 | 0.00184 | 0.00145 | 0.0030 | 0.100 | 0.250 | 33 | 0.030 | 0.0360 |
| 52 | 0.00197 | 0.00163 | 0.0050 | 0.250 | 0.350 | 34 | 0.030 | 0.0360 |
| 53 | 0.00215 | 0.00184 | 0.0050 | 0.250 | 0.350 | 35 | 0.030 | 0.0360 |
| 54 | 0.00236 | 0.00209 | 0.0050 | 0.300 | 0.350 | 36 | 0.030 | 0.0360 |
| 55 | 0.00272 | 0.00241 | 0.0075 | 0.300 | 0.350 | 37 | 0.030 | 0.0360 |
| 56 | 0.00320 | 0.00282 | 0.0075 | 0.300 | 0.350 | 38 | 0.030 | 0.0360 |
| 57 | 0.00363 | 0.00323 | 0.0075 | 0.300 | 0.350 | 39 | 0.030 | 0.0360 |
| 58 | 0.00414 | 0.00364 | 0.0075 | 0.300 | 0.350 | 40 | 0.030 | 0.0360 |
| 59 | 0.00467 | 0.00412 | 0.0075 | 0.300 | 0.350 | 41 | 0.030 | 0.0360 |
| 60 | 0.00530 | 0.00469 | 0.0000 | 0.450 | 0.500 | 42 | 0.030 | 0.0360 |
| 61 | 0.00612 | 0.00539 | 0.0000 | 0.400 | 0.500 | 43 | 0.030 | 0.0360 |
| 62 | 0.00698 | 0.00618 | 0.0000 | 0.400 | 0.500 | 44 | 0.030 | 0.0360 |
| 63 | 0.00810 | 0.00709 | 0.0000 | 0.400 | 0.500 | 45 | 0.030 | 0.0360 |
| 64 | 0.00913 | 0.00800 | 0.0000 | 0.400 | 0.500 | 46 | 0.030 | 0.0360 |
| 65 | 0.01031 | 0.00900 | 0.0000 | 0.350 | 0.500 | 47 | 0.030 | 0.0360 |
| 66 | 0.01184 | 0.01016 | 0.0000 | 0.350 | 0.500 | 48 | 0.030 | 0.0360 |
| 67 | 0.01321 | 0.01128 | 0.0000 | 0.350 | 0.500 | 49 | 0.030 | 0.0360 |
| 68 | 0.01446 | 0.01247 | 0.0000 | 0.350 | 0.500 | 50 | 0.030 | 0.0360 |
| 69 | 0.01603 | 0.01378 | 0.0000 | 0.350 | 0.500 | 51 | 0.030 | 0.0360 |
| 70 | 0.01770 | 0.01553 | 0.0000 | 0.500 | 0.500 | 52 | 0.030 | 0.0360 |
| 71 | 0.01959 | 0.01698 | 0.0000 | 0.500 | 0.500 | 53 | 0.030 | 0.0360 |
| 72 | 0.02175 | 0.01888 | 0.0000 | 0.500 | 0.500 | 54 | 0.030 | 0.0360 |
| 73 | 0.02422 | 0.02067 | 0.0000 | 0.500 | 0.500 | 55 | 0.030 | 0.0360 |
| 74 | 0.02702 | 0.02291 | 0.0000 | 0.500 | 0.500 | 56 | 0.030 | 0.0360 |

## Exhibit 7-A

## AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY

June 30, 2016

| Date | Description | Amtz. <br> Method | Amtz. <br> Period | Years <br> Initial Liability <br> Remain | Remaining <br> Balance | Mid-Year <br> Payment |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2014 | OAB (2013 Reamortization) | Note 1 | 15 | $1,837,878,911$ | 13 | $1,653,893,278$ | $189,244,961$ |
| 2014 | EAAB (2013 Reamortization) | Note 2 | 26 | $2,500,529,447$ | 24 | $2,420,603,021$ | $214,510,835$ |
| 2014 | 2009 Change in Assumptions | L | 25 | $(210,247,288)$ | 23 | $(204,050,816)$ | $(18,570,638)$ |
| 2014 | 2009 Experience Loss | L | 25 | $1,311,211,080$ | 23 | $1,272,566,666$ | $115,816,125$ |
| 2014 | 2010 Experience Loss | L | 26 | $605,996,175$ | 24 | $589,636,070$ | $52,830,615$ |
| 2014 | 2011 Experience Loss | L | 27 | $84,524,828$ | 25 | $82,432,273$ | $7,281,045$ |
| 2014 | 2012 Assumption Change | L | 28 | $351,078,877$ | 26 | $343,100,707$ | $29,911,445$ |
| 2014 | 2012 Experience Loss | L | 28 | $267,736,011$ | 26 | $261,651,785$ | $22,810,746$ |
| 2014 | 2013 Change in Asset Val Method | L | 29 | $(84,353,887)$ | 27 | $(82,592,723)$ | $(7,114,611)$ |
| 2014 | 2013 Experience Gain | L | 29 | $(535,064,013)$ | 27 | $(523,892,798)$ | $(45,128,597)$ |
| 2014 | 2014 Investment Exper Gain | L | 5 | $(418,219,552)$ | 3 | $(269,378,073)$ | $(100,244,534)$ |
| 2014 | 2014 Change in Assumptions | L | 30 | $725,253,130$ | 28 | $711,330,055$ | $60,604,358$ |
| 2014 | 2014 Change in Cost Method | L | 30 | $622,016,608$ | 28 | $610,075,420$ | $51,977,600$ |
| 2014 | 2014 Non-Inv Experience Gain | L | 30 | $(61,187,556)$ | 28 | $(60,012,905)$ | $(5,113,018)$ |
| 2015 | 2015 Experience Gain | L | 30 | $(153,582,892)$ | 29 | $(152,163,680)$ | $(12,833,854)$ |
| 2016 | 2016 Experience Loss | L | 30 | $168,957,714$ | 30 | $168,957,714$ | $14,118,621$ |


| Plan Specific UAL |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2014 | Act 414 - Chg in Lia | L | 23 | 3,352,622 | 21 |  | 3,234,419 |  | 305,122 |
| 2014 | Act 262 - Chg in Lia | L | 4 | 990,515 | 2 |  | 532,157 |  | 286,500 |
| 2014 | Act 740 - Chg in Lia | L | 4 | 279,993 | 2 |  | 150,427 |  | 80,986 |
| 2014 | Act 992-2010 Chg in Lia - Note 3 | L | 6 | 3,476,288 | 4 |  | 2,485,594 |  | 718,942 |
| 2014 | Act 992-2011 Chg in Lia - Note 4 | L | 7 | 351,163 | 5 |  | 268,774 |  | 64,423 |
| 2014 | Act 992-2012 Chg in Lia - Note 5 | L | 8 | 457,303 | 6 |  | 367,175 |  | 75,936 |
| 2014 | Act 852-2014 Chg in Lia - Note 6 | L | 9 | 4,726,302 |  |  | 1,213,580 |  | 721,309 |
| 2016 | Harbor Police - Note 7 | L | 6 | 3,358,474 | 6 |  | 3,358,474 |  | 694,576 |
|  | Total Outstanding Balance |  |  |  |  | \$ | 6,833,766,594 | \$ | 573,048,893 |
| Employers Credit Balance |  |  |  |  |  |  |  |  |  |
| 2014 | 2012 Contribution Variance | L | 2 | 32,865,201 | 1 |  | 11,782,192 |  | 12,230,234 |
| 2014 | 2013 Contribution Variance | L | 3 | 64,968,347 | 2 |  | 34,904,414 |  | 18,791,664 |
| 2014 | 2014 Contribution Variance | L | 4 | 100,910,314 | 3 |  | 64,997,023 |  | 24,187,552 |
| 2015 | 2015 Cont. Variance - Note 8 | L | 5 | - | 4 |  | - |  | - |
| 2016 | 2016 Cont. Variance - Note 8 | L | 5 | - | 5 |  | - |  | - |
|  | Total Credit Balance |  |  |  |  | \$ | 111,683,629 | \$ | 55,209,450 |
| Total Unfunded Actuarial Accrued Liability |  |  |  |  |  | \$ | 6,945,450,223 | \$ | 628,258,343 |

See exhibit 7-D for notes and explanations.

## Exhibit 7-B

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

| Date | Description | Amtz. <br> Method | Amtz. <br> Period | Years <br> Initial Liability | Remaining <br> Remain | Mid-Year <br> Bayment |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2017 | OAB (2013 Reamortization) | Note 1 | 12 | $1,585,628,633$ | 12 | $1,585,628,633$ | $198,266,840$ |
| 2017 | EAAB (2013 Reamortization) | Note 2 | 23 | $2,385,531,722$ | 23 | $2,385,531,722$ | $224,415,570$ |
| 2017 | 200 Change in Assumptions | L | 22 | $(200,587,931)$ | 22 | $(200,587,931)$ | $(18,500,685)$ |
| 2017 | 2009 Experience Loss | L | 22 | $1,250,970,321$ | 22 | $1,250,970,321$ | $115,379,864$ |
| 2017 | 2010 Experience Loss | L | 23 | $580,493,261$ | 23 | $580,493,261$ | $52,625,635$ |
| 2017 | 2011 Experience Loss | L | 24 | $81,262,854$ | 24 | $81,262,854$ | $7,252,002$ |
| 2017 | 2012 Assumption Change | L | 25 | $338,642,125$ | 25 | $338,642,125$ | $29,789,008$ |
| 2017 | 2012 Experience Loss | L | 25 | $258,251,629$ | 25 | $258,251,629$ | $22,717,374$ |
| 2017 | 2013 Change in Asset Val Method | L | 26 | $(81,608,501)$ | 26 | $(81,608,501)$ | $(7,084,774)$ |
| 2017 | 2013 Experience Gain | L | 26 | $(517,649,789)$ | 26 | $(517,649,789)$ | $(44,939,336)$ |
| 2017 | 2014 Change in Assumptions | L | 27 | $703,549,175$ | 27 | $703,549,175$ | $60,344,349$ |
| 2017 | 2014 Change in Cost Method | L | 27 | $603,402,114$ | 27 | $603,402,114$ | $51,754,603$ |
| 2017 | 2014 Investment Exper Gain | L | 2 | $(186,198,344)$ | 2 | $(186,198,344)$ | $(100,198,881)$ |
| 2017 | 2014 Non-Inv Experience Gain | L | 27 | $(59,356,454)$ | 27 | $(59,356,454)$ | $(5,091,082)$ |
| 2017 | 2015 Experience Gain | L | 28 | $(150,634,479)$ | 28 | $(150,634,479)$ | $(12,777,605)$ |
| 2017 | 2016 Experience Loss | L | 29 | $167,396,428$ | 29 | $167,396,428$ | $14,055,487$ |
| 2017 | 2017 Discount Rate Change | L | 30 | $89,692,812$ | 30 | $89,692,812$ | $7,460,851$ |


| Plan Specific UAL |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2017 | Act 414 - Chg in Lia | L | 20 | 3,168,362 | 20 |  | 3,168,362 |  | 304,045 |
| 2017 | Act 262 - Chg in Lia | L | 1 | 276,004 | 1 |  | 276,004 |  | 286,433 |
| 2017 | Act 740 - Chg in Lia | L | 1 | 78,019 | 1 |  | 78,019 |  | 80,967 |
| 2017 | Act 992-2010 Chg in Lia - Note 3 | L | 3 | 1,931,947 | 3 |  | 1,931,947 |  | 718,458 |
| 2017 | Act 992-2011 Chg in Lia - Note 4 | L | 4 | 222,730 | 4 |  | 222,730 |  | 64,366 |
| 2017 | Act 992-2012 Chg in Lia - Note 5 | L | 5 | 316,806 | 5 |  | 316,806 |  | 75,854 |
| 2017 | Act 852-2014 Chg in Lia - Note 6 | L | 1 | 558,895 | 1 |  | 558,895 |  | 580,013 |
| 2017 | Harbor Police - Note 7 | L | 5 | 2,897,767 | 5 |  | 2,897,767 |  | 693,818 |
|  | Total Outstanding Balance |  |  |  |  | \$ | 8,236,106 | \$ | ,273,174 |

## Employers Credit Balance

| 2017 | 2013 Contribution Variance | L | 1 | 18,103,252 | 1 |  | 18,103,252 |  | 18,787,303 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2017 | 2014 Contribution Variance | L | 2 | 44,926,961 | 2 |  | 44,926,961 |  | 24,176,537 |
| 2017 | 2015 Cont. Variance - Note 7 | L | 3 | - | 3 |  | - |  | - |
| 2017 | 2016 Cont. Variance - Note 7 | L | 4 | - | 4 |  | - |  | - |
| 2017 | 2017 Projected Cont. Variance | L | 5 | 31,102,410 | 5 | \$ | 31,102,410 | \$ | 7,446,915 |
|  | otal Contribution Variance Balan |  |  |  |  | \$ | 94,132,623 | \$ | 50,410,755 |
| Total | unded Actuarial Accrued Liabi |  |  |  |  | \$ | 6,952,368,729 | \$ | 648,683,929 |

See exhibit 7-D for notes and explanations.

## Exhibit 7-C

UAL Outstanding Balance and Payment Schedule
Based on June 30, 2016 UAL Schedules *

| FY | UAL <br> Outstanding <br> Balance <br> (Millions) | UAL <br> Mid-Year <br> Payments <br> (Millions) | Payment <br> \% | Change | FY <br> Beginning | UAL <br> Outstanding <br> Balance <br> (Millions) | UAL Mid- <br> Year <br> Payments <br> (Millions) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | | Payment |
| :---: |
| Change |

* Includes the June 30, 2017 projected contribution deficit.



## Exhibit 7-D

## Amortization Schedule 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 consists of the outstanding balance of the Initial Unfunded Accrued Liability (IUAL) and other schedules with negative outstanding balances, and 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, 2014, using a rate of 7.75\%. Projected July 1, 2017 schedules in Exhibit 7-B are based on a $7.70 \%$ rate.

Note 1: The Original Amortization Base includes the following bases that existed prior to Act 497 of 2009: 1993 (Initial 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). 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. Future payments will increase by $5.5 \%$ for 4 years, $5 \%$ for two years, and thereafter at $2 \%$ until paid off in 2029 or before.

Note 2: The Experience Account Amortization Base includes the following bases that existed prior to Act 497 of 2009: 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. The EAAB was reduced by $\$ 50$ Million on June 30, 2013 and re-amortized. Future payments will increase by $5.5 \%$ for 4 years, $5 \%$ for two years, and level thereafter until paid off in 2040 or before.

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

Note 4: Act 992-2011 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.

Note 5: Act 992-2012 Increase in Accrued Liability - Change in normal form of benefits for prior members joining the Hazardous Duty Plan prospectively between July 1, 2011 and June 30, 2012.

Note 6: Act 852 - 2014 Increase in Accrued Liability - Change in benefits for certain probation and parole officers employed by the office of adult services of the Department of Public Safety and Corrections prior to December 31, 2001. An additional payment of $\$ 3,101,201.01$ was paid to LASERS on May 12, 2016 and was used to make an additional payment toward this schedule, per R.S. 11:546, E (3)(b).

Note 7: 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 $12 / 31 / 2016$. The balance will be paid with level quarterly payments.

Note 8: The 2015 contribution variance surplus of $\$ 25,700,989$ was used to reduce the OAB , with no reamortization per Act 399 of 2014. The 2016 contribution variance surplus of $\$ 15,271,071$ was used to reduce the OAB, with no re-amortization per Act 399 of 2014.

## Exhibit 7-E

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

|  | Annual Outstanding Balance |  |  |  |  | Annual Payments |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | IUAL | IUAL <br> Acct | Net IUAL | Other <br> Schedules | Total OAB | IUAL | IUAL Acct | Net <br> IUAL | Other <br> Schedules | Total <br> OAB |
| 2016 | 2,638.7 | -83.9 | 2,554.9 | -885.7 | 1,669.2 | 299.2 | -9.5 | 289.7 | -100.4 | 189.2 |
| 2017 | 2,532.7 | -80.5 | 2,452.2 | -850.1 | 1,602.1 | 314.1 | -10.0 | 304.1 | -105.4 | 198.7 |
| 2018 | 2,402.9 | -76.4 | 2,326.5 | -806.5 | 1,520.0 | 320.4 | -10.2 | 310.2 | -107.5 | 202.7 |
| 2019 | 2,256.5 | -71.7 | 2,184.8 | -757.4 | 1,427.4 | 326.8 | -10.4 | 316.4 | -109.7 | 206.7 |
| 2020 | 2,092.2 | -66.5 | 2,025.7 | -702.2 | 1,323.4 | 333.4 | -10.6 | 322.8 | -111.9 | 210.9 |
| 2021 | 1,908.3 | -60.7 | 1,847.6 | -640.5 | 1,207.1 | 340.0 | -10.8 | 329.2 | -114.1 | 215.1 |
| 2022 | 1,703.2 | -54.1 | 1,649.1 | -571.7 | 1,077.4 | 346.8 | -11.0 | 335.8 | -116.4 | 219.4 |
| 2023 | 1,475.2 | -46.9 | 1,428.3 | -495.2 | 933.1 | 353.8 | -11.2 | 342.5 | -118.7 | 223.8 |
| 2024 | 1,222.3 | -38.9 | 1,183.4 | -410.3 | 773.2 | 360.8 | -11.5 | 349.4 | -121.1 | 228.3 |
| 2025 | 942.5 | -30.0 | 912.5 | -316.3 | 596.2 | 368.1 | -11.7 | 356.4 | -123.5 | 232.8 |
| 2026 | 633.5 | -20.1 | 613.3 | -212.6 | 400.7 | 375.4 | -11.9 | 363.5 | -126.0 | 237.5 |
| 2027 | 292.9 | -9.3 | 283.5 | -98.3 | 185.2 | 304.0 | -9.7 | 294.3 | -102.0 | 192.3 |
| 2028 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2029 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

## 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.


[^0]:    1 Aggregate employer rate for all plans, net of special sub-plan appropriations.

[^1]:    ${ }^{1}$ Dollar amounts reflect estimated payments due mid-year on January 1st per Act 81.
    ${ }^{2}$ Direct UAL payments for Acts 414, 35, 740, and 852 and direct normal cost payment for Act 852.
    ${ }^{3}$ Constitutional Minimum is $12 \%$ without regard to Employer Credits.

