

Mendocino County Employees' Retirement Association

Actuarial Valuation and Review as of June 30, 2016

This report has been prepared at the request of the Board of Retirement to assist in administering the Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Retirement and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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October 24, 2016

Board of Retirement Mendocino County Employees' Retirement Association 625-B Kings Court Ukiah, CA 95482-5027

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2016. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2017/2018 and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices, at the request of the Board to assist in administering the Plan. The census and financial information on which our calculations were based were prepared by MCERA. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. 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 (such as the end of an amortization period); and changes in plan provisions or applicable law.

The actuarial calculations were completed under the supervision of Andy Yeung, ASA, MAAA, FCA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal Consulting, a Member of the Segal Group, Inc.

Bv:

Paul Angelo, FSA, MAAA, FCA, EA Senior Vice President and Actuary

Vice President and Actuary

Andy Yeung, ASA, MAAA, FCA.

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Purpose

This report has been prepared by Segal Consulting to present a valuation of the Mendocino County Employees' Retirement Association as of June 30, 2016. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Retirement Association, as administered by the Board of Retirement;
- > The characteristics of covered active members, inactive vested members, retired members and beneficiaries as of June 30, 2016, provided by the Retirement Association;
- > The assets of the Plan as of June 30, 2016, provided by the Retirement Association;
- > Economic assumptions* regarding future salary increases and investment earnings; and
- > Other actuarial assumptions*, regarding employee terminations, retirement, death, etc. that the Board has adopted for the June 30, 2016 valuation.
 - * Under the Board's practice, these assumptions have been carried over unchanged from the June 30, 2015 valuation. MCERA will conduct a full review of all the assumptions in the 2017 experience study as part of the June 30, 2017 valuation.

One of the general goals of an actuarial valuation is to establish contributions that fully fund the Association's liabilities, and that, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions to evaluate the Association's assets, liabilities and future contribution requirements. Our calculations are based upon member data and financial information provided to us by the Association's staff. This information has not been audited by us, but it has been reviewed and found to be consistent, both internally and with prior year's information.

Ref: Pg. 47

The contribution requirements are determined as a percentage of payroll. The Association's employer rates provide for both normal cost and a payment or credit to amortize any unfunded or overfunded actuarial accrued liabilities. In this valuation, we have applied the Board's funding policy to amortize the outstanding balance of the Association's unfunded actuarial accrued liability (UAAL) from the June 30, 2012 valuation over a declining period, with 23 years remaining as of June 30, 2016. In addition, any new UAAL established after June 30, 2012 has been amortized over separate layers with different amortization periods depending on the source of the layer (gains and losses are amortized over 18 years, as are assumption and method changes). The rates calculated in this report may be adopted by the Board for the fiscal year that extends from July 1, 2017 through June 30, 2018.



Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

Ref: Pgs. 21, 22

> In the June 30, 2015 valuation, the ratio of the valuation value of assets to actuarial accrued liabilities was 70.2%. In this June 30, 2016 valuation, this funding ratio has increased to 70.7%. On a market value basis, the funded ratio decreased from 72.8% to 67.5%.

Ref: Pg. 46

The Association's unfunded actuarial accrued liability (UAAL) as of June 30, 2015 was \$182.2 million. In this year's valuation, the UAAL has increased to \$185.3 million. A reconciliation of the Association's UAAL is provided in Section 3, Exhibit I.

Ref: Pg. 19

The aggregate employer rate calculated in this valuation has decreased from 32.14% of payroll to 32.05% of payroll. The reasons for the change include gains from: (a) change in membership demographics, (b) amortizing the prior year's UAAL over a larger than expected projected total payroll, and (c) other actuarial gains. These gains were partially offset by losses from: (a) lower than expected return on investments (after smoothing) and (b) larger than expected salary increases for continuing General and Probation active members. A reconciliation of the Association's aggregate employer rate is provided in Section 2, Subsection D (see Chart 14).

Ref: Pg. 20

> The aggregate member rate calculated in this valuation has increased slightly from 9.64% of payroll to 9.65% of payroll. The reason for the increase is due to a change in the membership demographics for new General members enrolled in Tier 4 (CalPEPRA Tier). A reconciliation of the Association's aggregate member rate is provided in Section 2, Subsection D (see Chart 15).

The individual member rates have been updated to reflect the valuation as of June 30, 2016. These rates are provided in Appendix A of this report.

Ref: Pg. 5

As indicated in Section 2, Subsection B (see Chart 7), the total unrecognized investment <u>loss</u> as of June 30, 2016 is \$24.7 million (note that in the previous valuation, this amount was a deferred <u>gain</u> of \$11.5 million). This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years. This implies that if the Association earns the assumed net rate of investment return of 7.25% per year on a **market value** basis, there will be investment losses on the actuarial value of assets after June 30, 2016.

The deferred losses of \$24.7 million represent 5.8% of the market value of assets as of June 30, 2016. Unless offset by future investment gains or other favorable experience, the recognition of the \$24.7 million deferred market loss is expected



to have an impact on the Association's future funded percentage and contribution rate requirements. This potential impact may be illustrated as follows:

- If the deferred losses were recognized immediately, and assuming further that the balance in the Contingency Reserve would be included as valuation value of assets, the funded percentage would decrease from 70.7% to 67.5%.
- If the deferred losses were recognized immediately, and assuming further that the balance in the Contingency Reserve would be included as valuation value of assets, the aggregate employer rate would increase from 32.05% to about 34.8% of payroll.
- > The actuarial valuation report as of June 30, 2016 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the actuarial cost of the plan, while increases will decrease the actuarial cost of the plan.

Impact of Future Experience on Contribution Rates

Future contribution requirements may differ from those determined in the valuation because of:

- 1) difference between actual experience and anticipated experience;
- 2) changes in actuarial assumptions or methods;
- 3) changes in statutory provisions; and
- 4) difference between the contribution rates determined by the valuation and those adopted by the Board.



Valuation Summary for the Mendocino County Employees' Retirement Association **SECTION 1:**

| | June | 30, 2016 | June | 30, 2015 | |
|--|-------------------------------|------------------|----------------------|------------------|--|
| Employer Contribution Rates: | | Estimated | Estimated | | |
| 1 0 | Total Rate | Annual Amount(1) | Total Rate | Annual Amount(1) | |
| General Tier 1 | 31.53% | \$285,000 | 32.22% | \$292,000 | |
| General Tier 2/Tier 3 | 28.86% | 9,188,000 | 29.12% | 9,271,000 | |
| General Tier 4 | 25.53% | 4,222,000 | 25.51% | 4,219,000 | |
| Safety Tier 1 | | Not Calcu | lated ⁽²⁾ | | |
| Safety Tier 2 | 57.04% | 4,166,000 | 56.73% | 4,143,000 | |
| Safety Tier 3 | 47.69% | 899,000 | 47.03% | 887,000 | |
| Probation Tier 1 | | Not Calcu | lated ⁽²⁾ | | |
| Probation Tier 2 | 32.48% | 764,000 | 32.44% | 763,000 | |
| Probation Tier 3 | 24.65% | 97,000 | 24.82% | 98,000 | |
| All Categories Combined | 32.05% | \$19,621,000 | 32.14% | \$19,673,000 | |
| Average Member Contribution Rates: | | Estimated | | Estimated | |
| | Total Rate | Annual Amount(1) | Total Rate | Annual Amount(1) | |
| General Tier 1 | 0.98% | \$9,000 | 0.98% | \$9,000 | |
| General Tier 2/Tier 3 | 10.40% | 3,311,000 | 10.42% | 3,317,000 | |
| General Tier 4 | 7.46% | 1,234,000 | 7.34% | 1,214,000 | |
| Safety Tier 1 | Not Calculated ⁽²⁾ | | | | |
| Safety Tier 2 | 11.02% | 805,000 | 11.03% | 806,000 | |
| Safety Tier 3 | 10.58% | 199,000 | 10.79% | 203,000 | |
| Probation Tier 1 | Not Calculated ⁽²⁾ | | | | |
| Probation Tier 2 | 13.40% | 315,000 | 13.46% | 317,000 | |
| Probation Tier 3 | 9.40% | 37,000 | 9.56% | 38,000 | |
| All Categories Combined | 9.65% | \$5,910,000 | 9.64% | \$5,904,000 | |
| Funded Status: | | | | | |
| Actuarial Accrued Liability (AAL) ⁽³⁾ | \$632 | ,057,539 | \$610 |),381,849 | |
| Valuation Value of Assets (VVA) ⁽⁴⁾ | 446,773,272 | | 428,228,929 | | |
| Market Value of Assets (MVA) | 426,338,011 | | 444,217,356 | | |
| Funded Percentage on VVA Basis | 70.7% | | 70.2% | | |
| Funded Percentage on MVA Basis | 67.5% | | 72.8% | | |
| Unfunded Actuarial Accrued Liability (UAAL) on VVA Basis | \$185,284,267 | | \$182,152,920 | | |
| Unfunded Actuarial Accrued Liability (UAAL) on MVA Basis | 205,719,528 | | 166,164,493 | | |
| Key Economic Assumptions: | | | | | |
| Interest Rate | 7.25% | | 7.25% | | |
| Inflation Rate | 3.25% | | 3.25% | | |
| Across-the-Board Salary Increase | | 0.50% | 0.50% | | |

⁽⁴⁾ Excludes Contingency Reserve.



Based on June 30, 2016 projected annual compensation.

There were no Safety Tier 1 or Probation Tier 1 active members reported for the June 30, 2016 valuation.

⁽³⁾ Does not include an additional liability held for the Contingency Reserve.

SECTION 1: Valuation Summary for the Mendocino County Employees' Retirement Association

| | June 30, 2016 | June 30, 2015 | Percentage Change |
|-------------------------------------|---------------|---------------|-------------------|
| Active Members: | | | |
| Number of Members | 1,123 | 1,107 | 1.4% |
| Average Age | 47.0 | 47.2 | N/A |
| Average Service | 9.1 | 9.4 | N/A |
| Projected Total Compensation | \$61,214,954 | \$58,106,396 | 5.3% |
| Average Projected Compensation | \$54,510 | \$52,490 | 3.8% |
| Retired Members and Beneficiaries: | | | |
| Number of Members: | | | |
| Service Retired | 1,090 | 1,057 | 3.1% |
| Disability Retired | 172 | 170 | 1.2% |
| Beneficiaries | 154 | 152 | 1.3% |
| Total | 1,416 | 1,379 | 2.7% |
| Average Age | 68.8 | 68.6 | N/A |
| Average Monthly Benefit | \$1,822 | \$1,768 | 3.1% |
| Vested Terminated Members: | | | |
| Number of Vested Terminated Members | 428 | 414 | 3.4% |
| Average Age | 47.2 | 47.6 | N/A |
| Summary of Financial Data: | | | |
| Market Value of Assets | \$426,338,011 | \$444,217,356 | -4.0% |
| Return on Market Value of Assets* | -2.35% | 3.02% | N/A |
| Actuarial Value of Assets | \$451,044,882 | \$432,679,307 | 4.2% |
| Return on Actuarial Value of Assets | 6.04% | 8.59% | N/A |
| Valuation Value of Assets | \$446,773,272 | \$428,228,929 | 4.3% |
| Return on Valuation Value of Assets | 6.14% | 8.68% | N/A |

^{*} The rates of return have been calculated on a dollar-weighted basis. It is our understanding that MCERA's investment consultant calculates rates of return on a time-weighted basis, which can produce different results. The rates of return determined by the investment consultant were -2.19% as of June 30, 2016 and 3.11% as of June 30, 2015.



Important Information about Actuarial Valuations

In order to prepare an actuarial valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- > <u>Plan of benefits</u> Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report to confirm that Segal has correctly interpreted the plan of benefits.
- > <u>Participant data</u> An actuarial valuation for a plan is based on data provided to the actuary by the Association. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by the Association.
- Actuarial assumptions In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, termination, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- > The valuation is prepared at the request of the Board to assist the sponsors of the Fund in preparing items related to the pension plan in their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- > An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- > If the Association is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.



> Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Retirement Association, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Retirement Association.

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, vested terminated members, retired members and beneficiaries. This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A-E.

A historical perspective of how the member population has changed over the past ten valuations can be seen in this chart.

CHART 1
Member Population: 2007– 2016⁽¹⁾

| Year Ended June 30 | Active Members | Vested Terminated Members ⁽²⁾ | Retired Members and Beneficiaries | Ratio of Non-Actives to Actives |
|-----------------------|-------------------|---|--------------------------------------|---------------------------------|
| 2007 | 1,395 | 407 | 907 | 0.94 |
| 2008 | 1,410 | 411 | 962 | 0.97 |
| 2009 | 1,369 | 412 | 1,008 | 1.04 |
| 2010 | 1,254 | 395 | 1,083 | 1.18 |
| 2011 | 1,129 | 389 | 1,129 | 1.34 |
| 2012 | 1,069 | 356 | 1,217 | 1.47 |
| 2013 | 1,072 | 345 | 1,287 | 1.52 |
| 2014 | 1,081 | 394 | 1,328 | 1.59 |
| 2015 | 1,107 | 414 | 1,379 | 1.62 |
| 2016 | 1,123 | 428 | 1,416 | 1.64 |

⁽¹⁾ Information prior to 2011 has been extracted from the previous actuary's past valuation reports.

Includes pending withdrawals and pending disabilities prior to 2011.



Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 1,123 active members with an average age of 47.0 years, average years of service of 9.1, and average compensation of \$54,510. The 1,107 active members in the prior valuation had an average age of 47.2 years, average service of 9.4 years, and average compensation of \$52,490.

Inactive Members

In this year's valuation, there were 428 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 414 in the prior valuation.

These graphs show a distribution of active members by age and by years of service.

CHART 2
Distribution of Active Members by Age as of June 30, 2016

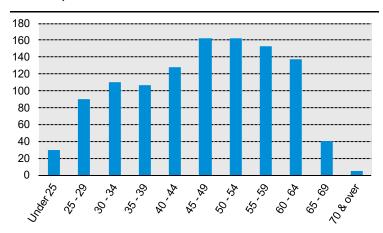
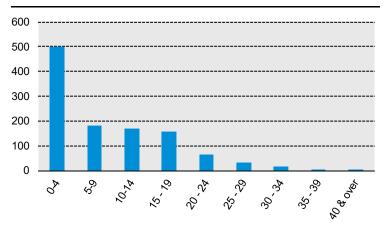


CHART 3
Distribution of Active Members by Years of Service as of June 30, 2016





Retired Members and Beneficiaries

As of June 30, 2016, 1,262 retired members and 154 beneficiaries were receiving total monthly benefits of \$2,580,294. For comparison, in the previous valuation, there were 1,227 retired members and 152 beneficiaries receiving monthly benefits of \$2,437,570.

These graphs show a distribution of the current retired members based on their monthly amount and age, by type of pension.

■ Disability
■ Service

CHART 4

Distribution of Retired Members (Excl. Beneficiaries) by Type and by Monthly Amount as of June 30, 2016

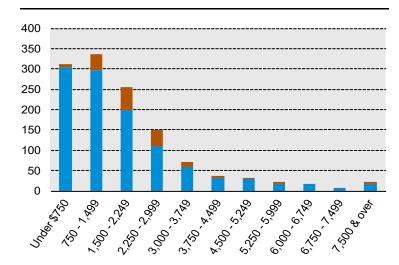
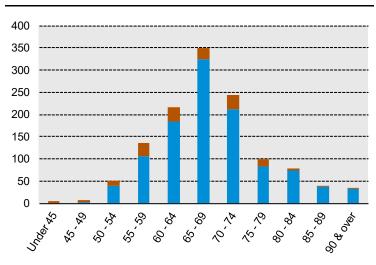


CHART 5

Distribution of Retired Members (Excl. Beneficiaries) by Type and by Age as of June 30, 2016





B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both contributions and net investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components. The adjustment toward market value shown in the chart is the "non-cash" earnings on investments implicitly included in the actuarial value of assets. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits F and G.

The chart depicts the components of changes in the actuarial value of assets over the last eight years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

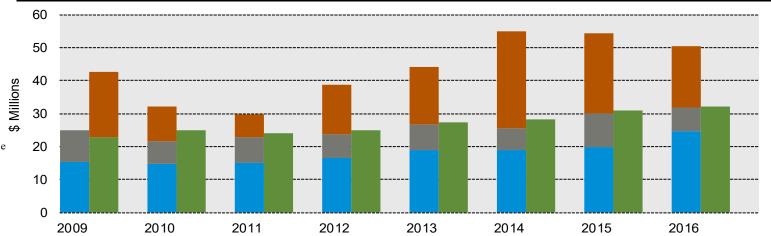
■Adjustment toward market value

■Benefits Paid

■ Net interest and dividends

Contributions

CHART 6 Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 2009 through 2016





It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board of Retirement has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale

of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 7 Determination of Actuarial Value of Assets for Year Ended June 30, 2016

| 1. Market value of assets: | | | | | \$426,338,011 |
|--|---------------|-----------------|----------------|---------------|----------------|
| | Actual Market | Expected Market | Investment | Deferred | Deferred |
| 2. Calculation of deferred return: | Return (net) | Return (net) | Gain / (Loss) | <u>Factor</u> | <u>Return</u> |
| (a) Year ended June 30, 2012 | \$(4,078,489) | \$27,196,991 | \$(31,275,480) | 0% | \$0 |
| (b) Year ended June 30, 2013 | 48,890,492 | 26,235,422 | 22,655,070 | 20% | 4,531,014 |
| (c) Year ended June 30, 2014 | 68,494,950 | 29,334,150 | 39,160,800 | 40% | 15,664,320 |
| (d) Year ended June 30, 2015 | 13,201,309 | 31,658,013 | (18,456,704) | 60% | (11,074,022) |
| (e) Year ended June 30, 2016 | (10,352,325) | 31,932,904 | (42,285,229) | 80% | (33,828,183) |
| (f) Total unrecognized return* | | | | | \$(24,706,871) |
| 3. Preliminary actuarial value of assets: (1) - (2f) | | | | | \$451,044,882 |
| 4. Adjustment to be within 25% corridor of market value | | | | | \$0 |
| 5. Final actuarial value of assets: (3) + (4) | | | | | \$451,044,882 |
| 6. Actuarial value as a percentage of market value: $(5) \div (1)$ | | | | | 105.8% |
| 7. Non-valuation reserves: | | | | | |
| Contingency reserve | | | | | \$4,271,610 |
| 8. Valuation value of assets**: (5) - (7) | | | | | \$446,773,272 |

^{*} The amount of deferred return that will be recognized in each subsequent valuation is as follows (note: amounts may not total exactly due to rounding):

6/30/2017 \$214,787 6/30/2019 (12,148,387) 6/30/2018 (4,316,227) 6/30/2020 (8,457,046) Total \$(24,706,871)

^{**} Note that the valuation value of assets for each of the General, Safety, and Probation membership groups has generally been calculated in proportion to the book value reserves maintained by MCERA for those three membership groups.

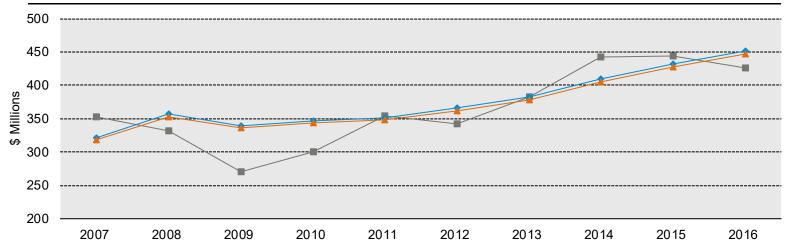


The market value, actuarial value, and valuation value of assets are representations of MCERA's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets, but with less volatility. The valuation value of assets is the actuarial value, excluding any non-valuation reserves. The valuation asset value is significant because MCERA's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in market value, actuarial value and valuation value over the past ten years.

CHART 8

Market Value, Actuarial Value and Valuation Value of Assets as of June 30, 2007 – 2016





Market Value→ Actuarial Value→ Valuation Value

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution

requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total experience loss was \$2.4 million, a net loss of \$4.7 million from investments and a gain of \$2.3 million from all other sources. The net experience variation from individual sources other than investments was 0.4% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 9 Actuarial Experience for Year Ended June 30, 2016

| 1. | Net gain/(loss) from investments (1) | \$(4,702,380) |
|----|---|------------------|
| 2. | Net gain/(loss) from other experience (2) | <u>2,282,412</u> |
| 3. | Net experience gain/(loss): (1) + (2) | \$(2,419,968) |

⁽¹⁾ Details in Chart 10.



⁽²⁾ See Section 3, Exhibit I.

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on MCERA's investment policy. For valuation purposes, the assumed rate of return on the valuation value of assets was 7.25% for the June 30, 2015 valuation. The actual rate of return on a valuation basis for the 2016 plan year was 6.14%.

Since the actual return for the year was less than the assumed return, MCERA experienced an actuarial loss during the year ended June 30, 2016 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 10

Investment Experience for Year Ended June 30, 2016 Valuation Value, Actuarial Value, and Market Value of Assets

| Valuation Value | Actuarial Value | Market Value |
|----------------------|---|---|
| valuation value | Actuariai value | Widiket Value |
| \$26,071,363 | \$25,892,595 | \$(10,352,325) |
| \$424,465,419 | \$428,915,797 | \$440,453,846 |
| 6.14% | 6.04% | (2.35)% |
| 7.25% | 7.25% | 7.25% |
| \$30,773,743 | \$31,096,395 | \$31,932,904 |
| <u>\$(4,702,380)</u> | <u>\$(5,203,800)</u> | <u>\$(42,285,229)</u> |
| | \$424,465,419 6.14% 7.25% \$30,773,743 | \$26,071,363 \$25,892,595 \$424,465,419 \$428,915,797 6.14% 6.04% 7.25% 7.25% \$30,773,743 \$31,096,395 |



Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on a valuation, actuarial, and market value basis for the last ten years. Based on recommendations adopted by the Board on October 15, 2014, we have maintained the assumed long-term rate of return of 7.25% for the June 30, 2016 valuation.

CHART 11
Investment Return – Valuation Value, Actuarial Value and Market Value: 2007 – 2016*

| | Valuatio Investme | n Value nt Return | Actuarial Value Investment Return | | Market Value Investment Return** | |
|-----------------------------|----------------------|----------------------|--------------------------------------|---------|-------------------------------------|----------|
| Year Ended June 30 | Amount | Percent | Amount | Percent | Amount | Percent |
| 2007 | N/A | N/A | N/A | 9.90% | \$50,991,137 | 16.80% |
| 2008 | N/A | N/A | N/A | 6.60% | (28,174,415) | (7.90)% |
| 2009 | N/A | N/A | N/A | 4.90% | (53,511,078) | (16.30)% |
| 2010 | N/A | N/A | N/A | 3.30% | 44,658,046 | 17.00% |
| 2011 | \$11,895,661 | 3.50% | \$14,809,915 | 4.33% | 64,075,101 | 21.68% |
| 2012 | 22,982,960 | 6.69% | 22,205,173 | 6.38% | (4,078,489) | (1.16)% |
| 2013 | 24,720,166 | 6.90% | 25,124,178 | 6.95% | 48,890,492 | 14.44% |
| 2014 | 35,462,137 | 9.48% | 36,055,066 | 9.54% | 68,494,950 | 18.10% |
| 2015 | 34,665,488 | 8.68% | 34,687,586 | 8.59% | 13,201,309 | 3.02% |
| 2016 | 26,071,363 | 6.14% | 25,892,595 | 6.04% | (10,352,325) | (2.35)% |
| Five-Year Average Return | | 7.57% | | 7.49% | | 6.09% |
| Ten-Year Average Return | | N/A | | 6.63% | | 5.59% |

^{*} Information prior to 2011 has been extracted from the previous actuary's past valuation reports.

^{**} The rates of return have been calculated on a dollar-weighted basis. It is our understanding that MCERA's investment consultant calculates rates of return on a time-weighted basis, which can produce different results.



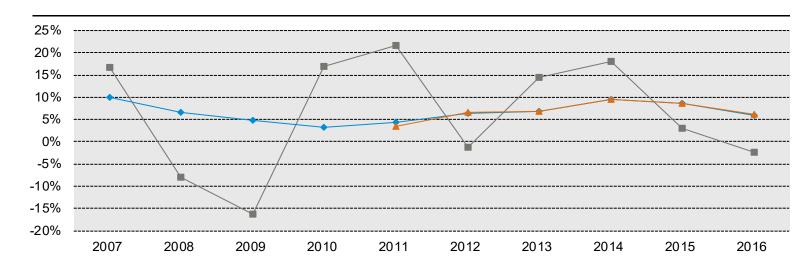
Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

This chart illustrates how this leveling effect has actually worked over the years 2007 - 2016.

Market Value→ Actuarial Value→ Valuation Value

CHART 12

Market, Actuarial and Valuation Value Rates of Return for Years Ended June 30, 2007 – 2016



Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- > actual turnover among the participants,
- > retirement experience (earlier or later than expected),
- > mortality (more or fewer deaths than expected),

- > the number of disability retirements, and
- > salary increases different than assumed.

The net gain from this other experience for the year ended June 30, 2016 amounted to \$2.3 million which is 0.4% of the actuarial accrued liability. See Exhibit I for a detailed development of the Unfunded Actuarial Accrued Liability.

D. EMPLOYER AND MEMBER CONTRIBUTIONS

Employer contributions consist of two components:

Normal Cost

The annual contribution rate that, if paid annually from a member's first year of membership through the year of retirement, would accumulate to the amount necessary to fully fund the member's retirement-related benefits. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution rate is expressed as a level percentage of the member's compensation.

Contribution to the Unfunded Actuarial Accrued Liability (UAAL)

The annual contribution rate that, if paid annually over the UAAL amortization period, would accumulate to the amount necessary to fully fund the UAAL. Accumulation includes annual crediting of interest at the assumed investment earnings rate. The contribution (or rate credit in the case of a negative UAAL) is calculated to remain as a level percentage of future active member payroll (including payroll for new members as they enter the Association) assuming a constant number of active members. In order to remain as a level percentage of payroll, amortization payments (credits) are scheduled to increase at the annual rate of 3.75% (i.e., 3.25% inflation plus 0.50% across-the-board salary increase).

Prior to July 1, 2012, the total UAAL was being amortized on a 30-year decreasing period, with 27 years remaining as of June 30, 2012 (and 23 years remaining as of June 30, 2016). On or after July 1, 2012, any new UAAL resulting from plan amendments are amortized over separate decreasing 15-year periods; early retirement incentive programs (ERIPs) are amortized over separate decreasing 5-year periods; assumption and method changes are amortized over separate decreasing 18-year periods; and experience gains/losses are also amortized over separate decreasing 18-year periods.

Also, under the Board's funding policy adopted on April 17, 2013, in addition to the UAAL contribution rate, an amortization amount equal to the UAAL contribution rate times the covered payroll (as estimated in the actuarial valuation that establishes such UAAL contribution rate) will be calculated for each employer. The final UAAL payment by each employer will be equal to the UAAL contribution rate times the actual covered payroll or the above amortization amount, if greater. This means that



UAAL contribution amounts will be equal to the greater of the UAAL contribution rates developed in Section 2, Chart 13A of this valuation times the actual fiscal year 2017/2018 payroll, or the estimated UAAL annual contribution amounts provided in Section 2, Chart 13B of this valuation. To facilitate the calculation of the minimum UAAL dollar contribution amount, we have provided in Chart 13B a breakdown of the estimated UAAL annual contribution amounts by employer (i.e., County of Mendocino, Mendocino County Superior Court, and Russian River Cemetery District).

On June 19, 2013 the Board adopted an additional change to the actuarial funding policy to anticipate the contribution rate impact that would result from the lag between the date of the actuarial valuation and the date of the contribution rate implementation. In general, the contribution rates determined in an actuarial valuation will apply to the fiscal year beginning 12 months after the valuation date. In compliance with the change in the funding policy, the employer contribution rates developed in this valuation have been adjusted to anticipate the delay in implementing the change in the employer contribution rates determined as of June 30, 2016 for the fiscal year 2017/2018. This adjustment is reflected in the UAAL portion of the June 30, 2016 employer rates.

The recommended employer contribution rates are provided on Chart 13A. The minimum amounts required from each employer to amortize their UAAL are provided in Chart 13B.

Member Contributions:

General Tiers 1, 2, and 3, Safety Tiers 1 and 2, and Probation Tiers 1 and 2

Articles 6 and 6.8 of the 1937 Act define the methodology to be used in the calculation of member basic contribution rates for General Tier 1-3 members and for Safety and Probation Tier 1-2 members, respectively. The basic contribution rate is determined so that the accumulation of a member's basic contributions made in a given year until a certain age will be sufficient to fund an annuity at that age that is equal to 1/100 of Final Average Salary. That age is 60 for General members and 50 for Safety and Probation members. It is assumed that contributions are made annually at the same rate, starting at entry age. In addition to the basic contributions, members



General Tier 4, Safety Tier 3, and Probation Tier 3 pay one-half of the total normal cost necessary to fund cost-of-living benefits. Following practices established by the Association's previous actuary prior to the June 30, 2011 valuation, we have also included a 1.63% of pay offset to the Safety member rates, which is picked up by the County. **No** other subsidies have been reflected in the member contribution rates.

Pursuant to Section 7522.30(a) of the Government Code, General Tier 4, Safety Tier 3, and Probation Tier 3 members are required to contribute at least 50% of the Normal Cost rate. In addition, there are certain additional requirements that would have to be met such as requiring the new employees to pay the contribution rate of "similarly situated employees", if it is greater (reference: Section 7522.30(c)). We further understand that different rules may have to be applied for collectively bargained employees, non-represented, managerial or other supervisory employees (reference: Section 7522.30(e)). In preparing the Normal Cost rates in this report, we have assumed that exactly 50% of the Normal Cost would be paid by the new members and we have taken into account in this valuation only the requirements of Section 7522.30(e), but not requirements of Section 7522.30(e).

Accumulation for all members includes semi-annual crediting of interest at the assumed investment earnings rate.

The member contribution rates are provided in Appendix A.



SECTION 2: Valuation Results for the Mendocino County Employees' Retirement Association

CHART 13A

Recommended Employer Contribution Rates (Estimated Annual Amounts in \$000's)

| | June 30, 2016 | | | | | June | 30, 2015 | |
|---------------------------------|---------------|--|--------------|--|---------------|---|---------------|--|
| | BASIC | | C | DLA | то | TOTAL | | AND COLA IBINED |
| | <u>Rate</u> | Estimated Annual <u>Amount⁽¹⁾</u> | <u>Rate</u> | Estimated Annual <u>Amount⁽¹⁾</u> | <u>Rate</u> | Estimated Annual <u>Amount</u> ⁽¹⁾ | <u>Rate</u> | Estimated Annual <u>Amount⁽¹⁾</u> |
| General Tier 1 Members | | | | | | | | |
| Normal Cost | 10.18% | \$92 | 3.28% | \$30 | 13.46% | \$122 | 14.05% | \$127 |
| UAAL | 14.60% | <u>132</u> | 3.47% | <u>31</u> | <u>18.07%</u> | <u>163</u> | <u>18.17%</u> | <u>165</u> |
| Total Contribution | 24.78% | \$224 | 6.75% | \$61 | 31.53% | \$285 | 32.22% | \$292 |
| General Tier 2 / Tier 3 Members | | | | | | | | |
| Normal Cost | 8.20% | \$2,611 | 2.59% | \$824 | 10.79% | \$3,435 | 10.95% | \$3,486 |
| UAAL | 14.60% | <u>4,648</u> | <u>3.47%</u> | <u>1,105</u> | <u>18.07%</u> | <u>5,753</u> | <u>18.17%</u> | <u>5,785</u> |
| Total Contribution | 22.80% | \$7,259 | 6.06% | \$1,929 | 28.86% | \$9,188 | 29.12% | \$9,271 |
| General Tier 4 Members | | | | | | | | |
| Normal Cost | 7.46% | \$1,234 | 0.00% | \$0 | 7.46% | \$1,234 | 7.34% | \$1,214 |
| UAAL | <u>14.60%</u> | <u>2,414</u> | <u>3.47%</u> | <u>574</u> | <u>18.07%</u> | <u>2,988</u> | <u>18.17%</u> | <u>3,005</u> |
| Total Contribution | 22.06% | \$3,648 | 3.47% | \$574 | 25.53% | \$4,222 | 25.51% | \$4,219 |
| Safety Tier 1 Members | | | | | | | | |
| Normal Cost | | | | | | | | |
| UAAL | | | | Not Calcu | ılated* | | | |
| Total Contribution | | | | | | | | |
| Safety Tier 2 Members | | | | | | | | |
| Normal Cost | 13.81% | \$1,009 | 6.12% | \$446 | 19.93% | \$1,455 | 20.49% | \$1,496 |
| UAAL | <u>23.63%</u> | <u>1,725</u> | 13.48% | <u>986</u> | <u>37.11%</u> | <u>2,711</u> | <u>36.24%</u> | <u>2,647</u> |
| Total Contribution | 37.44% | \$2,734 | 19.60% | \$1,432 | 57.04% | \$4,166 | 56.73% | \$4,143 |

^{*} There were no Safety Tier 1 active members reported for the June 30, 2016 valuation.



SECTION 2: Valuation Results for the Mendocino County Employees' Retirement Association

CHART 13A

Recommended Employer Contribution Rates (Estimated Annual Amounts in \$000's) – continued

| | | | June | 30, 2016 | | | June | 30, 2015 |
|---------------------------------|-------------|--|-------------|--|---------------|--|---------------|--|
| | В | ASIC | C | DLA | то | TAL | | AND COLA IBINED |
| | <u>Rate</u> | Estimated Annual <u>Amount⁽¹⁾</u> | <u>Rate</u> | Estimated Annual <u>Amount⁽¹⁾</u> | <u>Rate</u> | Estimated Annual <u>Amount⁽¹⁾</u> | <u>Rate</u> | Estimated Annual <u>Amount⁽¹⁾</u> |
| Safety Tier 3 Members | | | | | | | | |
| Normal Cost | 10.58% | \$199 | 0.00% | \$0 | 10.58% | \$199 | 10.79% | \$203 |
| UAAL | 23.63% | <u>446</u> | 13.48% | <u>254</u> | <u>37.11%</u> | <u>700</u> | 36.24% | <u>684</u> |
| Total Contribution | 34.21% | \$645 | 13.48% | \$254 | 47.69% | \$899 | 47.03% | \$887 |
| Probation Tier 1 Members | | | | | | | | |
| Normal Cost | | | | | | | | |
| UAAL | | | | Not Calc | ulated* | | | |
| Total Contribution | | | | | | | | |
| Probation Tier 2 Members | | | | | | | | |
| Normal Cost | 12.70% | \$299 | 4.53% | \$106 | 17.23% | \$405 | 17.18% | \$404 |
| UAAL | 12.83% | <u>302</u> | 2.42% | <u>57</u> | <u>15.25%</u> | <u>359</u> | <u>15.26%</u> | <u>359</u> |
| Total Contribution | 25.53% | \$601 | 6.95% | \$163 | 32.48% | \$764 | 32.44% | \$763 |
| Probation Tier 3 Members | | | | | | | | |
| Normal Cost | 9.40% | \$37 | 0.00% | \$0 | 9.40% | \$37 | 9.56% | \$38 |
| UAAL | 12.83% | <u>50</u> | 2.42% | <u>10</u> | <u>15.25%</u> | <u>60</u> | <u>15.26%</u> | <u>60</u> |
| Total Contribution | 22.23% | \$87 | 2.42% | \$10 | 24.65% | \$97 | 24.82% | \$98 |



^{*} There were no Probation Tier 1 active members reported for the June 30, 2016 valuation.

CHART 13A

Recommended Employer Contribution Rates (Estimated Annual Amounts in \$000's) – continued

| | | | June 3 | 30, 2016 | | | June 30 |), 2015 |
|----------------------|---------------|---|-------------|---|-------------|--|------------------|--|
| | В | ASIC | CC | DLA | то | TAL | BASIC AN COMB | |
| | <u>Rate</u> | Estimated Annual <u>Amount</u> ⁽¹⁾ | <u>Rate</u> | Estimated Annual <u>Amount</u> ⁽¹⁾ | <u>Rate</u> | Estimated Annual <u>Amount⁽¹⁾</u> | <u>Rate</u> | Estimated Annual <u>Amount⁽¹⁾</u> |
| All Members Combined | | | | | | | | |
| Normal Cost | 8.95% | \$5,481 | 2.30% | \$1,406 | 11.25% | \$6,887 | 11.38% | \$6,968 |
| UAAL | <u>15.88%</u> | <u>9,717</u> | 4.92% | <u>3,017</u> | 20.80% | 12,734 | 20.76% | <u>12,705</u> |
| Total Contribution | 24.83% | \$15,198 | 7.22% | \$4,423 | 32.05% | \$19,621 | 32.14% | \$19,673 |

(1) Amounts are based on the following June 30, 2016 projected annual compensation:

| General Tier 1 | \$905,180 |
|-------------------------|--------------|
| General Tier 2 / Tier 3 | 31,837,751 |
| General Tier 4 | 16,537,110 |
| Safety Tier 1 | 0 |
| Safety Tier 2 | 7,302,962 |
| Safety Tier 3 | 1,885,570 |
| Probation Tier 1 | 0 |
| Probation Tier 2 | 2,353,257 |
| Probation Tier 3 | 393,124 |
| Total | \$61,214,954 |

Note that a breakdown of the employer minimum dollar contribution to amortize the UAAL by membership group (General/Safety/Probation) and employer (County of Mendocino/Mendocino County Superior Court/Russian River Cemetery District) is provided on the next page.



CHART 13B

Recommended Minimum Dollar Employer Contribution To Amortize the UAAL (Estimated Annual Amounts in \$000's)

| | | June 30, 2016 | |
|----------------------|----------------|--------------------------|-------------------|
| | Est | imated UAAL Annual Amour | nt ⁽¹⁾ |
| | BASIC | COLA | TOTAL |
| General Members | | | |
| County | \$6,740 | \$1,603 | \$8,343 |
| Courts | 421 | 100 | 521 |
| Cemetery District | <u>33</u> | <u>7</u> | <u>40</u> |
| Total | \$7,194 | \$1,710 | \$8,904 |
| Safety Members | | | |
| County | <u>\$2,171</u> | <u>\$1,240</u> | <u>\$3,411</u> |
| Total | \$2,171 | \$1,240 | \$3,411 |
| Probation Members | | | |
| County | <u>\$352</u> | <u>\$67</u> | <u>\$419</u> |
| Total | \$352 | \$67 | \$419 |
| All Members Combined | | | |
| County | \$9,263 | \$2,910 | \$12,173 |
| Courts | 421 | 100 | 521 |
| Cemetery District | <u>33</u> | 7 | <u>40</u> |
| Total | \$9,717 | \$3,017 | \$12,734 |

⁽¹⁾ Amounts are based on the following June 30, 2016 projected annual compensation:

| General County | \$46,174,911 |
|---------------------------|--------------|
| General Courts | 2,882,128 |
| General Cemetery District | 223,002 |
| Safety County | 9,188,532 |
| Probation County | 2,746,381 |
| Total | \$61,214,954 |



The employer contribution rates as of June 30, 2016 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Recommended Employer Contribution

The chart below details the changes in the recommended employer contribution from the prior valuation to the current year's valuation.

The chart reconciles the employer contribution from the prior valuation to the amount determined in this valuation.

CHART 14
Reconciliation of Recommended Employer Contribution from June 30, 2015 to June 30, 2016

| | Contribution Rate | Estimated Amount ⁽¹⁾ |
|---|----------------------|---------------------------------|
| Recommended Contribution Rate as of June 30, 2015 | 32.14% | \$19,673,000 |
| Effect of actuarial experience during fiscal year 2016: | | |
| 1. Effect of change in membership demographics | (0.13)% | \$(81,000) |
| 2. Effect of anticipated one-year delay in implementing the lower aggregate employer contribution rate developed in the June 30, 2016 valuation until fiscal year 2017/2018 | $0.00\%^{(2)}$ | 0 |
| 3. Effect of investment loss | 0.58% | 355,000 |
| 4. Effect of higher than expected salary increases for continuing General and Probation active members | 0.29% | 178,000 |
| 5. Effect of amortizing prior year's UAAL over a larger than expected projected total payroll | (0.31)% | (190,000) |
| 6. Effect of other experience gains ⁽³⁾ | (0.52)% | (314,000) |
| Subtotal | (0.09)% | \$(52,000) |
| Recommended Contribution Rate as of June 30, 2016 | 32.05% | \$19,621,000 |

⁽¹⁾ Based on June 30, 2016 projected compensation.

⁽³⁾ Roughly one-half of the experience gains is due to changes in continuance eligibility for beneficiaries of continuing retired members. The remainder is due to more than expected deaths and other net experience gains.



⁽²⁾ The effect is less than 0.01%.

The member contribution rates as of June 30, 2016 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Recommended Member Contribution Rate

The chart below details the changes in the recommended member contribution rate from the prior valuation to the current year's valuation.

The chart reconciles the member contribution from the prior valuation to the amount determined in this valuation.

CHART 15
Reconciliation of Recommended Member Contribution from June 30, 2015 to June 30, 2016

| | Contribution Rate | Estimated Amount* |
|--|-------------------|-------------------|
| Average Contribution Rate as of June 30, 2015 | 9.64% | \$5,904,000 |
| Effect of actuarial experience during fiscal year 2016: | | |
| 1. Effect of change in membership demographics for new General members enrolled in Tier 4 (CalPEPRA Tier) | 0.01% | \$6,000 |
| Subtotal | 0.01% | \$6,000 |
| Average Contribution Rate as of June 30, 2016 | 9.65% | \$5,910,000 |

^{*} Based on June 30, 2016 projected compensation.



E. FUNDED RATIO

A critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the Plan as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors. The chart below depicts a history of the funded ratios for this plan.

The funded status measures shown in this valuation are appropriate for assessing the need for or amount of future contributions. However, they are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of setting the Plan's benefit obligations. As the chart below shows, the measures are different depending on whether the valuation value or market value of assets is used.

CHART 16
Funded Ratio for Plan Years Ending June 30, 2007 – 2016

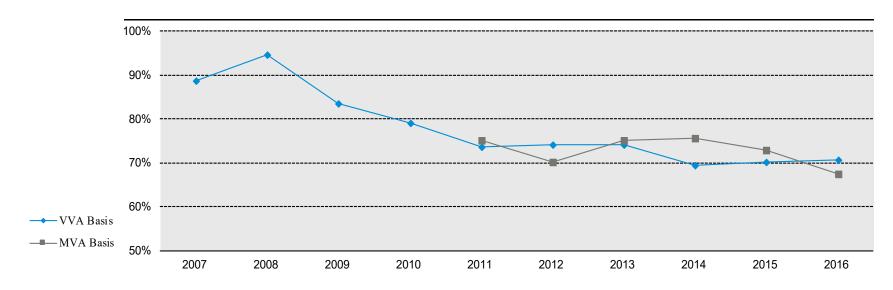




CHART 17 Schedule of Funding Progress⁽¹⁾

| Actuarial Valuation Date | Valuation Value of Assets ⁽²⁾ (a) | Actuarial Accrued Liability (AAL) (b) | Unfunded/ (Overfunded) AAL (UAAL) (b) - (a) | Funded Ratio (%) (a) / (b) | Covered Payroll ⁽³⁾ (c) | UAAL as a Percentage of Covered Payroll (%) [(b) - (a)] / (c) |
|--------------------------------|---|---|---|----------------------------------|--|---|
| 6/30/2007 | \$317,936,703 | \$358,259,082 | \$40,322,379 | 88.7% | \$65,899,000(4) | 61.2% |
| 6/30/2008 | 353,420,714 | 373,832,395 | 20,411,681 | 94.5 | 70,880,333 | 28.8 |
| 6/30/2009 | 336,262,500 | 403,195,980 | 66,933,480 | 83.4 | 72,235,097 | 92.7 |
| 6/30/2010 | 343,201,920 | 434,986,533 | 91,784,613 | 78.9 | 69,004,002 | 133.0 |
| 6/30/2011 | 347,731,607 | 472,644,283 | 124,912,676 | 73.6 | 64,143,765 | 194.7 |
| 6/30/2012 | 362,487,345 | 489,014,364 | 126,527,019 | 74.1 | 56,596,088 | 223.6 |
| 6/30/2013 | 378,777,024 | 510,461,279 | 131,684,255 | 74.2 | 56,463,983 | 233.2 |
| 6/30/2014 | 404,855,842 | 584,428,884 | 179,573,042 | 69.3 | 55,876,248 | 321.4 |
| 6/30/2015 | 428,228,929 | 610,381,849 | 182,152,920 | 70.2 | 58,106,396 | 313.5 |
| 6/30/2016 | 446,773,272 | 632,057,539 | 185,284,267 | 70.7 | 61,214,954 | 302.7 |

⁽¹⁾ Information prior to 2011 has been extracted from the previous actuary's past valuation reports.



⁽²⁾ Excludes assets for non-valuation reserves.

⁽³⁾ Beginning 6/30/2011, payroll includes a projection for expected salary increases during the year following the valuation date under the actuarial assumptions used in the valuation.

⁽⁴⁾ Revised to reflect the information in MCERA's 2015-2014 Comprehensive Annual Financial Report for the fiscal years ended June 30, 2015 and 2014. Note that the previous actuary has conflicting payroll amounts in their June 30, 2007 valuation report. This revision does not affect the UAAL as a percentage of covered payroll percentage.

F. VOLATILITY RATIO

Retirement plans are subject to volatility in the level of required contributions. This volatility tends to increase as retirement plans become more mature.

The Asset Volatility Ratio (AVR), which is equal to the market value of assets divided by total payroll, provides an indication of the potential contribution volatility for any given level of investment volatility. A higher AVR indicates that the plan is subject to a greater level of contribution volatility. This is a current measure since it is based on the current level of assets.

For MCERA, the current AVR is about 7.0. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 7.0% of one-year's payroll. Since MCERA amortizes actuarial gains and losses over an 18-year period, there would be a 0.5% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the Actuarial Accrued Liability divided by payroll, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities. For example, if a plan is 50% funded on a market value basis, the liability volatility ratio would be double the asset volatility ratio and the plan sponsor should expect contribution volatility to increase over time as the plan becomes better funded.

The LVR also indicates how volatile contributions will be in response to changes in the Actuarial Accrued Liability due to actual experience or to changes in actuarial assumptions.

For MCERA, the current LVR is about 10.3. This is about 47% higher than the AVR. Therefore, we would expect that contribution volatility will increase over the long-term.

This chart shows how the asset and liability volatility ratios have varied over time.

CHART 18
Volatility Ratios for Years Ended June 30, 2010 – 2016*

| | Asset Volatility Ratios | | | <u>i</u> | <u>Lia</u> | ability Vo | latility Ratio | <u>s</u> |
|--------------------|--------------------------------|--------|-----------|----------|------------|------------|----------------|----------|
| Year Ended June 30 | General | Safety | Probation | Total | General | Safety | Probation | Total |
| 2010 | 4.1 | 5.8 | 5.3 | 4.3 | 5.7 | 10.0 | 6.1 | 6.3 |
| 2011 | 5.0 | 8.7 | 5.9 | 5.5 | 6.7 | 11.6 | 7.7 | 7.4 |
| 2012 | 5.6 | 8.7 | 5.6 | 6.1 | 8.1 | 12.3 | 7.8 | 8.6 |
| 2013 | 6.3 | 9.6 | 6.4 | 6.8 | 8.4 | 12.9 | 7.8 | 9.0 |
| 2014 | 7.4 | 10.6 | 7.9 | 7.9 | 9.7 | 14.6 | 9.6 | 10.5 |
| 2015 | 7.1 | 10.4 | 8.2 | 7.6 | 9.6 | 15.2 | 10.3 | 10.5 |
| 2016 | 6.4 | 9.8 | 7.8 | 7.0 | 9.4 | 15.4 | 10.5 | 10.3 |



^{*} Information for year ended June 30, 2010 has been derived based on information from the previous actuary's past valuation report.

SECTION 3: Supplemental Information for the Mendocino County Employees' Retirement Association

EXHIBIT A

Table of Plan Coverage
i. General Tier 1

| | Year Ende | Year Ended June 30 | | | |
|--------------------------------|-------------|--------------------|---------------------------|--|--|
| Category | 2016 | 2015 | Change Fror Prior Year | | |
| Active members in valuation | | | | | |
| Number | 12 | 11 | 9.1% | | |
| Average age | 60.6 | 60.8 | N/A | | |
| Average service | 34.2 | 34.4 | N/A | | |
| Projected total compensation | \$905,180 | \$757,752 | 19.5% | | |
| Projected average compensation | \$75,432 | \$68,887 | 9.5% | | |
| Member account balances | \$2,552,593 | \$2,404,466 | 6.2% | | |
| Total active vested members | 12 | 11 | 9.1% | | |
| Vested terminated members | | | | | |
| Number | 4 | 6 | -33.3% | | |
| Average age | 59.9 | 60.1 | N/A | | |
| Retired members | | | | | |
| Number in pay status | 316 | 331 | -4.5% | | |
| Average age | 75.2 | 74.9 | N/A | | |
| Average monthly benefit | \$2,432 | \$2,300 | 5.7% | | |
| Disabled members | | | | | |
| Number in pay status | 31 | 31 | 0.0% | | |
| Average age | 71.9 | 70.9 | N/A | | |
| Average monthly benefit | \$1,943 | \$1,886 | 3.0% | | |
| Beneficiaries | | | | | |
| Number in pay status | 76 | 81 | -6.2% | | |
| Average age | 79.8 | 80.2 | N/A | | |
| Average monthly benefit | \$1,242 | \$1,261 | -1.5% | | |



SECTION 3: Supplemental Information for the Mendocino County Employees' Retirement Association

EXHIBIT A

Table of Plan Coverage
ii. General Tiers 2 and 3

| | Year Endo | Year Ended June 30 | | | |
|--------------------------------|--------------|--------------------|---------------------------|--|--|
| Category | 2016 | 2015 | Change Fror Prior Year | | |
| Active members in valuation | | | | | |
| Number | 562 | 634 | -11.4% | | |
| Average age | 51.4 | 50.8 | N/A | | |
| Average service | 12.9 | 12.1 | N/A | | |
| Projected total compensation | \$31,837,751 | \$33,648,551 | -5.4% | | |
| Projected average compensation | \$56,651 | \$53,073 | 6.7% | | |
| Member account balances | \$35,514,902 | \$37,740,834 | -5.9% | | |
| Total active vested members | 488 | 539 | -9.5% | | |
| Vested terminated members | | | | | |
| Number | 303 | 308 | -1.6% | | |
| Average age | 49.5 | 49.4 | N/A | | |
| Retired members | | | | | |
| Number in pay status | 659 | 613 | 7.5% | | |
| Average age | 66.3 | 65.9 | N/A | | |
| Average monthly benefit | \$1,336 | \$1,291 | 3.5% | | |
| Disabled members | | | | | |
| Number in pay status | 80 | 80 | 0.0% | | |
| Average age | 62.7 | 61.7 | N/A | | |
| Average monthly benefit | \$1,607 | \$1,561 | 2.9% | | |
| Beneficiaries | | | | | |
| Number in pay status | 41 | 38 | 7.9% | | |
| Average age | 65.8 | 63.4 | N/A | | |
| Average monthly benefit | \$966 | \$890 | 8.5% | | |



SECTION 3: Supplemental Information for the Mendocino County Employees' Retirement Association

EXHIBIT A

Table of Plan Coverage
iii. General Tier 4

| | Year Ende | | |
|--------------------------------|--------------|--------------|-------------|
| | | | Change From |
| Category | 2016 | 2015 | Prior Year |
| Active members in valuation | | | |
| Number | 369 | 285 | 29.5% |
| Average age | 42.2 | 41.3 | N/A |
| Average service | 1.5 | 1.1 | N/A |
| Projected total compensation | \$16,537,110 | \$12,181,432 | 35.8% |
| Projected average compensation | \$44,816 | \$42,742 | 4.9% |
| Member account balances | \$1,573,875 | \$869,019 | 81.1% |
| Total active vested members | 1* | 0 | N/A |
| Vested terminated members | | | |
| Number | 67 | 48 | 39.6% |
| Average age | 40.2 | 40.4 | N/A |
| Retired members | | | |
| Number in pay status | N/A | N/A | N/A |
| Average age | N/A | N/A | N/A |
| Average monthly benefit | N/A | N/A | N/A |
| Disabled members | | | |
| Number in pay status | N/A | N/A | N/A |
| Average age | N/A | N/A | N/A |
| Average monthly benefit | N/A | N/A | N/A |
| Beneficiaries | | | |
| Number in pay status | N/A | N/A | N/A |
| Average age | N/A | N/A | N/A |
| Average monthly benefit | N/A | N/A | N/A |

^{*} Member purchased additional years of service.



SECTION 3: Supplemental Information for the Mendocino County Employees' Retirement Association

EXHIBIT A

Table of Plan Coverage
iv. Safety Tiers 1 and 2

| | Year Ende | ed June 30 | |
|--------------------------------|-------------|-------------|------------------------|
| Category | 2016 | 2015 | Change From Prior Year |
| Active members in valuation | | | |
| Number | 94 | 104 | -9.6% |
| Average age | 46.4 | 46.0 | N/A |
| Average service | 16.2 | 15.0 | N/A |
| Projected total compensation | \$7,302,962 | \$7,776,909 | -6.1% |
| Projected average compensation | \$77,691 | \$74,778 | 3.9% |
| Member account balances | \$6,697,673 | \$6,701,085 | -0.1% |
| Total active vested members | 87 | 97 | -10.3% |
| Vested terminated members | | | |
| Number | 39 | 39 | 0.0% |
| Average age | 44.1 | 43.5 | N/A |
| Retired members | | | |
| Number in pay status | 85 | 82 | 3.7% |
| Average age | 65.4 | 65.1 | N/A |
| Average monthly benefit | \$2,938 | \$2,904 | 1.2% |
| Disabled members | | | |
| Number in pay status | 58 | 56 | 3.6% |
| Average age | 65.4 | 65.8 | N/A |
| Average monthly benefit | \$3,479 | \$3,241 | 7.3% |
| Beneficiaries | | | |
| Number in pay status | 35 | 31 | 12.9% |
| Average age | 67.2 | 66.9 | N/A |
| Average monthly benefit | \$1,752 | \$1,626 | 7.8% |



SECTION 3: Supplemental Information for the Mendocino County Employees' Retirement Association

EXHIBIT A

Table of Plan Coverage
v. Safety Tier 3

| | Year Ende | ed June 30 | |
|--------------------------------|-------------|-------------|------------------------|
| Category | 2016 | 2015 | Change From Prior Year |
| Active members in valuation | 2010 | 2013 | i iidi i eai |
| Number | 36 | 21 | 71.4% |
| Average age | 31.0 | 30.5 | N/A |
| Average service | 1.6 | 1.4 | N/A |
| Projected total compensation | \$1,885,570 | \$1,085,912 | 73.6% |
| Projected average compensation | \$52,377 | \$51,710 | 1.3% |
| Member account balances | \$307,127 | \$160,172 | 91.7% |
| Total active vested members | 0 | 0 | N/A |
| Vested terminated members | | | |
| Number | 1 | 2 | -50.0% |
| Average age | 32.0 | 33.2 | N/A |
| Retired members | | | |
| Number in pay status | N/A | N/A | N/A |
| Average age | N/A | N/A | N/A |
| Average monthly benefit | N/A | N/A | N/A |
| Disabled members | | | |
| Number in pay status | N/A | N/A | N/A |
| Average age | N/A | N/A | N/A |
| Average monthly benefit | N/A | N/A | N/A |
| Beneficiaries | | | |
| Number in pay status | N/A | N/A | N/A |
| Average age | N/A | N/A | N/A |
| Average monthly benefit | N/A | N/A | N/A |



SECTION 3: Supplemental Information for the Mendocino County Employees' Retirement Association

EXHIBIT A

Table of Plan Coverage
vi. Probation Tiers 1 and 2

| | Year Ende | d June 30 | |
|--------------------------------|-------------|-------------|------------------------|
| Category | 2016 | 2015 | Change From Prior Year |
| Active members in valuation | | | |
| Number | 41 | 45 | -8.9% |
| Average age | 45.3 | 43.5 | N/A |
| Average service | 12.1 | 10.9 | N/A |
| Projected total compensation | \$2,353,257 | \$2,367,098 | -0.6% |
| Projected average compensation | \$57,397 | \$52,602 | 9.1% |
| Member account balances | \$3,319,086 | \$3,211,304 | 3.4% |
| Total active vested members | 36 | 37 | -2.7% |
| Vested terminated members | | | |
| Number | 12 | 10 | 20.0% |
| Average age | 39.0 | 39.8 | N/A |
| Retired members | | | |
| Number in pay status | 30 | 31 | -3.2% |
| Average age | 64.5 | 64.1 | N/A |
| Average monthly benefit | \$2,926 | \$2,833 | 3.3% |
| Disabled members | | | |
| Number in pay status | 3 | 3 | 0.0% |
| Average age | 56.8 | 55.8 | N/A |
| Average monthly benefit | \$2,012 | \$1,954 | 3.0% |
| Beneficiaries | | | |
| Number in pay status | 2 | 2 | 0.0% |
| Average age | 71.4 | 70.4 | N/A |
| Average monthly benefit | \$1,027 | \$997 | 3.0% |



SECTION 3: Supplemental Information for the Mendocino County Employees' Retirement Association

EXHIBIT A

Table of Plan Coverage
vii. Probation Tier 3

| | Year Ende | d June 30 | |
|--------------------------------|-----------|-----------|---------------------------|
| Category | 2016 | 2015 | Change From Prior Year |
| Active members in valuation | | | |
| Number | 9 | 7 | 28.6% |
| Average age | 29.3 | 29.6 | N/A |
| Average service | 1.7 | 1.5 | N/A |
| Projected total compensation | \$393,124 | \$288,742 | 36.2% |
| Projected average compensation | \$43,680 | \$41,249 | 5.9% |
| Member account balances | \$53,636 | \$41,463 | 29.4% |
| Total active vested members | 0 | 0 | N/A |
| Vested terminated members | | | |
| Number | 2 | 1 | 100.0% |
| Average age | 29.9 | 25.7 | N/A |
| Retired members | | | |
| Number in pay status | N/A | N/A | N/A |
| Average age | N/A | N/A | N/A |
| Average monthly benefit | N/A | N/A | N/A |
| Disabled members | | | |
| Number in pay status | N/A | N/A | N/A |
| Average age | N/A | N/A | N/A |
| Average monthly benefit | N/A | N/A | N/A |
| Beneficiaries | | | |
| Number in pay status | N/A | N/A | N/A |
| Average age | N/A | N/A | N/A |
| Average monthly benefit | N/A | N/A | N/A |



EXHIBIT B

Members in Active Service and Projected Average Compensation By Age, Years of Service as of June 30, 2016

i. General Tier 1

| | Years of Service | | | | | | | | | | |
|-----------|------------------|-----|-----|----------|-------|-------|----------|----------|-----------|--|--|
| Age | Total | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35 & over | | |
| Under 25 | | | | | | | | | | | |
| | | | | | | | | | | | |
| 25 - 29 | | | | | | | | | | | |
| | | | | | | | | | | | |
| 30 - 34 | | | | | | | | | | | |
| | | | | | | | | | | | |
| 35 - 39 | | | | | | | | | | | |
| | | | | | | | | | | | |
| 40 - 44 | | | | | | | | | | | |
| | | | | | | | | | | | |
| 45 - 49 | | | | | | | | | | | |
| | | | | | | | | | | | |
| 50 - 54 | 1 | | | | | | | | 1* | | |
| | \$111,231 | | | | | | | | \$111,231 | | |
| 55 - 59 | 3 | | | 1 | | | 1 | 1* | | | |
| | 44,770 | | | \$43,318 | | | \$42,312 | \$48,680 | | | |
| 60 - 64 | 8 | | | | | | | 3 | 5 | | |
| | 82,455 | | | | | | | 96,406 | 74,084 | | |
| 65 - 69 | | | | | | | | | | | |
| | | | | | | | | | | | |
| 70 & over | | | | | | | | | | | |
| | | | | | | | | | | | |
| Total | 12 | | | 1 | | | 1 | 4 | | | |
| | \$75,432 | | | \$43,318 | | | \$42,312 | \$84,474 | \$80,276 | | |

^{*} Members previously enrolled in Tier 3 but have since been updated to reflect their participation in Tier 1 as a result of redepositing their withdrawn contributions.



EXHIBIT B

Members in Active Service and Projected Average Compensation
By Age, Years of Service as of June 30, 2016

ii. General Tiers 2 and 3

| | | Years of Service | | | | | | | | | | | |
|-----------|----------|------------------|----------|----------|----------|----------|----------|----------|-----------|--|--|--|--|
| Age | Total | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35 & over | | | | |
| Under 25 | 1 | 1 | | | | | | | | | | | |
| | \$45,715 | \$45,715 | | | | | | | | | | | |
| 25 - 29 | 9 | 7 | 2 | | | | | | | | | | |
| | 47,423 | 47,379 | \$47,574 | | | | | | | | | | |
| 30 - 34 | 29 | 16 | 9 | 4 | | | | | | | | | |
| | 55,952 | 58,721 | 53,391 | \$50,643 | | | | | | | | | |
| 35 - 39 | 54 | 8 | 20 | 18 | 8 | | | | | | | | |
| | 56,635 | 56,359 | 54,177 | 59,021 | \$57,684 | | | | | | | | |
| 40 - 44 | 57 | 11 | 11 | 16 | 18 | 1 | | | | | | | |
| | 55,977 | 53,022 | 65,776 | 53,729 | 53,580 | \$59,789 | | | | | | | |
| 45 - 49 | 90 | 10 | 21 | 24 | 18 | 12 | 5 | | | | | | |
| | 55,703 | 68,091 | 48,306 | 55,604 | 54,812 | 55,632 | \$65,840 | | | | | | |
| 50 - 54 | 96 | 9 | 22 | 22 | 26 | 10 | 4 | 3 | | | | | |
| | 55,078 | 58,870 | 49,823 | 53,256 | 62,328 | 49,079 | 52,933 | \$55,645 | | | | | |
| 55 - 59 | 92 | 5 | 22 | 24 | 25 | 8 | 5 | 3 | | | | | |
| | 63,035 | 64,146 | 68,984 | 53,030 | 65,439 | 60,006 | 62,641 | 86,291 | | | | | |
| 60 - 64 | 95 | 5 | 27 | 24 | 15 | 13 | 10 | 1 | | | | | |
| | 55,352 | 70,929 | 50,836 | 54,393 | 50,349 | 59,180 | 63,835 | 62,884 | | | | | |
| 65 - 69 | 35 | 1 | 15 | 11 | 7 | 1 | | | | | | | |
| | 54,142 | 50,632 | 51,041 | 58,663 | 54,783 | 49,940 | | | | | | | |
| 70 & over | 4 | 1 | 1 | 1 | | 1 | | | | | | | |
| | 60,071 | 59,117 | 45,573 | 66,516 | | 69,079 | | | | | | | |
| Total | 562 | 74 | 150 | 144 | 117 | 46 | 24 | 7 | | | | | |
| 10.01 | \$56,651 | \$58,742 | \$54,631 | \$55,005 | \$58,186 | \$56,230 | \$62,187 | \$69,813 | | | | | |



EXHIBIT B

Members in Active Service and Projected Average Compensation By Age, Years of Service as of June 30, 2016

iii. General Tier 4

| | | Years of Service | | | | | | | | | | | |
|---------------|----------|------------------|-----|----------|-------|-------|-------|-------|-----------|--|--|--|--|
| Age | Total | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35 & over | | | | |
| Under 25 | 22 | 22 | | | | | | | | | | | |
| | \$34,903 | \$34,903 | | | | | | | | | | | |
| 25 - 29 | 58 | 58 | | | | | | | | | | | |
| | 42,082 | 42,082 | | | | | | | | | | | |
| 30 - 34 | 54 | 54 | | | | | | | | | | | |
| | 41,939 | 41,939 | | | | | -, - | | | | | | |
| 35 - 39 | 34 | 34 | | | | | | | | | | | |
| | 44,306 | 44,306 | | | | | | | | | | | |
| 40 - 44 | 44 | 44 | | | | | | | | | | | |
| | 42,912 | 42,912 | | | | | | | | | | | |
| 45 - 49 | 42 | 42 | | | | | | | | | | | |
| | 45,117 | 45,117 | | | | | | | | | | | |
| 50 - 54 | 40 | 40 | | | | | | | | | | | |
| | 49,139 | 49,139 | | | | | | | | | | | |
| 55 - 59 | 44 | 44 | | | | | | | | | | | |
| | 50,298 | 50,298 | | | | | | | | | | | |
| 60 - 64 | 27 | 26 | | 1* | | | | | | | | | |
| 00 0. | 50,051 | 50,643 | | \$34,660 | | | | | | | | | |
| 65 - 69 | 3 | 3 | | | | | | | | | | | |
| | 54,136 | 54,136 | | | | | | | | | | | |
| 70 & over | 1 | 1 | | | | | | | | | | | |
| , 0 22 0 7 01 | 81,852 | 81.852 | | | | | | | | | | | |
| Total | 369 | 368 | | 1 | | | | | | | | | |
| 10141 | \$44,816 | \$44,844 | | \$34,660 | | | | | | | | | |

^{*} Member purchased additional years of service.



EXHIBIT B

Members in Active Service and Projected Average Compensation

By Age, Years of Service as of June 30, 2016

iv. Safety Tiers 1 and 2

| | Years of Service | | | | | | | | | | | | |
|-----------|------------------|----------|----------|----------|----------|----------|----------|-----------|--|--|--|--|--|
| Age | Total | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 & over | | | | | |
| Under 25 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 25 - 29 | 3 | 1 | 1 | 1 | | | | | | | | | |
| | \$70,390 | \$68,583 | \$70,214 | \$72,373 | | | | | | | | | |
| 30 - 34 | 8 | 5 | 3 | | | | | | | | | | |
| | 66,310 | 65,283 | 68,021 | | | | | | | | | | |
| 35 - 39 | 8 | | 5 | 1 | 2 | | | | | | | | |
| | 69,428 | | 67,430 | 64,288 | \$76,993 | | | | | | | | |
| 40 - 44 | 18 | 1 | 2 | 5 | 9 | 1 | | | | | | | |
| | 82,126 | 69,364 | 73,686 | 72,544 | 92,204 | \$68,978 | | | | | | | |
| 45 - 49 | 25 | | 3 | | 12 | 8 | 2 | | | | | | |
| | 76,053 | | 64,624 | | 68,813 | 89,117 | \$84,387 | | | | | | |
| 50 - 54 | 20 | | 1 | 6 | 5 | 3 | 3 | | | | | | |
| 50 51 | 85,374 | | 78,982 | 78,066 | 79,468 | 90,418 | 91,492 | \$108,512 | | | | | |
| 55 - 59 | 7 | | 1 | 2 | | 1 | 2 | | | | | | |
| 33 37 | 80,961 | | 57,464 | 59,373 | | 87,171 | 106,200 | _ | | | | | |
| 60 - 64 | 5 | | 1 | 1 | 1 | 1 | | , | | | | | |
| 00 - 04 | 70,417 | | 72,123 | 64,290 | 75,223 | 58,548 | | 81,902 | | | | | |
| 65 - 69 | 70,417 | | 72,123 | 04,250 | 73,223 | 50,540 | | 01,702 | | | | | |
| 03 - 09 | | | | | | | | | | | | | |
| 70.0 | | | | | | | | | | | | | |
| 70 & over | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Total | 94 | 7 | 17 | 16 | 29 | 14 | 7 | • | | | | | |
| | \$77,691 | \$66,338 | \$68,308 | \$71,926 | \$78,695 | \$85,635 | \$93,664 | \$97,468 | | | | | |



EXHIBIT B

Members in Active Service and Projected Average Compensation By Age, Years of Service as of June 30, 2016

v. Safety Tier 3

| | | Years of Service | | | | | | | | | | | | |
|-----------|----------|------------------|------|-------|-------|-------|-------|-----------|--|--|--|--|--|--|
| Age | Total | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 & over | | | | | | |
| Under 25 | 6 | 6 | | | | | - | | | | | | | |
| | \$48,209 | \$48,209 | | | | | - | | | | | | | |
| 25 - 29 | 14 | 14 | | | | | - | | | | | | | |
| | 50,117 | 50,117 | | | | | - | | | | | | | |
| 30 - 34 | 10 | 10 | | | | | - | | | | | | | |
| | 52,370 | 52,370 | | | | | - | | | | | | | |
| 35 - 39 | 2 | 2 | | | | | - | | | | | | | |
| | 53,735 | 53,735 | -, - | | | | - | | | | | | | |
| 40 - 44 | 1 | 1 | | | | | - | | | | | | | |
| | 50,892 | 50,892 | | | | | - | | | | | | | |
| 45 - 49 | 1 | 1 | | | | | - | | | | | | | |
| | 49,357 | 49,357 | | | | | - | | | | | | | |
| 50 - 54 | 2 | 2 | | | | | - | | | | | | | |
| | 81,630 | 81,630 | | | | | - | | | | | | | |
| 55 - 59 | | | | | | | - | | | | | | | |
| | | | | | | | _ | | | | | | | |
| 60 - 64 | | | | | | | _ | | | | | | | |
| | | | | | | | _ | | | | | | | |
| 65 - 69 | | | | | | | _ | | | | | | | |
| | | | | | | | _ | | | | | | | |
| 70 & over | | | | | | | _ | | | | | | | |
| | | | | | | | _ | | | | | | | |
| Total | 36 | 36 | | | | | - | | | | | | | |
| 10141 | \$52,377 | \$52,377 | | | | | _ | | | | | | | |



EXHIBIT B

Members in Active Service and Projected Average Compensation By Age, Years of Service as of June 30, 2016

vi. Probation Tiers 1 and 2

| | Years of Service | | | | | | | | | | | |
|-----------------|------------------|----------|----------|----------|----------|----------|----------|-----------|--|--|--|--|
| Age | Total | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 & over | | | | |
| Under 25 | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 25 - 29 | 1 | 1 | | | | | | | | | | |
| | \$47,030 | \$47,030 | | | | | | | | | | |
| 30 - 34 | 7 | 1 | 6 | | | | | | | | | |
| | 52,530 | 45,009 | \$53,783 | | | | | | | | | |
| 35 - 39 | 8 | 1 | 3 | 3 | 1 | | | | | | | |
| | 52,629 | 49,616 | 46,577 | \$57,998 | \$57,689 | | | | | | | |
| 40 - 44 | 7 | 1 | | 3 | 3 | | | | | | | |
| | 58,377 | 53,120 | | 52,087 | 66,420 | | | | | | | |
| 45 - 49 | 4 | | 1 | | 2 | 1 | | | | | | |
| | 58,011 | | 62,828 | | 56,272 | \$56,670 | | | | | | |
| 50 - 54 | 3 | | | | 1 | 1 | 1 | | | | | |
| | 66,708 | | | | 55,349 | 58,845 | \$85,929 | | | | | |
| 55 - 59 | 7 | | 3 | 1 | 3 | | | | | | | |
| | 56,981 | | 58,941 | 56,058 | 55,328 | | | | | | | |
| 60 - 64 | 2 | 1 | 1 | | | | | | | | | |
| | 50,834 | 55,554 | 46,114 | | | | | | | | | |
| 65 - 69 | 2 | ´ | 1 | | | 1 | | | | | | |
| 05 07 | 88,075 | | 55,882 | | | 120,266 | | | | | | |
| 70 & over | | | | | | -, | | | | | | |
| , , , & , , , , | | | | | | | | | | | | |
| Total | 41 | 5 | 15 | 7 | 10 | 3 | 1 | | | | | |
| Total | \$57,397 | \$50,066 | \$53,605 | \$55,188 | \$59,082 | \$78,594 | \$85,929 | | | | | |



EXHIBIT B

Members in Active Service and Projected Average Compensation By Age, Years of Service as of June 30, 2016

vii. Probation Tier 3

| | Years of Service | | | | | | | | | | | | |
|---------------|------------------|----------|-----|-------|-------|-------|-------|-----------|--|--|--|--|--|
| Age | Total | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 & over | | | | | |
| Under 25 | . 1 | . 1 | | | | | - | | | | | | |
| | \$40,159 | \$40,159 | | | | | - | | | | | | |
| 25 - 29 | 5 | 5 | | | | | - | | | | | | |
| | 44,817 | 44,817 | | | | | - | | | | | | |
| 30 - 34 | 2 | 2 | | | | | - | | | | | | |
| | 43,487 | 43,487 | | | | | - | | | | | | |
| 35 - 39 | | | | | | | - | | | | | | |
| | | | | | | | - | | | | | | |
| 40 - 44 | 1 | 1 | | | | | - | | | | | | |
| | 41,908 | 41,908 | | | | | - | | | | | | |
| 45 - 49 | | | | | | | - | | | | | | |
| | | | | | | | - | | | | | | |
| 50 - 54 | | | | | | | - | | | | | | |
| | | | | | | | - | | | | | | |
| 55 - 59 | | | | | | | _ | | | | | | |
| | | | | | | | _ | | | | | | |
| 60 - 64 | | | | | | | _ | | | | | | |
| | | | | | | | _ | | | | | | |
| 65 - 69 | | | | | | | _ | | | | | | |
| 00 0) | | | | | | | _ | | | | | | |
| 70 & over | | | | | | | _ | | | | | | |
| , 5 22 5 7 61 | | | | | | | _ | | | | | | |
| Total | 9 | 9 | | | | | | | | | | | |
| 10141 | \$43,680 | \$43,680 | | | | | | | | | | | |



EXHIBIT C
Schedule of Average Benefit Payment Amounts

| | | Nu | mber of Ye | ears Since F | Retirement | | |
|--|---------|---------|------------|--------------|------------|---------|--------------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 & Over |
| Valuation date: 6/30/2011 | | | | | | | |
| Average Monthly Benefit of Retirees | \$1,872 | \$1,637 | \$1,454 | \$1,502 | \$1,433 | \$1,501 | \$981 |
| Number of Retirees | 351 | 236 | 137 | 111 | 74 | 51 | 33 |
| Average Monthly Benefit of Beneficiaries | \$1,043 | \$1,172 | \$864 | \$1,380 | \$1,402 | \$1,069 | \$947 |
| Number of Beneficiaries | 45 | 35 | 20 | 15 | 9 | 5 | 7 |
| Valuation date: 6/30/2012 | | | | | | | |
| Average Monthly Benefit of Retirees | \$1,841 | \$1,752 | \$1,420 | \$1,462 | \$1,640 | \$1,336 | \$1,356 |
| Number of Retirees | 382 | 277 | 132 | 99 | 85 | 62 | 38 |
| Average Monthly Benefit of Beneficiaries | \$1,167 | \$1,230 | \$806 | \$1,385 | \$1,324 | \$1,150 | \$975 |
| Number of Beneficiaries | 44 | 42 | 19 | 14 | 8 | 8 | 7 |
| Valuation date: 6/30/2013 | | | | | | | |
| Average Monthly Benefit of Retirees | \$1,874 | \$1,870 | \$1,391 | \$1,480 | \$1,706 | \$1,377 | \$1,458 |
| Number of Retirees | 407 | 300 | 148 | 106 | 86 | 52 | 44 |
| Average Monthly Benefit of Beneficiaries | \$1,207 | \$1,236 | \$882 | \$1,248 | \$1,442 | \$1,177 | \$871 |
| Number of Beneficiaries | 46 | 38 | 19 | 20 | 7 | 8 | 6 |
| Valuation date: 6/30/2014 | | | | | | | |
| Average Monthly Benefit of Retirees | \$1,928 | \$1,916 | \$1,433 | \$1,575 | \$1,668 | \$1,517 | \$1,481 |
| Number of Retirees | 411 | 318 | 155 | 112 | 90 | 50 | 48 |
| Average Monthly Benefit of Beneficiaries | \$1,265 | \$1,228 | \$1,064 | \$954 | \$1,786 | \$1,300 | \$699 |
| Number of Beneficiaries | 41 | 39 | 22 | 19 | 8 | 9 | 6 |
| Valuation date: 6/30/2015 | | | | | | | |
| Average Monthly Benefit of Retirees | \$1,986 | \$2,006 | \$1,587 | \$1,570 | \$1,753 | \$1,457 | \$1,610 |
| Number of Retirees | 391 | 329 | 200 | 110 | 94 | 51 | 52 |
| Average Monthly Benefit of Beneficiaries | \$1,308 | \$1,208 | \$1,184 | \$961 | \$1,654 | \$1,226 | \$1,091 |
| Number of Beneficiaries | 46 | 40 | 23 | 16 | 12 | 8 | 7 |
| Valuation date: 6/30/2016 | | | | | | | |
| Average Monthly Benefit of Retirees | \$1,987 | \$2,057 | \$1,831 | \$1,596 | \$1,553 | \$1,742 | \$1,711 |
| Number of Retirees | 388 | 337 | 222 | 118 | 92 | 53 | 52 |
| Average Monthly Benefit of Beneficiaries | \$1,484 | \$1,181 | \$1,134 | \$843 | \$1,484 | \$1,576 | \$1,136 |
| Number of Beneficiaries | 50 | 41 | 23 | 14 | 11 | 8 | 7 |

Note: Final Average Salary is not available.



EXHIBIT D

Average Annual Benefit of Retired Members and Beneficiaries
By Age, Years in Retirement as of June 30, 2016

i. General

| | Years in Retirement | | | | | | | | | |
|-----------|---------------------|----------|----------|----------|----------|----------|----------|-----------|--|--|
| Age | Total | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 & over | | |
| Under 45 | 1 | | 1 | | | | | | | |
| | \$935 | | \$935 | | | | | | | |
| 45 - 49 | 3 | 2 | | 1 | | | | | | |
| | 14,753 | \$10,889 | | \$22,483 | | | | | | |
| 50 - 54 | 47 | 37 | 6 | 2 | | 2 | | | | |
| | 10,965 | 9,871 | 12,665 | 16,518 | | \$20,565 | | | | |
| 55 - 59 | 126 | 67 | 47 | 8 | | 3 | | 1 | | |
| | 16,842 | 19,185 | 13,537 | 15,950 | | 18,910 | | \$16,092 | | |
| 60 - 64 | 217 | 100 | 65 | 41 | 6 | 3 | 2 | | | |
| | 20,985 | 25,222 | 19,458 | 13,625 | \$20,769 | 19,877 | \$11,963 | | | |
| 65 - 69 | 337 | 123 | 112 | 68 | 28 | 3 | 2 | 1 | | |
| | 22,079 | 23,361 | 26,687 | 17,336 | 9,256 | 20,369 | 26,715 | 25,643 | | |
| 70 - 74 | 197 | 33 | 62 | 55 | 25 | 14 | 3 | 5 | | |
| | 20,169 | 19,671 | 21,671 | 23,080 | 13,811 | 14,595 | 22,825 | 18,618 | | |
| 75 - 79 | 92 | 6 | 19 | 19 | 25 | 15 | 6 | 2 | | |
| | 18,976 | 17,602 | 18,121 | 26,001 | 20,054 | 14,175 | 9,081 | 16,716 | | |
| 80 - 84 | 87 | 4 | 7 | 10 | 14 | 30 | 16 | 6 | | |
| | 17,837 | 17,630 | 16,932 | 17,480 | 20,672 | 20,494 | 13,696 | 10,767 | | |
| 85 & over | 96 | 8 | 8 | 3 | 10 | 19 | 16 | 32 | | |
| | 17,824 | 19,475 | 11,393 | 5,181 | 16,892 | 15,623 | 25,485 | 17,972 | | |
| Total | 1,203 | 380 | 327 | 207 | 108 | 89 | 45 | 47 | | |
| | \$19,667 | \$21,182 | \$20,992 | \$18,717 | \$15,636 | \$17,385 | \$18,382 | \$17,191 | | |



EXHIBIT D

Average Annual Benefit of Retired Members and Beneficiaries
By Age, Years in Retirement as of June 30, 2016

ii. Safety

| | Years in Retirement | | | | | | | | | |
|-----------|---------------------|----------|----------|----------|----------|----------|----------|-----------|--|--|
| Age | Total | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 & over | | |
| Under 45 | 7 | 5 | 2 | | | | | | | |
| | \$25,083 | \$26,647 | \$21,173 | | | | | | | |
| 45 - 49 | 5 | 3 | 2 | | | | | | | |
| | 32,433 | 31,303 | 34,127 | | | | | | | |
| 50 - 54 | 17 | 13 | 1 | | 2 | 1 | | | | |
| | 26,632 | 27,702 | 12,503 | | \$27,952 | \$24,220 | | | | |
| 55 - 59 | 23 | 14 | 6 | 2 | 1 | | | | | |
| | 42,813 | 50,506 | 34,466 | \$27,796 | 15,222 | | | | | |
| 60 - 64 | 21 | 4 | 12 | 1 | 1 | 2 | | 1 | | |
| | 50,752 | 27,900 | 73,293 | 4,961 | 11,405 | 23,912 | | \$10,489 | | |
| 65 - 69 | 37 | 5 | 7 | 9 | 9 | 3 | 2 | 2 | | |
| | 33,063 | 44,974 | 57,011 | 22,192 | 24,058 | 25,333 | \$24,659 | 28,916 | | |
| 70 - 74 | 36 | 1 | 4 | 10 | 9 | 3 | 7 | 2 | | |
| | 30,798 | 8,327 | 17,443 | 35,643 | 38,564 | 23,503 | 27,427 | 32,318 | | |
| 75 - 79 | 16 | | 3 | 5 | 1 | 2 | 3 | 2 | | |
| | 33,019 | | 24,317 | 46,788 | 30,484 | 25,841 | 26,860 | 29,337 | | |
| 80 - 84 | 13 | 1 | | 1 | | 3 | 4 | 4 | | |
| | 29,241 | 24,044 | | 17,331 | | 30,908 | 27,562 | 33,946 | | |
| 85 & over | 3 | | 1 | | 1 | | | 1 | | |
| | 24,199 | | 9,548 | | 35,486 | | | 27,562 | | |
| Total | 178 | 46 | 38 | 28 | 24 | 14 | 16 | 12 | | |
| | \$34,574 | \$36,156 | \$46,336 | \$30,999 | \$29,671 | \$25,926 | \$27,008 | \$29,581 | | |



EXHIBIT D

Average Annual Benefit of Retired Members and Beneficiaries By Age, Years in Retirement as of June 30, 2016

iii. Probation

| | Years in Retirement | | | | | | | | | |
|-----------|---------------------|----------|----------|----------|-------|-------|-------|-----------|--|--|
| Age | Total | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 & over | | |
| Under 45 | 1 | | | 1 | | | | | | |
| | \$27,576 | | | \$27,576 | | | | | | |
| 45 - 49 | | | | | | | | | | |
| | | | | | | | | | | |
| 50 - 54 | | | | | | | | | | |
| | | | | | | | | | | |
| 55 - 59 | 8 | 4 | 4 | | | | | | | |
| | 30,318 | \$46,153 | \$14,483 | | | | | | | |
| 60 - 64 | 10 | 3 | 6 | 1 | | | | | | |
| | 32,780 | 49,457 | 27,375 | 15,183 | | | | | | |
| 65 - 69 | 10 | 4 | 2 | 4 | | | | | | |
| | 26,822 | 19,329 | 6,568 | 44,441 | | | | | | |
| 70 - 74 | 5 | | 1 | 4 | | | | | | |
| | 53,178 | | 37,406 | 57,121 | | | | | | |
| 75 - 79 | 1 | 1 | | | | | | | | |
| | 18,382 | 18,382 | | | | | | | | |
| 80 - 84 | | | | | | | | | | |
| | | | | | | | | | | |
| 85 & over | | | | | | | | | | |
| | | | | | | | | | | |
| Total | 35 | 12 | 13 | 10 | | | | | | |
| | \$32,869 | \$35,724 | \$20,978 | \$44,901 | | | | | | |



EXHIBIT E

Reconciliation of Member Data – June 30, 2015 to June 30, 2016

| | Active Members | Vested Terminated Members | Pensioners | Disableds | Beneficiaries | Total |
|-----------------------------------|-------------------|---------------------------------|------------|-----------|---------------|-------|
| Number as of June 30, 2015 | 1,107 | 414 | 1,057 | 170 | 152 | 2,900 |
| New members | 164 | 0 | 0 | 0 | 13 | 177 |
| Terminations – with vested rights | -68 | 68 | 0 | 0 | 0 | 0 |
| Contributions refunds | -40 | -24 | 0 | 0 | 0 | -64 |
| Retirements | -41 | -24 | 65 | 0 | 0 | 0 |
| New disabilities | -3 | 0 | -3 | 6 | 0 | 0 |
| Return to work | 4 | -3 | -1 | 0 | 0 | 0 |
| Died with or without beneficiary | 0 | -1 | -28 | -4 | -10 | -43 |
| Data adjustments | 0 | -2 | 0 | 0 | -1 | -3 |
| Number as of June 30, 2016 | 1,123 | 428 | 1,090 | 172 | 154 | 2,967 |



EXHIBIT F
Summary Statement of Income and Expenses - Actuarial Value Basis

| | | Year Ended | June 30, | |
|--|------------------|---------------------|------------------|----------------|
| | 201 | 2016 | | 5 |
| Contribution Income: | | | | |
| Employer Contributions | \$19,129,191 | | \$15,164,044 | |
| Employee Contributions | <u>5,544,925</u> | | <u>4,651,960</u> | |
| Contribution Income | | \$24,674,116 | | \$19,816,004 |
| Investment Income: | | | | |
| Interest, Dividends and Other Income | \$7,735,536 | | \$10,758,646 | |
| Adjustment Toward Market Value | 18,646,924 | | 24,494,040 | |
| Less Investment Expenses | (489,865) | | (565,100) | |
| Net Investment Income | | <u>\$25,892,595</u> | | \$34,687,586 |
| Total Income Available for Benefits | | \$50,566,711 | | \$54,503,590 |
| Less Benefit Payments: | | | | |
| Benefit Payments and Refunds | \$(31,058,643) | | \$(30,049,133) | |
| Administrative Expenses | (1,142,493) | | (1,059,272) | |
| Net Benefit Payments | | \$(32,201,136) | | \$(31,108,405) |
| Change in Reserve for Future Benefits | | \$18,365,575 | | \$23,395,185 |



EXHIBIT G
Summary Statement of Assets

| | Year Ended June 30, | | | | | | |
|--|---------------------|----------------------|--------------|----------------------|--|--|--|
| ASSETS | 201 | 6 | 2015 | | | | |
| Cash and Cash Equivalents | | \$0 | | \$1,398,150 | | | |
| Accounts Receivable: | | | | | | | |
| Employer Contributions | \$614,064 | | \$545,830 | | | | |
| Member Contributions | <u>175,359</u> | | 113,026 | | | | |
| Total Accounts Receivable | | \$789,423 | | \$658,856 | | | |
| Other Assets | | 149,019 | | 146,739 | | | |
| Equipment | | 1,294,316 | | 0 | | | |
| Investments: | | | | | | | |
| Public Equity Securities | \$52,226,173 | | \$53,190,622 | | | | |
| Real Estate and Real Estate Partnerships | 46,044,183 | | 41,634,670 | | | | |
| Mutual Funds | 328,200,751 | | 347,937,529 | | | | |
| Total Investments at Market Value | | \$426,471,107 | | \$442,762,821 | | | |
| Total Assets | | \$428,703,865 | | \$444,966,566 | | | |
| Less Liabilities: | | | | | | | |
| Accounts Payable | \$(288,422) | | \$(365,017) | | | | |
| Cash Overdraft | (248,482) | | 0 | | | | |
| Accrued Expenses and Other Liabilities | (1,828,950) | | (384,193) | | | | |
| Total Liabilities | | \$(2,365,854) | | \$(749,210) | | | |
| NET ASSETS | | | | | | | |
| Net Assets at Market Value | | <u>\$426,338,011</u> | | <u>\$444,217,356</u> | | | |
| Net Assets at Actuarial Value | | <u>\$451,044,882</u> | | <u>\$432,679,307</u> | | | |
| Net Assets at Valuation Value | | <u>\$446,773,272</u> | | <u>\$428,228,929</u> | | | |

Note: Results may not total properly due to rounding.



EXHIBIT H

Actuarial Balance Sheet

An overview of the Plan's funding is given by an Actuarial Balance Sheet. In this approach, we first determine the amount and timing of all future payments that will be made by the Plan for current participants. We then discount these payments at the valuation interest rate to the date of the valuation, thereby determining their present value. We refer to this present value as the "liability" of the Plan.

Second, we determine how this liability will be met. These actuarial "assets" include the net amount of assets already accumulated by the Plan, the present value of future member contributions, the present value of future employer normal cost contributions, and the present value of future employer amortization payments.

Actuarial Balance Sheet

| Assets | <u>Basic</u> | COLA | <u>Total</u> | |
|---|---------------|---------------|---------------|---|
| 1. Total valuation assets | \$270,895,553 | \$175,877,719 | \$446,773,272 | |
| 2. Present value of future contributions by members | 26,705,838 | 5,838,330 | 32,544,168 | |
| 3. Present value of future employer contributions for: | | | | |
| a. entry age normal cost | 29,617,256 | 7,606,022 | 37,223,278 | |
| b. unfunded actuarial accrued liability | 138,251,048 | 47,033,219 | 185,284,267 | |
| 4. Total current and future assets | \$465,469,695 | \$236,355,290 | \$701,824,985 | |
| Liabilities | | | | |
| Present value of benefits already granted to present retirees and beneficiaries | \$243,819,329 | \$164,958,044 | \$408,777,373 | |
| 6. Present value of benefits to be granted to present non-retired members | 221,650,366 | 71,397,246 | 293,047,612 | |
| 7. Total liabilities | \$465,469,695 | \$236,355,290 | \$701,824,985 | _ |



EXHIBIT I Development of Unfunded Actuarial Accrued Liability as of June 30, 2016

| 1. | Unfunded actuarial accrued liability at beginning of year: | \$182,152,920 |
|----|--|---------------|
| 2. | Total normal cost at middle of year | 12,557,000 |
| 3. | Expected employer and member contributions | (24,656,688) |
| 4. | Interest (whole year on (1) plus half year on (2) + (3)) | 12,811,067 |
| 5. | Expected unfunded actuarial accrued liability at end of year | \$182,864,299 |
| 6. | Actuarial (gain)/loss due to all changes:* | |
| | a. (Gain)/loss from investments as recognized on June 30, 2016 | \$4,702,380 |
| | b. (Gain)/loss from higher than expected salary increases for continuing General and Probations active members | 2,341,542 |
| | c. (Gain)/loss due to one-year delay in implementing employer contribution rates in June 30, 2015 valuation (with interest to end of year)** | (264,082) |
| | d. Other experience (gains)/losses*** | (4,359,872) |
| | e. Subtotal | \$2,419,968 |
| 7. | Actual unfunded actuarial accrued liability at end of year (5) + (6e) | \$185,284,267 |

^{*} The "net gain/(loss) from other experience" of \$2,282,412 from Chart 9 is equal to the sum of items 6b, 6c, and 6d.



^{**} The reduction in employer contribution rate attributable to this gain was included in the employer rate determined in the 2015 valuation.

^{***} Roughly one-half of the experience gains is due to changes in continuance eligibility for beneficiaries of continuing retired members. The remainder is due to more than expected deaths and other net experience gains.

EXHIBIT J

Table of Amortization Bases

| Туре | Date Established | Initial Years | Initial Amount | Outstanding Balance | Years Remaining | Annual Payment* |
|------------------------------|---------------------|------------------|-------------------|------------------------|--------------------|--------------------|
| General | | | | | | |
| Combined Base | 6/30/2012 | 27 | \$96,509,955 | \$101,519,906 | 23 | \$6,446,188 |
| Experience Loss | 6/30/2013 | 18 | 1,308,206 | 1,278,047 | 15 | 110,487 |
| Experience Gain | 6/30/2014 | 18 | (10,922,004) | (10,769,309) | 16 | (886,165) |
| Change in Assumptions/Method | 6/30/2014 | 18 | 41,158,191 | 40,582,778 | 16 | 3,339,401 |
| Experience Gain | 6/30/2015 | 18 | (2,476,999) | (2,463,778) | 17 | (193,709) |
| Experience Loss | 6/30/2016 | 18 | 1,249,423 | 1,249,423 | 18 | 94,177 |
| Total | | | | \$131,397,067 | | \$8,910,379 |
| Safety | | | | | | |
| Combined Base | 6/30/2012 | 27 | \$24,941,466 | \$26,236,208 | 23 | \$1,665,915 |
| Experience Loss | 6/30/2013 | 18 | 2,713,369 | 2,650,817 | 15 | 229,164 |
| Experience Gain | 6/30/2014 | 18 | (489,900) | (483,051) | 16 | (39,748) |
| Change in Assumptions/Method | 6/30/2014 | 18 | 13,983,439 | 13,787,943 | 16 | 1,134,557 |
| Experience Loss | 6/30/2015 | 18 | 4,163,162 | 4,140,942 | 17 | 325,572 |
| Experience Loss | 6/30/2016 | 18 | 1,209,820 | 1,209,820 | 18 | 91,192 |
| Total | | | | \$47,542,679 | | \$3,406,652 |
| Probation | | | | | | |
| Combined Base | 6/30/2012 | 27 | \$5,075,598 | \$5,339,078 | 23 | \$339,014 |
| Experience Gain | 6/30/2013 | 18 | (964,299) | (942,069) | 15 | (81,442) |
| Experience Gain | 6/30/2014 | 18 | (834,449) | (822,783) | 16 | (67,704) |
| Change in Assumptions/Method | 6/30/2014 | 18 | 3,045,283 | 3,002,708 | 16 | 247,081 |
| Experience Gain | 6/30/2015 | 18 | (194,174) | (193,138) | 17 | (15,185) |
| Experience Gain | 6/30/2016 | 18 | (39,275) | (39,275) | 18 | (2,960) |
| Total | | | · | \$6,344,521 | | \$418,804 |

^{*} Level percentage of payroll.



EXHIBIT J (continued)

Table of Amortization Bases

| Туре | Date Established | Initial Years | Initial Amount | Outstanding Balance | Years Remaining | Annual Payment* |
|------------------------------|---------------------|------------------|-------------------|------------------------|--------------------|--------------------|
| Total | | | | | | - |
| Combined Base | 6/30/2012 | 27 | \$126,527,019 | \$133,095,192 | 23 | \$8,451,117 |
| Experience Loss | 6/30/2013 | 18 | 3,057,276 | 2,986,795 | 15 | 258,209 |
| Experience Gain | 6/30/2014 | 18 | (12,246,353) | (12,075,143) | 16 | (993,617) |
| Change in Assumptions/Method | 6/30/2014 | 18 | 58,186,913 | 57,373,429 | 16 | 4,721,039 |
| Experience Loss | 6/30/2015 | 18 | 1,491,989 | 1,484,026 | 17 | 116,678 |
| Experience Loss | 6/30/2016 | 18 | 2,419,968 | 2,419,968 | 18 | 182,409 |
| Total | | | | \$185,284,267 | | \$12,735,835 |

^{*} Level percentage of payroll.

Note: The equivalent single amortization period is about 22 years.



EXHIBIT K

Section 415 Limitations

Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan.

A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for noncompliance is disqualification: active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets.

In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of \$160,000 indexed for inflation. That limit is \$210,000 for 2016. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must generally be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions.

Benefits for members in non-CalPEPRA tiers in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m).

Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

Contributions rates determined in this valuation have not been reduced for the Section 415 limitations. Actual limitations will result in gains as they occur.



EXHIBIT L

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions:

The estimates on which the cost of the Plan is calculated including:

- Investment return the rate of investment yield that the Plan will earn over (a) the long-term future;
- Mortality rates the death rates of employees and pensioners; life (b) expectancy is based on these rates;
- Retirement rates the rate or probability of retirement at a given age; and (c)
- Turnover rates the rates at which employees of various ages are expected (d) to leave employment for reasons other than death, disability, or retirement.

Normal Cost:

The amount of contributions required to fund the level cost allocated to the current year of service.

Actuarial Accrued Liability

For Actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability

For Pensioners:

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded (Overfunded) Actuarial Accrued Liability:

The extent to which the actuarial accrued liability of the Plan exceeds (or is exceeded by) the assets of the Plan. There are many approaches to paying off the unfunded or overfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.



Amortization of the Unfunded (Overfunded) Actuarial Accrued Liability:

Payments made over a period of years equal in value to the Plan's unfunded or

overfunded actuarial accrued liability.

Investment Return: The rate of earnings of the Plan from its investments, including interest, dividends and

capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one

year to the next.



| EXHIBIT I | | | |
|----------------|---|-------------------|---------------|
| Summary of | f Actuarial Valuation Results | | |
| The valuation | n was made with respect to the following data supplied t | o us: | |
| 1. Retired me | embers as of the valuation date (including 154 beneficiaries in pay sta | itus) | 1,416 |
| 2. Members i | nactive during year ended June 30, 2016 with vested rights | | 428 |
| 3. Members a | active during the year ended June 30, 2016 | | 1,123 |
| The actuarial | I factors as of the valuation date are as follows: | | |
| 1. Normal co | st | | \$12,797,000 |
| 2. Present val | lue of future benefits | | 701,824,985 |
| 3. Present val | lue of future normal costs | | 69,767,446 |
| 4. Actuarial a | accrued liability* | | 632,057,539 |
| Retire | ed members and beneficiaries | \$408,777,373 | |
| Inacti | ve members with vested rights | 33,545,287 | |
| Active | e members | 189,734,879 | |
| 5. Valuation | value of assets* (\$426,338,011 at market value as reported by Retire | ment Association) | 446,773,272 |
| 6. Unfunded | actuarial accrued liability | | \$185,284,267 |

^{*} Excludes non-pension reserves.



EXHIBIT I (continued)

Summary of Actuarial Valuation Results

The determination of the recommended average employer contribution is as follows:

| | | Dollar Amount | % of Payroll |
|----|--|-------------------|---------------|
| 1. | Total normal cost | \$12,797,000 | 20.90% |
| 2. | Expected employee contributions | <u>-5,910,000</u> | <u>-9.65%</u> |
| 3. | Employer normal cost: $(1) + (2)$ | \$6,887,000 | 11.25% |
| 4. | Amortization of unfunded actuarial accrued liability | 12,734,000* | <u>20.80%</u> |
| 5. | Total recommended average employer contribution: (3) + (4) | \$19,621,000 | 32.05% |
| 6. | Projected compensation | \$61,214,954 | |

^{*} Based on the total annual payment in Section 3, Exhibit J plus an amount associated with the anticipated contribution rate impact resulting from the 12-month lag between the date of the valuation and the date of the contribution rate implementation.



EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions:

The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2011 through June 30, 2014 Actuarial Experience Study dated October 7, 2014. Unless otherwise noted, all actuarial assumptions and methods shown below apply to all membership groups (i.e., General, Safety, and Probation) and tiers. These assumptions were adopted by the Board.

Economic Assumptions:

Net Investment Return: 7.25% per annum.

Employee Contribution

Crediting Rate:

7.25% per annum.

Consumer Price Index:

Increase of 3.25% per year; retiree COLA increases due to CPI for General Tiers 1, 2, and 3, Safety Tiers 1 and 2, and Probation Tiers 1 and 2 subject to a 3% maximum change per year (no COLA increases for General Tier 4, Safety Tier 3, or Probation Tier 3).

Salary Increases:

Annual Rate of Compensation Increase (%)

Inflation: 3.25%; plus additional 0.50% "across the board" salary increases (other than inflation); plus the following Merit and Promotional increases based on years of service.

| Years of Service | General | Safety and Probation |
|------------------|---------|-------------------------|
| 0-1 | 5.00% | 5.00% |
| 1-2 | 3.75% | 3.75% |
| 2-3 | 3.50% | 3.00% |
| 3-4 | 2.75% | 2.25% |
| 4-5 | 2.25% | 1.00% |
| 5+ | 0.50% | 0.50% |



Demographic Assumptions:

Post-Retirement Mortality Rates

Healthy Members and

All Beneficiaries: For all members and all beneficiaries: RP-2000 Combined Healthy Mortality Table

projected with Scale BB to 2020, set back one year for males and with no setback for

females.

Disabled Members: For all members: RP-2000 Combined Healthy Mortality Table projected with Scale

BB to 2020, set forward four years for both males and females.

The above mortality tables contain a margin in excess of 10%, based on actual to expected deaths, as a provision appropriate to reasonably reflect future mortality improvement, based on a review of mortality experience as of the measurement date.

Employee Contribution Rates: For General members: RP-2000 Combined Healthy Mortality Table projected with

Scale BB to 2020, set back one year for males and with no setback for females,

weighted 30% male and 70% female.

For Safety and Probation members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and with no setback for

females, weighted 80% male and 20% female.



Termination Rates Before Retirement:

Rate (%)
Death

| | General ⁽¹⁾ | | Safety and | Probation ⁽²⁾ | | |
|-----|------------------------|--------|------------|--------------------------|--|--|
| Age | Male | Female | Male | Female | | |
| 25 | 0.04 | 0.02 | 0.04 | 0.02 | | |
| 30 | 0.04 | 0.02 | 0.04 | 0.02 | | |
| 35 | 0.07 | 0.04 | 0.07 | 0.04 | | |
| 40 | 0.10 | 0.07 | 0.10 | 0.07 | | |
| 45 | 0.13 | 0.11 | 0.13 | 0.11 | | |
| 50 | 0.19 | 0.16 | 0.19 | 0.16 | | |
| 55 | 0.30 | 0.25 | 0.30 | 0.25 | | |
| 60 | 0.53 | 0.41 | 0.53 | 0.41 | | |
| 65 | 0.90 | 0.76 | 0.90 | 0.76 | | |
| | | | | | | |

^{(1) 10%} of General deaths are assumed to be service connected deaths. The other 90% are assumed to be non-service connected deaths.

⁽²⁾ 50% of Safety and Probation deaths are assumed to be service connected deaths. The other 50% are assumed to be non-service connected deaths.

Termination Rates Before Retirement (continued):

Rate (%)
Disability

| | | - | |
|-----|------------------------|-----------------------|--------------------------|
| Age | General ⁽¹⁾ | Safety ⁽²⁾ | Probation ⁽²⁾ |
| 20 | 0.01 | 0.10 | 0.10 |
| 25 | 0.01 | 0.13 | 0.13 |
| 30 | 0.01 | 0.18 | 0.18 |
| 35 | 0.02 | 0.53 | 0.53 |
| 40 | 0.13 | 1.05 | 1.05 |
| 45 | 0.38 | 1.40 | 1.40 |
| 50 | 0.53 | 2.25 | 2.25 |
| 55 | 0.58 | 2.75 | 2.75 |
| 60 | 0.63 | 0.00 | 0.00 |

^{(1) 40%} of General disabilities are assumed to be service connected disabilities. The other 60% are assumed to be non-service connected disabilities.

^{(2) 90%} of Safety and Probation disabilities are assumed to be service connected disabilities. The other 10% are assumed to be non-service connected disabilities.

Termination Rates Before Retirement (continued):

Rate (%)
Termination (Less Than 5 Years of Service)⁽¹⁾

| Years of Service | General | Safety | Probation |
|------------------|---------|--------|-----------|
| 0 | 18.00 | 13.50 | 13.50 |
| 1 | 16.00 | 11.50 | 11.50 |
| 2 | 14.00 | 9.50 | 9.50 |
| 3 | 12.00 | 7.50 | 7.50 |
| 4 | 10.00 | 5.50 | 5.50 |

Rate (%)
Termination (5+ Years of Service)⁽²⁾

| Age | General | Safety | Probation |
|-----|---------|--------|-----------|
| 20 | 6.50 | 5.00 | 5.00 |
| 25 | 6.50 | 4.70 | 4.70 |
| 30 | 6.50 | 4.20 | 4.20 |
| 35 | 6.50 | 3.70 | 3.70 |
| 40 | 6.50 | 3.20 | 3.20 |
| 45 | 6.50 | 2.70 | 2.70 |
| 50 | 6.50 | 1.30 | 1.30 |
| 55 | 5.90 | 0.20 | 0.20 |
| 60 | 4.90 | 0.00 | 0.00 |

^{(1) 85%} of all terminated members will choose a refund of contributions and 15% will choose a deferred vested benefit. No termination is assumed after a member is eligible for retirement.



⁽²⁾ 25% of all terminated members will choose a refund of contributions and 75% will choose a deferred vested benefit. No termination is assumed after a member is eligible for retirement.

SECTION 4: Reporting Information for the Mendocino County Employees' Retirement Association

Retirement Rates:

Rate (%)

| Age | General Tiers 1, 2, & 3 | General Tier 4 | Safety Tiers 1 & 2 | Safety Tier 3 | Probation Tiers 1 & 2 | Probation Tier 3 |
|-----|----------------------------|-------------------|-----------------------|------------------|--------------------------|---------------------|
| 50 | 6.00 | 0.00 | 8.00 | 3.00 | 5.00 | 4.00 |
| 51 | 6.00 | 0.00 | 8.00 | 3.00 | 5.00 | 4.00 |
| 52 | 6.00 | 6.00 | 8.00 | 3.00 | 5.00 | 4.00 |
| 53 | 6.00 | 3.00 | 8.00 | 3.00 | 5.00 | 4.00 |
| 54 | 6.00 | 3.00 | 8.00 | 3.00 | 5.00 | 4.00 |
| 55 | 10.00 | 5.00 | 9.00 | 4.00 | 24.00 | 14.00 |
| 56 | 10.00 | 5.00 | 9.00 | 6.00 | 24.00 | 25.00 |
| 57 | 10.00 | 5.00 | 10.00 | 7.00 | 24.00 | 25.00 |
| 58 | 10.00 | 5.00 | 20.00 | 9.00 | 24.00 | 25.00 |
| 59 | 10.00 | 5.00 | 30.00 | 30.00 | 24.00 | 25.00 |
| 60 | 12.00 | 6.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 61 | 20.00 | 9.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 62 | 26.00 | 12.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 63 | 20.00 | 14.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 64 | 20.00 | 12.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 65 | 45.00 | 32.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 66 | 45.00 | 32.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 67 | 45.00 | 32.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 68 | 45.00 | 32.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 69 | 45.00 | 32.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 70 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |



| Retirement Age and Benefit for Deferred Vested Members: | For deferred vested members, retirement age assumptions are as follows: | | |
|---|--|--|--|
| | General Age: 60 Safety and Probation Age: 55 | | |
| | For deferred vested members who terminate with less than five years of service and are not vested, it is assumed they will retire at age 70 if they decide to leave their contributions on deposit. | | |
| | It is assumed that 60% of future deferred vested members will continue to work for a reciprocal employer. For reciprocals, 4.25% compensation increases per annum are assumed. | | |
| Future Benefit Accruals: | 1.0 year of service per year of employment plus 0.019 years of additional service to anticipate conversion of unused sick leave for each year of employment, for members expected to retire directly from active employment and to receive a service retirement benefit. | | |
| Unknown Data for Members: | Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male. | | |
| Inclusion of Deferred Vested Members: | All deferred vested members are included in the valuation. | | |
| Percent Married: | 75% of male members; 50% of female members. | | |
| Age of Spouse: | Female (or male) spouses are 3 years younger (or older) than their spouse. | | |
| Actuarial Value of Assets: | The market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual and expected returns on a market value basis and is recognized over a five-year period. The actuarial value of assets cannot be less than 75% or greater than 125% of the market value of assets. | | |
| Valuation Value of Assets: | The Actuarial Value of Assets reduced by the value of the non-valuation reserves. | | |
| Actuarial Cost Method: | Entry Age Cost Method. Entry Age is the age at the member's hire date. The Normal Cost is calculated on an individual basis where the Entry Age Normal Cost for each membership tier is calculated as the sum of the individual Normal Costs for members | | |



Actuarial Cost Method (continued):

in the membership tier. Actuarial Accrued Liability is calculated on an individual basis and is based on costs allocated as a level percentage of compensation.

Prior to July 1, 2012, the total UAAL was being amortized on a 30-year decreasing period, with 27 years remaining as of June 30, 2012 (and 23 years remaining as of June 30, 2016). On or after July 1, 2012, any new UAAL resulting from plan amendments are amortized over separate decreasing 15-year periods; early retirement incentive programs (ERIPs) are amortized over separate decreasing 5-year periods; assumption and method changes are amortized over separate decreasing 18-year periods; and experience gains/losses are also amortized over separate decreasing 18-year periods.

EXHIBIT III

Summary of Plan Provisions

This exhibit summarizes the major provisions of MCERA included in the valuation as of June 30, 2016. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

| Membership Eligibility: | Membership with MCERA usually begins with the first day of the pay period following the date of entrance into service. |
|-------------------------|--|
| General Tier 1 | All General members appointed to a permanent position of four-fifths time, or more, in service of the County of Mendocino or in the service of a participating District, who were hired prior to July 1, 1984. |
| General Tier 2 | General Tier 2 has been replaced by General Tier 3. |
| General Tier 3 | All General members appointed to a permanent position of four-fifths time, or more, in service of the County of Mendocino or in the service of a participating District, who were hired on or after July 1, 1984 and prior to January 1, 2013. |
| General Tier 4 | All General members appointed to a permanent position of four-fifths time, or more, in service of the County of Mendocino or in the service of a participating District, who were hired on or after January 1, 2013. |
| Safety Tier I | All employees appointed to a position in active law enforcement who were hired prior to June 1, 1982. |
| Safety Tier 2 | All employees appointed to a position in active law enforcement who were hired on or after June 1, 1982 and prior to January 1, 2013. |
| Safety Tier 3 | All employees appointed to a position in active law enforcement who were hired on or after January 1, 2013. |
| Probation Tier 1 | All employees appointed to positions with specific job classifications within the Departments of Probation, Juvenile Hall, and Social Services who were hired prior to July 1, 1984. |



| Membership Eligibility (continued): | | | | | |
|---|--|--|--|--|--|
| Probation Tier 2 | All employees appointed to positions with specific job classifications within the Departments of Probation, Juvenile Hall, and Social Services who were hired on or after July 1, 1984 and prior to January 1, 2013. | | | | |
| Probation Tier 3 | All employees appointed to positions with specific job classifications within the Departments of Probation, Juvenile Hall, and Social Services who were hired on or after January 1, 2013. | | | | |
| Final Compensation for Benefit Determination: | | | | | |
| General Tier 1, Safety Tier 1, and Probation Tier 1 | Highest consecutive twelve months of compensation earnable (§31462.1) (FAS1). | | | | |
| General Tiers 2 and 3, Safety Tier 2, and Probation Tier 2 | Highest consecutive thirty-six months of compensation earnable (§31462) (FAS3). | | | | |
| General Tier 4, Safety Tier 3, and Probation Tier 3 | Highest consecutive thirty-six months of pensionable compensation (§7522.10(c), §7522.32, §7522.34) (FAS3). | | | | |
| Service: | Years of service (Yrs). | | | | |
| Service Retirement Eligibility: | | | | | |
| General Tiers 1, 2, and 3 | Age 50 with 5 years of service and 10 years of membership, or age 70 and vested, or after 30 years of service regardless of age (§31672). | | | | |
| General Tier 4 | Age 52 with 5 years of service, or age 70 and vested (§7522.20(a)). | | | | |
| Safety and Probation Tiers 1 and 2 | Age 50 with 5 years of service and 10 years of membership, or age 70 and vested, or after 20 years of service regardless of age (§31663.25). | | | | |
| Safety and Probation Tier 3 | Age 50 with 5 years of service, or age 70 and vested (§7522.25(d)). | | | | |



Benefit Formula:

| | Retirement Age | Benefit Formula |
|------------------------------|----------------|---|
| General Tier 1 (§31676.12)* | 50 | (1.34% x FAS1 – 1/3 x 1.34% x \$350 x 12) x Yrs |
| | 55 | (1.77% x FAS1 - 1/3 x 1.77% x \$350 x 12) x Yrs |
| | 60 | (2.34% x FAS1 – 1/3 x 2.34% x \$350 x 12) x Yrs |
| | 62 or later | (2.62% x FAS1 – 1/3 x 2.62% x \$350 x 12) x Yrs |
| General Tier 2 and | | |
| General Tier 3 (§31676.12)* | 50 | (1.34% x FAS3 – 1/3 x 1.34% x \$350 x 12) x Yrs |
| | 55 | (1.77% x FAS3 – 1/3 x 1.77% x \$350 x 12) x Yrs |
| | 60 | (2.34% x FAS3 – 1/3 x 2.34% x \$350 x 12) x Yrs |
| | 62 or later | (2.62% x FAS3 – 1/3 x 2.62% x \$350 x 12) x Yrs |
| General Tier 4 (§7522.20(a)) | 52 | 1.00% x FAS3 x Yrs |
| | 55 | 1.30% x FAS3 x Yrs |
| | 60 | 1.80% x FAS3 x Yrs |
| | 62 | 2.00% x FAS3 x Yrs |
| | 65 | 2.30% x FAS3 x Yrs |
| | 67 or later | 2.50% x FAS3 x Yrs |

^{*} For members in Bargaining Groups 01 and 101 who have service prior to October 1, 2003 and who have not purchased this service to be covered under Section 31676.12, their prior service will be covered under Section 31676.11 for Tier 1 and 31676.1 for Tier 2 and Tier 3. For all other Bargaining Groups, the prior service date is January 1, 2002 (instead of October 1, 2003).

| | Retirement Age | Benefit Formula |
|--------------------------|----------------|---|
| Safety Tier 1 (§31664.2) | 50 | (2.29% x FAS1 – 1/3 x 2.29% x \$350 x 12) x Yrs |
| | 55 or later | (3.00% x FAS1 – 1/3 x 3.00% x \$350 x 12) x Yrs |
| Safety Tier 2 (§31664.2) | 50 | (2.29% x FAS3 – 1/3 x 2.29% x \$350 x 12) x Yrs |
| | 55 or later | (3.00% x FAS3 – 1/3 x 3.00% x \$350 x 12) x Yrs |



SECTION 4: Reporting Information for the Mendocino County Employees' Retirement Association

| | Retirement Age | Benefit Formula |
|--------------------------------|-----------------------|---|
| Safety Tier 3 (§7522.25(d)) | 50 | 2.00% x FAS3 x Yrs |
| | 55 | 2.50% x FAS3 x Yrs |
| | 57 or later | 2.70% x FAS3 x Yrs |
| Probation Tier 1 (§31664) | 50 | (2.00% x FAS1 – 1/3 x 2.00% x \$350 x 12) x Yrs |
| | 55 or later | (2.62% x FAS1 – 1/3 x 2.62% x \$350 x 12) x Yrs |
| Probation Tier 2 (§31664) | 50 | (2.00% x FAS3 – 1/3 x 2.00% x \$350 x 12) x Yrs |
| | 55 or later | (2.62% x FAS3 – 1/3 x 2.62% x \$350 x 12) x Yrs |
| Probation Tier 3 (§7522.25(d)) | 50 | 2.00% x FAS3 x Yrs |
| | 55 | 2.50% x FAS3 x Yrs |
| | 57 or later | 2.70% x FAS3 x Yrs |

Maximum Benefit:

General Tiers 1, 2, and 3, Safety Tiers 1 and 2,

and Probation Tiers 1 and 2 100% of Highest Average Compensation (§31676.12, §31664.2, and §31664).

General Tier 4, Safety Tier 3, and Probation Tier 3

None (§7522.20(a) and §7522.25(d)).

Non-Service Connected Disability:

Eligibility Five years of service (§31720).

Benefit Formula

1.8% of Final Compensation per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 62 for General members and to 55 for Safety and Probation members, but the total benefit cannot be more than one-third of Final Compensation (§31727.1 and §31727.2).



Service Connected Disability:

All Members

Eligibility No age or service requirements (§31720).

Benefit Formula 50% of the Final Compensation or 100% of Service Retirement benefit, if greater

(§31727.4).

Pre-Retirement Death:

All Members

Eligibility None.

Basic lump sum benefit Refund of employee contributions with interest, plus one month's compensation for

each year of service, to a maximum of six month's compensation (§31781).

Death in line-of-duty 50% of Final Compensation or 100% of Service Retirement benefit, if greater,

payable to spouse* or minor children (§31787).

OR

Vested Members

Eligibility Five years of service.

Basic benefit 60% of the greater of Service Retirement or Non-Service Connected Disability

Retirement benefit payable to surviving eligible spouse (§31765.1, §31781.1), in lieu

of the basic lump sum benefit above.

Death in line-of-duty 50% of Final compensation or 100% of Service Retirement benefit, if greater, payable

to spouse or minor children (§31787).



^{*} In this summary, continuance benefit payable to spouse is also available to eligible domestic partner.

| Death After Retirement: | |
|--|---|
| All Members | |
| Service or Non-Service Connected Disability Retirement | 60% of member's unmodified allowance continued to eligible spouse (§31760.1).* An eligible spouse is a surviving spouse who was married to the member at least one year prior to the date of retirement (§31760.1). |
| Service Connected Disability | 100% of member's allowance continued to eligible spouse (§31786). |
| Withdrawal Benefits: | |
| Less than Five Years of Service | Refund of accumulated employee contributions with interest (§31628). |
| Five or More Years of Service | If contributions left on deposit, entitled to earned benefits commencing at any time after eligible to retire (§31700). |
| Post-retirement Cost-of-Living Benefits: | |
| General Tiers 1, 2, and 3, Safety Tiers 1 and 2, and Probation Tiers 1 and 2 | Future changes based on Consumer Price Index to a maximum of 3% per year; excess "banked" (§31870.1) |
| General Tier 4, Safety Tier 3, and Probation Tier 3 | None. |
| Member Contributions: | Please refer to Appendix A for specific rates. |
| General Tier 1 | |
| Basic | Provide for an average annuity at age 60 equal to 1/100 of FAS1 (§31621.2). |
| Cost-of-Living | Provide for one-half of future Cost-of-Living costs. |

^{* 100%} of the COLA benefit is continued to the survivor upon the member's death for a member who retired prior to September 17, 2014 for service or non-service connected disability and chose the unmodified option at retirement.



Member Contributions (continued):

General Tier 2 and General Tier 3

Basic Provide for an average annuity at age 60 equal to 1/100 of FAS3 (§31621.2).

Cost-of-Living Provide for one-half of future Cost-of-Living costs.

General Tier 4 50% of the total Normal Cost rate.

Safety Tier 1 and Probation Tier 1

Basic Provide for an average annuity at age 50 equal to 1/100 of FAS1 (§31639.25).

Cost-of-Living Provide for one-half of future Cost-of-Living costs. Safety Tier 1 cost-of-living

member rates are offset by 1.63% of pay, which is picked up by the County.

Safety Tier 2 and Probation Tier 2

Basic Provide for an average annuity at age 50 equal to 1/100 of FAS3 (§31639.25).

Cost-of-Living Provide for one-half of future Cost-of-Living costs. Safety Tier 2 cost-of-living

member rates are offset by 1.63% of pay, which is picked up by the County.

Safety Tier 3 and Probation Tier 3 50% of the total Normal Cost rate.

Other Information: All non-CalPEPRA members with 30 or more years of service are exempt from

paying member contributions.

Plan Amendment: None during July 1, 2015 to June 30, 2016.

NOTE: The summary of major plan provisions is designed to outline principal plan benefits as interpreted for purposes of the actuarial valuation. If the Association should find the plan summary not in accordance with the actual provisions, the Association should alert the actuary so that both parties can be sure the proper provisions are valued.



Appendix A

Member Contribution Rates

General Tier 1 Members' Contribution Rates - Based on the June 30, 2016 Actuarial Valuation (as a percentage of payroll)

| | Basic | c Only | COLA | Only | T | otal |
|-----------|----------------|---------------|----------------|---------------|----------------|---------------|
| Entry Age | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 15 | 3.77% | 5.65% | 1.29% | 1.94% | 5.06% | 7.59% |
| 16 | 3.77% | 5.65% | 1.29% | 1.94% | 5.06% | 7.59% |
| 17 | 3.83% | 5.74% | 1.32% | 1.98% | 5.15% | 7.72% |
| 18 | 3.89% | 5.84% | 1.34% | 2.01% | 5.23% | 7.85% |
| 19 | 3.96% | 5.94% | 1.36% | 2.04% | 5.32% | 7.98% |
| 20 | 4.03% | 6.05% | 1.39% | 2.08% | 5.42% | 8.13% |
| 21 | 4.10% | 6.15% | 1.41% | 2.12% | 5.51% | 8.27% |
| 22 | 4.17% | 6.25% | 1.43% | 2.15% | 5.60% | 8.40% |
| 23 | 4.24% | 6.36% | 1.46% | 2.19% | 5.70% | 8.55% |
| 24 | 4.31% | 6.47% | 1.49% | 2.23% | 5.80% | 8.70% |
| 25 | 4.39% | 6.58% | 1.51% | 2.26% | 5.90% | 8.84% |
| 26 | 4.46% | 6.69% | 1.53% | 2.30% | 5.99% | 8.99% |
| 27 | 4.53% | 6.80% | 1.56% | 2.34% | 6.09% | 9.14% |
| 28 | 4.61% | 6.92% | 1.59% | 2.38% | 6.20% | 9.30% |
| 29 | 4.69% | 7.03% | 1.61% | 2.42% | 6.30% | 9.45% |
| 30 | 4.77% | 7.15% | 1.64% | 2.46% | 6.41% | 9.61% |
| 31 | 4.85% | 7.27% | 1.67% | 2.50% | 6.52% | 9.77% |
| 32 | 4.93% | 7.39% | 1.69% | 2.54% | 6.62% | 9.93% |
| 33 | 5.01% | 7.51% | 1.72% | 2.58% | 6.73% | 10.09% |
| 34 | 5.09% | 7.63% | 1.75% | 2.63% | 6.84% | 10.26% |
| 35 | 5.17% | 7.76% | 1.78% | 2.67% | 6.95% | 10.43% |
| 36 | 5.26% | 7.89% | 1.81% | 2.72% | 7.07% | 10.61% |
| 37 | 5.35% | 8.02% | 1.84% | 2.76% | 7.19% | 10.78% |
| 38 | 5.43% | 8.15% | 1.87% | 2.81% | 7.30% | 10.96% |
| 39 | 5.52% | 8.28% | 1.90% | 2.85% | 7.42% | 11.13% |



Appendix A

Member Contribution Rates (Continued)

General Tier 1 Members' Contribution Rates - Based on the June 30, 2016 Actuarial Valuation (continued) (as a percentage of payroll)

| | Basic | e Only | COLA | Only | T | otal |
|-----------|----------------|---------------|----------------|---------------|----------------|---------------|
| Entry Age | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 40 | 5.61% | 8.42% | 1.93% | 2.90% | 7.54% | 11.32% |
| 41 | 5.71% | 8.56% | 1.97% | 2.95% | 7.68% | 11.51% |
| 42 | 5.80% | 8.70% | 1.99% | 2.99% | 7.79% | 11.69% |
| 43 | 5.89% | 8.84% | 2.03% | 3.04% | 7.92% | 11.88% |
| 44 | 5.99% | 8.99% | 2.06% | 3.09% | 8.05% | 12.08% |
| 45 | 6.09% | 9.14% | 2.10% | 3.15% | 8.19% | 12.29% |
| 46 | 6.20% | 9.30% | 2.13% | 3.20% | 8.33% | 12.50% |
| 47 | 6.30% | 9.45% | 2.17% | 3.25% | 8.47% | 12.70% |
| 48 | 6.41% | 9.62% | 2.21% | 3.31% | 8.62% | 12.93% |
| 49 | 6.53% | 9.79% | 2.25% | 3.37% | 8.78% | 13.16% |
| 50 | 6.64% | 9.96% | 2.29% | 3.43% | 8.93% | 13.39% |
| 51 | 6.77% | 10.15% | 2.33% | 3.49% | 9.10% | 13.64% |
| 52 | 6.90% | 10.35% | 2.37% | 3.56% | 9.27% | 13.91% |
| 53 | 7.05% | 10.57% | 2.43% | 3.64% | 9.48% | 14.21% |
| 54 | 7.21% | 10.81% | 2.48% | 3.72% | 9.69% | 14.53% |
| 55 | 7.27% | 10.91% | 2.51% | 3.76% | 9.78% | 14.67% |
| 56 | 7.33% | 10.99% | 2.52% | 3.78% | 9.85% | 14.77% |
| 57 | 7.33% | 11.00% | 2.53% | 3.79% | 9.86% | 14.79% |
| 58 | 7.34% | 11.01% | 2.53% | 3.79% | 9.87% | 14.80% |
| 59 & Over | 7.29% | 10.93% | 2.51% | 3.76% | 9.80% | 14.69% |

Interest: 7.25% per annum

COLA: 3.00%

Mortality: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back 1 year for

males and with no setback for females, weighted 30% male and 70% female

Salary Increase: Inflation (3.25%) + Across-the-Board Increases (0.50%) + Merit/Promotion (see Exhibit II)

COLA Loading Factor: 34.42%



Appendix A
Member Contribution Rates (Continued)

General Tier 2 and Tier 3 Members' Contribution Rates - Based on the June 30, 2016 Actuarial Valuation (as a percentage of payroll)

| Ba | | c Only | COLA | A Only | Total | |
|-----------|----------------|---------------|----------------|---------------|----------------|---------------|
| Entry Age | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 15 | 3.61% | 5.42% | 1.25% | 1.87% | 4.86% | 7.29% |
| 16 | 3.61% | 5.42% | 1.25% | 1.87% | 4.86% | 7.29% |
| 17 | 3.67% | 5.51% | 1.27% | 1.90% | 4.94% | 7.41% |
| 18 | 3.74% | 5.61% | 1.29% | 1.93% | 5.03% | 7.54% |
| 19 | 3.80% | 5.70% | 1.31% | 1.96% | 5.11% | 7.66% |
| 20 | 3.87% | 5.80% | 1.33% | 2.00% | 5.20% | 7.80% |
| 21 | 3.93% | 5.90% | 1.35% | 2.03% | 5.28% | 7.93% |
| 22 | 4.00% | 6.00% | 1.38% | 2.07% | 5.38% | 8.07% |
| 23 | 4.07% | 6.10% | 1.40% | 2.10% | 5.47% | 8.20% |
| 24 | 4.14% | 6.21% | 1.43% | 2.14% | 5.57% | 8.35% |
| 25 | 4.21% | 6.31% | 1.45% | 2.17% | 5.66% | 8.48% |
| 26 | 4.28% | 6.42% | 1.47% | 2.21% | 5.75% | 8.63% |
| 27 | 4.35% | 6.53% | 1.50% | 2.25% | 5.85% | 8.78% |
| 28 | 4.43% | 6.64% | 1.53% | 2.29% | 5.96% | 8.93% |
| 29 | 4.50% | 6.75% | 1.55% | 2.32% | 6.05% | 9.07% |
| 30 | 4.57% | 6.86% | 1.57% | 2.36% | 6.14% | 9.22% |
| 31 | 4.65% | 6.97% | 1.60% | 2.40% | 6.25% | 9.37% |
| 32 | 4.73% | 7.09% | 1.63% | 2.44% | 6.36% | 9.53% |
| 33 | 4.81% | 7.21% | 1.65% | 2.48% | 6.46% | 9.69% |
| 34 | 4.89% | 7.33% | 1.68% | 2.52% | 6.57% | 9.85% |
| 35 | 4.97% | 7.45% | 1.71% | 2.56% | 6.68% | 10.01% |
| 36 | 5.05% | 7.57% | 1.74% | 2.61% | 6.79% | 10.18% |
| 37 | 5.13% | 7.70% | 1.77% | 2.65% | 6.90% | 10.35% |
| 38 | 5.21% | 7.82% | 1.79% | 2.69% | 7.00% | 10.51% |
| 39 | 5.30% | 7.95% | 1.83% | 2.74% | 7.13% | 10.69% |



Appendix A
Member Contribution Rates (Continued)

General Tier 2 and Tier 3 Members' Contribution Rates - Based on the June 30, 2016 Actuarial Valuation (continued) (as a percentage of payroll)

| | Basic | e Only | COLA | A Only | To | tal |
|-----------|----------------|---------------|----------------|---------------|----------------|---------------|
| Entry Age | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 40 | 5.39% | 8.08% | 1.85% | 2.78% | 7.24% | 10.86% |
| 41 | 5.47% | 8.21% | 1.89% | 2.83% | 7.36% | 11.04% |
| 42 | 5.57% | 8.35% | 1.91% | 2.87% | 7.48% | 11.22% |
| 43 | 5.66% | 8.49% | 1.95% | 2.92% | 7.61% | 11.41% |
| 44 | 5.75% | 8.63% | 1.98% | 2.97% | 7.73% | 11.60% |
| 45 | 5.85% | 8.77% | 2.01% | 3.02% | 7.86% | 11.79% |
| 46 | 5.95% | 8.92% | 2.05% | 3.07% | 8.00% | 11.99% |
| 47 | 6.05% | 9.07% | 2.08% | 3.12% | 8.13% | 12.19% |
| 48 | 6.15% | 9.23% | 2.12% | 3.18% | 8.27% | 12.41% |
| 49 | 6.26% | 9.39% | 2.15% | 3.23% | 8.41% | 12.62% |
| 50 | 6.37% | 9.56% | 2.19% | 3.29% | 8.56% | 12.85% |
| 51 | 6.49% | 9.74% | 2.23% | 3.35% | 8.72% | 13.09% |
| 52 | 6.62% | 9.93% | 2.28% | 3.42% | 8.90% | 13.35% |
| 53 | 6.73% | 10.09% | 2.31% | 3.47% | 9.04% | 13.56% |
| 54 | 6.80% | 10.20% | 2.34% | 3.51% | 9.14% | 13.71% |
| 55 | 6.83% | 10.24% | 2.35% | 3.52% | 9.18% | 13.76% |
| 56 | 6.83% | 10.25% | 2.35% | 3.53% | 9.18% | 13.78% |
| 57 | 6.81% | 10.22% | 2.35% | 3.52% | 9.16% | 13.74% |
| 58 | 7.05% | 10.57% | 2.43% | 3.64% | 9.48% | 14.21% |
| 59 & Over | 7.29% | 10.93% | 2.51% | 3.76% | 9.80% | 14.69% |

Interest: 7.25% per annum

COLA: 3.00%

Mortality: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back 1 year for males

and with no setback for females, weighted 30% male and 70% female

Salary Increase: Inflation (3.25%) + Across-the-Board Increases (0.50%) + Merit/Promotion (see Exhibit II)

COLA Loading Factor: 34.42%



Appendix A

Member Contribution Rates (Continued)

General Tier 4 Members' Contribution Rates - Based on the June 30, 2016 Actuarial Valuation (as a percentage of eligible payroll)*

| | Basic Only | |
|----------------------------|--------------|--------------|
| | Eligible Pay | Eligible Pay |
| All General Tier 4 Members | 7.46% | 7.46% |

Interest: 7.25% per annum

COLA: 0%

Mortality: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back 1 year for

males and with no setback for females, weighted 30% male and 70% female

Salary Increase: Inflation (3.25%) + Across-the-Board Increases (0.50%) + Merit/Promotion (see Exhibit II)

COLA Loading Factor: 0%



^{*} It is our understanding that in the determination of pension benefits under the CalPEPRA formulas, the compensation that can be taken into account for 2016 is equal to \$117,020. For an employer that is not enrolled in Social Security, the maximum amount is 120% of \$117,020, or \$140,424 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2016. (reference: Section 7522.10(d).)

Appendix A

Member Contribution Rates (Continued)

Safety Tier 2 Members' Contribution Rates - Based on the June 30, 2016 Actuarial Valuation (as a percentage of payroll)

| | Basi | Basic Only | | COLA Only* | | otal |
|-----------|----------------|---------------|----------------|---------------|----------------|---------------|
| Entry Age | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 15 | 4.72% | 7.08% | 0.90% | 2.17% | 5.62% | 9.25% |
| 16 | 4.72% | 7.08% | 0.90% | 2.17% | 5.62% | 9.25% |
| 17 | 4.80% | 7.20% | 0.94% | 2.23% | 5.74% | 9.43% |
| 18 | 4.88% | 7.32% | 0.99% | 2.29% | 5.87% | 9.61% |
| 19 | 4.96% | 7.44% | 1.03% | 2.36% | 5.99% | 9.80% |
| 20 | 5.04% | 7.56% | 1.07% | 2.42% | 6.11% | 9.98% |
| 21 | 5.13% | 7.69% | 1.12% | 2.49% | 6.25% | 10.18% |
| 22 | 5.21% | 7.82% | 1.16% | 2.56% | 6.37% | 10.38% |
| 23 | 5.30% | 7.95% | 1.21% | 2.63% | 6.51% | 10.58% |
| 24 | 5.39% | 8.08% | 1.26% | 2.70% | 6.65% | 10.78% |
| 25 | 5.47% | 8.21% | 1.30% | 2.77% | 6.77% | 10.98% |
| 26 | 5.56% | 8.34% | 1.35% | 2.84% | 6.91% | 11.18% |
| 27 | 5.65% | 8.48% | 1.40% | 2.92% | 7.05% | 11.40% |
| 28 | 5.75% | 8.62% | 1.45% | 2.99% | 7.20% | 11.61% |
| 29 | 5.84% | 8.76% | 1.50% | 3.07% | 7.34% | 11.83% |
| 30 | 5.93% | 8.90% | 1.55% | 3.14% | 7.48% | 12.04% |
| 31 | 6.03% | 9.04% | 1.60% | 3.22% | 7.63% | 12.26% |
| 32 | 6.13% | 9.19% | 1.66% | 3.30% | 7.79% | 12.49% |
| 33 | 6.23% | 9.34% | 1.71% | 3.38% | 7.94% | 12.72% |
| 34 | 6.33% | 9.49% | 1.76% | 3.46% | 8.09% | 12.95% |
| 35 | 6.43% | 9.65% | 1.82% | 3.54% | 8.25% | 13.19% |
| 36 | 6.54% | 9.81% | 1.88% | 3.63% | 8.42% | 13.44% |
| 37 | 6.65% | 9.97% | 1.94% | 3.71% | 8.59% | 13.68% |
| 38 | 6.76% | 10.14% | 1.99% | 3.81% | 8.75% | 13.95% |
| 39 | 6.87% | 10.31% | 2.05% | 3.90% | 8.92% | 14.21% |



Appendix A

Member Contribution Rates (Continued)

Safety Tier 2 Members' Contribution Rates - Based on the June 30, 2016 Actuarial Valuation (continued) (as a percentage of payroll)

| | Basic | c Only | COLA | Only* | То | tal |
|-----------|----------------|---------------|----------------|---------------|----------------|---------------|
| Entry Age | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 40 | 6.99% | 10.49% | 2.12% | 3.99% | 9.11% | 14.48% |
| 41 | 7.11% | 10.67% | 2.18% | 4.09% | 9.29% | 14.76% |
| 42 | 7.25% | 10.87% | 2.26% | 4.20% | 9.51% | 15.07% |
| 43 | 7.37% | 11.06% | 2.32% | 4.30% | 9.69% | 15.36% |
| 44 | 7.48% | 11.22% | 2.38% | 4.39% | 9.86% | 15.61% |
| 45 | 7.54% | 11.31% | 2.41% | 4.43% | 9.95% | 15.74% |
| 46 | 7.56% | 11.34% | 2.42% | 4.45% | 9.98% | 15.79% |
| 47 | 7.54% | 11.31% | 2.41% | 4.43% | 9.95% | 15.74% |
| 48 | 7.80% | 11.70% | 2.55% | 4.64% | 10.35% | 16.34% |
| 49 & over | 8.07% | 12.11% | 2.70% | 4.86% | 10.77% | 16.97% |

Interest: 7.25% per annum

COLA: 3.00%

Mortality: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back 1 year for

males and with no setback for females, weighted 80% male and 20% female

Salary Increase: Inflation (3.25%) + Across-the-Board Increases (0.50%) + Merit/Promotion (see Exhibit II)

COLA Loading Factor: 53.61%



^{*} COLA rate is offset by 1.63%, which is picked up by the County.

Appendix A

Member Contribution Rates (Continued)

Safety Tier 3 Members' Contribution Rates - Based on the June 30, 2016 Actuarial Valuation (as a percentage of eligible payroll)*

| | Basic Only | Total |
|---------------------------|--------------|--------------|
| | Eligible Pay | Eligible Pay |
| All Safety Tier 3 Members | 10.58% | 10.58% |

Interest: 7.25% per annum

COLA: 0%

Mortality: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back 1 year for

males and with no setback for females, weighted 80% male and 20% female

Salary Increase: Inflation (3.25%) + Across-the-Board Increases (0.50%) + Merit/Promotion (see Exhibit II)

COLA Loading Factor: 0%



^{*} It is our understanding that in the determination of pension benefits under the CalPEPRA formulas, the compensation that can be taken into account for 2016 is equal to \$117,020. For an employer that is not enrolled in Social Security, the maximum amount is 120% of \$117,020, or \$140,424 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2016. (reference: Section 7522.10(d).)

Appendix A
Member Contribution Rates (Continued)

Probation Tier 2 Members' Contribution Rates - Based on the June 30, 2016 Actuarial Valuation (as a percentage of payroll)

| | Basi | c Only | COLA Only | | Total | |
|-----------|----------------|---------------|----------------|---------------|----------------|---------------|
| Entry Age | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 15 | 4.72% | 7.08% | 2.11% | 3.16% | 6.83% | 10.24% |
| 16 | 4.72% | 7.08% | 2.11% | 3.16% | 6.83% | 10.24% |
| 17 | 4.80% | 7.20% | 2.15% | 3.22% | 6.95% | 10.42% |
| 18 | 4.88% | 7.32% | 2.18% | 3.27% | 7.06% | 10.59% |
| 19 | 4.96% | 7.44% | 2.21% | 3.32% | 7.17% | 10.76% |
| 20 | 5.04% | 7.56% | 2.25% | 3.38% | 7.29% | 10.94% |
| 21 | 5.13% | 7.69% | 2.29% | 3.43% | 7.42% | 11.12% |
| 22 | 5.21% | 7.82% | 2.33% | 3.49% | 7.54% | 11.31% |
| 23 | 5.30% | 7.95% | 2.37% | 3.55% | 7.67% | 11.50% |
| 24 | 5.39% | 8.08% | 2.41% | 3.61% | 7.80% | 11.69% |
| 25 | 5.47% | 8.21% | 2.45% | 3.67% | 7.92% | 11.88% |
| 26 | 5.56% | 8.34% | 2.48% | 3.72% | 8.04% | 12.06% |
| 27 | 5.65% | 8.48% | 2.53% | 3.79% | 8.18% | 12.27% |
| 28 | 5.75% | 8.62% | 2.57% | 3.85% | 8.32% | 12.47% |
| 29 | 5.84% | 8.76% | 2.61% | 3.91% | 8.45% | 12.67% |
| 30 | 5.93% | 8.90% | 2.65% | 3.97% | 8.58% | 12.87% |
| 31 | 6.03% | 9.04% | 2.69% | 4.04% | 8.72% | 13.08% |
| 32 | 6.13% | 9.19% | 2.73% | 4.10% | 8.86% | 13.29% |
| 33 | 6.23% | 9.34% | 2.78% | 4.17% | 9.01% | 13.51% |
| 34 | 6.33% | 9.49% | 2.83% | 4.24% | 9.16% | 13.73% |
| 35 | 6.43% | 9.65% | 2.87% | 4.31% | 9.30% | 13.96% |
| 36 | 6.54% | 9.81% | 2.92% | 4.38% | 9.46% | 14.19% |
| 37 | 6.65% | 9.97% | 2.97% | 4.45% | 9.62% | 14.42% |
| 38 | 6.76% | 10.14% | 3.02% | 4.53% | 9.78% | 14.67% |
| 39 | 6.87% | 10.31% | 3.07% | 4.60% | 9.94% | 14.91% |



Appendix A

Member Contribution Rates (Continued)

Probation Tier 2 Members' Contribution Rates - Based on the June 30, 2016 Actuarial Valuation (continued) (as a percentage of payroll)

| | Basic | c Only | COLA | A Only | То | tal |
|-----------|----------------|---------------|----------------|---------------|----------------|---------------|
| Entry Age | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 40 | 6.99% | 10.49% | 3.12% | 4.68% | 10.11% | 15.17% |
| 41 | 7.11% | 10.67% | 3.18% | 4.77% | 10.29% | 15.44% |
| 42 | 7.25% | 10.87% | 3.23% | 4.85% | 10.48% | 15.72% |
| 43 | 7.37% | 11.06% | 3.29% | 4.94% | 10.66% | 16.00% |
| 44 | 7.48% | 11.22% | 3.34% | 5.01% | 10.82% | 16.23% |
| 45 | 7.54% | 11.31% | 3.37% | 5.05% | 10.91% | 16.36% |
| 46 | 7.56% | 11.34% | 3.37% | 5.06% | 10.93% | 16.40% |
| 47 | 7.54% | 11.31% | 3.37% | 5.05% | 10.91% | 16.36% |
| 48 | 7.80% | 11.70% | 3.49% | 5.23% | 11.29% | 16.93% |
| 49 & over | 8.07% | 12.11% | 3.61% | 5.41% | 11.68% | 17.52% |

Interest: 7.25% per annum

COLA: 3.00%

Mortality: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back 1 year for

males and with no setback for females, weighted 80% male and 20% female

Salary Increase: Inflation (3.25%) + Across-the-Board Increases (0.50%) + Merit/Promotion (see Exhibit II)

COLA Loading Factor: 44.66%



Appendix A

Member Contribution Rates (Continued)

Probation Tier 3 Members' Contribution Rates - Based on the June 30, 2016 Actuarial Valuation (as a percentage of eligible payroll)*

| | Basic Only | Total |
|------------------------------|--------------|--------------|
| | Eligible Pay | Eligible Pay |
| All Probation Tier 3 Members | 9.40% | 9.40% |

Interest: 7.25% per annum

COLA: 0%

Mortality: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back 1 year for

males and with no setback for females, weighted 80% male and 20% female

Salary Increase: Inflation (3.25%) + Across-the-Board Increases (0.50%) + Merit/Promotion (see Exhibit II)

COLA Loading Factor: 0%



^{*} It is our understanding that in the determination of pension benefits under the CalPEPRA formulas, the compensation that can be taken into account for 2016 is equal to \$117,020. For an employer that is not enrolled in Social Security, the maximum amount is 120% of \$117,020, or \$140,424 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2016. (reference: Section 7522.10(d).)