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**October 2011**

**MISCELLANEOUS PLAN OF THE CITY OF CHICO (EMPLOYER # 533)**
**Annual Valuation Report as of June 30, 2010**

Dear Employer,

As an attachment to this letter, you will find a copy of the June 30, 2010 actuarial valuation report of your pension plan. This report contains important actuarial information about your pension plan at CalPERS. Your CalPERS staff actuary is available to discuss the report with you.

**Changes Since the Prior Year's Valuation**

A temporary modification to our method of determining the actuarial value of assets and amortizing gains and losses was implemented for the valuations as of June 30, 2009 through June 30, 2011. The effect of those modifications continue in this valuation.

There may also be changes specific to your plan such as contract amendments and funding changes.

Further descriptions of general changes are included in the "Highlights and Executive Summary" section and in Appendix A, "Statement of Actuarial Data, Methods and Assumptions." The effect of the changes on your rate is included in the "Reconciliation of Required Employer Contributions."

**Future Contribution Rates**

The exhibit below displays the required employer contribution rate and Superfunded status for 2012/2013 along with estimates of the contribution rate for 2013/2014 and 2014/2015 and the probable Superfunded status for 2013/2014. The estimated rate for 2013/2014 is based solely on a projection of the investment return for fiscal 2010/2011, namely 20.0%. The estimated rate for 2014/2015 uses the valuation assumption of 7.75% as the investment return for fiscal 2011/2012. See Appendix D, "Investment Return Sensitivity Analysis", for rate projections under a variety of investment return scenarios. Please disregard any projections that we may have provided to you in the past.

| Fiscal Year | Employer Contribution Rate | Superfunded? |
|---|---|---|
| 2012/2013 | 23.831% | NO |
| 2013/2014 | 24.0% (projected) | NO |
| 2014/2015 | 24.2% (projected) | N/A |

Member contributions (whether paid by the employer or the employee) are in addition to the above rates.

The estimates for 2013/2014 and 2014/2015 also assume that there are no future amendments and no liability gains or losses (such as larger than expected pay increases, more retirements than expected, etc.). **This is a very important assumption because these gains and losses do occur and can have a significant impact on your contribution rate.** Even for the largest plans, such gains and losses often cause a change in the employer's contribution rate of one or two percent and may be even larger in some less common instances. These gains and losses cannot be predicted in advance so the projected employer contribution rates are just estimates. Your actual rate for 2013/2014 will be provided in next year's report.

We are very busy preparing actuarial valuations for other public agencies and expect to complete all such valuations by the end of October. We understand that you might have a number of questions about these results. While we are very interested in discussing these results with your agency, in the interest of allowing us to give every public agency their result, we ask that, if at all possible, you wait until after October 31 to contact us with questions. If you have questions, please call (888) CalPERS (225-7377).

Sincerely,

ALAN MILLIGAN, MAAA, FCA, FSA, FCIA
Chief Actuary

# ACTUARIAL VALUATION

as of June 30, 2010

# for the MISCELLANEOUS PLAN of the CITY OF CHICO

(EMPLOYER # 533)

## REQUIRED CONTRIBUTIONS FOR FISCAL YEAR July 1, 2012 – June 30, 2013

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# ACTUARIAL CERTIFICATION

To the best of our knowledge, this report is complete and accurate and contains sufficient information to disclose, fully and fairly, the funded condition of the MISCELLANEOUS PLAN OF THE CITY OF CHICO. This valuation is based on the member and financial data as of June 30, 2010 provided by the various CalPERS databases and the benefits under this plan with CalPERS as of the date this report was produced. It is our opinion that the valuation has been performed in accordance with generally accepted actuarial principles, in accordance with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for this plan, as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

The undersigned listed are actuaries for CalPERS. Both are members of the American Academy of Actuaries and the Society of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

BARBARA J. WARE, FSA, MAAA
Enrolled Actuary
Senior Pension Actuary, CalPERS
Plan Actuary

ALAN MILLIGAN, MAAA, FCA, FSA, FCIA
Chief Actuary

# HIGHLIGHTS AND EXECUTIVE SUMMARY

- **PURPOSE OF THE REPORT**
- **REQUIRED CONTRIBUTIONS**
- **FUNDED STATUS**
- **COST AND VOLATILITY**
- **CHANGES SINCE THE PRIOR VALUATION**

# Purpose of the Report

This report presents the results of the June 30, 2010 actuarial valuation of the MISCELLANEOUS PLAN OF THE CITY OF CHICO of the California Public Employees' Retirement System (CalPERS). The valuation was prepared by the Plan Actuary in order to:

- set forth the actuarial assets and accrued liabilities of this plan as of June 30, 2010;
- certify that the actuarially required employer contribution rate of this plan for the fiscal year July 1, 2012 through June 30, 2013 is 23.831%;
- provide actuarial information as of June 30, 2010 to the CalPERS Board of Administration and other interested parties; and
- provide pension information as of June 30, 2010 to be used in financial reports subject to Governmental Accounting Standards Board (GASB) Statement Number 27 for a Single Employer Defined Benefit Pension Plan.

The use of this report for any other purposes may be inappropriate. In particular, this report does not contain information applicable to termination or alternative benefit costs. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

# Required Contributions

| | Fiscal Year 2011/2012 | Fiscal Year 2012/2013 |
|---|---|---|
| **Required Employer Contributions** | | |
| Employer Contribution Required (in Projected Dollars) | | |
| Payment for Normal Cost | $ 2,278,307 | $ 2,224,993 |
| Payment on the Amortization Bases | 2,132,052 | 2,256,332 |
| Total (not less than zero) | $ 4,410,359 | $ 4,481,325 |
| Annual Lump Sum Prepayment Option* | $ 4,248,790 | $ 4,317,157 |
| Employer Contribution Required (Percentage of Payroll) | | |
| Payment for Normal Cost | 12.012% | 11.832% |
| Payment on the Amortization Bases | 11.241% | 11.999% |
| Total (not less than zero) | 23.253% | 23.831% |

# Funded Status

| | June 30, 2009 | June 30, 2010 |
|---|---|---|
| Present Value of Projected Benefits | $ 148,877,919 | $ 156,064,244 |
| Entry Age Normal Accrued Liability | $ 124,038,404 | $ 131,660,734 |
| Actuarial Value of Assets (AVA) | 92,367,227 | 98,082,197 |
| Unfunded Liability (AVA) | $ 31,671,177 | $ 33,578,537 |
| Market Value of Assets (MVA) | $ 67,807,358 | $ 77,577,007 |
| Unfunded Liability (MVA) | 56,231,046 | 54,083,727 |
| Funded Status (MVA) | 54.7% | 58.9% |
| **Superfunded Status** | No | No |

* Payment **must be** received by CalPERS before the first payroll of the new fiscal year and after June 30.

# Cost and Volatility

### Actuarial Cost Estimates in General

What will this pension plan cost? Unfortunately, there is no simple answer. There are two major reasons for the complexity of the answer. First, all actuarial calculations, including the ones in this report, are based on a number of assumptions about the future. These assumptions can be divided into two categories.

- Demographic assumptions include the percentage of employees that will terminate, die, become disabled, and retire in each future year.
- Economic assumptions include future salary increases for each active employee, and the assumption with the greatest impact, future asset returns at CalPERS for each year into the future until the last dollar is paid to current members of your plan.

While CalPERS has set these assumptions to reflect our best estimate of the real future of your plan, it must be understood that these assumptions are very long term predictors and will surely not be realized in any one year. For example, while the asset earnings at CalPERS have averaged more than the assumed return of 7.75% for the past twenty year period ending June 30, 2011, returns for each fiscal year ranged from -24% to +20.7%

Second, the very nature of actuarial funding produces the answer to the question of plan cost as the sum of two separate pieces.

- The Normal Cost (i.e., the future annual premiums in the absence of surplus or unfunded liability) expressed as a percentage of total active payroll.
- The Past Service Cost or Accrued Liability (i.e., the current value of the benefit for all credited past service of current members) which is expressed as a lump sum dollar amount.

The cost is the sum of a percent of future pay and a lump sum dollar amount (the sum of an apple and an orange if you will). To communicate the total cost, either the Normal Cost (i.e., future percent of payroll) must be converted to a lump sum dollar amount (in which case the total cost is the present value of benefits), or the Past Service Cost (i.e., the lump sum) must be converted to a percent of payroll (in which case the total cost is expressed as the employer's rate, part of which is permanent and part temporary). Converting the Past Service Cost lump sum to a percent of payroll requires a specific amortization period, and the employer rate will vary depending on the amortization period chosen.

### Rate Volatility

As is stated above, the actuarial calculations supplied in this communication are based on a number of assumptions about very long term demographic and economic behavior. Unless these assumptions (terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year to year basis. The year-to-year differences between actual experience and the assumptions are called actuarial gains and losses and serve to lower or raise the employer's rates from one year to the next. Therefore, the rates will inevitably fluctuate, especially due to the ups and downs of investment returns.

Plans that have higher asset to payroll ratios produce more volatile employer rates due to investment return. On the following page we have shown your volatility index, a measure of the plan's potential future rate volatility. It should be noted that this ratio increases over time but generally tends to stabilize as the plan matures.

| Rate Volatility | As of June 30, 2010 |
|---|---|
| Market Value of Assets without Receivables | $ 77,351,426 |
| Payroll | 17,084,420 |
| Volatility Index | 4.5 |

# Changes since the Prior Valuation

### Actuarial Assumptions

There were no changes made to the actuarial assumptions since the prior year's actuarial valuation. The only exception would be changes necessary to reflect a benefit amendment.

### Actuarial Methods

A method change was adopted by the CalPERS Board in June 2009. We are in the second year of a 3-year temporary change to the asset smoothing method and the amortization of gains and losses in order to phase in the impact of the -24% investment loss experienced by CalPERS in fiscal year 2008-2009. The following changes were adopted:

- Increase the corridor limits for the actuarial value of assets from 80%-120% of market value to 60%-140% of market value on June 30, 2009
- Reduce the corridor limits for the actuarial value of assets to 70%-130% of market value on June 30, 2010
- Return to the 80%-120% of market value corridor limits for the actuarial value of assets on June 30, 2011 and thereafter
- Isolate and amortize all gains and losses during fiscal year 2008-2009, 2009-2010 and 2010-2011 over fixed and declining 30 year periods (as opposed to the current rolling 30 year amortization)

A complete description of all methods is in Appendix A. The detailed calculation of the actuarial value of assets is shown in the "Development of the Actuarial Value of Assets."

### Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation whose valuation date follows the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective even if the valuation date is prior to the effective date of the amendment.

This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to Appendix B for a summary of the plan provisions used in the valuation. The effect of any mandated benefit changes or plan amendments on the unfunded liability is shown in the "(Gain)/Loss Analysis" and the effect on your employer contribution rate is shown in the "Reconciliation of Required Employer Contributions". It should be noted that no change in liability or rate is shown for any plan changes which were already included in the prior year's valuation.

# SUMMARY OF LIABILITIES AND RATES

- DEVELOPMENT OF ACCRUED AND UNFUNDED LIABILITIES
- (GAIN) / LOSS ANALYSIS
- SCHEDULE OF AMORTIZATION BASES
- RECONCILIATION OF REQUIRED EMPLOYER CONTRIBUTIONS
- EMPLOYER CONTRIBUTION RATE HISTORY
- FUNDING HISTORY

# Development of Accrued and Unfunded Liabilities

| | | | |
|---|---|---|---|
| 1. | Present Value of Projected Benefits | | |
| | a) Active Members | $ | 85,540,240 |
| | b) Transferred Members | | 5,645,673 |
| | c) Terminated Members | | 2,541,329 |
| | d) Members and Beneficiaries Receiving Payments | | 62,337,002 |
| | e) Total | $ | 156,064,244 |
| 2. | Present Value of Future Employer Normal Costs | $ | 14,205,784 |
| 3. | Present Value of Future Employee Contributions | $ | 10,197,726 |
| 4. | Entry Age Normal Accrued Liability | | |
| | a) Active Members [(1a) - (2) - (3)] | $ | 61,136,730 |
| | b) Transferred Members (1b) | | 5,645,673 |
| | c) Terminated Members (1c) | | 2,541,329 |
| | d) Members and Beneficiaries Receiving Payments (1d) | | 62,337,002 |
| | e) Total | $ | 131,660,734 |
| 5. | Actuarial Value of Assets | $ | 98,082,197 |
| 6. | Unfunded Accrued Liability [(4e) – (5)] | $ | 33,578,537 |

# (Gain)/Loss Analysis 6/30/09 – 6/30/10

To calculate the cost requirements of the plan, 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 compared to the expected experience based on the actuarial assumptions. This results in actuarial gains or losses, as shown below.

| | | | | |
|---|---|---|---|---|
| **A** | **Total (Gain)/Loss for the Year*** | | | |
| 1. | Unfunded Accrued Liability (UAL) as of 6/30/09 | | $ | 31,671,177 |
| 2. | Expected Payment on the UAL during 2009/2010 | | | 1,564,421 |
| 3. | Interest through 6/30/10 [.0775 x (A1) - ((1.0775)$^{1/2}$ - 1) x (A2)] | | | 2,395,026 |
| 4. | Expected UAL before all other changes [(A1) - (A2) + (A3)] | | | 32,501,782 |
| 5. | Change due to plan changes | | | 0 |
| 6. | Change due to assumption change | | | 0 |
| 7. | Expected UAL after all other changes [(A4) + (A5) + (A6)] | | | 32,501,782 |
| 8. | Actual UAL as of 6/30/10 | | | 33,578,537 |
| 9. | Total (Gain)/Loss for 2009/2010 [(A8) - (A7)] | | $ | 1,076,755 |
| **B** | **Contribution (Gain)/Loss for the Year** | | | |
| 1. | Expected Contribution (Employer and Employee) | | $ | 5,124,888 |
| 2. | Interest on Expected Contributions | | | 194,884 |
| 3. | Actual Contributions | | | 5,006,170 |
| 4. | Interest on Actual Contributions | | | 190,369 |
| 5. | Expected Contributions with Interest [(B1) + (B2)] | | | 5,319,772 |
| 6. | Actual Contributions with Interest [(B3) + (B4)] | | | 5,196,539 |
| 7. | Contribution (Gain)/Loss [(B5) - (B6)] | | $ | 123,233 |
| **C** | **Asset (Gain)/Loss for the Year** | | | |
| 1. | Actuarial Value of Assets as of 6/30/09 Including Receivables | | $ | 92,367,227 |
| 2. | Receivables as of 6/30/09 | | | 265,746 |
| 3. | Actuarial Value of Assets as of 6/30/09 | | | 92,101,481 |
| 4. | Contributions Received | | | 5,006,170 |
| 5. | Benefits and Refunds Paid | | | (4,830,704) |
| 6. | Transfers/Misc. Adjustments | | | (96,541) |
| 7. | Expected Int. [.0775 x (C3) + ((1.0775)$^{1/2}$ - 1) x ((C4) + (C5) + (C6))] | | | 7,140,866 |
| 8. | Expected Assets as of 6/30/10 [(C3) + (C4) + (C5) + (C6) + (C7)] | | | 99,321,272 |
| 9. | Receivables as of 6/30/10 | | | 225,581 |
| 10. | Expected Assets Including Receivables | | | 99,546,853 |
| 11. | Actual Actuarial Value of Assets as of 6/30/10 | | | 98,082,197 |
| 12. | Asset (Gain)/Loss [(C10) - (C11)] | | $ | 1,464,656 |
| **D** | **Liability (Gain)/Loss for the Year** | | | |
| 1. | Total (Gain)/Loss (A9) | | $ | 1,076,755 |
| 2. | Contribution (Gain)/Loss (B7) | | | 123,233 |
| 3. | Asset (Gain)/Loss (C12) | | | 1,464,656 |
| 4. | Liability (Gain)/Loss [(D1) - (D2) - (D3)] | | $ | (511,134) |
| **Development of the (Gain)/Loss Balance as of 6/30/10**** | | | | |
| 1. | (Gain)/Loss Balance as of 6/30/09 | | $ | 24,280,734 |
| 2. | Payment Made on the Balance during 2009/2010 | | | 1,320,743 |
| 3. | Interest through 6/30/10 [.0775 x (1) - ((1.0775)$^{1/2}$ - 1) x (2)] | | | 1,831,533 |
| 4. | Scheduled (Gain)/Loss Balance as of 6/30/10 [(1) - (2) + (3)] | | $ | 24,791,524 |

* The Total (Gain)/Loss for 2009/2010 is being amortized over a fixed and declining 30-year period and is shown as "Special (Gain)/Loss" in the "Schedule of Amortization Bases" on the following page.

** This (Gain)/Loss represents the 6/30/10 balance of the accumulation of (gains)/losses through 6/30/08 and is amortized using a rolling 30-year period. Gains and losses incurred after 6/30/2011 will again accumulate to this base.

# Schedule of Amortization Bases

There is a two year lag between the Valuation Date and the Contribution Fiscal Year.

- The assets, liabilities and funded status of the plan are measured as of the valuation date (June 30, 2010).
- The employer contribution rate determined by the valuation is for the fiscal year beginning two years after the valuation date (fiscal year 2012/2013).

This two year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and due to the need to provide public agencies with their employer contribution rates well in advance of the start of the fiscal year.

The Unfunded Liability is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The Unfunded Liability is rolled forward each year by subtracting the expected Payment on the Unfunded Liability for the fiscal year and adjusting for interest. The Expected Payment on the Unfunded Liability for a fiscal year is equal to the Expected Employer Contribution for the fiscal year minus the Expected Normal Cost for the year. The Employer Contribution Rate for the first fiscal year is determined by the actuarial valuation two years ago and the rate for the second year is from the actuarial valuation one year ago. The Normal Cost Rate for each of the two fiscal years is assumed to be the same as the rate determined by the current valuation. All expected dollar amounts are determined by multiplying the rate by the expected payroll for the applicable fiscal year, based on payroll as of the valuation date.

| | | | | | | | Amounts for Fiscal 2012/2013 | | |
|---|---|---|---|---|---|---|---|---|---|
| Reason for Base | Date Established | Amortization Period | Balance 6/30/10 | Expected Payment 2010/2011 | Balance 6/30/11 | Expected Payment 2011/2012 | Balance 6/30/12 | Scheduled Payment for 2012–2013 | Payment as Percent-age of Payroll |
| ASSUMPTION CHANGE | 06/30/03 | 13 | $2,442,142 | $223,989 | $2,398,901 | $231,269 | $2,344,752 | $238,785 | 1.270% |
| ASSETS CHANGE | 06/30/03 | 13 | $(121,368) | $(11,132) | $(119,219) | $(11,493) | $(116,528) | $(11,867) | (0.063%) |
| METHOD CHANGE | 06/30/04 | 14 | $(287,631) | $(25,207) | $(283,757) | $(26,026) | $(278,732) | $(26,871) | (0.143%) |
| (GAIN)/LOSS | 06/30/08 | 30 | $24,791,524 | $1,488,755 | $25,167,499 | $1,511,333 | $25,549,176 | $1,534,253 | 8.159% |
| ASSUMPTION CHANGE | 06/30/09 | 19 | $3,714,035 | $70,724 | $3,928,459 | $296,721 | $3,924,910 | $306,364 | 1.629% |
| SPECIAL (GAIN)/LOSS | 06/30/09 | 29 | $2,443,946 | $0 | $2,633,351 | $158,135 | $2,673,287 | $163,275 | 0.868% |
| SPECIAL (GAIN)/LOSS | 06/30/10 | 30 | $1,076,754 | $0 | $1,160,202 | $0 | $1,250,118 | $75,071 | 0.399% |
| PAYMENT (GAIN)/LOSS | 06/30/10 | 30 | $(480,865) | $(87,413) | $(427,395) | $(79,838) | $(377,644) | $(22,678) | (0.121%) |
| **TOTAL** | | | **$33,578,537** | **$1,659,716** | **$34,458,041** | **$2,080,101** | **$34,969,339** | **$2,256,332** | **11.999%** |

The special (gain)/loss bases were established using the temporary modification recognized in the 2009, 2010 and 2011 annual valuations. Unlike the gain/loss occurring in previous and subsequent years, the gain/loss recognized in the 2009, 2010, and 2011 annual valuations will be amortized over fixed and declining 30 year periods so that these annual gain/losses will be fully paid off in 30 years.

# Reconciliation of Required Employer Contributions

| | Percentage of Projected Payroll | Estimated $ Based on Projected Payroll |
|---|---|---|
| 1. Contribution for 7/1/11 – 6/30/12 (from prior year annual report) | 23.253% | $ 4,410,359 |
| 2. Effect of changes since the prior year annual valuation | | |
| a) Effect of unexpected changes in demographics and financial results | 0.578% | 108,645 |
| b) Effect of plan changes | 0.000% | 0 |
| c) Effect of changes in Assumptions | 0.000% | 0 |
| d) Effect of change in payroll | - | (37,679) |
| e) Effect of elimination of amortization base | 0.000% | 0 |
| f) Effect of changes due to Fresh Start | 0.000% | 0 |
| g) Net effect of the changes above [Sum of (a) through (f)] | 0.578% | 70,966 |
| 3. Contribution for 7/1/12 – 6/30/13 [(1)+(2g)] | 23.831% | 4,481,325 |

The contribution actually paid (item 1) may be different if a prepayment of unfunded actuarial liability is made or a plan change became effective after the prior year's actuarial valuation was performed.

# Employer Contribution Rate History

The table below provides a recent history of the employer contribution rates for your plan, as determined by the annual actuarial valuation. It does not account for prepayments or benefit changes made in the middle of the year.

**Required By Valuation**

| Fiscal Year | Employer Normal Cost | Unfunded Rate | Total Employer Contribution Rate |
|---|---|---|---|
| 2008 - 2009 | 12.289% | 8.628% | 20.917% |
| 2009 - 2010 | 12.522% | 8.283% | 20.805% |
| 2010 - 2011 | 12.461% | 8.780% | 21.241% |
| 2011 - 2012 | 12.012% | 11.241% | 23.253% |
| 2012 - 2013 | 11.832% | 11.999% | 23.831% |

# Funding History

The Funding History below shows the recent history of the actuarial accrued liability, the market value of assets, the actuarial value of assets, funded ratios and the annual covered payroll. The Actuarial Value of Assets is used to establish funding requirements and the funded ratio on this basis represents the progress toward fully funding future benefits for current plan participants. The funded ratio based on the Market Value of Assets is an indicator of the short-term solvency of the plan.

| Valuation Date | Accrued Liability | Actuarial Value of Assets (AVA) | Market Value of Assets (MVA) | Funded Ratio AVA | Funded Ratio MVA | Annual Covered Payroll |
|---|---|---|---|---|---|---|
| 06/30/06 | $ 93,375,572 | $ 71,283,269 | $ 75,486,392 | 76.3% | 80.8% | $ 15,093,526 |
| 06/30/07 | 102,419,370 | 79,504,774 | 92,536,865 | 77.6% | 90.4% | 16,207,108 |
| 06/30/08 | 112,037,659 | 86,576,900 | 88,560,689 | 77.3% | 79.0% | 17,034,880 |
| 06/30/09 | 124,038,404 | 92,367,227 | 67,807,358 | 74.5% | 54.7% | 17,231,634 |
| 06/30/10 | 131,660,734 | 98,082,197 | 77,577,007 | 74.5% | 58.9% | 17,084,420 |

# SUMMARY OF ASSETS

- RECONCILIATION OF THE MARKET VALUE OF ASSETS
- DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS
- ASSET ALLOCATION
- CALPERS HISTORY OF INVESTMENT RETURNS

# Reconciliation of the Market Value of Assets

| | | | |
|---|---|---|---|
| 1. | Market Value of Assets as of 6/30/09 Including Receivables | $ | 67,807,358 |
| 2. | Receivables for Service Buybacks as of 6/30/09 | | 265,746 |
| 3. | Market Value of Assets as of 6/30/09 | | 67,541,612 |
| 4. | Employer Contributions | | 3,560,759 |
| 5. | Employee Contributions | | 1,445,411 |
| 6. | Benefit Payments to Retirees and Beneficiaries | | (4,820,778) |
| 7. | Refunds | | (9,926) |
| 8. | Lump Sum Payments | | 0 |
| 9. | Transfers and Miscellaneous Adjustments | | (96,541) |
| 10. | Investment Return | | 9,730,889 |
| 11. | Market Value of Assets as of 6/30/10 | $ | 77,351,426 |
| 12. | Receivables for Service Buybacks as of 6/30/10 | | 225,581 |
| 13. | Market Value of Assets as of 6/30/10 Including Receivables | $ | 77,577,007 |

# Development of the Actuarial Value of Assets

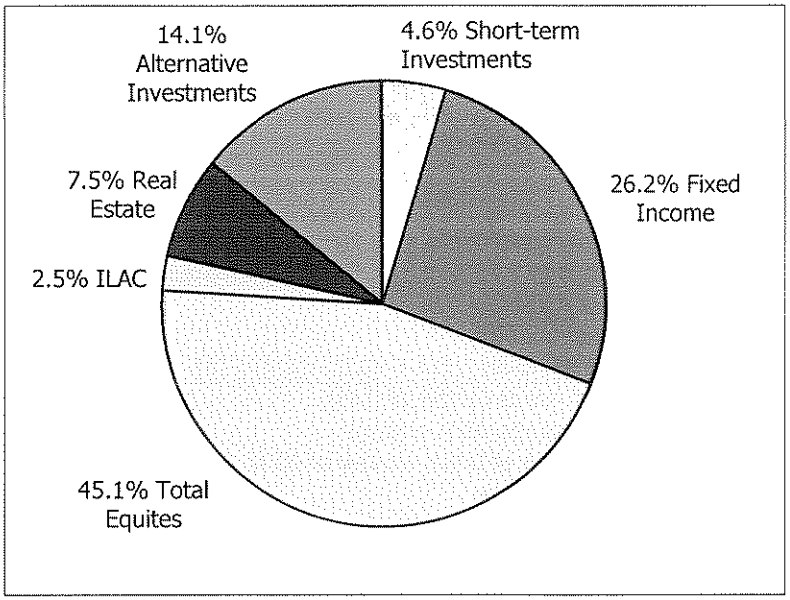
| | | | |
|---|---|---|---|
| 1. | Actuarial Value of Assets as of 6/30/09 Used For Rate Setting Purposes | $ | 92,367,227 |
| 2. | Receivables for Service Buybacks as of 6/30/09 | | 265,746 |
| 3. | Actuarial Value of Assets as of 6/30/09 | | 92,101,481 |
| 4. | Employer Contributions | | 3,560,759 |
| 5. | Employee Contributions | | 1,445,411 |
| 6. | Benefit Payments to Retirees and Beneficiaries | | (4,820,778) |
| 7. | Refunds | | (9,926) |
| 8. | Lump Sum Payments | | 0 |
| 9. | Transfers and Miscellaneous Adjustments | | (96,541) |
| 10. | Expected Investment Income at 7.75% | | 7,140,866 |
| 11. | Expected Actuarial Value of Assets | $ | 99,321,272 |
| 12. | Market Value of Assets as of 6/30/10 | $ | 77,351,426 |
| 13. | Preliminary Actuarial Value of Assets [(11) + ((12) – (11)) / 15] | | 97,856,616 |
| 14. | Maximum Actuarial Value of Assets (130% of (12)) | | 100,556,854 |
| 15. | Minimum Actuarial Value of Assets (70% of (12)) | | 54,145,998 |
| 16. | Actuarial Value of Assets {Lesser of [(14), Greater of ((13), (15))]} | | 97,856,616 |
| 17. | Actuarial Value to Market Value Ratio | | 126.4% |
| 18. | Receivables for Service Buybacks as of 6/30/10 | | 225,581 |
| 19. | Actuarial Value of Assets as of 6/30/10 Used for Rate Setting Purposes | $ | 98,082,197 |

# Asset Allocation

CalPERS follows a strategic asset allocation policy that identifies the percentage of funds to be invested in each asset class. The current target allocation was adopted by the Board in December 2010.

The asset allocation and market value of assets shown below reflect the values of the Public Employees Retirement Fund (PERF) in its entirety as of June 30, 2010. The assets for CITY OF CHICO MISCELLANEOUS PLAN are part of the Public Employees Retirement Fund (PERF) and are invested accordingly.

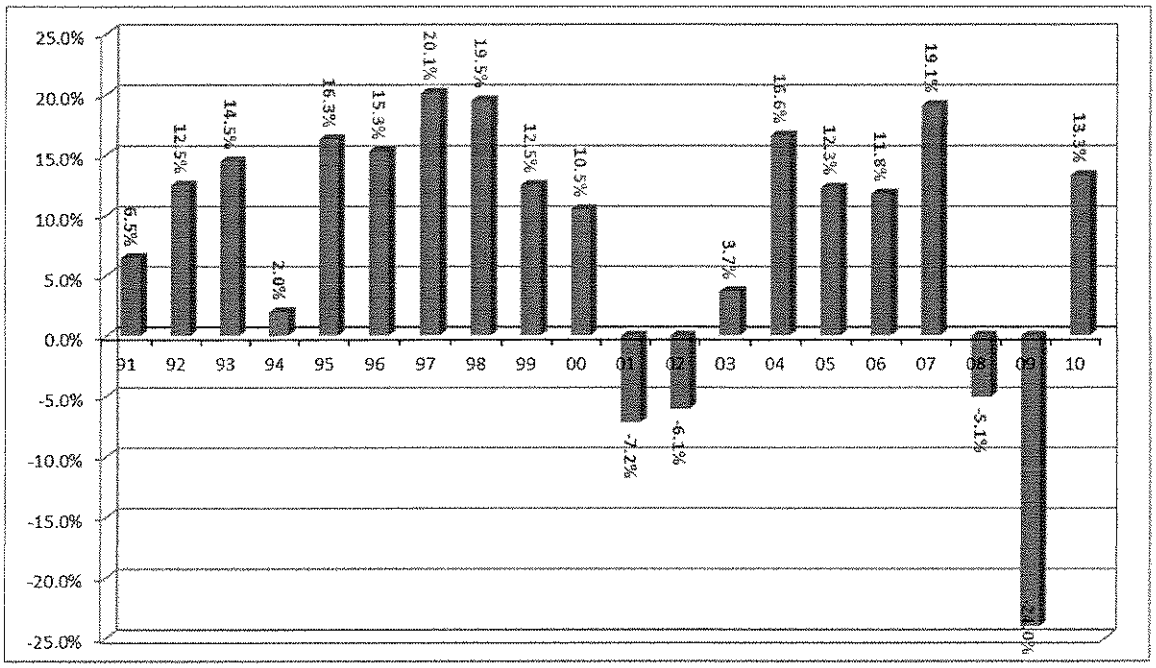
| (A) Asset Class | (B) Market Value ($ Billion) | (C) Current Allocation | (D) Current Target |
|---|---|---|---|
| 1) Short-term Investments | 9.3 | 4.6% | 4.0% |
| 2) Total Global Fixed Income | 53.4 | 26.2% | 16.0% |
| 3) Total Equities | 91.9 | 45.1% | 49.0% |
| 4) Inflation Linked (ILAC) | 5.0 | 2.5% | 4.0% |
| 5) Total Real Estate | 15.2 | 7.5% | 13.0% |
| 6) Alternative Investments | 28.7 | 14.1% | 14.0% |
| Total Fund | 203.5[1] | 100.0% | 100.0% |




[1] Differences between investment values above and the values on the Summary of Investments on page 23 of the Comprehensive Annual Financial Report (Year Ended June 30, 2010) are due to differences in reporting methods. The Summary of Investments includes Net Investment Receivables/Payables.

# CalPERS 20-Year History of Investment Returns

The following is a chart with historical annual returns of the Public Employees Retirement Fund for each fiscal year ending on June 30. Beginning with June 30, 2002 the figures are reported as gross of fees.



# SUMMARY OF PARTICIPANT DATA

- SUMMARY OF VALUATION DATA
- ACTIVE MEMBERS
- TRANSFERRED AND TERMINATED MEMBERS
- RETIRED MEMBERS AND BENEFICIARIES

# Summary of Valuation Data

| | June 30, 2009 | June 30, 2010 |
|---|---|---|
| 1. **Active Members** | | |
| a) Counts | 257 | 252 |
| b) Average Attained Age | 46.82 | 46.99 |
| c) Average Entry Age to Rate Plan | 36.33 | 36.13 |
| d) Average Years of Service | 10.49 | 10.86 |
| e) Average Annual Covered Pay | $ 67,049 | $ 67,795 |
| f) Annual Covered Payroll | 17,231,634 | 17,084,420 |
| g) Projected Annual Payroll for Contribution Year | 18,966,913 | 18,804,874 |
| h) Present Value of Future Payroll | 128,846,422 | 127,471,506 |
| 2. **Transferred Members** | | |
| a) Counts | 75 | 72 |
| b) Average Attained Age | 50.12 | 50.61 |
| c) Average Years of Service | 4.10 | 4.02 |
| d) Average Annual Covered Pay | $ 84,841 | $ 83,689 |
| 3. **Terminated Members** | | |
| a) Counts | 50 | 50 |
| b) Average Attained Age | 46.59 | 46.64 |
| c) Average Years of Service | 4.60 | 5.07 |
| d) Average Annual Covered Pay | $ 46,860 | $ 47,869 |
| 4. **Retired Members and Beneficiaries** | | |
| a) Counts | 273 | 286 |
| b) Average Attained Age | 69.54 | 69.90 |
| c) Average Annual Benefits | $ 16,834 | $ 17,879 |
| 5. **Active to Retired Ratio** | 0.94 | 0.88 |

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

# Active Members

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

**Distribution of Active Members by Age and Service**

| Attained Age | Years of Service at Valuation Date | | | | | | |
|---|---|---|---|---|---|---|---|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-25 | 25+ | Total |
| 15-24 | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| 25-29 | 6 | 1 | 0 | 0 | 0 | 0 | 7 |
| 30-34 | 16 | 6 | 2 | 1 | 0 | 0 | 25 |
| 35-39 | 17 | 9 | 6 | 0 | 0 | 0 | 32 |
| 40-44 | 6 | 13 | 8 | 2 | 0 | 0 | 29 |
| 45-49 | 9 | 11 | 10 | 7 | 7 | 0 | 44 |
| 50-54 | 7 | 16 | 10 | 6 | 9 | 4 | 52 |
| 55-59 | 7 | 4 | 7 | 7 | 6 | 4 | 35 |
| 60-64 | 3 | 2 | 3 | 2 | 5 | 4 | 19 |
| 65 and over | 0 | 1 | 0 | 0 | 0 | 2 | 3 |
| **All Ages** | 77 | 63 | 46 | 25 | 27 | 14 | 252 |

**Distribution of Average Annual Salaries by Age and Service**

| Attained Age | Years of Service at Valuation Date | | | | | | |
|---|---|---|---|---|---|---|---|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-25 | 25+ | Average |
| 15-24 | $41,348 | $0 | $0 | $0 | $0 | $0 | $41,348 |
| 25-29 | 49,994 | 48,769 | 0 | 0 | 0 | 0 | 49,819 |
| 30-34 | 53,768 | 57,892 | 53,027 | 59,523 | 0 | 0 | 54,929 |
| 35-39 | 58,809 | 58,460 | 86,298 | 0 | 0 | 0 | 63,865 |
| 40-44 | 52,179 | 69,365 | 63,557 | 66,753 | 0 | 0 | 64,027 |
| 45-49 | 82,273 | 72,507 | 69,193 | 63,697 | 85,486 | 0 | 74,415 |
| 50-54 | 63,635 | 57,281 | 86,312 | 75,562 | 88,204 | 71,804 | 72,298 |
| 55-59 | 54,703 | 65,030 | 67,622 | 62,706 | 116,312 | 89,488 | 74,605 |
| 60-64 | 69,070 | 80,530 | 78,942 | 77,589 | 75,677 | 64,660 | 73,542 |
| 65 and over | 0 | 49,444 | 0 | 0 | 0 | 61,136 | 57,239 |
| **All Ages** | $58,405 | $63,630 | $73,859 | $67,456 | $91,426 | $73,291 | $67,795 |

# Transferred and Terminated Members

### Distribution of Transfers to Other CalPERS Plans by Age and Service

| Attained Age | Years of Service at Valuation Date 0-4 | 5-9 | 10-14 | 15-19 | 20-25 | 25+ | Total | Average Salary |
|---|---|---|---|---|---|---|---|---|
| 15-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| 25-29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30-34 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 66,350 |
| 35-39 | 2 | 2 | 0 | 0 | 0 | 0 | 4 | 74,894 |
| 40-44 | 8 | 1 | 0 | 0 | 1 | 0 | 10 | 91,259 |
| 45-49 | 9 | 2 | 1 | 0 | 0 | 0 | 12 | 79,559 |
| 50-54 | 12 | 2 | 4 | 1 | 0 | 0 | 19 | 76,623 |
| 55-59 | 11 | 1 | 1 | 0 | 0 | 0 | 13 | 101,709 |
| 60-64 | 5 | 2 | 1 | 0 | 0 | 0 | 8 | 87,117 |
| 65 and over | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 59,174 |
| **All Ages** | 52 | 11 | 7 | 1 | 1 | 0 | 72 | 83,689 |

### Distribution of Terminated Participants with Funds on Deposit by Age and Service

| Attained Age | Years of Service at Valuation Date 0-4 | 5-9 | 10-14 | 15-19 | 20-25 | 25+ | Total | Average Salary |
|---|---|---|---|---|---|---|---|---|
| 15-24 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | $32,017 |
| 25-29 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 46,704 |
| 30-34 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 51,777 |
| 35-39 | 4 | 1 | 0 | 0 | 0 | 0 | 5 | 42,555 |
| 40-44 | 8 | 0 | 1 | 0 | 0 | 0 | 9 | 43,883 |
| 45-49 | 4 | 3 | 3 | 0 | 0 | 0 | 10 | 47,682 |
| 50-54 | 7 | 2 | 4 | 0 | 0 | 0 | 13 | 53,501 |
| 55-59 | 1 | 2 | 1 | 1 | 0 | 0 | 5 | 49,446 |
| 60-64 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 52,345 |
| 65 and over | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 27,976 |
| **All Ages** | 30 | 9 | 10 | 1 | 0 | 0 | 50 | 47,869 |

# Retired Members and Beneficiaries

**Distribution of Retirees and Beneficiaries by Age and Retirement Type***

| Attained Age | Service Retirement | Non-Industrial Disability | Industrial Disability | Non-Industrial Death | Industrial Death | Death After Retirement | Total |
|---|---|---|---|---|---|---|---|
| Under 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30-34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35-39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40-44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45-49 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| 50-54 | 5 | 1 | 0 | 0 | 0 | 0 | 6 |
| 55-59 | 32 | 1 | 0 | 0 | 0 | 2 | 35 |
| 60-64 | 67 | 2 | 0 | 0 | 0 | 3 | 72 |
| 65-69 | 40 | 3 | 0 | 0 | 0 | 2 | 45 |
| 70-74 | 33 | 5 | 0 | 1 | 0 | 5 | 44 |
| 75-79 | 26 | 0 | 0 | 0 | 0 | 5 | 31 |
| 80-84 | 14 | 2 | 0 | 0 | 0 | 2 | 18 |
| 85 and Over | 23 | 0 | 0 | 0 | 0 | 10 | 33 |
| **All Ages** | 240 | 15 | 0 | 1 | 0 | 30 | 286 |

**Distribution of Average Annual Amounts for Retirees and Beneficiaries by Age and Retirement Type***

| Attained Age | Service Retirement | Non-Industrial Disability | Industrial Disability | Non-Industrial Death | Industrial Death | Death After Retirement | Average |
|---|---|---|---|---|---|---|---|
| Under 30 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| 30-34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35-39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40-44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45-49 | 0 | 5,869 | 0 | 0 | 0 | 6,688 | 6,279 |
| 50-54 | 7,207 | 11,301 | 0 | 0 | 0 | 0 | 7,889 |
| 55-59 | 28,738 | 12,492 | 0 | 0 | 0 | 3,900 | 26,854 |
| 60-64 | 26,490 | 1,823 | 0 | 0 | 0 | 8,938 | 25,073 |
| 65-69 | 21,727 | 8,315 | 0 | 0 | 0 | 1,708 | 19,943 |
| 70-74 | 12,932 | 3,020 | 0 | 3,084 | 0 | 10,107 | 11,260 |
| 75-79 | 13,835 | 0 | 0 | 0 | 0 | 7,310 | 12,783 |
| 80-84 | 10,620 | 8,280 | 0 | 0 | 0 | 5,164 | 9,753 |
| 85 and Over | 12,275 | 0 | 0 | 0 | 0 | 6,119 | 10,410 |
| **All Ages** | $20,071 | $5,994 | $0 | $3,084 | $0 | $6,777 | $17,879 |

# Retired Members and Beneficiaries (continued)

**Distribution of Retirees and Beneficiaries by Years Retired and Retirement Type***

| Years Retired | Service Retirement | Non-Industrial Disability | Industrial Disability | Non-Industrial Death | Industrial Death | Death After Retirement | Total |
|---|---|---|---|---|---|---|---|
| Under 5 Yrs | 76 | 0 | 0 | 0 | 0 | 6 | 82 |
| 5-9 | 66 | 2 | 0 | 0 | 0 | 9 | 77 |
| 10-14 | 43 | 4 | 0 | 1 | 0 | 11 | 59 |
| 15-19 | 14 | 1 | 0 | 0 | 0 | 1 | 16 |
| 20-24 | 23 | 2 | 0 | 0 | 0 | 2 | 27 |
| 25-29 | 12 | 6 | 0 | 0 | 0 | 1 | 19 |
| 30 and Over | 6 | 0 | 0 | 0 | 0 | 0 | 6 |
| **All Years** | 240 | 15 | 0 | 1 | 0 | 30 | 286 |

**Distribution of Average Annual Amounts for Retirees and Beneficiaries by Years Retired and Retirement Type***

| Years Retired | Service Retirement | Non-Industrial Disability | Industrial Disability | Non-Industrial Death | Industrial Death | Death After Retirement | Average |
|---|---|---|---|---|---|---|---|
| Under 5 Yrs | $31,969 | $0 | $0 | $0 | $0 | $11,284 | $30,456 |
| 5-9 | 20,269 | 1,823 | 0 | 0 | 0 | 7,497 | 18,297 |
| 10-14 | 10,972 | 11,404 | 0 | 3,084 | 0 | 5,201 | 9,792 |
| 15-19 | 15,880 | 5,437 | 0 | 0 | 0 | 1,277 | 14,315 |
| 20-24 | 10,076 | 8,280 | 0 | 0 | 0 | 3,437 | 9,452 |
| 25-29 | 8,880 | 3,109 | 0 | 0 | 0 | 2,776 | 6,736 |
| 30 and Over | 2,855 | 0 | 0 | 0 | 0 | 0 | 2,855 |
| **All Years** | $20,071 | $5,994 | $0 | $3,084 | $0 | $6,777 | $17,879 |

* Counts of members do not include alternate payees receiving benefits while the member is still working. Therefore, the total counts may not match information on page 25 of the report. Multiple records may exist for those who have service in more than one coverage group. This does not result in double counting of liabilities.

# APPENDICES

- **APPENDIX A - STATEMENT OF ACTUARIAL DATA, METHODS AND ASSUMPTIONS**
- **APPENDIX B - SUMMARY OF PRINCIPAL PLAN PROVISIONS**
- **APPENDIX C - GASB STATEMENT NO. 27**
- **APPENDIX D – INVESTMENT RETURN SENSITIVITY ANALYSIS**
- **APPENDIX E – GLOSSARY OF ACTUARIAL TERMS**

# APPENDIX A

- **STATEMENT OF ACTUARIAL DATA, METHODS AND ASSUMPTIONS**

# Actuarial Data

As stated in the Actuarial Certification, the data which serves as the basis of this valuation has been obtained from the various CalPERS databases. We have reviewed the valuation data and believe that it is reasonable and appropriate in aggregate. We are unaware of any potential data issues that would have a material effect on the results of this valuation, except that data does not always contain the latest salary information for former members now in reciprocal systems and does not recognize the potential for unusually large salary deviation in certain cases such as elected officials. Therefore, salary information in these cases may not be accurate. These situations are relatively infrequent, however, and when they do occur, they generally do not have a material impact on the employer contribution rates.

# Actuarial Methods

**Funding Method**

The actuarial funding method used for the Retirement Program is the Entry Age Normal Cost Method. Under this method, projected benefits are determined for all members and the associated liabilities are spread in a manner that produces level annual cost as a percent of pay in each year from the age of hire (entry age) to the assumed retirement age. The cost allocated to the current fiscal year is called the normal cost.

The actuarial accrued liability for active members is then calculated as the portion of the total cost of the plan allocated to prior years. The actuarial accrued liability for members currently receiving benefits, for active members beyond the assumed retirement age, and for members entitled to deferred benefits, is equal to the present value of the benefits expected to be paid. No normal costs are applicable for these participants.

The excess of the total actuarial accrued liability over the actuarial value of plan assets is called the unfunded actuarial accrued liability. Funding requirements are determined by adding the normal cost and an amortization of the unfunded liability as a level percentage of assumed future payrolls. All changes in liability due to plan amendments, changes in actuarial assumptions, or changes in actuarial methodology are amortized separately over a 20-year period. All gains or losses are tracked and amortized over a rolling 30-year period with the exception of special gains and losses in fiscal years 2008-2009, 2009-2010 and 2010-2011. Each of these years' gains or losses will be isolated and amortized over fixed and declining 30 year periods (as opposed to the current rolling 30 year amortization). If a plan's accrued liability exceeds the actuarial value of assets, the annual contribution with respect to the total unfunded liability may not be less than the amount produced by a 30-year amortization of the unfunded liability.

Additional contributions will be required for any plan or pool if their cash flows hamper adequate funding progress by preventing the expected funded status on a market value of assets basis of the plan to either:

- Increase by at least 15% by June 30, 2043; or
- Reach a level of 75% funded by June 30, 2043

The necessary additional contribution will be obtained by changing the amortization period of the gains and losses prior to 2009 to a period which will result in the satisfaction of the above criteria. CalPERS actuaries will reassess the criteria above when performing each future valuation to determine whether or not additional contributions are necessary.

An exception to the funding rules above is used whenever the application of such rules results in inconsistencies. In these cases a "fresh start" approach is used. This simply means that the current unfunded actuarial liability is projected and amortized over a set number of years. As mentioned above, if the annual contribution on the total unfunded liability was less than the amount produced by a 30-year amortization of the unfunded liability, the plan actuary would implement a 30-year fresh start. However, in the case of a 30-year fresh start, just the unfunded liability not already in the (gain)/loss base (which already is amortized over 30 years) will go into the new fresh start base. In addition, a fresh start is needed in the following situations:

1) when a positive payment would be required on a negative unfunded actuarial liability (or conversely a negative payment on a positive unfunded actuarial liability); or

2) when there are excess assets, rather than an unfunded liability. In this situation a 30-year fresh start is used, unless a longer fresh start is needed to avoid a negative total rate.

It should be noted that the actuary may choose to use a fresh start under other circumstances. In all cases, the fresh start period is set by the actuary at what he deems appropriate, and will not be less than five years nor greater than 30 years.

### Asset Valuation Method

In order to dampen the effect of short term market value fluctuations on employer contribution rates, the following asset smoothing technique is used. First an Expected Value of Assets is computed by bringing forward the prior year's Actuarial Value of Assets and the contributions received and benefits paid during the year at the assumed actuarial rate of return. The Actuarial Value of Assets is then computed as the Expected Value of Assets plus one-fifteenth of the difference between the actual Market Value of Assets and the Expected Value of Assets as of the valuation date. However in no case will the Actuarial Value of Assets be less than 80% or greater than 120% of the actual Market Value of Assets.

In June 2009, the CalPERS Board adopted changes to the asset smoothing method in order to phase in over a three year period the impact of the -24% investment loss experienced by CalPERS in fiscal year 2008-2009. The following changes were adopted:

- Increase the corridor limits for the actuarial value of assets from 80%-120% of market value to 60%-140% of market value on June 30, 2009
- Reduce the corridor limits for the actuarial value of assets to 70%-130% of market value on June 30, 2010
- Return to the 80%-120% of market value corridor limits for the actuarial value of assets on June 30, 2011 and thereafter

## Miscellaneous

### Superfunded Status

If a rate plan is superfunded (actuarial value of assets exceeds the present value of benefits), as of the most recently completed annual valuation, the employer may cover their employees' member contributions (both taxed and tax-deferred) using their employer assets during the fiscal year for which this valuation applies. This would entail transferring assets within the Public Employees' Retirement Fund (PERF) from the employer account to the member accumulated contribution accounts. This change was implemented effective January 1, 1999 pursuant to Chapter 231 (Assembly Bill 2099) which added Government Code Section 20816.

Superfunded status applies only to individual plans, not risk pools. For rate plans within a risk pool, actuarial value of assets is the sum of the rate plan's side fund plus the rate plan's pro-rata share of non-side fund assets.

### Internal Revenue Code Section 415

The limitations on benefits imposed by Internal Revenue Code Section 415 were not taken into account in this valuation. The effect of these limitations has been deemed immaterial on the overall results.

### Internal Revenue Code Section 401(a)(17)

The limitations on compensation imposed by Internal Revenue Code Section 401(a)(17) were taken into account in this valuation. Each year the impact of any changes in this compensation limitation since the prior valuation is included and amortized as part of the actuarial gain or loss base.

# Actuarial Assumptions

## *Economic Assumptions*

### Investment Return

7.75% compounded annually (net of expenses). This assumption is used for all plans.

### Salary Growth

Annual increases vary by category, entry age, and duration of service. Sample assumed increases are shown below.

**Public Agency Miscellaneous**

| Duration of Service | Entry Age 20 | Entry Age 30 | Entry Age 40 |
|---|---|---|---|
| 0 | 0.1445 | 0.1265 | 0.1005 |
| 1 | 0.1215 | 0.1075 | 0.0875 |
| 2 | 0.1035 | 0.0935 | 0.0775 |
| 3 | 0.0905 | 0.0825 | 0.0695 |
| 4 | 0.0805 | 0.0735 | 0.0635 |
| 5 | 0.0725 | 0.0675 | 0.0585 |
| 10 | 0.0505 | 0.0485 | 0.0435 |
| 15 | 0.0455 | 0.0435 | 0.0385 |
| 20 | 0.0415 | 0.0395 | 0.0355 |
| 25 | 0.0385 | 0.0385 | 0.0355 |
| 30 | 0.0385 | 0.0385 | 0.0355 |

**Public Agency Fire**

| Duration of Service | Entry Age 20 | Entry Age 30 | Entry Age 40 |
|---|---|---|---|
| 0 | 0.1075 | 0.1075 | 0.1045 |
| 1 | 0.0975 | 0.0965 | 0.0875 |
| 2 | 0.0895 | 0.0855 | 0.0725 |
| 3 | 0.0825 | 0.0775 | 0.0625 |
| 4 | 0.0765 | 0.0705 | 0.0535 |
| 5 | 0.0715 | 0.0645 | 0.0475 |
| 10 | 0.0535 | 0.0485 | 0.0375 |
| 15 | 0.0435 | 0.0415 | 0.0365 |
| 20 | 0.0395 | 0.0385 | 0.0355 |
| 25 | 0.0375 | 0.0375 | 0.0355 |
| 30 | 0.0375 | 0.0375 | 0.0355 |

**Public Agency Police**

| Duration of Service | Entry Age 20 | Entry Age 30 | Entry Age 40 |
|---|---|---|---|
| 0 | 0.1115 | 0.1115 | 0.1115 |
| 1 | 0.0955 | 0.0955 | 0.0955 |
| 2 | 0.0835 | 0.0835 | 0.0805 |
| 3 | 0.0745 | 0.0725 | 0.0665 |
| 4 | 0.0675 | 0.0635 | 0.0575 |
| 5 | 0.0615 | 0.0575 | 0.0505 |
| 10 | 0.0475 | 0.0445 | 0.0365 |
| 15 | 0.0435 | 0.0415 | 0.0355 |
| 20 | 0.0395 | 0.0385 | 0.0355 |
| 25 | 0.0375 | 0.0365 | 0.0355 |
| 30 | 0.0375 | 0.0365 | 0.0355 |

**Public Agency County Peace Officers**

| Duration of Service | Entry Age 20 | Entry Age 30 | Entry Age 40 |
|---|---|---|---|
| 0 | 0.1315 | 0.1315 | 0.1315 |
| 1 | 0.1115 | 0.1085 | 0.1055 |
| 2 | 0.0965 | 0.0915 | 0.0865 |
| 3 | 0.0845 | 0.0795 | 0.0735 |
| 4 | 0.0755 | 0.0695 | 0.0635 |
| 5 | 0.0685 | 0.0625 | 0.0555 |
| 10 | 0.0485 | 0.0445 | 0.0405 |
| 15 | 0.0435 | 0.0405 | 0.0385 |
| 20 | 0.0395 | 0.0385 | 0.0365 |
| 25 | 0.0375 | 0.0365 | 0.0355 |
| 30 | 0.0375 | 0.0365 | 0.0355 |

- The Miscellaneous salary scale is used for Local Prosecutors.
- The Police salary scale is used for Other Safety, Local Sheriff, and School Police.

**Overall Payroll Growth**

3.25% compounded annually (used in projecting the payroll over which the unfunded liability is amortized). This assumption is used for all plans.

**Inflation**

3.00% compounded annually. This assumption is used for all plans.

**Non-valued Potential Additional Liabilities**

The potential liability loss for a cost-of-living increase exceeding the 3% inflation assumption, and any potential liability loss from future member service purchases are not reflected in the valuation.

## *Miscellaneous Loading Factors*

**Credit for Unused Sick Leave**

Final Average Salary is increased by 1% for those plans with the provision providing Credit for Unused Sick Leave.

**Conversion of Employer Paid Member Contributions (EPMC)**

Final Average Salary is increased by the Employee Contribution Rate for those plans with the provision providing for the Conversion of Employer Paid Member Contributions (EPMC) during the final compensation period.

**Norris Decision (Best Factors)**

Employees hired prior to July 1, 1982 have projected benefit amounts increased in order to reflect the use of "Best Factors" in the calculation of optional benefit forms. This is due to a 1983 Supreme Court decision, known as the Norris decision, which required males and females to be treated equally in the determination of benefit amounts. Consequently, anyone already employed at that time is given the best possible conversion factor when optional benefits are determined. No loading is necessary for employees hired after July 1, 1982.

## ***Demographic Assumptions***

### Pre-Retirement Mortality

Non-Industrial Death Rates vary by age and gender. Industrial Death rates vary by age. See sample rates in table below. The non-industrial death rates are used for all plans. The industrial death rates are used for Safety Plans (except for Local Prosecutor safety members where the corresponding Miscellaneous Plan does not have the Industrial Death Benefit).

| | **Non-Industrial Death (Not Job-Related)** | | **Industrial Death (Job-Related)** |
|---|---|---|---|
| Age | Male | Female | Male and Female |
| 20 | 0.00047 | 0.00016 | 0.00003 |
| 25 | 0.00050 | 0.00026 | 0.00007 |
| 30 | 0.00053 | 0.00036 | 0.00010 |
| 35 | 0.00067 | 0.00046 | 0.00012 |
| 40 | 0.00087 | 0.00065 | 0.00013 |
| 45 | 0.00120 | 0.00093 | 0.00014 |
| 50 | 0.00176 | 0.00126 | 0.00015 |
| 55 | 0.00260 | 0.00176 | 0.00016 |
| 60 | 0.00395 | 0.00266 | 0.00017 |
| 65 | 0.00608 | 0.00419 | 0.00018 |
| 70 | 0.00914 | 0.00649 | 0.00019 |
| 75 | 0.01220 | 0.00878 | 0.00020 |
| 80 | 0.01527 | 0.01108 | 0.00021 |

Miscellaneous Plans usually have Industrial Death rates set to zero unless the agency has specifically contracted for Industrial Death benefits. If so, each Non-Industrial Death rate shown above will be split into two components: 99% will become the Non-Industrial Death rate and 1% will become the Industrial Death rate.

### Post-Retirement Mortality

Rates vary by age, type of retirement and gender. See sample rates in table below. These rates are used for all plans.

| | **Healthy Recipients** | | **Non-Industrially Disabled (Not Job-Related)** | | **Industrially Disabled (Job-Related)** | |
|---|---|---|---|---|---|---|
| Age | Male | Female | Male | Female | Male | Female |
| 50 | 0.00239 | 0.00125 | 0.01632 | 0.01245 | 0.00443 | 0.00356 |
| 55 | 0.00474 | 0.00243 | 0.01936 | 0.01580 | 0.00563 | 0.00546 |
| 60 | 0.00720 | 0.00431 | 0.02293 | 0.01628 | 0.00777 | 0.00798 |
| 65 | 0.01069 | 0.00775 | 0.03174 | 0.01969 | 0.01388 | 0.01184 |
| 70 | 0.01675 | 0.01244 | 0.03870 | 0.03019 | 0.02236 | 0.01716 |
| 75 | 0.03080 | 0.02071 | 0.06001 | 0.03915 | 0.03585 | 0.02665 |
| 80 | 0.05270 | 0.03749 | 0.08388 | 0.05555 | 0.06926 | 0.04528 |
| 85 | 0.09775 | 0.07005 | 0.14035 | 0.09577 | 0.11799 | 0.08017 |
| 90 | 0.16747 | 0.12404 | 0.21554 | 0.14949 | 0.16575 | 0.13775 |
| 95 | 0.25659 | 0.21556 | 0.31025 | 0.23055 | 0.26108 | 0.23331 |
| 100 | 0.34551 | 0.31876 | 0.45905 | 0.37662 | 0.40918 | 0.35165 |
| 105 | 0.58527 | 0.56093 | 0.67923 | 0.61523 | 0.64127 | 0.60135 |
| 110 | 1.00000 | 1.00000 | 1.00000 | 1.00000 | 1.00000 | 1.00000 |

**Marital Status**

For active members, a percentage married upon retirement is assumed according to the following table.

| Member Category | Percent Married |
|---|---|
| Miscellaneous Member | 85% |
| Local Police | 90% |
| Local Fire | 90% |
| Other Local Safety | 90% |
| School Police | 90% |

**Age of Spouse**

It is assumed that female spouses are 3 years younger than male spouses. This assumption is used for all plans.

**Terminated Members**

It is assumed that terminated members refund immediately if non-vested. Terminated members who are vested are assumed to follow the same service retirement pattern as active members but with a load to reflect the expected higher rates of retirement, especially at lower ages. The following table shows the load factors that are applied to the service retirement assumption for active members to obtain the service retirement pattern for separated vested members:

| Age | Load Factor |
|---|---|
| 50 | 450% |
| 51 | 250% |
| 52 through 56 | 200% |
| 57 through 60 | 150% |
| 61 through 64 | 125% |
| 65 and above | 100% (no change) |

**Termination with Refund**

Rates vary by entry age and service for Miscellaneous Plans. Rates vary by service for Safety Plans. See sample rates in tables below.

**Public Agency Miscellaneous**

| Duration of Service | Entry Age 20 | Entry Age 25 | Entry Age 30 | Entry Age 35 | Entry Age 40 | Entry Age 45 |
|---|---|---|---|---|---|---|
| 0 | 0.1742 | 0.1674 | 0.1606 | 0.1537 | 0.1468 | 0.1400 |
| 1 | 0.1545 | 0.1477 | 0.1409 | 0.1339 | 0.1271 | 0.1203 |
| 2 | 0.1348 | 0.1280 | 0.1212 | 0.1142 | 0.1074 | 0.1006 |
| 3 | 0.1151 | 0.1083 | 0.1015 | 0.0945 | 0.0877 | 0.0809 |
| 4 | 0.0954 | 0.0886 | 0.0818 | 0.0748 | 0.0680 | 0.0612 |
| 5 | 0.0212 | 0.0193 | 0.0174 | 0.0155 | 0.0136 | 0.0116 |
| 10 | 0.0138 | 0.0121 | 0.0104 | 0.0088 | 0.0071 | 0.0055 |
| 15 | 0.0060 | 0.0051 | 0.0042 | 0.0032 | 0.0023 | 0.0014 |
| 20 | 0.0037 | 0.0029 | 0.0021 | 0.0013 | 0.0005 | 0.0001 |
| 25 | 0.0017 | 0.0011 | 0.0005 | 0.0001 | 0.0001 | 0.0001 |
| 30 | 0.0005 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| 35 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |

**Public Agency Safety**

| Duration of Service | Fire | Police | County Peace Officer |
|---|---|---|---|
| 0 | 0.0710 | 0.1013 | 0.0997 |
| 1 | 0.0554 | 0.0636 | 0.0782 |
| 2 | 0.0398 | 0.0271 | 0.0566 |
| 3 | 0.0242 | 0.0258 | 0.0437 |
| 4 | 0.0218 | 0.0245 | 0.0414 |
| 5 | 0.0029 | 0.0086 | 0.0145 |
| 10 | 0.0009 | 0.0053 | 0.0089 |
| 15 | 0.0006 | 0.0027 | 0.0045 |
| 20 | 0.0005 | 0.0017 | 0.0020 |
| 25 | 0.0003 | 0.0012 | 0.0009 |
| 30 | 0.0003 | 0.0009 | 0.0006 |
| 35 | 0.0003 | 0.0009 | 0.0006 |

The Police Termination and Refund rates are used for Public Agency Local Prosecutors, Other Safety, Local Sheriff, and School Police.

**Termination with Vested Benefits**

Rates vary by entry age and service for Miscellaneous Plans. Rates vary by service for Safety Plans. See sample rates in tables below.

**Public Agency Miscellaneous**

| Duration of Service | Entry Age 20 | Entry Age 25 | Entry Age 30 | Entry Age 35 | Entry Age 40 |
|---|---|---|---|---|---|
| 5 | 0.0656 | 0.0597 | 0.0537 | 0.0477 | 0.0418 |
| 10 | 0.0530 | 0.0466 | 0.0403 | 0.0339 | 0.0000 |
| 15 | 0.0443 | 0.0373 | 0.0305 | 0.0000 | 0.0000 |
| 20 | 0.0333 | 0.0261 | 0.0000 | 0.0000 | 0.0000 |
| 25 | 0.0212 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 30 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 35 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

**Public Agency Safety**

| Duration of Service | Fire | Police | County Peace Officer |
|---|---|---|---|
| 5 | 0.0162 | 0.0163 | 0.0265 |
| 10 | 0.0061 | 0.0126 | 0.0204 |
| 15 | 0.0058 | 0.0082 | 0.0130 |
| 20 | 0.0053 | 0.0065 | 0.0074 |
| 25 | 0.0047 | 0.0058 | 0.0043 |
| 30 | 0.0045 | 0.0056 | 0.0030 |
| 35 | 0.0000 | 0.0000 | 0.0000 |

- When a member is eligible to retire, the termination with vested benefits probability is set to zero.
- After termination with vested benefits, a miscellaneous member is assumed to retire at age 59 and a safety member at age 54.
- The Police Termination with vested benefits rates are used for Public Agency Local Prosecutors, Other Safety, Local Sheriff, and School Police.

**Non-Industrial (Not Job-Related) Disability**
Rates vary by age and gender for Miscellaneous Plans.

Rates vary by age and category for Safety Plans.

| | Miscellaneous | | Fire | Police | County Peace Officer |
|---|---|---|---|---|---|
| Age | Male | Female | Male and Female | Male and Female | Male and Female |
| 20 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| 25 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| 30 | 0.0002 | 0.0002 | 0.0001 | 0.0002 | 0.0001 |
| 35 | 0.0006 | 0.0009 | 0.0001 | 0.0003 | 0.0004 |
| 40 | 0.0015 | 0.0016 | 0.0001 | 0.0004 | 0.0007 |
| 45 | 0.0025 | 0.0024 | 0.0002 | 0.0005 | 0.0013 |
| 50 | 0.0033 | 0.0031 | 0.0005 | 0.0008 | 0.0018 |
| 55 | 0.0037 | 0.0031 | 0.0010 | 0.0013 | 0.0010 |
| 60 | 0.0038 | 0.0025 | 0.0015 | 0.0020 | 0.0006 |

- The Miscellaneous Non-Industrial Disability rates are used for Local Prosecutors.
- The Police Non-Industrial Disability rates are used for Other Safety, Local Sheriff, and School Police.

**Industrial (Job-Related) Disability**
Rates vary by age and category.

| Age | Fire | Police | County Peace Officer |
|---|---|---|---|
| 20 | 0.0002 | 0.0007 | 0.0003 |
| 25 | 0.0012 | 0.0032 | 0.0015 |
| 30 | 0.0025 | 0.0064 | 0.0031 |
| 35 | 0.0037 | 0.0097 | 0.0046 |
| 40 | 0.0049 | 0.0129 | 0.0063 |
| 45 | 0.0061 | 0.0161 | 0.0078 |
| 50 | 0.0074 | 0.0192 | 0.0101 |
| 55 | 0.0721 | 0.0668 | 0.0173 |
| 60 | 0.0721 | 0.0668 | 0.0173 |

- The Police Industrial Disability rates are used for Local Sheriff and Other Safety.
- Fifty Percent of the Police Industrial Disability rates are used for School Police.
- One Percent of the Police Industrial Disability rates are used for Local Prosecutors.
- Normally, rates are zero for Miscellaneous Plans unless the agency has specifically contracted for Industrial Disability benefits. If so, each miscellaneous non-industrial disability rate will be split into two components: 50% will become the Non-Industrial Disability rate and 50% will become the Industrial Disability rate.

**Service Retirement**

Retirement rate vary by age, service, and formula, except for the safety ½ @ 55 and 2% @ 55 formulas, where retirement rates vary by age only.

**Public Agency Miscellaneous 1.5% @ 65**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.008 | 0.011 | 0.013 | 0.015 | 0.017 | 0.019 |
| 51 | 0.007 | 0.010 | 0.012 | 0.013 | 0.015 | 0.017 |
| 52 | 0.010 | 0.014 | 0.017 | 0.019 | 0.021 | 0.024 |
| 53 | 0.008 | 0.012 | 0.015 | 0.017 | 0.019 | 0.022 |
| 54 | 0.012 | 0.016 | 0.019 | 0.022 | 0.025 | 0.028 |
| 55 | 0.018 | 0.025 | 0.031 | 0.035 | 0.038 | 0.043 |
| 56 | 0.015 | 0.021 | 0.025 | 0.029 | 0.032 | 0.036 |
| 57 | 0.020 | 0.028 | 0.033 | 0.038 | 0.043 | 0.048 |
| 58 | 0.024 | 0.033 | 0.040 | 0.046 | 0.052 | 0.058 |
| 59 | 0.028 | 0.039 | 0.048 | 0.054 | 0.060 | 0.067 |
| 60 | 0.049 | 0.069 | 0.083 | 0.094 | 0.105 | 0.118 |
| 61 | 0.062 | 0.087 | 0.106 | 0.120 | 0.133 | 0.150 |
| 62 | 0.104 | 0.146 | 0.177 | 0.200 | 0.223 | 0.251 |
| 63 | 0.099 | 0.139 | 0.169 | 0.191 | 0.213 | 0.239 |
| 64 | 0.097 | 0.136 | 0.165 | 0.186 | 0.209 | 0.233 |
| 65 | 0.140 | 0.197 | 0.240 | 0.271 | 0.302 | 0.339 |
| 66 | 0.092 | 0.130 | 0.157 | 0.177 | 0.198 | 0.222 |
| 67 | 0.129 | 0.181 | 0.220 | 0.249 | 0.277 | 0.311 |
| 68 | 0.092 | 0.129 | 0.156 | 0.177 | 0.197 | 0.221 |
| 69 | 0.092 | 0.130 | 0.158 | 0.178 | 0.199 | 0.224 |
| 70 | 0.103 | 0.144 | 0.175 | 0.198 | 0.221 | 0.248 |

**Public Agency Miscellaneous 2% @ 60**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.011 | 0.015 | 0.018 | 0.021 | 0.023 | 0.026 |
| 51 | 0.009 | 0.013 | 0.016 | 0.018 | 0.020 | 0.023 |
| 52 | 0.013 | 0.018 | 0.022 | 0.025 | 0.028 | 0.031 |
| 53 | 0.011 | 0.016 | 0.019 | 0.022 | 0.025 | 0.028 |
| 54 | 0.015 | 0.021 | 0.025 | 0.028 | 0.032 | 0.036 |
| 55 | 0.023 | 0.032 | 0.039 | 0.044 | 0.049 | 0.055 |
| 56 | 0.019 | 0.027 | 0.032 | 0.037 | 0.041 | 0.046 |
| 57 | 0.025 | 0.035 | 0.042 | 0.048 | 0.054 | 0.060 |
| 58 | 0.030 | 0.042 | 0.051 | 0.058 | 0.065 | 0.073 |
| 59 | 0.035 | 0.049 | 0.060 | 0.068 | 0.076 | 0.085 |
| 60 | 0.062 | 0.087 | 0.105 | 0.119 | 0.133 | 0.149 |
| 61 | 0.079 | 0.110 | 0.134 | 0.152 | 0.169 | 0.190 |
| 62 | 0.132 | 0.186 | 0.225 | 0.255 | 0.284 | 0.319 |
| 63 | 0.126 | 0.178 | 0.216 | 0.244 | 0.272 | 0.305 |
| 64 | 0.122 | 0.171 | 0.207 | 0.234 | 0.262 | 0.293 |
| 65 | 0.173 | 0.243 | 0.296 | 0.334 | 0.373 | 0.418 |
| 66 | 0.114 | 0.160 | 0.194 | 0.219 | 0.245 | 0.274 |
| 67 | 0.159 | 0.223 | 0.271 | 0.307 | 0.342 | 0.384 |
| 68 | 0.113 | 0.159 | 0.193 | 0.218 | 0.243 | 0.273 |
| 69 | 0.114 | 0.161 | 0.195 | 0.220 | 0.246 | 0.276 |
| 70 | 0.127 | 0.178 | 0.216 | 0.244 | 0.273 | 0.306 |

**Public Agency Miscellaneous 2% @ 55**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.015 | 0.020 | 0.024 | 0.029 | 0.033 | 0.039 |
| 51 | 0.013 | 0.016 | 0.020 | 0.024 | 0.027 | 0.033 |
| 52 | 0.014 | 0.018 | 0.022 | 0.027 | 0.030 | 0.036 |
| 53 | 0.017 | 0.022 | 0.027 | 0.032 | 0.037 | 0.043 |
| 54 | 0.027 | 0.034 | 0.041 | 0.049 | 0.056 | 0.067 |
| 55 | 0.050 | 0.064 | 0.078 | 0.094 | 0.107 | 0.127 |
| 56 | 0.045 | 0.057 | 0.069 | 0.083 | 0.095 | 0.113 |
| 57 | 0.048 | 0.061 | 0.074 | 0.090 | 0.102 | 0.122 |
| 58 | 0.052 | 0.066 | 0.080 | 0.097 | 0.110 | 0.131 |
| 59 | 0.060 | 0.076 | 0.092 | 0.111 | 0.127 | 0.151 |
| 60 | 0.072 | 0.092 | 0.112 | 0.134 | 0.153 | 0.182 |
| 61 | 0.089 | 0.113 | 0.137 | 0.165 | 0.188 | 0.224 |
| 62 | 0.128 | 0.162 | 0.197 | 0.237 | 0.270 | 0.322 |
| 63 | 0.129 | 0.164 | 0.199 | 0.239 | 0.273 | 0.325 |
| 64 | 0.116 | 0.148 | 0.180 | 0.216 | 0.247 | 0.294 |
| 65 | 0.174 | 0.221 | 0.269 | 0.323 | 0.369 | 0.439 |
| 66 | 0.135 | 0.171 | 0.208 | 0.250 | 0.285 | 0.340 |
| 67 | 0.133 | 0.169 | 0.206 | 0.247 | 0.282 | 0.336 |
| 68 | 0.118 | 0.150 | 0.182 | 0.219 | 0.250 | 0.297 |
| 69 | 0.116 | 0.147 | 0.179 | 0.215 | 0.246 | 0.293 |
| 70 | 0.138 | 0.176 | 0.214 | 0.257 | 0.293 | 0.349 |

**Public Agency Miscellaneous 2.5% @ 55**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.026 | 0.033 | 0.040 | 0.048 | 0.055 | 0.062 |
| 51 | 0.021 | 0.026 | 0.032 | 0.038 | 0.043 | 0.049 |
| 52 | 0.021 | 0.026 | 0.032 | 0.038 | 0.043 | 0.049 |
| 53 | 0.026 | 0.033 | 0.040 | 0.048 | 0.055 | 0.062 |
| 54 | 0.043 | 0.054 | 0.066 | 0.078 | 0.089 | 0.101 |
| 55 | 0.088 | 0.112 | 0.136 | 0.160 | 0.184 | 0.208 |
| 56 | 0.055 | 0.070 | 0.085 | 0.100 | 0.115 | 0.130 |
| 57 | 0.061 | 0.077 | 0.094 | 0.110 | 0.127 | 0.143 |
| 58 | 0.072 | 0.091 | 0.111 | 0.130 | 0.150 | 0.169 |
| 59 | 0.083 | 0.105 | 0.128 | 0.150 | 0.173 | 0.195 |
| 60 | 0.088 | 0.112 | 0.136 | 0.160 | 0.184 | 0.208 |
| 61 | 0.083 | 0.105 | 0.128 | 0.150 | 0.173 | 0.195 |
| 62 | 0.121 | 0.154 | 0.187 | 0.220 | 0.253 | 0.286 |
| 63 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 64 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 65 | 0.143 | 0.182 | 0.221 | 0.260 | 0.299 | 0.338 |
| 66 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 67 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 68 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 69 | 0.105 | 0.133 | 0.162 | 0.190 | 0.219 | 0.247 |
| 70 | 0.125 | 0.160 | 0.194 | 0.228 | 0.262 | 0.296 |

**Public Agency Miscellaneous 2.7% @ 55**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.028 | 0.035 | 0.043 | 0.050 | 0.058 | 0.065 |
| 51 | 0.022 | 0.028 | 0.034 | 0.040 | 0.046 | 0.052 |
| 52 | 0.022 | 0.028 | 0.034 | 0.040 | 0.046 | 0.052 |
| 53 | 0.028 | 0.035 | 0.043 | 0.050 | 0.058 | 0.065 |
| 54 | 0.044 | 0.056 | 0.068 | 0.080 | 0.092 | 0.104 |
| 55 | 0.091 | 0.116 | 0.140 | 0.165 | 0.190 | 0.215 |
| 56 | 0.061 | 0.077 | 0.094 | 0.110 | 0.127 | 0.143 |
| 57 | 0.063 | 0.081 | 0.098 | 0.115 | 0.132 | 0.150 |
| 58 | 0.074 | 0.095 | 0.115 | 0.135 | 0.155 | 0.176 |
| 59 | 0.083 | 0.105 | 0.128 | 0.150 | 0.173 | 0.195 |
| 60 | 0.088 | 0.112 | 0.136 | 0.160 | 0.184 | 0.208 |
| 61 | 0.085 | 0.109 | 0.132 | 0.155 | 0.178 | 0.202 |
| 62 | 0.124 | 0.158 | 0.191 | 0.225 | 0.259 | 0.293 |
| 63 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 64 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 65 | 0.146 | 0.186 | 0.225 | 0.265 | 0.305 | 0.345 |
| 66 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 67 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 68 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 69 | 0.107 | 0.137 | 0.166 | 0.195 | 0.224 | 0.254 |
| 70 | 0.129 | 0.164 | 0.199 | 0.234 | 0.269 | 0.304 |

**Public Agency Miscellaneous 3% @ 60**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.026 | 0.033 | 0.040 | 0.048 | 0.055 | 0.062 |
| 51 | 0.021 | 0.026 | 0.032 | 0.038 | 0.043 | 0.049 |
| 52 | 0.019 | 0.025 | 0.030 | 0.035 | 0.040 | 0.046 |
| 53 | 0.025 | 0.032 | 0.038 | 0.045 | 0.052 | 0.059 |
| 54 | 0.039 | 0.049 | 0.060 | 0.070 | 0.081 | 0.091 |
| 55 | 0.083 | 0.105 | 0.128 | 0.150 | 0.173 | 0.195 |
| 56 | 0.055 | 0.070 | 0.085 | 0.100 | 0.115 | 0.130 |
| 57 | 0.061 | 0.077 | 0.094 | 0.110 | 0.127 | 0.143 |
| 58 | 0.072 | 0.091 | 0.111 | 0.130 | 0.150 | 0.169 |
| 59 | 0.080 | 0.102 | 0.123 | 0.145 | 0.167 | 0.189 |
| 60 | 0.094 | 0.119 | 0.145 | 0.170 | 0.196 | 0.221 |
| 61 | 0.088 | 0.112 | 0.136 | 0.160 | 0.184 | 0.208 |
| 62 | 0.127 | 0.161 | 0.196 | 0.230 | 0.265 | 0.299 |
| 63 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 64 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 65 | 0.149 | 0.189 | 0.230 | 0.270 | 0.311 | 0.351 |
| 66 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 67 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 68 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 69 | 0.110 | 0.140 | 0.170 | 0.200 | 0.230 | 0.260 |
| 70 | 0.132 | 0.168 | 0.204 | 0.240 | 0.276 | 0.312 |

**Public Agency Fire ½ @ 55 and 2% @ 55**

| Age | Rate | Age | Rate |
|---|---|---|---|
| 50 | 0.01588 | 56 | 0.11079 |
| 51 | 0.00000 | 57 | 0.00000 |
| 52 | 0.03442 | 58 | 0.09499 |
| 53 | 0.01990 | 59 | 0.04409 |
| 54 | 0.04132 | 60 | 1.00000 |
| 55 | 0.07513 | | |

**Public Agency Police ½ @ 55 and 2% @ 55**

| Age | Rate | Age | Rate |
|---|---|---|---|
| 50 | 0.02552 | 56 | 0.06921 |
| 51 | 0.00000 | 57 | 0.05113 |
| 52 | 0.01637 | 58 | 0.07241 |
| 53 | 0.02717 | 59 | 0.07043 |
| 54 | 0.00949 | 60 | 1.00000 |
| 55 | 0.16674 | | |

**Public Agency Police 2%@ 50**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.014 | 0.014 | 0.014 | 0.014 | 0.025 | 0.045 |
| 51 | 0.012 | 0.012 | 0.012 | 0.012 | 0.023 | 0.040 |
| 52 | 0.026 | 0.026 | 0.026 | 0.026 | 0.048 | 0.086 |
| 53 | 0.052 | 0.052 | 0.052 | 0.052 | 0.096 | 0.171 |
| 54 | 0.070 | 0.070 | 0.070 | 0.070 | 0.128 | 0.227 |
| 55 | 0.090 | 0.090 | 0.090 | 0.090 | 0.165 | 0.293 |
| 56 | 0.064 | 0.064 | 0.064 | 0.064 | 0.117 | 0.208 |
| 57 | 0.071 | 0.071 | 0.071 | 0.071 | 0.130 | 0.232 |
| 58 | 0.063 | 0.063 | 0.063 | 0.063 | 0.115 | 0.205 |
| 59 | 0.140 | 0.140 | 0.140 | 0.140 | 0.174 | 0.254 |
| 60 | 0.140 | 0.140 | 0.140 | 0.140 | 0.172 | 0.251 |
| 61 | 0.140 | 0.140 | 0.140 | 0.140 | 0.172 | 0.251 |
| 62 | 0.140 | 0.140 | 0.140 | 0.140 | 0.172 | 0.251 |
| 63 | 0.140 | 0.140 | 0.140 | 0.140 | 0.172 | 0.251 |
| 64 | 0.140 | 0.140 | 0.140 | 0.140 | 0.172 | 0.251 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

- These rates also apply to Local Prosecutors, Local Sheriff, School Police, and Other Safety.

**Public Agency Fire 2%@50**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.007 | 0.007 | 0.007 | 0.007 | 0.010 | 0.015 |
| 51 | 0.008 | 0.008 | 0.008 | 0.008 | 0.013 | 0.019 |
| 52 | 0.017 | 0.017 | 0.017 | 0.017 | 0.027 | 0.040 |
| 53 | 0.047 | 0.047 | 0.047 | 0.047 | 0.072 | 0.107 |
| 54 | 0.064 | 0.064 | 0.064 | 0.064 | 0.098 | 0.147 |
| 55 | 0.087 | 0.087 | 0.087 | 0.087 | 0.134 | 0.200 |
| 56 | 0.078 | 0.078 | 0.078 | 0.078 | 0.120 | 0.180 |
| 57 | 0.090 | 0.090 | 0.090 | 0.090 | 0.139 | 0.208 |
| 58 | 0.079 | 0.079 | 0.079 | 0.079 | 0.122 | 0.182 |
| 59 | 0.073 | 0.073 | 0.073 | 0.073 | 0.112 | 0.168 |
| 60 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 61 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 62 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 63 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 64 | 0.114 | 0.114 | 0.114 | 0.114 | 0.175 | 0.262 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

**Public Agency Police 3%@ 55**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.019 | 0.019 | 0.019 | 0.019 | 0.040 | 0.060 |
| 51 | 0.024 | 0.024 | 0.024 | 0.024 | 0.049 | 0.074 |
| 52 | 0.024 | 0.024 | 0.024 | 0.024 | 0.051 | 0.077 |
| 53 | 0.059 | 0.059 | 0.059 | 0.059 | 0.121 | 0.183 |
| 54 | 0.069 | 0.069 | 0.069 | 0.069 | 0.142 | 0.215 |
| 55 | 0.116 | 0.116 | 0.116 | 0.116 | 0.240 | 0.363 |
| 56 | 0.076 | 0.076 | 0.076 | 0.076 | 0.156 | 0.236 |
| 57 | 0.058 | 0.058 | 0.058 | 0.058 | 0.120 | 0.181 |
| 58 | 0.076 | 0.076 | 0.076 | 0.076 | 0.157 | 0.237 |
| 59 | 0.094 | 0.094 | 0.094 | 0.094 | 0.193 | 0.292 |
| 60 | 0.141 | 0.141 | 0.141 | 0.141 | 0.290 | 0.438 |
| 61 | 0.094 | 0.094 | 0.094 | 0.094 | 0.193 | 0.292 |
| 62 | 0.118 | 0.118 | 0.118 | 0.118 | 0.241 | 0.365 |
| 63 | 0.094 | 0.094 | 0.094 | 0.094 | 0.193 | 0.292 |
| 64 | 0.094 | 0.094 | 0.094 | 0.094 | 0.193 | 0.292 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

- These rates also apply to Local Prosecutors, Local Sheriff, School Police, and Other Safety.

**Public Agency Fire 3%@55**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.012 | 0.012 | 0.012 | 0.018 | 0.028 | 0.033 |
| 51 | 0.008 | 0.008 | 0.008 | 0.012 | 0.019 | 0.022 |
| 52 | 0.018 | 0.018 | 0.018 | 0.027 | 0.042 | 0.050 |
| 53 | 0.043 | 0.043 | 0.043 | 0.062 | 0.098 | 0.114 |
| 54 | 0.057 | 0.057 | 0.057 | 0.083 | 0.131 | 0.152 |
| 55 | 0.092 | 0.092 | 0.092 | 0.134 | 0.211 | 0.246 |
| 56 | 0.081 | 0.081 | 0.081 | 0.118 | 0.187 | 0.218 |
| 57 | 0.100 | 0.100 | 0.100 | 0.146 | 0.230 | 0.268 |
| 58 | 0.081 | 0.081 | 0.081 | 0.119 | 0.187 | 0.219 |
| 59 | 0.078 | 0.078 | 0.078 | 0.113 | 0.178 | 0.208 |
| 60 | 0.117 | 0.117 | 0.117 | 0.170 | 0.267 | 0.312 |
| 61 | 0.078 | 0.078 | 0.078 | 0.113 | 0.178 | 0.208 |
| 62 | 0.098 | 0.098 | 0.098 | 0.141 | 0.223 | 0.260 |
| 63 | 0.078 | 0.078 | 0.078 | 0.113 | 0.178 | 0.208 |
| 64 | 0.078 | 0.078 | 0.078 | 0.113 | 0.178 | 0.208 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

**Public Agency Police 3%@ 50**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.070 | 0.070 | 0.070 | 0.131 | 0.193 | 0.249 |
| 51 | 0.050 | 0.050 | 0.050 | 0.095 | 0.139 | 0.180 |
| 52 | 0.061 | 0.061 | 0.061 | 0.116 | 0.171 | 0.220 |
| 53 | 0.069 | 0.069 | 0.069 | 0.130 | 0.192 | 0.247 |
| 54 | 0.071 | 0.071 | 0.071 | 0.134 | 0.197 | 0.255 |
| 55 | 0.090 | 0.090 | 0.090 | 0.170 | 0.250 | 0.322 |
| 56 | 0.069 | 0.069 | 0.069 | 0.130 | 0.191 | 0.247 |
| 57 | 0.080 | 0.080 | 0.080 | 0.152 | 0.223 | 0.288 |
| 58 | 0.087 | 0.087 | 0.087 | 0.164 | 0.242 | 0.312 |
| 59 | 0.090 | 0.090 | 0.090 | 0.170 | 0.251 | 0.323 |
| 60 | 0.135 | 0.135 | 0.135 | 0.255 | 0.377 | 0.485 |
| 61 | 0.090 | 0.090 | 0.090 | 0.170 | 0.251 | 0.323 |
| 62 | 0.113 | 0.113 | 0.113 | 0.213 | 0.314 | 0.404 |
| 63 | 0.090 | 0.090 | 0.090 | 0.170 | 0.251 | 0.323 |
| 64 | 0.090 | 0.090 | 0.090 | 0.170 | 0.251 | 0.323 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

- These rates also apply to Local Prosecutors, Local Sheriff, School Police, and Other Safety.

**Public Agency Fire 3%@50**

| | Duration of Service | | | | | |
|---|---|---|---|---|---|---|
| Age | 5 Years | 10 Years | 15 Years | 20 Years | 25 Years | 30 Years |
| 50 | 0.034 | 0.034 | 0.034 | 0.048 | 0.068 | 0.080 |
| 51 | 0.046 | 0.046 | 0.046 | 0.065 | 0.092 | 0.109 |
| 52 | 0.069 | 0.069 | 0.069 | 0.097 | 0.138 | 0.163 |
| 53 | 0.084 | 0.084 | 0.084 | 0.117 | 0.166 | 0.197 |
| 54 | 0.103 | 0.103 | 0.103 | 0.143 | 0.204 | 0.241 |
| 55 | 0.127 | 0.127 | 0.127 | 0.177 | 0.252 | 0.298 |
| 56 | 0.121 | 0.121 | 0.121 | 0.169 | 0.241 | 0.285 |
| 57 | 0.101 | 0.101 | 0.101 | 0.141 | 0.201 | 0.238 |
| 58 | 0.118 | 0.118 | 0.118 | 0.165 | 0.235 | 0.279 |
| 59 | 0.100 | 0.100 | 0.100 | 0.140 | 0.199 | 0.236 |
| 60 | 0.150 | 0.150 | 0.150 | 0.210 | 0.299 | 0.354 |
| 61 | 0.100 | 0.100 | 0.100 | 0.140 | 0.199 | 0.236 |
| 62 | 0.125 | 0.125 | 0.125 | 0.175 | 0.249 | 0.295 |
| 63 | 0.100 | 0.100 | 0.100 | 0.140 | 0.199 | 0.236 |
| 64 | 0.100 | 0.100 | 0.100 | 0.140 | 0.199 | 0.236 |
| 65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

# APPENDIX B

- **SUMMARY OF MAJOR BENEFIT OPTIONS**
- **DESCRIPTIONS OF PRINCIPAL PLAN PROVISIONS**

# Summary of Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in the following section of this Appendix.

| | Coverage Group | | | | |
|---|---|---|---|---|---|
| **Benefit Provision** | 70001 | 70002 | 70003 | 70004 | |
| Benefit Formula | 2.0% @ 55 | 2.0% @ 55 | 3.0% @ 60 | 3.0% @ 60 | |
| Social Security Coverage | No | Yes | No | Yes | |
| Full/Modified | Full | Modified | Full | Modified | |
| Final Average Compensation Period | 12 mos. | 12 mos. | 12 mos. | 12 mos. | |
| Sick Leave Credit | Yes | Yes | Yes | Yes | |
| Non-Industrial Disability | Standard | Standard | Standard | Standard | |
| Industrial Disability | No | No | No | No | |
| Pre-Retirement Death Benefits | | | | | |
| Optional Settlement 2W | No | No | No | No | |
| 1959 Survivor Benefit Level | Level 4 | No | Level 4 | No | |
| Special | No | No | No | No | |
| Alternate (firefighters) | No | No | No | No | |
| Post-Retirement Death Benefits | | | | | |
| Lump Sum | $500 | $500 | $500 | $500 | |
| Survivor Allowance (PRSA) | Yes | Yes | Yes | Yes | |
| COLA | 2% | 2% | 2% | 2% | |
| Employee Contributions | | | | | |
| Contractual Employer Paid | No | No | No | No | |
| Contractual Employee Cost Sharing | 0% | 0% | 0% | 0% | |

# DESCRIPTION OF PRINCIPAL PLAN PROVISIONS

The following is a description of the principal plan provisions used in calculating costs and liabilities. We have indicated whether a plan provision is standard or optional. Standard benefits are applicable to all members while optional benefits vary among employers. Optional benefits that apply to a single period of time, such as Golden Handshakes, have not been included. Many of the statements in this summary are general in nature, and are intended to provide an easily understood summary of the complex Public Employees' Retirement Law. The law itself governs in all situations.

## Service Retirement

**Eligibility**
A CalPERS member becomes eligible for Service Retirement upon attainment of age 50 with at least 5 years of credited service (total service across all CalPERS employers, and with certain other Retirement Systems with which CalPERS has reciprocity agreements). For employees hired into a plan with the 1.5% at 65 formula, eligibility for service retirement is age 55 with at least 5 years of service.

**Benefit**
The Service Retirement benefit is a monthly allowance equal to the product of the *benefit factor*, *years of service*, and *final compensation.*

- The *benefit factor* depends on the benefit formula specified in your agency's contract. The table below shows the factors for each of the available formulas. Factors vary by the member's age at retirement. Listed are the factors for retirement at whole year ages:

**Miscellaneous Plan Formulas**

| Retirement Age | 1.5% at 65 | 2% at 60 | 2% at 55 | 2.5% at 55 | 2.7% at 55 | 3% at 60 |
|---|---|---|---|---|---|---|
| 50 | 0.5000% | 1.092% | 1.426% | 2.0% | 2.0% | 2.0% |
| 51 | 0.5667% | 1.156% | 1.522% | 2.1% | 2.14% | 2.1% |
| 52 | 0.6334% | 1.224% | 1.628% | 2.2% | 2.28% | 2.2% |
| 53 | 0.7000% | 1.296% | 1.742% | 2.3% | 2.42% | 2.3% |
| 54 | 0.7667% | 1.376% | 1.866% | 2.4% | 2.56% | 2.4% |
| 55 | 0.8334% | 1.460% | 2.0% | 2.5% | 2.7% | 2.5% |
| 56 | 0.9000% | 1.552% | 2.052% | 2.5% | 2.7% | 2.6% |
| 57 | 0.9667% | 1.650% | 2.104% | 2.5% | 2.7% | 2.7% |
| 58 | 1.0334% | 1.758% | 2.156% | 2.5% | 2.7% | 2.8% |
| 59 | 1.1000% | 1.874% | 2.210% | 2.5% | 2.7% | 2.9% |
| 60 | 1.1667% | 2.0% | 2.262% | 2.5% | 2.7% | 3.0% |
| 61 | 1.2334% | 2.134% | 2.314% | 2.5% | 2.7% | 3.0% |
| 62 | 1.3000% | 2.272% | 2.366% | 2.5% | 2.7% | 3.0% |
| 63 | 1.3667% | 2.272% | 2.366% | 2.5% | 2.7% | 3.0% |
| 64 | 1.4334% | 2.272% | 2.366% | 2.5% | 2.7% | 3.0% |
| 65 & Up | 1.5000% | 2.418% | 2.418% | 2.5% | 2.7% | 3.0% |

**Safety Plan Formulas**

| Retirement Age | ½ at 55 * | 2% at 55 | 2% at 50 | 3% at 55 | 3% at 50 |
|---|---|---|---|---|---|
| 50 | 1.783% | 1.426% | 2.0% | 2.40% | 3.0% |
| 51 | 1.903% | 1.522% | 2.14% | 2.52% | 3.0% |
| 52 | 2.035% | 1.628% | 2.28% | 2.64% | 3.0% |
| 53 | 2.178% | 1.742% | 2.42% | 2.76% | 3.0% |
| 54 | 2.333% | 1.866% | 2.56% | 2.88% | 3.0% |
| 55 & Up | 2.5% | 2.0% | 2.7% | 3.0% | 3.0% |

* For this formula, the benefit factor also varies by entry age. The factors shown are for members with an entry age of 35 or greater. If entry age is less than 35, then the age 55 benefit factor is 50% divided by the difference between age 55 and entry age. The benefit factor for ages prior to age 55 is the same proportion of the age 55 benefit factor as in the above table.

- The *years of service* is the amount credited by CalPERS to a member while he or she is employed in this group (or for other periods that are recognized under the employer's contract with CalPERS). For a member who has earned service with multiple CalPERS employers, the benefit from each employer is calculated separately according to each employer's contract, and then added together for the total allowance. An agency may contract for an optional benefit where any unused sick leave accumulated at the time of retirement will be converted to credited service at a rate of 0.004 years of service for each day of sick leave.

- The *final compensation* is the monthly average of the member's highest 36 or 12 consecutive months' full-time equivalent monthly pay (no matter which CalPERS employer paid this compensation). The standard benefit is 36 months. Employers have the option of providing a final compensation equal to the highest 12 consecutive months. Final compensation must be defined by the highest 36 consecutive months' pay under the 1.5% at 65 formula.

- Employees must be covered by Social Security with the 1.5% at 65 formula. Social Security is optional for all other benefit formulas. For employees covered by Social Security, the Modified formula is the standard benefit. Under this type of formula, the final compensation is offset by $133.33 (or by one third if the final compensation is less than $400). Employers may contract for the Full benefit with Social Security that will eliminate the offset applicable to the final compensation. For employees not covered by Social Security, the Full benefit is paid with no offsets. Auxiliary organizations of the CSUC system may elect reduced contribution rates, in which case the offset is $317 if members are not covered by Social Security or $513 if members are covered by Social Security.

- The Miscellaneous Service Retirement benefit is not capped. The Safety Service Retirement benefit is capped at 90% of final compensation.

## Vested Deferred Retirement

**Eligibility for Deferred Status**
A CalPERS member becomes eligible for a deferred vested retirement benefit when he or she leaves employment, keeps his or her contribution account balance on deposit with CalPERS, **and** has earned at least 5 years of credited service (total service across all CalPERS employers, and with certain other Retirement Systems with which CalPERS has reciprocity agreements).

**Eligibility to Start Receiving Benefits**
The CalPERS member becomes eligible to receive the deferred retirement benefit upon satisfying the eligibility requirements for Deferred Status and upon attainment of age 50 (55 for employees hired into a 1.5% @ 65 plan).

**Benefit**
The vested deferred retirement benefit is the same as the Service Retirement benefit, where the benefit factor is based on the member's age at allowance commencement. For members who have earned service with multiple CalPERS employers, the benefit from each employer is calculated separately according to each employer's contract, and then added together for the total allowance.

## Non-Industrial (Non-Job Related) Disability Retirement

**Eligibility**
A CalPERS member is eligible for Non-Industrial Disability Retirement if he or she becomes *disabled* and has at least 5 years of credited service (total service across all CalPERS employers, and with certain other Retirement Systems with which CalPERS has reciprocity agreements). There is no special age requirement. *Disabled* means the member is unable to perform his or her job because of an illness or injury which is expected to be permanent or to last indefinitely. The illness or injury does not have to be job related. A CalPERS member must be actively employed by any CalPERS employer at the time of disability in order to be eligible for this benefit.

**Standard Benefit**
The standard Non-Industrial Disability Retirement benefit is a monthly allowance equal to 1.8% of final compensation, multiplied by *service*, which is determined as follows:

- *service* is CalPERS credited service, for members with less than 10 years of service or greater than 18.518 years of service; or

- *service* is CalPERS credited service plus the additional number of years that the member would have worked until age 60, for members with at least 10 years but not more than 18.518 years of service. The maximum benefit in this case is 33 1/3% of Final Compensation.

**Improved Benefit**
Employers have the option of providing the improved Non-Industrial Disability Retirement benefit. This benefit provides a monthly allowance equal to 30% of final compensation for the first 5 years of service, plus 1% for each additional year of service to a maximum of 50% of final compensation.

Members who are eligible for a larger service retirement benefit may choose to receive that benefit in lieu of a disability benefit. Members eligible to retire, and who have attained the normal retirement age determined by their service retirement benefit formula, will receive the same dollar amount for disability retirement as that payable for service retirement. For members who have earned service with multiple CalPERS employers, the benefit attributed to each employer is the total disability allowance multiplied by the ratio of service with a particular employer to the total CalPERS service.

## Industrial (Job Related) Disability Retirement

All safety members have this benefit. For miscellaneous members, employers have the option of providing this benefit. An employer may choose to provide the Increased benefit option or the Improved benefit option.

**Eligibility**
An employee is eligible for Industrial Disability Retirement if he or she becomes disabled while working, where disabled means the member is unable to perform the duties of the job because of a work-related illness or injury which is expected to be permanent or to last indefinitely. A CalPERS member who has left active employment within this group is not eligible for this benefit, except to the extent described below.

**Standard Benefit**
The standard Industrial Disability Retirement benefit is a monthly allowance equal to 50% of final compensation.

**Increased Benefit (75% of Final Compensation)**
The increased Industrial Disability Retirement benefit is a monthly allowance equal to 75% of final compensation for total disability.

**Improved Benefit (50% to 90% of Final Compensation)**
The improved Industrial Disability Retirement benefit is a monthly allowance equal to the Workman's Compensation Appeals Board permanent disability rate percentage (if 50% or greater, with a maximum of 90%) times the final compensation.

For a CalPERS member not actively employed in this group who became disabled while employed by some other CalPERS employer, the benefit is a return of accumulated member contributions with respect to employment in this group. With the standard or increased benefit, a member may also choose to receive the annuitization of the accumulated member contributions.

If a member is eligible for Service Retirement and if the Service Retirement benefit is more than the Industrial Disability Retirement benefit, the member may choose to receive the larger benefit.

## Post-Retirement Death Benefit

**Standard Lump Sum Payment**
Upon the death of a retiree, a one-time lump sum payment of $500 will be made to the retiree's designated survivor(s), or to the retiree's estate.

**Improved Lump Sum Payment**
Employers have the option of providing an improved lump sum death benefit of $600, $2,000, $3,000, $4,000 or $5,000.

## Form of Payment for Retirement Allowance

**Standard Form of Payment**
Generally, the retirement allowance is paid to the retiree in the form of an annuity for as long as he or she is alive. The retiree may choose to provide for a portion of his or her allowance to be paid to any designated beneficiary after the retiree's death. CalPERS provides for a variety of such benefit options, which the retiree pays for by taking a reduction in his or her retirement allowance. Such reduction takes into account the amount to be provided to the beneficiary and the probable duration of payments (based on the ages of the member and beneficiary) made subsequent to the member's death.

**Improved Form of Payment (Post Retirement Survivor Allowance)**
Employers have the option to contract for the post retirement survivor allowance.

For retirement allowances with respect to service subject to the modified formula, 25% of the retirement allowance will automatically be continued to certain statutory beneficiaries upon the death of the retiree, without a reduction in the retiree's allowance. For retirement allowances with respect to service subject to the full or supplemental formula, 50% of the retirement allowance will automatically be continued to certain statutory beneficiaries upon the death of the retiree, without a reduction in the retiree's allowance. This additional benefit is often referred to as post retirement survivor allowance (PRSA) or simply as survivor continuance.

In other words, 25% or 50% of the allowance, the continuance portion, is paid to the retiree for as long as he or she is alive, and that same amount is continued to the retiree's spouse (or if no eligible spouse, to unmarried children until they attain age 18; or, if no eligible children, to a qualifying dependent parent) for the rest of his or her lifetime. This benefit will not be discontinued in the event the spouse remarries.

The remaining 75% or 50% of the retirement allowance, which may be referred to as the option portion of the benefit, is paid to the retiree as an annuity for as long as he or she is alive. Or, the retiree may choose to provide for some of this option portion to be paid to any designated beneficiary after the retiree's death. Benefit options applicable to the option portion are the same as those offered with the standard form. The reduction is calculated in the same manner but is applied only to the option portion.

## Pre-Retirement Death Benefits

## Basic Death Benefit

This is a standard benefit.

**Eligibility**
An employee's beneficiary (or estate) may receive the Basic Death benefit if the member dies while actively employed. A CalPERS member must be actively employed with the CalPERS employer providing this benefit to be eligible for this benefit. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this Basic Death benefit.

**Benefit**
The Basic Death Benefit is a lump sum in the amount of the member's accumulated contributions, where interest is currently credited at 7.75% per year, plus a lump sum in the amount of one month's salary for each completed year of current service, up to a maximum of six months' salary. For purposes of this benefit, one month's salary is defined as the member's average monthly full-time rate of compensation during the 12 months preceding death.

## 1957 Survivor Benefit

This is a standard benefit.

**Eligibility**
An employee's *eligible survivor(s)* may receive the 1957 Survivor benefit if the member dies while actively employed, has attained at least age 50, and has at least 5 years of credited service (total service across all CalPERS employers and with certain other Retirement Systems with which CalPERS has reciprocity agreements). A CalPERS member must be actively employed with the CalPERS employer providing this benefit to be eligible for this benefit. An eligible survivor means the surviving spouse to whom the member was married at least one year before death or, if there is no eligible spouse, to the member's unmarried children under age 18. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this 1957 Survivor benefit.

**Benefit**
The 1957 Survivor benefit is a monthly allowance equal to one-half of the unmodified Service Retirement benefit that the member would have been entitled to receive if the member had retired on the date of his or her death. If the benefit is payable to the spouse, the benefit is discontinued upon the death of the spouse. If the benefit is payable to a dependent child, the benefit will be discontinued upon death or attainment of age 18, unless the child is disabled. The total amount paid will be at least equal to the Basic Death benefit.

## Optional Settlement 2W Death Benefit

This is an optional benefit.

**Eligibility**
An employee's *eligible survivor* may receive the Optional Settlement 2W Death benefit if the member dies while actively employed, has attained at least age 50, and has at least 5 years of credited service (total service across all

CalPERS employers and with certain other Retirement Systems with which CalPERS has reciprocity agreements). A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married at least one year before death. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this Optional Settlement 2W Death benefit.

**Benefit**
The Optional Settlement 2W Death benefit is a monthly allowance equal to the Service Retirement benefit that the member would have received had the member retired on the date of his or her death and elected Optional Settlement 2W. (A retiree who elects Optional Settlement 2W receives an allowance that has been reduced so that it will continue to be paid after his or her death to a surviving beneficiary.) The allowance is payable as long as the surviving spouse lives, at which time it is continued to any unmarried children under age 18, if applicable. The total amount paid will be at least equal to the Basic Death Benefit.

## Special Death Benefit

This is a standard benefit for safety members. An employer may elect to provide this benefit for miscellaneous members.

**Eligibility**
An employee's *eligible survivor(s)* may receive the Special Death benefit if the member dies while actively employed and the death is job-related. A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married prior to the onset of the injury or illness that resulted in death. If there is no eligible spouse, an eligible survivor means the member's unmarried children under age 22. An eligible survivor who chooses to receive this benefit will not receive any other death benefit.

**Benefit**
The Special Death benefit is a monthly allowance equal to 50% of final compensation, and will be increased whenever the compensation paid to active employees is increased but ceasing to increase when the member would have attained age 50. The allowance is payable to the surviving spouse until death at which time the allowance is continued to any unmarried children under age 22. There is a guarantee that the total amount paid will at least equal the Basic Death Benefit.

If the member's death is the result of an accident or injury caused by external violence or physical force incurred in the performance of the member's duty, and there are *eligible* surviving children (*eligible* means unmarried children under age 22) in addition to an eligible spouse, then an **additional monthly allowance** is paid equal to the following:

- if 1 eligible child: 12.5% of final compensation
- if 2 eligible children: 20.0% of final compensation
- if 3 or more eligible children: 25.0% of final compensation

## Alternate Death Benefit for Local Fire Members

This is an optional benefit available only to local fire members.

**Eligibility**
An employee's *eligible survivor(s)* may receive the Alternate Death benefit in lieu of the Basic Death Benefit or the 1957 Survivor Benefit if the member dies while actively employed and has at least 20 years of total CalPERS service. A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married prior to the onset of the injury or illness that resulted in death. If there is no eligible spouse, an eligible survivor means the member's unmarried children under age 18.

**Benefit**
The Alternate Death benefit is a monthly allowance equal to the Service Retirement benefit that the member would have received had the member retired on the date of his or her death and elected Optional Settlement 2W. (A retiree who elects Optional Settlement 2W receives an allowance that has been reduced so that it will continue to be paid after his or her death to a surviving beneficiary.) If the member has not yet attained age 50, the benefit is equal to that which would be payable if the member had retired at age 50, based on service credited at the time of death. The allowance is payable as long as the surviving spouse lives, at which time it is continued to any unmarried children under age 18, if applicable. The total amount paid will be at least equal to the Basic Death Benefit.

## Cost-of-Living Adjustments (COLA)

**Standard Benefit**
Beginning the second calendar year after the year of retirement, retirement and survivor allowances will be annually adjusted on a compound basis by 2%.

**Improved Benefit**
Employers have the option of providing an improved cost-of-living adjustment of 3%, 4% or 5%. An improved COLA is not available in conjunction with the 1.5% at 65 formula.

The cumulative adjustment may not be greater than the cumulative change in the Consumer Price Index since the date of retirement.

## Purchasing Power Protection Allowance (PPPA)

Retirement and survivor allowances are protected against inflation by PPPA. PPPA benefits are cost-of-living adjustments that are intended to maintain an individual's allowance at 80% of the initial allowance at retirement adjusted for inflation since retirement. The PPPA benefit will be coordinated with other cost-of-living adjustments provided under the plan.

## Employee Contributions

Each employee contributes toward his or her retirement based upon the retirement formula. The standard employee contribution is as described below.

The percent contributed below the monthly compensation breakpoint is 0%.
The monthly compensation breakpoint is $0 for full and supplemental formula members and $133.33 for employees covered by the modified formula.
The percent contributed above the monthly compensation breakpoint depends upon the benefit formula, as shown in the table below.

| Benefit Formula | Percent Contributed above the Breakpoint |
|---|---|
| Miscellaneous, 1.5% at 65 | 2% |
| Miscellaneous, 2% at 60 | 7% |
| Miscellaneous, 2% at 55 | 7% |
| Miscellaneous, 2.5% at 55 | 8% |
| Miscellaneous, 2.7% at 55 | 8% |
| Miscellaneous, 3% at 60 | 8% |
| Safety, 1/2 at 55 | Varies by entry age |
| Safety, 2% at 55 | 7% |
| Safety, 2% at 50 | 9% |
| Safety, 3% at 55 | 9% |
| Safety, 3% at 50 | 9% |

The employer may choose to "pick-up" these contributions for the employees (Employer Paid Member Contributions or EPMC). An employer may also include Employee Cost Sharing in the contract, where employees contribute an additional percentage of compensation based on any optional benefit for which a contract amendment was made on or after January 1, 1979.

- Auxiliary organizations of the CSUC system may elect reduced contribution rates, in which case the offset is $317 and the contribution rate is 6% if members are not covered by Social Security. If members are covered by Social Security the offset is $513 and the contribution rate is 5%.

## Refund of Employee Contributions

If the member's service with the employer ends, and if the member does not satisfy the eligibility conditions for any of the retirement benefits above, the member may elect to receive a refund of his or her employee contributions, which are credited annually with 6% interest.

## 1959 Survivor Benefit

This is a pre-retirement death benefit available only to members not covered by Social Security. Any agency joining CalPERS subsequent to 1993 was required to provide this benefit if the members were not covered by Social Security. The benefit is optional for agencies joining CalPERS prior to 1994. Levels 1, 2 and 3 are now closed. Any new agency or any agency wishing to add this benefit or increase the current level must choose the 4$^{th}$ or Indexed Level.

This benefit is not included in the results presented in this valuation. More information on this benefit is available on the CalPERS website at www.calpers.ca.gov.

# APPENDIX C

- **GASB STATEMENT NO. 27**

# MISCELLANEOUS PLAN of the CITY OF CHICO
# Information for Compliance with GASB Statement No. 27

Under GASB 27, an employer reports an annual pension cost (APC) equal to the annual required contribution (ARC) plus an adjustment for the cumulative difference between the APC and the employer's actual plan contributions for the year. The cumulative difference is called the net pension obligation (NPO). The ARC for the period July 1, 2012 to June 30, 2013 has been determined by an actuarial valuation of the plan as of June 30, 2010. The contribution rate for the indicated period is 23.831% of payroll. In order to calculate the dollar value of the ARC for inclusion in financial statements prepared as of June 30, 2013, this contribution rate, as modified by any amendments for the year, would be multiplied by the payroll of covered employees that was actually paid during the period July 1, 2012 to June 30, 2013. The employer and the employer's auditor are responsible for determining the NPO and the APC.

Note: If an agency elects the Annual Lump Sum Prepayment Option, the ARC for the period July 1, 2012 through June 30, 2013 is $4,317,157. If any amendments are enacted during the year the ARC will include the increase in the employer contribution due to amendment multiplied by the payroll from the effective date of the amendment.

A summary of principal assumptions and methods used to determine the ARC is shown below.

| | ***Retirement Program*** |
|---|---|
| Valuation Date | June 30, 2010 |
| Actuarial Cost Method | Entry Age Normal Cost Method |
| Amortization Method | Level Percent of Payroll |
| Average Remaining Period | 28 Years as of the Valuation Date |
| Asset Valuation Method | 15 Year Smoothed Market |
| Actuarial Assumptions | |
| Investment Rate of Return | 7.75% (net of administrative expenses) |
| Projected Salary Increases | 3.55% to 14.45% depending on Age, Service, and type of employment |
| Inflation | 3.00% |
| Payroll Growth | 3.25% |
| Individual Salary Growth | A merit scale varying by duration of employment coupled with an assumed annual inflation growth of 3.00% and an annual production growth of 0.25%. |

Initial unfunded liabilities are amortized over a closed period that depends on the plan's date of entry into CalPERS. Subsequent plan amendments are amortized as a level percentage of pay over a closed 20-year period. Gains and losses that occur in the operation of the plan are amortized over a 30 year rolling period, which results in an amortization of about 6% of unamortized gains and losses each year. If the plan's accrued liability exceeds the actuarial value of plan assets, then the amortization payment on the total unfunded liability may not be lower than the payment calculated over a 30 year amortization period. More complete information on assumptions and methods is provided in Appendix A of this report. Appendix B contains a description of benefits included in the valuation.

The Schedule of Funding Progress below shows the recent history of the actuarial accrued liability, actuarial value of assets, their relationship and the relationship of the unfunded actuarial accrued liability to payroll.

| Valuation Date | Accrued Liability (a) | Actuarial Value of Assets (AVA) (b) | Unfunded Liability (UL) (a)-(b) | Funded Ratios (AVA) (b)/(a) | Funded Ratios Market Value | Annual Covered Payroll (c) | UL As a % of Payroll [(a)-(b)]/(c) |
|---|---|---|---|---|---|---|---|
| 06/30/06 | $ 93,375,572 | $ 71,283,269 | $ 22,092,303 | 76.3% | 80.8% | $ 15,093,526 | 146.4% |
| 06/30/07 | 102,419,370 | 79,504,774 | 22,914,596 | 77.6% | 90.4% | 16,207,108 | 141.4% |
| 06/30/08 | 112,037,659 | 86,576,900 | 25,460,759 | 77.3% | 79.0% | 17,034,880 | 149.5% |
| 06/30/09 | 124,038,404 | 92,367,227 | 31,671,177 | 74.5% | 54.7% | 17,231,634 | 183.8% |
| 06/30/10 | 131,660,734 | 98,082,197 | 33,578,537 | 74.5% | 58.9% | 17,084,420 | 196.5% |

# APPENDIX D

## INVESTMENT RETURN SENSITIVITY ANALYSIS

# Investment Return Sensitivity Analysis

In July 2011, the investment return for fiscal year 2010-2011 was estimated to be 20.7%. Note that this return is before administrative expenses and also does not reflect final investment return information for real estate and private equities. The final return information for these two asset classes is expected to be available later in October. Our estimated preliminary 20.0% return for the 2010-2011 fiscal year is good news as it will help reduce the impact of the -24% return in 2008-2009 and the impact of the three year phase in adopted by the Board in June 2009. For purposes of projecting future employer rates, we are assuming a 20% investment return for fiscal year 2010-2011.

The investment return realized during a fiscal year first affects the contribution rate for the fiscal year 2 years later. Specifically, the investment return for 2010-2011 will first be reflected in the June 30, 2011 actuarial valuation that will be used to set the 2013-2014 employer contribution rates, the 2011-2012 investment return will first be reflected in the June 30, 2012 actuarial valuation that will be used to set the 2014-2015 employer contribution rates and so forth.

Based on a 20% investment return for fiscal year 2010-2011 and assuming that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur between now and the beginning of the fiscal year 2013-2014, the effect on the 2013-2014 Employer Rate is as follows:

| Estimated 2013-2014 Employer Rate | Estimated Increase in Employer Rate between 2012-2013 and 2013-2014 |
|---|---|
| 24.0% | 0.2% |

As part of this report, a sensitivity analysis was performed to determine the effects of various investment returns during fiscal years 2011-2012, 2012-2013 and 2013-2014 on the 2014-2015, 2015-2016 and 2016-2017 employer rates. Once again, the projected rate increases assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

Five different investment return scenarios were selected.

- The first scenario is what one would expect if the markets were to give us a 5th percentile return from July 1, 2011 through June 30, 2014. The 5th percentile return corresponds to a -3.64% return for each of the 2011-2012, 2012-2013 and 2013-2014 fiscal years.
- The second scenario is what one would expect if the markets were to give us a 25th percentile return from July 1, 2011 through June 30, 2014. The 25th percentile return corresponds to a 2.93% return for each of the 2011-2012, 2012-2013 and 2013-2014 fiscal years.
- The third scenario assumed the return for 2011-2012, 2012-2013, 2013-2014 would be our assumed 7.75% investment return which represents about a 49th percentile event.
- The fourth scenario is what one would expect if the markets were to give us a 75th percentile return from July 1, 2011 through June 30, 2014. The 75th percentile return corresponds to a 12.25% return for each of the 2011-2012, 2012-2013 and 2013-2014 fiscal years.
- Finally, the last scenario is what one would expect if the markets were to give us a 95th percentile return from July 1, 2011 through June 30, 2014. The 95th percentile return corresponds to a 19.02% return for each of the 2011-2012, 2012-2013 and 2013-2014 fiscal years.

The table below shows the estimated projected contribution rates and the estimated increases for your plan under the five different scenarios.

| 2011-2014 Investment Return Scenario | Estimated Employer Rate | | | Estimated Increase in Employer Rate between 2013-2014 and 2016-2017 |
|---|---|---|---|---|
| | 2014-2015 | 2015-2016 | 2016-2017 | |
| -3.64% (5th percentile) | 25.7% | 29.7% | 33.3% | 9.3% |
| 2.93% (25th percentile) | 24.3% | 24.8% | 26.5% | 2.5% |
| 7.75% | 24.2% | 24.3% | 24.5% | 0.5% |
| 12.25%(75th percentile) | 24.1% | 24.0% | 23.8% | -0.2% |
| 19.02%(95th percentile) | 23.9% | 23.6% | 22.9% | -1.1% |

# APPENDIX E

## GLOSSARY OF ACTUARIAL TERMS

# Glossary of Actuarial Terms

**Accrued Liability** *(also called Actuarial Accrued Liability or Entry Age Normal Accrued Liability)*
The total dollars needed as of the valuation date to fund all benefits earned in the past for *current* members.

**Actuarial Assumptions**
Assumptions made about certain events that will affect pension costs. Assumptions generally can be broken down into two categories: demographic and economic. Demographic assumptions include such things as mortality, disability and retirement rates. Economic assumptions include investment return, salary growth and inflation.

**Actuarial Methods**
Procedures employed by actuaries to achieve certain goals of a pension plan. These may include things such as funding method, setting the length of time to fund the past service liability and determining the actuarial value of assets.

**Actuarial Valuation**
The determination, as of a valuation date, of the normal cost, actuarial accrued liability, actuarial value of assets and related actuarial present values for a pension plan. These valuations are performed annually or when an employer is contemplating a change to their plan provisions.

**Actuarial Value of Assets**
The actuarial value of assets used for funding purposes is obtained through an asset smoothing technique where investment gains and losses are partially recognized in the year they are incurred, with the remainder recognized in subsequent years.

This method helps to dampen large fluctuations in the employer contribution rate.

**Amortization Bases**
Separate payment schedules for different portions of the unfunded liability. The total unfunded liability of a risk pool or non-pooled plan can be segregated by "cause", creating "bases" and each such base will be separately amortized and paid for over a specific period of time. This can be likened to a home mortgage that has 24 years of remaining payments and a second on that mortgage that has 10 years left. Each base or each mortgage note has its own terms (payment period, principal, etc.)

Generally in an actuarial valuation, the separate bases consist of changes in unfunded liability due to amendments, actuarial assumption changes, actuarial methodology changes, and gains and losses. Payment periods are determined by Board policy and vary based on the cause of the change.

**Amortization Period**
The number of years required to pay off an amortization base.

**Annual Required Contributions (ARC)**
The employer's periodic required annual contributions to a defined benefit pension plan as set forth in GASB Statement No. 27, calculated in accordance with the plan assumptions. The ARC is determined by multiplying the employer contribution rate by the payroll reported to CalPERS for the applicable fiscal year. However, if this contribution is fully prepaid in a lump sum, then the dollar value of the ARC is equal to the Lump Sum Prepayment.

**Entry Age**
The earliest age at which a plan member begins to accrue benefits under a defined benefit pension plan or risk pool. In most cases, this is age of the member on their date of hire.

**Entry Age Normal Cost Method**
An actuarial cost method designed to fund a member's total plan benefit over the course of his or her career. This method is designed to yield a rate expressed as a level percentage of payroll.

(The assumed retirement age less the entry age is the amount of time required to fund a member's total benefit. Generally, the older a member on the date of hire, the greater the entry age normal cost. This is mainly because there is less time to earn investment income to fund the future benefits.)

**Fresh Start**

A fresh start is the single amortization base created when multiple amortization bases are collapsed into one base and amortized over a new funding period.

**Funded Status**

A measure of how well funded a plan is. Or equivalently, how "on track" a plan is with respect to assets vs. accrued liabilities. A ratio greater than 100% means the plan or risk pool has more assets than liabilities and a ratio less than 100% means liabilities are greater than assets. A funded ratio based on the Actuarial Value of Assets indicates the progress toward fully funding the plan using the actuarial cost methods and assumptions. A funded ratio based on the Market Value of Assets indicates the short-term solvency of the plan.

**GASB 27**

Statement No. 27 of the Governmental Accounting Standards Board. The accounting standard governing a state or local governmental employer's accounting for pensions.

**Lump Sum Contribution**

A payment made by the employer to reduce or eliminate the unfunded liability.

**Normal Cost**

The annual cost of service accrual for the upcoming fiscal year for active employees. The normal cost should be viewed as the long term contribution rate.

**Pension Actuary**

A person who is responsible for the calculations necessary to properly fund a pension plan.

**Prepayment Contribution**

A payment made by the employer to reduce or eliminate the year's required employer contribution.

**Present Value of Benefits**

The total dollars needed as of the valuation date to fund all benefits earned in the past or expected to be earned in the future for *current* members.

**Rolling Amortization Period**

An amortization period that remains the same each year, rather than declining.

**Superfunded**

A condition existing when the actuarial value of assets exceeds the present value of benefits. When this condition exists on a given valuation date for a given plan, employee contributions for the rate year covered by that valuation may be waived.

**Unfunded Liability or Unfunded Accrued Liability (UAL)**

A plan with an actuarial value of assets below the accrued liability is said to have an unfunded liability and must temporarily increase contributions to get back on schedule.