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October 2009

**SAFETY PLAN OF THE CITY OF SACRAMENTO (EMPLOYER # 1121)  
 Annual Valuation Report as of June 30, 2008**

Dear Employer,

As an attachment to this letter, you will find a copy of the June 30, 2008 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**

There may be changes specific to your plan such as contract amendments and funding changes. There are no other material changes since the prior valuation.

**Future Contribution Rates**

The exhibit below displays the required employer contribution rate and Superfunded status for 2010/2011 along with an estimate of the contribution rate and the probable Superfunded status for 2011/2012. The estimated rate for 2011/2012 is based solely on a projection of the investment return for fiscal 2008/2009, namely -28.0%. Please disregard any projections that we may have provided to you in the past.

Fiscal Year	Employer Contribution Rate	Superfunded?
2010/2011	23.187%	NO
2011/2012	25.6% (projected)	NO

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

The estimate for 2011/2012 also assumes that there are no future amendments and no liability gains or losses (such as from 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 effect on your contribution rate.** Even for the largest plans, such gains and losses often cause a change in the employer's contribution rate by one or two percent, even larger in some less common instances. These gains and losses cannot be predicted in advance so the projected employer contribution rate for 2011/2012 is just an estimate. In addition, your employer contribution rate can vary dramatically because short term experience does not conform to the long term actuarial assumptions. Also, the current financial market volatility has impacted the CalPERS trust fund and will impact future employer rates. Last, the CalPERS Board has adopted a new smoothing policy. Please refer to the Cost and Volatility and Subsequent Events sections of the Highlights & Executive Summary for more information. Your actual rate for 2011/2012 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,

Ronald L. Seeling, Ph.D., FCA, ASA, MAAA  
 Enrolled Actuary  
 Chief Actuary, CalPERS

**ACTUARIAL VALUATION**

as of June 30, 2008

**for the  
SAFETY PLAN  
of the  
CITY OF SACRAMENTO  
(EMPLOYER # 1121)**

**REQUIRED CONTRIBUTIONS  
FOR FISCAL YEAR  
July 1, 2010 – June 30, 2011**



California Public Employees' Retirement System  
P.O. Box 942709  
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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 SAFETY PLAN OF THE CITY OF SACRAMENTO. This valuation is based on the member and financial data as of June 30, 2008 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 Society of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.





Fritzie Archuleta, ASA, MAAA  
Associate Pension Actuary, CalPERS  
Plan Actuary



Ron Seeling, Ph.D., FCA, ASA, MAAA  
Enrolled Actuary  
Chief Actuary, CalPERS





# HIGHLIGHTS AND EXECUTIVE SUMMARY

- **PURPOSE OF THE REPORT**
  - **REQUIRED CONTRIBUTIONS**
  - **FUNDED STATUS**
  - **COST AND VOLATILITY**
  - **CHANGES SINCE THE PRIOR VALUATION**
  - **SUBSEQUENT EVENTS**
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## **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**
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## 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
2006 - 2007	16.002%	6.707%	22.709%
2007 - 2008	16.032%	6.247%	22.279%
2008 - 2009	15.794%	7.601%	23.395%
2009 - 2010	15.813%	6.771%	22.584%
2010 - 2011	15.829%	7.358%	23.187%

## Funding History

The Funding History below shows the recent history of the market value of assets, actuarial accrued liability, their relationship, and the annual covered payroll.

Valuation Date	Accrued Liability	Market Value of Assets	Funded Ratio	Annual Covered Payroll
06/30/04	\$ 771,486,597	\$ 667,542,281	86.5%	\$ 79,055,240
06/30/05	822,582,834	751,086,524	91.3%	83,871,389
06/30/06	907,559,350	834,317,782	91.9%	92,179,706
06/30/07	971,501,170	989,464,838	101.8%	99,923,895
06/30/08	1,048,464,418	928,292,164	88.5%	109,507,245



## **SUMMARY OF ASSETS**

- **RECONCILIATION OF THE MARKET VALUE OF ASSETS**
- **DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS**
- **ASSET ALLOCATION**







## **SUMMARY OF PARTICIPANT DATA**

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



## 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	160	1	33	0	1	22	217
5-9	175	1	76	0	2	12	266
10-14	130	1	70	0	0	5	206
15-19	82	2	43	0	2	2	131
20-24	0	0	5	0	0	0	5
25-29	1	0	3	0	1	0	5
30 and Over	0	0	0	0	0	0	0
<b>All Years</b>	<b>548</b>	<b>5</b>	<b>230</b>	<b>0</b>	<b>6</b>	<b>41</b>	<b>830</b>

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	\$64,521	\$6,156	\$47,459	\$0	\$42,986	\$48,743	\$59,959
5-9	62,531	39,250	45,091	0	39,728	37,822	56,175
10-14	50,128	23,304	38,639	0	0	37,680	45,791
15-19	57,328	19,083	41,737	0	31,668	19,287	50,654
20-24	0	0	25,896	0	0	0	25,896
25-29	7,969	0	25,786	0	56,986	0	28,463
30 and Over	0	0	0	0	0	0	0
<b>All Years</b>	<b>59,292</b>	<b>21,375</b>	<b>42,171</b>	<b>0</b>	<b>40,460</b>	<b>42,761</b>	<b>53,366</b>

\* 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 23 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 - GLOSSARY OF ACTUARIAL TERMS**





## **APPENDIX A**

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



**Public Agency Police 3% @ 50**

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0435	0.0435	0.0435	0.0821	0.1208	0.1559
51	0.0385	0.0385	0.0385	0.0728	0.1071	0.1382
52	0.0614	0.0614	0.0614	0.1159	0.1705	0.2200
53	0.0689	0.0689	0.0689	0.1303	0.1916	0.2472
54	0.0710	0.0710	0.0710	0.1342	0.1974	0.2547
55	0.0898	0.0898	0.0898	0.1698	0.2497	0.3222
56	0.0687	0.0687	0.0687	0.1299	0.1910	0.2465
57	0.0803	0.0803	0.0803	0.1518	0.2232	0.2880
58	0.0791	0.0791	0.0791	0.1495	0.2198	0.2837
59	0.0820	0.0820	0.0820	0.1549	0.2279	0.2940
60	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

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

**Public Agency Fire 3% @ 50**

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0341	0.0341	0.0341	0.0477	0.0679	0.0804
51	0.0463	0.0463	0.0463	0.0647	0.0922	0.1091
52	0.0693	0.0693	0.0693	0.0967	0.1377	0.1630
53	0.0835	0.0835	0.0835	0.1166	0.1661	0.1965
54	0.1025	0.1025	0.1025	0.1431	0.2038	0.2412
55	0.1265	0.1265	0.1265	0.1766	0.2516	0.2977
56	0.1210	0.1210	0.1210	0.1690	0.2407	0.2848
57	0.1010	0.1010	0.1010	0.1411	0.2010	0.2378
58	0.1184	0.1184	0.1184	0.1652	0.2354	0.2786
59	0.1002	0.1002	0.1002	0.1399	0.1993	0.2358
60	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000



## **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.

Benefit Provision	Coverage Group						
	74001	74101	74102	74401	75001	75101	75102
Benefit Formula Social Security Coverage Full/Modified	3.0% @ 55 No Full	3.0% @ 55 No Full	3.0% @ 55 No Full	3.0% @ 55 No Full	3.0% @ 50 No Full	3.0% @ 50 No Full	3.0% @ 50 No Full
Final Average Compensation Period	12 mos.	12 mos.	12 mos.	12 mos.	12 mos.	12 mos.	12 mos.
Sick Leave Credit	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Non-Industrial Disability	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Industrial Disability	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pre-Retirement Death Benefits Optional Settlement 2W 1959 Survivor Benefit Level Special Alternate (firefighters)	No No Yes No	No No Yes No	No No Yes No	No Level 2 Yes No	Yes Level 4 Yes No	Yes Level 4 Yes No	Yes Level 4 Yes No
Post-Retirement Death Benefits Lump Sum Survivor Allowance (PRSA)	\$500 Yes	\$500 Yes	\$500 Yes	\$500 Yes	\$500 Yes	\$500 Yes	\$500 Yes
COLA	2%	3%	2%	2%	2%	3%	2%
Employee Contributions Contractual Employer Paid Contractual Employee Cost Sharing	No 0%	No 0%	No 0%	No 0%	No 0%	No 0%	No 0%



## **APPENDIX C**

- **GASB STATEMENT NO. 27**
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## SAFETY PLAN of the CITY OF SACRAMENTO

### 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, 2010 to June 30, 2011 has been determined by an actuarial valuation of the plan as of June 30, 2008. The contribution rate for the indicated period is 23.187% of payroll and for the 1959 Survivor Program. In order to calculate the dollar value of the ARC for inclusion in financial statements prepared as of June 30, 2011, 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, 2010 to June 30, 2011. 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, 2010 through June 30, 2011 is \$26,924,679.

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

	<b><u>Retirement Program</u></b>
Valuation Date	June 30, 2008
Actuarial Cost Method	Entry Age Normal Cost Method
Amortization Method	Level Percent of Payroll
Average Remaining Period	31 Years as of the Valuation Date
Asset Valuation Method	15 Year Smoothed Market
<b>Actuarial Assumptions</b>	
Investment Rate of Return	7.75% (net of administrative expenses)
Projected Salary Increases	3.25% to 13.15% 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 value of assets, actuarial accrued liability, 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		Annual Covered Payroll (c)	UL As a % of Payroll [(a)-(b)]/(c)
				(AVA) (b)/(a)	Market Value		
06/30/04	\$ 771,486,597	\$ 677,938,151	\$ 93,548,446	87.9%	86.5%	\$ 79,055,240	118.3%
06/30/05	822,582,834	729,662,145	92,920,689	88.7%	91.3%	83,871,389	110.8%
06/30/06	907,559,350	786,516,931	121,042,419	86.7%	91.9%	92,179,706	131.3%
06/30/07	971,501,170	853,106,691	118,394,479	87.8%	101.8%	99,923,895	118.5%
06/30/08	1,048,464,418	908,746,779	139,717,639	86.7%	88.5%	109,507,245	127.6%

# **APPENDIX D**

## **GLOSSARY OF ACTUARIAL TERMS**

## Purpose of the Report

This report presents the results of the June 30, 2008 actuarial valuation of the SAFETY PLAN OF THE CITY OF SACRAMENTO 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, 2008;
- certify the actuarially required employer contribution rate of this plan for the fiscal year July 1, 2010 through June 30, 2011 is 23.187%;
- provide actuarial information as of June 30, 2008 to the CalPERS Board of Administration and other interested parties; and
- provide pension information as of June 30, 2008 to be used in financial reports subject to Governmental Accounting Standards Board (GASB) Statement Number 27 for a Single Employer Defined Benefit Pension Plan.

Use of this report for other purposes may be inappropriate.

## Required Contributions

	Fiscal Year 2009/2010	Fiscal Year 2010/2011
<b>Required Employer Contributions</b>		
Employer Contribution Required (in Projected Dollars)		
Payment for Normal Cost	\$ 17,392,171	\$ 19,079,479
Payment on the Amortization Bases	7,447,577	8,869,064
Total (not less than zero)	\$ 24,839,748	\$ 27,948,543
Annual Lump Sum Prepayment Option*	\$ 23,929,771	\$ 26,924,679
Employer Contribution Required (Percentage of Payroll)		
Payment for Normal Cost	15.813%	15.829%
Payment on the Amortization Bases	6.771%	7.358%
Total (not less than zero)	22.584%	23.187%
<b>Required Employee Contributions (Percentage)</b>	9.000%	9.000%

## Funded Status

	June 30, 2007	June 30, 2008
Present Value of Projected Benefits	\$ 1,226,426,486	\$ 1,326,629,153
Entry Age Normal Accrued Liability	971,501,170	1,048,464,418
Actuarial Value of Assets (AVA)**	853,106,691	908,746,779
Unfunded Liability	\$ 118,394,479	\$ 139,717,639
Market Value of Assets (MVA)	\$ 989,464,838	\$ 928,292,164
Funded Status (on an MVA basis)	101.8%	88.5%
<b>Superfunded Status</b>	No	No

\* Payment **must be** received by CalPERS between July 1 and July 15.

\*\* The Actuarial Value of Assets is used to establish funding requirements, while the funded ratio based on the Market Value of Assets is a better indicator of the solvency of the plan.

## 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.

- There are demographic assumptions about the percentage of employees that will terminate, die, become disabled, and retire in each future year.
- There are economic assumptions about 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 each year as we go forward. For example, while the asset earnings at CalPERS have averaged the assumed return of 7.75% for the past twenty year period ending June 30, 2009 returns for each fiscal year ranged from -24% to +20.1%

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 (i.e., Accrued Liability – representing 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. So, the employer rate can be computed in many different ways depending on how long one will take to pay for it. And as the first point above states; all of these results depend on all assumptions being exactly realized.

### 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 year to year. 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. 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.

Beginning with the June 30, 2004 actuarial valuation, rate stabilization methodologies were implemented. Although there is no method that can provide perfectly stable rates, the new methods have been shown to be very effective in mitigating rate volatility. It continues to be true that a plan that has a volatility index that is three times the index of a second plan will have three times the volatility in rates as compared to the second plan. However, the amount of change has been dramatically reduced through the rate stabilization process. In most situations, the new rate stabilization policies will reduce rate volatility due to actual gains and losses about 50%.

As of June 30, 2008

Market Value of Assets without Receivables	\$	926,767,733
Payroll		109,507,245
Volatility Index		8.5

## 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

There were no material changes in actuarial methods since the prior year's actuarial valuation.

### 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 whose report is dated after the amendment becomes effective.

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 section and the effect on your employer contribution rate is shown in the RECONCILIATION OF REQUIRED EMPLOYER CONTRIBUTIONS section of this report. 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.

## Subsequent Events

The current financial market volatility has impacted the CalPERS trust fund and will continue to impact future employer rates. In response to this, the CalPERS Board has adopted a new smoothing policy which will be implemented in the June 30, 2009 valuation.

CalPERS will implement a 3-year phase-in of the 2008 – 2009 investment loss because it is expected that 3 years will be a sufficient length of time for the economy to recover. This phased-in approach will be achieved by temporarily relaxing the constraints on the smoothed value of assets around the actual market value. This corridor which constrains the smoothed value of assets will be allowed to expand and then contract with the following conditions:

- 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 which impacts the 2011 – 2012 contribution rate
- Reduce the corridor limits for the actuarial value of assets to 70%-130% of market value on June 30, 2010 which impacts the 2012 – 2013 contribution rate

- Return to the 80%-120% of market value corridor limits for the actuarial value of assets on June 30, 2011 and thereafter which impacts the 2013 – 2014 and fiscal years beyond contribution rates

We will isolate the asset loss outside of the 80% - 120% corridor and pay for it with a disciplined fixed and certain 30 year amortization schedule. It is prudent for 2008-2009 Fiscal Year investment losses to be subject to a more stringent funding schedule and that they should be paid for in full at the end of the 30 years. In this way we will not rely on future investment returns to pay for 2008-2009 investment losses.

This methodology has the dual benefit of providing short-term relief to local government employers and strengthening the long-term financial health of the pension fund.

## Development of Accrued and Unfunded Liabilities

1. Present Value of Projected Benefits		
a) Active Members	\$	677,102,007
b) Transferred Members		28,743,322
c) Terminated Members		6,765,845
d) Members and Beneficiaries Receiving Payments		614,017,979
e) Total		<u>1,326,629,153</u>
2. Present Value of Future Employer Normal Costs		176,344,177
3. Present Value of Future Employee Contributions		101,820,558
4. Entry Age Normal Accrued Liability		
a) Active Members		398,937,272
b) Transferred Members		28,743,322
c) Terminated Members		6,765,845
d) Members and Beneficiaries Receiving Payments		614,017,979
e) Total		<u>1,048,464,418</u>
5. Actuarial Value of Assets		908,746,779
6. Unfunded Accrued Liability		139,717,639

## (Gain)/Loss Analysis 6/30/07 – 6/30/08

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.

<b>A Total (Gain)/Loss for the Year</b>	
1. Unfunded Accrued Liability (UAL) as of 6/30/07	\$ 118,394,479
2. Expected Payment on the UAL during 2007/2008	6,671,064
3. Interest through 6/30/08 $[(.0775 \times (A1) - ((1.0775)^{1/2} - 1) \times (A2)]$	8,921,892
4. Expected UAL before all other changes $[(A1) - (A2) + (A3)]$	120,645,307
5. Change due to new plan changes	1,453,517
6. Change due to change in actuarial methods	0
7. Expected UAL after all other changes $[(A4) + (A5) + (A6)]$	122,098,824
8. Actual UAL as of 6/30/08	139,717,639
9. Total (Gain)/Loss for 2007/2008 $[(A8) - (A7)]$	\$ 17,618,815
<b>B Contribution (Gain)/Loss for the Year</b>	
1. Expected Contribution (Employer and Employee)	\$ 32,270,989
2. Interest on Expected Contributions	1,227,168
3. Actual Contributions	30,784,040
4. Interest on Actual Contributions	1,170,624
5. Expected Contributions with Interest	33,498,157
6. Actual Contributions with Interest	31,954,664
7. Contribution (Gain)/Loss $[(B5) - (B6)]$	\$ 1,543,493
<b>C Asset (Gain)/Loss for the Year</b>	
1. Actuarial Value of Assets as of 6/30/07 Including Receivables	\$ 853,106,691
2. Receivables as of 6/30/07	1,688,263
3. Actuarial Value of Assets as of 6/30/07	851,418,428
4. Contributions Received	30,784,040
5. Benefits and Refunds Paid	(42,895,091)
6. Transfers/Misc. Adjustments	958,058
7. Expected Int. $[(.0775 \times (C3) + ((1.0775)^{1/2} - 1) \times ((C4) + (C5) + (C6))]$	65,560,814
8. Expected Assets as of 6/30/08 $[(C3) + (C4) + (C5) + (C6) + (C7)]$	905,826,249
9. Receivables as of 6/30/08	1,524,431
10. Expected Assets Including Receivables	907,350,680
11. Actual Actuarial Value of Assets as of 6/30/08	908,746,779
12. Asset (Gain)/Loss $[(C10) - (C11)]$	\$ (1,396,099)
<b>D Liability (Gain)/Loss for the Year</b>	
1. Total (Gain)/Loss (A9)	\$ 17,618,815
2. Contribution (Gain)/Loss (B7)	1,543,493
3. Asset (Gain)/Loss (C12)	(1,396,099)
4. Liability (Gain)/Loss $[(D1) - (D2) - (D3)]$	\$ 17,471,421
<b>Development of the (Gain)/Loss Balance as of 6/30/08</b>	
1. (Gain)/Loss Balance as of 6/30/07	\$ 113,431,120
2. Payment Made on the Balance during 2007/2008	5,317,591
3. Interest through 6/30/08 $[(.0775 \times (1) - ((1.0775)^{1/2} - 1) \times (2)]$	8,588,700
4. Scheduled (Gain)/Loss Balance as of 6/30/08 $[(1) - (2) + (3)]$	\$ 116,702,229
5. (Gain)/Loss for Fiscal Year ending 6/30/08 $[(A9) \text{ above}]$	17,618,815
6. Final (Gain)/Loss Balance as of 6/30/08 $[(4) + (5)]$	\$ 134,321,044



## 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, 2008).
- The employer contribution rate determined by the valuation is for the fiscal year beginning two years after the valuation date (fiscal year 2010/2011).

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.

Reason for Base	Date Established	Amortization Period	Amounts for Fiscal 2010/2011						Payment as % of Payroll
			Balance 6/30/08	Expected Payment 2008/2009	Balance 6/30/09	Expected Payment 2009/2010	Balance 6/30/10	Scheduled Payment for 2010-2011	
BENEFIT CHANGE	06/30/01	13	\$1,396,245	\$128,061	\$1,371,523	\$132,223	\$1,340,565	\$136,521	0.113%
BENEFIT CHANGE	06/30/04	15	\$1,811,904	\$152,289	\$1,794,246	\$157,239	\$1,770,082	\$162,349	0.135%
BENEFIT CHANGE	06/30/05	16	\$1,688,464	\$136,560	\$1,677,567	\$140,998	\$1,661,219	\$145,581	0.121%
ASSUMPTION CHANGE	06/30/07	15	\$3,108,768	\$261,290	\$3,078,471	\$269,782	\$3,037,012	\$278,550	0.231%
ARNETT CASE	06/30/07	15	\$73,914	\$6,212	\$73,194	\$6,414	\$72,209	\$6,623	0.005%
METHOD CHANGE	06/30/07	16	\$(3,433,218)	\$(277,673)	\$(3,411,060)	\$(286,697)	\$(3,377,818)	\$(296,015)	(0.246%)
BENEFIT CHANGE	06/30/08	19	\$615,842	\$(31,696)	\$696,471	\$52,605	\$695,842	\$54,315	0.045%
BENEFIT CHANGE	06/30/08	19	\$837,675	\$(162,302)	\$1,071,069	\$80,899	\$1,070,102	\$83,528	0.069%
PAYMENT (GAIN)/LOSS	06/30/08	30	\$(702,999)	\$1,025,144	\$(1,821,608)	\$238,034	\$(2,209,868)	\$(132,704)	(0.110%)
(GAIN)/LOSS	06/30/08	30	\$134,321,044	\$7,329,143	\$137,123,076	\$7,094,350	\$140,385,988	\$8,430,316	6.994%
<b>TOTAL</b>			<b>\$139,717,639</b>	<b>\$8,567,028</b>	<b>\$141,652,949</b>	<b>\$7,885,847</b>	<b>\$144,445,333</b>	<b>\$8,869,064</b>	<b>7.358%</b>

## Reconciliation of Required Employer Contributions

	Percentage of Projected Payroll	Estimated \$ Based on Projected Payroll
1. Contribution for 7/1/09 – 6/30/10 (from prior year annual report)	22.584%	\$ 24,839,018
2. Effect of changes since the prior year annual valuation		
a) Effect of unexpected changes in demographics and financial results	0.482%	581,422
b) Effect of plan changes	0.121%	145,847
c) Effect of elimination of amortization base	0.000%	0
d) Effect of change in payroll	-	2,382,256
e) Effect of changes in Actuarial Methods or Assumptions	0	0
f) Effect of changes due to Fresh Start	0.000%	0
g) Net effect of the changes above [Sum of (a) through (f)]	0.603%	3,109,525
3. Contribution for 7/1/10 – 6/30/11 [(1)+(2g)]	23.187%	27,948,543

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.



## Reconciliation of the Market Value of Assets

1. Market Value of Assets as of 6/30/07 Including Receivables	\$	989,464,838
2. Receivables for Service Buybacks as of 6/30/07		1,688,263
3. Market Value of Assets as of 6/30/07		987,776,575
4. Employer Contributions		19,813,710
5. Employee Contributions		10,970,330
6. Benefit Payments to Retirees and Beneficiaries		(42,735,808)
7. Refunds		(159,283)
8. Lump Sum Payments		0
9. Transfers and Miscellaneous Adjustments		958,058
10. Investment Return		(49,855,849)
11. Market Value of Assets as of 6/30/08	\$	926,767,733
12. Receivables for Service Buybacks as of 6/30/08		1,524,431
13. Market Value of Assets as of 6/30/08 Including Receivables		928,292,164

## Development of the Actuarial Value of Assets

1. Actuarial Value of Assets as of 6/30/07 Used For Rate Setting Purposes	\$	853,106,691
2. Receivables for Service Buybacks as of 6/30/07		1,688,263
3. Actuarial Value of Assets as of 6/30/07		851,418,428
4. Employer Contributions		19,813,710
5. Employee Contributions		10,970,330
6. Benefit Payments to Retirees and Beneficiaries		(42,735,808)
7. Refunds		(159,283)
8. Lump Sum Payments		0
9. Transfers and Miscellaneous Adjustments		958,058
10. Expected Investment Income at 7.75%		65,560,814
11. Expected Actuarial Value of Assets	\$	905,826,249
12. Market Value of Assets as of 6/30/08	\$	926,767,733
13. Preliminary Actuarial Value of Assets $[(11) + ((12) - (11)) / 15]$		907,222,348
14. Maximum Actuarial Value of Assets (120% of (12))		1,112,121,280
15. Minimum Actuarial Value of Assets (80% of (12))		741,414,186
16. Actuarial Value of Assets {Lesser of [(14), Greater of ((13), (15))]}		907,222,348
17. Actuarial Value to Market Value Ratio		97.9%
18. Receivables for Service Buybacks as of 6/30/08		1,524,431
19. Actuarial Value of Assets as of 6/30/08 Used for Rate Setting Purposes		908,746,779



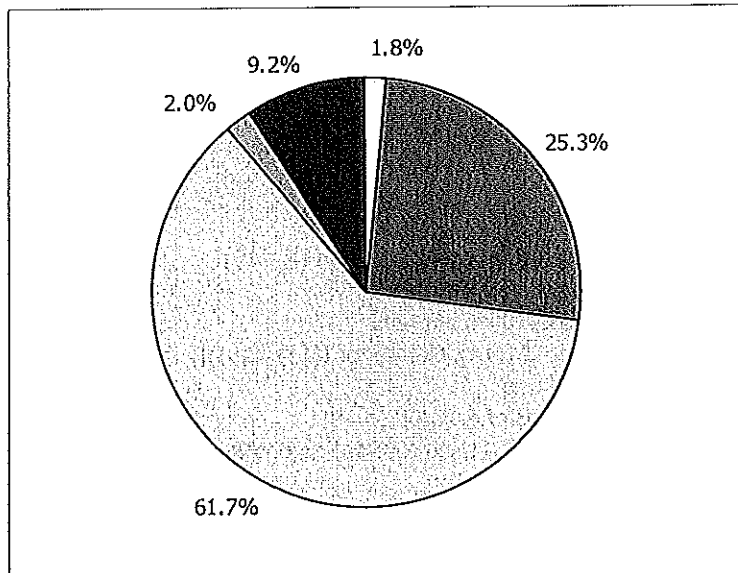
## Asset Allocation

The starting point and most important element of CalPERS' successful return on investment is the asset allocation or diversification among stocks, bonds, cash and other investments. Asset allocation is not an asset-only or liability-only decision. All factors, including liabilities, benefit payments, operating expenses, and employer and member contributions are taken into account in determining the appropriate asset allocation mix. The goal is to maximize returns at a prudent level of risk which presents an ever-changing balancing act between market volatility and long-term goals.

CalPERS follows a strategic asset allocation policy that identifies the percentage of funds to be invested in each asset class.

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, 2008. The assets for CITY OF SACRAMENTO SAFETY 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) Target
1) Total Cash Equivalents	4.3	1.8%	0.0%
2) Total Global Fixed Income	59.9	25.3%	19.0%
3) Total Equities	146.4	61.7%	66.0%
4) Inflation Linked (ILAC)	4.7	2.0%	5.0%
5) Total Real Estate	<u>21.8</u>	<u>9.2%</u>	<u>10.0%</u>
Total Fund	237.1	100.0%	100.0%



## Summary of Valuation Data

	June 30, 2007	June 30, 2008
<b>1. Active Members</b>		
a) Counts	1,280	1,321
b) Average Attained Age	37.87	38.04
c) Average Entry Age to Rate Plan	27.41	27.44
d) Average Years of Service	10.46	10.60
e) Average Annual Covered Pay	\$ 78,066	\$ 82,897
f) Annual Covered Payroll	99,923,895	109,507,245
g) Projected Annual Payroll for Contribution Year	109,986,539	120,534,962
h) Present Value of Future Payroll	1,037,067,984	1,131,339,511
<b>2. Transferred Members</b>		
a) Counts	220	222
b) Average Attained Age	39.82	40.18
c) Average Years of Service	5.25	5.29
d) Average Annual Covered Pay	\$ 76,809	\$ 83,175
<b>3. Terminated Members</b>		
a) Counts	98	115
b) Average Attained Age	38.78	37.92
c) Average Years of Service	4.11	3.82
d) Average Annual Covered Pay	\$ 52,332	\$ 53,708
<b>4. Retired Members and Beneficiaries</b>		
a) Counts	801	831
b) Average Attained Age	61.27	61.87
c) Average Annual Benefits	\$ 51,412	\$ 53,344
<b>5. Active to Retired Ratio</b>	1.60	1.59

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  
 Years of Service at Valuation Date**

Attained Age	0-4	5-9	10-14	15-19	20-25	25+	Total
15-24	37	0	0	0	0	0	37
25-29	209	24	0	0	0	0	233
30-34	104	131	15	0	0	0	250
35-39	62	104	116	17	0	0	299
40-44	14	36	78	56	24	2	210
45-49	8	8	14	40	71	19	160
50-54	1	2	2	17	34	42	98
55-59	0	0	1	0	6	22	29
60-64	0	0	0	0	2	1	3
65 and over	0	0	0	0	1	1	2
<b>All Ages</b>	<b>435</b>	<b>305</b>	<b>226</b>	<b>130</b>	<b>138</b>	<b>87</b>	<b>1,321</b>

**Distribution of Average Annual Salaries by Age and Service  
 Years of Service at Valuation Date**

Attained Age	0-4	5-9	10-14	15-19	20-25	25+	Average
15-24	\$55,753	\$0	\$0	\$0	\$0	\$0	\$55,753
25-29	64,414	78,599	0	0	0	0	65,875
30-34	69,463	82,811	93,051	0	0	0	77,873
35-39	73,588	82,556	87,877	89,969	0	0	83,183
40-44	68,960	84,371	91,858	93,665	100,312	119,437	90,758
45-49	72,028	83,671	86,879	92,660	105,276	99,414	97,073
50-54	64,100	89,575	88,354	94,923	97,647	101,971	98,331
55-59	0	0	75,478	0	120,282	99,153	102,708
60-64	0	0	0	0	101,491	142,280	115,087
65 and over	0	0	0	0	96,174	108,420	102,297
<b>All Ages</b>	<b>66,477</b>	<b>82,644</b>	<b>89,482</b>	<b>93,037</b>	<b>103,064</b>	<b>101,639</b>	<b>82,897</b>

## Transferred and Terminated Members

### Distribution of Transfers to Other CalPERS Plans by Age and Service Years of Service at Valuation Date

<b>Attained Age</b>	<b>0-4</b>	<b>5-9</b>	<b>10-14</b>	<b>15-19</b>	<b>20-25</b>	<b>25+</b>	<b>Total</b>	<b>Average Salary</b>
15-24	0	0	0	0	0	0	0	\$0
25-29	23	0	0	0	0	0	23	68,656
30-34	31	5	0	0	0	0	36	82,234
35-39	39	17	3	2	0	0	61	80,486
40-44	20	12	7	2	0	0	41	81,577
45-49	11	4	9	8	2	0	34	99,322
50-54	7	4	5	1	3	0	20	76,322
55-59	4	1	1	0	0	0	6	102,378
60-64	0	0	0	0	0	1	1	153,455
65 and over	0	0	0	0	0	0	0	0
<b>All Ages</b>	<b>135</b>	<b>43</b>	<b>25</b>	<b>13</b>	<b>5</b>	<b>1</b>	<b>222</b>	<b>83,175</b>

### Distribution of Terminated Participants with Funds on Deposit by Age and Service Years of Service at Valuation Date

<b>Attained Age</b>	<b>0-4</b>	<b>5-9</b>	<b>10-14</b>	<b>15-19</b>	<b>20-25</b>	<b>25+</b>	<b>Total</b>	<b>Average Salary</b>
15-24	6	0	0	0	0	0	6	\$54,847
25-29	12	0	0	0	0	0	12	52,714
30-34	23	3	0	0	0	0	26	55,258
35-39	19	8	4	0	0	0	31	55,047
40-44	12	3	3	1	0	0	19	51,797
45-49	5	2	1	2	0	0	10	59,789
50-54	4	1	2	0	0	0	7	39,939
55-59	1	1	0	0	0	0	2	66,853
60-64	0	0	0	0	0	0	0	0
65 and over	1	0	0	0	0	1	2	38,146
<b>All Ages</b>	<b>83</b>	<b>18</b>	<b>10</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>115</b>	<b>53,708</b>

## 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	1	1
30-34	0	0	0	0	0	0	0
35-39	0	1	6	0	0	0	7
40-44	0	0	18	0	3	0	21
45-49	0	1	28	0	0	1	30
50-54	76	0	26	0	1	1	104
55-59	113	2	30	0	1	8	154
60-64	143	0	62	0	1	4	210
65-69	124	0	38	0	0	12	174
70-74	70	1	19	0	0	12	102
75-79	19	0	1	0	0	2	22
80-84	3	0	1	0	0	0	4
85 and Over	0	0	1	0	0	0	1
<b>All Ages</b>	<b>548</b>	<b>5</b>	<b>230</b>	<b>0</b>	<b>6</b>	<b>41</b>	<b>830</b>

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	\$10,729	\$10,729
30-34	0	0	0	0	0	0	0
35-39	0	6,156	27,265	0	0	0	24,250
40-44	0	0	32,218	0	39,790	0	33,300
45-49	0	3,749	30,060	0	0	128,441	32,463
50-54	58,621	0	38,347	0	56,986	14,956	53,117
55-59	65,932	31,277	44,257	0	37,078	41,145	59,785
60-64	60,415	0	46,224	0	29,328	51,533	55,908
65-69	55,643	0	48,763	0	0	39,326	53,015
70-74	54,396	34,416	49,661	0	0	43,051	51,983
75-79	54,393	0	42,531	0	0	37,623	52,329
80-84	68,689	0	45,285	0	0	0	62,838
85 and Over	0	0	39,125	0	0	0	39,125
<b>All Ages</b>	<b>59,292</b>	<b>21,375</b>	<b>42,171</b>	<b>0</b>	<b>40,460</b>	<b>42,761</b>	<b>53,366</b>



## 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 usually 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. In addition, all gains or losses are tracked and amortized over a rolling 30 year period. Finally, 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.

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.

## **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 of this valuation.

### **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. The assumed increases are shown below.

#### **Public Agency Miscellaneous**

<u>Duration of Service</u>	<u>Entry Age 20</u>	<u>Entry Age 30</u>	<u>Entry Age 40</u>
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	0.0365	0.0365	0.0345
30	0.0325	0.0325	0.0325

#### **Public Agency Fire**

<u>Duration of Service</u>	<u>Entry Age 20</u>	<u>Entry Age 30</u>	<u>Entry Age 40</u>
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	0.0345
25	0.0355	0.0355	0.0335
30	0.0325	0.0325	0.0325

#### **Public Agency Police**

<u>Duration of Service</u>	<u>Entry Age 20</u>	<u>Entry Age 30</u>	<u>Entry Age 40</u>
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	0.0345
25	0.0365	0.0355	0.0335
30	0.0325	0.0325	0.0325

**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	0.0365	0.0355	0.0345
30	0.0325	0.0325	0.0325

- 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).

Age	Non-Industrial Death (Not Job-Related)		Industrial Death (Job-Related)
	Male	Female	Male and Female
20	0.00019	0.00009	0.00003
25	0.00027	0.00014	0.00007
30	0.00038	0.00021	0.00010
35	0.00054	0.00031	0.00013
40	0.00077	0.00046	0.00017
45	0.00110	0.00068	0.00020
50	0.00156	0.00102	0.00023
55	0.00221	0.00151	0.00027
60	0.00314	0.00226	0.00030

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.

Age	Healthy Recipients		Non-Industrially Disabled (Not Job-Related)		Industrially Disabled (Job-Related)	
	Male	Female	Male	Female	Male	Female
50	0.00245	0.00136	0.01459	0.01129	0.00546	0.00388
55	0.00429	0.00253	0.02115	0.01481	0.00616	0.00568
60	0.00721	0.00442	0.02870	0.01884	0.01016	0.00818
65	0.01302	0.00795	0.03617	0.02356	0.01853	0.01214
70	0.02135	0.01276	0.04673	0.03020	0.03369	0.01760
75	0.03716	0.02156	0.06552	0.04298	0.05768	0.02774
80	0.06256	0.03883	0.09481	0.06514	0.08670	0.04690
85	0.10195	0.07219	0.14041	0.10269	0.13032	0.08262
90	0.17379	0.12592	0.20793	0.16189	0.19588	0.13984
95	0.25917	0.21773	0.30792	0.25522	0.29444	0.23566
100	0.34724	0.32036	0.45599	0.40236	0.44259	0.35341

**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 members refund immediately if non-vested, retire immediately if eligible, or retire at the earliest retirement age if not eligible.

**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	0.1760	0.1691	0.1622	0.1553	0.1483	0.1414
1	0.1561	0.1492	0.1423	0.1353	0.1284	0.1215
2	0.1362	0.1293	0.1224	0.1154	0.1085	0.1016
3	0.1163	0.1094	0.1025	0.0955	0.0886	0.0817
4	0.0964	0.0895	0.0826	0.0756	0.0687	0.0618
5	0.0283	0.0257	0.0232	0.0206	0.0181	0.0155
10	0.0184	0.0161	0.0139	0.0117	0.0095	0.0073
15	0.0120	0.0102	0.0083	0.0064	0.0046	0.0027
20	0.0073	0.0057	0.0041	0.0025	0.0009	0.0002
25	0.0034	0.0022	0.0009	0.0002	0.0002	0.0002
30	0.0010	0.0002	0.0002	0.0002	0.0002	0.0002

**Public Agency Safety**

Duration of Service	Fire	Police	County Peace Officer
0	0.0947	0.1299	0.1072
1	0.0739	0.0816	0.0841
2	0.0531	0.0348	0.0609
3	0.0323	0.0331	0.0470
4	0.0290	0.0314	0.0445
5	0.0095	0.0110	0.0156
10	0.0029	0.0068	0.0096
15	0.0021	0.0035	0.0048
20	0.0016	0.0022	0.0022
25	0.0010	0.0015	0.0010
30	0.0009	0.0012	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	0.0482	0.0439	0.0395	0.0351	0.0307
10	0.0390	0.0343	0.0296	0.0249	0.0000
15	0.0326	0.0274	0.0224	0.0000	0.0000
20	0.0245	0.0192	0.0000	0.0000	0.0000
25	0.0156	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000

**Public Agency Safety**

Duration of Service	Fire	Police	County Peace Officer
5	0.0162	0.0187	0.0265
10	0.0061	0.0145	0.0204
15	0.0058	0.0094	0.0130
20	0.0053	0.0075	0.0074
25	0.0047	0.0067	0.0043
30	0.0045	0.0064	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.
- 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 for Safety Plans.

Age	Miscellaneous		Fire	Police	County Peace Officer
	Male	Female	Male and Female	Male and Female	Male and Female
20	0.0001	0.0001	0.0001	0.0001	0.0001
25	0.0002	0.0002	0.0001	0.0001	0.0001
30	0.0002	0.0004	0.0001	0.0002	0.0001
35	0.0008	0.0010	0.0001	0.0003	0.0002
40	0.0015	0.0016	0.0001	0.0004	0.0003
45	0.0024	0.0023	0.0002	0.0005	0.0004
50	0.0037	0.0035	0.0005	0.0008	0.0007
55	0.0049	0.0041	0.0010	0.0013	0.0012
60	0.0055	0.0039	0.0015	0.0020	0.0019

- 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	0.0006	0.0002
25	0.0010	0.0028	0.0012
30	0.0021	0.0056	0.0025
35	0.0031	0.0084	0.0037
40	0.0041	0.0112	0.0050
45	0.0051	0.0140	0.0062
50	0.0062	0.0167	0.0075
55	0.0601	0.0581	0.0128
60	0.0601	0.0581	0.0128

- 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**

**Public Agency Miscellaneous 2% @ 60**

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0085	0.0120	0.0146	0.0165	0.0184	0.0206
51	0.0059	0.0082	0.0100	0.0113	0.0126	0.0142
52	0.0092	0.0129	0.0157	0.0178	0.0198	0.0222
53	0.0104	0.0146	0.0177	0.0200	0.0224	0.0251
54	0.0109	0.0154	0.0187	0.0211	0.0236	0.0264
55	0.0198	0.0279	0.0339	0.0383	0.0427	0.0479
56	0.0181	0.0254	0.0308	0.0348	0.0389	0.0436
57	0.0208	0.0292	0.0354	0.0400	0.0447	0.0501
58	0.0262	0.0368	0.0447	0.0505	0.0564	0.0632
59	0.0335	0.0471	0.0572	0.0646	0.0721	0.0809
60	0.0615	0.0865	0.1051	0.1187	0.1325	0.1485
61	0.0628	0.0883	0.1073	0.1212	0.1353	0.1517
62	0.1258	0.1767	0.2147	0.2426	0.2708	0.3036
63	0.1263	0.1775	0.2156	0.2436	0.2720	0.3049
64	0.0972	0.1366	0.1659	0.1875	0.2093	0.2346
65	0.1731	0.2432	0.2955	0.3339	0.3727	0.4178
66	0.0946	0.1330	0.1616	0.1825	0.2038	0.2284
67	0.1272	0.1787	0.2171	0.2453	0.2738	0.3069

**Public Agency Miscellaneous 2% @ 55**

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0145	0.0184	0.0224	0.0269	0.0307	0.0366
51	0.0106	0.0135	0.0164	0.0198	0.0226	0.0269
52	0.0114	0.0145	0.0176	0.0212	0.0241	0.0287
53	0.0150	0.0190	0.0231	0.0278	0.0318	0.0378
54	0.0199	0.0252	0.0307	0.0369	0.0421	0.0502
55	0.0475	0.0604	0.0734	0.0883	0.1008	0.1200
56	0.0395	0.0502	0.0611	0.0735	0.0838	0.0998
57	0.0427	0.0542	0.0659	0.0793	0.0905	0.1078
58	0.0473	0.0601	0.0730	0.0879	0.1003	0.1194
59	0.0510	0.0648	0.0788	0.0948	0.1082	0.1287
60	0.0715	0.0908	0.1104	0.1328	0.1516	0.1804
61	0.0715	0.0908	0.1104	0.1328	0.1516	0.1805
62	0.1275	0.1620	0.1969	0.2369	0.2704	0.3219
63	0.1287	0.1636	0.1988	0.2392	0.2731	0.3250
64	0.0931	0.1182	0.1438	0.1729	0.1974	0.2350
65	0.1738	0.2209	0.2686	0.3231	0.3688	0.4390
66	0.1085	0.1378	0.1675	0.2016	0.2301	0.2739
67	0.1109	0.1409	0.1713	0.2061	0.2353	0.2801

**Public Agency Miscellaneous 2.5% @ 55, 2.7% @ 55, 3% @ 60**

Age	2.5% @ 55		2.7% @ 55		3% @ 60	
	Male	Female	Male	Female	Male	Female
50	0.05000	0.07000	0.05000	0.07000	0.05000	0.07000
51	0.02000	0.05000	0.02000	0.05000	0.02000	0.05000
52	0.03000	0.05000	0.03000	0.05000	0.03000	0.05000
53	0.03000	0.05000	0.03000	0.06000	0.03000	0.05000
54	0.04000	0.05000	0.04000	0.06000	0.04000	0.05000
55	0.08000	0.09000	0.09000	0.10000	0.08000	0.09000
56	0.06000	0.07000	0.07000	0.08000	0.07000	0.08000
57	0.07000	0.06000	0.08000	0.07000	0.08000	0.07000
58	0.08000	0.10000	0.08000	0.10000	0.09000	0.11000
59	0.09000	0.09000	0.10000	0.09000	0.11000	0.10000
60	0.16000	0.12000	0.17000	0.13000	0.19000	0.15000
61	0.15000	0.10000	0.16000	0.11000	0.17000	0.12000
62	0.26000	0.21000	0.28000	0.23000	0.31000	0.25000
63	0.22000	0.18000	0.23000	0.20000	0.26000	0.22000
64	0.15000	0.13000	0.16000	0.14000	0.18000	0.16000
65	0.25000	0.25000	0.27000	0.27000	0.30000	0.30000
66	0.14000	0.15000	0.15000	0.16000	0.17000	0.18000
67	0.12000	0.14000	0.13000	0.16000	0.14000	0.17000
68	0.12000	0.11000	0.13000	0.12000	0.15000	0.13000
69	0.09000	0.13000	0.10000	0.14000	0.11000	0.15000
70	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

**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**

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0138	0.0138	0.0138	0.0138	0.0253	0.0451
51	0.0123	0.0123	0.0123	0.0123	0.0226	0.0402
52	0.0262	0.0262	0.0262	0.0262	0.0480	0.0855
53	0.0523	0.0523	0.0523	0.0523	0.0957	0.1706
54	0.0697	0.0697	0.0697	0.0697	0.1275	0.2274
55	0.0899	0.0899	0.0899	0.0899	0.1645	0.2932
56	0.0638	0.0638	0.0638	0.0638	0.1166	0.2079
57	0.0711	0.0711	0.0711	0.0711	0.1300	0.2318
58	0.0628	0.0628	0.0628	0.0628	0.1149	0.2049
59	0.1396	0.1396	0.1396	0.1396	0.1735	0.2544
60	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506
61	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506
62	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506
63	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506
64	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506
65	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

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

**Public Agency Fire 2%@50**

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0065	0.0065	0.0065	0.0065	0.0101	0.0151
51	0.0081	0.0081	0.0081	0.0081	0.0125	0.0187
52	0.0173	0.0173	0.0173	0.0173	0.0267	0.0400
53	0.0465	0.0465	0.0465	0.0465	0.0716	0.1072
54	0.0638	0.0638	0.0638	0.0638	0.0983	0.1471
55	0.0868	0.0868	0.0868	0.0868	0.1336	0.2000
56	0.0779	0.0779	0.0779	0.0779	0.1200	0.1796
57	0.0901	0.0901	0.0901	0.0901	0.1387	0.2077
58	0.0790	0.0790	0.0790	0.0790	0.1217	0.1821
59	0.0729	0.0729	0.0729	0.0729	0.1123	0.1681
60	0.1135	0.1135	0.1135	0.1135	0.1747	0.2615
61	0.1136	0.1136	0.1136	0.1136	0.1749	0.2618
62	0.1136	0.1136	0.1136	0.1136	0.1749	0.2618
63	0.1136	0.1136	0.1136	0.1136	0.1749	0.2618
64	0.1136	0.1136	0.1136	0.1136	0.1749	0.2618
65	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

**Public Agency Police 3% @ 55**

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0193	0.0193	0.0193	0.0193	0.0397	0.0600
51	0.0157	0.0157	0.0157	0.0157	0.0324	0.0491
52	0.0163	0.0163	0.0163	0.0163	0.0337	0.0510
53	0.0587	0.0587	0.0587	0.0587	0.1208	0.1829
54	0.0691	0.0691	0.0691	0.0691	0.1422	0.2154
55	0.1164	0.1164	0.1164	0.1164	0.2397	0.3630
56	0.0756	0.0756	0.0756	0.0756	0.1556	0.2357
57	0.0581	0.0581	0.0581	0.0581	0.1196	0.1812
58	0.0508	0.0508	0.0508	0.0508	0.1045	0.1583
59	0.0625	0.0625	0.0625	0.0625	0.1287	0.1949
60	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

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

**Public Agency Fire 3% @ 55**

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0024	0.0024	0.0024	0.0035	0.0055	0.0065
51	0.0048	0.0048	0.0048	0.0070	0.0110	0.0128
52	0.0147	0.0147	0.0147	0.0215	0.0339	0.0396
53	0.0425	0.0425	0.0425	0.0621	0.0979	0.1142
54	0.0567	0.0567	0.0567	0.0828	0.1306	0.1523
55	0.0915	0.0915	0.0915	0.1337	0.2109	0.2459
56	0.0811	0.0811	0.0811	0.1184	0.1868	0.2178
57	0.0996	0.0996	0.0996	0.1455	0.2295	0.2676
58	0.0814	0.0814	0.0814	0.1189	0.1874	0.2185
59	0.0775	0.0775	0.0775	0.1131	0.1784	0.2080
60	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

## 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)

#### Benefit

The Service Retirement benefit calculated for service earned by this group of employees 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	2% at 60	2% at 55	2.5% at 55	2.7% at 55	3% at 60
<b>Age</b>					
50	1.092%	1.426%	2.0%	2.0%	2.0%
51	1.156%	1.522%	2.1%	2.14%	2.1%
52	1.224%	1.628%	2.2%	2.28%	2.2%
53	1.296%	1.742%	2.3%	2.42%	2.3%
54	1.376%	1.866%	2.4%	2.56%	2.4%
55	1.460%	2.0%	2.5%	2.7%	2.5%
56	1.552%	2.052%	2.5%	2.7%	2.6%
57	1.650%	2.104%	2.5%	2.7%	2.7%
58	1.758%	2.156%	2.5%	2.7%	2.8%
59	1.874%	2.210%	2.5%	2.7%	2.9%
60	2.0%	2.262%	2.5%	2.7%	3.0%
61	2.134%	2.314%	2.5%	2.7%	3.0%
62	2.272%	2.366%	2.5%	2.7%	3.0%
63 & Up	2.418%	2.418%	2.5%	2.7%	3.0%

**Safety Plan Formulas**

Retirement	½ at 55 *	2% at 55	2% at 50	3% at 55	3% at 50
<b>Age</b>					
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 larger. 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.
- 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.

### **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 2 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**

**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%.

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.

<b>Benefit Formula</b>	<b>Percent Contributed above the Breakpoint</b>
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.

- 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<sup>th</sup> or Indexed Level.

This benefit is not included in the results presented in this valuation. For more information on this benefit, go to the CalPERS website at [www.calpers.ca.gov](http://www.calpers.ca.gov).

## 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. We calculate a funded ratio by dividing the market value of assets by the 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.

**GASB 27**

Statement No. 27 of the Governmental Accounting Standards Board. The accounting standard governing a state of 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.