Terminated Agency Risk Pool Actuarial Valuation

As of June 30, 2016

CalPERS

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Actuarial Certification

September 2017

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 Terminated Agency Risk Pool. This valuation is based on the member and financial data as of June 30, 2016 provided by the various CalPERS databases and the benefits under this risk pool 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 risk pool, as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

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

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Highlights and Executive Summary

3 INTRODUCTION

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Highlights and Executive Summary

INTRODUCTION

This is the third actuarial valuation report for the Terminated Agency Risk Pool of the California Public Employees' Retirement System (CalPERS) that is being presented to the Board of Administration. Actuarial valuations for this pool have been performed on a regular basis and its financial condition has been closely monitored. The Pool has always been overfunded. This report shows that the Terminated Agency Risk Pool continues to be substantially overfunded as of June 30, 2016.

In December 2012 the Board's Investment Committee adopted an investment policy and asset allocation strategy for the Pool. In addition, the Board adopted a resolution regarding the discount rate to be used for valuing this Pool's liabilities. This report reflects these developments. (Further details on the investment policy and the discount rate determination may be found in the Assets Section and Appendix A, respectively.)

PURPOSE OF REPORT

This Actuarial Valuation for the Terminated Agency Risk Pool of the California Public Employees' Retirement System (CalPERS) was performed by CalPERS' staff actuaries using data as of June 30, 2016 in order to:

- Set forth the funded status of this risk pool as of June 30, 2016
- Provide actuarial information as of June 30, 2016 to the CalPERS Board and other interested parties

Use of this report for other purposes may be inappropriate.

California Actuarial Advisory Panel Recommendations

The report satisfies all relevant basic disclosure requirements under the *Model Disclosure Elements for Actuarial Valuation Reports* recommended by the California Actuarial Advisory Panel. As the Terminated Agencies do not pay contributions to the Pool, the basic disclosure requirement related to contributions are not relevant.

FUNDED STATUS OF THE RISK POOL

	June 30, 2015	June 30, 2016
1) Present Value of Projected Benefits		
a) Active Members	$0	$0
b) Transferred Members	13,192,157	14,998,231
c) Terminated Members	10,572,737	16,347,959
d) Members and Beneficiaries Receiving Payments	64,708,774	86,014,091
e) Total	$88,473,668	$117,360,281
2) Market Value of Assets (MVA)	$219,694,509	$250,137,428
3) Unfunded Liability [(1e) - (2)]	**($131,220,841)**	**($132,777,147)**
4) Funded Ratio [(2) / (1e)]	**248.3%**	**213.1%**

CHANGES SINCE PRIOR YEAR'S VALUATION

This report reflects a change in both the discount rate and inflation assumption. The discount rate changed from 3.26 percent to 2.44 percent. The inflation assumption changed from 2.19 percent to 1.76 percent.

These assumptions change each year as the yields on the underlying US Treasury securities fluctuate each year. See Appendix A for details on how these assumptions are set.

SUBSEQUENT EVENTS

This report reflects events impacting the Terminating Agency Pool through June 30, 2016. As a matter of course, additional plans are expected to terminate. In the Fiscal Year ending June 30, 2017 three agencies terminated adding approximately $26.1 million in liabilities and assets to the pool.

Assets

5 RECONCILIATION OF THE MARKET VALUE OF ASSETS

5 ASSET ALLOCATION

Assets

RECONCILIATION OF THE MARKET VALUE OF ASSETS

1) Market Value of Assets as of June 30, 2015 Including Receivables	$219,694,509
2) Change in Receivables for Service Buybacks as of June 30, 2015	74,700
3) Benefit Payments to Retirees and Beneficiaries	(5,476,385)
4) Refunds	(242,626)
5) Lump Sum Payments	—
6) Transfers and Miscellaneous Adjustments	581,838
7) Investment Return	7,949,461
8) Market Value of Assets as of June 30, 2016 (w/o Pool Transfers) [(1) + (2) + (3) + (4) + (5) + (6) + (7)]	$222,581,497
9) Net Transfers into and out of the Risk Pool	$27,555,931
10) Market Value of Assets as of June 30, 2016 Including Receivables [(8) + (9)]	**$250,137,428**

ASSET ALLOCATION

CalPERS Board has adopted an investment strategy for the Terminated Agency Risk Pool with the objective of minimizing funding risk and immunizing projected future benefit payments.

The assets of the Pool are invested as two independent segments:

- The Immunization Segment will be invested in a blend of US Treasury Separate Trading of Registered Interest and Principal of Securities (STRIPS), US Treasury Inflation Protected Securities (TIPS) and cash or cash equivalents.
- The Surplus Segment will be invested in the Public Employees' Retirement Fund (PERF).

This strategy is designed to minimize underfunding risk, and balance other risks including reinvestment risk, inflation risk, and implementation risk. In addition, a higher expected return is expected to be generated from the Surplus Segment that is invested with the rest of the PERF.

	June 30, 2015 Allocation	June 30, 2016 Allocation
Immunized Segment	48.6%	47.6%
Surplus Segment	51.4%	52.4%
Total	**100.0%**	**100.0%**

Liabilities

7 DEVELOPMENT OF ACCRUED AND UNFUNDED LIABILITIES

8 GAIN AND LOSS ANALYSIS

Liabilities

DEVELOPMENT OF ACCRUED AND UNFUNDED LIABILITIES

The following table shows the development of the accrued liabilities and the unfunded liabilities.

	June 30, 2015	June 30, 2016
1) Present Value of Benefits		
a) Active Members	$0	$0
b) Transferred Members	13,192,157	14,998,231
c) Terminated Members	10,572,737	16,347,959
d) Members and Beneficiaries Receiving Payments	64,708,774	86,014,091
e) Total	$88,473,668	$117,360,281
2) Present Value of Future Employer Normal Costs	$0	$0
3) Present Value of Future Employee Contributions	$0	$0
4) Accrued Liability		
a) Active Members	$0	$0
b) Transferred Members	13,192,157	14,998,231
c) Terminated Members	10,572,737	16,347,959
d) Members and Beneficiaries Receiving Payments	64,708,774	86,014,091
e) Total	$88,473,668	$117,360,281
5) Market Value of Assets (MVA)	$219,694,509	$250,137,428
6) Unfunded Liability/(Surplus) [(4e) - (5)]	**($131,220,841)**	**($132,777,147)**
7) Funded Status [(5) / (4e)]	**248.3%**	**213.1%**

(GAIN)/LOSS ANALYSIS

	June 30, 2016
1) Liability (Gain)/Loss for the Year	
a) Accrued Liability at 6/30/2015	$88,473,668
b) Benefit Payments to Retirees & Beneficiaries	(5,476,385)
c) Refunds	(242,626)
d) Interest	2,791,769
e) Expect Accrued Liability at 6/30/2016 [(1a) + (1b) + (1c) + (1d)]	85,546,426
f) Effect of New Entrants to the Pool	22,159,651
g) Change due to Assumption Changes	9,989,845
h) Actual Accrued Liability at 6/30/2016	117,360,281
i) Liability (Gain)/Loss [(1h) - (1g) - (1f) - (1e)]	**($335,641)**
2) Asset (Gain)/Loss for the Year	
a) Market Value of Assets as of 6/30/2015 Including Receivables	$219,694,509
b) Change in Receivable for Service Buybacks as of 6/30/2015	74,700
c) Benefit Payments to Retirees & Beneficiaries	(5,476,385)
d) Refunds	(242,626)
e) Lump Sum Payments	—
f) Transfers and Miscellaneous Adjustments	581,838
g) Net Transfers into and out of Risk Pool	27,555,931
h) Expected Interest	12,184,357
i) Expected Asset at 6/30/2016 [(2a) + (2b) + (2c) + (2d) + (2e) + (2f) + (2g) + (2h)]	$254,372,324
j) Market Value of Assets as of 6/30/2016 Including Receivables	250,137,428
k) Asset (Gain)/Loss [(2i) - (2j)]	**$4,234,896**
3) Total (Gain)/Loss for the Year	
a) Liability (Gain)/Loss (1f)	($335,641)
b) Asset (Gain)/Loss (2k)	4,234,896
c) Total (Gain)/Loss (3a)+(3b)	**$3,899,255**

- Expected interest on Liabilities 3.26%.
- Expected interest on Assets 5.28%. This is based on a blend of the expected return on the two segments of the TAP Portfolio:
  - Immunized Segment
  - Surplus Segment

Risk Analysis

10 ANALYSIS OF MORTALITY RATE SENSITIVITY

Risk Analysis

ANALYSIS OF MORTALITY RATE SENSITIVITY

The following analysis looks at the change in the June 30, 2016 funded ratio under two different mortality rate scenarios. Shown below are the funded ratios assuming mortality rates that are 10 percent lower and 10 percent higher than the current valuation mortality rate assumptions. This analysis gives an indication of the sensitivity of the funded ratio of the Terminated Agency Risk Pool to increasing or decreasing mortality rates over the long-term.

This type of analysis gives the reader a sense of the long-term risk to the risk pool's funded ratio.

Funded Ratios as of June 30, 2016

	Current Mortality Rates	-10% Mortality Rates	+10% Mortality Rates
Funded Ratio	213.1%	205.8%	220.1%

A 10 percent increase (decrease) to the assumed mortality rates over the long-term would result in approximately an 7 percentage point increase (decrease) to the funded ratio.

Discount Rate Sensitivity

The Terminated Agency Pool's funded ratio is not expected to be sensitive to changes in interest rates due to the Immunization Segment of the pool's market value of assets. Immunization of a significant portion of the risk pool's portfolio results in a funded status that is invariant to changes in the interest rate. Since the funded ratio is not expected to be sensitive to the discount rate for this risk pool, the most sensitive assumptions are the mortality rate assumptions. Consequently, a discount rate sensitivity analysis was replaced with a mortality rate sensitivity analysis for this risk pool.

Appendix A
Statement of Actuarial Data, Methods and Assumptions

ACTUARIAL DATA

As stated in the Actuarial Certification, the data, which serve as the basis of this valuation, have been obtained from the various CalPERS databases. We have reviewed the valuation data and believe that they are 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 do 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

The actuarial accrued liability for members currently receiving benefits and for members entitled to deferred benefits (i.e., transferred members and separated members) is equal to the present value of the benefits expected to be paid.

As there are no contributions or amortization requirements for the Terminated Agency Pool, there is no need to dampen fluctuations in the Market Value of Assets to derive an Actuarial Value of Assets. Therefore, the Actuarial Value of Assets has been set equal to the Market Value of Assets.

The excess of the actuarial accrued liability over the market value of plan assets is called the unfunded actuarial accrued liability.

ACTUARIAL ASSUMPTIONS

Economic Assumptions

Discount Rate

2.44 percent compounded annually (net of expenses) is the yield on 30 Year US Treasury STRIPS as of the June 30, 2016. This rate is used for all plans in this valuation. 3.26 percent was used in the prior year's valuation.

This rate is determined based on Board Resolution ACT-11-04, and Attachment 3 of the Agenda Item 4.b. of the August 2011 Benefit and Program Administration Committee Meeting entitled Methodology for Setting the Discount Rate for Local Agencies Terminating Their Contract for Retirement Benefits and for the Terminated Agency Pool.

The following procedure is used to determine the discount rate for terminated agency valuations:

(a) determine the duration of the pension liabilities as of the valuation date
(b) determine the weights that should be applied to the 10 Year and 30 year US Treasury durations (at spot rates at the valuation date), to equal the duration calculated in (a)
(c) apply the weights determined in (b) to the 10 Year and 30 Year US Treasury yields .

Economic Assumptions (continued)

Salary Growth

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

Annual Percentage Increase

Public Agency Miscellaneous

Duration of Service	Entry Age		
	20	30	40
0	0.122%	0.116%	0.102%
1	0.099%	0.094%	0.083%
2	0.086%	0.081%	0.071%
3	0.077%	0.072%	0.063%
4	0.070%	0.065%	0.057%
5	0.064%	0.060%	0.052%
10	0.046%	0.043%	0.039%
15	0.042%	0.040%	0.036%
20	0.039%	0.038%	0.034%
25	0.037%	0.036%	0.033%
30	0.035%	0.034%	0.032%

Public Agency Fire

Duration of Service	Entry Age		
	20	30	40
0	0.200%	0.198%	0.168%
1	0.149%	0.146%	0.125%
2	0.120%	0.116%	0.099%
3	0.098%	0.094%	0.081%
4	0.082%	0.078%	0.067%
5	0.069%	0.064%	0.055%
10	0.047%	0.046%	0.042%
15	0.044%	0.042%	0.039%
20	0.042%	0.039%	0.036%
25	0.040%	0.037%	0.034%
30	0.038%	0.036%	0.034%

Public Agency Police

Duration of Service	Entry Age		
	20	30	40
0	0.150%	0.147%	0.131%
1	0.116%	0.112%	0.101%
2	0.095%	0.092%	0.083%
3	0.081%	0.078%	0.070%
4	0.070%	0.067%	0.060%
5	0.061%	0.058%	0.052%
10	0.045%	0.043%	0.037%
15	0.045%	0.043%	0.037%
20	0.045%	0.043%	0.037%
25	0.045%	0.043%	0.037%
30	0.045%	0.043%	0.037%

Public Agency County Peace Officers

Duration of Service	Entry Age		
	20	30	40
0	0.177%	0.167%	0.150%
1	0.134%	0.126%	0.114%
2	0.108%	0.130%	0.094%
3	0.900%	0.086%	0.079%
4	0.076%	0.073%	0.067%
5	0.065%	0.062%	0.058%
10	0.047%	0.045%	0.041%
15	0.046%	0.045%	0.039%
20	0.046%	0.045%	0.038%
25	0.046%	0.045%	0.038%
30	0.046%	0.044%	0.038%

Schools

Duration of Service	Entry Age		
	20	30	40
0	0.090%	0.088%	0.082%
1	0.078%	0.075%	0.070%
2	0.070%	0.068%	0.063%
3	0.065%	0.063%	0.058%
4	0.061%	0.059%	0.054%
5	0.058%	0.056%	0.051%
10	0.046%	0.045%	0.041%
15	0.042%	0.041%	0.038%
20	0.039%	0.038%	0.035%
25	0.037%	0.035%	0.033%
30	0.035%	0.033%	0.031%

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

Inflation

1.76 percent compounded annually. This assumption is used for all plans. Rate determined as the difference between yield on 30 Year US Treasury STRIPS and the yield on 30 Year US Treasury TIPS as of the valuation date. 2.19 percent was used in the prior year’s valuation.

Non-valued Potential Additional Liabilities

The potential liability loss for a cost-of-living increase exceeding the 1.76 percent 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 percent for those agencies that have accepted 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 agencies that have contracted for 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" for these employees 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.

Termination Liability

The termination liabilities include a 7 percent contingency load. This load is for unforeseen improvements in mortality.

Demographic Assumptions

Pre-Retirement Mortality

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

	Non-Industrial Death (Not Job-Related)		Industrial Death (Job-Related)
Age	Male	Female	Male and Female
20	0.00031	0.00020	0.00003
25	0.00040	0.00023	0.00007
30	0.00049	0.00025	0.00010
35	0.00057	0.00035	0.00012
40	0.00075	0.00050	0.00013
45	0.00106	0.00071	0.00014
50	0.00155	0.00100	0.00015
55	0.00228	0.00138	0.00016
60	0.00308	0.00182	0.00017
65	0.00400	0.00257	0.00018
70	0.00524	0.00367	0.00019
75	0.00713	0.00526	0.00020
80	0.00990	0.00814	0.00021

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

Demographic Assumptions (continued)

Post-Retirement Mortality

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

	Healthy Recipients		Non-Industrial Disability (Not Job-Related)		Industrial Disability (Job-Related)	
Age	Male	Female	Male	Female	Male	Female
50	0.00501	0.00466	0.01680	0.01158	0.00501	0.00466
55	0.00599	0.00416	0.01973	0.01149	0.00599	0.00416
60	0.00710	0.00436	0.02289	0.01235	0.00754	0.00518
65	0.00829	0.00588	0.02451	0.01607	0.01122	0.00838
70	0.01305	0.00993	0.02875	0.02211	0.01635	0.01395
75	0.02205	0.01722	0.03990	0.03037	0.02834	0.02319
80	0.03899	0.02902	0.06083	0.04725	0.04899	0.03910
85	0.06969	0.05243	0.09731	0.07762	0.07679	0.06251
90	0.12974	0.09887	0.14804	0.12890	0.12974	0.09887
95	0.22444	0.18489	0.22444	0.21746	0.22444	0.18489
100	0.32536	0.30017	0.32536	0.30017	0.32536	0.30017
105	0.58527	0.56093	0.58527	0.56093	0.58527	0.56093
110	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

The mortality assumptions are based on mortality rates resulting from the most recent CalPERS Experience Study adopted by the CalPERS Board, first used in the June 30, 2013 valuation. For purposes of the post-retirement mortality rates, the revised rates include 20 years of projected on-going mortality improvement using Scale BB published by the Society of Actuaries. For more details, please refer to the experience study report that can be found at the following link:

https://www.calpers.ca.gov/docs/forms-publications/calpers-experience-study-2014.pdf

Marital Status

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

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

Age of Spouse

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

Terminated Members

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

Age	Miscellaneous Load Factor	Safety Load Factor
50	190%	310%
51	110%	190%
52	110%	105%
53 through 54	100%	105%
55	100%	140%
56 and above	100%	100%

Demographic Assumptions (continued)

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

Public Agency Safety

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

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

Demographic Assumptions (continued)

Schools

Duration of Service	Entry Age					
	20	25	30	35	40	45
0	0.1730	0.1627	0.1525	0.1422	0.1319	0.1217
1	0.1585	0.1482	0.1379	0.1277	0.1174	0.1071
2	0.1440	0.1336	0.1234	0.1131	0.1028	0.0926
3	0.1295	0.1192	0.1089	0.0987	0.0884	0.0781
4	0.1149	0.1046	0.0944	0.0841	0.0738	0.0636
5	0.0278	0.0249	0.0221	0.0192	0.0164	0.0135
10	0.0172	0.0147	0.0122	0.0098	0.0074	0.0049
15	0.0115	0.0094	0.0074	0.0053	0.0032	0.0011
20	0.0073	0.0055	0.0038	0.0020	0.0002	0.0002
25	0.0037	0.0023	0.0010	0.0002	0.0002	0.0002
30	0.0015	0.0003	0.0002	0.0002	0.0002	0.0002
35	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002

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	25	30	35	40
5	0.0656	0.0597	0.0537	0.0477	0.0418
10	0.0530	0.0466	0.0403	0.0339	0.0000
15	0.0443	0.0373	0.0305	0.0000	0.0000
20	0.0333	0.0261	0.0000	0.0000	0.0000
25	0.0212	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000

Public Agency Safety

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

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

Demographic Assumptions (continued)

Schools

Duration of Service	Entry Age 20	25	30	35	40
5	0.0816	0.0733	0.0649	0.0566	0.0482
10	0.0629	0.0540	0.0450	0.0359	0.0000
15	0.0537	0.0440	0.0344	0.0000	0.0000
20	0.0420	0.0317	0.0000	0.0000	0.0000
25	0.0291	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000

Non-Industrial (Not Job-Related) Disability

Rates vary by age and gender for Miscellaneous Plans.

Rates vary by age for Safety Plans

	Miscellaneous		Fire	Police	County Peace Officer	Schools	
Age	Male	Female	Male and Female	Male and Female	Male and Female	Male	Female
20	0.00017	0.00010	0.0001	0.0001	0.0001	0.00028	0.00026
25	0.00017	0.00010	0.0001	0.0001	0.0001	0.00010	0.00012
30	0.00019	0.00024	0.0001	0.0002	0.0001	0.00011	0.00016
35	0.00049	0.00081	0.0001	0.0003	0.0004	0.00053	0.00043
40	0.00122	0.00155	0.0001	0.0004	0.0007	0.00149	0.00101
45	0.00191	0.00218	0.0002	0.0005	0.0013	0.00295	0.00188
50	0.00213	0.00229	0.0005	0.0008	0.0018	0.00388	0.00244
55	0.00221	0.00179	0.0010	0.0013	0.0010	0.00358	0.00205
60	0.00222	0.00135	0.0015	0.0020	0.0006	0.00306	0.00139

- 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	0.00007	0.00000	0.00042
25	0.00025	0.00165	0.00131
30	0.00074	0.00476	0.00249
35	0.00158	0.00788	0.00370
40	0.00300	0.01100	0.00513
45	0.00530	0.01412	0.00672
50	0.02772	0.01846	0.00919
55	0.04088	0.04785	0.01505
60	0.05833	0.06024	0.01740

- 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 percent will become the Non-Industrial Disability rate and 50 percent will become the Industrial Disability rate.

Appendix A - Statement of Actuarial Methods and Assumptions (continued)

Demographic Assumptions (continued)

Service Retirement

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

Public Agency Miscellaneous 1.5% @ 65

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

Public Agency Miscellaneous 2% @ 60

	Years of Service					
Age	5	10	15	20	25	30
50	0.010	0.013	0.015	0.018	0.019	0.021
51	0.009	0.011	0.014	0.016	0.017	0.019
52	0.011	0.014	0.017	0.020	0.022	0.024
53	0.010	0.012	0.015	0.017	0.020	0.021
54	0.015	0.019	0.023	0.025	0.029	0.031
55	0.022	0.029	0.035	0.040	0.045	0.049
56	0.018	0.024	0.028	0.033	0.036	0.040
57	0.024	0.032	0.038	0.043	0.049	0.053
58	0.027	0.036	0.043	0.049	0.055	0.061
59	0.033	0.044	0.054	0.061	0.068	0.076
60	0.056	0.077	0.092	0.105	0.117	0.130
61	0.071	0.097	0.118	0.134	0.149	0.166
62	0.117	0.164	0.198	0.224	0.250	0.280
63	0.122	0.171	0.207	0.234	0.261	0.292
64	0.114	0.159	0.193	0.218	0.244	0.271
65	0.150	0.209	0.255	0.287	0.321	0.358
66	0.114	0.158	0.192	0.217	0.243	0.270
67	0.141	0.196	0.238	0.270	0.301	0.337
68	0.103	0.143	0.174	0.196	0.219	0.245
69	0.109	0.153	0.185	0.209	0.234	0.261
70	0.117	0.162	0.197	0.222	0.248	0.277

Demographic Assumptions (continued)

Public Agency Miscellaneous 2% @ 55

Age	Years of Service 5	10	15	20	25	30
50	0.014	0.018	0.021	0.025	0.027	0.031
51	0.012	0.014	0.017	0.020	0.021	0.025
52	0.013	0.017	0.019	0.023	0.025	0.028
53	0.015	0.020	0.023	0.027	0.030	0.034
54	0.026	0.033	0.038	0.045	0.051	0.059
55	0.048	0.061	0.074	0.088	0.100	0.117
56	0.042	0.053	0.063	0.075	0.085	0.100
57	0.044	0.056	0.067	0.081	0.091	0.107
58	0.049	0.062	0.074	0.089	0.100	0.118
59	0.057	0.072	0.086	0.103	0.118	0.138
60	0.067	0.086	0.103	0.123	0.139	0.164
61	0.081	0.103	0.124	0.148	0.168	0.199
62	0.116	0.147	0.178	0.214	0.243	0.288
63	0.114	0.144	0.174	0.208	0.237	0.281
64	0.108	0.138	0.166	0.199	0.227	0.268
65	0.155	0.197	0.238	0.285	0.325	0.386
66	0.132	0.168	0.203	0.243	0.276	0.328
67	0.122	0.155	0.189	0.225	0.256	0.304
68	0.111	0.141	0.170	0.204	0.232	0.274
69	0.114	0.144	0.174	0.209	0.238	0.282
70	0.130	0.165	0.200	0.240	0.272	0.323

Public Agency Miscellaneous 2.5% @ 55

Age	Years of Service 5	10	15	20	25	30
50	0.004	0.009	0.019	0.029	0.049	0.094
51	0.004	0.009	0.019	0.029	0.049	0.094
52	0.004	0.009	0.020	0.030	0.050	0.095
53	0.008	0.014	0.025	0.036	0.058	0.104
54	0.024	0.034	0.050	0.066	0.091	0.142
55	0.066	0.088	0.115	0.142	0.179	0.241
56	0.042	0.057	0.078	0.098	0.128	0.184
57	0.041	0.057	0.077	0.097	0.128	0.183
58	0.045	0.061	0.083	0.104	0.136	0.192
59	0.055	0.074	0.098	0.123	0.157	0.216
60	0.066	0.088	0.115	0.142	0.179	0.241
61	0.072	0.095	0.124	0.153	0.191	0.255
62	0.099	0.130	0.166	0.202	0.248	0.319
63	0.092	0.121	0.155	0.189	0.233	0.302
64	0.091	0.119	0.153	0.187	0.231	0.299
65	0.122	0.160	0.202	0.245	0.297	0.374
66	0.138	0.179	0.226	0.272	0.329	0.411
67	0.114	0.149	0.189	0.229	0.279	0.354
68	0.100	0.131	0.168	0.204	0.250	0.322
69	0.114	0.149	0.189	0.229	0.279	0.354
70	0.127	0.165	0.209	0.253	0.306	0.385

Appendix A - Statement of Actuarial Methods and Assumptions (continued)

Demographic Assumptions (continued)

Public Agency Miscellaneous 2.7% @ 55

	Years of Service					
Age	5	10	15	20	25	30
50	0.004	0.009	0.014	0.035	0.055	0.095
51	0.002	0.006	0.011	0.030	0.050	0.090
52	0.006	0.012	0.017	0.038	0.059	0.099
53	0.010	0.017	0.024	0.046	0.068	0.110
54	0.032	0.044	0.057	0.085	0.113	0.160
55	0.076	0.101	0.125	0.165	0.205	0.265
56	0.055	0.074	0.093	0.127	0.160	0.214
57	0.050	0.068	0.086	0.118	0.151	0.204
58	0.055	0.074	0.093	0.127	0.161	0.215
59	0.061	0.082	0.102	0.138	0.174	0.229
60	0.069	0.093	0.116	0.154	0.192	0.250
61	0.086	0.113	0.141	0.183	0.225	0.288
62	0.105	0.138	0.171	0.218	0.266	0.334
63	0.103	0.135	0.167	0.215	0.262	0.329
64	0.109	0.143	0.177	0.226	0.275	0.344
65	0.134	0.174	0.215	0.270	0.326	0.401
66	0.147	0.191	0.235	0.294	0.354	0.433
67	0.121	0.158	0.196	0.248	0.300	0.372
68	0.113	0.147	0.182	0.232	0.282	0.352
69	0.117	0.153	0.189	0.240	0.291	0.362
70	0.141	0.183	0.226	0.283	0.341	0.418

Public Agency Miscellaneous 3% @ 60

	Years of Service					
Age	5	10	15	20	25	30
50	0.012	0.018	0.024	0.039	0.040	0.091
51	0.009	0.014	0.019	0.034	0.034	0.084
52	0.014	0.020	0.026	0.043	0.044	0.096
53	0.016	0.023	0.031	0.048	0.050	0.102
54	0.026	0.036	0.045	0.065	0.070	0.125
55	0.043	0.057	0.072	0.096	0.105	0.165
56	0.042	0.056	0.070	0.094	0.103	0.162
57	0.049	0.065	0.082	0.108	0.119	0.180
58	0.057	0.076	0.094	0.122	0.136	0.199
59	0.076	0.100	0.123	0.157	0.175	0.244
60	0.114	0.148	0.182	0.226	0.255	0.334
61	0.095	0.123	0.152	0.190	0.214	0.288
62	0.133	0.172	0.211	0.260	0.294	0.378
63	0.129	0.166	0.204	0.252	0.285	0.368
64	0.143	0.185	0.226	0.278	0.315	0.401
65	0.202	0.260	0.318	0.386	0.439	0.542
66	0.177	0.228	0.279	0.340	0.386	0.482
67	0.151	0.194	0.238	0.292	0.331	0.420
68	0.139	0.179	0.220	0.270	0.306	0.391
69	0.190	0.245	0.299	0.364	0.414	0.513
70	0.140	0.182	0.223	0.274	0.310	0.396

Appendix A - Statement of Actuarial Methods and Assumptions (continued)

Demographic Assumptions (continued)

Public Agency Fire ½ @ 55 and 2% @ 55

Age	Rate
50	0.015880
51	0.000001
52	0.034420
53	0.019900
54	0.041320
55	0.075130
56	0.110790
57	0.000001
58	0.094990
59	0.044090
60	1.000000

Public Agency Police ½ @ 55 and 2% @ 55

Age	Rate
50	0.025520
51	0.000001
52	0.016370
53	0.027170
54	0.009490
55	0.166740
56	0.069210
57	0.051130
58	0.072410
59	0.070430
60	1.000000

Public Agency Police 2% @ 50

	Years of Service					
Age	5	10	15	20	25	30
50	0.005	0.005	0.005	0.005	0.017	0.089
51	0.005	0.005	0.005	0.005	0.017	0.087
52	0.018	0.018	0.018	0.018	0.042	0.132
53	0.044	0.044	0.044	0.044	0.090	0.217
54	0.065	0.065	0.065	0.065	0.126	0.283
55	0.086	0.086	0.086	0.086	0.166	0.354
56	0.067	0.067	0.067	0.067	0.130	0.289
57	0.066	0.066	0.066	0.066	0.129	0.288
58	0.066	0.066	0.066	0.066	0.129	0.288
59	0.139	0.139	0.139	0.139	0.176	0.312
60	0.123	0.123	0.123	0.123	0.153	0.278
61	0.110	0.110	0.110	0.110	0.138	0.256
62	0.130	0.130	0.130	0.130	0.162	0.291
63	0.130	0.130	0.130	0.130	0.162	0.291
64	0.130	0.130	0.130	0.130	0.162	0.291
65	1.000	1.000	1.000	1.000	1.000	1.000

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

Demographic Assumptions (continued)

Public Agency Fire 2% @ 50

Age	Years of Service					
	5	10	15	20	25	30
50	0.009	0.009	0.009	0.009	0.013	0.020
51	0.013	0.013	0.013	0.013	0.020	0.029
52	0.018	0.018	0.018	0.018	0.028	0.042
53	0.052	0.052	0.052	0.052	0.079	0.119
54	0.067	0.067	0.067	0.067	0.103	0.154
55	0.089	0.089	0.089	0.089	0.136	0.204
56	0.083	0.083	0.083	0.083	0.127	0.190
57	0.082	0.082	0.082	0.082	0.126	0.189
58	0.088	0.088	0.088	0.088	0.136	0.204
59	0.074	0.074	0.074	0.074	0.113	0.170
60	0.100	0.100	0.100	0.100	0.154	0.230
61	0.072	0.072	0.072	0.072	0.110	0.165
62	0.099	0.099	0.099	0.099	0.152	0.228
63	0.114	0.114	0.114	0.114	0.175	0.262
64	0.114	0.114	0.114	0.114	0.175	0.262
65	1.000	1.000	1.000	1.000	1.000	1.000

Public Agency Police 3% @ 55

Age	Years of Service					
	5	10	15	20	25	30
50	0.004	0.004	0.004	0.004	0.015	0.086
51	0.014	0.014	0.014	0.014	0.034	0.114
52	0.026	0.026	0.026	0.026	0.060	0.154
53	0.038	0.038	0.038	0.038	0.083	0.188
54	0.071	0.071	0.071	0.071	0.151	0.292
55	0.061	0.061	0.061	0.061	0.131	0.261
56	0.072	0.072	0.072	0.072	0.153	0.295
57	0.065	0.065	0.065	0.065	0.140	0.273
58	0.066	0.066	0.066	0.066	0.142	0.277
59	0.118	0.118	0.118	0.118	0.247	0.437
60	0.065	0.065	0.065	0.065	0.138	0.272
61	0.084	0.084	0.084	0.084	0.178	0.332
62	0.108	0.108	0.108	0.108	0.226	0.405
63	0.084	0.084	0.084	0.084	0.178	0.332
64	0.084	0.084	0.084	0.084	0.178	0.332
65	1.000	1.000	1.000	1.000	1.000	1.000

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

Demographic Assumptions (continued)

Public Agency Fire 3% @ 55

	Years of Service					
Age	5	10	15	20	25	30
50	0.001	0.001	0.001	0.006	0.016	0.069
51	0.002	0.002	0.002	0.006	0.018	0.071
52	0.012	0.012	0.012	0.021	0.040	0.098
53	0.032	0.032	0.032	0.049	0.085	0.149
54	0.057	0.057	0.057	0.087	0.144	0.217
55	0.073	0.073	0.073	0.109	0.179	0.259
56	0.064	0.064	0.064	0.097	0.161	0.238
57	0.063	0.063	0.063	0.095	0.157	0.233
58	0.065	0.065	0.065	0.099	0.163	0.241
59	0.088	0.088	0.088	0.131	0.213	0.299
60	0.105	0.105	0.105	0.155	0.251	0.344
61	0.118	0.118	0.118	0.175	0.282	0.380
62	0.087	0.087	0.087	0.128	0.210	0.295
63	0.067	0.067	0.067	0.100	0.165	0.243
64	0.067	0.067	0.067	0.100	0.165	0.243
65	1.000	1.000	1.000	1.000	1.000	1.000

Public Agency Police 3% @ 50

	Years of Service					
Age	5	10	15	20	25	30
50	0.050	0.050	0.050	0.099	0.240	0.314
51	0.034	0.034	0.034	0.072	0.198	0.260
52	0.033	0.033	0.033	0.071	0.198	0.259
53	0.039	0.039	0.039	0.080	0.212	0.277
54	0.045	0.045	0.045	0.092	0.229	0.300
55	0.052	0.052	0.052	0.105	0.248	0.323
56	0.042	0.042	0.042	0.087	0.221	0.289
57	0.043	0.043	0.043	0.088	0.223	0.292
58	0.054	0.054	0.054	0.109	0.255	0.333
59	0.054	0.054	0.054	0.108	0.253	0.330
60	0.060	0.060	0.060	0.121	0.272	0.355
61	0.048	0.048	0.048	0.098	0.238	0.311
62	0.061	0.061	0.061	0.122	0.274	0.357
63	0.057	0.057	0.057	0.115	0.263	0.343
64	0.069	0.069	0.069	0.137	0.296	0.385
65	1.000	1.000	1.000	1.000	1.000	1.000

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

Demographic Assumptions (continued)

Public Agency Fire 3% @ 50

	Years of Service					
Age	5	10	15	20	25	30
50	0.020	0.020	0.020	0.040	0.130	0.192
51	0.008	0.008	0.008	0.023	0.107	0.164
52	0.023	0.023	0.023	0.043	0.136	0.198
53	0.023	0.023	0.023	0.043	0.135	0.198
54	0.027	0.027	0.027	0.048	0.143	0.207
55	0.043	0.043	0.043	0.070	0.174	0.244
56	0.053	0.053	0.053	0.085	0.196	0.269
57	0.054	0.054	0.054	0.086	0.197	0.271
58	0.052	0.052	0.052	0.084	0.193	0.268
59	0.075	0.075	0.075	0.116	0.239	0.321
60	0.065	0.065	0.065	0.102	0.219	0.298
61	0.076	0.076	0.076	0.117	0.241	0.324
62	0.068	0.068	0.068	0.106	0.224	0.304
63	0.027	0.027	0.027	0.049	0.143	0.208
64	0.094	0.094	0.094	0.143	0.277	0.366
65	1.000	1.000	1.000	1.000	1.000	1.000

Schools 2% @ 55

	Years of Service					
Age	5	10	15	20	25	30
50	0.005	0.009	0.013	0.015	0.016	0.018
51	0.005	0.010	0.014	0.017	0.019	0.021
52	0.006	0.012	0.017	0.020	0.022	0.025
53	0.007	0.014	0.019	0.023	0.026	0.029
54	0.012	0.024	0.033	0.039	0.044	0.049
55	0.024	0.048	0.067	0.079	0.088	0.099
56	0.020	0.039	0.055	0.065	0.072	0.081
57	0.021	0.042	0.059	0.070	0.078	0.087
58	0.025	0.050	0.070	0.083	0.092	0.103
59	0.029	0.057	0.080	0.095	0.105	0.118
60	0.037	0.073	0.102	0.121	0.134	0.150
61	0.046	0.090	0.126	0.149	0.166	0.186
62	0.076	0.151	0.212	0.250	0.278	0.311
63	0.069	0.136	0.191	0.225	0.251	0.281
64	0.067	0.133	0.185	0.219	0.244	0.273
65	0.091	0.180	0.251	0.297	0.331	0.370
66	0.072	0.143	0.200	0.237	0.264	0.295
67	0.067	0.132	0.185	0.218	0.243	0.272
68	0.060	0.118	0.165	0.195	0.217	0.243
69	0.067	0.133	0.187	0.220	0.246	0.275
70	0.066	0.131	0.183	0.216	0.241	0.270

MISCELLANEOUS ASSUMPTIONS

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 taken into account in this valuation. Each year the impact of any changes in this limitation since the prior valuation is included and amortized as part of the actuarial gain or loss base.

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.

Appendix B
Principal Plan Provisions

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 five 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 Age	2% at 60	2% at 55	2.5% at 55	2.7% at 55	3% at 60
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%

Service Retirement (continued)

Safety Plan Formulas

Retirement Age	½ at 55[1]	2% at 55	2% at 50	3% at 55	3% at 50
50	1.783%	1.426%	2.0%	2.4%	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%

(1) 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 percent 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 percent 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 five 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 five 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 Non-Industrial Disability Retirement benefit is a monthly allowance equal to 1.8 percent 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 percent 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 percent of final compensation for the first five years of service, plus 1 percent for each additional year of service to a maximum of 50 percent 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 percent of final compensation.

Increased Benefit (75% of Final Compensation)

The increased Industrial Disability Retirement benefit is a monthly allowance equal to 75 percent of final compensation for total disability.

Industrial (Job Related) Disability Retirement (continued)

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 percent or greater, with a maximum of 90 percent) 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 percent 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 percent 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, 2 percent or 50 percent 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 percent or 50 percent 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 7.5 percent 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 five years of credited service (total service across all CalPERS employers and with certain other Retirement Systems with which CalPERS has reciprocity agreements). A CalPERS member must be actively employed with the CalPERS employer providing this benefit to be eligible for this benefit. An eligible survivor means the surviving spouse to whom the member was married at least one year before death or, if there is no eligible spouse, to the member's unmarried children under age 18. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this 1957 Survivor benefit.

Benefit

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

Optional Settlement 2W Death Benefit

This is an optional benefit.

Eligibility

An employee's *eligible survivor* may receive the Optional Settlement 2W Death benefit if the member dies while actively employed, has attained at least age 50, and has at least five 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.

Pre-Retirement Death Benefits (continued)

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 percent 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

The Retirement Law provides for the payment of an annual cost-of-living adjustment (COLA) to be paid each May, beginning the second calendar year after the year of retirement. The basic COLA provision is 2 percent. The COLA adjustment is limited to the lesser of two compounded numbers - the rate of inflation or the COLA contracted by the employer. This means that members may receive increases smaller than the COLA provision in years where the rate of inflation is lower that the COLA provision. Similarly, members may see increases larger than inflation and even the COLA provision in some years.

Improved Benefit

Employers have the option of providing an improved cost-of-living adjustment of 3 percent, 4 percent or 5 percent.

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

Benefit Formula	Percent Contributed above the Breakpoint
Miscellaneous, 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, ½ 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 percent 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 percent.

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 percent 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 4th or Indexed Level.

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

Appendix C
Summary of Participant Data

SOURCE OF THE PARTICIPANT DATA

The data was extracted from various databases within CalPERS and placed in a database by a series of extract programs. Included in this data is:

- Individual member and beneficiary information,
- Employment and payroll information,
- Accumulated contributions with interest,
- Service information,
- Benefit payment information,
- Information about the various organizations which contract with CalPERS, and
- Detailed information about the plan provisions applicable to each group of members.

DATA VALIDATION TEST AND ADJUSTMENTS

Once the information is extracted from the various computer systems into the database, update queries are then run against these data to correct for flaws found in the data. This part of the process is intended to validate the participant data for all CalPERS plans. The data are then checked for reasonableness and consistency with data from the prior valuation.
Checks on the data include:

- a reconciliation of the membership of the plans,
- comparisons of various member statistics (average attained age, average entry age, average salary, etc.) for each plan with those from the prior valuation,
- comparisons of pension amounts for each retiree and beneficiary receiving payments with those from the prior valuation,
- checks for invalid ages and dates, and
- reasonableness checks on various key data elements such as service and salary.

As a result of the tests on the data, a number of adjustments were determined to be necessary. These included:

- Dates of hire and dates of entry were adjusted where necessary to be consistent with the service fields, the date of birth and each other.

SUMMARY OF VALUATION DATA

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.

	June 30, 2015	June 30, 2016
Number of Plans in the Risk Pool	93	98
Active Members	0	0
Transferred Members		
Counts	90	89
Average Attained Age	47.00	47.37
Average Years of Service	4.39	3.99
Average Annual Covered Pay	$93,423	$96,887
Terminated Members		
Counts	245	239
Average Attained Age	54.03	53.73
Average Years of Service	3.70	2.85
Average Annual Covered Pay	$41,135	$40,626
Retired Members and Beneficiaries		
Counts[1]	716	718
Average Attained Age	77.22	77.06
Average Annual Benefits[1]	$6,875	$7,671

(1) Values may not match those on pages 36 - 38 due to inclusion of community property settlements.

TRANSFERRED AND TERMINATED PARTICIPANTS

Distribution of Transfers to Other CalPERS Plans by Age and Service

	Years of Service at Valuation Date							
Attained Age	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	Total	Average Salary
15 - 24	—	—	—	—	—	—	—	$0
25 - 29	—	—	—	—	—	—	—	—
30 - 34	8	—	—	—	—	—	8	81,894
35 - 39	12	2	—	—	—	—	14	94,279
40 - 44	13	1	1	—	—	—	15	96,164
45 - 49	12	4	1	1	—	—	18	102,360
50 - 54	10	1	3	1	—	—	15	102,638
55 - 59	10	—	—	—	—	—	10	66,098
60 - 64	4	3	—	—	—	—	7	123,699
65 and Over	—	1	1	—	—	—	2	148,254
Total	**69**	**12**	**6**	**2**	**—**	**—**	**89**	**$96,887**

Distribution of Terminated Participants With Funds on Deposit by Age and Service

	Years of Service at Valuation Date							
Attained Age	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	Total	Average Salary
15 - 24	—	—	—	—	—	—	—	$0
25 - 29	—	1	—	—	—	—	1	112,283
30 - 34	7	1	—	—	—	—	8	42,556
35 - 39	6	1	—	—	—	—	7	36,012
40 - 44	17	2	—	—	—	—	19	41,720
45 - 49	33	6	—	1	—	—	40	47,414
50 - 54	41	4	3	1	1	—	50	48,177
55 - 59	39	9	2	—	1	1	52	36,692
60 - 64	33	8	1	—	—	—	42	35,562
65 and Over	19	—	—	1	—	—	20	25,259
Total	**195**	**32**	**6**	**3**	**2**	**1**	**239**	**$40,626**

RETIRED MEMBERS AND BENEFICIARIES

Distribution of Retirees and Beneficiaries by Age and Retirement Type[1]

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 30	—	—	—	—	—	—	—
30 - 34	—	—	—	—	—	—	—
35 - 39	—	—	—	—	—	1	1
40 - 44	—	—	1	—	—	—	1
45 - 49	—	1	2	—	—	1	4
50 - 54	3	1	2	—	—	—	6
55 - 59	23	1	2	—	2	1	29
60 - 64	43	5	4	—	—	9	61
65 - 69	93	4	7	—	—	4	108
70 - 74	79	6	3	1	—	9	98
75 - 79	77	5	1	—	1	17	101
80 - 84	88	6	1	—	—	21	116
85 and Over	150	8	—	—	1	34	193
Total	**556**	**37**	**23**	**1**	**4**	**97**	**718**

(1) Counts of members do not include alternate payees receiving benefits while the member is still working. Therefore the counts may not match information onpage16 and 17 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.

Distribution of Total Annual Amounts for Retirees and Beneficiaries by Age and Retirement Type[1]

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Average
Under 30	$0	$0	$0	$0	$0	$0	$0
30 - 34	—	—	—	—	—	—	—
35 - 39	—	—	—	—	—	1,006	1,006
40 - 44	—	—	2,285	—	—	—	2,285
45 - 49	—	23,568	439	—	—	1,215	6,415
50 - 54	15,802	42,945	4,434	—	—	—	16,536
55 - 59	24,215	404	22,273	—	24,510	1,899	22,511
60 - 64	8,354	2,230	6,816	—	—	5,887	7,387
65 - 69	6,367	9,866	12,383	—	—	4,548	6,819
70 - 74	5,274	9,281	16,328	1,777	—	3,602	5,668
75 - 79	6,609	5,357	7,432	—	24,296	8,656	7,075
80 - 84	7,265	5,514	1,422	—	—	6,803	7,040
85 and Over	6,981	7,413	—	—	25,568	9,437	7,528
Average	**$7,496**	**$7,902**	**$9,929**	**$1,777**	**$24,721**	**$7,408**	**$7,671**

(1) Counts of members do not include alternate payees receiving benefits while the member is still working. Therefore the counts may not match information onpage16 and 17 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.

Distribution of Retirees and Beneficiaries by Years Retired and Retirement Type[1]

Years Retired	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 5 Years	86	3	5	—	—	21	115
5 - 9	70	—	1	1	—	19	91
10 - 14	78	3	4	—	—	18	103
15 - 19	76	6	6	—	1	14	103
20 - 24	68	5	1	—	1	8	83
25 - 29	35	4	3	—	—	10	52
30 and Over	143	16	3	—	2	7	171
Total	**556**	**37**	**23**	**1**	**4**	**97**	**718**

(1) Counts of members do not include alternate payees receiving benefits while the member is still working. Therefore the counts may not match information onpage16 and 17 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.

RETIRED MEMBERS AND BENEFICIARIES (CONTINUED)

Distribution of Total Annual Amounts for Retirees and Beneficiaries by Years Retired and Retirement Type[1]

Years Retired	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Average
Under 5 Years	$12,148	$22,306	$3,204	$0	$0	$11,103	$11,834
5 - 9	7,520	—	19,268	1,777	—	9,060	7,908
10 - 14	5,292	8,058	5,247	—	—	4,838	5,291
15 - 19	6,073	8,048	18,653	—	27,910	4,581	6,930
20 - 24	7,195	7,205	25,278	—	21,110	4,385	7,311
25 - 29	8,378	2,860	868	—	—	8,526	7,548
30 and Over	6,571	6,596	10,762	—	24,932	5,966	6,837
Average	**$7,496**	**$7,902**	**$9,929**	**$1,777**	**$24,721**	**$7,408**	**$7,671**

(1) Counts of members do not include alternate payees receiving benefits while the member is still working. Therefore the counts may not match information onpage16 and 17 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.

Distribution of Retirees and Beneficiaries by Years Retired and Retirement Type

Annual Amounts do not Include PPPA Payments

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 30	$0	$0	$0	$0	$0	$0	$0
30 - 34	—	—	—	—	—	—	—
35 - 39	—	—	—	—	—	1,006	1,006
40 - 44	—	—	2,285	—	—	—	2,285
45 - 49	—	23,568	877	—	—	1,215	25,660
50 - 54	47,405	42,945	8,867	—	—	—	99,217
55 - 59	556,954	404	44,546	—	49,020	1,899	652,823
60 - 64	359,225	11,149	27,263	—	—	52,986	450,623
65 - 69	592,123	39,465	86,682	—	—	18,192	736,462
70 - 74	416,614	55,683	48,985	1,777	—	32,415	555,474
75 - 79	508,905	26,784	7,432	—	24,296	147,157	714,574
80 - 84	639,291	33,083	1,422	—	—	142,861	816,657
85 and Over	1,047,157	59,302	—	—	25,568	320,872	1,452,899
Total	**$4,167,674**	**$292,383**	**$228,359**	**$1,777**	**$98,884**	**$718,603**	**$5,507,680**

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

Annual Amounts do not Include PPPA Payments

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 5 Years	$1,044,765	$66,917	$16,018	$0	$0	$233,159	$1,360,859
5 - 9	526,411	—	19,268	1,777	—	172,137	719,593
10 - 14	412,741	24,175	20,989	—	—	87,076	544,981
15 - 19	461,542	48,288	111,915	—	27,910	64,131	713,786
20 - 24	489,282	36,027	25,278	—	21,110	35,080	606,777
25 - 29	293,217	11,440	2,605	—	—	85,256	392,518
30 and Over	939,716	105,536	32,286	—	49,864	41,764	1,169,166
Total	**$4,167,674**	**$292,383**	**$228,359**	**$1,777**	**$98,884**	**$718,603**	**$5,507,680**

Appendix D
List of Terminated Agencies

Aromas Tri-County Fire District
Associated Students of California State University, Chico
Bay Area Library And Information System
Bay Area Sewage Services Agency
Ben Lomond Fire Protection District
California Egg Marketing/Research Agreement (1st Level)
California State University Foundation
California State University, Dominguez Hills Foundation
California State University, Fullerton Foundation
California Tahoe Regional Planning Agency
Camanche Regional Park District
Carmel Valley Fire Protection District
Central Coast Regional Criminal Justice Planning Board
Central Sierra Planning Council
Chico State University Foundation
Citrus Pest Control District # 2 of Riverside County
City of Loyalton
City of Pittsburg
City of Westmorland
Coalinga-Huron Mosquito Abatement District
College Of The Desert, Associated Students Of
Cooperative Library Agency For Systems And Services
Corona City Redevelopment Agency
Daly City Redevelopment Agency
Deer Springs Fire Protection District
Descanso Community Water District
Eel River Water Council
El Pueblo De Los Angeles State Historical Monument Commission
El Toro Water District
Etna Cemetery District
Fallbrook Hospital District
Fremont(John C) Hospital District
Fresno City Redevelopment Agency
Fresno State College Agricultural Foundation
Gilroy Rural Fire Protection District
Golden Empire Transit District
Halcumb Cemetery District
Hamilton City Community Services District
Heffernan Memorial Hospital District
Humboldt Bay Wastewater Authority
Idyllwild Water District
Independent Data Processing Center
Inland Manpower Association
Jefferson School District Federal Credit Union
Kaweah Delta Hospital District
Laney College Bookstore
Long Beach Promotion and Service Corporation
Lower Sweetwater Fire Protection District
Madera County Economic Development Commission
Mark Twain Hospital District
Meadow Vista County Water District
Metro Gold Line Foothill Extension Construction Authority
Mid City Development Corporation
Newport Beach City Employees Federal Credit Union
Northridge State University Student Center, Inc.
Orange County Intergovernmental Coordinating Council
Orange Cove Fire Protection District Of Fresno And Tulare Counties
Palo Verde Cemetery District
Paradise Fire Protection District
Paso Robles District Cemetery
Pioneer Community Services District
Placer Consolidated Fire Protection District
Plumas County Housing Authority
Provident Central Credit Union
Sacramento State University Associated Students
San Benito Hospital District
San Diego Rural Fire Protection District
San Diego State University Foundation
San Francisco State University Franciscan Shops
San Francisco State University Frederick Burke Foundation
San Jose Housing Authority
San Jose State University Spartan Shops, Inc.
San Jose State University, Associated Students
San Marcos Cemetery District
San Mateo Local Agency Formation Commission
Sanitation Districts of Orange County
Santa Barbara County Housing Authority
Santa Clara City Redevelopment Agency
Santa Clara County Traffic Authority
Santa Cruz Port District
Saratoga Cemetery District
School Personnel Credit Union
Selection Consulting Center
Shasta-Trinity Schools Insurance Group
South Lake County Fire Protection District
Southeast Recreation and Park District
Southern Mono Hospital District
Springville Public Utility District
Student Union Of San Jose State University
Sunline Transit Agency
Tulare County Housing Authority
Veterans Home of California Post Fund
Victorville Fire Protection District
Weaverville Fire Protection District
West Bay Rapid Transit Authority
West Contra Costa Hospital District

Appendix E
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 discount rate, salary growth and inflation.

Actuarial Methods: Procedures employed by actuaries to achieve certain funding goals of a pension plan. Actuarial methods include funding method, setting the length of time to fund the Accrued Liability and determining the Value of Assets.

Actuarial Valuation: The determination, as of a valuation date of the Normal Cost, Accrued Liability, 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.

Amortization Bases: Separate payment schedules for different portions of the Unfunded Liability. The total Unfunded Liability of a 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. However, all bases are amortized using investment and payroll assumptions from the current valuation. This can be likened to a home having a first mortgage of 24 years remaining payments and a second mortgage that has 10 years remaining payments. 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 contract amendments, actuarial assumption changes, actuarial methodology changes, and/or gains and losses. Amortization methodology is determined by Board policy.

Amortization Period: The number of years required to pay off an Amortization Base.

Class 1 Benefits: Class 1 benefits have been identified to be additional benefits which have a significant, ongoing effect on the total plan cost. In some cases, a Class 1 benefit may be an alternate benefit formula. These benefits vary by employer across the risk pool. Agencies contracting for a Class 1 benefit will be responsible for the past service liability associated with such benefit and will be required to pay a surcharge established by the actuary to cover the ongoing cost (normal cost) of the Class 1 benefit.

Class 2 Benefits: Class 2 benefits have been identified to be the ancillary benefits providing one-time increases in benefits. These benefits vary by employer across the risk pool. Agencies contracting for a Class 2 benefit will be responsible for the past service liability associated with such benefit.

Class 3 Benefits: Class 3 benefits have been identified to be additional benefits which have a minimal effect on the total plan cost. Class 3 benefits may vary by rate plan within each risk pool. However, the employer contribution rate will not vary within the risk pool due to the Class 3 benefits.

Discount Rate Assumption: The actuarial assumption that was called “investment return” in earlier CalPERS reports or “actuarial interest rate” in Section 20014 of the California Public Employees’ Retirement Law (PERL).

Appendix E - Glossary of Actuarial Terms (continued)

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 the same as the date of hire.

(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 is at 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.)

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 when multiple amortization bases are collapsed to one base and amortized together over a new funding period.

Funded Status: A measure of how well funded, or how "on track" a plan or risk pool is with respect to assets versus 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.

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 business professional that is authorized by the Society of Actuaries, and the American Academy of Actuaries to perform the calculations necessary to properly fund a pension plan.

Present Value of Benefits (PVB): 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.

Risk Pool: Utilizing the law of large numbers, a risk pool is a collection of employer plans for the purpose of sharing risk. If a pooled plan has active members at the time of valuation, it belongs to the risk pool composed of all other pooled plans with the same benefit formula.

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

Side Fund: At the time a plan joined a risk pool, a Side Fund was created to account for the difference between the funded status of the risk pool and the funded status of the plan. The plan's Side Fund is amortized on an annual basis, with the discount rate net of, for active plans, the payroll growth rate assumption. The actuarial investment return assumption is currently 7.5%. As of the June 30, 2013 actuarial valuations, the side fund is treated as a liability as opposed to an asset. Prior to June 30, 2013, a positive side fund conveyed that a public agency had a surplus when risk pooling began June 30, 2003. Conversely, a negative side fund signified that a public agency had an unfunded liability that required elimination through an amortization payment schedule. After June 30, 2013 a positive side fund signifies that an agency has an unfunded liability, while a negative side fund indicates a surplus asset. Beginning with FY 2015-16.

Superfunded: A condition existing when a plan's Market Value of Assets exceeds its Present Value of Benefits. Prior to the passage of PEPRA, when this condition existed on a given valuation date for a given plan, employee contributions for the rate year covered by that valuation could be waived.
Unfunded Liability (UAL): When a plan or pool's Value of Assets is less than its Accrued Liability, the difference is the plan or pool's Unfunded Liability. If the Unfunded Liability is positive, the plan or pool will have to pay contributions exceeding the Normal Cost.

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