

1959 Survivor Benefit Program Actuarial Valuation *As of June 30, 2019*



Table of Contents

Actuarial Certification	1
Highlights and Executive Summary	2
Introduction.....	3
Purpose of Report.....	3
Funded Status of the Plan.....	3
Required Employer and Employee Monthly Premiums.....	4
Changes Since the Prior Year's Valuation.....	5
Assets	6
State 5 th Level Pool.....	7
Schools 5 th Level Pool.....	7
Public Agency 1 st Level Pool.....	7
Public Agency 2 nd Level Pool.....	7
Public Agency 3 rd Level Pool	7
Public Agency 4 th Level Pool	8
Public Agency Indexed Level Pool	8
Liabilities and Funding Requirements.....	9
Comparison of Current and Prior Year Results	10
Development of Funding Requirements.....	13
Schedule of Amortization Bases	16
(Gain)/Loss Analysis.....	16
Risk Analysis	19
Analysis of Future Investment Return Scenarios.....	20
Analysis of Discount Rate Sensitivity.....	21
Analysis of Mortality Sensitivity	22
Appendix A – Statement of Actuarial Methods and Assumptions.....	A-1
Appendix B – Summary of Principal Plan Provisions.....	B-1
Appendix C – Demographic and Experience Information.....	C-1
Appendix D – 1959 Survivor Deaths Per Year.....	D-1
Appendix E – List of Contracting Agencies.....	E-1
Appendix F – Glossary of Actuarial Terms.....	F-1

Actuarial Certification



April 2020

To the best of our knowledge, this report is complete and accurate and contains sufficient information to fully and fairly disclose the funded condition of the 1959 Survivor Program for Public Agency 1st, 2nd, 3rd, 4th, and Indexed Level, and the State and Schools 5th Level Pools. This valuation is based on the survivor and membership data provided to the Actuarial Office, the statement of assets provided by the CalPERS Financial Office, and the benefits provided under this program. It is our opinion that this valuation has been performed by qualified actuaries 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 program.

The undersigned are actuaries for CalPERS, who 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.

DANIEL MILLER, ASA, MAAA
Associate Pension Actuary, CalPERS

Scott Terando, ASA, EA, MAAA, FCA, CFA
Chief Actuary, CalPERS

Highlights and Executive Summary

- 3 Introduction
- 3 Purpose of Report
- 3 Funded Status of the Plan
- 4 Required Employer and Employee Monthly Premiums
- 5 Changes Since the Prior Year's Valuation

Highlights and Executive Summary

Introduction

The 1959 Survivor program was designed to provide pre-retirement death benefits comparable to those provided by Social Security, formally the Federal Old Age and Survivor Insurance (OASI) program, to CalPERS' members not covered by Social Security.

Purpose of Report

This actuarial valuation of the 1959 Survivor Program for Public Agency 1st, 2nd, 3rd, 4th, and Indexed level, and the State and Schools 5th level pools within the California Public Employees' Retirement System (CalPERS) was performed by CalPERS staff actuaries as of June 30, 2019 in order to:

- Set forth the funded status of the program, reflecting the assets and funding liabilities of this program as of June 30, 2019.
- Establish the actuarially required premiums for all levels and employee premiums in the Indexed, and State and Schools 5th Level for the Fiscal year July 1, 2020 through June 30, 2021; and
- Provide actuarial information as of June 30, 2019 to the CalPERS Board of Administration and other interested parties.

The use of this report for any other purposes may be inappropriate.

Funded Status of the Plan

Shown below are the Accrued Liability, Market Value of Assets (MVA), and Funded Ratio of all pools within the 1959 Survivor Benefit Program as of June 30, 2019.

Plan	Accrued Liability ¹	Market Value of Assets	Funded Ratio
State 5 th Level Pool	\$151,352,423	\$112,515,580	74.3%
Schools 5 th Level Pool	15,546,665	86,061,386	553.6%
PA 1 st Level Pool	3,032,539	55,422,944	1,827.6%
PA 2 nd Level Pool	2,560,774	12,962,320	506.2%
PA 3 rd Level Pool	31,845,095	126,394,624	396.9%
PA 4 th Level Pool	145,555,960	153,251,364	105.3%
PA Indexed Level Pool	19,880,662	26,787,538	134.7%
Total	\$ 369,774,119	\$573,395,756	155.1%

(1) By definition, under the Term Insurance Method, the present value of future benefits and the accrued liability are equal. Under the Entry Age Normal Method, which is being used to fund the benefit in the Indexed Pool, the accrued liability is defined as the difference between the present value of future benefits and the present value of future normal costs.

Highlights and Executive Summary (continued)

Required Employer and Employee Monthly Premiums

The actuarially required employer and employee monthly premiums per covered member per month for the 1959 Survivor Program for the fiscal year July 1, 2020 through June 30, 2021 are shown below. The results for fiscal year July 1, 2019 through June 30, 2020 are shown for comparison. Except for the Public Agency Indexed Level pool, these monthly premiums are determined using a Modified Term Insurance funding method. Monthly premiums for the Public Agency Indexed Level pool are determined using the Entry Age Normal funding method.

Required Monthly Premiums

Plan	2019-20 Premiums			2020-21 Premiums		
	Employer	Employee	Total	Employer	Employee	Total
State 5 th Level Pool ¹	\$5.40	\$5.40	\$10.80	\$5.95	\$5.95	\$11.90
Schools 5 th Level Pool ¹	\$0.00	\$2.00	\$2.00	\$0.00	\$2.00	\$2.00
PA 1 st Level Pool ²	\$0.00	\$2.00	\$2.00	\$0.00	\$2.00	\$2.00
PA 2 nd Level Pool ²	\$0.00	\$2.00	\$2.00	\$0.00	\$2.00	\$2.00
PA 3 rd Level Pool ²	\$0.00	\$2.00	\$2.00	\$0.00	\$2.00	\$2.00
PA 4 th Level Pool ²	\$4.80	\$2.00	\$6.80	\$5.20	\$2.00	\$7.20
PA Indexed Level Pool ¹	\$2.90	\$2.90	\$5.80	\$2.40	\$2.40	\$4.80

- (1) Section 21581 of the California Public Employees' Retirement Law requires mandatory cost sharing when the total premium exceeds \$4.00. Mandatory \$2.00 member monthly premium required.
 (2) Mandatory \$2.00 member monthly premium required.

The required employee premium for the State 5th level pool will change from \$5.40 to \$5.95 per member, per month (or from \$2.49 to \$2.75 for biweekly paid members) for fiscal year 2020-21. This is in accordance with Statute 21581(c), which specifies that when the total required premium (after amortization of surplus/unfunded liability) exceeds \$4.00, the employer and the member shall evenly share the required monthly premium.

The required employee premium for the Indexed level pool will change from \$2.90 to \$2.40 per member, per month (or from \$1.34 to \$1.11 for biweekly paid members) for fiscal year 2020-21. This is in accordance with Statute 21581(b), which specifies that when the total required premium (after amortization of surplus/unfunded liability) exceeds \$4.00, the employer and the member shall evenly share the required monthly premium. This decrease is due to very favorable experience in the past year.

Employee required premiums for Public Agency 1st, 2nd and 3rd level pools shall remain the same as in the prior year: \$2.00 per member, per month. There are no Employer required premiums for these pools.

Employee required premiums for Public Agency 4th pool shall remain the same as in the prior year: \$2.00 per member, per month. Employer premiums are \$5.20 per member, per month. This increase is due to a variety of factors including the added Reserve for Unclaimed Benefits.

Highlights and Executive Summary (continued)

Changes Since the Prior Year's Valuation

Actuarial Methods and Assumptions

Since the prior year's valuation, there have been no changes to the actuarial assumptions. However, modifications and enhancements were made to certain methods used in this valuation. A summary of these changes is provided here, and a complete description of the actuarial methods and assumptions used in the June 30, 2019 valuation may be found in Appendix A of this report.

The first change involves the modified Term Insurance method that is used to calculate the Normal Cost. The Normal Cost was previously calculated using a blend of the most recent data, along with the final Normal Cost from the prior year. The Normal Cost is now calculated using ten years of experience with a weighting system. The largest weight is given to the most recent year, with the weight decreasing each year until the final year. We believe this change will allow for better recognition of demographic and assumption changes.

The second change involves enhancements to the calculation of the Present Value of Benefits for current survivors resulting from the implementation of a new Actuarial Valuation System. The main changes were as follows:

- monthly cash flows instead of annual cash flows,
- allowing for the valuation of more than three survivors,
- and more accurate modeling of benefit payments.

For example: benefit payments commence in the month a spouse's deferral period ends and stop in the month when a beneficiary becomes too old to receive benefits.

Another method change since the prior valuation was the addition of a reserve for unclaimed benefits. This reserve was established for survivors that are eligible to receive a benefit but have not claimed it. Functionality of the new Actuarial Valuation System enabled the calculation of this reserve.

Finally, a change was made to the method used to calculate the normal cost for the Indexed Level pool. In prior years, the normal cost for all miscellaneous members was based on the 2% @ 55 formula, and the safety member normal cost was based on the 2% @ 50 safety formula. For the current year, active members were valued based on the benefit provisions and the associated assumptions of their employer's current pension plan. This has led to a decrease in Accrued Liability, and a slight increase in the Normal Cost.

Impacts of these changes on the accrued liabilities have been reflected in the Non-Investment (Gain)/Loss items within the "(Gain)/Loss Analysis 6/30/2018 – 6/30/2019" tables.

In addition to the method changes described above, we have modified the amortization schedule for existing unfunded liability of the State 5th Level pool. In general, the changes shortened the period over which existing unfunded liability will be amortized. These changes were made to improve intergenerational equity in connection with the funding of these benefits. These changes do not affect the amortization of future unfunded liability bases of this pool.

Plan Provisions

No changes were made since the prior valuation. A complete description of the principal plan provisions used in the June 30, 2019 valuation may be found in Appendix B of this report.

Subsequent Changes

CalPERS recently adopted a Funding Risk Mitigation Policy that will reduce the funding risk over time. Under this policy, good investment performance that significantly outperforms the discount rate triggers adjustments to the discount rate, expected investment return and strategic asset allocation targets. This is the first year that the temporary suspension of this policy has been lifted. There is no impact on the current year's Normal Cost and Accrued Liability as a result of this suspension, as the fiscal year 2018-19 investment returns did not trigger a Risk Mitigation event. However, the Risk Mitigation Policy is reflected in projections in future years, where this would be appropriate.

Assets

Reconciliation of the Market Value of Assets

- 7 State 5th Level Pool
- 7 Schools 5th Level Pool
- 7 Public Agency 1st Level Pool
- 7 Public Agency 2nd Level Pool
- 7 Public Agency 3rd Level Pool
- 8 Public Agency 4th Level Pool
- 8 Public Agency Indexed Level Pool

Assets

Reconciliation of the Market Value of Assets

Shown below are the changes in the market value of assets for the various pools.

State 5 th Level	June 30, 2018	June 30, 2019
Beginning Balance	\$107,536,929	\$110,568,331
Contributions (Employer and Employee) Received During Fiscal Year	9,337,492	9,611,056
Benefit Payments During Fiscal Year	(15,015,394)	(14,692,785)
Net Transfer of Assets Into and Out of this Pool	—	—
Investment Earnings Credited	8,709,304	7,028,978
Ending Balance	\$110,568,331	\$112,515,580
Fund Return for Year	8.32%	6.51%

Schools 5 th Level	June 30, 2018	June 30, 2019
Beginning Balance	\$76,938,556	\$82,038,098
Contributions (Employer and Employee) Received During Fiscal Year	220,138	221,774
Benefit Payments During Fiscal Year	(1,350,728)	(1,392,374)
Net Transfer of Assets Into and Out of this Pool	—	—
Investment Earnings Credited	6,230,132	5,193,887
Ending Balance	\$82,038,098	\$86,061,386
Fund Return for Year	8.16%	6.38%

Public Agency 1 st Level	June 30, 2018	June 30, 2019
Beginning Balance	\$48,304,912	\$52,177,082
Contributions (Employer and Employee) Received During Fiscal Year	175,857	175,579
Benefit Payments During Fiscal Year	(240,028)	(253,809)
Net Transfer of Assets Into and Out of this Pool	—	—
Investment Earnings Credited	3,936,341	3,324,092
Ending Balance	\$52,177,082	\$55,422,944
Fund Return for Year	8.15%	6.38%

Public Agency 2 nd Level	June 30, 2018	June 30, 2019
Beginning Balance	\$11,477,764	\$12,307,348
Contributions (Employer and Employee) Received During Fiscal Year	96,398	97,661
Benefit Payments During Fiscal Year	(198,697)	(223,425)
Net Transfer of Assets Into and Out of this Pool	—	—
Investment Earnings Credited	931,884	780,735
Ending Balance	\$12,307,348	\$12,962,320
Fund Return for Year	8.16%	6.38%

Public Agency 3 rd Level	June 30, 2018	June 30, 2019
Beginning Balance	\$113,940,781	\$120,740,841
Contributions (Employer and Employee) Received During Fiscal Year	1,067,705	1,085,094
Benefit Payments During Fiscal Year	(2,675,258)	(2,718,172)
Net Transfer of Assets Into and Out of this Pool	(812,421)	(363,314)
Investment Earnings Credited	9,220,034	7,650,174
Ending Balance	\$120,740,841	\$126,394,624
Fund Return for Year	8.18%	6.39%

Assets (continued)

Reconciliation of the Market Value of Assets (continued)

Public Agency 4 th Level	June 30, 2018	June 30, 2019
Beginning Balance	\$145,771,600	\$151,267,552
Contributions (Employer and Employee) Received During Fiscal Year	6,162,979	5,745,508
Benefit Payments During Fiscal Year	(12,964,609)	(13,148,563)
Net Transfer of Assets Into and Out of this Pool	812,421	363,314
Investment Earnings Credited	11,485,161	9,023,552
Ending Balance	\$151,267,552	\$153,251,364
Fund Return for Year	8.04%	6.11%

Public Agency Indexed Level	June 30, 2018	June 30, 2019
Beginning Balance	\$24,443,312	\$25,933,332
Contributions (Employer and Employee) Received During Fiscal Year	888,612	551,907
Benefit Payments During Fiscal Year	(1,357,616)	(1,293,463)
Net Transfer of Assets Into and Out of this Pool	—	—
Investment Earnings Credited	1,959,024	1,595,762
Ending Balance	\$25,933,332	\$26,787,538
Fund Return for Year	8.09%	6.24%

Liabilities and Funding Requirements

- 10 Comparison of Current and Prior Year Results
- 13 Development of Funding Requirements
- 16 Schedule of Amortization Bases
- 16 (Gain)/Loss Analysis

Liabilities and Funding Requirements

Comparison of Current and Prior Year Results

Shown below are the comparisons of key valuation results for the current valuation date compared to corresponding values from the prior valuation date.

State 5 th Level	June 30, 2018	June 30, 2019
Covered Active Members	77,362	78,011
Survivors Included in the Valuation		
Deferred (eligible, but not currently receiving benefits)	298	279
Receiving Benefits	1,420	1,435
Total	1,718	1,714
Accrued Liabilities	\$149,571,393	\$151,352,423
Market Value of Assets (MVA)	110,568,331	112,515,580
Unfunded Liability/(Excess Assets)	39,003,062	38,836,843
Required Employer Monthly Premium Per Member		
Before Amortization of Unfunded Liability/(Excess Assets)	\$7.40	\$7.20
After Amortization of Unfunded Liability/(Excess Assets)	\$10.80	\$11.90
After Employer/Employee Premium Sharing	\$5.40	\$5.95
Funded Ratio Based on MVA	73.9%	74.3%
Schools 5 th Level	June 30, 2018	June 30, 2019
Covered Active Members	10,894	11,190
Survivors Included in the Valuation		
Deferred (eligible, but not currently receiving benefits)	18	18
Receiving Benefits	148	150
Total	166	168
Accrued Liabilities	\$13,952,547	\$15,546,665
Market Value of Assets (MVA)	82,038,098	86,061,386
Unfunded Liability/(Excess Assets)	(68,085,552)	(70,514,721)
Required Employer Monthly Premium Per Member		
Before Amortization of Unfunded Liability/(Excess Assets)	\$4.20	\$5.40
After Amortization of Unfunded Liability/(Excess Assets)	\$0.00	\$0.00
After Employer/Employee Premium Sharing	\$0.00	\$0.00
Funded Ratio Based on MVA	588.0%	553.6%

Liabilities and Funding Requirements (continued)

Comparison of Current and Prior Year Results (continued)

Public Agency 1 st Level	June 30, 2018	June 30, 2019
Covered Active Members	7,349	7,290
Survivors Included in the Valuation		
Deferred (eligible, but not currently receiving benefits)	25	28
Receiving Benefits	108	106
Total	133	134
Accrued Liabilities	\$2,908,667	\$3,032,539
Market Value of Assets (MVA)	52,177,082	55,422,944
Unfunded Liability/(Excess Assets)	(49,268,415)	(52,390,405)
Required Employer Monthly Premium Per Member		
Total Premium Required	\$1.40	\$1.40
Premium Required After Employee Contributions	\$0.00	\$0.00
Employer Premium After Amortization of Unfunded Liability/(Excess Assets)	\$0.00	\$0.00
Funded Ratio Based on MVA	1,793.8%	1,827.61%
Public Agency 2 nd Level	June 30, 2018	June 30, 2019
Covered Active Members	4,076	4,158
Survivors Included in the Valuation		
Deferred (eligible, but not currently receiving benefits)	18	16
Receiving Benefits	76	77
Total	94	93
Accrued Liabilities	\$2,428,704	\$2,560,774
Market Value of Assets (MVA)	12,307,348	12,962,320
Unfunded Liability/(Excess Assets)	(9,878,644)	(10,401,546)
Required Employer Monthly Premium Per Member		
Total Premium Required	\$1.80	\$1.70
Premium Required After Employee Contributions	\$0.00	\$0.00
Employer Premium After Amortization of Unfunded Liability/(Excess Assets)	\$0.00	\$0.00
Funded Ratio Based on MVA	506.7%	506.2%
Public Agency 3 rd Level	June 30, 2018	June 30, 2019
Covered Active Members	45,694	45,811
Survivors Included in the Valuation		
Deferred (eligible, but not currently receiving benefits)	184	182
Receiving Benefits	581	593
Total	765	775
Accrued Liabilities	\$30,510,650	\$31,845,095
Market Value of Assets (MVA)	120,740,841	126,394,624
Unfunded Liability/(Excess Assets)	(90,230,191)	(94,549,529)
Required Employer Monthly Premium Per Member		
Total Premium Required	\$2.70	\$2.70
Premium Required After Employee Contributions	\$0.70	\$0.70
Employer Premium After Amortization of Unfunded Liability/(Excess Assets)	\$0.00	\$0.00
Funded Ratio Based on MVA	395.7%	396.9%

Liabilities and Funding Requirements (continued)

Comparison of Current and Prior Year Results (continued)

Public Agency 4 th Level	June 30, 2018	June 30, 2019
Covered Active Members	72,362	73,021
Survivors Included in the Valuation		
Deferred (eligible, but not currently receiving benefits)	216	216
Receiving Benefits	1,004	1,015
Total	1,220	1,231
Accrued Liabilities	\$141,358,235	\$145,555,960
Market Value of Assets (MVA)	151,267,552	153,251,364
Unfunded Liability/(Excess Assets)	(9,909,316)	(7,695,404)
Required Employer Monthly Premium Per Member		
Total Premium Required	\$7.40	\$7.60
Premium Required After Employee Contributions	\$5.40	\$5.60
Employer Premium After Amortization of Unfunded Liability/(Excess Assets)	\$4.80	\$5.20
Funded Ratio Based on MVA	107.0%	105.3%
Public Agency Indexed Level	June 30, 2018	June 30, 2019
Covered Active Members	10,858	11,094
Survivors Included in the Valuation		
Deferred (eligible, but not currently receiving benefits)	21	18
Receiving Benefits	114	118
Total	135	136
Accrued Liabilities	\$20,261,829	\$19,880,662
Market Value of Assets (MVA)	25,933,332	26,787,538
Unfunded Liability/(Excess Assets)	(5,671,503)	(6,906,876)
Required Employer Monthly Premium Per Member		
Before Amortization of Unfunded Liability/(Excess Assets)	\$8.70	\$8.60
After Amortization of Unfunded Liability/(Excess Assets)	\$5.80	\$4.80
After Employer/Employee Premium Sharing	\$2.90	\$2.40
Funded Ratio Based on MVA	128.0%	134.7%

Liabilities and Funding Requirements (continued)

Development of Funding Requirements

The following table develops the annual premiums required for fiscal year 2020-21 for the State 5th and Schools 5th Level Pools.

June 30, 2019	State 5 th Level	Schools 5 th Level
1) Development of Unfunded Liability		
a) Present Value of Future Benefits for Current Survivors as of 6/30/2019	\$148,391,423	\$13,773,665
b) Reserve for Unclaimed Benefits as of 6/30/2019	2,961,000	1,773,000
c) Total Accrued Liabilities as of 6/30/2019 [(1a) + (1b)]	151,352,423	15,546,665
d) Market Value of Assets as of 6/30/2019	112,515,580	86,061,386
e) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(1c) - (1d)]	\$38,836,842	(\$70,514,721)
2) Development of Normal Cost		
a) Weighted Present Value of Benefits for Last Ten Years	\$6,491,228	\$677,400
b) Weighted Member Months for Last Ten Years	75,426	10,461
c) Total Per Member, Per Month 2019/2020 Term Insurance Normal Cost [(2a) / (2b) / 12], rounded to the nearest \$0.10	\$7.20	\$5.40
3) 2020 Projected Unfunded Liability		
a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(1e)]	\$38,836,842	(\$70,514,721)
b) Projected Normal Cost Contributions with Interest 7/1/2019 – 6/30/2020	7,082,054	583,903
c) Projected UAL Payment 7/1/2019 – 6/30/2020	2,945,186	(583,903)
d) Projected Required Contributions 7/1/2019 – 6/30/2020 [(3b) + (3c)]	10,027,240	—
e) Projected Employee Contributions with Interest 7/1/2019 – 6/30/2020	5,167,985	278,049
f) Changes in Contributions due to Contribution (Gain)/Loss ¹	224,395	(160,632)
g) Excess Assets due to Employee Contributions [maximum, (\$0, (3e) - (3d))]	—	278,049
h) Projected UAL/(Excess Assets) as of 6/30/2020 [(3a) * 1.07 - ((3c) + (3f) + (3g)) * 1.07^{1/2}]	\$38,276,781	(\$74,968,214)
4) Required Contribution		
a) Required Normal Cost Per Member, Per Month [(2c)]	\$7.20	\$5.40
b) Projected Active Members as of 6/30/2020	78,000	11,200
c) Required Normal Cost Contribution [(4a) * (4b) * 12 * (1.07) ^{1/2}]	\$6,971,083	\$750,732
d) Amortization of the UAL/(Excess Assets) ²	4,145,298	(750,732)
e) Total Required Contributions [(4c) + (4d)]	11,116,381	0.00
f) Required Contributions Per Member, Per Month [(4e) / (4b) / 12], rounded to the nearest \$0.10	\$11.90	\$0.00
g) Amortization Period	See Table on Pg. 16	30-year
5) 2020/2021 Required Employer and Employee Premiums with Cost Sharing Provision		
a) Required Employee Premium Per Member, Per Month [maximum, (\$2, (4f) / 2)]	\$5.95	\$2.00
b) Required Employer Premium Per Member, Per Month [maximum, (\$0, (4f) - (5a))]	\$5.95	\$0.00

(1) This reflects differences in calculated Normal Costs from the prior year and the current year, as well as differences in Actual and Estimated covered members
(2) See amortization schedule on Page 16

Liabilities and Funding Requirements (continued)

Development of Funding Requirements (continued)

The following table develops the annual premiums required for fiscal year 2020-21 for the Public Agency 1st, 2nd, 3rd, and 4th Level Pools.

June 30, 2019	Public Agency 1 st Level	Public Agency 2 nd Level	Public Agency 3 rd Level	Public Agency 4 th Level
1) Development of Unfunded Liability				
a) Present Value of Future Benefits for Current Survivors as of 6/30/2019	\$2,840,299	\$2,423,074	\$30,740,495	\$141,771,160
b) Reserve for Unclaimed Benefits as of 6/30/2019	192,240	137,700	1,104,600	3,784,800
c) Total Accrued Liabilities as of 6/30/2019 [(1a) + (1b)]	3,032,539	2,560,774	31,845,095	145,555,960
d) Market Value of Assets as of 6/30/2019	55,422,944	12,962,320	126,394,624	153,251,364
e) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(1c) - (1d)]	(\$52,390,404)	(\$10,401,546)	(\$94,549,528)	(\$7,695,404)
2) Development of Normal Cost				
a) Weighted Present Value of Benefits for Last Ten Years ¹	\$2,265,092	\$2,832,074	\$4,409,864	\$12,492,233
b) Weighted Member Months for Last Ten Years ¹	137,109	137,109	137,109	137,109
c) Total Per Member, Per Month 2019/2020 Term Insurance Normal Cost [(2a) / (2b) / 12], rounded to the nearest \$0.10	\$1.40	\$1.70	\$2.70	\$7.60
3) 2020 Projected Unfunded Liability				
a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(1e)]	(\$52,390,404)	(\$10,401,546)	(\$94,549,528)	(\$7,695,404)
b) Projected Normal Cost Contributions with Interest 7/1/2019 – 6/30/2020	126,860	91,607	1,548,385	6,613,591
c) Projected UAL Payment 7/1/2019 – 6/30/2020	(126,860)	(91,607)	(1,548,385)	(759,354)
d) Projected Required Contributions 7/1/2019 – 6/30/2020 [(3b) + (3c)]	—	—	—	5,854,237
e) Projected Employee Contributions with Interest 7/1/2019 – 6/30/2020	181,228	101,786	1,146,952	1,787,457
f) Changes in Contributions due to Contribution (Gain)/Loss ²	168	3,737	12,604	(207,106)
g) Excess Assets due to Employee Contributions [maximum, (\$0, (3e) - (3d))]	181,228	101,786	1,146,952	—
h) Projected UAL/(Excess Assets) as of 6/30/2020 [(3a) * 1.07 - ((3c) + (3f) + (3g)) * 1.07^{1/2}]	(\$56,114,145)	(\$11,144,048)	(\$100,765,787)	(\$7,234,369)
4) Required Contribution				
a) Required Normal Cost Per Member, Per Month [(2c)]	\$1.40	\$1.70	\$2.70	\$7.60
b) Projected Active Members as of 6/30/2020	7,300	4,200	45,800	73,000
c) Required Normal Cost Contribution [(4a) * (4b) * 12 * (1.07) ^{1/2}]	\$126,860	\$88,628	\$1,534,979	\$6,886,675
d) Amortization of the UAL/(Excess Assets)	(126,860)	(88,628)	(1,534,979)	(596,979)
e) Total Required Contributions [(4c) + (4d)]	0.00	0.00	0.00	6,289,696
f) Required Contributions Per Member, Per Month [(4e) / (4b) / 12], rounded to the nearest \$0.10	\$0.00	\$0.00	\$0.00	\$7.20
g) Amortization Period	30-year	30-year	30-year	30-year
5) 2020/2021 Required Employer/Employee Premiums				
a) Required Employee Premium Per Member, Per Month [\$2]	\$2.00	\$2.00	\$2.00	\$2.00
b) Required Employer Premium Per Member, Per Month [maximum, (\$0, (4f) - (5a))]	\$0.00	\$0.00	\$0.00	\$5.20

(1) Mortality experience and survivor distribution are assumed to be homogeneous across all Public Agency pools and are added together to develop normal costs in order to improve credibility of the data. This is further explained in the Actuarial Funding Methods section.

(2) This reflects differences in calculated Normal Costs from the prior year and the current year, as well as differences in Actual and Estimated members.

Liabilities and Funding Requirements (continued)

Development of Funding Requirements (continued)

The following table develops the annual premiums required for fiscal year 2020-21 for the Public Agency Indexed Level Pool.

June 30, 2019	Public Agency Indexed Level
1) Development of Unfunded Liability	
a) Present Value of Future Benefits for Current Survivors as of 6/30/2019	\$15,655,927
b) Present Value of Future Benefits for Active Members as of 6/30/2019	12,229,339
c) Reserve for Unclaimed Benefits as of 6/30/2019	133,740
d) Total Present Value of Future Benefits as of 6/30/2019 [(1a) + (1b)]	\$27,885,267
e) Present Value of Future Normal Costs as of 6/30/2019	8,138,345
f) Total Accrued Liabilities as of 6/30/2019 [(1c) + (1d) - (1e)]	19,880,662
g) Market Value of Assets as of 6/30/2019	\$26,787,538
h) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(1f) - (1g)]	(\$6,906,876)
2) Development of Normal Cost	
a) Required Entry Age Normal Cost	\$1,144,605
b) Active Members as of 6/30/2019	11,094
c) Total Per Member, Per Month 2019/2020 Entry Age Normal Cost [(2a) / (2b) / 12], rounded to the nearest \$0.10	\$8.60
3) 2020 Projected Unfunded Liability	
a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(1h)]	(\$6,906,876)
b) Projected Normal Cost Contributions with Interest 7/1/2019 – 6/30/2020	1,187,914
c) Projected UAL Payment 7/1/2019 – 6/30/2020	(422,070)
d) Projected Required Contributions 7/1/2019 – 6/30/2020 [(3b) + (3c)]	765,844
e) Projected Employee Contributions with Interest 7/1/2019 – 6/30/2020	395,971
f) Changes in Contributions due to Contribution (Gain)/Loss ¹	19,855
g) Excess Assets due to Employee Contributions [maximum, (\$0, (3e) - (3d))]	—
h) Projected UAL/(Excess Assets) as of 6/30/2020 [(3a) * 1.07 - ((3c) + (3f) + (3g)) * 1.07^{1/2}]	(\$6,974,303)
4) Required Contribution	
a) Required Normal Cost Per Member, Per Month [(2c)]	\$8.60
b) Projected Active Members as of 6/30/2020	11,100
c) Required Normal Cost Contribution [(4a) * (4b) * 12 * (1.07) ^{1/2}]	\$1,184,935
d) Amortization of the UAL/(Excess Assets)	(543,339)
e) Total Required Contributions [(4c) + (4d)]	641,596
f) Required Contributions Per Member, Per Month [(4e) / (4b) / 12], rounded to the nearest \$0.10	\$4.80
g) Amortization Period	30-year
5) 2020/2021 Required Employer and Employee Premiums with Cost Sharing Provision	
a) Required Employee Premium Per Member, Per Month [maximum (\$2, (4f) / 2)]	\$2.40
b) Required Employer Premium Per Member, Per Month [maximum (\$0, (4f) - (5a))]	\$2.40

(1) This reflects differences in calculated Normal Costs from the prior year and the current year, as well as differences in Actual and Estimated members.

Liabilities and Funding Requirements (continued)

Schedule of Amortization Bases

The schedule below shows the development of the required payments on the Amortization Bases in accordance with the Amortization Policy. In accordance with Board policy, a plan with a funding excess will have their funding excess amortized over a minimum of 30 years.

State 5th Level Pool

	Date Established	Remaining Period	Original Period	Balance 6/30/2019	Payment 2019-20	Projected Balance 6/30/2020	Payment 2020-21	Projected Balance 6/30/2021	Projected Payment 2021-22
Fresh Start Bases Prior to 2019	6/30/2019	15	15	\$38,814,204	\$2,945,186	\$38,484,676	\$4,084,859	\$36,953,192	\$4,084,859
Fresh Start 2019 Bases	6/30/2019	5	5	22,638	(224,395)	256,339	60,439	211,764	60,439
Total				\$38,836,842	\$2,720,791	\$38,741,015	\$4,145,298	\$37,164,956	\$4,415,298

(Gain)/Loss Analysis 6/30/2018 – 6/30/2019

The following table develops the asset and demographic gains and losses between June 30, 2018 and June 30, 2019 for the State and Schools 5th Level Pools.

	State 5 th Level	Schools 5 th Level
1) Prior Year Unfunded Accrued Liability/(Excess Assets) Development		
a) Accrued Liability as of 6/30/2018	\$149,571,393	\$13,952,547
b) Market Value of Assets as of 6/30/2018	110,568,331	82,038,098
c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2018 [(1a) - (1b)]	\$39,003,062	(\$68,085,551)
2) Development of Projected Unfunded Accrued Liability/(Excess Assets) for 6/30/2019		
a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2018 [(1c)]	\$39,003,062	(\$68,085,551)
b) Projected Unfunded Accrued Liability/(Excess Assets) Payment with Interest 7/1/2018 – 6/30/2019	2,919,071	(321,217)
c) Projected Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(2a) * 1.07 - (2b)]	38,814,205	(72,530,323)
3) Development of Projected Assets		
a) Market Value of Assets as of 6/30/2018	\$110,568,331	\$82,038,098
b) Net Cash Flows 7/1/2018 – 6/30/2019	(5,081,729)	(1,170,600)
c) Net Transfer of Assets Into and Out of this Pool	—	—
d) Expected Assets as of 6/30/2019 [(3a) * 1.07 + ((3b) + (3c)) * 1.07^{1/2}]	\$113,051,533	(\$86,569,887)
4) Current Year Unfunded Liability/(Excess Assets) Development		
a) Accrued Liability as of 6/30/2019	\$151,352,423	\$15,546,665
b) Market Value of Assets as of 6/30/2019	112,515,580	86,061,386
c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(4a) - (4b)]	\$38,836,842	(\$70,514,721)
5) Development of (Gain)/Loss due to changes in Reserve for Unclaimed Benefits		
a) Reserve for Unclaimed Benefits as of 6/30/2018	\$0	\$0
b) Reserve for Unclaimed Benefits as of 6/30/2019	2,961,000	1,773,000
c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5b) - (5a)]	2,961,000	1,773,000
6) (Gain)/Loss for the Period of 6/30/2018 – 6/30/2019		
a) Total (Gain)/Loss [(4c) - (2c)]	\$22,637	\$2,015,602
b) Investment (Gain)/Loss [(3d) - (4b)]	535,952	508,501
c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5c)]	2,961,000	1,773,000
d) Non-Investment (Gain)/Loss [(6a) - (6b) - (6c)]	(3,474,315)	(265,899)

Liabilities and Funding Requirements (continued)

(Gain)/Loss Analysis 6/30/2018 – 6/30/2019 (continued)

The following table develops the asset and demographic gains and losses between June 30, 2018 and June 30, 2019 for the Public Agency 1st, 2nd, 3rd, and 4th Level Pools.

	Public Agency 1 st Level	Public Agency 2 nd Level	Public Agency 3 rd Level	Public Agency 4 th Level
1) Prior Year Unfunded Accrued Liability/(Excess Assets) Development				
a) Accrued Liability as of 6/30/2018	\$2,908,667	\$2,428,704	\$30,510,650	\$141,358,235
b) Market Value of Assets as of 6/30/2018	52,177,082	12,307,348	120,740,841	151,267,552
c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2018 [(1a) - (1b)]	(\$49,268,415)	(\$9,878,644)	(\$90,230,191)	(\$9,909,317)
2) Development of Projected Unfunded Accrued Liability/(Excess Assets) for 6/30/2019				
a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2018 [(1c)]	(\$49,268,415)	(\$9,878,644)	(\$90,230,191)	(\$9,909,317)
b) Projected Unfunded Accrued Liability/(Excess Assets) Payment with Interest 7/1/2018 – 6/30/2019	50,157	7,015	(451,928)	(855,887)
c) Projected Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(2a) * 1.07 - (2b)]	(52,767,361)	(10,577,164)	(96,094,376)	(9,747,082)
3) Development of Projected Assets				
a) Market Value of Assets as of 6/30/2018	\$52,177,082	\$12,307,348	\$120,740,841	\$151,267,552
b) Net Cash Flows 7/1/2018 – 6/30/2019	(78,230)	(125,764)	(1,633,077)	(7,403,054)
c) Net Transfer of Assets Into and Out of this Pool	—	—	(363,314)	363,314
d) Expected Assets as of 6/30/2019 [(3a) * 1.07 + ((3b) + (3c)) * 1.07^{1/2}]	\$55,748,556	\$13,038,771	\$127,127,616	\$154,574,317
4) Current Year Unfunded Liability/(Excess Assets) Development				
a) Accrued Liability as of 6/30/2019	\$3,032,539	\$2,560,774	\$31,845,095	\$145,555,960
b) Market Value of Assets as of 6/30/2019	55,422,944	12,962,320	126,394,624	153,251,364
c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(4a) - (4b)]	(\$52,390,404)	(\$10,401,546)	(\$94,549,528)	(\$7,695,404)
5) Development of (Gain)/Loss due to changes in the Reserve for Unclaimed Benefits				
a) Reserve for Unclaimed Benefits as of 6/30/2018	\$0	\$0	\$0	\$0
b) Reserve for Unclaimed Benefits as of 6/30/2019	192,240	137,700	1,104,600	3,784,800
c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5b) - (5a)]	192,240	137,700	1,104,600	3,784,800
6) (Gain)/Loss for the Period of 6/30/2018 – 6/30/2019				
a) Total (Gain)/Loss [(4c) - (2c)]	\$376,957	\$175,619	\$1,544,848	\$2,051,678
b) Investment (Gain)/Loss [(3d) - (4b)]	325,612	76,452	732,993	1,322,952
c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5c)]	192,240	137,700	1,104,600	3,784,800
d) Non-Investment (Gain)/Loss [(6a) - (6b) - (6c)]	(140,896)	(38,533)	(292,745)	(3,056,074)

Liabilities and Funding Requirements (continued)

(Gain)/Loss Analysis 6/30/2018 – 6/30/2019 (continued)

The following table develops the asset and demographic gains and losses between June 30, 2018 and June 30, 2019 for the Public Agency Indexed Level Pool.

	Public Agency Indexed Level
1) Prior Year Unfunded Accrued Liability/(Excess Assets) Development	
a) Accrued Liability as of 6/30/2018	\$20,261,829
b) Market Value of Assets as of 6/30/2018	25,933,332
c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2018 [(1a) - (1b)]	(\$5,671,503)
2) Development of Projected Unfunded Accrued Liability/(Excess Assets) for 6/30/2019	
a) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2018 [(1c)]	(\$5,671,503)
b) Projected Unfunded Accrued Liability/(Excess Assets) Payment with Interest 7/1/2018 – 6/30/2019	(650,819)
c) Projected Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(2a) * 1.07 - (2b)]	(5,417,689)
3) Development of Projected Assets	
a) Market Value of Assets as of 6/30/2018	\$25,933,332
b) Net Cash Flows 7/1/2018 – 6/30/2019	(741,556)
c) Net Transfer of Assets Into and Out of this Pool	—
d) Expected Assets as of 6/30/2019 [(3a) * 1.07 + ((3b) + (3c)) * 1.07^{1/2}]	\$26,981,594
4) Current Year Unfunded Liability/(Excess Assets) Development	
a) Accrued Liability as of 6/30/2019	\$19,880,662
b) Market Value of Assets as of 6/30/2019	26,787,538
c) Unfunded Accrued Liability/(Excess Assets) as of 6/30/2019 [(4a) - (4b)]	(\$6,906,876)
5) Development of (Gain)/Loss due to changes in the Reserve for Unclaimed Benefits	
a) Reserve for Unclaimed Benefits as of 6/30/2018	\$0
b) Reserve for Unclaimed Benefits as of 6/30/2019	133,740
c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5b) - (5a)]	133,740
6) (Gain)/Loss for the Period of 6/30/2018 – 6/30/2019	
a) Total (Gain)/Loss [(4c) - (2c)]	(\$1,489,187)
b) Investment (Gain)/Loss [(3d) - (4b)]	194,056
c) (Gain)/Loss due to changes in Reserve for Unclaimed Benefits [(5c)]	133,740
c) Non-Investment (Gain)/Loss [(6a) - (6b) - (6c)]	(1,816,983)

Risk Analysis

- 20 Analysis of Future Investment Return Scenarios
- 21 Analysis of Discount Rate Sensitivity
- 22 Analysis of Mortality Sensitivity

Risk Analysis

Analysis of Future Investment Return Scenarios

To give the reader a sense of the short term investment risk to contributions, FY 2021-22 contributions are shown below based on the following FY 2019-20 investment return scenarios:

- 11% investment return (5th percentile return)
 - 7% investment return (50th percentile return)
 - 25% investment return (95th percentile return)
- Note: this return would trigger a reduction in the discount rate by 25 basis points (from 7.00% to 6.75%)
- Year-to-Date return has been populated with Not Applicable (N/A) due to high market volatility at the time this report was being produced

The tables below show FY 2021-22 projected employee and employer contributions under the investment return scenarios mentioned above.

(11%) Return

	2021-22 Employer Monthly Premium	2021-22 Employee Monthly Premium
State 5 th Level	\$7.05	\$7.05
Schools 5 th Level	0.00	2.00
PA 1 st Level	0.00	2.00
PA 2 nd Level	0.00	2.00
PA 3 rd Level	0.00	2.00
PA 4 th Level	8.50	2.00
PA Indexed Level	3.95	3.95

7% Return

	2021-22 Employer Monthly Premium	2021-22 Employee Monthly Premium
State 5 th Level	\$5.85	\$5.85
Schools 5 th Level	0.00	2.00
PA 1 st Level	0.00	2.00
PA 2 nd Level	0.00	2.00
PA 3 rd Level	0.00	2.00
PA 4 th Level	5.20	2.00
PA Indexed Level	2.45	2.45

25% Return

	2021-22 Employer Monthly Premium	2021-22 Employee Monthly Premium
State 5 th Level	\$4.85	\$4.85
Schools 5 th Level	0.00	2.00
PA 1 st Level	0.00	2.00
PA 2 nd Level	0.00	2.00
PA 3 rd Level	0.00	2.00
PA 4 th Level	\$3.10	\$2.00
PA Indexed Level	0.5	2.00

Risk Analysis (continued)

Analysis of Discount Rate Sensitivity

To give the reader a sense of long-term investment risk to contributions, 2020-21 contributions are presented below using discount rates that are 1 percent lower and 1 percent higher than the valuation discount rate of 7 percent. This analysis will give an indication of the potential required contributions if the PERF had investment returns of 6 percent or 8 percent over the long-term.

6% Discount Rate (-1%)

	2020-21 Employer Monthly Premium	2020-21 Employee Monthly Premium
State 5 th Level	\$7.80	\$7.80
Schools 5 th Level	0.00	2.00
PA 1 st Level	0.00	2.00
PA 2 nd Level	0.00	2.00
PA 3 rd Level	0.00	2.00
PA 4 th Level	7.70	2.00
PA Indexed Level	3.65	3.65

Increase in Contribution

	2020-21 Employer Monthly Premium	2020-21 Employee Monthly Premium
State 5 th Level	\$1.85	\$1.85
Schools 5 th Level	0.00	0.00
PA 1 st Level	0.00	0.00
PA 2 nd Level	0.00	0.00
PA 3 rd Level	0.00	0.00
PA 4 th Level	2.50	0.00
PA Indexed Level	1.25	1.25

8% Discount Rate (+1%)

	2020-21 Employer Monthly Premium	2020-21 Employee Monthly Premium
State 5 th Level	\$4.30	\$4.30
Schools 5 th Level	0.00	2.00
PA 1 st Level	0.00	2.00
PA 2 nd Level	0.00	2.00
PA 3 rd Level	0.00	2.00
PA 4 th Level	3.40	2.00
PA Indexed Level	0.00	2.00

Decrease in Contribution

	2020-21 Employer Monthly Premium	2020-21 Employee Monthly Premium
State 5 th Level	(\$1.65)	(\$1.65)
Schools 5 th Level	0.00	0.00
PA 1 st Level	0.00	0.00
PA 2 nd Level	0.00	0.00
PA 3 rd Level	0.00	0.00
PA 4 th Level	(1.80)	0.00
PA Indexed Level	(2.40)	(0.40)

Risk Analysis (continued)

Analysis of Mortality Sensitivity

To give the reader a sense of the long-term mortality risk to contributions, 2020-21 contributions are shown below using mortality rates that are 10 percent lower and 10 percent higher than the mortality tables used in the valuation. These mortality rates were only applied to individuals who were receiving a benefit or in a deferral status as of the valuation date. This analysis will give an indication of the potential required contributions if mortality were to be 10 percent lower or 10 percent higher than expected over the long term.

Lower Mortality Rates (-10%)

	2020-21 Employer Monthly Premium	2020-21 Employee Monthly Premium
State 5 th Level	\$6.30	\$6.30
Schools 5 th Level	0.00	2.00
PA 1 st Level	0.00	2.00
PA 2 nd Level	0.00	2.00
PA 3 rd Level	0.00	2.00
PA 4 th Level	5.50	2.00
PA Indexed Level	2.55	2.55

Increase in Contribution

	2020-21 Employer Monthly Premium	2020-21 Employee Monthly Premium
State 5 th Level	\$0.35	\$0.35
Schools 5 th Level	0.00	0.00
PA 1 st Level	0.00	0.00
PA 2 nd Level	0.00	0.00
PA 3 rd Level	0.00	0.00
PA 4 th Level	0.30	0.00
PA Indexed Level	0.15	0.15

Higher Mortality Rate (+10%)

	2020-21 Employer Monthly Premium	2020-21 Employee Monthly Premium
State 5 th Level	\$5.55	\$5.55
Schools 5 th Level	0.00	2.00
PA 1 st Level	0.00	2.00
PA 2 nd Level	0.00	2.00
PA 3 rd Level	0.00	2.00
PA 4 th Level	4.90	2.00
PA Indexed Level	2.25	2.25

Decrease in Contribution

	2020-21 Employer Monthly Premium	2020-21 Employee Monthly Premium
State 5 th Level	(\$0.40)	(\$0.40)
Schools 5 th Level	0.00	0.00
PA 1 st Level	0.00	0.00
PA 2 nd Level	0.00	0.00
PA 3 rd Level	0.00	0.00
PA 4 th Level	(0.30)	0.00
PA Indexed Level	(0.15)	(0.15)

Appendices

A-1 Appendix A – Statement of Actuarial Methods and Assumptions

B-1 Appendix B – Summary of Principal Plan Provisions

C-1 Appendix C – Demographic and Experience Information

D-1 Appendix D – 1959 Survivor Deaths Per Year

E-1 Appendix E – List of Contracting Agencies

F-1 Appendix F – Glossary of Actuarial Terms

Appendix A – Statement of Actuarial Methods and Assumptions

Actuarial Funding Method for Public Agency 1st, 2nd, 3rd, and 4th Level, and State and Schools 5th Level Pools

The actuarial funding method used, as provided in State statute for Public Agency 1st, 2nd, 3rd, and 4th level, and State and Schools 5th level pools, is called the Term Insurance method. This is a terminal funding arrangement with no pre-funding of the survivor benefits payable on account of deaths expected to occur beyond those in the coming year.

The Normal Cost for the year is equal to the Expected Claims (present value of benefits arising from deaths) that will occur in the coming fiscal year. The expected claims for the coming fiscal year is determined as the expected claim value divided by the expected member months for the coming fiscal year. The Normal Cost (or Expected Claims) per member, per month for the coming fiscal year is equal to a weighted average of ten years of Present Value of Benefits divided by the weighted average of ten years of member counts. The ten years used in this calculation end one year before the valuation date. The most recent year is excluded, and the chart below shows the weights given to the years prior to and including the valuation year. The Present Value of Benefits for current Survivors are recalculated each year, using the current assumptions. The reason for excluding the claims from the most recent year is that when new deaths occur each year, it is often unknown which benefit will ultimately apply (i.e. 1957 Survivor, Industrial Death, Pre-Retirement Option 2, or 1959 Survivor). Many times, new deaths are initially placed under the 1959 Survivor roll, but ultimately are reclassified to another roll some time later. This can create extreme volatility in the Normal Cost calculation between valuation years, especially for smaller pools.

Weights for Historical Data to Calculate Expected Claims

The table below displays the weights applied to historical Present Value of Benefits and member counts to develop the expected claims per member, per month.

Data 't' Years Ago	Weights
0	0.0%
1	19.0%
2	17.0%
3	15.0%
4	13.0%
5	11.0%
6	9.0%
7	7.0%
8	5.0%
9	3.0%
10	1.0%

A Reserve for Unclaimed Benefits is included in the Accrued Liability. This is done by finding all survivors that are eligible to receive a benefit but are not currently being paid the benefit. This population is assumed to be spouses that were in deferral but have not received a benefit yet due to unforeseen reasons. The amount of this reserve is calculated as the difference between each individual's age as of the valuation date rounded to the nearest whole year minus the age for which their deferral ends, multiplied by their monthly benefit amount. Based on expected lifetimes, the maximum assumed age for receiving benefits is 86. Based upon current mortality tables, an individual who starts receiving a benefit at age 62 is expected to continue receiving until age 86.4 based, while an individual who starts receiving a benefit at age 60 is expected to continue receiving until age 86.1.

The Accrued Liability is equal to the Present Value of Benefits payable to current survivors, plus the Reserve for Unclaimed Benefits. If the Accrued Liability exceeds the Market Value of Assets, the difference is called the Unfunded Liability. On the other hand, if the Market Value of Assets exceeds the Accrued Liability, the difference is called Excess Assets.

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

Actuarial Funding Method for Public Agency 1st, 2nd, 3rd and 4th Level, and State and Schools 5th Level Pools (continued)

The required employer monthly premium is the total required monthly premium less the \$2.00 per month member contributions as required by State Statute Section 21581. For all levels, existing excess assets in the pool will be amortized and directly used to offset required employer contributions. However, for the State and Schools 5th Level pools, if the total required monthly premium after amortization of excess assets exceeds \$4.00, the member and the employer shall evenly share the required monthly premium. For the current valuation date, the unfunded liability for the State 5th Level pool was amortized using CalPERS amortization policy. Excess assets for the Schools 5th Level pool, and Public Agency 1st, 2nd, and 3rd Level pools were sufficient to offset required employer contributions, based on June 30, 2019 data and assumptions. Excess assets for the Public Agency 4th Level were amortized over a 30-year period, and are not sufficient to fully offset the required employer contribution. The resulting employer contribution for the 4th Level is \$5.40 per covered member per month.

Actuarial Funding Method for Public Agency Indexed Level Pool

The funding method used for the Public Agency Indexed Level pool is the Entry Age Normal method. Under this method, projected benefits are determined for all members and the associated liabilities are spread in a manner that produces an annual cost that increases by approximately 2 percent in each year.

The Normal Cost for the Public Agency Indexed Level pool is the portion of the total Entry Age Normal Cost, as described in the preceding paragraph that is allocated to the current fiscal year. Since there is no cost allocated to the current fiscal year for those already receiving benefits or are in a deferred status, only active members have a Normal Cost. The population demographics, excluding population growth, are assumed to remain stable for purposes of projecting the Normal Cost to the year for which the contribution requirement is being determined.

A Reserve for Unclaimed Benefits is included in the Accrued Liability. This is done by finding all survivors that are eligible to receive a benefit but are not currently being paid the benefit. This population is assumed to be spouses that were in deferral but have not received a benefit yet due to unforeseen reasons. The amount of this reserve is calculated as the difference between each individual's age as of the valuation date rounded to the nearest whole year minus the age for which their deferral ends, multiplied by their monthly benefit amount. Based on expected lifetimes, the maximum assumed age for receiving benefits is 86. Based upon current mortality tables, an individual who starts receiving a benefit at age 62 is expected to continue receiving until age 86.4 based, while an individual who starts receiving a benefit at age 60 is expected to continue receiving until age 86.1.

The Accrued Liability is equal to the Present Value of Future Benefits for both current survivors and active members, less the Present Value of Future Normal Costs.

The total required monthly premium is the sum of the individual Normal Costs divided by the number of member months. The required employer monthly premium is the total required monthly premium less the \$2.00 per month member contributions as required by State Statute Section 21581. Existing excess assets in the pool will be amortized and directly used to offset required employer contributions. However, if the total required monthly premium after amortization of excess assets exceeds \$4.00, the member and the employer shall evenly share the required monthly premium. Excess assets for the Public Agency Indexed Level are amortized over a 30-year period. The resulting employer contribution for the Indexed Level is \$2.40 per covered member per month.

Asset Valuation Method

Commencing with the June 30, 2013 valuation, assets were and continue to be valued on a Market Value basis.

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

Method for Projecting Active Counts

The projected counts this year assume a stable population. Projected counts are necessary to determine employer premiums. Other methods have been used in the past; however, after comparing actual to projected counts using current counts is a more reliable methodology.

Actuarial Assumptions

The actuarial assumptions used in this valuation include the investment return rate and the mortality rates for current beneficiaries. These assumptions are shown below. Actual mortality rates for active members of all pools combined are shown in Appendix D and are used in the calculation of the annual normal costs, except for the Public Agency Indexed Level.

Economic Assumptions

Investment Return: 7% compounded annually (net of administrative expenses)

Demographic Assumptions:

The mortality assumptions are based on mortality rates resulting from the most recent CalPERS Experience Study adopted by the CalPERS Board. For purposes of the mortality rates, the revised rates include 15 years of projected on-going mortality improvement using 90 percent of Scale MP 2016 published by the Society of Actuaries. For more details, please refer to the experience study report that can be found on the CalPERS website.

Sample mortality rates for those who are receiving are shown in the following table:

Attained Age	Healthy Recipients	
	Male	Female
35	0.00049	0.00027
40	0.00064	0.00037
45	0.00080	0.00054
50	0.00372	0.00346
55	0.00437	0.00410
60	0.00671	0.00476
65	0.00928	0.00637
70	0.01339	0.00926
75	0.02316	0.01635
80	0.03977	0.03007
85	0.07122	0.05418
90	0.13044	0.10089
95	0.21658	0.17698
100	0.32222	0.28151
105	0.46691	0.43491
110	1.00000	1.00000

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

Economic Assumptions

The Public Agency Indexed Level Pool's Accrued Liability and Entry Age Normal Cost for active members are calculated based on the actuarial assumptions for the plan that the members are currently in. For instance, if a member is currently working for an employer that provides a pension in a miscellaneous 2% @ 55 plan, then the corresponding assumptions from the miscellaneous 2% @ 55 plan would be used. Additionally, if the member was working in safety police 2.7% @ 57 plan, then all the assumptions from the 2.7% @ 57 would be used. This is done to reflect the trends in the retirement based on the retirement formula and member category that an individual is working in.

The actuarial assumptions for each of these plans are as follows:

Eligible Survivor Status

For active members of both the Miscellaneous and Safety plans, the probability of having eligible survivor(s) at the date of death is assumed according to the following table:

Age at Death	Percent Having Eligible Survivor(s)
Age 20 and Under	30%
Between Ages 21 and 24	50%
Between Ages 25 and 29	70%
Between Ages 30 and 39	90%
Between Ages 40 and 49	95%
Between Ages 50 and 54	90%
Age 55 and Above	85%

Average claims are developed at every age using actual experience from the program. These average claims are then multiplied by the percentages in the above table. The results are used to estimate expected claims in the active population.

Benefit amounts and Present Value of benefits were based on average claim experience. A sample of the average claim experience is shown in the table below:

Age at Death	Present Value of Average Claim ¹ at the Time of Death ²
Age 20 and Under	\$29,688
25	101,049
30	142,527
35	137,085
40	128,754
45	109,538
50	87,223
55	71,082
60	65,179
65	64,009
70	65,198
75	64,656
Age 80 and Above	56,578

(1) Average claims were calculated using actual experience from the 1959 Survivor program and smoothed using a polynomial regression model.

(2) Values are based on an initial benefit of \$500/\$1,000/\$1,500 for one, two, or three survivors, respectively. This was the benefit level on June 30, 2000, when the Indexed Level first became effective. The valuation program increases these amounts by 2 percent per year up to the current valuation year.

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Pre-Retirement Mortality

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 (Not Job-Related) and Industrial (Job-Related) Death

Rates vary by age and sex. See sample rates in table below.

Attained Age	Pre-Retirement Mortality			
	Non-Industrial Death		Industrial Death	
	Male	Female	Male	Female
20	0.00022	0.00007	0.00004	0.00004
25	0.00029	0.00011	0.00006	0.00006
30	0.00038	0.00015	0.00007	0.00007
35	0.00049	0.00027	0.00009	0.00009
40	0.00064	0.00037	0.00010	0.00010
45	0.00080	0.00054	0.00012	0.00012
50	0.00116	0.00079	0.00013	0.00013
55	0.00172	0.00120	0.00015	0.00015
60	0.00255	0.00166	0.00016	0.00016

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.

Termination with Refund

Rates vary by age and sex. See sample rates in table below.

Years of Service	Public Agency Miscellaneous					
	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

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Termination with Refund (continued)

Years of Service	Public Agency Safety		
	Fire	Police	County Peace Officer
0	0.1298	0.1013	0.1188
1	0.0674	0.0636	0.0856
2	0.0320	0.0271	0.0617
3	0.0237	0.0258	0.0445
4	0.0087	0.0245	0.0321
5	0.0052	0.0086	0.0121
10	0.0005	0.0053	0.0053
15	0.0004	0.0027	0.0025
20	0.0003	0.0017	0.0012
25	0.0002	0.0012	0.0005
30	0.0002	0.0009	0.0003
35	0.0001	0.0009	0.0002

The police termination and refund rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff, and School Police.

Termination with Vested Benefits

Rates vary by entry age and sex. See sample rates in tables below.

Years of Service	Public Agency Miscellaneous				
	Entry Age				
	20	25	30	35	40
5	0.0422	0.0422	0.0393	0.0364	0.0344
10	0.0278	0.0278	0.0271	0.0263	0.0215
15	0.0192	0.0192	0.0174	0.0156	0.0120
20	0.0139	0.0139	0.0109	0.0079	0.0047
25	0.0083	0.0083	0.0048	0.0014	0.0007
30	0.0015	0.0015	0.0007	0.0000	0.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000

Years of Service	Public Agency Safety		
	Fire	Police	County Peace Officer
5	0.0094	0.0163	0.0187
10	0.0064	0.0126	0.0134
15	0.0048	0.0082	0.0092
20	0.0038	0.0062	0.0064
25	0.0026	0.0058	0.0042
30	0.0014	0.0056	0.0022
35	0.0000	0.0000	0.0000

The police termination with vested benefits rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff, and School Police.

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Non-Industrial (Not Job-Related) and Industrial (Job-Related) Disability

Rates vary by age and sex. See sample rates in table below .

Attained Age	Public Agency Miscellaneous	
	Non-Industrial Disability	
	Male	Female
20	0.0002	0.0001
25	0.0002	0.0001
30	0.0002	0.0002
35	0.0004	0.0007
40	0.0010	0.0014
45	0.0015	0.0019
50	0.0016	0.0020
55	0.0016	0.0015
60	0.0015	0.0011

The miscellaneous non-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.

Attained Age	Public Agency Safety					
	Non-Industrial Disability			Industrial Disability		
	Fire	Police	County Peace Officer	Fire	Police	County Peace Officer
20	0.0001	0.0001	0.0001	0.0001	0.0000	0.0004
25	0.0001	0.0001	0.0001	0.0002	0.0017	0.0013
30	0.0001	0.0002	0.0001	0.0006	0.0048	0.0025
35	0.0001	0.0003	0.0004	0.0012	0.0079	0.0037
40	0.0001	0.0004	0.0007	0.0023	0.0110	0.0051
45	0.0002	0.0005	0.0013	0.0040	0.0141	0.0067
50	0.0005	0.0008	0.0018	0.0208	0.0185	0.0092
55	0.0007	0.0013	0.0010	0.0307	0.0479	0.0151
60	0.0007	0.0020	0.0006	0.0438	0.0602	0.0174

The police non-industrial disability rates are also used for Other Safety, Local Sheriff, and School Police. 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.

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Service Retirement

Rates vary by age and sex. See sample rates in table below .

Attained Age	Public Agency Miscellaneous 1.5% @ 65					
	Years of Service					
	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
70	0.103	0.144	0.175	0.178	0.199	0.224

Attained Age	Public Agency Miscellaneous 2% @ 60					
	Years of Service					
	5	10	15	20	25	30
50	0.020	0.020	0.020	0.020	0.020	0.150
51	0.006	0.019	0.027	0.031	0.035	0.038
52	0.011	0.024	0.031	0.034	0.037	0.040
53	0.010	0.015	0.021	0.027	0.033	0.040
54	0.025	0.025	0.029	0.035	0.041	0.048
55	0.019	0.026	0.033	0.092	0.136	0.146
56	0.030	0.034	0.038	0.060	0.093	0.127
57	0.030	0.046	0.061	0.076	0.090	0.104
58	0.040	0.044	0.059	0.080	0.101	0.122
59	0.024	0.044	0.063	0.083	0.103	0.122
60	0.070	0.074	0.089	0.113	0.137	0.161
61	0.080	0.086	0.093	0.118	0.156	0.195
62	0.100	0.117	0.133	0.190	0.273	0.357
63	0.140	0.157	0.173	0.208	0.255	0.301
64	0.140	0.153	0.165	0.196	0.239	0.283
65	0.140	0.178	0.215	0.264	0.321	0.377
70	0.140	0.178	0.215	0.264	0.321	0.377

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Service Retirement (continued)

Attained Age	Public Agency Miscellaneous 2% @ 55					
	Years of Service					
	5	10	15	20	25	30
50	0.008	0.013	0.018	0.021	0.022	0.033
51	0.009	0.016	0.020	0.023	0.026	0.036
52	0.015	0.018	0.020	0.021	0.025	0.030
53	0.016	0.020	0.024	0.028	0.031	0.035
54	0.018	0.022	0.026	0.030	0.034	0.038
55	0.040	0.040	0.056	0.093	0.109	0.154
56	0.034	0.050	0.066	0.092	0.107	0.138
57	0.042	0.048	0.058	0.082	0.096	0.127
58	0.046	0.054	0.062	0.090	0.106	0.131
59	0.045	0.055	0.066	0.097	0.115	0.144
60	0.058	0.075	0.093	0.126	0.143	0.169
61	0.065	0.088	0.111	0.146	0.163	0.189
62	0.136	0.118	0.148	0.190	0.213	0.247
63	0.130	0.133	0.174	0.212	0.249	0.285
64	0.113	0.129	0.165	0.196	0.223	0.249
65	0.145	0.173	0.201	0.233	0.266	0.289
70	0.150	0.171	0.192	0.239	0.304	0.330

Attained Age	Public Agency Miscellaneous 2.5% @ 55					
	Years of Service					
	5	10	15	20	25	30
50	0.008	0.014	0.020	0.026	0.033	0.050
51	0.008	0.015	0.023	0.030	0.037	0.059
52	0.009	0.016	0.023	0.030	0.037	0.061
53	0.014	0.021	0.028	0.035	0.042	0.063
54	0.014	0.022	0.030	0.039	0.047	0.068
55	0.020	0.038	0.055	0.073	0.122	0.192
56	0.025	0.047	0.069	0.091	0.136	0.196
57	0.030	0.048	0.065	0.083	0.123	0.178
58	0.035	0.054	0.073	0.093	0.112	0.153
59	0.035	0.054	0.073	0.092	0.131	0.183
60	0.044	0.072	0.101	0.130	0.158	0.197
61	0.050	0.078	0.105	0.133	0.161	0.223
62	0.055	0.093	0.130	0.168	0.205	0.268
63	0.090	0.124	0.158	0.192	0.226	0.279
64	0.080	0.112	0.144	0.175	0.207	0.268
65	0.120	0.156	0.193	0.229	0.265	0.333
70	0.120	0.156	0.193	0.229	0.265	0.333

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Service Retirement (continued)

Attained Age	Public Agency Miscellaneous 2.7% @ 55					
	Years of Service					
	5	10	15	20	25	30
50	0.003	0.010	0.016	0.034	0.033	0.045
51	0.009	0.016	0.023	0.042	0.038	0.047
52	0.015	0.019	0.024	0.040	0.036	0.046
53	0.012	0.020	0.028	0.047	0.046	0.060
54	0.020	0.027	0.035	0.054	0.056	0.073
55	0.033	0.055	0.078	0.113	0.156	0.234
56	0.039	0.067	0.095	0.135	0.169	0.227
57	0.050	0.067	0.084	0.113	0.142	0.198
58	0.043	0.066	0.089	0.124	0.151	0.201
59	0.050	0.070	0.090	0.122	0.158	0.224
60	0.060	0.086	0.112	0.150	0.182	0.238
61	0.071	0.094	0.117	0.153	0.184	0.241
62	0.091	0.122	0.152	0.194	0.226	0.279
63	0.143	0.161	0.179	0.209	0.222	0.250
64	0.116	0.147	0.178	0.221	0.254	0.308
65	0.140	0.174	0.208	0.254	0.306	0.389
70	0.150	0.181	0.212	0.243	0.291	0.350

Attained Age	Public Agency Miscellaneous 3% @ 60					
	Years of Service					
	5	10	15	20	25	30
50	0.013	0.019	0.026	0.042	0.038	0.064
51	0.035	0.037	0.039	0.052	0.047	0.062
52	0.023	0.030	0.038	0.055	0.051	0.056
53	0.025	0.032	0.040	0.057	0.056	0.066
54	0.035	0.042	0.050	0.067	0.066	0.076
55	0.040	0.052	0.064	0.085	0.095	0.120
56	0.043	0.056	0.070	0.094	0.102	0.150
57	0.045	0.060	0.074	0.099	0.109	0.131
58	0.053	0.056	0.059	0.099	0.126	0.185
59	0.050	0.068	0.085	0.113	0.144	0.202
60	0.089	0.106	0.123	0.180	0.226	0.316
61	0.100	0.117	0.133	0.212	0.230	0.298
62	0.130	0.155	0.180	0.248	0.282	0.335
63	0.120	0.163	0.206	0.270	0.268	0.352
64	0.150	0.150	0.150	0.215	0.277	0.300
65	0.200	0.242	0.283	0.330	0.300	0.342
70	0.220	0.255	0.291	0.326	0.358	0.388

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Service Retirement (continued)

Attained Age	Public Agency Miscellaneous 2% @ 62					
	Years of Service					
	5	10	15	20	25	30
50	0.000	0.000	0.000	0.000	0.000	0.000
51	0.000	0.000	0.000	0.000	0.000	0.000
52	0.005	0.008	0.012	0.015	0.019	0.031
53	0.007	0.011	0.014	0.018	0.021	0.032
54	0.007	0.011	0.015	0.019	0.023	0.034
55	0.010	0.019	0.028	0.036	0.061	0.096
56	0.014	0.026	0.038	0.050	0.075	0.108
57	0.018	0.029	0.039	0.050	0.074	0.107
58	0.023	0.035	0.048	0.060	0.073	0.099
59	0.025	0.038	0.051	0.065	0.092	0.128
60	0.031	0.051	0.071	0.091	0.111	0.138
61	0.038	0.058	0.079	0.100	0.121	0.167
62	0.044	0.074	0.104	0.134	0.164	0.214
63	0.077	0.105	0.134	0.163	0.192	0.237
64	0.072	0.101	0.129	0.158	0.187	0.242
65	0.108	0.141	0.173	0.206	0.239	0.300
70	0.120	0.156	0.193	0.229	0.265	0.333

Public Agency Police ½ @ 55 and 2% @ 55	
Attained Age	Rate
50	0.0255
51	0.0000
52	0.0164
53	0.0272
54	0.0095
55	0.1667
56	0.0692
57	0.0511
58	0.0724
59	0.0704
60	0.3000

Public Agency Fire ½ @ 55 and 2% @ 55	
Attained Age	Rate
50	0.0159
51	0.0000
52	0.0344
53	0.0199
54	0.0413
55	0.0751
56	0.1108
57	0.0000
58	0.0950
59	0.0441
60	1.0000

The Police rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Service Retirement (continued)

Attained Age	Public Agency Police 2% @ 50					
	Years of Service					
	5	10	15	20	25	30
50	0.050	0.050	0.050	0.050	0.050	0.100
51	0.040	0.040	0.040	0.040	0.058	0.094
52	0.040	0.040	0.040	0.040	0.061	0.087
53	0.040	0.040	0.040	0.040	0.082	0.123
54	0.040	0.040	0.040	0.046	0.098	0.158
55	0.072	0.072	0.072	0.096	0.141	0.255
56	0.066	0.066	0.066	0.088	0.129	0.228
57	0.060	0.060	0.060	0.080	0.118	0.213
58	0.080	0.080	0.080	0.088	0.138	0.228
59	0.080	0.080	0.080	0.092	0.140	0.228
60	0.150	0.150	0.150	0.150	0.150	0.228
61	0.144	0.144	0.144	0.144	0.144	0.170
62	0.150	0.150	0.150	0.150	0.150	0.213
63	0.150	0.150	0.150	0.150	0.150	0.213
64	0.150	0.150	0.150	0.150	0.150	0.319
65	1.000	1.000	1.000	1.000	1.000	1.000

These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Attained Age	Public Agency Fire 2% @ 50					
	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

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Service Retirement (continued)

Attained Age	Public Agency Police 3% @ 55					
	Years of Service					
	5	10	15	20	25	30
50	0.035	0.035	0.035	0.035	0.070	0.090
51	0.028	0.028	0.028	0.029	0.065	0.101
52	0.032	0.032	0.032	0.039	0.066	0.109
53	0.028	0.028	0.028	0.043	0.075	0.132
54	0.038	0.038	0.038	0.074	0.118	0.333
55	0.070	0.070	0.070	0.120	0.175	0.340
56	0.060	0.060	0.060	0.110	0.165	0.330
57	0.060	0.060	0.060	0.110	0.165	0.320
58	0.080	0.080	0.080	0.100	0.185	0.350
59	0.090	0.090	0.095	0.130	0.185	0.350
60	0.150	0.150	0.150	0.150	0.185	0.350
61	0.120	0.120	0.120	0.120	0.160	0.350
62	0.150	0.150	0.150	0.150	0.200	0.350
63	0.150	0.150	0.150	0.150	0.200	0.400
64	0.150	0.150	0.150	0.150	0.175	0.350
65	1.000	1.000	1.000	1.000	1.000	1.000

These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Attained Age	Public Agency Fire 3% @ 55					
	Years of Service					
	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

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Service Retirement (continued)

Attained Age	Public Agency Police 3% @ 50					
	Years of Service					
	5	10	15	20	25	30
50	0.050	0.050	0.050	0.100	0.155	0.400
51	0.040	0.040	0.040	0.090	0.140	0.380
52	0.040	0.040	0.040	0.070	0.115	0.350
53	0.040	0.040	0.040	0.080	0.135	0.350
54	0.040	0.040	0.040	0.090	0.145	0.350
55	0.070	0.070	0.070	0.120	0.175	0.340
56	0.060	0.060	0.060	0.110	0.165	0.330
57	0.060	0.060	0.060	0.110	0.165	0.320
58	0.080	0.080	0.080	0.100	0.185	0.350
59	0.090	0.090	0.095	0.130	0.185	0.350
60	0.150	0.150	0.150	0.150	0.185	0.350
61	0.120	0.120	0.120	0.120	0.160	0.350
62	0.150	0.150	0.150	0.150	0.200	0.350
63	0.150	0.150	0.150	0.150	0.200	0.400
64	0.150	0.150	0.150	0.150	0.175	0.350
65	1.000	1.000	1.000	1.000	1.000	1.000

These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Attained Age	Public Agency Fire 3% @ 50					
	Years of Service					
	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

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Service Retirement (continued)

Attained Age	Public Agency Police 2% @ 57					
	Years of Service					
	5	10	15	20	25	30
50	0.040	0.040	0.040	0.040	0.040	0.080
51	0.028	0.028	0.028	0.028	0.040	0.066
52	0.028	0.028	0.028	0.028	0.043	0.061
53	0.028	0.028	0.028	0.028	0.057	0.086
54	0.028	0.028	0.028	0.032	0.069	0.110
55	0.050	0.050	0.050	0.067	0.099	0.179
56	0.046	0.046	0.046	0.062	0.090	0.160
57	0.054	0.054	0.054	0.072	0.106	0.191
58	0.060	0.060	0.060	0.066	0.103	0.171
59	0.060	0.060	0.060	0.069	0.105	0.171
60	0.113	0.113	0.113	0.113	0.113	0.171
61	0.108	0.108	0.108	0.108	0.108	0.128
62	0.113	0.113	0.113	0.113	0.113	0.159
63	0.113	0.113	0.113	0.113	0.113	0.159
64	0.113	0.113	0.113	0.113	0.113	0.239
65	1.000	1.000	1.000	1.000	1.000	1.000

These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Attained Age	Public Agency Fire 2% @ 57					
	Years of Service					
	5	10	15	20	25	30
50	0.005	0.005	0.005	0.005	0.008	0.012
51	0.006	0.006	0.006	0.006	0.009	0.013
52	0.012	0.012	0.012	0.012	0.019	0.028
53	0.033	0.033	0.033	0.033	0.050	0.075
54	0.045	0.045	0.045	0.045	0.069	0.103
55	0.061	0.061	0.061	0.061	0.094	0.140
56	0.055	0.055	0.055	0.055	0.084	0.126
57	0.081	0.081	0.081	0.081	0.125	0.187
58	0.059	0.059	0.059	0.059	0.091	0.137
59	0.055	0.055	0.055	0.055	0.084	0.126
60	0.085	0.085	0.085	0.085	0.131	0.196
61	0.085	0.085	0.085	0.085	0.131	0.196
62	0.085	0.085	0.085	0.085	0.131	0.196
63	0.085	0.085	0.085	0.085	0.131	0.196
64	0.085	0.085	0.085	0.085	0.131	0.196
65	1.000	1.000	1.000	1.000	1.000	1.000

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Service Retirement (continued)

Attained Age	Public Agency Police 2.5% @ 57					
	Years of Service					
	5	10	15	20	25	30
50	0.050	0.050	0.050	0.050	0.050	0.100
51	0.038	0.038	0.038	0.038	0.055	0.089
52	0.038	0.038	0.038	0.038	0.058	0.082
53	0.036	0.036	0.036	0.036	0.073	0.111
54	0.036	0.036	0.036	0.041	0.088	0.142
55	0.061	0.061	0.061	0.082	0.120	0.217
56	0.056	0.056	0.056	0.075	0.110	0.194
57	0.060	0.060	0.060	0.080	0.118	0.213
58	0.072	0.072	0.072	0.079	0.124	0.205
59	0.072	0.072	0.072	0.083	0.126	0.205
60	0.135	0.135	0.135	0.135	0.135	0.205
61	0.130	0.130	0.130	0.130	0.130	0.153
62	0.135	0.135	0.135	0.135	0.135	0.191
63	0.135	0.135	0.135	0.135	0.135	0.191
64	0.135	0.135	0.135	0.135	0.135	0.287
65	1.000	1.000	1.000	1.000	1.000	1.000

These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Attained Age	Public Agency Fire 2.5% @ 57					
	Years of Service					
	5	10	15	20	25	30
50	0.007	0.007	0.007	0.007	0.010	0.015
51	0.008	0.008	0.008	0.008	0.012	0.018
52	0.016	0.016	0.016	0.016	0.025	0.038
53	0.042	0.042	0.042	0.042	0.064	0.096
54	0.057	0.057	0.057	0.057	0.088	0.132
55	0.074	0.074	0.074	0.074	0.114	0.170
56	0.066	0.066	0.066	0.066	0.102	0.153
57	0.090	0.090	0.090	0.090	0.139	0.208
58	0.071	0.071	0.071	0.071	0.110	0.164
59	0.066	0.066	0.066	0.066	0.101	0.151
60	0.102	0.102	0.102	0.102	0.157	0.235
61	0.102	0.102	0.102	0.102	0.157	0.236
62	0.102	0.102	0.102	0.102	0.157	0.236
63	0.102	0.102	0.102	0.102	0.157	0.236
64	0.102	0.102	0.102	0.102	0.157	0.236
65	1.000	1.000	1.000	1.000	1.000	1.000

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

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level (continued)

Service Retirement (continued)

Attained Age	Public Agency Police 2.7% @ 57					
	Years of Service					
	5	10	15	20	25	30
50	0.0500	0.0500	0.0500	0.0500	0.0500	0.1000
51	0.0400	0.0400	0.0400	0.0400	0.0575	0.0942
52	0.0380	0.0380	0.0380	0.0380	0.0580	0.0825
53	0.0380	0.0380	0.0380	0.0380	0.0774	0.1169
54	0.0380	0.0380	0.0380	0.0437	0.0931	0.1497
55	0.0684	0.0684	0.0684	0.0912	0.1340	0.2423
56	0.0627	0.0627	0.0627	0.0836	0.1228	0.2168
57	0.0600	0.0600	0.0600	0.0800	0.1175	0.2125
58	0.0800	0.0800	0.0800	0.0880	0.1375	0.2275
59	0.0800	0.0800	0.0800	0.0920	0.1400	0.2275
60	0.1500	0.1500	0.1500	0.1500	0.1500	0.2275
61	0.1440	0.1440	0.1440	0.1440	0.1440	0.1700
62	0.1500	0.1500	0.1500	0.1500	0.1500	0.2125
63	0.1500	0.1500	0.1500	0.1500	0.1500	0.2125
64	0.1500	0.1500	0.1500	0.1500	0.1500	0.3188
65	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

These rates also apply to County Peace officers, Local Prosecutors, Local Sheriff, School Police, and Other Safety.

Attained Age	Public Agency Fire 2.7% @ 57					
	Years of Service					
	5	10	15	20	25	30
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	0.0164	0.0164	0.0164	0.0164	0.0254	0.0380
53	0.0442	0.0442	0.0442	0.0442	0.0680	0.1018
54	0.0606	0.0606	0.0606	0.0606	0.0934	0.1397
55	0.0825	0.0825	0.0825	0.0825	0.1269	0.1900
56	0.0740	0.0740	0.0740	0.0740	0.1140	0.1706
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

Appendix B – Summary of Principal Plan Provisions

The 1959 Survivor program was designed to provide pre-retirement death benefits comparable to those provided by Social Security, formally the Federal Old Age and Survivor Insurance (OASI) program, to CalPERS' members not covered by Social Security.

Eligibility

The benefit is available only to those members not covered by Social Security OASI benefits. For public agencies, this benefit is provided by contract with CalPERS. Only those public agencies that contract for the 1st, 2nd, 3rd, 4th, or Indexed level of the program are eligible for the benefits valued in this report. Public Agency 1st and 2nd levels have been closed since January 1, 1994 and 3rd level has been closed since July 1, 2001. For State and Schools members, the 5th level benefit is provided by State statute to certain groups of employees. Members who are eligible for the benefit are given a one-time option to join at the time of contract. Members hired subsequent to the time of contract are automatically enrolled in the program.

Spousal or Domestic Partner Benefit

The benefit is a monthly payment to eligible surviving spouses or domestic partners age 62 or older for Public Agency 1st, 2nd, and 3rd Levels and age 60 or older for all other levels. The benefit is also payable under these deferred ages for spouses or partners that have care of children under the age of 22. As an example, assume an agency contracts for the 3rd Level benefit and an active member dies and leaves behind a 35-year-old spouse and 2 children, ages 5 and 15. The following table describes how the benefit would be paid over the course of time.

Event	Monthly Benefit Paid
Member Death	\$840
1 st Child Turns 22	\$700
2 nd Child Turns 22 ¹	\$0
Spouse Turns 62 ²	\$350

(1) At this time, the spouse would be 52 years old and would not receive any benefit until age 62.

(2) Spouse would continue to receive this benefit until his/her death.

Child Benefit

Children are eligible if they are not married or in a registered domestic partnership and are under the age of 22 whether or not a spouse or domestic partner exists. For 3 or more children, the 3-survivor benefit is paid; for 2 children, the 2-survivor benefit is paid and so forth (see tables below). In all cases, unless a child is disabled, the benefit stops at age 22. If a child is disabled, the benefit is paid until the disability ceases.

Parental Benefits

If there is no eligible spouse or domestic partner or children, parent(s) dependent for at least half of their support from the deceased member may be eligible for benefits. The parent(s) must be over age 62 for Public Agency 1st, 2nd, and 3rd Levels and over age 60 for all other levels.

Appendix B - Summary of Principal Plan Provisions (continued)

Monthly Benefit Amounts

The monthly benefit amount depends upon the coverage level within the program.

1st, 2nd, and 3rd Level (For Members of Public Agencies who Contract)

	1 st Level	2 nd Level	3 rd Level
Spouse or Domestic Partner with Two or More Eligible Children; or Three or More Eligible Children	\$430	\$538	\$840
Spouse or Domestic Partner with One Eligible Child; or Two Eligible Children Only	360	450	700
Spouse or Domestic Partner Age 62 or Older; or One Eligible Child Only; or Eligible Dependent parents	180	225	350

4th Level and Indexed Level (For Members of Public Agencies who Contract) and 5th Level (State and Schools Members)

	4 th Level	Indexed Level	State and Schools 5 th Level
Spouse or Domestic Partner with Two or More Eligible Children; or Three or More Eligible Children	\$2,280	\$2,229 ¹	\$1,800
Spouse or Domestic Partner with One Eligible Child; or Two Eligible Children Only	1,900	1,486 ¹	1,500
Spouse or Domestic Partner Age 60 or Older; or One Eligible Child Only; or Eligible Dependent parents	950	743 ¹	750

(1) These figures indicate calendar year benefit amounts for the Indexed Level in effect for calendar year 2020. Benefit amounts will increase by 2 percent each January 1.

Comparison of Social Security and CalPERS 1959 Survivor Benefits

The following tables compare current Social Security survivor benefits with current benefit levels paid under the 1959 Survivor Program.

Social Security

Survivor Group	Low	Average	High
Three Survivors	\$1,603	\$2,800	\$4,196
Two Survivors	1,602	2,368	3,596
One Survivor	801	1,184	1,798

Unlike the 1959 Survivor Benefit (with the exception of the Indexed level), federal Social Security benefits normally receive an automatic cost-of-living adjustment every year. Also, unlike the 1959 Survivor Benefit, Social Security benefits are based on a worker's actual earnings up to the maximum covered. The values shown assume death at age 45 (benefits slightly higher at lower ages, lower at higher ages), and steady earnings. "Low" is 2019 salary of \$25,000, "Average" is \$50,000, and "High" is \$90,000.

CalPERS 1959 Survivor Benefit

Survivor Group	1 st Level	2 nd Level	3 rd Level	4 th Level	Indexed Level ¹	State and Schools 5 th Level
Three Survivors	\$430	\$538	\$840	\$2,280	\$2,229	\$1,800
Two Survivors	360	450	700	1,900	1,486	1,500
One Survivor	180	225	350	950	743	750

(1) Amounts effective January 1, 2020

Summary of Plan Changes

Existing public agency employers joining the Public Agency 4th or Indexed Level Pool during the 2020-21 fiscal year are required to pay only the Unfunded Liability based on their own membership (amortized over a period of five years) which exists at the time they join plus the agency's normal cost for all members at the new benefit level for the first five years. If they have excess assets, the excess assets will be amortized over five years and used to offset the agency's normal cost for each year.

Appendix C – Demographic and Experience Information

Current and Deferred Survivors – All Levels of the 1959 Survivor Program for Public Agencies, State and Schools

Currently, there are 4,251 cases where liability exists. These cases include surviving spouses or domestic partners in deferred status even though presently there are no benefits being paid. There are 9 possible survivor combinations that can be associated with each case. The combinations presented below are given as of the date of the valuation, for all levels of the 1959 Survivor program.

Status as of 6/30/19	Number	Percent
Surviving Spouse or Domestic Partner Deferred	772	18.2%
Surviving Spouse or Domestic Partner Only Receiving	2,606	61.3%
Surviving Spouse or Domestic Partner with One Child	335	7.9%
Surviving Spouse or Domestic Partner with Two or More Children	288	6.8%
One Child	151	3.6%
Two Children	58	1.4%
Three or More Children	23	0.5%
One Parent	13	0.3%
Two Parents	5	0.1%
Totals	4,251	100.0%¹

(1) Percentages may not sum to 100% due to rounding.

Survivor Combinations as of the Member's Date of Death – All Levels of the 1959 Survivor Program for Public Agencies, State and Schools

There exist 8,136 cases of death associated with the 1959 Survivor program since its inception where 1959 Survivor benefits became payable. With this data, a historical account of each combination can be made. Further, probabilities can be approximated with respect to these combinations when a member dies. Below is a list of all combinations on record, numbers and associated percentages as of the time of death, for all levels of the 1959 Survivor program.

Status as of the Member's Date of Death	Number	Percent
Surviving Spouse or Domestic Partner Deferred	2,370	29.1%
Surviving Spouse or Domestic Partner Only Receiving	1,014	10.5%
Surviving Spouse or Domestic Partner with One Child	1,341	16.5%
Surviving Spouse or Domestic Partner with Two or More Children	2,223	27.3%
One Child	512	6.3%
Two Children	404	5.0%
Three or More Children	235	2.9%
One Parent	29	0.4%
Two Parents	8	0.1%
Totals	8,136	100.0%¹

(1) Percentages may not sum to 100% due to rounding.

Appendix D – 1959 Survivor Deaths Per Year

1959 Survivor Deaths Per Year

Displayed below is a year-by-year account of the number of deaths under the program and the death rate each year for the last 35 years for public agencies, State, and Schools. Deaths given in the exhibit are on a calendar year basis and may change from previous valuations due mainly to reclassification of the benefit that ultimately gets paid to the survivor. Counts represent mid-year active exposure. The historic covered active counts may not match those reported in the prior year's valuation. This is due to the fact that in some cases there is a time gap between the time of the member's death and the determination of which type of death benefit that the survivor will receive.

Calendar Year	Public Agency			State			Schools		
	Deaths	Mid-Year Active Counts	Death Rate	Deaths	Mid-Year Active Counts	Death Rate	Deaths	Mid-Year Active Counts	Death Rate
2018	78	141,374	0.06%	49	78,011	0.06%	7	11,190	0.06%
2017	92	141,063	0.07%	53	76,638	0.07%	7	10,557	0.07%
2016	83	139,581	0.06%	67	75,782	0.09%	4	10,259	0.04%
2015	75	134,879	0.06%	54	74,372	0.07%	5	10,490	0.05%
2014	61	132,024	0.05%	57	72,848	0.08%	4	10,287	0.04%
2013	94	129,796	0.07%	62	71,180	0.09%	4	9,944	0.04%
2012	105	132,754	0.08%	54	71,759	0.08%	7	10,123	0.07%
2011	97	134,255	0.07%	55	77,714	0.07%	7	9,811	0.07%
2010	89	138,470	0.06%	71	79,587	0.09%	6	10,203	0.06%
2009	97	143,207	0.07%	48	82,434	0.06%	10	10,562	0.09%
2008	115	144,828	0.08%	56	81,369	0.07%	4	10,550	0.04%
2007	97	140,012	0.07%	69	76,902	0.09%	6	10,131	0.06%
2006	94	137,095	0.07%	75	71,742	0.10%	15	9,469	0.16%
2005	111	133,510	0.08%	61	70,193	0.09%	5	9,402	0.05%
2004	92	131,633	0.07%	71	64,252	0.11%	4	9,325	0.04%
2003	81	129,620	0.06%	58	68,791	0.08%	7	9,390	0.07%
2002	81	129,355	0.06%	51	65,558	0.08%	7	9,195	0.08%
2001	90	116,161	0.08%	63	64,309	0.10%	5	7,884	0.06%
2000	83	121,538	0.07%	60	60,349	0.10%	2	8,338	0.02%
1999	91	118,850	0.08%	55	59,406	0.09%	8	7,444	0.11%
1998	78	112,389	0.07%	59	55,435	0.11%	3	6,956	0.04%
1997	77	102,475	0.08%	66	55,084	0.12%	5	6,794	0.07%
1996	74	100,494	0.07%	50	51,746	0.10%	7	6,726	0.10%
1995	74	99,235	0.07%	60	47,689	0.13%	9	6,751	0.13%
1994	69	98,088	0.07%	55	47,323	0.12%	7	6,653	0.11%
1993	87	97,752	0.09%	42	46,872	0.09%	9	6,776	0.13%
1992	90	95,840	0.09%	47	48,872	0.10%	5	6,823	0.07%
1991	100	91,574	0.11%	47	47,708	0.10%	6	7,752	0.08%
1990	72	86,196	0.08%	63	45,502	0.14%	8	7,942	0.10%
1989	67	82,046	0.08%	57	44,069	0.13%	8	6,899	0.12%
1988	68	84,808	0.08%	49	41,980	0.12%	10	7,100	0.14%
1987	68	69,340	0.10%	52	40,315	0.13%	10	6,200	0.16%
1986	58	68,500	0.08%	61	39,391	0.15%	5	6,500	0.08%
1985	77	66,927	0.12%	70	39,175	0.18%	6	6,842	0.09%
1984	65	65,480	0.10%	68	38,488	0.18%	2	7,104	0.03%

Appendix E – List of Contracting Agencies

Level 1

1. Belmont Fire Protection District, Miscellaneous
2. Central Basin Municipal Water District, Miscellaneous
3. City and County of San Francisco, Safety - County Peace Officer
4. City and County of San Francisco, Safety - Sheriff
5. City of Baldwin Park, Miscellaneous
6. City of Baldwin Park, Safety - Police
7. City of Bishop, Miscellaneous
8. City of Bishop, Safety - Police
9. City of Calexico, Safety - Fire
10. City of Calexico, Safety - Police
11. City of Camarillo, Safety - Fire
12. City of Camarillo, Safety - Police
13. City of Coachella City, Miscellaneous
14. City of Coachella City, Safety - Fire
15. City of Coachella City, Safety - Police
16. City of Compton, Safety - Fire
17. City of Culver City, Miscellaneous
18. City of Dixon, Miscellaneous
19. City of El Segundo, Miscellaneous
20. City of Glendora, Safety - Fire
21. City of Hawthorne, Miscellaneous
22. City of Hawthorne, Safety - Fire
23. City of Hawthorne, Safety - Police
24. City of Hemet, Safety - Police
25. City of Indio, Safety - Fire
26. City of Indio, Safety - Police
27. City of Lynwood, Safety - Police
28. City of Madera, Safety - Fire
29. City of Manhattan Beach, Safety - Police
30. City of Maywood, Safety - Police
31. City of Menlo Park, Miscellaneous
32. City of Palo Alto, Miscellaneous
33. City of Palo Alto, Safety - Fire
34. City of Palo Alto, Safety - Police
35. City of Placentia, Safety - Fire
36. City of Pleasanton, Safety - Police
37. City of Pomona, Miscellaneous
38. City of Pomona, Safety - Fire
39. City of Pomona, Safety - Police
40. City of Redondo Beach, Miscellaneous
41. City of Richmond, Miscellaneous
42. City of Richmond, Safety - Fire
43. City of Richmond, Safety - Police
44. City of Rolling Hills Estates, Miscellaneous
45. City of Salinas, Safety - Fire
46. City of San Fernando, Safety - Fire
47. City of San Mateo, Miscellaneous
48. City of San Pablo, Safety - Fire
49. City of Santa Clara, Miscellaneous
50. City of Santa Fe Springs, Safety - Police
51. City of Santa Monica, Safety - Other Safety
52. City of Santa Paula, Safety - Fire
53. City of Sausalito, Miscellaneous
54. City of Seal Beach, Safety - Fire
55. City of South Lake Tahoe, Safety - Police
56. City of South Pasadena, Miscellaneous
57. City of South Pasadena, Safety - Fire
58. City of South Pasadena, Safety - Police
59. City of South San Francisco, Miscellaneous
60. City of Sunnyvale, Safety - Fire
61. City of Tustin, Safety - Fire
62. City of Union City, Safety - Fire
63. City of Union City, Safety - Police
64. City of Vallejo, Miscellaneous
65. City of Vernon, Safety - Police
66. City of Vista, Safety - Police
67. City of Watsonville, Miscellaneous
68. City of Westminster, Safety - Fire
69. City of Whittier, Safety - Fire
70. County of Glenn, Miscellaneous
71. County of Inyo, Miscellaneous
72. County of Madera, Miscellaneous
73. County of Monterey, Miscellaneous
74. County of Plumas, Safety - Fire
75. County of Santa Clara, Miscellaneous
76. County of Santa Clara, Safety - County Peace Officer
77. County of Santa Clara, Safety - Fire
78. County of Santa Cruz, Safety - Fire
79. County of Siskiyou, Safety - Fire
80. County of Solano, Safety - Fire
81. East Contra Costa Irrigation District, Miscellaneous
82. Fruitridge Fire Protection District, Miscellaneous
83. Fruitridge Fire Protection District, Safety - Fire
84. Lakeside Fire Protection District, Miscellaneous
85. Los Angeles Community College District, Safety - Police
86. Monterey County Water Resources Agency, Miscellaneous
87. Monterey-Salinas Transit District, Miscellaneous
88. Moulton-Niguel Water District, Miscellaneous
89. Northern California Special Districts Insurance Authority, Miscellaneous
90. Pomona, Calif State Polytechnic University, Associated Students, Inc., Miscellaneous
91. Riverside County Air Pollution Control District, Miscellaneous

Appendix E – List of Contracting Agencies (continued)

Level 1 (continued)

92. Riverside County Flood Control and Water Conservation District, Miscellaneous
93. Riverside County Regional Park and Open Space District, Miscellaneous
94. San Luis Obispo Cal Poly Associated Students, Inc.,

- Miscellaneous
95. Town of Hillsborough, Miscellaneous
 96. Town of Tiburon, Safety - Police
 97. Town of Yountville, Miscellaneous

Level 2

1. Belmont-San Carlos Fire Department, Miscellaneous
2. Brooktrails Township Community Services District, Miscellaneous
3. CSAC Excess Insurance Authority, Miscellaneous
4. California Interscholastic Federation, Southern Section, Miscellaneous
5. California Interscholastic Federation, State Office, Miscellaneous
6. Capitol Area Development Authority, Miscellaneous
7. City and County of San Francisco, Safety - Police
8. City of Antioch, Miscellaneous
9. City of Capitola, Miscellaneous
10. City of Capitola, Safety - Fire
11. City of Capitola, Safety - Police
12. City of Corcoran, Miscellaneous
13. City of Corcoran, Safety - Fire
14. City of Corcoran, Safety - Police
15. City of Coronado, Safety - Fire
16. City of Coronado, Safety - Police
17. City of Cotati, Safety - Police
18. City of Crescent City, Miscellaneous
19. City of Crescent City, Safety - Police
20. City of Del Mar, Safety - Other Safety
21. City of Emeryville, Safety - Police
22. City of Eureka, Safety - Fire
23. City of Eureka, Safety - Police
24. City of Glendora, Miscellaneous
25. City of Inglewood, Safety - Police
26. City of La Puente, Miscellaneous
27. City of Lakeport, Miscellaneous
28. City of Lakeport, Safety - Police
29. City of Martinez, Safety - Fire
30. City of Montclair, Miscellaneous
31. City of Montclair, Safety - Fire
32. City of Palm Desert, Miscellaneous
33. City of Palos Verdes Estates, Safety - Fire

34. City of Palos Verdes Estates, Safety - Police
35. City of Patterson, Safety - Fire
36. City of Patterson, Safety - Police
37. City of Santa Barbara, Safety - Fire
38. City of Santa Barbara, Safety - Police
39. City of Sierra Madre, Safety - Police
40. City of Solana Beach, Miscellaneous
41. City of Solana Beach, Safety - Other Safety
42. City of Stanton, Miscellaneous
43. City of Stanton, Safety - Fire
44. City of Stanton, Safety - Police
45. City of Susanville, Safety - Police
46. City of Visalia, Miscellaneous
47. City of Vista, Miscellaneous
48. City of Watsonville, Safety - Fire
49. City of Watsonville, Safety - Police
50. County of Alpine, Miscellaneous
51. County of Alpine, Safety - County Peace Officer
52. County of Alpine, Safety - Fire
53. County of Calaveras, Miscellaneous
54. County of Calaveras, Safety - County Peace Officer
55. County of Calaveras, Safety - Fire
56. Los Angeles County Office of Education, Miscellaneous
57. Main San Gabriel Basin Watermaster, Miscellaneous
58. North Coast Unified Air Quality Management District, Miscellaneous
59. Pacific Fire Protection District, Miscellaneous
60. Pupil Transportation Cooperative, Miscellaneous
61. Rancho California Water District, Miscellaneous
62. Running Springs Water District, Miscellaneous
63. Running Springs Water District, Safety - Fire
64. San Diego Trolley, Inc., Miscellaneous
65. San Francisco County Transportation Authority, Miscellaneous
66. Sonoma County Library, Miscellaneous
67. Tahoe Transportation District, Miscellaneous

Level 3

1. Access Services Incorporated, Miscellaneous
2. Agoura Hills and Calabasas Community Center, Miscellaneous
3. Alameda Alliance for Health, Miscellaneous
4. Alameda Corridor Transportation Authority, Miscellaneous
5. Alameda County Fire Department, Miscellaneous

6. Alameda County Fire Department, Safety - Fire
7. Alameda County Mosquito Abatement District, Miscellaneous
8. Alameda County Transportation Authority, Miscellaneous
9. American Canyon Fire Protection District, Safety - Fire
10. Apple Valley Fire Protection District, Miscellaneous
11. Apple Valley Fire Protection District, Safety - Fire

Appendix E – List of Contracting Agencies (continued)

Level 3 (continued)

- | | |
|--|---|
| 12. Arcata Fire Protection District, Miscellaneous | 59. City of Belvedere, Safety - Police |
| 13. Arcata Fire Protection District, Safety - Fire | 60. City of Benicia, Miscellaneous |
| 14. Association of California Water Agencies, Miscellaneous | 61. City of Berkeley, Miscellaneous |
| 15. Avila Beach Community Services District, Miscellaneous | 62. City of Brentwood, Miscellaneous |
| 16. Baldwin Park Unified School District, Safety - Police | 63. City of Brentwood, Safety - Fire |
| 17. Beaumont-Cherry Valley Recreation and Park District, Miscellaneous | 64. City of Brentwood, Safety - Police |
| 18. Belmont-San Carlos Fire Department, Safety - Fire | 65. City of Brisbane, Miscellaneous |
| 19. Belvedere-Tiburon Library Agency, Miscellaneous | 66. City of Brisbane, Safety - Fire |
| 20. Big Bear City Community Services District, Miscellaneous | 67. City of Brisbane, Safety - Police |
| 21. Bighorn-Desert View Water Agency, Miscellaneous | 68. City of Burlingame, Miscellaneous |
| 22. Bodega Bay Fire Protection District, Miscellaneous | 69. City of Calabasas, Miscellaneous |
| 23. Bodega Bay Fire Protection District, Safety - Fire | 70. City of Campbell, Miscellaneous |
| 24. Borrego Springs Fire Protection District, Miscellaneous | 71. City of Carlsbad, Miscellaneous |
| 25. Borrego Water District, Miscellaneous | 72. City of Carlsbad, Safety - Police |
| 26. Broadmoor Police Protection District, Miscellaneous | 73. City of Claremont, Miscellaneous |
| 27. Broadmoor Police Protection District, Safety - Police | 74. City of Claremont, Safety - Police |
| 28. Brooktrails Township Community Services District, Safety - Fire | 75. City of Clayton, Miscellaneous |
| 29. Buena Park Library District, Miscellaneous | 76. City of Compton, Miscellaneous |
| 30. Butte County Air Quality Management District, Miscellaneous | 77. City of Compton, Safety - Police |
| 31. Butte Schools Self-Funded Programs, Miscellaneous | 78. City of Corona, Safety - Police |
| 32. California Firefighter's Joint Apprenticeship Committee, Safety - Fire | 79. City of Costa Mesa, Miscellaneous |
| 33. California Pines Community Services District, Miscellaneous | 80. City of Costa Mesa, Safety - Fire |
| 34. Cambria Community Healthcare District, Miscellaneous | 81. City of Costa Mesa, Safety - Police |
| 35. Cambria Community Healthcare District, Safety - Fire | 82. City of Cypress, Miscellaneous |
| 36. Cameron Park Community Services District, Miscellaneous | 83. City of Daly City, Miscellaneous |
| 37. Cameron Park Community Services District, Safety - Fire | 84. City of Daly City, Safety - Police |
| 38. Camrosa Water District, Miscellaneous | 85. City of Dana Point, Miscellaneous |
| 39. Casitas Municipal Water District, Miscellaneous | 86. City of Del Mar, Miscellaneous |
| 40. Castaic Lake Water Agency, Miscellaneous | 87. City of Dinuba, Miscellaneous |
| 41. Castro Valley Sanitary District, Miscellaneous | 88. City of Dinuba, Safety - Fire |
| 42. Central Calaveras Fire and Rescue Protection District, Safety - Fire | 89. City of Dinuba, Safety - Police |
| 43. Central Coast Water Authority, Miscellaneous | 90. City of Downey, Safety - Fire |
| 44. Central Valley Regional Center, Inc., Miscellaneous | 91. City of Downey, Safety - Police |
| 45. City and County of San Francisco, Miscellaneous | 92. City of Duarte, Miscellaneous |
| 46. City of Adelanto, Safety - Police | 93. City of Dublin, Miscellaneous |
| 47. City of Agoura Hills, Miscellaneous | 94. City of East Palo Alto, Miscellaneous |
| 48. City of Alameda, Miscellaneous | 95. City of East Palo Alto, Safety - Police |
| 49. City of Alameda, Safety - Fire | 96. City of El Cajon, Safety - Fire |
| 50. City of Alameda, Safety - Police | 97. City of El Cajon, Safety - Police |
| 51. City of Alhambra, Miscellaneous | 98. City of El Centro, Miscellaneous |
| 52. City of Alhambra, Safety - Fire | 99. City of Encinitas, Miscellaneous |
| 53. City of Alhambra, Safety - Police | 100. City of Encinitas, Safety - Fire |
| 54. City of Arcadia, Miscellaneous | 101. City of Encinitas, Safety - Other Safety |
| 55. City of Arcadia, Safety - Police | 102. City of Eureka, Miscellaneous |
| 56. City of Bell, Safety - Fire | 103. City of Exeter, Safety - Police |
| 57. City of Bell, Safety - Police | 104. City of Fortuna, Safety - Police |
| 58. City of Belvedere, Miscellaneous | 105. City of Fremont, Safety - Fire |
| | 106. City of Gardena, Miscellaneous |
| | 107. City of Gardena, Safety - Fire |
| | 108. City of Gardena, Safety - Police |
| | 109. City of Gilroy, Miscellaneous |

Appendix E – List of Contracting Agencies (continued)

Level 3 (continued)

- | | |
|--|---|
| 110. City of Gridley , Miscellaneous | 161. City of Oakland, Safety - Fire |
| 111. City of Gridley , Safety - Fire | 162. City of Oceanside, Miscellaneous |
| 112. City of Gridley , Safety - Police | 163. City of Oceanside, Safety - Fire |
| 113. City of Half Moon Bay , Miscellaneous | 164. City of Oceanside, Safety - Police |
| 114. City of Hanford, Miscellaneous | 165. City of Orange, Miscellaneous |
| 115. City of Hay ward, Safety - Fire | 166. City of Ox nard, Safety - Police |
| 116. City of Hay ward, Safety - Police | 167. City of Palmdale, Miscellaneous |
| 117. City of Hemet, Safety - Fire | 168. City of Palos Verdes Estates, Miscellaneous |
| 118. City of Hercules, Miscellaneous | 169. City of Patterson, Miscellaneous |
| 119. City of Hercules, Safety - Police | 170. City of Petaluma, Miscellaneous |
| 120. City of Hermosa Beach, Miscellaneous | 171. City of Pinole, Miscellaneous |
| 121. City of Hermosa Beach, Safety - Fire | 172. City of Pinole, Safety - Fire |
| 122. City of Hermosa Beach, Safety - Police | 173. City of Pinole, Safety - Police |
| 123. City of Highland, Miscellaneous | 174. City of Pleasant Hill, Miscellaneous |
| 124. City of Inglew ood, Miscellaneous | 175. City of Pleasant Hill, Safety - Police |
| 125. City of Inglew ood, Safety - Fire | 176. City of Pleasanton, Miscellaneous |
| 126. City of La Mesa, Safety - Fire | 177. City of Redw ood City , Miscellaneous |
| 127. City of La Mesa, Safety - Police | 178. City of Riverside, Miscellaneous |
| 128. City of La Quinta, Miscellaneous | 179. City of Riverside, Safety - Fire |
| 129. City of Laguna Hills, Miscellaneous | 180. City of Riverside, Safety - Police |
| 130. City of Laguna Niguel, Miscellaneous | 181. City of Rohnert Park, Miscellaneous |
| 131. City of Laguna Woods, Miscellaneous | 182. City of Rohnert Park, Safety - Fire |
| 132. City of Lake Forest, Miscellaneous | 183. City of Rohnert Park, Safety - Police |
| 133. City of Lancaster, Miscellaneous | 184. City of Rosev ille, Miscellaneous |
| 134. City of Larkspur, Miscellaneous | 185. City of Rosev ille, Safety - Fire |
| 135. City of Lathrop, Miscellaneous | 186. City of San Carlos, Safety - Police |
| 136. City of Lodi, Miscellaneous | 187. City of San Dimas, Miscellaneous |
| 137. City of Lodi, Safety - Fire | 188. City of San Joaquin, Miscellaneous |
| 138. City of Lodi, Safety - Police | 189. City of San Jose, Miscellaneous |
| 139. City of Lompoc, Miscellaneous | 190. City of San Luis Obispo, Safety - Fire |
| 140. City of Los Altos, Miscellaneous | 191. City of San Marino, Safety - Police |
| 141. City of Los Altos, Safety - Police | 192. City of San Pablo, Miscellaneous |
| 142. City of Lynw ood, Safety - Fire | 193. City of San Pablo, Safety - Police |
| 143. City of Manhattan Beach, Miscellaneous | 194. City of Santa Cruz, Miscellaneous |
| 144. City of Mary sville, Miscellaneous | 195. City of Santa Cruz, Safety - Fire |
| 145. City of Menlo Park, Safety - Police | 196. City of Santa Cruz, Safety - Police |
| 146. City of Mill Valley , Miscellaneous | 197. City of Santa Paula, Miscellaneous |
| 147. City of Milpitas, Miscellaneous | 198. City of Santa Paula, Safety - Police |
| 148. City of Milpitas, Safety - Fire | 199. City of Santee, Miscellaneous |
| 149. City of Mission Viejo, Miscellaneous | 200. City of Saratoga, Miscellaneous |
| 150. City of Modesto, Miscellaneous | 201. City of Seal Beach, Miscellaneous |
| 151. City of Montclair, Safety - Police | 202. City of Seal Beach, Safety - Other Safety |
| 152. City of Montebello, Safety - Fire | 203. City of Seal Beach, Safety - Police |
| 153. City of Montebello, Safety - Police | 204. City of Sebastopol, Miscellaneous |
| 154. City of Mountain View, Miscellaneous | 205. City of Sebastopol, Safety - Fire |
| 155. City of National City, Miscellaneous | 206. City of Sebastopol, Safety - Police |
| 156. City of National City, Safety - Fire | 207. City of Sonoma, Miscellaneous |
| 157. City of National City , Safety - Police | 208. City of Sonoma, Safety - Fire |
| 158. City of Norw alk, Miscellaneous | 209. City of South San Francisco, Safety - Fire |
| 159. City of Oakdale, Miscellaneous | 210. City of South San Francisco, Safety - Police |
| 160. City of Oakdale, Safety - Police | 211. City of Suisun City , Miscellaneous |

Appendix E – List of Contracting Agencies (continued)

Level 3 (continued)

- | | |
|--|--|
| 212. City of Suisun City, Safety - Fire | 262. El Dorado County Transit Authority, Miscellaneous |
| 213. City of Sunnyvale, Miscellaneous | 263. El Dorado Hills County Water District, Miscellaneous |
| 214. City of Sunnyvale, Safety - Police | 264. El Dorado Hills County Water District, Safety - Fire |
| 215. City of Turlock, Miscellaneous | 265. Encina Wastewater Authority, Miscellaneous |
| 216. City of Tustin, Miscellaneous | 266. Encinitas Fire Protection District, Miscellaneous |
| 217. City of Twentynine Palms, Miscellaneous | 267. Encinitas Fire Protection District, Safety - Fire |
| 218. City of Ukiah, Miscellaneous | 268. Feather River Air Quality Management District, Miscellaneous |
| 219. City of Ukiah, Safety - Fire | 269. Fontana Unified School District, Safety - Police |
| 220. City of Union City, Miscellaneous | 270. Fort Ord Reuse Authority, Miscellaneous |
| 221. City of Upland, Miscellaneous | 271. Georgetown Fire Protection District, Miscellaneous |
| 222. City of Upland, Safety - Fire | 272. Georgetown Fire Protection District, Safety - Fire |
| 223. City of Upland, Safety - Police | 273. Greater Anaheim Special Education Local Plan Area,
Miscellaneous |
| 224. City of Ventura, Safety - Fire | 274. Greater Vallejo Recreation District, Miscellaneous |
| 225. City of Vernon, Miscellaneous | 275. Green Valley County Water District, Miscellaneous |
| 226. City of Vernon, Safety - Prosecutor | 276. Grossmont Healthcare District, Miscellaneous |
| 227. City of Victorville, Safety - Police | 277. Gualala Community Services District, Miscellaneous |
| 228. City of Vista, Safety - Fire | 278. Henry Miller Reclamation District No. 2131, Miscellaneous |
| 229. City of West Sacramento, Miscellaneous | 279. Higgins Area Fire Protection District, Miscellaneous |
| 230. City of West Sacramento, Safety - Police | 280. Higgins Area Fire Protection District, Safety - Fire |
| 231. City of Whittier, Miscellaneous | 281. Hilton Creek Community Services District, Miscellaneous |
| 232. City of Whittier, Safety - Police | 282. Housing Authority of the City of Madera, Miscellaneous |
| 233. City of Woodlake, Miscellaneous | 283. Human Rights/Fair Housing Commission of the City and
County of Sacramento, Miscellaneous |
| 234. City of Woodlake, Safety - Police | 284. Humboldt Bay Harbor Recreation and Conservation District,
Miscellaneous |
| 235. City of Yucaipa, Miscellaneous | 285. Humboldt No. 1 Fire Protection District of Humboldt County,
Safety - Fire |
| 236. Coachella Valley Association of Governments, Miscellaneous | 286. Independent Cities Association, Inc., Miscellaneous |
| 237. Coast Life Support District, Miscellaneous | 287. Indian Wells Valley Water District, Miscellaneous |
| 238. Coast Life Support District, Safety - Fire | 288. Inland Counties Regional Center, Inc., Miscellaneous |
| 239. Coastal Developmental Services Fdn DBA Westside Regional
Center, Miscellaneous | 289. Inland Empire Health Plan, Miscellaneous |
| 240. Compton Unified School District, Safety - Police | 290. Isla Vista Recreation and Park District, Miscellaneous |
| 241. Contra Costa County Schools Insurance Group, Miscellaneous | 291. June Lake Public Utility District, Miscellaneous |
| 242. Cooperative Personnel Services, Miscellaneous | 292. Kern Health Systems, Miscellaneous |
| 243. Cottonwood Fire Protection District, Safety - Fire | 293. Kings Mosquito Abatement District, Miscellaneous |
| 244. County of Amador, Safety - County Peace Officer | 294. Laguna Beach County Water District, Miscellaneous |
| 245. County of Amador, Safety - Fire | 295. Lake Don Pedro Community Services District, Miscellaneous |
| 246. County of Amador, Safety - Prosecutor | 296. Leucadia Wastewater District, Miscellaneous |
| 247. County of El Dorado, Miscellaneous | 297. Los Angeles County Area 'E' Civil Defense and Disaster
Board, Miscellaneous |
| 248. County of Inyo, Safety - County Peace Officer | 298. Los Angeles County Sanitation District No. 2, Miscellaneous |
| 249. County of Lassen, Safety - County Peace Officer | 299. Los Angeles County West Vector Control District,
Miscellaneous |
| 250. County of Plumas, Miscellaneous | 300. Los Angeles Regionalized Insurance Services Authority,
Miscellaneous |
| 251. County of Santa Cruz, Safety - County Peace Officer | 301. Los Gatos-Saratoga Department of Community Education and
Recreation, Miscellaneous |
| 252. County of Santa Cruz, Safety - Sheriff | 302. Los Osos Community Services District, Miscellaneous |
| 253. County of Yuba, Miscellaneous | 303. Los Osos Community Services District, Safety - Fire |
| 254. County of Yuba, Safety - County Peace Officer | 304. Majestic Pines Community Services District, Miscellaneous |
| 255. Crestline Lake Arrowhead Water Agency, Miscellaneous | |
| 256. Dairy Council of California, Miscellaneous | |
| 257. Del Norte County Library District, Miscellaneous | |
| 258. Dougherty Regional Fire Authority, Miscellaneous | |
| 259. Dougherty Regional Fire Authority, Safety - Fire | |
| 260. El Dorado County Fire Protection District, Miscellaneous | |
| 261. El Dorado County Fire Protection District, Safety - Fire | |

Appendix E – List of Contracting Agencies (continued)

Level 3 (continued)

- | | |
|--|---|
| 305. Management of Emeryville Services Authority, Miscellaneous | 349. Redwood Empire School Insurance Group, Miscellaneous |
| 306. Meeks Bay Fire Protection District, Miscellaneous | 350. Rescue Fire Protection District, Miscellaneous |
| 307. Mendocino Transit Authority, Miscellaneous | 351. Rincon Del Diablo Municipal Water District, Safety - Fire |
| 308. Metropolitan Transportation Commission, Miscellaneous | 352. Riverbank City Housing Authority, Miscellaneous |
| 309. Mid City Development Corporation, Miscellaneous | 353. Riverside County Department of Waste Resources, Miscellaneous |
| 310. Minter Field Airport District, Miscellaneous | 354. Riverside County Transportation Commission, Miscellaneous |
| 311. Mojave Air and Space Port, Safety - Fire | 355. Roseville Public Cemetery District, Miscellaneous |
| 312. Mojave Water Agency, Miscellaneous | 356. Ross Valley Fire Department, Safety - Fire |
| 313. Montecito Fire Protection District, Miscellaneous | 357. Rural County Representatives of California, Miscellaneous |
| 314. Montecito Fire Protection District, Safety - Fire | 358. Russian River Fire Protection District, Miscellaneous |
| 315. Monterey County Regional Fire Protection District, Miscellaneous | 359. Russian River Fire Protection District, Safety - Fire |
| 316. Monterey County Regional Fire Protection District, Safety - Fire | 360. Sacramento Area Council of Governments, Miscellaneous |
| 317. Monterey One Water, Miscellaneous | 361. Sacramento Metropolitan Air Quality Management District, Miscellaneous |
| 318. Monterey Regional Waste Management District, Miscellaneous | 362. Sacramento Public Library Authority, Miscellaneous |
| 319. Mountains Recreation and Conservation Authority, Miscellaneous | 363. Sacramento Regional Fire/EMS Communications Center, Miscellaneous |
| 320. Murrieta Fire Protection District, Miscellaneous | 364. Sacramento Transportation Authority, Miscellaneous |
| 321. Nevada Irrigation District, Miscellaneous | 365. Sacramento-Yolo Mosquito and Vector Control District, Miscellaneous |
| 322. North Bay Schools Insurance Authority, Miscellaneous | 366. Salida Fire Protection District, Miscellaneous |
| 323. North County Fire Protection District of Monterey County, Safety - Fire | 367. Salida Fire Protection District, Safety - Fire |
| 324. North Tahoe Fire Protection District, Miscellaneous | 368. Samoa Peninsula Fire Protection District, Safety - Fire |
| 325. North Tahoe Fire Protection District, Safety - Fire | 369. San Andreas Regional Center, Inc., Miscellaneous |
| 326. Northern Sierra Air Quality Management District, Miscellaneous | 370. San Diego County Law Library, Miscellaneous |
| 327. Novato Sanitary District, Miscellaneous | 371. San Diego Rural Fire Protection District, Miscellaneous |
| 328. Oakdale Rural Fire Protection District, Miscellaneous | 372. San Diego Rural Fire Protection District, Safety - Fire |
| 329. Oakdale Rural Fire Protection District, Safety - Fire | 373. San Dieguito Water District, Miscellaneous |
| 330. Oakland Unified School District, Safety - Police | 374. San Francisco Health Authority, Miscellaneous |
| 331. Ojai Valley Sanitary District, Miscellaneous | 375. San Joaquin Delta Community College District, Safety - Police |
| 332. Ophir Hill Fire Protection District, Miscellaneous | 376. San Luis Obispo Regional Transit Authority, Miscellaneous |
| 333. Ophir Hill Fire Protection District, Safety - Fire | 377. San Mateo County Harbor District, Miscellaneous |
| 334. Orange County Health Authority, Miscellaneous | 378. San Mateo County In-Home Supportive Services Public Authority, Miscellaneous |
| 335. Orange County Transportation Authority, Miscellaneous | 379. Santa Barbara Regional Health Authority, Miscellaneous |
| 336. Pajaro Valley Fire Protection Agency, Safety - Fire | 380. Santa Clara County Central Fire Protection District, Miscellaneous |
| 337. Peardale Chicago Park Fire Protection District, Safety - Fire | 381. Santa Clara County Central Fire Protection District, Safety - Fire |
| 338. Peninsula Fire Protection District, Miscellaneous | 382. Santa Clara County Health Authority, Miscellaneous |
| 339. Penn Valley Fire Protection District, Miscellaneous | 383. Santa Clarita Valley School Food Services Agency, Miscellaneous |
| 340. Personal Assistance Services Council, Miscellaneous | 384. Santa Cruz Metropolitan Transit District, Miscellaneous |
| 341. Placer Hills Fire Protection District, Miscellaneous | 385. Santa Cruz Regional 9-1-1, Miscellaneous |
| 342. Pleasant Hill - Martinez Joint Facilities Agency, Miscellaneous | 386. Santa Fe Irrigation District, Miscellaneous |
| 343. Pomona Valley Transportation Authority, Miscellaneous | 387. Santa Maria Public Airport District, Miscellaneous |
| 344. Public Agency Risk Sharing Authority of California, Miscellaneous | 388. School Risk And Insurance Management Group, Miscellaneous |
| 345. Public Entity Risk Management Authority, Miscellaneous | 389. Schools Excess Liability Fund, Miscellaneous |
| 346. Public Transportation Services Corporation, Miscellaneous | 390. Scotts Valley Water District, Miscellaneous |
| 347. Quincy Community Services District, Miscellaneous | |
| 348. Rancho Murieta Community Services District, Miscellaneous | |

Appendix E – List of Contracting Agencies (continued)

Level 3 (continued)

- | | |
|---|---|
| 391. Sewer Authority Mid-Coastside, Miscellaneous | Miscellaneous |
| 392. Shasta Lake Fire Protection District, Safety - Fire | 412. Tuolumne Utilities District, Miscellaneous |
| 393. Solano Cemetery District, Miscellaneous | 413. Valley Mountain Regional Center, Inc., Miscellaneous |
| 394. Solano County Water Agency, Miscellaneous | 414. Valley-Wide Recreation and Park District, Miscellaneous |
| 395. Solano Transportation Authority, Miscellaneous | 415. Ventura County Schools Business Services Authority, Miscellaneous |
| 396. Southern California Regional Rail Authority, Miscellaneous | 416. Victor Valley Wastewater Reclamation Authority, Miscellaneous |
| 397. Stockton Unified School District, Safety - Police | 417. Water Facilities Authority, Miscellaneous |
| 398. Sunnyslope County Water District, Miscellaneous | 418. Weaverville Community Services District, Miscellaneous |
| 399. Sweetwater Springs Water District, Miscellaneous | 419. West Almanor Community Services District, Safety - Fire |
| 400. Tahoe-Truckee Sanitation Agency, Miscellaneous | 420. West Cities Communication Center, Miscellaneous |
| 401. Tehama County Mosquito Abatement District, Miscellaneous | 421. West End Communications Authority, Miscellaneous |
| 402. Town of Atherton, Miscellaneous | 422. West Valley-Mission Community College District, Safety - Police |
| 403. Town of Atherton, Safety - Police | 423. Westlands Water District, Miscellaneous |
| 404. Town of Fairfax, Miscellaneous | 424. Yolo County Public Agency Risk Management Insurance Authority, Miscellaneous |
| 405. Town of Fairfax, Safety - Police | 425. Yolo County Transportation District, Miscellaneous |
| 406. Town of Loomis, Miscellaneous | 426. Yuba County Water Agency, Miscellaneous |
| 407. Town of Truckee, Miscellaneous | 427. Yuba Sutter Transit Authority, Miscellaneous |
| 408. Town of Yucca Valley, Miscellaneous | |
| 409. Transportation Agency for Monterey County, Miscellaneous | |
| 410. Tri-City Mental Health Center, Miscellaneous | |
| 411. Tri-Counties Association for the Developmentally Disabled, | |

Level 4

- | | |
|--|--|
| 1. Academic Senate for California Community Colleges, Miscellaneous | 22. Bolinas Community Public Utility District, Miscellaneous |
| 2. Alameda County Congestion Management Agency, Miscellaneous | 23. Bonita-Sunny side Fire Protection District, Safety - Fire |
| 3. Alameda County Schools Insurance Group, Miscellaneous | 24. Borrego Springs Fire Protection District, Safety - Fire |
| 4. Alameda County Transportation Commission, Miscellaneous | 25. Boulder Creek Fire Protection District, Safety - Fire |
| 5. Alameda County Transportation Improvement Authority, Miscellaneous | 26. Butte County Association of Governments, Miscellaneous |
| 6. Alameda County Waste Management Authority, Miscellaneous | 27. Butte County Fair Association, Miscellaneous |
| 7. Alameda County Water District, Miscellaneous | 28. Butte County In-Home Supportive Services Public Authority, Miscellaneous |
| 8. Albany Municipal Services Joint Powers Authority, Miscellaneous | 29. Butte Local Agency Formation Commission, Miscellaneous |
| 9. Alliance of Schools for Cooperative Insurance Programs, Miscellaneous | 30. Butte-Glenn Community College District, Safety - Police |
| 10. Alpine Fire Protection District, Miscellaneous | 31. Calaveras Council of Governments, Miscellaneous |
| 11. Alpine Fire Protection District, Safety - Fire | 32. California Firefighter's Joint Apprenticeship Committee, Miscellaneous |
| 12. Amador County Transportation Commission, Miscellaneous | 33. California Interscholastic Federation, Northern Section, Miscellaneous |
| 13. Aptos/La Selva Fire Protection Agency, Safety - Fire | 34. California Joint Powers Risk Management Authority, Miscellaneous |
| 14. Association of California Water Agencies - Joint Powers Insurance Authority, Miscellaneous | 35. California Pines Community Services District, Safety - Fire |
| 15. Bay Area Water Supply and Conservation Agency, Miscellaneous | 36. California Redevelopment Association Foundation, Miscellaneous |
| 16. Belmont Fire Protection District, Safety - Fire | 37. Carmel Regional Fire Ambulance Authority, Safety - Fire |
| 17. Berkeley Housing Authority, Miscellaneous | 38. Central Calaveras Fire and Rescue Protection District, Miscellaneous |
| 18. Big Bear Area Regional Wastewater Agency, Miscellaneous | 39. Central Contra Costa Solid Waste Authority, Miscellaneous |
| 19. Big Bear City Airport District, Miscellaneous | 40. Central County Fire Department, Miscellaneous |
| 20. Black Gold Cooperative Library System, Miscellaneous | 41. Central County Fire Department, Safety - Fire |
| 21. Blue Lake Fire Protection District, Safety - Fire | 42. Central Marin Fire Authority, Miscellaneous |
| | 43. Central Marin Fire Authority, Safety - Fire |

Appendix E – List of Contracting Agencies (continued)

Level 4 (continued)

- | | |
|--|--|
| 44. Central Marin Police Authority , Miscellaneous | 94. City of Camarillo, Miscellaneous |
| 45. Central Marin Police Authority , Safety - Police | 95. City of Campbell, Safety - Police |
| 46. Central Marin Sanitation Agency , Miscellaneous | 96. City of Carlsbad, Safety - Fire |
| 47. Children and Families Commission of San Luis Obispo County , Miscellaneous | 97. City of Carmel-By-The-Sea, Miscellaneous |
| 48. Chino Basin Watermaster, Miscellaneous | 98. City of Carmel-By-The-Sea, Safety - Fire |
| 49. Chino Valley Independent Fire District, Miscellaneous | 99. City of Carmel-By-The-Sea, Safety - Police |
| 50. Chino Valley Independent Fire District, Safety - Fire | 100. City of Carson, Miscellaneous |
| 51. City of Adelanto, Miscellaneous | 101. City of Cathedral City , Miscellaneous |
| 52. City of Albany , Safety - Fire | 102. City of Cathedral City , Safety - Fire |
| 53. City of Albany , Safety - Police | 103. City of Cathedral City , Safety - Police |
| 54. City of Anaheim, Miscellaneous | 104. City of Cerritos, Miscellaneous |
| 55. City of Anaheim, Safety - Fire | 105. City of Chico, Miscellaneous |
| 56. City of Anaheim, Safety - Police | 106. City of Chico, Safety - Fire |
| 57. City of Arcadia, Safety - Fire | 107. City of Chico, Safety - Police |
| 58. City of Atascadero, Safety - Fire | 108. City of Chino, Miscellaneous |
| 59. City of Atascadero, Safety - Police | 109. City of Chino, Safety - Police |
| 60. City of Auburn, Safety - Fire | 110. City of Chow chilla, Miscellaneous |
| 61. City of Auburn, Safety - Police | 111. City of Chow chilla, Safety - Fire |
| 62. City of Azusa, Miscellaneous | 112. City of Chow chilla, Safety - Police |
| 63. City of Azusa, Safety - Police | 113. City of Chula Vista, Miscellaneous |
| 64. City of Bakersfield, Miscellaneous | 114. City of Chula Vista, Safety - Fire |
| 65. City of Bakersfield, Safety - Fire | 115. City of Chula Vista, Safety - Police |
| 66. City of Bakersfield, Safety - Police | 116. City of Citrus Heights, Miscellaneous |
| 67. City of Barstow , Miscellaneous | 117. City of Citrus Heights, Safety - Police |
| 68. City of Barstow , Safety - Police | 118. City of Clayton, Safety - Police |
| 69. City of Beaumont, Safety - Police | 119. City of Clov erdale, Miscellaneous |
| 70. City of Bell Gardens, Miscellaneous | 120. City of Clov erdale, Safety - Fire |
| 71. City of Bell Gardens, Safety - Police | 121. City of Clov erdale, Safety - Police |
| 72. City of Belmont, Miscellaneous | 122. City of Clov is, Miscellaneous |
| 73. City of Belmont, Safety - Police | 123. City of Clov is, Safety - Fire |
| 74. City of Benicia, Safety - Fire | 124. City of Clov is, Safety - Police |
| 75. City of Benicia, Safety - Police | 125. City of Colton, Miscellaneous |
| 76. City of Berkeley, Safety - Police | 126. City of Colton, Safety - Fire |
| 77. City of Beverly Hills, Miscellaneous | 127. City of Colton, Safety - Police |
| 78. City of Beverly Hills, Safety - Fire | 128. City of Corona, Miscellaneous |
| 79. City of Beverly Hills, Safety - Police | 129. City of Corona, Safety - Fire |
| 80. City of Bishop, Safety - Fire | 130. City of Cotati, Miscellaneous |
| 81. City of Brea, Miscellaneous | 131. City of Cov ina, Miscellaneous |
| 82. City of Brea, Safety - Fire | 132. City of Cov ina, Safety - Fire |
| 83. City of Brea, Safety - Police | 133. City of Cov ina, Safety - Police |
| 84. City of Buena Park, Miscellaneous | 134. City of Culv er City , Safety - Fire |
| 85. City of Buena Park, Safety - Fire | 135. City of Culv er City , Safety - Police |
| 86. City of Buena Park, Safety - Police | 136. City of Cupertino, Miscellaneous |
| 87. City of Burbank, Miscellaneous | 137. City of Cypress, Safety - Police |
| 88. City of Burbank, Safety - Fire | 138. City of Daly City , Safety - Fire |
| 89. City of Burbank, Safety - Police | 139. City of Dav is, Miscellaneous |
| 90. City of Burlingame, Safety - Police | 140. City of Dav is, Safety - Fire |
| 91. City of California City , Miscellaneous | 141. City of Dav is, Safety - Police |
| 92. City of California City, Safety - Fire | 142. City of Diamond Bar, Miscellaneous |
| 93. City of California City, Safety - Police | 143. City of Dix on, Safety - Fire |
| | 144. City of Dix on, Safety - Police |

Appendix E – List of Contracting Agencies (continued)

Level 4 (continued)

- | | |
|---|--|
| 145. City of Downey, Miscellaneous | 196. City of Huntington Beach, Miscellaneous |
| 146. City of El Cajon, Miscellaneous | 197. City of Huntington Beach, Safety - Fire |
| 147. City of El Centro, Safety - Fire | 198. City of Huntington Beach, Safety - Other Safety |
| 148. City of El Centro, Safety - Police | 199. City of Huntington Beach, Safety - Police |
| 149. City of El Cerrito, Safety - Fire | 200. City of Huntington Park, Miscellaneous |
| 150. City of El Cerrito, Safety - Police | 201. City of Huntington Park, Safety - Fire |
| 151. City of El Monte, Miscellaneous | 202. City of Huntington Park, Safety - Police |
| 152. City of El Monte, Safety - Fire | 203. City of Industry, Miscellaneous |
| 153. City of El Monte, Safety - Police | 204. City of Irvine, Miscellaneous |
| 154. City of El Segundo, Safety - Fire | 205. City of Irvine, Safety - Police |
| 155. City of El Segundo, Safety - Police | 206. City of Irwindale, Miscellaneous |
| 156. City of Elk Grove, Miscellaneous | 207. City of Irwindale, Safety - Fire |
| 157. City of Elk Grove, Safety - Police | 208. City of Irwindale, Safety - Police |
| 158. City of Escondido, Miscellaneous | 209. City of La Canada Flintridge, Miscellaneous |
| 159. City of Escondido, Safety - Fire | 210. City of La Habra, Miscellaneous |
| 160. City of Escondido, Safety - Police | 211. City of La Habra, Safety - Fire |
| 161. City of Exeter, Miscellaneous | 212. City of La Habra, Safety - Police |
| 162. City of Fairfield, Miscellaneous | 213. City of La Mirada, Miscellaneous |
| 163. City of Fairfield, Safety - Fire | 214. City of La Palma, Miscellaneous |
| 164. City of Fairfield, Safety - Police | 215. City of La Palma, Safety - Police |
| 165. City of Fontana, Miscellaneous | 216. City of La Verne, Miscellaneous |
| 166. City of Fontana, Safety - Police | 217. City of La Verne, Safety - Fire |
| 167. City of Foster City, Miscellaneous | 218. City of La Verne, Safety - Police |
| 168. City of Foster City, Safety - Fire | 219. City of Laguna Beach, Miscellaneous |
| 169. City of Foster City, Safety - Police | 220. City of Laguna Beach, Safety - Fire |
| 170. City of Fountain Valley, Miscellaneous | 221. City of Laguna Beach, Safety - Other Safety |
| 171. City of Fremont, Miscellaneous | 222. City of Laguna Beach, Safety - Police |
| 172. City of Fremont, Safety - Police | 223. City of Larkspur, Safety - Fire |
| 173. City of Fullerton, Miscellaneous | 224. City of Lawndale, Miscellaneous |
| 174. City of Fullerton, Safety - Fire | 225. City of Lemon Grove, Miscellaneous |
| 175. City of Fullerton, Safety - Police | 226. City of Lemon Grove, Safety - Fire |
| 176. City of Gilroy, Safety - Fire | 227. City of Livermore, Miscellaneous |
| 177. City of Gilroy, Safety - Police | 228. City of Livermore, Safety - Police |
| 178. City of Glendale, Miscellaneous | 229. City of Loma Linda, Safety - Fire |
| 179. City of Glendale, Safety - Fire | 230. City of Lomita, Miscellaneous |
| 180. City of Glendale, Safety - Police | 231. City of Lompoc, Safety - Fire |
| 181. City of Glendora, Safety - Police | 232. City of Lompoc, Safety - Police |
| 182. City of Goleta, Miscellaneous | 233. City of Long Beach, Safety - Fire |
| 183. City of Grand Terrace, Miscellaneous | 234. City of Long Beach, Safety - Police |
| 184. City of Half Moon Bay, Safety - Police | 235. City of Los Alamitos, Miscellaneous |
| 185. City of Hanford, Safety - Police | 236. City of Los Alamitos, Safety - Police |
| 186. City of Hayward, Miscellaneous | 237. City of Lynwood, Miscellaneous |
| 187. City of Healdsburg, Miscellaneous | 238. City of Manhattan Beach, Safety - Fire |
| 188. City of Healdsburg, Safety - Fire | 239. City of Manteca, Miscellaneous |
| 189. City of Healdsburg, Safety - Police | 240. City of Manteca, Safety - Fire |
| 190. City of Hemet, Miscellaneous | 241. City of Manteca, Safety - Police |
| 191. City of Hesperia, Miscellaneous | 242. City of Marina, Miscellaneous |
| 192. City of Hollister, Miscellaneous | 243. City of Marina, Safety - Fire |
| 193. City of Hollister, Safety - Fire | 244. City of Marina, Safety - Police |
| 194. City of Hollister, Safety - Police | 245. City of Martinez, Safety - Police |
| 195. City of Hughson, Miscellaneous | 246. City of Marysville, Safety - Fire |

Appendix E – List of Contracting Agencies (continued)

Level 4 (continued)

- | | |
|---|---|
| 247. City of Marysville, Safety - Police | 298. City of Palm Springs, Safety - Fire |
| 248. City of Menifee, Miscellaneous | 299. City of Palm Springs, Safety - Police |
| 249. City of Menifee, Safety - Police | 300. City of Paramount, Miscellaneous |
| 250. City of Millbrae, Miscellaneous | 301. City of Pasadena, Miscellaneous |
| 251. City of Milpitas, Safety - Police | 302. City of Pasadena, Safety - Fire |
| 252. City of Monrovia, Miscellaneous | 303. City of Pasadena, Safety - Police |
| 253. City of Monrovia, Safety - Fire | 304. City of Petaluma, Safety - Fire |
| 254. City of Monrovia, Safety - Police | 305. City of Petaluma, Safety - Police |
| 255. City of Monterey, Miscellaneous | 306. City of Pico Rivera, Miscellaneous |
| 256. City of Monterey Park, Miscellaneous | 307. City of Piedmont, Safety - Fire |
| 257. City of Monterey Park, Safety - Fire | 308. City of Pittsburg, Safety - Police |
| 258. City of Monterey Park, Safety - Police | 309. City of Placentia, Miscellaneous |
| 259. City of Moorpark, Miscellaneous | 310. City of Placentia, Safety - Police |
| 260. City of Moreno Valley, Miscellaneous | 311. City of Pleasanton, Safety - Fire |
| 261. City of Morgan Hill, Miscellaneous | 312. City of Porterville, Miscellaneous |
| 262. City of Morgan Hill, Safety - Police | 313. City of Porterville, Safety - Fire |
| 263. City of Morro Bay, Miscellaneous | 314. City of Porterville, Safety - Police |
| 264. City of Morro Bay, Safety - Fire | 315. City of Rancho Cucamonga, Miscellaneous |
| 265. City of Morro Bay, Safety - Police | 316. City of Rancho Mirage, Miscellaneous |
| 266. City of Mountain View, Safety - Fire | 317. City of Rancho Palos Verdes, Miscellaneous |
| 267. City of Mountain View, Safety - Police | 318. City of Redding, Safety - Fire |
| 268. City of Murrieta, Miscellaneous | 319. City of Redding, Safety - Police |
| 269. City of Murrieta, Safety - Police | 320. City of Redondo Beach, Safety - Fire |
| 270. City of Napa, Safety - Police | 321. City of Redondo Beach, Safety - Police |
| 271. City of Newport Beach, Miscellaneous | 322. City of Redwood City, Safety - Fire |
| 272. City of Newport Beach, Safety - Fire | 323. City of Redwood City, Safety - Police |
| 273. City of Newport Beach, Safety - Other Safety | 324. City of Rialto, Miscellaneous |
| 274. City of Newport Beach, Safety - Police | 325. City of Rialto, Safety - Fire |
| 275. City of Norco, Miscellaneous | 326. City of Rocklin, Miscellaneous |
| 276. City of Norco, Safety - Fire | 327. City of Rocklin, Safety - Fire |
| 277. City of Novato, Miscellaneous | 328. City of Rocklin, Safety - Police |
| 278. City of Novato, Safety - Police | 329. City of Roseville, Safety - Police |
| 279. City of Oakdale, Safety - Fire | 330. City of San Bernardino, Miscellaneous |
| 280. City of Oakley, Miscellaneous | 331. City of San Bernardino, Safety - Fire |
| 281. City of Oakley, Safety - Police | 332. City of San Bruno, Miscellaneous |
| 282. City of Ontario, Safety - Fire | 333. City of San Bruno, Safety - Fire |
| 283. City of Ontario, Safety - Police | 334. City of San Bruno, Safety - Police |
| 284. City of Orange, Safety - Fire | 335. City of San Clemente, Miscellaneous |
| 285. City of Orange, Safety - Police | 336. City of San Fernando, Miscellaneous |
| 286. City of Oroville, Miscellaneous | 337. City of San Fernando, Safety - Police |
| 287. City of Oroville, Safety - Fire | 338. City of San Gabriel, Miscellaneous |
| 288. City of Oroville, Safety - Police | 339. City of San Gabriel, Safety - Fire |
| 289. City of Oxnard, Miscellaneous | 340. City of San Gabriel, Safety - Police |
| 290. City of Oxnard, Safety - Fire | 341. City of San Jacinto, Miscellaneous |
| 291. City of Pacific Grove, Miscellaneous | 342. City of San Jacinto, Safety - Fire |
| 292. City of Pacific Grove, Safety - Fire | 343. City of San Jacinto, Safety - Police |
| 293. City of Pacific Grove, Safety - Police | 344. City of San Leandro, Safety - Police |
| 294. City of Pacifica, Miscellaneous | 345. City of San Luis Obispo, Miscellaneous |
| 295. City of Pacifica, Safety - Fire | 346. City of San Luis Obispo, Safety - Police |
| 296. City of Pacifica, Safety - Police | 347. City of San Marino, Miscellaneous |
| 297. City of Palm Springs, Miscellaneous | 348. City of San Marino, Safety - Fire |

Appendix E – List of Contracting Agencies (continued)

Level 4 (continued)

- | | |
|--|---|
| 349. City of San Mateo, Safety - Fire | 400. City of Turlock, Safety - Police |
| 350. City of San Mateo, Safety - Police | 401. City of Tustin, Safety - Police |
| 351. City of San Ramon, Miscellaneous | 402. City of Ukiah, Safety - Police |
| 352. City of San Ramon, Safety - Police | 403. City of Vacaville, Miscellaneous |
| 353. City of Sand City, Miscellaneous | 404. City of Vacaville, Safety - Fire |
| 354. City of Sand City, Safety - Police | 405. City of Vacaville, Safety - Police |
| 355. City of Santa Ana, Miscellaneous | 406. City of Vallejo, Safety - Fire |
| 356. City of Santa Ana, Safety - Fire | 407. City of Vallejo, Safety - Police |
| 357. City of Santa Ana, Safety - Police | 408. City of Ventura, Miscellaneous |
| 358. City of Santa Barbara, Miscellaneous | 409. City of Ventura, Safety - Police |
| 359. City of Santa Clara, Safety - Fire | 410. City of Vernon, Safety - Fire |
| 360. City of Santa Clara, Safety - Police | 411. City of Victorville, Miscellaneous |
| 361. City of Santa Fe Springs, Miscellaneous | 412. City of Victorville, Safety - Fire |
| 362. City of Santa Fe Springs, Safety - Fire | 413. City of Villa Park, Miscellaneous |
| 363. City of Santa Maria, Miscellaneous | 414. City of Visalia, Safety - Fire |
| 364. City of Santa Maria, Safety - Fire | 415. City of Visalia, Safety - Police |
| 365. City of Santa Maria, Safety - Police | 416. City of Walnut, Miscellaneous |
| 366. City of Santa Monica, Miscellaneous | 417. City of Walnut Creek, Miscellaneous |
| 367. City of Santa Monica, Safety - Fire | 418. City of Walnut Creek, Safety - Police |
| 368. City of Santa Monica, Safety - Police | 419. City of West Covina, Miscellaneous |
| 369. City of Santa Rosa, Miscellaneous | 420. City of West Covina, Safety - Fire |
| 370. City of Santa Rosa, Safety - Fire | 421. City of West Covina, Safety - Police |
| 371. City of Santa Rosa, Safety - Police | 422. City of West Hollywood, Miscellaneous |
| 372. City of Sausalito, Safety - Fire | 423. City of West Sacramento, Safety - Fire |
| 373. City of Sausalito, Safety - Police | 424. City of Westminster, Miscellaneous |
| 374. City of Seaside, Miscellaneous | 425. City of Westminster, Safety - Police |
| 375. City of Seaside, Safety - Fire | 426. City of Wildomar, Miscellaneous |
| 376. City of Seaside, Safety - Police | 427. City of Woodland, Miscellaneous |
| 377. City of Sierra Madre, Miscellaneous | 428. City of Woodland, Safety - Fire |
| 378. City of Sierra Madre, Safety - Fire | 429. City of Woodland, Safety - Police |
| 379. City of Signal Hill, Safety - Fire | 430. City of Yorba Linda, Miscellaneous |
| 380. City of Signal Hill, Safety - Police | 431. City/County Association of Governments of San Mateo
County, Miscellaneous |
| 381. City of Simi Valley, Miscellaneous | 432. Cloverdale Fire Protection District, Safety - Fire |
| 382. City of Simi Valley, Safety - Police | 433. Coastside Fire Protection District, Miscellaneous |
| 383. City of Sonoma, Safety - Police | 434. Coastside Fire Protection District, Safety - Fire |
| 384. City of South Gate, Miscellaneous | 435. Colusa County One-Stop Partnership, Miscellaneous |
| 385. City of Stockton, Miscellaneous | 436. Conejo Recreation and Park District, Miscellaneous |
| 386. City of Stockton, Safety - Fire | 437. Contra Costa Transportation Authority, Miscellaneous |
| 387. City of Stockton, Safety - Police | 438. Costa Mesa Sanitary District, Miscellaneous |
| 388. City of Suisun City, Safety - Police | 439. Cosumnes Community Services District, Miscellaneous |
| 389. City of Temecula, Miscellaneous | 440. Cosumnes Community Services District, Safety - Fire |
| 390. City of Temple City, Miscellaneous | 441. County of El Dorado, Safety - County Peace Officer |
| 391. City of Thousand Oaks, Miscellaneous | 442. County of Humboldt, Miscellaneous |
| 392. City of Torrance, Safety - Fire | 443. County of Humboldt, Safety - County Peace Officer |
| 393. City of Torrance, Safety - Police | 444. County of Humboldt, Safety - Fire |
| 394. City of Tracy, Safety - Fire | 445. County of Kings, Safety - County Peace Officer |
| 395. City of Tracy, Safety - Police | 446. County of Kings, Safety - Fire |
| 396. City of Tulare, Miscellaneous | 447. County of Mono, Miscellaneous |
| 397. City of Tulare, Safety - Fire | 448. County of Mono, Safety - County Peace Officer |
| 398. City of Tulare, Safety - Police | 449. County of Mono, Safety - Fire |
| 399. City of Turlock, Safety - Fire | |

Appendix E – List of Contracting Agencies (continued)

Level 4 (continued)

450. County of Mono, Safety - Sheriff
451. County of Monterey, Safety - County Peace Officer
452. County of Monterey, Safety - Fire
453. County of Napa, Miscellaneous
454. County of Napa, Safety - County Peace Officer
455. County of Plumas, Safety - County Peace Officer
456. County of Plumas, Safety - Sheriff
457. County of Shasta, Safety - Sheriff
458. County of Siskiyou, Safety - County Peace Officer
459. County of Solano, Safety - County Peace Officer
460. County of Solano, Safety - Sheriff
461. Crestline Village Water District, Miscellaneous
462. Crockett - Valona Sanitary District, Miscellaneous
463. Crockett Community Services District, Miscellaneous
464. Cucamonga Valley Water District, Miscellaneous
465. Del Puerto Water District, Miscellaneous
466. East County Fire Protection District, Miscellaneous
467. East County Fire Protection District, Safety - Fire
468. East Valley Water District, Miscellaneous
469. Eastern Municipal Water District, Miscellaneous
470. Eastern Sierra Transit Authority, Miscellaneous
471. El Dorado County Transportation Commission, Miscellaneous
472. El Dorado County Water Agency, Miscellaneous
473. El Dorado Local Agency Formation Commission, Miscellaneous
474. Esparto Fire Protection District, Miscellaneous
475. Estero Municipal Improvement District, Miscellaneous
476. Estero Municipal Improvement District, Safety - Fire
477. Estero Municipal Improvement District, Safety - Police
478. Exeter District Ambulance, Miscellaneous
479. Fairfield-Suisun Sewer District, Miscellaneous
480. Far Northern Coordinating Council on Developmental Disabilities, Miscellaneous
481. Florin Resource Conservation District Elk Grove Water District, Miscellaneous
482. Georgetown Divide Resource Conservation District, Miscellaneous
483. Glen Ellen Fire Protection District, Safety - Fire
484. Glendale Community College District, Safety - Police
485. Gold Coast Transit, Miscellaneous
486. Gold Ridge Fire Protection District, Miscellaneous
487. Graton Community Services District, Miscellaneous
488. Hacienda La Puente Unified School District, Safety - Police
489. Hamilton Branch Fire Protection District, Safety - Fire
490. Health Plan of San Joaquin, Miscellaneous
491. Heartland Communications Facility Authority, Miscellaneous
492. Helendale Community Services District, Miscellaneous
493. Heritage Ranch Community Services District, Miscellaneous
494. Herlong Public Utility District, Miscellaneous
495. Hesperia Fire Protection District, Miscellaneous
496. Hesperia Fire Protection District, Safety - Fire
497. Hesperia Water District, Miscellaneous
498. Hidden Valley Lake Community Services District, Miscellaneous
499. Hopland Public Utility District, Miscellaneous
500. Housing Authority of the City of Alameda, Miscellaneous
501. Housing Authority of the City of San Buenaventura, Miscellaneous
502. Hub Cities Consortium, Miscellaneous
503. Humboldt Bay Fire Joint Powers Authority, Miscellaneous
504. Humboldt Bay Fire Joint Powers Authority, Safety - Fire
505. Humboldt Transit Authority, Miscellaneous
506. Humboldt Waste Management Authority, Miscellaneous
507. Idyllwild Fire Protection District, Safety - Fire
508. Intelcom Intelligent Telecommunications, Miscellaneous
509. Intergovernmental Training and Development Center, Miscellaneous
510. Ironhouse Sanitary District, Miscellaneous
511. Irvine Ranch Water District, Miscellaneous
512. Kaweah Delta Water Conservation District, Miscellaneous
513. Kensington Community Services District, Safety - Police
514. Kentfield Fire Protection District, Miscellaneous
515. Kentfield Fire Protection District, Safety - Fire
516. Kern-Tulare Water District, Miscellaneous
517. Kings County Area Public Transit Agency, Miscellaneous
518. Kings County Association of Governments, Miscellaneous
519. Kings County In-Home Supportive Services Public Authority, Miscellaneous
520. Lake County Fire Protection District, Miscellaneous
521. Lake County Fire Protection District, Safety - Fire
522. Lake Shastina Community Services District, Miscellaneous
523. Lake Shastina Community Services District, Safety - Police
524. Lake Valley Fire Protection District, Miscellaneous
525. Lake Valley Fire Protection District, Safety - Fire
526. Lakeport County Fire Protection District, Miscellaneous
527. Lakeport County Fire Protection District, Safety - Fire
528. Lakeside Fire Protection District, Safety - Fire
529. Lassen County Waterworks District No. 1, Miscellaneous
530. Linda Fire Protection District, Miscellaneous
531. Linda Fire Protection District, Safety - Fire
532. Livermore/Amador Valley Transit Authority, Miscellaneous
533. Local Agency Formation Commission of Monterey County, Miscellaneous
534. Local Agency Formation Commission of Solano County, Miscellaneous
535. Local Government Services Authority, a Joint Powers Authority, Miscellaneous
536. Los Angeles County Development Authority, Miscellaneous
537. Los Angeles Unified School District, Safety - Police
538. Mammoth Lakes Fire District, Safety - Fire
539. Mammoth Lakes Mosquito Abatement District, Miscellaneous
540. March Joint Powers Authority, Miscellaneous

Appendix E – List of Contracting Agencies (continued)

Level 4 (continued)

- | | |
|--|--|
| 541. Marin Community College District, Safety - Police | 585. Rincon Valley Fire Protection District, Miscellaneous |
| 542. Mendocino County Russian River Flood Control & Water Conservation Improvement Dt, Miscellaneous | 586. Rincon Valley Fire Protection District, Safety - Fire |
| 543. Metropolitan Water District of Southern California, Miscellaneous | 587. Rose Bowl Operating Company, Miscellaneous |
| 544. Midway Heights County Water District, Miscellaneous | 588. Rosedale-Rio Bravo Water Storage District, Miscellaneous |
| 545. Monterey Bay Unified Air Pollution Control District, Miscellaneous | 589. Sacramento Groundwater Authority, Miscellaneous |
| 546. Monterey Peninsula Regional Park District, Miscellaneous | 590. Sacramento Metropolitan Fire District, Miscellaneous |
| 547. Monterey Peninsula Water Management District, Miscellaneous | 591. Sacramento Metropolitan Fire District, Safety - Fire |
| 548. Municipal Pooling Authority, Miscellaneous | 592. Sacramento Suburban Water District, Miscellaneous |
| 549. Municipal Water District of Orange County, Miscellaneous | 593. Salinas Valley Solid Waste Authority, Miscellaneous |
| 550. Murrieta Fire Protection District, Safety - Fire | 594. San Bernardino City Unified School District, Safety - Police |
| 551. Murrieta Valley Cemetery District, Miscellaneous | 595. San Diego Association of Governments, Miscellaneous |
| 552. Napa County Mosquito Abatement District, Miscellaneous | 596. San Diego Community College District, Safety - Police |
| 553. Napa County Resource Conservation District, Miscellaneous | 597. San Diego Pooled Insurance Program Authority, Miscellaneous |
| 554. Napa Sanitation District, Miscellaneous | 598. San Diego Unified School District, Safety - Police |
| 555. Napa Valley Transportation Authority, Miscellaneous | 599. San Francisco Bay Area Rapid Transit District, Safety - Police |
| 556. Nevada County Consolidated Fire District, Miscellaneous | 600. San Francisco Bay Area Water Emergency Transportation Authority, Miscellaneous |
| 557. Nevada County Consolidated Fire District, Safety - Fire | 601. San Gabriel Valley Council of Governments, Miscellaneous |
| 558. Nevada-Sierra Connecting Point Public Authority, Miscellaneous | 602. San Joaquin County IHSS Public Authority, Miscellaneous |
| 559. Nipomo Community Services District, Miscellaneous | 603. San Luis Obispo Council of Governments, Miscellaneous |
| 560. North Bay Regional Center, Miscellaneous | 604. San Mateo Consolidated Fire Department, Miscellaneous |
| 561. North Coast Railroad Authority, Miscellaneous | 605. San Mateo Consolidated Fire Department, Safety - Fire |
| 562. North County Dispatch Joint Powers Authority, Miscellaneous | 606. San Miguel Community Services District, Miscellaneous |
| 563. North County Fire Protection District of San Diego County, Miscellaneous | 607. San Miguel Consolidated Fire Protection District, Miscellaneous |
| 564. North County Fire Protection District of San Diego County, Safety - Fire | 608. San Miguel Consolidated Fire Protection District, Safety - Fire |
| 565. Northshore Fire Protection District, Miscellaneous | 609. San Simeon Community Services District, Miscellaneous |
| 566. Northshore Fire Protection District, Safety - Fire | 610. Santa Ana Unified School District, Safety - Police |
| 567. Orange County Vector Control District, Miscellaneous | 611. Santa Clara Valley Water District, Miscellaneous |
| 568. Pasadena Unified School District, Safety - Police | 612. Santa Clarita Valley Water Agency, Miscellaneous |
| 569. Pebble Beach Community Services District, Miscellaneous | 613. Santa Cruz County Regional Transportation Commission, Miscellaneous |
| 570. Peninsula Traffic Congestion Relief Alliance, Miscellaneous | 614. Santa Margarita Water District, Miscellaneous |
| 571. Penn Valley Fire Protection District, Safety - Fire | 615. Schell Vista Fire Protection District, Safety - Fire |
| 572. Phelan Pinon Hills Community Services District, Miscellaneous | 616. Selma-Kingsburg-Fowler County Sanitation District, Miscellaneous |
| 573. Pixley Irrigation District, Miscellaneous | 617. Shasta Lake Fire Protection District, Miscellaneous |
| 574. Placer Mosquito and Vector Control District, Miscellaneous | 618. Shasta Regional Transportation Agency, Miscellaneous |
| 575. Plumas Eureka Community Services District, Miscellaneous | 619. Sierra-Sacramento Valley Emergency Medical Services Agency, Miscellaneous |
| 576. Point Montara Fire Protection District, Safety - Fire | 620. Silicon Valley Animal Control Authority, Miscellaneous |
| 577. Rancho Cucamonga Fire Protection District, Miscellaneous | 621. Silicon Valley Clean Water, Miscellaneous |
| 578. Rancho Cucamonga Fire Protection District, Safety - Fire | 622. Sonoma County Fire District, Miscellaneous |
| 579. Rancho Santa Fe Fire Protection District, Miscellaneous | 623. Sonoma County Fire District, Safety - Fire |
| 580. Rancho Santa Fe Fire Protection District, Safety - Fire | 624. Sonoma Marin Area Rail Transit District, Safety - Other Safety |
| 581. Redwood Empire Municipal Insurance Fund, Miscellaneous | 625. Soquel Creek Water District, Miscellaneous |
| 582. Regional Center of Orange County, Miscellaneous | 626. South Central Los Angeles Regional Center for Developmentally Disabled Persons, Miscellaneous |
| 583. Rescue Fire Protection District, Safety - Fire | 627. South Coast Water District, Miscellaneous |
| 584. Rincon Del Diablo Municipal Water District, Miscellaneous | 628. South County Support Services Agency, Miscellaneous |

Appendix E – List of Contracting Agencies (continued)

Level 4 (continued)

- | | |
|--|---|
| 629. South Orange County Wastewater Authority, Miscellaneous | 664. Treasure Island Development Authority, Miscellaneous |
| 630. South Placer Fire District, Miscellaneous | 665. Trindel Insurance Fund, Miscellaneous |
| 631. South Placer Fire District, Safety - Fire | 666. Truckee Fire Protection District, Miscellaneous |
| 632. Southeast Area Social Services Funding Authority, Miscellaneous | 667. Truckee Fire Protection District, Safety - Fire |
| 633. Stanislaus Consolidated Fire Protection District, Miscellaneous | 668. Truckee Tahoe Airport District, Miscellaneous |
| 634. Stanislaus Consolidated Fire Protection District, Safety - Fire | 669. Tuolumne Fire District, Safety - Fire |
| 635. State Center Community College District, Safety - Police | 670. Twain Harte Community Services District, Miscellaneous |
| 636. Stinson Beach County Water District, Miscellaneous | 671. Twain Harte Community Services District, Safety - Fire |
| 637. Stockton East Water District, Miscellaneous | 672. Twin Rivers Unified School District, Safety - Police |
| 638. Student Union, San Bernardino, California State University, Miscellaneous | 673. Ukiah Valley Fire District, Safety - Fire |
| 639. Successor Agency to the Redevelopment Agency of the City of San Bernardino, Miscellaneous | 674. Union Sanitary District, Miscellaneous |
| 640. Summit Cemetery District, Miscellaneous | 675. Upper San Gabriel Valley Municipal Water District, Miscellaneous |
| 641. Susanville Sanitary District, Miscellaneous | 676. Val Verde Unified School District, Safety - Police |
| 642. Temescal Valley Water District, Miscellaneous | 677. Valley Center Municipal Water District, Miscellaneous |
| 643. Three Rivers Community Services District, Miscellaneous | 678. Ventura County Schools Self-Funding Authority, Miscellaneous |
| 644. Three Valleys Municipal Water District, Miscellaneous | 679. Ventura Port District, Miscellaneous |
| 645. Tiburon Fire Protection District, Miscellaneous | 680. Ventura Port District, Safety - Police |
| 646. Tiburon Fire Protection District, Safety - Fire | 681. Victor Valley Transit Authority, Miscellaneous |
| 647. Town of Corte Madera, Miscellaneous | 682. Water Employee Services Authority, Miscellaneous |
| 648. Town of Corte Madera, Safety - Fire | 683. West Bay Sanitary District, Miscellaneous |
| 649. Town of Hillsborough, Safety - Police | 684. West Contra Costa Integrated Waste Management Authority, Miscellaneous |
| 650. Town of Los Altos Hills, Miscellaneous | 685. West Contra Costa Transportation Advisory Committee, Miscellaneous |
| 651. Town of Los Gatos, Miscellaneous | 686. West County Wastewater District, Miscellaneous |
| 652. Town of Los Gatos, Safety - Police | 687. West Valley Mosquito and Vector Control District, Miscellaneous |
| 653. Town of Mammoth Lakes, Miscellaneous | 688. Western Contra Costa Transit Authority, Miscellaneous |
| 654. Town of Mammoth Lakes, Safety - Police | 689. Winton Water and Sanitary District, Miscellaneous |
| 655. Town of Moraga, Miscellaneous | 690. Woodbridge Rural County Fire Protection District, Miscellaneous |
| 656. Town of Moraga, Safety - Police | 691. Woodbridge Rural County Fire Protection District, Safety - Fire |
| 657. Town of Paradise, Miscellaneous | 692. Woodside Fire Protection District, Safety - Fire |
| 658. Town of Paradise, Safety - Fire | 693. Yorba Linda Water District, Miscellaneous |
| 659. Town of Paradise, Safety - Police | 694. Yuima Municipal Water District, Miscellaneous |
| 660. Town of Tiburon, Miscellaneous | |
| 661. Town of Windsor, Miscellaneous | |
| 662. Transbay Joint Powers Authority, Miscellaneous | |
| 663. Transportation Authority of Marin, Miscellaneous | |

Indexed Level

- | | |
|---|---|
| 1. Alpine Springs County Water District, Miscellaneous | 8. Central Sierra Child Support Agency, Miscellaneous |
| 2. Alta California Regional Center, Inc., Miscellaneous | 9. Channel Islands Beach Community Services District, Miscellaneous |
| 3. BETA Healthcare Group Risk Management Authority, Miscellaneous | 10. City of Aliso Viejo, Miscellaneous |
| 4. California Central Valley Flood Control Association, Miscellaneous | 11. City of American Canyon, Miscellaneous |
| 5. California Special Districts Association, Miscellaneous | 12. City of Berkeley, Safety - Fire |
| 6. Central Fire Protection District of Santa Cruz County, Miscellaneous | 13. City of Crescent City, Safety - Fire |
| 7. Central Fire Protection District of Santa Cruz County, Safety - Fire | 14. City of Del Mar, Safety - Fire |
| | 15. City of Eastvale, Miscellaneous |
| | 16. City of Emeryville, Safety - Fire |
| | 17. City of Garden Grove, Miscellaneous |

Appendix E – List of Contracting Agencies (continued)

Indexed Level (continued)

- | | |
|--|--|
| 18. City of Garden Grove, Safety - Fire | Organization, Miscellaneous |
| 19. City of Garden Grove, Safety - Police | 66. Hesperia Unified School District, Safety - Police |
| 20. City of Greenfield, Safety - Fire | 67. Housing Authority of the County of Santa Cruz, Miscellaneous |
| 21. City of Hanford, Safety - Fire | 68. Inland Empire Resource Conservation District, Miscellaneous |
| 22. City of Madera, Miscellaneous | 69. Jurupa Area Recreation and Park District, Miscellaneous |
| 23. City of Madera, Safety - Police | 70. Loomis Fire Protection District, Miscellaneous |
| 24. City of Maywood, Miscellaneous | 71. Loomis Fire Protection District, Safety - Fire |
| 25. City of Mill Valley, Safety - Fire | 72. Marin Children and Families Commission, Miscellaneous |
| 26. City of Mill Valley, Safety - Police | 73. Marin County In-Home Supportive Services Public Authority, Miscellaneous |
| 27. City of Modesto, Safety - Fire | 74. Menlo Park Fire Protection District, Miscellaneous |
| 28. City of Modesto, Safety - Police | 75. Menlo Park Fire Protection District, Safety - Fire |
| 29. City of Monterey, Safety - Fire | 76. Midpeninsula Regional Open Space District, Miscellaneous |
| 30. City of Monterey, Safety - Police | 77. Mojave Air and Space Port, Miscellaneous |
| 31. City of Napa, Miscellaneous | 78. North Bay Cooperative Library System, Miscellaneous |
| 32. City of Napa, Safety - Fire | 79. North Delta Water Agency, Miscellaneous |
| 33. City of Newark, Miscellaneous | 80. Oceano Community Services District, Safety - Fire |
| 34. City of Newark, Safety - Fire | 81. Plumas Local Agency Formation Commission, Miscellaneous |
| 35. City of Newark, Safety - Police | 82. Redwood Coast Regional Center, Miscellaneous |
| 36. City of Oceanside, Safety - Other Safety | 83. Regional Center of the East Bay, Miscellaneous |
| 37. City of Poway, Miscellaneous | 84. Sacramento Area Flood Control Agency, Miscellaneous |
| 38. City of Poway, Safety - Fire | 85. San Diego County Office Of Education, Miscellaneous |
| 39. City of Rancho Cordova, Miscellaneous | 86. San Elijo Joint Powers Authority, Miscellaneous |
| 40. City of Rancho Santa Margarita, Miscellaneous | 87. San Francisquito Creek Joint Powers Authority, Miscellaneous |
| 41. City of Redding, Miscellaneous | 88. Santa Clara Valley Open Space Authority, Miscellaneous |
| 42. City of Sacramento, Safety - Police | 89. Santa Monica Community College District, Safety - Police |
| 43. City of Salinas, Safety - Police | 90. Schools Insurance Authority, Miscellaneous |
| 44. City of San Carlos, Safety - Fire | 91. Scotts Valley Fire Protection District, Miscellaneous |
| 45. City of San Marcos, Safety - Fire | 92. Scotts Valley Fire Protection District, Safety - Fire |
| 46. City of Santa Clarita, Miscellaneous | 93. Shasta Local Agency Formation Commission, Miscellaneous |
| 47. City of Santee, Safety - Fire | 94. Sonoma County Junior College District, Safety - Police |
| 48. City of Shasta Lake, Miscellaneous | 95. Sonoma Marin Area Rail Transit District, Miscellaneous |
| 49. City of Solana Beach, Safety - Fire | 96. State and Federal Contractors Water Agency, Miscellaneous |
| 50. City of South Lake Tahoe, Miscellaneous | 97. Stege Sanitary District, Miscellaneous |
| 51. City of South Lake Tahoe, Safety - Fire | 98. Town of Truckee, Safety - Police |
| 52. City of Yuba City, Miscellaneous | 99. Vallejo Flood and Wastewater District, Miscellaneous |
| 53. City of Yuba City, Safety - Fire | 100. Williams Fire Protection Authority, Safety - Fire |
| 54. City of Yuba City, Safety - Police | 101. Yolo County In-Home Supportive Services Public Authority, Miscellaneous |
| 55. Coalinga/Huron Unified School District Library District, Miscellaneous | 102. Yuba Community College District, Safety - Police |
| 56. Contra Costa Community College District, Safety - Police | |
| 57. Cooperative Organization for the Development of Employee Selection Procedures, Miscellaneous | |
| 58. County of Riverside, Miscellaneous | |
| 59. County of Riverside, Safety - County Peace Officer | |
| 60. County of Riverside, Safety - Fire | |
| 61. Foothill Municipal Water District, Miscellaneous | |
| 62. Foundation for California Community Colleges, Miscellaneous | |
| 63. Greater Los Angeles County Vector Control District, Miscellaneous | |
| 64. Greenfield Fire Protection District, Safety - Fire | |
| 65. Grossmont-Cuyamaca Community College District Auxiliary | |

Appendix F – 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 Base: 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 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 actuarial assumption changes, actuarial methodology changes, and/or experience gains and losses. Amortization methodology is determined by Board policy.

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

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.)

Normal Cost: The portion of the actuarial present value of projected benefits that is allocated to a period, typically twelve months, under the actuarial cost method. The normal cost may include a provision for expenses.

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.

Appendix F – Glossary of Actuarial Terms (continued)

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.

Term Insurance Method: An actuarial cost method designed such that contributions are made to the plan to meet benefit payments expected to fall due within the year for which the contribution is made.

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.

Actuarial Office
P.O. Box 942709 Sacramento, CA 94229-2709
TTY - (877) 249-7442
(888) 225-7377
FAX (916) 795-2744

Available online at www.calpers.ca.gov



California Public Employees' Retirement System
A Component Unit of the State of California

