

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.

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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.

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)

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|---|---|
| 92. Riverside County Flood Control and Water Conservation District, Miscellaneous | Miscellaneous |
| 93. Riverside County Regional Park and Open Space District, Miscellaneous | 95. Town of Hillsborough, Miscellaneous |
| 94. San Luis Obispo Cal Poly Associated Students, Inc., | 96. Town of Tiburon, Safety - Police |
| | 97. Town of Yountville, Miscellaneous |

Level 2

- | | |
|---|--|
| 1. Belmont-San Carlos Fire Department, Miscellaneous | 34. City of Palos Verdes Estates, Safety - Police |
| 2. Brooktrails Township Community Services District, Miscellaneous | 35. City of Patterson, Safety - Fire |
| 3. CSAC Excess Insurance Authority, Miscellaneous | 36. City of Patterson, Safety - Police |
| 4. California Interscholastic Federation, Southern Section, Miscellaneous | 37. City of Santa Barbara, Safety - Fire |
| 5. California Interscholastic Federation, State Office, Miscellaneous | 38. City of Santa Barbara, Safety - Police |
| 6. Capitol Area Development Authority, Miscellaneous | 39. City of Sierra Madre, Safety - Police |
| 7. City and County of San Francisco, Safety - Police | 40. City of Solana Beach, Miscellaneous |
| 8. City of Antioch, Miscellaneous | 41. City of Solana Beach, Safety - Other Safety |
| 9. City of Capitola, Miscellaneous | 42. City of Stanton, Miscellaneous |
| 10. City of Capitola, Safety - Fire | 43. City of Stanton, Safety - Fire |
| 11. City of Capitola, Safety - Police | 44. City of Stanton, Safety - Police |
| 12. City of Corcoran, Miscellaneous | 45. City of Susanville, Safety - Police |
| 13. City of Corcoran, Safety - Fire | 46. City of Visalia, Miscellaneous |
| 14. City of Corcoran, Safety - Police | 47. City of Vista, Miscellaneous |
| 15. City of Coronado, Safety - Fire | 48. City of Watsonville, Safety - Fire |
| 16. City of Coronado, Safety - Police | 49. City of Watsonville, Safety - Police |
| 17. City of Cotati, Safety - Police | 50. County of Alpine, Miscellaneous |
| 18. City of Crescent City, Miscellaneous | 51. County of Alpine, Safety - County Peace Officer |
| 19. City of Crescent City, Safety - Police | 52. County of Alpine, Safety - Fire |
| 20. City of Del Mar, Safety - Other Safety | 53. County of Calaveras, Miscellaneous |
| 21. City of Emeryville, Safety - Police | 54. County of Calaveras, Safety - County Peace Officer |
| 22. City of Eureka, Safety - Fire | 55. County of Calaveras, Safety - Fire |
| 23. City of Eureka, Safety - Police | 56. Los Angeles County Office of Education, Miscellaneous |
| 24. City of Glendora, Miscellaneous | 57. Main San Gabriel Basin Watermaster, Miscellaneous |
| 25. City of Inglewood, Safety - Police | 58. North Coast Unified Air Quality Management District, Miscellaneous |
| 26. City of La Puente, Miscellaneous | 59. Pacific Fire Protection District, Miscellaneous |
| 27. City of Lakeport, Miscellaneous | 60. Pupil Transportation Cooperative, Miscellaneous |
| 28. City of Lakeport, Safety - Police | 61. Rancho California Water District, Miscellaneous |
| 29. City of Martinez, Safety - Fire | 62. Running Springs Water District, Miscellaneous |
| 30. City of Montclair, Miscellaneous | 63. Running Springs Water District, Safety - Fire |
| 31. City of Montclair, Safety - Fire | 64. San Diego Trolley, Inc., Miscellaneous |
| 32. City of Palm Desert, Miscellaneous | 65. San Francisco County Transportation Authority, Miscellaneous |
| 33. City of Palos Verdes Estates, Safety - Fire | 66. Sonoma County Library, Miscellaneous |
| | 67. Tahoe Transportation District, Miscellaneous |

Level 3

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|---|--|
| 1. Access Services Incorporated, Miscellaneous | 6. Alameda County Fire Department, Safety - Fire |
| 2. Agoura Hills and Calabasas Community Center, Miscellaneous | 7. Alameda County Mosquito Abatement District, Miscellaneous |
| 3. Alameda Alliance for Health, Miscellaneous | 8. Alameda County Transportation Authority, Miscellaneous |
| 4. Alameda Corridor Transportation Authority, Miscellaneous | 9. American Canyon Fire Protection District, Safety - Fire |
| 5. Alameda County Fire Department, Miscellaneous | 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
13. Arcata Fire Protection District, Safety - Fire
14. Association of California Water Agencies, Miscellaneous
15. Avila Beach Community Services District, Miscellaneous
16. Baldwin Park Unified School District, Safety - Police
17. Beaumont-Cherry Valley Recreation and Park District, Miscellaneous
18. Belmont-San Carlos Fire Department, Safety - Fire
19. Belvedere-Tiburon Library Agency, Miscellaneous
20. Big Bear City Community Services District, Miscellaneous
21. Bighorn-Desert View Water Agency, Miscellaneous
22. Bodega Bay Fire Protection District, Miscellaneous
23. Bodega Bay Fire Protection District, Safety - Fire
24. Borrego Springs Fire Protection District, Miscellaneous
25. Borrego Water District, Miscellaneous
26. Broadmoor Police Protection District, Miscellaneous
27. Broadmoor Police Protection District, Safety - Police
28. Brooktrails Township Community Services District, Safety - Fire
29. Buena Park Library District, Miscellaneous
30. Butte County Air Quality Management District, Miscellaneous
31. Butte Schools Self-Funded Programs, Miscellaneous
32. California Firefighter's Joint Apprenticeship Committee, Safety - Fire
33. California Pines Community Services District, Miscellaneous
34. Cambria Community Healthcare District, Miscellaneous
35. Cambria Community Healthcare District, Safety - Fire
36. Cameron Park Community Services District, Miscellaneous
37. Cameron Park Community Services District, Safety - Fire
38. Camrosa Water District, Miscellaneous
39. Casitas Municipal Water District, Miscellaneous
40. Castaic Lake Water Agency, Miscellaneous
41. Castro Valley Sanitary District, Miscellaneous
42. Central Calaveras Fire and Rescue Protection District, Safety - Fire
43. Central Coast Water Authority, Miscellaneous
44. Central Valley Regional Center, Inc., Miscellaneous
45. City and County of San Francisco, Miscellaneous
46. City of Adelanto, Safety - Police
47. City of Agoura Hills, Miscellaneous
48. City of Alameda, Miscellaneous
49. City of Alameda, Safety - Fire
50. City of Alameda, Safety - Police
51. City of Alhambra, Miscellaneous
52. City of Alhambra, Safety - Fire
53. City of Alhambra, Safety - Police
54. City of Arcadia, Miscellaneous
55. City of Arcadia, Safety - Police
56. City of Bell, Safety - Fire
57. City of Bell, Safety - Police
58. City of Belvedere, Miscellaneous
59. City of Belvedere, Safety - Police
60. City of Benicia, Miscellaneous
61. City of Berkeley, Miscellaneous
62. City of Brentwood, Miscellaneous
63. City of Brentwood, Safety - Fire
64. City of Brentwood, Safety - Police
65. City of Brisbane, Miscellaneous
66. City of Brisbane, Safety - Fire
67. City of Brisbane, Safety - Police
68. City of Burlingame, Miscellaneous
69. City of Calabasas, Miscellaneous
70. City of Campbell, Miscellaneous
71. City of Carlsbad, Miscellaneous
72. City of Carlsbad, Safety - Police
73. City of Claremont, Miscellaneous
74. City of Claremont, Safety - Police
75. City of Clayton, Miscellaneous
76. City of Compton, Miscellaneous
77. City of Compton, Safety - Police
78. City of Corona, Safety - Police
79. City of Costa Mesa, Miscellaneous
80. City of Costa Mesa, Safety - Fire
81. City of Costa Mesa, Safety - Police
82. City of Cypress, Miscellaneous
83. City of Daly City, Miscellaneous
84. City of Daly City, Safety - Police
85. City of Dana Point, Miscellaneous
86. City of Del Mar, Miscellaneous
87. City of Dinuba, Miscellaneous
88. City of Dinuba, Safety - Fire
89. City of Dinuba, Safety - Police
90. City of Downey, Safety - Fire
91. City of Downey, Safety - Police
92. City of Duarte, Miscellaneous
93. City of Dublin, Miscellaneous
94. City of East Palo Alto, Miscellaneous
95. City of East Palo Alto, Safety - Police
96. City of El Cajon, Safety - Fire
97. City of El Cajon, Safety - Police
98. City of El Centro, Miscellaneous
99. City of Encinitas, Miscellaneous
100. City of Encinitas, Safety - Fire
101. City of Encinitas, Safety - Other Safety
102. City of Eureka, Miscellaneous
103. City of Exeter, Safety - Police
104. City of Fortuna, Safety - Police
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
111. City of Gridley , Safety - Fire
112. City of Gridley , Safety - Police
113. City of Half Moon Bay , Miscellaneous
114. City of Hanford , Miscellaneous
115. City of Hay ward , Safety - Fire
116. City of Hay ward , Safety - Police
117. City of Hemet , Safety - Fire
118. City of Hercules , Miscellaneous
119. City of Hercules , Safety - Police
120. City of Hermosa Beach , Miscellaneous
121. City of Hermosa Beach , Safety - Fire
122. City of Hermosa Beach , Safety - Police
123. City of Highland , Miscellaneous
124. City of Inglew ood , Miscellaneous
125. City of Inglew ood , Safety - Fire
126. City of La Mesa , Safety - Fire
127. City of La Mesa , Safety - Police
128. City of La Quinta , Miscellaneous
129. City of Laguna Hills , Miscellaneous
130. City of Laguna Niguel , Miscellaneous
131. City of Laguna Woods , Miscellaneous
132. City of Lake Forest , Miscellaneous
133. City of Lancaster , Miscellaneous
134. City of Larkspur , Miscellaneous
135. City of Lathrop , Miscellaneous
136. City of Lodi , Miscellaneous
137. City of Lodi , Safety - Fire
138. City of Lodi , Safety - Police
139. City of Lompoc , Miscellaneous
140. City of Los Altos , Miscellaneous
141. City of Los Altos , Safety - Police
142. City of Lynw ood , Safety - Fire
143. City of Manhattan Beach , Miscellaneous
144. City of Mary sville , Miscellaneous
145. City of Menlo Park , Safety - Police
146. City of Mill Valley , Miscellaneous
147. City of Milpitas , Miscellaneous
148. City of Milpitas , Safety - Fire
149. City of Mission Viejo , Miscellaneous
150. City of Modesto , Miscellaneous
151. City of Montclair , Safety - Police
152. City of Montebello , Safety - Fire
153. City of Montebello , Safety - Police
154. City of Mountain View , Miscellaneous
155. City of National City , Miscellaneous
156. City of National City , Safety - Fire
157. City of National City , Safety - Police
158. City of Norw alk , Miscellaneous
159. City of Oakdale , Miscellaneous
160. City of Oakdale , Safety - Police
161. City of Oakland , Safety - Fire
162. City of Oceanside , Miscellaneous
163. City of Oceanside , Safety - Fire
164. City of Oceanside , Safety - Police
165. City of Orange , Miscellaneous
166. City of Ox nard , Safety - Police
167. City of Palmdale , Miscellaneous
168. City of Palos Verdes Estates , Miscellaneous
169. City of Patterson , Miscellaneous
170. City of Petaluma , Miscellaneous
171. City of Pinole , Miscellaneous
172. City of Pinole , Safety - Fire
173. City of Pinole , Safety - Police
174. City of Pleasant Hill , Miscellaneous
175. City of Pleasant Hill , Safety - Police
176. City of Pleasanton , Miscellaneous
177. City of Redw ood City , Miscellaneous
178. City of Riverside , Miscellaneous
179. City of Riverside , Safety - Fire
180. City of Riverside , Safety - Police
181. City of Rohnert Park , Miscellaneous
182. City of Rohnert Park , Safety - Fire
183. City of Rohnert Park , Safety - Police
184. City of Rosev ille , Miscellaneous
185. City of Rosev ille , Safety - Fire
186. City of San Carlos , Safety - Police
187. City of San Dimas , Miscellaneous
188. City of San Joaquin , Miscellaneous
189. City of San Jose , Miscellaneous
190. City of San Luis Obispo , Safety - Fire
191. City of San Marino , Safety - Police
192. City of San Pablo , Miscellaneous
193. City of San Pablo , Safety - Police
194. City of Santa Cruz , Miscellaneous
195. City of Santa Cruz , Safety - Fire
196. City of Santa Cruz , Safety - Police
197. City of Santa Paula , Miscellaneous
198. City of Santa Paula , Safety - Police
199. City of Santee , Miscellaneous
200. City of Saratoga , Miscellaneous
201. City of Seal Beach , Miscellaneous
202. City of Seal Beach , Safety - Other Safety
203. City of Seal Beach , Safety - Police
204. City of Sebastopol , Miscellaneous
205. City of Sebastopol , Safety - Fire
206. City of Sebastopol , Safety - Police
207. City of Sonoma , Miscellaneous
208. City of Sonoma , Safety - Fire
209. City of South San Francisco , Safety - Fire
210. City of South San Francisco , 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
213. City of Sunnyvale, Miscellaneous
214. City of Sunnyvale, Safety - Police
215. City of Turlock, Miscellaneous
216. City of Tustin, Miscellaneous
217. City of Twentynine Palms, Miscellaneous
218. City of Ukiah, Miscellaneous
219. City of Ukiah, Safety - Fire
220. City of Union City, Miscellaneous
221. City of Upland, Miscellaneous
222. City of Upland, Safety - Fire
223. City of Upland, Safety - Police
224. City of Ventura, Safety - Fire
225. City of Vernon, Miscellaneous
226. City of Vernon, Safety - Prosecutor
227. City of Victorville, Safety - Police
228. City of Vista, Safety - Fire
229. City of West Sacramento, Miscellaneous
230. City of West Sacramento, Safety - Police
231. City of Whittier, Miscellaneous
232. City of Whittier, Safety - Police
233. City of Woodlake, Miscellaneous
234. City of Woodlake, Safety - Police
235. City of Yucaipa, Miscellaneous
236. Coachella Valley Association of Governments, Miscellaneous
237. Coast Life Support District, Miscellaneous
238. Coast Life Support District, Safety - Fire
239. Coastal Developmental Services Fdn DBA Westside Regional Center, Miscellaneous
240. Compton Unified School District, Safety - Police
241. Contra Costa County Schools Insurance Group, Miscellaneous
242. Cooperative Personnel Services, Miscellaneous
243. Cottonwood Fire Protection District, Safety - Fire
244. County of Amador, Safety - County Peace Officer
245. County of Amador, Safety - Fire
246. County of Amador, Safety - Prosecutor
247. County of El Dorado, Miscellaneous
248. County of Inyo, Safety - County Peace Officer
249. County of Lassen, Safety - County Peace Officer
250. County of Plumas, Miscellaneous
251. County of Santa Cruz, Safety - County Peace Officer
252. County of Santa Cruz, Safety - Sheriff
253. County of Yuba, Miscellaneous
254. County of Yuba, Safety - County Peace Officer
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
262. El Dorado County Transit Authority, Miscellaneous
263. El Dorado Hills County Water District, Miscellaneous
264. El Dorado Hills County Water District, Safety - Fire
265. Encina Wastewater Authority, Miscellaneous
266. Encinitas Fire Protection District, Miscellaneous
267. Encinitas Fire Protection District, Safety - Fire
268. Feather River Air Quality Management District, Miscellaneous
269. Fontana Unified School District, Safety - Police
270. Fort Ord Reuse Authority, Miscellaneous
271. Georgetown Fire Protection District, Miscellaneous
272. Georgetown Fire Protection District, Safety - Fire
273. Greater Anaheim Special Education Local Plan Area, Miscellaneous
274. Greater Vallejo Recreation District, Miscellaneous
275. Green Valley County Water District, Miscellaneous
276. Grossmont Healthcare District, Miscellaneous
277. Gualala Community Services District, Miscellaneous
278. Henry Miller Reclamation District No. 2131, Miscellaneous
279. Higgins Area Fire Protection District, Miscellaneous
280. Higgins Area Fire Protection District, Safety - Fire
281. Hilton Creek Community Services District, Miscellaneous
282. Housing Authority of the City of Madera, Miscellaneous
283. Human Rights/Fair Housing Commission of the City and County of Sacramento, Miscellaneous
284. Humboldt Bay Harbor Recreation and Conservation District, Miscellaneous
285. Humboldt No. 1 Fire Protection District of Humboldt County, Safety - Fire
286. Independent Cities Association, Inc., Miscellaneous
287. Indian Wells Valley Water District, Miscellaneous
288. Inland Counties Regional Center, Inc., Miscellaneous
289. Inland Empire Health Plan, Miscellaneous
290. Isla Vista Recreation and Park District, Miscellaneous
291. June Lake Public Utility District, Miscellaneous
292. Kern Health Systems, Miscellaneous
293. Kings Mosquito Abatement District, Miscellaneous
294. Laguna Beach County Water District, Miscellaneous
295. Lake Don Pedro Community Services District, Miscellaneous
296. Leucadia Wastewater District, Miscellaneous
297. Los Angeles County Area 'E' Civil Defense and Disaster Board, Miscellaneous
298. Los Angeles County Sanitation District No. 2, Miscellaneous
299. Los Angeles County West Vector Control District, Miscellaneous
300. Los Angeles Regionalized Insurance Services Authority, Miscellaneous
301. Los Gatos-Saratoga Department of Community Education and Recreation, Miscellaneous
302. Los Osos Community Services District, Miscellaneous
303. Los Osos Community Services District, Safety - Fire
304. Majestic Pines Community Services District, Miscellaneous

Appendix E – List of Contracting Agencies (continued)

Level 3 (continued)

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

Appendix E – List of Contracting Agencies (continued)

Level 3 (continued)

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| 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

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| 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
45. Central Marin Police Authority , Safety - Police
46. Central Marin Sanitation Agency , Miscellaneous
47. Children and Families Commission of San Luis Obispo County , Miscellaneous
48. Chino Basin Watermaster, Miscellaneous
49. Chino Valley Independent Fire District, Miscellaneous
50. Chino Valley Independent Fire District, Safety - Fire
51. City of Adelanto, Miscellaneous
52. City of Albany , Safety - Fire
53. City of Albany , Safety - Police
54. City of Anaheim, Miscellaneous
55. City of Anaheim, Safety - Fire
56. City of Anaheim, Safety - Police
57. City of Arcadia, Safety - Fire
58. City of Atascadero, Safety - Fire
59. City of Atascadero, Safety - Police
60. City of Auburn, Safety - Fire
61. City of Auburn, Safety - Police
62. City of Azusa, Miscellaneous
63. City of Azusa, Safety - Police
64. City of Bakersfield, Miscellaneous
65. City of Bakersfield, Safety - Fire
66. City of Bakersfield, Safety - Police
67. City of Barstow , Miscellaneous
68. City of Barstow , Safety - Police
69. City of Beaumont, Safety - Police
70. City of Bell Gardens, Miscellaneous
71. City of Bell Gardens, Safety - Police
72. City of Belmont, Miscellaneous
73. City of Belmont, Safety - Police
74. City of Benicia, Safety - Fire
75. City of Benicia, Safety - Police
76. City of Berkeley , Safety - Police
77. City of Beverly Hills, Miscellaneous
78. City of Beverly Hills, Safety - Fire
79. City of Beverly Hills, Safety - Police
80. City of Bishop, Safety - Fire
81. City of Brea, Miscellaneous
82. City of Brea, Safety - Fire
83. City of Brea, Safety - Police
84. City of Buena Park, Miscellaneous
85. City of Buena Park, Safety - Fire
86. City of Buena Park, Safety - Police
87. City of Burbank, Miscellaneous
88. City of Burbank, Safety - Fire
89. City of Burbank, Safety - Police
90. City of Burlingame, Safety - Police
91. City of California City , Miscellaneous
92. City of California City , Safety - Fire
93. City of California City , Safety - Police
94. City of Camarillo, Miscellaneous
95. City of Campbell, Safety - Police
96. City of Carlsbad, Safety - Fire
97. City of Carmel-By-The-Sea, Miscellaneous
98. City of Carmel-By-The-Sea, Safety - Fire
99. City of Carmel-By-The-Sea, Safety - Police
100. City of Carson, Miscellaneous
101. City of Cathedral City , Miscellaneous
102. City of Cathedral City , Safety - Fire
103. City of Cathedral City , Safety - Police
104. City of Cerritos, Miscellaneous
105. City of Chico, Miscellaneous
106. City of Chico, Safety - Fire
107. City of Chico, Safety - Police
108. City of Chino, Miscellaneous
109. City of Chino, Safety - Police
110. City of Chow chilla, Miscellaneous
111. City of Chow chilla, Safety - Fire
112. City of Chow chilla, Safety - Police
113. City of Chula Vista, Miscellaneous
114. City of Chula Vista, Safety - Fire
115. City of Chula Vista, Safety - Police
116. City of Citrus Heights, Miscellaneous
117. City of Citrus Heights, Safety - Police
118. City of Clayton, Safety - Police
119. City of Clov erdale, Miscellaneous
120. City of Clov erdale, Safety - Fire
121. City of Clov erdale, Safety - Police
122. City of Clov is, Miscellaneous
123. City of Clov is, Safety - Fire
124. City of Clov is, Safety - Police
125. City of Colton, Miscellaneous
126. City of Colton, Safety - Fire
127. City of Colton, Safety - Police
128. City of Corona, Miscellaneous
129. City of Corona, Safety - Fire
130. City of Cotati, Miscellaneous
131. City of Cov ina, Miscellaneous
132. City of Cov ina, Safety - Fire
133. City of Cov ina, Safety - Police
134. City of Culv er City , Safety - Fire
135. City of Culv er City , Safety - Police
136. City of Cupertino, Miscellaneous
137. City of Cypress, Safety - Police
138. City of Daly City , Safety - Fire
139. City of Dav is, Miscellaneous
140. City of Dav is, Safety - Fire
141. City of Dav is, Safety - Police
142. City of Diamond Bar, Miscellaneous
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
146. City of El Cajon, Miscellaneous
147. City of El Centro, Safety - Fire
148. City of El Centro, Safety - Police
149. City of El Cerrito, Safety - Fire
150. City of El Cerrito, Safety - Police
151. City of El Monte, Miscellaneous
152. City of El Monte, Safety - Fire
153. City of El Monte, Safety - Police
154. City of El Segundo, Safety - Fire
155. City of El Segundo, Safety - Police
156. City of Elk Grove, Miscellaneous
157. City of Elk Grove, Safety - Police
158. City of Escondido, Miscellaneous
159. City of Escondido, Safety - Fire
160. City of Escondido, Safety - Police
161. City of Exeter, Miscellaneous
162. City of Fairfield, Miscellaneous
163. City of Fairfield, Safety - Fire
164. City of Fairfield, Safety - Police
165. City of Fontana, Miscellaneous
166. City of Fontana, Safety - Police
167. City of Foster City, Miscellaneous
168. City of Foster City, Safety - Fire
169. City of Foster City, Safety - Police
170. City of Fountain Valley, Miscellaneous
171. City of Fremont, Miscellaneous
172. City of Fremont, Safety - Police
173. City of Fullerton, Miscellaneous
174. City of Fullerton, Safety - Fire
175. City of Fullerton, Safety - Police
176. City of Gilroy, Safety - Fire
177. City of Gilroy, Safety - Police
178. City of Glendale, Miscellaneous
179. City of Glendale, Safety - Fire
180. City of Glendale, Safety - Police
181. City of Glendora, Safety - Police
182. City of Goleta, Miscellaneous
183. City of Grand Terrace, Miscellaneous
184. City of Half Moon Bay, Safety - Police
185. City of Hanford, Safety - Police
186. City of Hayward, Miscellaneous
187. City of Healdsburg, Miscellaneous
188. City of Healdsburg, Safety - Fire
189. City of Healdsburg, Safety - Police
190. City of Hemet, Miscellaneous
191. City of Hesperia, Miscellaneous
192. City of Hollister, Miscellaneous
193. City of Hollister, Safety - Fire
194. City of Hollister, Safety - Police
195. City of Hughson, Miscellaneous
196. City of Huntington Beach, Miscellaneous
197. City of Huntington Beach, Safety - Fire
198. City of Huntington Beach, Safety - Other Safety
199. City of Huntington Beach, Safety - Police
200. City of Huntington Park, Miscellaneous
201. City of Huntington Park, Safety - Fire
202. City of Huntington Park, Safety - Police
203. City of Industry, Miscellaneous
204. City of Irvine, Miscellaneous
205. City of Irvine, Safety - Police
206. City of Irwindale, Miscellaneous
207. City of Irwindale, Safety - Fire
208. City of Irwindale, Safety - Police
209. City of La Canada Flintridge, Miscellaneous
210. City of La Habra, Miscellaneous
211. City of La Habra, Safety - Fire
212. City of La Habra, Safety - Police
213. City of La Mirada, Miscellaneous
214. City of La Palma, Miscellaneous
215. City of La Palma, Safety - Police
216. City of La Verne, Miscellaneous
217. City of La Verne, Safety - Fire
218. City of La Verne, Safety - Police
219. City of Laguna Beach, Miscellaneous
220. City of Laguna Beach, Safety - Fire
221. City of Laguna Beach, Safety - Other Safety
222. City of Laguna Beach, Safety - Police
223. City of Larkspur, Safety - Fire
224. City of Lawndale, Miscellaneous
225. City of Lemon Grove, Miscellaneous
226. City of Lemon Grove, Safety - Fire
227. City of Livermore, Miscellaneous
228. City of Livermore, Safety - Police
229. City of Loma Linda, Safety - Fire
230. City of Lomita, Miscellaneous
231. City of Lompoc, Safety - Fire
232. City of Lompoc, Safety - Police
233. City of Long Beach, Safety - Fire
234. City of Long Beach, Safety - Police
235. City of Los Alamitos, Miscellaneous
236. City of Los Alamitos, Safety - Police
237. City of Lynwood, Miscellaneous
238. City of Manhattan Beach, Safety - Fire
239. City of Manteca, Miscellaneous
240. City of Manteca, Safety - Fire
241. City of Manteca, Safety - Police
242. City of Marina, Miscellaneous
243. City of Marina, Safety - Fire
244. City of Marina, Safety - Police
245. City of Martinez, Safety - Police
246. City of Marysville, Safety - Fire

Appendix E – List of Contracting Agencies (continued)

Level 4 (continued)

247. City of Marysville, Safety - Police
248. City of Menifee, Miscellaneous
249. City of Menifee, Safety - Police
250. City of Millbrae, Miscellaneous
251. City of Milpitas, Safety - Police
252. City of Monrovia, Miscellaneous
253. City of Monrovia, Safety - Fire
254. City of Monrovia, Safety - Police
255. City of Monterey, Miscellaneous
256. City of Monterey Park, Miscellaneous
257. City of Monterey Park, Safety - Fire
258. City of Monterey Park, Safety - Police
259. City of Moorpark, Miscellaneous
260. City of Moreno Valley, Miscellaneous
261. City of Morgan Hill, Miscellaneous
262. City of Morgan Hill, Safety - Police
263. City of Morro Bay, Miscellaneous
264. City of Morro Bay, Safety - Fire
265. City of Morro Bay, Safety - Police
266. City of Mountain View, Safety - Fire
267. City of Mountain View, Safety - Police
268. City of Murrieta, Miscellaneous
269. City of Murrieta, Safety - Police
270. City of Napa, Safety - Police
271. City of Newport Beach, Miscellaneous
272. City of Newport Beach, Safety - Fire
273. City of Newport Beach, Safety - Other Safety
274. City of Newport Beach, Safety - Police
275. City of Norco, Miscellaneous
276. City of Norco, Safety - Fire
277. City of Novato, Miscellaneous
278. City of Novato, Safety - Police
279. City of Oakdale, Safety - Fire
280. City of Oakley, Miscellaneous
281. City of Oakley, Safety - Police
282. City of Ontario, Safety - Fire
283. City of Ontario, Safety - Police
284. City of Orange, Safety - Fire
285. City of Orange, Safety - Police
286. City of Oroville, Miscellaneous
287. City of Oroville, Safety - Fire
288. City of Oroville, Safety - Police
289. City of Oxnard, Miscellaneous
290. City of Oxnard, Safety - Fire
291. City of Pacific Grove, Miscellaneous
292. City of Pacific Grove, Safety - Fire
293. City of Pacific Grove, Safety - Police
294. City of Pacifica, Miscellaneous
295. City of Pacifica, Safety - Fire
296. City of Pacifica, Safety - Police
297. City of Palm Springs, Miscellaneous
298. City of Palm Springs, Safety - Fire
299. City of Palm Springs, Safety - Police
300. City of Paramount, Miscellaneous
301. City of Pasadena, Miscellaneous
302. City of Pasadena, Safety - Fire
303. City of Pasadena, Safety - Police
304. City of Petaluma, Safety - Fire
305. City of Petaluma, Safety - Police
306. City of Pico Rivera, Miscellaneous
307. City of Piedmont, Safety - Fire
308. City of Pittsburg, Safety - Police
309. City of Placentia, Miscellaneous
310. City of Placentia, Safety - Police
311. City of Pleasanton, Safety - Fire
312. City of Porterville, Miscellaneous
313. City of Porterville, Safety - Fire
314. City of Porterville, Safety - Police
315. City of Rancho Cucamonga, Miscellaneous
316. City of Rancho Mirage, Miscellaneous
317. City of Rancho Palos Verdes, Miscellaneous
318. City of Redding, Safety - Fire
319. City of Redding, Safety - Police
320. City of Redondo Beach, Safety - Fire
321. City of Redondo Beach, Safety - Police
322. City of Redwood City, Safety - Fire
323. City of Redwood City, Safety - Police
324. City of Rialto, Miscellaneous
325. City of Rialto, Safety - Fire
326. City of Rocklin, Miscellaneous
327. City of Rocklin, Safety - Fire
328. City of Rocklin, Safety - Police
329. City of Roseville, Safety - Police
330. City of San Bernardino, Miscellaneous
331. City of San Bernardino, Safety - Fire
332. City of San Bruno, Miscellaneous
333. City of San Bruno, Safety - Fire
334. City of San Bruno, Safety - Police
335. City of San Clemente, Miscellaneous
336. City of San Fernando, Miscellaneous
337. City of San Fernando, Safety - Police
338. City of San Gabriel, Miscellaneous
339. City of San Gabriel, Safety - Fire
340. City of San Gabriel, Safety - Police
341. City of San Jacinto, Miscellaneous
342. City of San Jacinto, Safety - Fire
343. City of San Jacinto, Safety - Police
344. City of San Leandro, Safety - Police
345. City of San Luis Obispo, Miscellaneous
346. City of San Luis Obispo, Safety - Police
347. City of San Marino, 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
350. City of San Mateo, Safety - Police
351. City of San Ramon, Miscellaneous
352. City of San Ramon, Safety - Police
353. City of Sand City, Miscellaneous
354. City of Sand City, Safety - Police
355. City of Santa Ana, Miscellaneous
356. City of Santa Ana, Safety - Fire
357. City of Santa Ana, Safety - Police
358. City of Santa Barbara, Miscellaneous
359. City of Santa Clara, Safety - Fire
360. City of Santa Clara, Safety - Police
361. City of Santa Fe Springs, Miscellaneous
362. City of Santa Fe Springs, Safety - Fire
363. City of Santa Maria, Miscellaneous
364. City of Santa Maria, Safety - Fire
365. City of Santa Maria, Safety - Police
366. City of Santa Monica, Miscellaneous
367. City of Santa Monica, Safety - Fire
368. City of Santa Monica, Safety - Police
369. City of Santa Rosa, Miscellaneous
370. City of Santa Rosa, Safety - Fire
371. City of Santa Rosa, Safety - Police
372. City of Sausalito, Safety - Fire
373. City of Sausalito, Safety - Police
374. City of Seaside, Miscellaneous
375. City of Seaside, Safety - Fire
376. City of Seaside, Safety - Police
377. City of Sierra Madre, Miscellaneous
378. City of Sierra Madre, Safety - Fire
379. City of Signal Hill, Safety - Fire
380. City of Signal Hill, Safety - Police
381. City of Simi Valley, Miscellaneous
382. City of Simi Valley, Safety - Police
383. City of Sonoma, Safety - Police
384. City of South Gate, Miscellaneous
385. City of Stockton, Miscellaneous
386. City of Stockton, Safety - Fire
387. City of Stockton, Safety - Police
388. City of Suisun City, Safety - Police
389. City of Temecula, Miscellaneous
390. City of Temple City, Miscellaneous
391. City of Thousand Oaks, Miscellaneous
392. City of Torrance, Safety - Fire
393. City of Torrance, Safety - Police
394. City of Tracy, Safety - Fire
395. City of Tracy, Safety - Police
396. City of Tulare, Miscellaneous
397. City of Tulare, Safety - Fire
398. City of Tulare, Safety - Police
399. City of Turlock, Safety - Fire
400. City of Turlock, Safety - Police
401. City of Tustin, Safety - Police
402. City of Ukiah, Safety - Police
403. City of Vacaville, Miscellaneous
404. City of Vacaville, Safety - Fire
405. City of Vacaville, Safety - Police
406. City of Vallejo, Safety - Fire
407. City of Vallejo, Safety - Police
408. City of Ventura, Miscellaneous
409. City of Ventura, Safety - Police
410. City of Vernon, Safety - Fire
411. City of Victorville, Miscellaneous
412. City of Victorville, Safety - Fire
413. City of Villa Park, Miscellaneous
414. City of Visalia, Safety - Fire
415. City of Visalia, Safety - Police
416. City of Walnut, Miscellaneous
417. City of Walnut Creek, Miscellaneous
418. City of Walnut Creek, Safety - Police
419. City of West Covina, Miscellaneous
420. City of West Covina, Safety - Fire
421. City of West Covina, Safety - Police
422. City of West Hollywood, Miscellaneous
423. City of West Sacramento, Safety - Fire
424. City of Westminster, Miscellaneous
425. City of Westminster, Safety - Police
426. City of Wildomar, Miscellaneous
427. City of Woodland, Miscellaneous
428. City of Woodland, Safety - Fire
429. City of Woodland, Safety - Police
430. City of Yorba Linda, Miscellaneous
431. City/County Association of Governments of San Mateo County, Miscellaneous
432. Cloverdale Fire Protection District, Safety - Fire
433. Coastside Fire Protection District, Miscellaneous
434. Coastside Fire Protection District, Safety - Fire
435. Colusa County One-Stop Partnership, Miscellaneous
436. Conejo Recreation and Park District, Miscellaneous
437. Contra Costa Transportation Authority, Miscellaneous
438. Costa Mesa Sanitary District, Miscellaneous
439. Cosumnes Community Services District, Miscellaneous
440. Cosumnes Community Services District, Safety - Fire
441. County of El Dorado, Safety - County Peace Officer
442. County of Humboldt, Miscellaneous
443. County of Humboldt, Safety - County Peace Officer
444. County of Humboldt, Safety - Fire
445. County of Kings, Safety - County Peace Officer
446. County of Kings, Safety - Fire
447. County of Mono, Miscellaneous
448. County of Mono, Safety - County Peace Officer
449. County of Mono, 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
542. Mendocino County Russian River Flood Control & Water Conservation Improvement Dt, Miscellaneous
543. Metropolitan Water District of Southern California, Miscellaneous
544. Midway Heights County Water District, Miscellaneous
545. Monterey Bay Unified Air Pollution Control District, Miscellaneous
546. Monterey Peninsula Regional Park District, Miscellaneous
547. Monterey Peninsula Water Management District, Miscellaneous
548. Municipal Pooling Authority, Miscellaneous
549. Municipal Water District of Orange County, Miscellaneous
550. Murrieta Fire Protection District, Safety - Fire
551. Murrieta Valley Cemetery District, Miscellaneous
552. Napa County Mosquito Abatement District, Miscellaneous
553. Napa County Resource Conservation District, Miscellaneous
554. Napa Sanitation District, Miscellaneous
555. Napa Valley Transportation Authority, Miscellaneous
556. Nevada County Consolidated Fire District, Miscellaneous
557. Nevada County Consolidated Fire District, Safety - Fire
558. Nevada-Sierra Connecting Point Public Authority, Miscellaneous
559. Nipomo Community Services District, Miscellaneous
560. North Bay Regional Center, Miscellaneous
561. North Coast Railroad Authority, Miscellaneous
562. North County Dispatch Joint Powers Authority, Miscellaneous
563. North County Fire Protection District of San Diego County, Miscellaneous
564. North County Fire Protection District of San Diego County, Safety - Fire
565. Northshore Fire Protection District, Miscellaneous
566. Northshore Fire Protection District, Safety - Fire
567. Orange County Vector Control District, Miscellaneous
568. Pasadena Unified School District, Safety - Police
569. Pebble Beach Community Services District, Miscellaneous
570. Peninsula Traffic Congestion Relief Alliance, Miscellaneous
571. Penn Valley Fire Protection District, Safety - Fire
572. Phelan Pinon Hills Community Services District, Miscellaneous
573. Pixley Irrigation District, Miscellaneous
574. Placer Mosquito and Vector Control District, Miscellaneous
575. Plumas Eureka Community Services District, Miscellaneous
576. Point Montara Fire Protection District, Safety - Fire
577. Rancho Cucamonga Fire Protection District, Miscellaneous
578. Rancho Cucamonga Fire Protection District, Safety - Fire
579. Rancho Santa Fe Fire Protection District, Miscellaneous
580. Rancho Santa Fe Fire Protection District, Safety - Fire
581. Redwood Empire Municipal Insurance Fund, Miscellaneous
582. Regional Center of Orange County, Miscellaneous
583. Rescue Fire Protection District, Safety - Fire
584. Rincon Del Diablo Municipal Water District, Miscellaneous
585. Rincon Valley Fire Protection District, Miscellaneous
586. Rincon Valley Fire Protection District, Safety - Fire
587. Rose Bowl Operating Company, Miscellaneous
588. Rosedale-Rio Bravo Water Storage District, Miscellaneous
589. Sacramento Groundwater Authority, Miscellaneous
590. Sacramento Metropolitan Fire District, Miscellaneous
591. Sacramento Metropolitan Fire District, Safety - Fire
592. Sacramento Suburban Water District, Miscellaneous
593. Salinas Valley Solid Waste Authority, Miscellaneous
594. San Bernardino City Unified School District, Safety - Police
595. San Diego Association of Governments, Miscellaneous
596. San Diego Community College District, Safety - Police
597. San Diego Pooled Insurance Program Authority, Miscellaneous
598. San Diego Unified School District, Safety - Police
599. San Francisco Bay Area Rapid Transit District, Safety - Police
600. San Francisco Bay Area Water Emergency Transportation Authority, Miscellaneous
601. San Gabriel Valley Council of Governments, Miscellaneous
602. San Joaquin County IHSS Public Authority, Miscellaneous
603. San Luis Obispo Council of Governments, Miscellaneous
604. San Mateo Consolidated Fire Department, Miscellaneous
605. San Mateo Consolidated Fire Department, Safety - Fire
606. San Miguel Community Services District, Miscellaneous
607. San Miguel Consolidated Fire Protection District, Miscellaneous
608. San Miguel Consolidated Fire Protection District, Safety - Fire
609. San Simeon Community Services District, Miscellaneous
610. Santa Ana Unified School District, Safety - Police
611. Santa Clara Valley Water District, Miscellaneous
612. Santa Clarita Valley Water Agency, Miscellaneous
613. Santa Cruz County Regional Transportation Commission, Miscellaneous
614. Santa Margarita Water District, Miscellaneous
615. Schell Vista Fire Protection District, Safety - Fire
616. Selma-Kingsburg-Fowler County Sanitation District, Miscellaneous
617. Shasta Lake Fire Protection District, Miscellaneous
618. Shasta Regional Transportation Agency, Miscellaneous
619. Sierra-Sacramento Valley Emergency Medical Services Agency, Miscellaneous
620. Silicon Valley Animal Control Authority, Miscellaneous
621. Silicon Valley Clean Water, Miscellaneous
622. Sonoma County Fire District, Miscellaneous
623. Sonoma County Fire District, Safety - Fire
624. Sonoma Marin Area Rail Transit District, Safety - Other Safety
625. Soquel Creek Water District, Miscellaneous
626. South Central Los Angeles Regional Center for Developmentally Disabled Persons, Miscellaneous
627. South Coast 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
630. South Placer Fire District, Miscellaneous
631. South Placer Fire District, Safety - Fire
632. Southeast Area Social Services Funding Authority, Miscellaneous
633. Stanislaus Consolidated Fire Protection District, Miscellaneous
634. Stanislaus Consolidated Fire Protection District, Safety - Fire
635. State Center Community College District, Safety - Police
636. Stinson Beach County Water District, Miscellaneous
637. Stockton East Water District, Miscellaneous
638. Student Union, San Bernardino, California State University, Miscellaneous
639. Successor Agency to the Redevelopment Agency of the City of San Bernardino, Miscellaneous
640. Summit Cemetery District, Miscellaneous
641. Susanville Sanitary District, Miscellaneous
642. Temescal Valley Water District, Miscellaneous
643. Three Rivers Community Services District, Miscellaneous
644. Three Valleys Municipal Water District, Miscellaneous
645. Tiburon Fire Protection District, Miscellaneous
646. Tiburon Fire Protection District, Safety - Fire
647. Town of Corte Madera, Miscellaneous
648. Town of Corte Madera, Safety - Fire
649. Town of Hillsborough, Safety - Police
650. Town of Los Altos Hills, Miscellaneous
651. Town of Los Gatos, Miscellaneous
652. Town of Los Gatos, Safety - Police
653. Town of Mammoth Lakes, Miscellaneous
654. Town of Mammoth Lakes, Safety - Police
655. Town of Moraga, Miscellaneous
656. Town of Moraga, Safety - Police
657. Town of Paradise, Miscellaneous
658. Town of Paradise, Safety - Fire
659. Town of Paradise, Safety - Police
660. Town of Tiburon, Miscellaneous
661. Town of Windsor, Miscellaneous
662. Transbay Joint Powers Authority, Miscellaneous
663. Transportation Authority of Marin, Miscellaneous
664. Treasure Island Development Authority, Miscellaneous
665. Trindel Insurance Fund, Miscellaneous
666. Truckee Fire Protection District, Miscellaneous
667. Truckee Fire Protection District, Safety - Fire
668. Truckee Tahoe Airport District, Miscellaneous
669. Tuolumne Fire District, Safety - Fire
670. Twain Harte Community Services District, Miscellaneous
671. Twain Harte Community Services District, Safety - Fire
672. Twin Rivers Unified School District, Safety - Police
673. Ukiah Valley Fire District, Safety - Fire
674. Union Sanitary District, Miscellaneous
675. Upper San Gabriel Valley Municipal Water District, Miscellaneous
676. Val Verde Unified School District, Safety - Police
677. Valley Center Municipal Water District, Miscellaneous
678. Ventura County Schools Self-Funding Authority, Miscellaneous
679. Ventura Port District, Miscellaneous
680. Ventura Port District, Safety - Police
681. Victor Valley Transit Authority, Miscellaneous
682. Water Employee Services Authority, Miscellaneous
683. West Bay Sanitary District, Miscellaneous
684. West Contra Costa Integrated Waste Management Authority, Miscellaneous
685. West Contra Costa Transportation Advisory Committee, Miscellaneous
686. West County Wastewater District, Miscellaneous
687. West Valley Mosquito and Vector Control District, Miscellaneous
688. Western Contra Costa Transit Authority, Miscellaneous
689. Winton Water and Sanitary District, Miscellaneous
690. Woodbridge Rural County Fire Protection District, Miscellaneous
691. Woodbridge Rural County Fire Protection District, Safety - Fire
692. Woodside Fire Protection District, Safety - Fire
693. Yorba Linda Water District, Miscellaneous
694. Yuima Municipal Water District, Miscellaneous

Indexed Level

1. Alpine Springs County Water District, Miscellaneous
2. Alta California Regional Center, Inc., Miscellaneous
3. BETA Healthcare Group Risk Management Authority, Miscellaneous
4. California Central Valley Flood Control Association, Miscellaneous
5. California Special Districts Association, Miscellaneous
6. Central Fire Protection District of Santa Cruz County, Miscellaneous
7. Central Fire Protection District of Santa Cruz County, Safety - Fire
8. Central Sierra Child Support Agency, Miscellaneous
9. Channel Islands Beach Community Services District, Miscellaneous
10. City of Aliso Viejo, Miscellaneous
11. City of American Canyon, Miscellaneous
12. City of Berkeley, Safety - Fire
13. City of Crescent City, 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
19. City of Garden Grove, Safety - Police
20. City of Greenfield, Safety - Fire
21. City of Hanford, Safety - Fire
22. City of Madera, Miscellaneous
23. City of Madera, Safety - Police
24. City of Maywood, Miscellaneous
25. City of Mill Valley, Safety - Fire
26. City of Mill Valley, Safety - Police
27. City of Modesto, Safety - Fire
28. City of Modesto, Safety - Police
29. City of Monterey, Safety - Fire
30. City of Monterey, Safety - Police
31. City of Napa, Miscellaneous
32. City of Napa, Safety - Fire
33. City of Newark, Miscellaneous
34. City of Newark, Safety - Fire
35. City of Newark, Safety - Police
36. City of Oceanside, Safety - Other Safety
37. City of Poway, Miscellaneous
38. City of Poway, Safety - Fire
39. City of Rancho Cordova, Miscellaneous
40. City of Rancho Santa Margarita, Miscellaneous
41. City of Redding, Miscellaneous
42. City of Sacramento, Safety - Police
43. City of Salinas, Safety - Police
44. City of San Carlos, Safety - Fire
45. City of San Marcos, Safety - Fire
46. City of Santa Clarita, Miscellaneous
47. City of Santee, Safety - Fire
48. City of Shasta Lake, Miscellaneous
49. City of Solana Beach, Safety - Fire
50. City of South Lake Tahoe, Miscellaneous
51. City of South Lake Tahoe, Safety - Fire
52. City of Yuba City, Miscellaneous
53. City of Yuba City, Safety - Fire
54. City of Yuba City, Safety - Police
55. Coalinga/Huron Unified School District Library District, Miscellaneous
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 Organization, Miscellaneous
66. Hesperia Unified School District, Safety - Police
67. Housing Authority of the County of Santa Cruz, Miscellaneous
68. Inland Empire Resource Conservation District, Miscellaneous
69. Jurupa Area Recreation and Park District, Miscellaneous
70. Loomis Fire Protection District, Miscellaneous
71. Loomis Fire Protection District, Safety - Fire
72. Marin Children and Families Commission, Miscellaneous
73. Marin County In-Home Supportive Services Public Authority, Miscellaneous
74. Menlo Park Fire Protection District, Miscellaneous
75. Menlo Park Fire Protection District, Safety - Fire
76. Midpeninsula Regional Open Space District, Miscellaneous
77. Mojave Air and Space Port, Miscellaneous
78. North Bay Cooperative Library System, Miscellaneous
79. North Delta Water Agency, Miscellaneous
80. Oceano Community Services District, Safety - Fire
81. Plumas Local Agency Formation Commission, Miscellaneous
82. Redwood Coast Regional Center, Miscellaneous
83. Regional Center of the East Bay, Miscellaneous
84. Sacramento Area Flood Control Agency, Miscellaneous
85. San Diego County Office Of Education, Miscellaneous
86. San Elijo Joint Powers Authority, Miscellaneous
87. San Francisquito Creek Joint Powers Authority, Miscellaneous
88. Santa Clara Valley Open Space Authority, Miscellaneous
89. Santa Monica Community College District, Safety - Police
90. Schools Insurance Authority, Miscellaneous
91. Scotts Valley Fire Protection District, Miscellaneous
92. Scotts Valley Fire Protection District, Safety - Fire
93. Shasta Local Agency Formation Commission, Miscellaneous
94. Sonoma County Junior College District, Safety - Police
95. Sonoma Marin Area Rail Transit District, Miscellaneous
96. State and Federal Contractors Water Agency, Miscellaneous
97. Stege Sanitary District, Miscellaneous
98. Town of Truckee, Safety - Police
99. Vallejo Flood and Wastewater District, Miscellaneous
100. Williams Fire Protection Authority, Safety - Fire
101. Yolo County In-Home Supportive Services Public Authority, Miscellaneous
102. Yuba Community College District, Safety - Police

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.

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