1959 Survivor Benefit Program Actuarial Valuation as of June 30, 2013

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Actuarial Certification

Certification

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 beneficiary and membership data provided to the Actuarial Office, the statement of assets provided by the CalPERS Fiscal Services Division, 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

Contents This section contains the following topics:

Highlights and Executive Summary

Purpose of the 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, 2013 in order to

- Set forth the funded status of the program, reflecting the assets and funding liabilities of this program as of June 30, 2013;
- 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, 2014 through June 30, 2015; and
- Provide actuarial information as of June 30, 2013 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, and Funded Ratio of all pools within the 1959 Survivor Benefit Program at June 30, 2013.

Plan	Accrued Liability[1]	Market Value of Assets (MVA)	Funded Ratio
State 5th Level Pool	$ 140,626,666	$ 102,751,222	73.1%
Schools 5th Level Pool	$ 13,699,453	$ 61,870,390	451.6%
PA 1st Level Pool	$ 2,451,490	$ 36,668,679	1,495.8%
PA 2nd Level Pool	$ 2,413,045	$ 9,100,668	377.1%
PA 3rd Level Pool	$ 27,210,478	$ 92,079,207	338.4%
PA 4th Level Pool	$ 123,288,733	$ 133,865,159	108.6%
PA Indexed Level Pool	$ 17,961,240	$ 20,411,771	113.6%
Total	$ 327,651,105	$ 456,747,096	139.4%

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.

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, 2014 through June 30, 2015 are shown below. The results for Fiscal year July 1, 2013 through June 30, 2014 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

	2013-2014 Premium			2014-2015 Premium		
Plan	Employer	Employee	Total	Employer	Employee	Total
State 5th Level Pool*	$5.35	$5.35	$10.70	$5.55	$5.55	$11.10
Schools 5th Level Pool*	$0.00	$2.00	$2.00	$0.00	$2.00	$2.00
PA 1st Level Pool**	$0.00	$2.00	$2.00	$0.00	$2.00	$2.00
PA 2nd Level Pool**	$0.00	$2.00	$2.00	$0.00	$2.00	$2.00
PA 3rd Level Pool**	$0.00	$2.00	$2.00	$0.00	$2.00	$2.00
PA 4th Level Pool**	$4.60	$2.00	$6.60	$5.00	$2.00	$7.00
PA Indexed Level Pool*	$2.60	$2.60	$5.20	$3.35	$3.35	$6.70

* 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.

** Mandatory $2.00 member monthly premium required.

The required employee premium for the State 5th level pool will change from $5.35 to $5.55 per member, per month (or from $2.47 to $2.56 for biweekly paid members) for Fiscal year 2014-15. 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 $2.60 to $3.35 per member, per month (or from $1.20 to $1.55 for biweekly paid members) for Fiscal Year 2014-15. 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.

Employee required premiums for all of the other pools shall remain the same, $2.00, as in the prior year.

Changes Since the Prior Year's Valuation

Actuarial Assumptions - Consistent with the decision made by the CalPERS Board of Administration for plans participating in the Public Employees' Retirement Fund (PERF), the mortality assumption was changed in this valuation. The mortality table used in last year's valuation was developed from the 1997-2007 experience study and included 5 years of projected on-going mortality improvement using the Scale AA table published by the Society of Actuaries. The new mortality table used in this valuation was developed from the February 2014 experience study and includes 20 years of projected on-going mortality improvement using the Scale BB table published by the Society of Actuaries.

Actuarial Methods - On April 17, 2013, the CalPERS Board of Administration approved a recommendation to change the CalPERS amortization and smoothing policies. Prior to this change, CalPERS employed an amortization and smoothing policy, which spread investment returns over a 15-year period while experience gains and losses were amortized over a rolling 30-year period. Effective with the June 30, 2013 valuation, CalPERS will use the market value of assets instead of an actuarial value of assets and will amortize all experience gains and losses over a fixed 30-year period.

Benefits - There was no change in the existing benefit levels in the program since the June 30, 2012 valuation.

Assets

Contents

This section contains the following topics:

Reconciliation of the Market Value of Assets

State 5th Level Pool

Reconciliation of the Market Value of Assets from the Prior Fiscal Year

The following table shows the changes in the market value of assets for the State 5th Level Pool between June 30, 2012 and June 30, 2013.

1)	Beginning Balance 6/30/2012	$ 96,508,512
2)	Contributions (Employer and Employee) received during 2012-2013	9,643,375
3)	Benefit Payments during 2012-2013	(15,345,321)
4)	Net Transfer of Assets into and out of this pool	0
5)	Investment Earnings credited	11,944,656
6)	Ending Balance 6/30/2013 [(1)+(2)+(3)+(4)+(5)]	$ 102,751,222
7)	Fund Return for Year 12.8%	

Schools 5th Level Pool

Reconciliation of the Market Value of Assets from the Prior Fiscal Year

The following table shows the changes in the market value of assets for the Schools 5th Level Pool between June 30, 2012 and June 30, 2013.

1)	Beginning Balance 6/30/2012	$ 56,096,617
2)	Contributions (Employer and Employee) received during 2012-2013	217,171
3)	Benefit Payments during 2012-2013	(1,475,106)
4)	Net Transfer of Assets into and out of this pool	0
5)	Investment Earnings credited	7,031,708
6)	Ending Balance 6/30/2013 [(1)+(2)+(3)+(4)+(5)]	$ 61,870,390
7)	Fund Return for Year 12.7%	

Public Agency 1st Level Pool

Reconciliation of the Market Value of Assets from the Prior Fiscal Year

The following table shows the changes in the market value of assets for the Public Agency 1st Level Pool between June 30, 2012 and June 30, 2013.

1)	Beginning Balance 6/30/2012	$ 32,683,599
2)	Contributions (Employer and Employee) received during 2012-2013	177,607
3)	Benefit Payments during 2012-2013	(236,676)
4)	Net Transfer of Assets into and out of this pool	(49,315)
5)	Investment Earnings credited	4,086,761
6)	Ending Balance 6/30/2013 [(1)+(2)+(3)+(4)+(5)]	$ 36,668,679
7)	Fund Return for Year 12.5%	

Public Agency 2nd Level Pool

Reconciliation of the Market Value of Assets from the Prior Fiscal Year

The following table shows the changes in the market value of assets for the Public Agency 2nd Level Pool between June 30, 2012 and June 30, 2013.

1)	Beginning Balance 6/30/2012	$ 8,210,729
2)	Contributions (Employer and Employee) received during 2012-2013	90,057
3)	Benefit Payments during 2012-2013	(215,493)
4)	Net Transfer of Assets into and out of this pool	(12,581)
5)	Investment Earnings credited	1,027,956
6)	Ending Balance 6/30/2013 [(1)+(2)+(3)+(4)+(5)]	$ 9,100,668
7)	Fund Return for Year 12.6%	

Public Agency 3rd Level Pool

Reconciliation of the Market Value of Assets from the Prior Fiscal Year

The following table shows the changes in the market value of assets for the Public Agency 3rd Level Pool between June 30, 2012 and June 30, 2013.

1)	Beginning Balance 6/30/2012	$ 83,615,577
2)	Contributions (Employer and Employee) received during 2012-2013	980,476
3)	Benefit Payments during 2012-2013	(2,595,614)
4)	Net Transfer of Assets into and out of this pool	(394,968)
5)	Investment Earnings credited	10,473,736
6)	Ending Balance 6/30/2013 [(1)+(2)+(3)+(4)+(5)]	$ 92,079,207
7)	Fund Return for Year 12.7%	

Public Agency 4th Level Pool

Reconciliation of the Market Value of Assets from the Prior Fiscal Year

The following table shows the changes in the market value of assets for the Public Agency 4th Level Pool between June 30, 2012 and June 30, 2013.

1)	Beginning Balance 6/30/2012	$ 125,729,339
2)	Contributions (Employer and Employee) received during 2012-2013	5,101,618
3)	Benefit Payments during 2012-2013	(12,827,495)
4)	Net Transfer of Assets into and out of this pool	450,162
5)	Investment Earnings credited	15,411,536
6)	Ending Balance 6/30/2013 [(1)+(2)+(3)+(4)+(5)]	$133,865,159
7)	Fund Return for Year 12.6%	

Public Agency Indexed Level Pool

Reconciliation of the Market Value of Assets from the Prior Fiscal Year

The following table shows the changes in the market value of assets for the Public Agency Indexed Level Pool between June 30, 2012 and June 30, 2013.

1)	Beginning Balance 6/30/2012	$ 18,606,508
2)	Contributions (Employer and Employee) received during 2012-2013	788,812
3)	Benefit Payments during 2012-2013	(1,331,039)
4)	Net Transfer of Assets into and out of this pool	0
5)	Investment Earnings credited	2,347,490
6)	Ending Balance 6/30/2013 [(1)+(2)+(3)+(4)+(5)]	$ 20,411,771
7)	Fund Return for Year 12.8%	

Liabilities and Funding Requirements

Contents

This section contains the following topics:

Comparison of Current and Prior 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 5th Level Pool

	June 30, 2012	June 30, 2013
Covered Active Members	71,759	71,180
Beneficiaries Included in the Valuation		
Deferred (eligible, but not yet receiving benefits)	320	277
Receiving Benefits	1,388	1,448
Total	1,708	1,725
Present Value of Benefits	$ 134,750,039	$ 140,626,666
Assets		
Actuarial Value (AVA)	$ 103,353,979	N/A
Market Value (MVA)	$ 96,508,512	$ 102,751,222
(Unfunded Liability)/Excess Assets[1]	$ (31,396,060)	$ (37,875,444)
Required Employer Monthly Premium Per Member		
Before Amortization of (Unfunded Liability)/Excess Assets	$7.30	$7.20
After Amortization of (Unfunded Liability)/Excess Assets	$10.70	$11.10
After employer/employee premium sharing	$5.35	$5.55
Funded Ratio based on MVA	71.6%	73.1%

Schools 5th Level Pool

	June 30, 2012	June 30, 2013
Covered Active Members	10,123	9,944
Beneficiaries Included in the Valuation		
Deferred (eligible, but not yet receiving benefits)	24	20
Receiving Benefits	137	151
Total	161	171
Present Value of Benefits	$ 12,007,246	$ 13,699,453
Assets		
Actuarial Value (AVA)	$ 59,533,306	N/A
Market Value (MVA)	$ 56,096,617	$ 61,870,390
(Unfunded Liability)/Excess Assets[1]	$ 47,526,060	$ 48,170,937
Required Employer Monthly Premium Per Member		
Before Amortization of (Unfunded Liability)/Excess Assets	$5.00	$5.10
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	467.2%	451.6%

1 - Based on AVA at 6/30/2012 and MVA at 6/30/2013

Comparison of Current and Prior Results (continued)

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

Public Agency 1st Level Pool

	June 30, 2012	June 30, 2013
Covered Active Members	7,735	7,460
Beneficiaries Included in the Valuation		
Deferred (eligible, but not yet receiving benefits)	36	30
Receiving Benefits	93	96
Total	129	126
Present Value of Benefits	$ 2,423,373	$ 2,451,490
Assets		
Actuarial Value (AVA)	$ 34,540,309	N/A
Market Value (MVA)	$ 32,683,599	$ 36,668,679
(Unfunded Liability)/Excess Assets[1]	$ 32,116,936	$ 34,217,189
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	1,348.7%	1,495.8%

Public Agency 2nd Level Pool

	June 30, 2012	June 30, 2013
Covered Active Members	3,966	3,921
Beneficiaries Included in the Valuation		
Deferred (eligible, but not yet receiving benefits)	29	29
Receiving Benefits	62	68
Total	91	97
Present Value of Benefits	$ 2,231,378	$ 2,413,045
Assets		
Actuarial Value (AVA)	$ 8,701,999	N/A
Market Value (MVA)	$ 8,210,729	$ 9,100,668
(Unfunded Liability)/Excess Assets[1]	$ 6,470,621	$ 6,687,623
Required Employer Monthly Premium Per Member		
Total premium required	$ 1.80	$ 1.80
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	368.0%	377.1%

1 - Based on AVA at 6/30/2012 and MVA at 6/30/2013

Comparison of Current and Prior Results (continued)

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

Public Agency 3rd Level Pool

	June 30, 2012	June 30, 2013
Covered Active Members	41,429	40,580
Beneficiaries Included in the Valuation		
Deferred (eligible, but not yet receiving benefits)	203	183
Receiving Benefits	492	532
Total	695	715
Present Value of Benefits	$ 26,185,801	$ 27,210,478
Assets		
Actuarial Value (AVA)	$ 88,755,548	N/A
Market Value (MVA)	$ 83,615,577	$ 92,079,207
(Unfunded Liability)/Excess Assets [1]	$ 62,569,747	$ 64,868,729
Required Employer Monthly Premium Per Member		
Total premium required	$ 2.70	$ 2.80
Premium required after Employee Contributions	$ 0.70	$ 0.80
Employer premium after Amortization of (Unfunded Liability)/Excess Assets	$ 0.00	$ 0.00
Funded Ratio based on MVA	319.3%	338.4%

Public Agency 4th Level Pool

	June 30, 2012	June 30, 2013
Covered Active Members	69,642	67,913
Beneficiaries Included in the Valuation		
Deferred (eligible, but not yet receiving benefits)	272	245
Receiving Benefits	874	890
Total	1,146	1,135
Present Value of Benefits	$ 120,627,231	$ 123,288,733
Assets		
Actuarial Value (AVA)	$ 134,516,614	N/A
Market Value (MVA)	$ 125,729,339	$ 133,865,159
(Unfunded Liability)/Excess Assets[1]	$ 13,889,383	$ 10,576,426
Required Employer Monthly Premium Per Member		
Total premium required	$ 7.60	$ 7.70
Premium required after Employee Contributions	$ 5.60	$ 5.70
Employer premium after Amortization of (Unfunded Liability)/Excess Assets	$ 4.60	$ 5.00
Funded Ratio based on MVA	104.2%	108.6%

1 - Based on AVA at 6/30/2012 and MVA at 6/30/2013

Comparison of Current and Prior Results (continued)

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

Public Agency Indexed Level Pool

	June 30, 2012	June 30, 2013
Covered Active Members	9,982	9,922
Beneficiaries Included in the Valuation		
Deferred (eligible, but not yet receiving benefits)	27	22
Receiving Benefits	98	107
Total	125	129
Entry Age Normal Accrued Liability	$ 16,250,802	$ 17,961,240
Assets		
Actuarial Value (AVA)	$ 19,782,550	N/A
Market Value (MVA)	$ 18,606,508	$ 20,411,771
(Unfunded Liability)/Excess Assets [1]	$ 3,531,748	$ 2,450,531
Required Employer Monthly Premium Per Member		
Before Amortization of (Unfunded Liability)/Excess Assets	$ 7.40	$ 8.00
After Amortization of (Unfunded Liability)/Excess Assets	$ 5.20	$ 6.70
After employer/employee premium sharing	$ 2.60	$ 3.35
Funded Ratio based on MVA	114.5%	113.6%

1 - Based on AVA at 6/30/2012 and MVA at 6/30/2013

The following table develops the annual premiums required for 2014-15 for the State 5th and Schools 5th Level Pools.

Development of Funding Requirements for State 5th and Schools 5th Level Pools

June 30, 2013 Annual Valuation of 1959 Survivor Program

	State 5th Level	School 5th Level
1) Development of Unfunded Liability		
a. Present Value of Future Survivor Benefits	$140,626,666	$13,699,453
b. Market Value of Assets	$102,751,222	$61,870,390
c. Unfunded Accrued Liability/(Excess Assets) [1(a)-1(b)]	$37,875,444	($48,170,937)
2) Development of Normal Cost		
a. Present Value of Benefits for 2009-2012 Deaths	$24,136,160	$2,548,116
b. Number of 2009-2012 Member Months	3,737,928	488,388
c. Total per member, per month 2013/2014 Term Insurance Normal Cost[1]	$7.40	$5.10
d. Total per member, per month 2014/2015 Term Insurance Normal Cost [.25 * 2(a)/2(b) + .75 * (c)], rounded to nearest $0.10	$7.20	$5.10
3) 2014 Projected Unfunded Liability		
a. 2013 Unfunded Accrued Liability/(Excess Assets) as of June 30, 2014 [1(c)*1.075]	$40,716,102	($51,783,757)
b. Projected Normal Cost Accrual 2013-2014 with interest	$6,558,345	$659,165
c. Projected Employer Contributions 2013-2014 with interest	$4,698,751	$0
d. Projected Employee Contributions 2013-2014 with interest	$4,698,751	$249,385
e. Total Projected UAL/(Excess Assets) as of June 30, 2014 [3(a)+3(b)-3(c)-3(d)]	$37,876,945	($51,373,977)
4) 2014/2015 Required Contribution		
a. Required Normal Cost per member, per month [2(d)]	$7.20	$5.10
b. Projected Active Members as of 6/30/2014	70,000	10,100
c. Required Normal Cost Contribution [12*4(a)*4(b)*1.075^1/2]	$6,270,700	$640,880
d. Amortization of the UAL/(Excess Assets)	$3,093,190	($640,880)
e. Total Required Contribution per member, per month [(4(c)+4(d))/(4(b)*12)], rounded to nearest $0.10	$11.10	$0.00
f. Amortization Period	30-year	N/A
5) 2014/2015 Required Employer and Employee Premiums With Cost Sharing Provision		
a. Required Employee Premium per member, per month [maximum($2,4(e)/2)]	$5.55	$2.00
b. Required Employer Premium per member, per month [maximum($0,4(e)-5(a))]	$5.55	$0.00

[1] Based on new mortality assumptions

The following table develops the annual premiums required for 2014-15 for the Public Agency 1st and 2nd Level Pools.

Development of Funding Requirements for Public Agency 1st and 2nd Level Pools

June 30, 2013 Annual Valuation of 1959 Survivor Program

	Public Agency Level 1	Public Agency Level 2
1) Development of Unfunded Liability		
a. Present Value of Future Survivor Benefits	$2,451,490	$2,413,045
b. Market Value of Assets	$36,668,679	$9,100,668
c. Unfunded Accrued Liability/(Excess Assets) [1(a)-1(b)]	($34,217,189)	($6,687,623)
2) Development of Normal Cost		
a. Present Value of Benefits for 2009-2012 Deaths1	$9,664,308	$12,080,385
b. Number of 2009-2012 Member Months1	6,584,232	6,584,232
c. Total per member, per month 2013/2014 Term Insurance Normal Cost	$1.40	$1.80
d. Total per member, per month 2014/2015 Term Insurance Normal Cost [.25 * 2(a)/2(b) + .75 * (c)], rounded to nearest $0.10	$1.40	$1.80
3) 2014 Projected Unfunded Liability		
a. 2013 Unfunded Accrued Liability as of June 30, 2014 [1(c)*1.075]	($36,783,478)	($7,189,194)
b. Projected Normal Cost Accrual 2013-2014 with interest	$133,334	$89,691
c. Projected Employer Contributions 2013-2014 with interest	$0	$0
d. Projected Employee Contributions 2013-2014 with interest	$183,642	$96,064
e. Total Projected UAL as of June 30, 2014 [3(a)+3(b)-3(c)-3(d)]	($36,833,786)	($7,195,567)
4) 2014/2015 Required Contribution		
a. Required Normal Cost per member, per month [2(d)]	$1.40	$1.80
b. Projected Active Members as of 6/30/2014	7,300	3,800
c. Required Normal Cost Contribution [12*4(a)*4(b)*1.075^1/2]	$127,156	$85,102
d. Amortization of the UAL/(Excess Assets)	($127,156)	($85,102)
e. Total Required Contribution Per Member, Per Month [(4(c)+4(d))/(4(b)*12)], rounded to nearest $0.10	$0.00	$0.00
f. Amortization Period	N/A	N/A
5) 2014/2015 Required Employer and Employee Premiums		
a. Required Employee Premium per member, per month	$2.00	$2.00
b. Required Employer Premium per member, per month [maximum($0,4(e)-5(a))]	$0.00	$0.00

Notes:

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.

The following table develops the annual premiums required for 2014-15 for the Public Agency 3rd and 4th Level Pools.

Development of Funding Requirements for Public Agency 3rd and 4th Level Pools

June 30, 2013 Annual Valuation of 1959 Survivor Program

	Public Agency Level 3	Public Agency Level 4
1) Development of Unfunded Liability		
a. Present Value of Future Survivor Benefits	$27,210,478	$123,288,733
b. Market Value of Assets	$92,079,207	$133,865,159
c. Unfunded Accrued Liability/(Excess Assets) [1(a)-1(b)]	($64,868,729)	($10,576,426)
2) Development of Normal Cost		
a. Present Value of Benefits for 2009-2012 Deaths1	$18,791,710	$51,006,069
b. Number of 2009-2012 Member Months1	6,584,232	6,584,232
c. Total per member, per month 2013/2014 Term Insurance Normal Cost	$2.80	$7.70
d. Total per member, per month 2014/2015 Term Insurance Normal Cost [.25 * 2(a)/2(b) + .75 * (c)], rounded to nearest $0.10	$2.80	$7.70
3) 2014 Projected Unfunded Liability		
a. 2013 Unfunded Accrued Liability as of June 30, 2014 [1(c)*1.075]	($69,733,884)	($11,369,658)
b. Projected Normal Cost Accrual 2013-2014 with interest	$1,452,163	$6,764,336
c. Projected Employer Contributions 2013-2014 with interest	$0	$3,897,911
d. Projected Employee Contributions 2013-2014 with interest	$1,000,077	$1,694,744
e. Total Projected UAL as of June 30, 2014 [3(a)+3(b)-3(c)-3(d)]	($69,281,798)	($10,197,976)
4) 2014/2015 Required Contribution		
a. Required Normal Cost per member, per month [2(d)]	$2.80	$7.70
b. Projected Active Members as of 6/30/2014	39,800	68,300
c. Required Normal Cost Contribution [12*4(a)*4(b)*1.075^1/2]	$1,386,521	$6,543,301
d. Amortization of the UAL/(Excess Assets)	($1,386,521)	($832,810)
e. Total Required Contribution Per Member, Per Month [(4(c)+4(d))/(4(b)*12)], rounded to nearest $0.10	$0.00	$7.00
f. Amortization Period	N/A	30-year
5) 2014/2015 Required Employer and Employee Premiums		
a. Required Employee Premium per member, per month	$2.00	$2.00
b. Required Employer Premium per member, per month [maximum($0,4(e)-5(a))]	$0.00	$5.00

Notes:

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.

The following table develops the annual premiums required for 2014-15 for the Public Agency Indexed Level Pools.

Development of Funding Requirements for Public Agency Indexed Level Pool

June 30, 2013 Annual Valuation of 1959 Survivor Program

	Public Agency Indexed Level
1) Development of Unfunded Liability	
a. Present Value of Future Benefits for Active Members	$10,808,075
b. Present Value of Future Benefits for Current Survivors	$13,818,741
c. Total Present Value of Future Benefits [1(a)+1(b)]	$24,626,816
d. Present Value of Future Normal Costs	$6,665,576
e. Entry Age Normal Total Accrued Liability [1(c)-1(d)]	$17,961,240
f. Market Value of Assets	$20,411,771
g. Unfunded Accrued Liability/(Excess Assets) [1(e)-1(f)]	($2,450,531)
2) Development of Normal Cost	
a. Required Entry Age Normal Cost	$952,543
b. Active Members as of June 30, 2013	9,922
c. Total per member per month Entry Age Normal Cost [2(a)/2(b)*12], rounded to nearest $0.10	$8.00
3) 2014 Projected Unfunded Liability	
a. 2013 Unfunded Accrued Liability/(Excess Assets) as of June 30, 2014 [1(g)*1.075]	($2,634,320)
b. Projected Normal Cost Accrual 2013-2014 with interest	$1,017,879
c. Projected Employer Contributions 2013-2014 with interest	$318,992
d. Projected Employee Contributions 2013-2014 with interest	$318,992
e. Total Projected UAL as of June 30, 2014 [3(a)+3(b)-3(c)-3(d)]	($2,254,426)
4) 2014/2015 Required Contribution	
a. Required Normal Cost per member, per month [2(c)]	$8.00
b. Projected Active Members as of June 30, 2014	9,800
c. Required Normal Cost Contribution [12*4(a)*4(b)*1.075^1/2]	$975,442
d. Amortization of the UAL/(Excess Assets)	($184,106)
e. Total Required Contribution per member, per month [(4(c)+4(d))/(4(b)*12)], rounded to nearest $0.10	$6.70
f. Amortization Period	30-year
5) 2014/2015 Employer and Employee Premiums with Cost Sharing Provision	
a. Required Employee Premium per member, per month [maximum(2,4(e)/2)]	$3.35
b. Required Employer Premium per member, per month [maximum(0,4(e)-5(a))]	$3.35

Gain/(Loss) Analysis 6/30/2012 – 6/30/2013

State 5th Level Pool

The following table develops the asset and demographic gain and losses between June 30, 2012 and June 30, 2013 for the State 5th Level Pool.

Amounts as of 6/30/2012	
1) Present Value of Benefits	$ 134,750,039
2) Actuarial Value of Assets	103,353,979
3) Unfunded Liability/(Excess Assets) [(1)-(2)]	31,396,060
Amounts During the Period 6/30/2012 – 6/30/2013	
4) Expected Claims for the Fiscal Year	6,320,763
5) Employer and Employee Premiums Collected	9,643,375
6) Benefit Payments	(15,345,321)
7) Net Liabilities Transferred into the State 5th level pool	0
8) Net Assets Transferred into the State 5th level pool	0
Expected Amounts as of 6/30/2013	
9) Change in Accrued Liability due to Assumption Change	5,242,573
10) Expected Present Value of Benefits $[(1) * 1.075 + ((4) + (6) + (7)) * (1.075)^{1/2} + (9)]$	140,742,004
11) Expected Value of Assets $[(2) * 1.075 + ((5) + (6) + (8)) * (1.075)^{1/2}]$	105,193,624
12) Expected Unfunded Liability/(Excess Assets) [(10)-(11)]	35,548,380
Amounts as of 6/30/2013	
13) Present Value of Benefits	140,626,666
14) Market Value of Assets	102,751,222
15) Unfunded Liability/(Excess Assets) [(13)-(14)]	37,875,444
Gain/(Loss) for the Period 6/30/2012 – 6/30/2013	
16) Liability Gain/(Loss) [(10) – (13)]	115,338
17) Asset Gain/(Loss) [(14) – (11)]*	(2,442,402)
18) Total Gain/(Loss) [(16) + (17)]	$ (2,327,064)

* includes loss of $2,279,575 due to change to market value of assets

Gain/(Loss) Analysis 6/30/2012 – 6/30/2013

Schools 5th Level Pool

The following table develops the asset and demographic gain and losses between June 30, 2012 and June 30, 2013 for the Schools 5th Level Pool.

Amounts as of 6/30/2012		
1)	Present Value of Benefits	$ 12,007,246
2)	Actuarial Value of Assets	59,533,306
3)	Unfunded Liability/(Excess Assets) [(1)-(2)]	(47,526,060)
Amounts During the Period 6/30/2012 – 6/30/2013		
4)	Expected Claims for the Fiscal Year	600,806
5)	Employer and Employee Premiums Collected	217,171
6)	Benefit Payments	(1,475,106)
7)	Net Liabilities Transferred into the Schools 5th level pool	0
8)	Net Assets Transferred into the Schools 5th level pool	0
Expected Amounts as of 6/30/2013		
9)	Change in Accrued Liability due to Assumption Change	620,206
10)	Expected Present Value of Benefits $[(1) * 1.075 + ((4) + (6) + (7)) * (1.075)^{1/2} + (9)]$	12,621,502
11)	Expected Value of Assets $[(2) * 1.075 + ((5) + (6) + (8)) * (1.075)^{1/2}]$	62,694,049
12)	Expected Unfunded Liability/(Excess Assets) [(10)-(11)]	(50,072,547)
Amounts as of 6/30/2013		
13)	Present Value of Benefits	13,669,453
14)	Market Value of Assets	61,870,390
15)	Unfunded Liability/(Excess Assets) [(13)-(14)]	(48,170,937)
Gain/(Loss) for the Period 6/30/2012 – 6/30/2013		
16)	Liability Gain/(Loss) [(10) – (13)]	(1,077,951)
17)	Asset Gain/(Loss) [(14) – (11)]*	(823,660)
18)	Total Gain/(Loss) [(16) + (17)]	$ (1,901,611)

* includes loss of $768,749 due to change to market value of assets

Gain/(Loss) Analysis 6/30/2012 – 6/30/2013

Public Agency 1st Level Pool

The following table develops the asset and demographic gain and losses between June 30, 2012 and June 30, 2013 for the Public Agency 1st Level Pool.

Amounts as of 6/30/2012		
1)	Present Value of Benefits	$ 2,423,373
2)	Actuarial Value of Assets	34,540,309
3)	Unfunded Liability/(Excess Assets) [(1)-(2)]	(32,116,936)
Amounts During the Period 6/30/2012 – 6/30/2013		
4)	Expected Claims for the Fiscal Year	130,373
5)	Employer and Employee Premiums Collected	177,607
6)	Benefit Payments	(236,676)
7)	Net Liabilities Transferred into the 1st level pool	0
8)	Net Assets Transferred into the 1st level pool	(42,613)
Expected Amounts as of 6/30/2013		
9)	Change in Accrued Liability due to Assumption Change	86,367
10)	Expected Present Value of Benefits $[(1) * 1.075 + ((4) + (6) + (7)) * (1.075)^{1/2} + (9)]$	2,581,275
11)	Expected Value of Assets $[(2) * 1.075 + ((5) + (6) + (8)) * (1.075)^{1/2}]$	37,025,406
12)	Expected Unfunded Liability/(Excess Assets) [(10)-(11)]	(34,444,131)
Amounts as of 6/30/2013		
13)	Present Value of Benefits	2,451,490
14)	Market Value of Assets	36,668,679
15)	Unfunded Liability/(Excess Assets) [(13)-(14)]	(34,217,189)
Gain/(Loss) for the Period 6/30/2012 – 6/30/2013		
16)	Liability Gain/(Loss) [(10) – (13)]	129,785
17)	Asset Gain/(Loss) [(14) – (11)]*	(356,727)
18)	Total Gain/(Loss) [(16) + (17)]	$ (226,941)

* includes loss of $326,460 due to change to market value of assets

Gain/(Loss) Analysis 6/30/2012 – 6/30/2013

Public Agency 2nd Level Pool

The following table develops the asset and demographic gain and losses between June 30, 2012 and June 30, 2013 for the Public Agency 2nd Level Pool.

Amounts as of 6/30/2012		
1)	Present Value of Benefits	$ 2,231,378
2)	Actuarial Value of Assets	8,701,999
3)	Unfunded Liability/(Excess Assets) [(1)-(2)]	(6,470,621)
Amounts During the Period 6/30/2012 – 6/30/2013		
4)	Expected Claims for the Fiscal Year	84,706
5)	Employer and Employee Premiums Collected	90,057
6)	Benefit Payments	(215,493)
7)	Net Liabilities Transferred into the 2nd level pool	0
8)	Net Assets Transferred into the 2nd level pool	(12,581)
Expected Amounts as of 6/30/2013		
9)	Change in Accrued Liability due to Assumption Change	96,281
10)	Expected Present Value of Benefits $[(1) * 1.075 + ((4) + (6) + (7)) * (1.075)^{1/2} + (9)]$	2,359,409
11)	Expected Value of Assets $[(2) * 1.075 + ((5) + (6) + (8)) * (1.075)^{1/2}]$	9,211,550
12)	Expected Unfunded Liability/(Excess Assets) [(10)-(11)]	(6,852,140)
Amounts as of 6/30/2013		
13)	Present Value of Benefits	2,413,045
14)	Market Value of Assets	9,100,668
15)	Unfunded Liability/(Excess Assets) [(13)-(14)]	(6,687,623)
Gain/(Loss) for the Period 6/30/2012 – 6/30/2013		
16)	Liability Gain/(Loss) [(10) – (13)]	(53,636)
17)	Asset Gain/(Loss) [(14) – (11)]*	(110,882)
18)	Total Gain/(Loss) [(16) + (17)]	$ (164,518)

* includes loss of $103,490 due to change to market value of assets

Gain/(Loss) Analysis 6/30/2012 – 6/30/2013

Public Agency 3rd Level Pool

The following table develops the asset and demographic gain and losses between June 30, 2012 and June 30, 2013 for the Public Agency 3rd Level Pool.

Amounts as of 6/30/2012		
1)	Present Value of Benefits	$ 26,185,801
2)	Actuarial Value of Assets	88,755,548
3)	Unfunded Liability/(Excess Assets) [(1)-(2)]	(62,569,747)
Amounts During the Period 6/30/2012 - 6/30/2013		
4)	Expected Claims for the Fiscal Year	1,367,910
5)	Employer and Employee Premiums Collected	980,476
6)	Benefit Payments	(2,595,614)
7)	Net Liabilities Transferred into the 3rd level pool	(32,325)
8)	Net Assets Transferred into 3rd level pool	(394,968)
Expected Amounts as of 6/30/2013		
9)	Change in Accrued Liability due to Assumption Change	1,031,690
10)	Expected Present Value of Benefits [(1) * 1.075 + ((4) + (6) + (7)) * $(1.075)^{1/2}$ + (9)]	27,875,001
11)	Expected Value of Assets [(2) * 1.075 + ((5) + (6) + (8)) * $(1.075)^{1/2}$]	93,328,092
12)	Expected Unfunded Liability/(Excess Assets) [(10)-(11)]	(65,453,091)
Amounts as of 6/30/2013		
13)	Present Value of Benefits	27,210,478
14)	Market Value of Assets	92,079,207
15)	Unfunded Liability/(Excess Assets) [(13)-(14)]	(64,868,729)
Gain/(Loss) for the Period 6/30/2012 – 6/30/2013		
16)	Liability Gain/(Loss) [(10) – (13)]	664,523
17)	Asset Gain/(Loss) [(14) – (11)]*	(1,248,885)
18)	Total Gain/(Loss) [(16) + (17)]	$ (584,362)

* includes loss of $1,165,626 due to change to market value of assets

Gain/(Loss) Analysis 6/30/2012 – 6/30/2013

Public Agency 4th Level Pool

The following table develops the asset and demographic gain and losses between June 30, 2012 and June 30, 2013 for the Public Agency 4th Level Pool.

Amounts as of 6/30/2012		
1)	Present Value of Benefits	$ 120,627,231
2)	Actuarial Value of Assets	134,516,614
3)	Unfunded Liability/(Excess Assets) [(1)-(2)]	(13,889,383)
Amounts During the Period 6/30/2012 – 6/30/2013		
4)	Expected Claims for the Fiscal Year	6,231,242
5)	Employer and Employee Premiums Collected	5,101,618
6)	Benefit Payments	(12,827,495)
7)	Net Liabilities Transferred into the 4th level pool	87,740
8)	Net Assets Transferred into the 4th level pool	450,162
Expected Amounts as of 6/30/2013		
9)	Change in Accrued Liability due to Assumption Change	4,169,079
10)	Expected Present Value of Benefits $[(1) * 1.075 + ((4) + (6) + (7)) * (1.075)^{1/2} + (9)]$	127,095,182
11)	Expected Value of Assets $[(2) * 1.075 + ((5) + (6) + (8)) * (1.075)^{1/2}]$	137,061,738
12)	Expected Unfunded Liability/(Excess Assets) [(10)-(11)]	(9,966,556)
Amounts as of 6/30/2013		
13)	Present Value of Benefits	123,288,733
14)	Market Value of Assets	133,865,159
15)	Unfunded Liability/(Excess Assets) [(13)-(14)]	(10,576,426)
Gain/(Loss) for the Period 6/30/2012 – 6/30/2013		
16)	Liability Gain/(Loss) [(10) – (13)]	3,806,449
17)	Asset Gain/(Loss) [(14) – (11)]*	(3,196,579)
18)	Total Gain/(Loss) [(16) + (17)]	$ 609,870

* includes loss of $2,983,474 due to change to market value of assets

Gain/(Loss) Analysis 6/30/2012 – 6/30/2013

Public Agency Indexed Level Pool

The following table develops the asset and demographic gain and losses between June 30, 2012 and June 30, 2013 for the Public Agency Indexed Level Pool.

Amounts as of 6/30/2012		
1)	Accrued Liability	$ 16,250,802
2)	Actuarial Value of Assets	19,782,550
3)	Unfunded Liability/(Excess Assets) [(1)-(2)]	(3,531,748)
Amounts During the Period 6/30/2012 – 6/30/2013		
4)	Normal Cost for the Fiscal Year	870,601
5)	Employer and Employee Premiums Collected	788,812
6)	Benefit Payments	(1,331,039)
7)	Net Liabilities Transferred into the Indexed Level pool	0
8)	Net Assets Transferred into the Indexed Level pool	0
Expected Amounts as of 6/30/2013		
9)	Change in Accrued Liability due to Assumption Change	436,416
10)	Expected Present Value of Benefits $[(1) * 1.075 + ((4) + (6) + (7)) * (1.075)^{1/2} + (9)]$	17,428,636
11)	Expected Value of Assets $[(2) * 1.075 + ((5) + (6) + (8)) * (1.075)^{1/2}]$	20,704,048
12)	Expected Unfunded Liability/(Excess Assets) [(10)-(11)]	(3,275,412)
Amounts as of 6/30/2013		
13)	Present Value of Benefits	17,961,240
14)	Market Value of Assets	20,411,771
15)	Unfunded Liability/(Excess Assets) [(13)-(14)]	(2,450,531)
Gain/(Loss) for the Period 6/30/2012 – 6/30/2013		
16)	Liability Gain/(Loss) [(10) – (13)]	(532,604)
17)	Asset Gain/(Loss) [(14) – (11)]*	(292,277)
18)	Total Gain/(Loss) [(16) + (17)]	$ (824,881)

* includes loss of $272,792 due to change to market value of assets

Risk Analysis

Contents

This section contains the following topics:

Analysis of Future Investment Return Scenarios

The following analysis looks at what the 2015-16 contribution rates would be under four different investment return scenarios. This type of analysis can give the reader a sense of the short-term risk to the contribution rates.

The first scenario is what one would expect if the markets were to give us a 5th percentile return without considering we are already at an approximate return of 14% so far for the 2013-14 Fiscal Year. The 5th percentile return corresponds to a -12% return for the 2013-14 Fiscal Year. The second scenario assumed the return would be our assumed 7.50%. The third scenario assumes an approximate return of 14%, the rate of return attained so far this Fiscal Year (thru April 30, 2014). The last scenario is what one would expect if the markets were to give us a 95th percentile return notwithstanding the 14% year-to-date return for the current Fiscal Year. This 95th percentile return is equivalent to around 27%.

The tables below shows 2015-16 projected employee and employer contribution rates under the return scenarios mentioned above.

-12% Return

	2015-2016 Employer Monthly Premium	2015-2016 Employee Monthly Premium
PA 1	$0.00	$2.00
PA 2	$0.00	$2.00
PA 3	$0.00	$2.00
PA 4	$7.50	$2.00
Indexed	$4.70	$4.70
State	$6.50	$6.50
School	$0.00	$2.00

7.50% Return

2015-2016 Employer Monthly Premium	2015-2016 Employee Monthly Premium
$0.00	$2.00
$0.00	$2.00
$0.00	$2.00
$5.00	$2.00
$3.35	$3.35
$5.55	$5.55
$0.00	$2.00

14% Return

	2015-2016 Employer Monthly Premium	2015-2016 Employee Monthly Premium
PA 1	$0.00	$2.00
PA 2	$0.00	$2.00
PA 3	$0.00	$2.00
PA 4	$4.10	$2.00
Indexed	$2.90	$2.90
State	$5.25	$5.25
School	$0.00	$2.00

27% Return

2015-2016 Employer Monthly Premium	2015-2016 Employee Monthly Premium
$0.00	$2.00
$0.00	$2.00
$0.00	$2.00
$2.40	$2.00
$2.00	$2.00
$4.65	$4.65
$0.00	$2.00

Analysis of Discount Rate Sensitivity

The following analysis looks at what the 2014-15 contribution rates would be under two different discount rate scenarios. We determined the required contribution rates using discount rates that are 1% lower and 1% higher than the valuation discount rate of 7.50%. This analysis will give an indication of the potential required contribution rates if the PERF had investment returns of 6.50% or 8.50% over the long-term.

This type of analysis can give employers a sense of the long-term risk to the contribution rates.

	6.50% Discount Rate (-1%)		Increase in Rate	
	2014-2015 Employer Monthly Premium	2014-2015 Employee Monthly Premium	2014-2015 Employer Monthly Premium	2014-2015 Employee Monthly Premium
PA 1	$0.00	$2.00	$0.00	$0.00
PA 2	$0.00	$2.00	$0.00	$0.00
PA 3	$0.00	$2.00	$0.00	$0.00
PA 4	$6.50	$2.00	$1.50	$0.00
Indexed	$4.75	$4.75	$1.40	$1.40
State	$6.05	$6.05	$0.50	$0.50
School	$0.00	$2.00	$0.00	$0.00

	8.50% Discount Rate (+1%)		Decrease in Rate	
	2014-2015 Employer Monthly Premium	2014-2015 Employee Monthly Premium	2014-2015 Employer Monthly Premium	2014-2015 Employee Monthly Premium
PA 1	$0.00	$2.00	$0.00	$0.00
PA 2	$0.00	$2.00	$0.00	$0.00
PA 3	$0.00	$2.00	$0.00	$0.00
PA 4	$3.50	$2.00	($1.50)	$0.00
Indexed	$2.15	$2.15	($1.20)	($1.20)
State	$5.10	$5.10	($0.45)	($0.45)
School	$0.00	$2.00	$0.00	$0.00

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 per member, per month multiplied 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 the prior year and current year normal cost. Specifically, the current year's normal cost is calculated as the present value of member deaths for the past 4 years divided by the total number of members exposed to the death benefit over the same period. Then the normal cost (expected claims) for the coming year is simply 25% of the current year's normal cost and 75% of the prior year's normal cost. The reason for this methodology 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.

The consequence of this approach is that very little weight is given to the most recent year's data and more weight is given to previous years. In fact, as this methodology matures or reaches a steady state, all data from the past would have some impact on the calculated normal cost. The following matrix shows ultimate weights for the past ten year's data as the methodology approaches its steady state:

Data t years ago	Weights
1	6.3%
2	10.9
3	14.5
4	17.1
5	12.8
6	9.6
7	7.2
8	5.4
9	4.1
10	3.0

For Public Agency 1st, 2nd, 3rd and 4th Levels, the Present Value of Benefits for 2009-2012 Deaths for each level are calculated as if all members of all four levels who died from 2009-2012 were members of that particular level.

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

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 pool, if the total required monthly premium after amortization of excess assets exceeds $4, 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 over a 30-year period. Excess assets for the Schools 5th Level pool, and Public Agency 1st, 2nd, and 3rd Level pools were sufficient to offset required employer contributions indefinitely, based on June 30, 2013 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 $5.00 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% 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.

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 $3.35 per covered member per month.

Asset Valuation Method

On April 17, 2013 the CalPERS Board of Administration approved a recommendation to change the asset valuation method from an Actuarial Value of Assets using an asset smoothing method to one utilizing the Market Value of Assets.

Method for Projecting Active Counts

In the past, actuarial staff has found that two particular methods have worked well in predicting future active member counts for the pools. Projected counts are necessary to determine employer premiums. The two methods that are normally used are linear trend or autoregressive models. For this valuation year, we will continue to use these models for the Public Agency Pools. They continue to model slow and even declining growth in the Levels 1, 2 and 3 pools and less positive growth in Level 4 and Indexed. This is to be expected, since the first three levels are closed to new entrants and Levels 4 and Indexed are still open to amending and new contracting.

These methods when applied to the State and Schools Pools are also predicting less positive growth for Schools and continued declining growth for State. This is consistent with the current state of the economy, current hiring practices of the State and the fact that new migration into and out of these pools do not take place.

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 3 and are used in the calculation of the annual normal costs, except for the Public Agency Indexed Level.

Economic Assumptions:

Investment Return	7.50% compounded annually (net of administrative expenses).

Demographic Assumptions:

The following table shows updated mortality rates reflecting mortality improvement for the 1959 Survivor Program by age and sex.

Attained Age	Male Mortality Rate	Female Mortality Rate
20	.0003	.0002
25	.0003	.0002
30	.0004	.0003
35	.0006	.0005
40	.0011	.0009
45	.0023	.0020
50	.0050	.0047
55	.0060	.0042
60	.0071	.0044
65	.0083	.0059
70	.0131	.0099
75	.0221	.0172
80	.0390	.0290
85	.0697	.0524
90	.1297	.0989
95	.2244	.1849
100	.3254	.3002
105	.5853	.5609
110	1.0000	1.0000

Additional Actuarial Assumptions Applicable to the Public Agency Indexed Level

The Public Agency Indexed Level's Accrued Liability and Entry Age Normal cost for active members are calculated based on the actuarial assumptions for our Public Agency miscellaneous 2% @ 55 and police 2% @ 50 pension plans. The final valuation results equals the sum of the results valued on the basis of a miscellaneous 2% @ 55 plan plus the results valued on the basis of a police 2% @ 50 plan, where all miscellaneous employees of plans contracting for the Public Agency Indexed Level of 1959 Survivor benefits are valued using miscellaneous 2% @ 55 assumptions, and all safety employees of plans contracting for the Public Agency Indexed Level of 1959 Survivor benefits are valued using police 2% @ 50 assumptions.
The actuarial assumptions for each of these plans are as follows:

Eligible Survivor Status

For active members of both the Miscellaneous and Safety Police 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 at the Time of Death*
20 and below	$31,707
25	$93,090
30	$125,004
35	$118,385
40	$111,656
45	$96,873
50	$79,591
55	$67,140
60	$63,054
65	$62,093
70	$62,147
75	$59,820
80 and above	$50,429

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

*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% per year up to the current valuation year.

Public Agency Miscellaneous 2% @ 55

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

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

	Male		Female	
Attained Age	Non-Industrial (Not Job-Related) Death	Non-Industrial (Not Job-Related) Disability	Non-Industrial (Not Job-Related) Death	Non-Industrial (Not Job-Related) Disability
20	0.00031	0.00017	0.00020	0.00010
25	0.00040	0.00017	0.00023	0.00010
30	0.00049	0.00019	0.00025	0.00024
35	0.00057	0.00049	0.00035	0.00081
40	0.00075	0.00122	0.00050	0.00155
45	0.00106	0.00191	0.00071	0.00218
50	0.00155	0.00213	0.00100	0.00229
55	0.00228	0.00221	0.00138	0.00179
60	0.00308	0.00222	0.00182	0.00135

Service Retirement

Rates vary by age and service. See table sample below.

	Service Retirement					
	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0140	0.0180	0.0210	0.0250	0.0270	0.0310
51	0.0120	0.0140	0.0170	0.0200	0.0210	0.0250
52	0.0130	0.0170	0.0190	0.0230	0.0250	0.0280
53	0.0150	0.0200	0.0230	0.0270	0.0300	0.0340
54	0.0260	0.0330	0.0380	0.0450	0.0510	0.0590
55	0.0480	0.0610	0.0740	0.0880	0.1000	0.1170
56	0.0420	0.0530	0.0630	0.0750	0.0850	0.1000
57	0.0440	0.0560	0.0670	0.0810	0.0910	0.1070
58	0.0490	0.0620	0.0740	0.0890	0.1000	0.1180
59	0.0570	0.0720	0.0860	0.1030	0.1180	0.1380
60	0.0670	0.0860	0.1030	0.1230	0.1390	0.1640
61	0.0810	0.1030	0.1240	0.1480	0.1680	0.1990
62	0.1160	0.1470	0.1780	0.2140	0.2430	0.2880
63	0.1140	0.1440	0.1740	0.2080	0.2370	0.2810
64	0.1080	0.1380	0.1660	0.1990	0.2270	0.2680
65	0.1550	0.1970	0.2380	0.2850	0.3250	0.3860
66	0.1320	0.1680	0.2030	0.2430	0.2760	0.3280
67	0.1220	0.1550	0.1890	0.2250	0.2560	0.3040
68	0.1110	0.1410	0.1700	0.2040	0.2320	0.2740
69	0.1140	0.1440	0.1740	0.2090	0.2380	0.2820
70	0.1300	0.1650	0.2000	0.2400	0.2720	0.3230

Public Agency Miscellaneous 2% @ 55 (continued)

Termination with Refund

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

Duration of Service	Termination with Refund – 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

Termination with Vested Deferred Benefits

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

Duration of Service	Termination with Vested Deferred Benefits – Entry Age 20	25	30	35	40
5	0.0656	0.0597	0.0537	0.0477	0.0418
10	0.0530	0.0466	0.0403	0.0339	0.0000
15	0.0443	0.0373	0.0305	0.0000	0.0000
20	0.0333	0.0261	0.0000	0.0000	0.0000
25	0.0212	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000

Public Agency Police 2% @ 50

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

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

Attained Age	Male – Non-Industrial (Not Job-Related) Death	Male – Non-Industrial (Not Job-Related) Disability	Female – Non-Industrial (Not Job-Related) Death	Female – Non-Industrial (Not Job-Related) Disability
20	0.00031	0.00010	0.00020	0.00010
25	0.00040	0.00010	0.00023	0.00010
30	0.00049	0.00020	0.00025	0.00020
35	0.00057	0.00030	0.00035	0.00030
40	0.00075	0.00040	0.00050	0.00040
45	0.00106	0.00050	0.00071	0.00050
50	0.00155	0.00080	0.00100	0.00080
55	0.00228	0.00130	0.00138	0.00130
60	0.00308	0.00200	0.00182	0.00200

Public Agency Police 2% @ 50 (continued)

Service Retirement

Rates vary by age and service. See table sample below.

Service Retirement

	Duration of Service					
Age	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0050	0.0050	0.0050	0.0050	0.0170	0.0890
51	0.0050	0.0050	0.0050	0.0050	0.0170	0.0870
52	0.0180	0.0180	0.0180	0.0180	0.0420	0.1320
53	0.0440	0.0440	0.0440	0.0440	0.0900	0.2170
54	0.0650	0.0650	0.0650	0.0650	0.1260	0.2830
55	0.0860	0.0860	0.0860	0.0860	0.1660	0.3540
56	0.0670	0.0670	0.0670	0.0670	0.1300	0.2890
57	0.0660	0.0660	0.0660	0.0660	0.1290	0.2880
58	0.0660	0.0660	0.0660	0.0660	0.1290	0.2880
59	0.1390	0.1390	0.1390	0.1390	0.1760	0.3120
60	0.1230	0.1230	0.1230	0.1230	0.1530	0.2780
61	0.1100	0.1100	0.1100	0.1100	0.1380	0.2560
62	0.1300	0.1300	0.1300	0.1300	0.1620	0.2910
63	0.1300	0.1300	0.1300	0.1300	0.1620	0.2910
64	0.1300	0.1300	0.1300	0.1300	0.1620	0.2910
65	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Termination with Refund

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

Termination with Refund

Duration of	Entry Age					
Service	20	25	30	35	40	45
0	0.1013	0.1013	0.1013	0.1013	0.1013	0.1013
1	0.0636	0.0636	0.0636	0.0636	0.0636	0.0636
2	0.0271	0.0271	0.0271	0.0271	0.0271	0.0271
3	0.0258	0.0258	0.0258	0.0258	0.0258	0.0258
4	0.0245	0.0245	0.0245	0.0245	0.0245	0.0245
5	0.0086	0.0086	0.0086	0.0086	0.0086	0.0086
10	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
15	0.0027	0.0027	0.0027	0.0027	0.0027	0.0027
20	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017
25	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
30	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009

Termination with Vested Deferred Benefits

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

Termination with Vested Deferred Benefits

Duration of	Entry Age				
Service	20	25	30	35	40
5	0.0163	0.0163	0.0163	0.0163	0.0163
10	0.0126	0.0126	0.0126	0.0126	0.0000
15	0.0082	0.0082	0.0082	0.0000	0.0000
20	0.0065	0.0065	0.0000	0.0000	0.0000
25	0.0058	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000

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 Levels 1, 2 and 3 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 Level 3 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
1st Child turns 22	$700
2nd Child turns 22*	$0
Spouse turns 62**	$350

* At this time, the spouse would be 52 years old and would not receive any benefit until age 62

** Spouse would continue to receive this benefit until his/her death

Child Benefit

Children are eligible 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 Benefit

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

Monthly Benefit Amounts

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

Level 1 (For Members of Public Agencies who Contract)

a. spouse or domestic partner with two or more eligible children; or three or more eligible children	$430
b. spouse with one eligible child; or two eligible children only	$360
c. one eligible child only; or spouse age 62 or older; or eligible dependent parents	$180

Level 2 (For Members of Public Agencies who Contract)

a. spouse or domestic partner with two or more eligible children; or three or more eligible children	$538
b. spouse with one eligible child; or two eligible children only	$450
c. one eligible child only; or spouse age 62 or older; or eligible dependent parents	$225

Level 3 (For Members of Public Agencies who Contract)

a. spouse or domestic partner with two or more eligible children; or three or more eligible children	$840
b. spouse with one eligible child; or two eligible children only	$700
c. one eligible child only; or spouse age 62 or older; or eligible dependent parents	$350

Level 4 (For Members of Public Agencies who Contract)

a. spouse or domestic partner with two or more eligible children; or three or more eligible children	$2,280
b. spouse with one eligible child; or two eligible children only	$1,900
c. one eligible child only; or spouse age 60 or older; or eligible dependent parents	$950

Indexed Level (For Members of Public Agencies who Contract)

a. spouse or domestic partner with two or more eligible children; or three or more eligible children $1,979[1]

b. spouse with one eligible child; or two eligible children only $1,319[1]

c. one eligible child only; or spouse age 60 or older; or eligible dependent parents $660[1]

Level 5 – (For State and Schools Members)

a. spouse or domestic partner with two or more eligible children; or three or more eligible children $1,800

b. spouse with one eligible child; or two eligible children only $1,500

c. one eligible child only; or spouse age 60 or older; or eligible dependent parents $750

1 - These figures indicate calendar year benefit amounts for the Indexed Level in effect for calendar year 2014. 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**
One Survivor	$ 744	$ 1,133	$ 1,638
Two Survivors	$ 1,488	$ 2,266	$ 3,276
Three Survivors	$ 1,488	$ 2,831	$ 3,825

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 2014 salary of $25,000, "Average" is $50,000, and "High" is exceeding the maximum OASDI taxable earnings.

	CalPERS 1959 Survivor Benefit					
Survivor Group	**First**	**Second**	**Third**	**Fourth**	**Indexed[2]**	**Schools/ State 5th**
One Survivor	$ 180	$ 225	$ 350	$ 950	$ 660	$ 750
Two Survivors	$ 360	$ 450	$ 700	$ 1,900	$ 1,319	$ 1,500
Three Survivors	$ 430	$ 538	$ 840	$ 2,280	$ 1,979	$ 1,800

2 – Amounts effective January 1, 2014

Summary of Plan Changes

Existing public agency employers joining the Public Agency 4th or Indexed Level Pool during the 2014-15 Fiscal Year are required to pay only the Unfunded Liability based on their own membership (amortized over a period of 5 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, then they will be allowed to use as much of it as necessary to offset any increased liabilities incurred at the higher level and required employer premiums incurred at the higher level.

Appendix C - Demographic and Experience Information

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

Currently, there are 4,098 cases where liability exists. These cases include widows or widowers in deferred status even though presently there are no benefits being paid. There are 9 possible beneficiary 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	Number	Percent
Widow deferred	806	19.7%
Widow only receiving	2,440	59.5%
Widow with one child	302	7.4%
Widow with two or more children	272	6.6%
One child	173	4.2%
Two children	67	1.6%
Three or more children	28	0.7%
One parent	10	0.2%
Two parents	0	0.0%
Totals	4,098	100.0%[1]

Beneficiary Combinations at Date of Death – All Levels of the 1959 Survivor Program for Public Agencies, State and Schools

There exist 7,195 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	Number	Percent
Widow deferred	2,086	29.0%
Widow only receiving	990	13.8%
Widow with one child	1,185	16.5%
Widow with two or more children	1,910	26.5%
One child	439	6.1%
Two children	338	4.7%
Three or more children	221	3.1%
One parent	23	0.3%
Two parents	3	0.0%
Totals	7,195	100.0%[1]

1 – Percentages may not sum to 100% due to rounding

Appendix D – 1959 Survivor Deaths Per Year

1959 Survivor Deaths Per Year

Displayed on the following page is a year-by-year account of the number of deaths under the program since 1959 and the death rate each year since 1980 for public agencies, State, and Schools. The historic covered active counts are not available prior to 1980. Deaths given in the exhibit are on a calendar year basis. Counts represent mid-year active exposure. The historic covered active counts may not match those reported in the prior year's valuation. This is due to the fact that in some cases there is a time gap between a member's death and the determination of which type of death benefit that member will receive.

1959 Survivor Deaths Per Year

	Public Agency			State			School		
Calendar Year	Deaths	Mid-year Active Counts	Death Rate	Deaths	Mid-year Active Counts	Death Rate	Deaths	Mid-year Active Counts	Death Rate
1959	2		*	1		*	1		*
1960	2		*	66		*	10		*
1961	1		*	80		*	9		*
1962	8		*	63		*	15		*
1963	12		*	50		*	9		*
1964	14		*	64		*	14		*
1965	18		*	76		*	8		*
1966	25		*	60		*	5		*
1967	39		*	66		*	12		*
1968	20		*	79		*	9		*
1969	35		*	86		*	12		*
1970	39		*	72		*	10		*
1971	37		*	66		*	11		*
1972	46		*	67		*	10		*
1973	52		*	70		*	13		*
1974	53		*	66		*	5		*
1975	57		*	91		*	11		*
1976	52		*	67		*	3		*
1977	58		*	67		*	19		*
1978	70		*	92		*	13		*
1979	54		*	81		*	7		*
1980	60		*	81		*	6		*
1981	73	54,354	0.13%	73	38,192	0.19%	10	7,843	0.13%
1982	75	56,401	0.13%	79	37,030	0.21%	10	7,987	0.13%
1983	77	59,917	0.13%	68	37,186	0.18%	8	7,685	0.10%
1984	74	65,480	0.11%	63	38,488	0.16%	4	7,104	0.06%
1985	68	66,927	0.10%	82	39,175	0.21%	5	6,842	0.07%
1986	64	68,500	0.09%	41	39,391	0.10%	8	6,500	0.12%
1987	61	69,340	0.09%	52	40,315	0.13%	11	6,200	0.18%
1988	74	84,808	0.09%	50	41,980	0.12%	9	7,100	0.13%
1989	66	82,046	0.08%	60	44,069	0.14%	6	6,899	0.09%
1990	85	86,196	0.10%	59	45,502	0.13%	7	7,942	0.09%
1991	95	91,574	0.10%	42	47,708	0.09%	7	7,752	0.09%
1992	82	95,840	0.09%	45	48,872	0.09%	8	6,823	0.12%
1993	74	97,752	0.08%	51	46,872	0.11%	3	6,776	0.04%
1994	68	98,088	0.07%	57	47,323	0.12%	11	6,653	0.17%
1995	72	99,235	0.07%	51	47,689	0.11%	10	6,751	0.15%
1996	84	100,494	0.08%	53	51,746	0.10%	6	6,726	0.09%
1997	70	102,475	0.07%	59	55,084	0.11%	4	6,794	0.06%
1998	83	112,389	0.07%	58	55,435	0.10%	6	6,956	0.09%
1999	91	118,850	0.08%	58	59,406	0.10%	2	7,444	0.03%
2000	78	121,538	0.06%	57	60,349	0.09%	7	8,338	0.08%
2001	83	116,161	0.07%	58	64,309	0.09%	5	7,884	0.06%
2002	85	129,355	0.07%	47	65,558	0.07%	6	9,195	0.07%
2003	91	129,620	0.07%	70	68,791	0.10%	6	9,390	0.06%
2004	93	131,633	0.07%	58	64,252	0.09%	3	9,325	0.03%
2005	102	133,510	0.08%	64	70,193	0.09%	7	9,402	0.07%
2006	83	137,095	0.06%	68	71,742	0.09%	13	9,469	0.14%
2007	104	140,012	0.07%	69	76,902	0.09%	5	10,131	0.05%
2008	103	144,828	0.07%	48	81,369	0.06%	8	10,550	0.08%
2009	98	143,207	0.07%	60	82,434	0.07%	6	10,562	0.06%
2010	84	138,470	0.06%	54	79,587	0.07%	7	10,203	0.07%
2011	104	134,255	0.08%	52	77,714	0.07%	6	9,811	0.06%
2012	83	132,754	0.06%	44	71,759	0.06%	3	10,123	0.03%

Death counts may change from previous valuations due mainly to reclassification of the benefit that ultimately gets paid to the beneficiary.

Appendix E – Glossary of Actuarial Terms

Accrued Liability — The portion of the actuarial present value of projected benefits allocated to service before the valuation date in accordance with the actuarial cost method.

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

Actuarial Cost Method — A procedure employed by actuaries for the allocation of the actuarial present value of projected benefits to time periods, usually in the form of a normal cost and an actuarial accrued liability to achieve certain funding goals for a pension plan. Sometimes this is referred to as the “funding method.”

Actuarial Valuation — The determination, as of a valuation date, of the normal cost, actuarial accrued liability, actuarial value of assets and related actuarial present values for a pension plan.

Actuarial Value of Assets — The value of assets used for funding purposes. The actuarial value of assets may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses through an asset smoothing technique where investment gains and losses are partially recognized in the year they are incurred, with the remainder recognized in subsequent years in accordance with an asset valuation method. The actuarial value of assets has been set to equal the fair market value of assets for this System.

Amortization Period — The period of time used for determining the amount, timing, and pattern of recognition of contributions. The period for determining the employer’s annual required contributions (ARC) under GASB 27 equals the average future working period for the active members in the plan as of the valuation date.

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 person who is responsible for the calculations necessary to properly fund a pension plan.
Present Value of Benefits	Sometimes called the "actuarial present value of benefits," the total dollars needed as of the valuation date to make future payments of all benefits, earned in the past or expected to be earned in the future, for current members by application of a particular set of actuarial assumptions.