Judges' Retirement System
Actuarial Valuation

As of June 30, 2016

CalPERS

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Actuarial Certification

April 2017

To the best of our knowledge, this report is complete and accurate and contains sufficient information to fully and fairly disclose the actuarial funded condition of the Judges' Retirement System. This valuation is based on the member and financial data as of June 30, 2016 provided by the various CalPERS databases and the benefits under this plan with CalPERS as of the date this report was produced. It is our opinion that the valuation has been performed in accordance with generally accepted actuarial principles, in accordance with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for this plan, as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

The undersigned 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 opinions contained herein.

Randall Dziubek, ASA, EA, MAAA
Senior Pension Actuary, CalPERS

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

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Highlights and Executive Summary

INTRODUCTION

This is the actuarial valuation report as of June 30, 2016 for the Judges' Retirement System. This actuarial valuation is used to recommend the 2017-18 employer contributions. The Judges' Retirement System provides retirement and ancillary benefits to judges elected or appointed prior to November 9, 1994. The employer and member contribution rates for the System are set by State statute and are each equal to 8 percent of payroll. The State currently funds the System using a pay-as-you-go approach since the 8 percent of payroll contributions made by both the State and members are ***not adequate to meet the System's current benefit payouts.***

PURPOSE OF REPORT

This actuarial valuation of the Judges' Retirement System of the State of California was performed by CalPERS staff actuaries as of June 30, 2016 in order to:

- Set forth the funded status, the actuarial assets, and accrued liabilities of the System as of June 30, 2016;
- Provide expected benefit payouts and funding alternatives;
- Provide actuarial information as of June 30, 2016, to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to Governmental Accounting Standards Board (GASB) Statement No. 68 for an Agent Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; changes in actuarial policies; and changes in plan provisions or applicable law.

California Actuarial Advisory Panel Recommendations

This report includes all the basic disclosure elements as described in the *Model Disclosure Elements for Actuarial Valuation Reports* recommended in 2011 by the California Actuarial Advisory Panel (CAAP) that would be applicable to a pay-as-you-go plan.

EMPLOYER CONTRIBUTION

The State contributes to the plan on a pay-as-you-go basis. In other words, member contributions plus employer contributions are designed to cover only benefit payments and expenses each year, with nothing left over for pre-funding. A pay-as-you-go approach is easy to understand. However, from an accounting viewpoint, pensions in the aggregate are considered a form of deferred wages and should generally be charged over the period of employment. Also, from the member's point of view, it is generally not satisfactory that his/her future benefit payments are dependent upon the continued willingness and ability of the employer to cover the benefit payments each year.

A comparison of the pay-as-you-go costs reduced by expected member contributions for the prior and current valuation is shown below.

	Fiscal Year 2016/2017	Fiscal Year 2017/2018
Estimated Employer Pay-as-You-Go Cost (PAYG)	$227,341,695	$208,334,913

EMPLOYER CONTRIBUTION (CONTINUED)

The average expected remaining service for current actives is approximately 4.3 years. Some believe that pensions should be funded over a period similar to the remaining service life. CalPERS recognizes that making contributions equal to the entire Unfunded Actuarial Liability (UAL) within 4 years is not realistic at this time. However, the lack of any accumulation of assets remains a serious concern. Advance funding of the System's benefits enables the pension assets to grow with investment earnings and would reduce future contribution requirements needed on a pay-as-you-go basis. It is recommended that the State consider some form of advanced funding.

In the following table, we have shown three possible funding amounts, equal to the Normal Cost plus a 15-year, a 10-year and a 5-year level dollar amortization of the UAL, in addition to the PAYG amount. We recommend a 10-year or shorter amortization, since most, if not all, active members would be expected to retire within that time and the duration of benefit payments is 9.3. We have also shown the expected total amount of payments expected to be made over the life of the plan under each scenario. This demonstrates the amount of earnings that can be realized when assets are invested.

	Fiscal Year 2017-18			
	Pay-as-You-Go	Funding, 15-Year Amortization	Funding, 10-Year Amortization	Funding, 5-Year Amortization
Total Normal Cost	N/A	$25,318,403	$25,318,403	$25,318,403
Less Estimated Employee Contributions	N/A	($2,613,540)	($2,613,540)	($2,613,540)
Amortization of UAL	N/A	$298,432,451	$415,450,757	$769,504,551
Total	**$208,334,913**	**$321,137,314**	**$438,155,620**	**$792,209,414**
Expected Total Payout over the Life of the Plan (Employer and Employee)	$5,294,702,970	$4,612,121,722	$4,290,142,520	$3,983,157,707

CalPERS will be happy to work with the Administration in establishing an acceptable advance-funding basis that satisfies both the recommendation for advanced funding and current fiscal limitations.

PLAN'S FUNDED STATUS

The table below summarizes the funded status of the Judges' Retirement System as of June 30, 2016.

	June 30, 2015	June 30, 2016
1) Present Value of Projected Benefits	$3,365,609,774	$3,543,516,613
2) Entry Age Normal Accrued Liability	3,322,609,989	3,428,743,441
3) Market Value of Assets (MVA)	41,177,519	39,793,891
4) Unfunded Liability [(2) - (3)]	**$3,281,432,470**	**$3,388,949,550**
5) Funded Ratio [(3) / (2)]	**1.2%**	**1.2%**

This measure of funded status is an assessment of the need for future employer contributions based on the selected actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members.

CHANGES SINCE THE PRIOR YEAR'S VALUATION

Actuarial Methods and Assumptions

There were changes to the actuarial methods and assumptions since the prior valuation. The first change was a revision to the assumed rates of retirement. Recent past experience indicated that active members have retired at lower rates than those previously assumed. These lower rates of retirement have persisted for a long enough period of time that we believe it is appropriate to reflect lower retirement rate expectations into our assumptions. The revised rates are believed to be a better predictor of future retirement patterns. In addition, we have also removed the assumed rates of termination and disability prior to retirement. We believe the future incidence of pre-retirement termination and disability will be sufficiently low such that removal of these rates is appropriate. The final change was a change to the discount rate from 4.25 percent to 3.25 percent. The new discount rate of 3.25 percent is the assumed rate of return for fixed income investments. For this purpose we have assumed that should the State begin a prefunding program that all assets will be invested in fixed income investments. A complete description of the actuarial assumptions used in the valuation may be found in Appendix A of this report.

CHANGES SINCE THE PRIOR YEAR'S VALUATION (CONTINUED)

Plan Provisions

There were no plan changes since the prior valuation. A description of the principal plan provisions may be found in Appendix B of this report.

SUBSEQUENT EVENTS

Plan Data

In the case of Robert M. Mallano, et al. v. John Chiang, Controller of the State of California (SCO), the Judges' Retirement System (JRS), and the Judges' Retirement System II (JRS II), the judge issued a Statement of Decision, which orders judicial salary increases to be given to the judges for the fiscal years 2008-09, 2009-10, 2010-11 and 2013-14 plus 10 percent interest per annum for each year that the judicial salaries were not increased within those fiscal years. The increases and amounts owed have not been calculated yet. We anticipate the impact of this lawsuit to be reflected in the June 30, 2017 valuation.

Assets

7 RECONCILIATION OF THE MARKET VALUE OF ASSETS

7 ASSET ALLOCATION

Assets

RECONCILIATION OF THE MARKET VALUE OF ASSETS

The following displays the change in the market value of assets from the prior valuation date to June 30, 2016. As of June 30, 2016, assets of the fund are invested in short-term domestic securities with equal cost and market values.

	Market Value
Beginning Balance as of June 30, 2015	$41,177,519
Prior Period Adjustment	—
Adjusted Beginning Balance as of June 30, 2015	$41,177,519
Contributions (Employer plus Employee)	8,893,769
Other Income	2,567,539
Transfer from General Fund	186,953,000
Investment Earnings Credit	194,756
Less Other Investment Expenses	(1,268)
Contribution Refund	(78,329)
Administrative Costs[1]	(642,267)
Benefit Payments	(199,270,828)
Ending Balance as of June 30, 2016	**$39,793,891**

(1) An adjustment of ($611,711) for "OPEB Expenses" is included in the amount shown.

ASSET ALLOCATION

Shown below is the market value of assets, by asset type, as of the valuation date.

	June 30, 2016
Cash	$444
Investments at Market Value	
Investment in Short Term Domestic Securities	$37,863,615
Accounts Receivable	
Member, Agency, State, School and Other	$2,418,246
Due from PERF	141,139
Accrued Interest Receivable	37,801
Subtotal of Accounts Receivable	$2,597,186
Accounts Payable	
Retirement Benefits in Process of Payment	($120)
Due to General Fund	(52,050)
Due to Other Funds	(110,805)
Other Program Liabilities	(504,379)
Subtotal of Accounts Payable	($667,354)
Fund Balance at Market Value on 6/30/2016	**$39,793,891**

Liabilities and Funding Requirements

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10 (GAIN)/LOSS ANALYSIS

11 FUNDING HISTORY

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.

		June 30, 2016	
	June 30, 2015	Old Assumptions	New Assumptions
1) Members Included in the Valuation			
a) Active Members	231	216	216
b) Deferred Vested Terminated Members & QDRO's	15	12	12
c) Receiving Payments	1,924	1,897	1,897
d) Total	**2,170**	**2,125**	**2,125**
2) Payroll			
a) Covered Annual Payroll	$44,284,467	$42,429,926	$42,429,926
b) Projected Covered Annual Payroll	34,339,836	32,414,880	39,409,598
c) Average Covered Annual Payroll [(2a) / (1a)]	$191,708	$196,435	$196,435
3) Age and Service for Actives			
a) Average Attained Age for Actives	68.23	69.24	69.24
b) Average Service for Actives	27.27	28.56	28.56
c) Average Future Service for Actives	1.64	1.54	4.33
4) Present Value of Benefits at Valuation Date			
a) Active Members	$603,829,127	$566,289,587	$572,645,131
b) Deferred Vested Terminated Members & QDRO's	36,872,177	22,160,140	25,746,748
c) Receiving Benefits	2,724,908,470	2,662,251,913	2,945,124,734
d) Total	**$3,365,609,774**	**$3,250,701,640**	**$3,543,516,613**
5) Present Value of Future Normal Costs at Valuation Date			
a) Member Contributions	$5,782,276	$5,217,829	$14,785,410
b) Employer Normal Costs	37,217,509	33,652,462	99,987,762
6) Unfunded Accrued Actuarial Liability			
a) Accrued Actuarial Liability			
i) Active Members	$560,829,342	$527,419,296	$457,871,959
ii) Deferred Vested Terminated Members & QDRO's	36,872,177	22,160,140	25,746,748
iii) Receiving Benefits	2,724,908,470	2,662,251,913	2,945,124,734
iv) Total	**$3,322,609,989**	**$3,211,831,349**	**$3,428,743,441**
b) Assets (Market Value)	$41,177,519	$39,793,891	$39,793,891
c) Unfunded Accrued Actuarial Liability [(6 a iv) - (6b)]	$3,281,432,470	$3,172,037,458	$3,388,949,550
d) Funded Ratio [(6b) / (6 a iv)]	1.2%	1.2%	1.2%
7) Normal Cost	$20,725,030	$19,554,777	$24,521,456
8) Employer Contributions			
a) Recommended 10-Year Funding			
i) Normal Cost [(7) * (1 + interest rate)]	$21,605,844	$20,385,855	$25,318,403
ii) Estimated Employee Contributions		1,312,153	2,613,540
iii) Payment on Unfunded Liability	427,030,533	412,794,369	415,450,757
iv) TOTAL [(8 a i) - (8 a ii) + (8 a iii)]	**$448,636,377**	**$431,868,071**	**$438,155,620**
b) Estimated Pay-as-You-Go Costs (PAYG)			
i) Estimated Benefit Payments	$228,795,191	$227,666,299	$210,948,453
ii) Estimated Employee Contributions	1,453,496	1,312,153	2,613,540
iii) Estimated Employer Contributions [(10 b i) - (10 b ii)]	$227,341,695	$226,354,146	$208,334,913

(GAIN)/LOSS ANALYSIS

Shown below is an analysis of the (Gain)/Loss for the fiscal year ending on the valuation date. The Gain or Loss is shown separately for assets, contributions, and liabilities.

1) Total (Gain)/Loss for the Year	
a) Unfunded Accrued Liability (UAL) as of 6/30/15	$3,281,432,470
b) Expected Normal Cost During 2015/2016	20,725,030
c) Contributions During 2015/2016	(198,414,308)
d) Interest Through 6/30/16	136,169,261
e) Expected UAL Before All Other Changes [1a + 1b + 1c + 1d]	$3,239,912,453
f) Change Due to Revised Actuarial Methods	—
g) Change Due to New Actuarial Assumptions	216,912,092
h) Expected UAL After All Changes [1e + 1f + 1g]	$3,456,824,545
i) Actual Unfunded Accrued Liability as of 6/30/16	3,388,949,550
j) Total (Gain)/Loss for 2015/2016 [1i - 1h]	**($67,874,995)**
2) Asset (Gain)/Loss for the Year	
a) Market Value of Assets as of 6/30/15	$41,117,519
b) Contributions Received	198,414,308
c) Benefits, Refunds Paid and Administrative Costs	(200,603,134)
d) Expected Interest [0.0425 x 2a + $((1.0425)^{1/2} - 1)$ x (2b + 2c)]	1,701,466
e) Expected Assets as of 6/30/16 [2a + 2b + 2c + 2d]	40,630,159
f) Actual Market Value of Assets as of 6/30/16	39,793,891
g) Asset (Gain)/Loss [2e - 2f]	**$836,268**
3) Liability (Gain)/Loss for the Year	
a) Total (Gain)/Loss (1j)	($67,874,995)
b) Asset (Gain)/Loss (2g)	836,268
c) Liability (Gain)/Loss [3a - 3b]	**($68,711,263)**

FUNDING HISTORY

The Funding History below shows the recent history of the actuarial accrued liability, the market value of assets, funded ratio, the annual covered payroll and the Pay-As-You-Go Cost (PAYG).

Valuation Date	Entry Age Normal Accrued Liability	Market Value of Assets (MVA)	Unfunded Accrued Liability	Funded Ration (MVA)	Payroll	PAYG
6/30/16	$3,428,743,441	$39,793,891	$3,388,949,550	1.2%	$42,429,926	$208,334,913
6/30/15	3,322,609,989	41,177,519	3,281,432,470	1.2%	44,284,467	227,341,695
6/30/14	3,414,779,730	57,198,659	3,357,581,071	1.7%	52,335,325	225,157,030
6/30/13	3,383,309,964	53,819,947	3,329,490,017	1.6%	60,593,543	217,464,586
6/30/12	3,172,276,086	72,693,177	3,099,582,909	2.3%	69,227,033	213,556,754
6/30/11	3,296,537,803	54,383,026	3,242,154,777	1.6%	75,919,674	212,005,561
6/30/10	3,429,380,904	63,828,344	3,365,552,560	1.9%	85,947,377	210,566,972

Projections of Contributions & Payouts

13 10-YEAR PROJECTION OF CONTRIBUTIONS AND BENEFITS

13 GRAPH OF PROJECTED BENEFIT PAYOUTS

10-YEAR PROJECTION OF CONTRIBUTIONS AND BENEFITS

Shown below is a 10-year projection of expected State and member statutory contributions and expected benefit payouts.

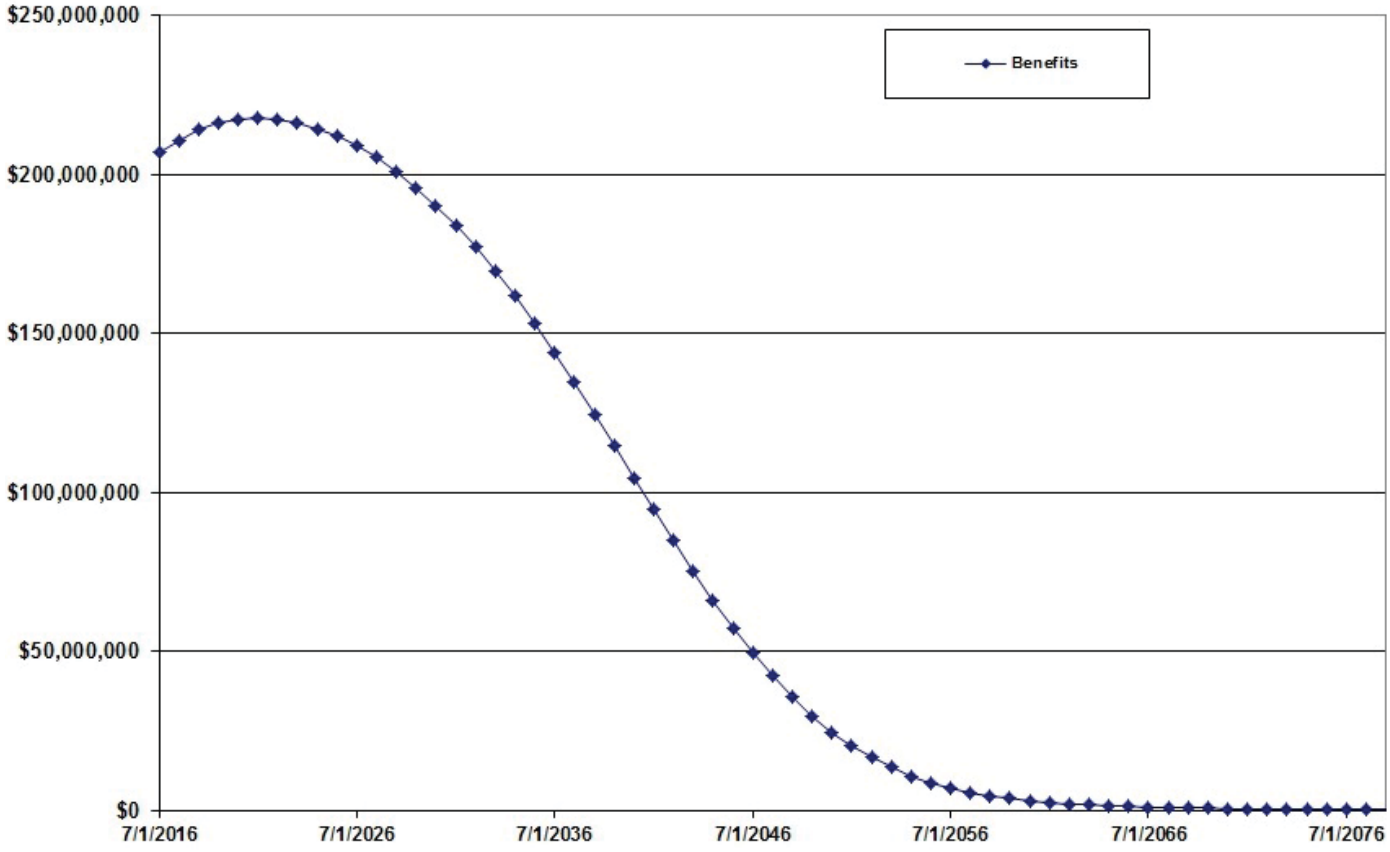
Fiscal Years Beginning July 1	State Statutory Contributions[1]	Member Statutory Contributions[1]	Future Benefit Payouts
2017	$2,613,540	$2,613,540	$210,948,453
2018	2,172,817	2,172,817	214,245,137
2019	1,794,041	1,794,041	216,559,936
2020	1,466,825	1,466,825	217,593,792
2021	1,192,212	1,192,212	217,890,905
2022	966,149	966,149	217,387,156
2023	777,579	777,579	216,316,231
2024	622,874	622,874	214,452,508
2025	499,427	499,427	212,013,384
2026	396,113	396,113	209,095,147

(1) Statutory state contributions and statutory member contributions both equal eight percent (8%) of pay.

GRAPH OF PROJECTED BENEFIT PAYOUTS

The graph below shows a projection of future annual benefit payouts from the System. Total benefit payments from the System are projected to decline from a peak of $218 million during the 2021-2022 Fiscal Year.

Projection of Annual Benefit Payouts



Appendix A
Statement of Actuarial Methods and Assumptions

ACTUARIAL DATA
As stated in the Actuarial Certification, the data, which serves as the basis of this valuation, has been obtained from the various CalPERS databases. We have reviewed the valuation data and believe that it is reasonable and appropriate in aggregate.

ACTUARIAL FUNDING METHOD
The method used to determine the optional funding schedules was the Entry Age Normal actuarial cost method.

Under this funding method the actuarial present value of projected pension, termination, death and disability benefits for members and beneficiaries are determined as of the valuation date using the actuarial assumptions set forth below.

The cost allocated to the current fiscal year is called the normal cost. The actuarial accrued liability for active members is then calculated as the portion of the total cost of the plan allocated to prior years. The actuarial accrued liability for members currently receiving benefits, for active members beyond the assumed retirement age, and for members entitled to deferred benefits, is equal to the present value of the benefits expected to be paid. No normal costs are applicable for these participants. The excess of the total actuarial accrued liability over the value of plan assets is called the unfunded actuarial accrued liability. Funding requirements are determined by adding the normal cost and an amortization of the unfunded liability over the average remaining service for current active members.

AMORTIZATION PERIOD
No formal amortization of the unfunded liability is currently in use, since contributions are being made on a pay-as-you-go basis. However, we have included a recommended contribution using an amortization period of 10 years.

ASSET VALUATION METHOD
The value of assets equals the market value of the fund plus accrued interest.

ACTUARIAL ASSUMPTIONS
The actuarial assumptions used in the June 30, 2016 actuarial valuation are shown below.

The current inflation assumption is based on a study performed by GRS in February 2012 and adopted by the CalPERS Board of Administration in March of 2012. The discount rate assumption was decreased from 4.25 percent to 3.25 percent since the prior valuation. The 3.25 percent assumption is equal to the expected return on fixed income investment.

ECONOMIC ASSUMPTIONS
Investment Return: 3.25 percent per annum, compounded annually.

Salary Increases: 3.00 percent per annum, compounded annually.

Inflation: 2.75 percent per annum, compounded annually.

Cost-of-Living Adjustment: Benefits are fully adjusted for increases in wages for the active judges of the same court from which the member retired. Therefore, we assume that benefits will increase by 3 percent per annum compounded annually.

ECONOMIC ASSUMPTIONS (CONTINUED)

Interest Crediting Rate: Based on the rate for 30-year U.S. Treasuries, or their equivalent, for the month of June of the valuation year. This rate for June 2016 equals 2.45 percent (a change from 3.11 percent as of June 2015).

DEMOGRAPHIC ASSUMPTIONS

The following decrements apply to all members.

Probability of Termination and Disability

No pre-retirement termination or disability rates were assumed.

Probability of Service Retirement

Age	Rate
60	0.2
61	0.2
62	0.2
63	0.2
64	0.2
65	0.2
66	0.2
67	0.2

Age	Rate
68	0.2
69	0.3
70	0.1
71	0.1
72 - 79	0.2
80 - 84	0.3
85 - 89	0.5
> 89	1.0

Mortality: 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 rates include 20 years of projected on-going mortality improvement using Scale BB published by the Society of Actuaries.

Rates vary by age as shown in the table below.

Pre-Retirement Mortality

Attained Age	Male	Female
35	0.00057	0.00035
40	0.00075	0.00050
45	0.00106	0.00071
50	0.00155	0.00100
55	0.00228	0.00138
60	0.00308	0.00182
65	0.00400	0.00257
70	0.00524	0.00367
75	0.00713	0.00526
80	0.00990	0.00814
85	0.01770	0.01471

DEMOGRAPHIC ASSUMPTIONS (CONTINUED)

Sample rates are shown in the following table.

Post-Retirement Mortality

	Standard		Disability	
Attained Age	Male	Female	Male	Female
35	0.00060	0.00046	0.00788	0.00492
40	0.00110	0.00091	0.00949	0.00605
45	0.00227	0.00200	0.01221	0.00804
50	0.00501	0.00466	0.01680	0.01158
55	0.00599	0.00416	0.01973	0.01149
60	0.00710	0.00436	0.02289	0.01235
65	0.00829	0.00588	0.02451	0.01607
70	0.01305	0.00993	0.02875	0.02211
75	0.02205	0.01722	0.03990	0.03037
80	0.03899	0.02902	0.06083	0.04725
85	0.06969	0.05243	0.09731	0.07762
90	0.12974	0.09887	0.14804	0.12890
95	0.22444	0.18489	0.22444	0.21746
100	0.32536	0.30017	0.32536	0.30017
105	0.58527	0.56093	0.58527	0.56093
110	1.00000	1.00000	1.00000	1.00000

Marital Status

90 percent of non-retired members are assumed to be married.

Age of Spouse

Female spouses are assumed to be four years younger than male spouses. For retired members receiving some form of joint and survivor annuity, the spouse's actual date of birth was used in the valuation if such information was furnished. Otherwise, wives were assumed to be four years younger than their husbands.

Form of Payment

For retired members for whom no optional form of payment was elected, the assumed form of payment was 1) 50 percent joint and survivor if beneficiary information was provided or 2) a life annuity if no beneficiary information was provided.

Appendix B
Summary of Principal Plan Provisions

ELIGIBILITY OF MEMBERSHIP

All Supreme Court, District Court of Appeal, Superior Court, and Municipal Court Judges and Justices were immediately eligible for membership, if elected or appointed before November 9, 1994.

MEMBERSHIP CONTRIBUTIONS

8 percent of pay. Withdrawal of contributions results in forfeiture of all other benefits.

SERVICE RETIREMENT

Eligibility

A member who has met the age and service qualifications in one of the following subdivisions shall be eligible for Service Retirement upon specifying the date upon which his or her retirement is to be effective.

Age at Retirement	Service Qualifications	Re-Retirement Time Limit for Accrual of Service
70 or older	20 years	*
70 or older	10 years	15 years
69	12 years	16 years
68	14 years	18 years
67	16 years	20 years
66	18 years	22 years
65	20 years	24 years
60	20 years	No Limit

* At least 5 years of service must immediately precede retirement.

Benefit

Members retiring after age 60 with at least 20 years of service receive 75 percent of pay of the last judicial office held. With less than 20 years of service, the benefit percentage is 65 percent.

Form of Payment

50 percent of the retirement allowance will automatically be continued to the spouse upon the death of the retiree, without a reduction in the retiree's allowance. For post-January 1, 1980 judges, there is a one-year marriage requirement at benefit commencement. The remaining 50 percent, often referred to as the option portion, is paid to the retiree as an annuity for as long as he or she is alive. The retiree may choose to provide for some, or all, of the option portion to be paid to any designated beneficiary after the retiree's death, paid for by a reduction to the option portion of the allowance.

TERMINATION BENEFIT

Eligibility

Completion of five years of service.

Benefit

3.75 percent of pay of last judicial office held multiplied by years of service to a maximum of 20 years. Benefit percentage is reduced by 0.25 percent for each year of service less than 12 years. Benefit begins at the earliest age that member would have been eligible for service retirement had he remained in service; and, the member is at least age 63, or age 60 with 20 years of service.

TERMINATION BENEFIT (CONTINUED)

Minimum benefit for pre-January 1, 1974 judges: 5 percent of pay of last judicial office held multiplied by years of service, to a maximum of 8 years. Benefit is payable at age 65.

Form of Payment: 50 percent contingent annuity with spouse as contingent annuitant. Minimum benefit is paid as life annuity only.

DISABILITY RETIREMENT

Eligibility

Four years of service (no service requirement is necessary for a work-related disability), two years of service for pre-January 1, 1989 judges. No service requirement for pre-January 1, 1980 judges.

Benefit

With 20 years of service, 75 percent of pay of last judicial office held, payable immediately. With less than 20 years of service, the benefit is 65 percent of pay.

PRE-RETIREMENT DEATH BENEFITS

Spouses Benefit

25 percent of pay of last judicial office held, payable for spouse's lifetime if not eligible for retirement. If a member dies after being eligible to retire, the surviving spouse will receive a monthly allowance equal to 50 percent of the monthly allowance the member would have received, had he/she retired, for life.

Contributory Benefit

After 10 years of service, spouse or minor child receives 1.625 percent of pay of last judicial office held multiplied by years of service, to a maximum of 20 years. Spouse's benefit is payable for life. Child's benefit ceases at age 18, or at age 22 if a full-time student. Requires $2 monthly contribution.

Benefit with No Spouse or Children

Refund of accumulated member contributions plus one month's pay multiplied by years of service, to a maximum of 6 years.

POST-RETIREMENT ADJUSTMENTS

The retirement allowances of retired judges, beneficiaries and individuals receiving benefits under domestic relation orders will increase proportionately according to increases in judicial salary increases for the judicial office last held by the member.

EXTENDED SERVICE INCENTIVE PROGRAM (ESIP)

Eligibility

An active member shall automatically participate in the program if he/she has 20 or more years of creditable service and has attained the age of 60 or more on or after January 1, 2001.

Vesting

36 months of creditable service after the later of January 1, 2001 or the date the judge first becomes eligible to participate in the program. However, the 36 months of creditable service requirement is waived in the event of the member's death, disability, or because he/she was unsuccessful in his/her efforts to be reelected or retained in office.

Benefit

For the first 60 months of participation in the program, 20 percent of the judge's monthly salaries and 8 percent of the judge's monthly salaries for the 61st to the 120th months of participation plus interest based on 30-year U.S. Treasury Bonds shall be credited to the judge. The benefit shall be paid in the form of a single, lump sum payment.

Appendix C
Participant Data

SUMMARY OF VALUATION DATA

The table below illustrates counts of records processed by the valuation.

	June 30, 2015	June 30, 2016
1) Active Members		
a) Counts	231	216
b) Average Attained Age	68.23	69.24
c) Average Entry Age to Rate Plan	40.96	40.68
d) Average Years of Service	27.27	28.56
e) Average Annual Covered Pay	$191,708	$196,435
f) Annual Covered Payroll	44,284,467	42,429,926
g) Projected Annual Payroll	34,339,836	39,409,598
h) Present Value of Future Payroll	72,278,361	184,817,481
2) Transferred and Vested Termination Members and		
a) Counts	15	12
3) Receiving Payments		
a) Counts	1,924	1,897
b) Average Attained Age	77.06	78.09
c) Average Annual Benefits	$101,269	$102,256
4) Active to Retired Ratio [(1a) / (3)]	0.12	0.11

RECONCILATION OF PARTICIPANTS

The table below provides a reconciliation of the member data over the course of the valuation year.

Reconciliation of Participants For the Fiscal Year Ending June 30, 2016

	Active Judges	Vested Terminated Judges	Disabled Judges	Retired Judges	Benefi-ciaries	QDRO[1] Receiving Benefits	QDRO[1] Not Receiving Benefits	Total Participants
As of June 30, 2015	**231**	**11**	**42**	**1,243**	**515**	**124**	**4**	**2,170**
New Entrants	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
Rehires	1	0	0	(1)	N/A	N/A	N/A	0
Disability Retirements	0	N/A	0	N/A	N/A	N/A	N/A	0
Service Retirements	(16)	(3)	N/A	19	N/A	0	0	0
Vested Terminations	0	0	N/A	N/A	N/A	N/A	N/A	0
Termination with Refund	0	0	0	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	0	(3)	(32)	41	0	N/A	6
Divorce Settlements	0	0	0	0	0	5	0	5
Died, WIthout Beneficiary; and Other Terminations	0	0	(2)	(21)	N/A	(3)	0	(26)
Beneficiary Deaths	N/A	N/A	N/A	N/A	(30)	N/A	N/A	(30)
Data Corrections	0	0	0	0	0	0	0	0
As of June 30, 2016	**216**	**8**	**37**	**1,208**	**526**	**126**	**4**	**2,125**

(1) Qualified Domestic Relations Order

DISTRIBUTION OF ACTIVE PARTICIPANTS

The following table displays the number of active members by age and service as of June 30, 2016.

Attained Age	Years of Service at Valuation Date[1]						Total	Valuation Payroll
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 29	30+		
15 - 19	0	0	0	0	0	0	0	$0
20 - 24	—	—	—	—	—	—	—	—
25 - 29	—	—	—	—	—	—	—	—
30 - 34	—	—	—	—	—	—	—	—
35 - 39	—	—	—	—	—	—	—	—
40 - 44	—	—	—	—	—	—	—	—
45 - 49	—	—	—	—	—	—	—	—
50 - 54	—	—	—	—	1	—	1	189,041
55 - 59	—	—	1	—	7	—	8	1,565,264
60 - 64	—	—	1	4	36	2	43	8,319,782
65 - 69	—	—	2	4	45	24	75	14,574,533
70 - 74	—	—	—	—	25	18	43	8,607,092
75+	—	—	1	—	22	23	46	9,174,215
Total	**—**	**—**	**5**	**8**	**136**	**67**	**216**	**$42,429,926**

(1) Years of Service at Valuation Date may include service related to a Qualified Domestic Relations Order.

DISTRIBUTION OF AVERAGE ANNUAL PAYROLL

The following table displays the average annual payroll of active members by age and service as of June 30, 2016.

Attained Age	Years of Service at Valuation Date[1]								Average Valuation Payroll
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	
15 - 19	$0	$0	$0	$0	$0	$0	$0	$0	$0
20 - 24	—	—	—	—	—	—	—	—	—
25 - 29	—	—	—	—	—	—	—	—	—
30 - 34	—	—	—	—	—	—	—	—	—
35 - 39	—	—	—	—	—	—	—	—	—
40 - 44	—	—	—	—	—	—	—	—	—
45 - 49	—	—	—	—	—	—	—	—	—
50 - 54	—	—	—	—	189,041	—	—	—	189,041
55 - 59	—	—	189,041	—	189,041	241,978	—	—	195,658
60 - 64	—	—	189,041	202,685	190,340	194,499	202,685	—	193,483
65 - 69	—	—	202,685	195,863	190,557	191,596	201,321	189,041	194,327
70 - 74	—	—	—	—	198,137	200,176	199,274	202,685	200,165
75+	—	—	216,330	—	193,212	195,863	204,201	202,685	199,439
All Ages	**$0**	**$0**	**$199,957**	**$199,274**	**$191,782**	**$195,574**	**$201,636**	**$200,736**	**$196,435**

(1) Years of Service at Valuation Date may include service related to a Qualified Domestic Relations Order.

DISTRIBUTION OF TERMINATED VESTED MEMBERS & QDRO's NOT RECEIVING BENEFITS

The following table displays the number of terminated vested members and QDRO's not receiving benefits by age and service as of June 30, 2016.

	Years of Service at Valuation Date							
Attained Age	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total
15 - 19	0	0	0	0	0	0	0	0
20 - 24	—	—	—	—	—	—	—	—
25 - 29	—	—	—	—	—	—	—	—
30 - 34	—	—	—	—	—	—	—	—
35 - 39	—	—	—	—	—	—	—	—
40 - 44	—	—	—	—	—	—	—	—
45 - 49	—	—	—	—	—	—	—	—
50 - 54	—	—	—	—	—	1	—	1
55 - 59	—	—	—	—	1	1	1	3
60 - 64	—	—	—	—	7	—	—	7
65 - 69	—	—	—	—	—	1	—	1
70 - 74	—	—	—	—	—	—	—	—
75+	—	—	—	—	—	—	—	—
Total	**0**	**0**	**0**	**0**	**8**	**3**	**1**	**12**

DISTRIBUTION OF RETIRED JUDGES, BENEFICIARIES & QDRO'S RECEIVING BENEFITS

The following table displays the distribution of retired judges, beneficiaries & QDRO's receiving benefits by age as of June 30, 2016.

Attained Age	Service & Disability Retired Judges	Beneficiaries & QDRO's	Total
Under 30	0	2	2
30 - 34	—	2	2
35 - 39	—	—	—
40 - 44	—	1	1
45 - 49	—	6	6
50 - 54	—	3	3
55 - 59	1	11	12
60 - 64	44	37	81
65 - 69	227	55	282
70 - 74	296	85	381
75 - 79	253	102	355
80 - 84	197	98	295
85+	227	250	477
Total	**1,245**	**652**	**1,897**

DISTRIBUTION OF ANNUAL BENEFITS FOR RETIRED JUDGES, BENEFICIARIES & QDRO'S

The following table displays the distribution of annual benefits for retirees, beneficiaries & QDRO's by age as of June 30, 2016.

Attained Age	Service & Disability Retired Judges	Beneficiaries & QDRO's	Total
Under 30	$0	$9,878	$9,878
30 - 34	—	28,569	28,569
35 - 39	—	—	—
40 - 44	—	23,630	23,630
45 - 49	—	257,946	257,946
50 - 54	—	130,344	130,344
55 - 59	122,877	408,213	531,090
60 - 64	5,826,814	2,166,295	7,993,109
65 - 69	27,577,466	3,213,023	30,790,489
70 - 74	36,354,786	5,576,398	41,931,184
75 - 79	31,623,558	6,653,505	38,277,063
80 - 84	24,172,362	6,434,923	30,607,285
85+	28,116,155	15,795,824	43,911,979
Total	**$153,794,018**	**$40,698,548**	**$194,492,566**
Average	**$123,529**	**$62,421**	**$102,526**

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

Normal Cost: The annual cost of service accrual for the upcoming fiscal year for active employees. The normal cost should be viewed as the long term contribution rate.

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

Present Value of Benefits (PVB): The total dollars needed as of the valuation date to fund all benefits earned in the past or expected to be earned in the future for *current* members.

Unfunded Liability (UAL): When a plan or pool's Value of Assets is less than its Accrued Liability, the difference is the plan or pool's Unfunded Liability. If the Unfunded Liability is positive, the plan or pool will have to pay contributions exceeding the Normal Cost.

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

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