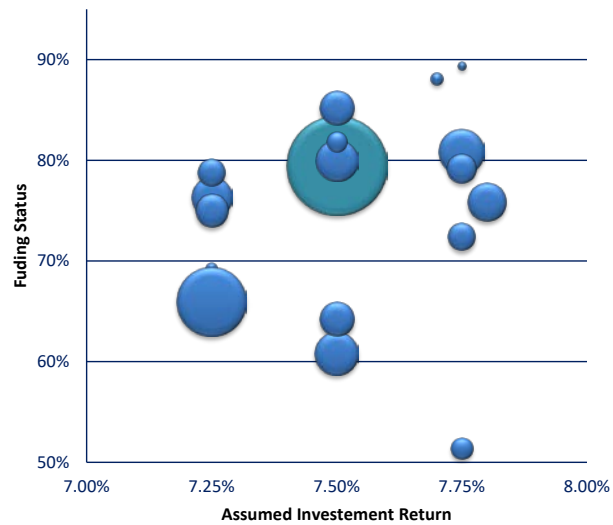


System	Date	Active Members	Assumed Return	Funding Ratio	UAAL (billions)	Employer Rate
AC Transit	Jan-13	1,911	7.38%	64.0%	\$ 0.75	31.97%
Alameda County	Dec-12	10,800	7.80%	75.7%	\$ 1.73	24.16%
CalPERS	Jun-12		7.50%			
CalSTRS	Jul-12	421,499	7.50%	67.0%	\$ 71.0	34.09%
Contra Costa County	Dec-12	8,640	7.75%	70.6%	\$ 2.30	49.82%
Fresno City	Jun-13	1,528	7.50%	99.9%	\$ 0.00	11.65%
Fresno City F&P	Jun-13	893	7.50%	106.4%	\$ (0.06)	20.83%
Fresno County	Jun-13	6,866	7.25%	75.0%	\$ 1.18	53.52%
Imperial County	Jun-13	1,919	7.75%	89.4%	\$ 0.07	18.27%
Kern County	Jun-13	8,485	7.75%	61.1%	\$ 1.99	42.00%
Los Angeles City	Jun-13	24,441	7.75%	68.7%	\$ 4.66	21.43%
Los Angeles City F&P	Jun-13	13,224	7.75%	83.1%	\$ 2.98	36.43%
Los Angeles City W&P	Jun-13	8,913	7.75%	78.8%	\$ 2.14	47.39%
Los Angeles County	Jun-13	91,545	7.50%	75.0%	\$ 13.32	21.34%
Marin County	Jun-13	2,491	7.50%	79.8%	\$ 0.59	25.78%
Mendocino County	Jun-13	1,072	7.75%	74.2%	\$ 0.13	26.28%
Merced County	Jun-13	1,899	7.75%	51.4%	\$ 0.52	50.09%
Orange County	Dec-12	21,256	7.25%	62.5%	\$ 5.68	41.64%
Pasadena City P&F	Jun-13	-	6.00%	75.8%	\$ 0.04	0.00%
Sacramento County	Jun-13	12,026	7.50%	82.8%	\$ 1.41	27.57%
San Bernardino County	Jun-13	19,401	7.75%	79.3%	\$ 1.88	24.73%
San Diego City	Jun-13	7,566	7.25%	70.4%	\$ 2.24	59.55%
San Diego City Airport	Jun-13	347	7.25%	93.4%	\$ 0.01	14.29%
San Diego City Port	Jun-13	417	7.25%	73.7%	\$ 0.11	42.85%
San Diego County	Jun-13	16,891	7.75%	79.0%	\$ 2.45	35.79%
San Francisco City & County	Jun-13	28,717	7.58%	80.6%	\$ 3.92	26.76%
San Joaquin County	Jun-13	5,254	7.50%	69.9%	\$ 0.92	35.12%
San Jose City	Jun-13	3,094	7.25%	59.0%	\$ 1.23	52.31%
San Jose City F&P	Jun-13	1,707	7.13%	77.5%	\$ 0.81	72.70%
San Luis Obispo County	Jan-13	2,495	7.25%	76.4%	\$ 0.35	20.57%
San Mateo County	Jun-13	4,917	7.50%	73.3%	\$ 0.95	37.47%
Santa Barbara County	Jun-13	4,108	7.75%	72.4%	\$ 0.82	38.94%
Sonoma County	Dec-12	3,620	7.50%	77.9%	\$ 0.53	24.47%
Stanislaus County	Jun-13	3,924	7.75%	79.4%	\$ 0.40	22.94%
Tulare County	Jun-13	4,383	7.75%	88.4%	\$ 0.14	14.09%
UC Regents	Jun-13	118,321	7.50%	75.9%	\$ 13.81	30.33%
Ventura County	Jun-13	8,068	7.75%	79.2%	\$ 0.95	29.03%

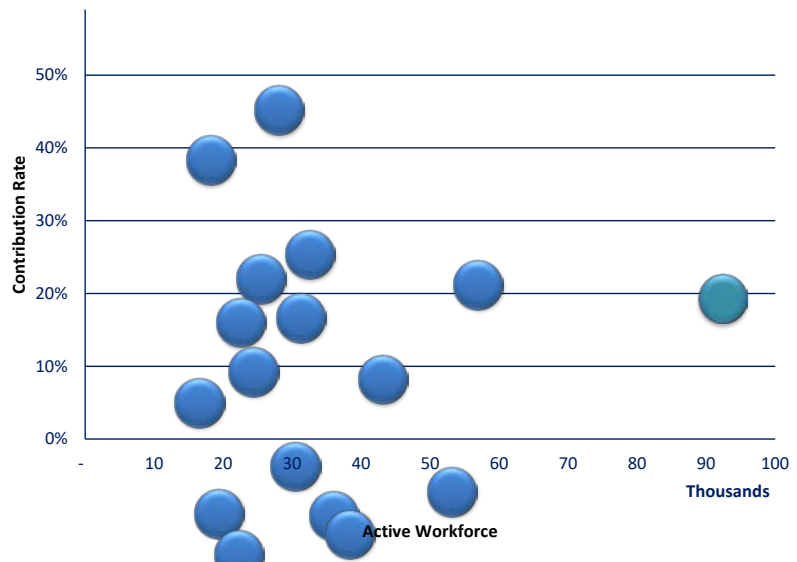
Data From Calendar Year 2015

System	Date	Active Members	Assumed Return	Funding Ratio	UAAL (billions)	Employer Rate		Safety Members	Tier	Safety Rate
AC Transit	Jan-14	1,879	7.25%	67.9%	\$ 0.25	30.99%				
Alameda County	Dec-13	10,877	7.80%	75.9%	\$ 1.65	25.65%				50.0%
CalPERS	Jun-13	190,000	7.50%	66.1%	\$ 30.2	24.28%				36.9%
CalSTRS	Jun-13	417,000	7.50%	66.9%	\$ 73.7	32.88%				
Contra Costa County	Dec-13	9,124	7.25%	76.4%	\$ 1.80	43.58%				80.0%
Fresno City	Jun-14	1,512	7.50%	104.6%	\$ (0.04)	12.04%				
Fresno City F&P	Jun-14	872	7.50%	113.6%	\$ (0.14)	20.14%		872		20.1%
Fresno County	Jun-14	6,866	7.25%	75.0%	\$ 1.18	53.52%				75.0%
Imperial County	Jun-14	1,987	7.50%	88.9%	\$ 0.08	19.52%		317	Legacy	27.28%
Kern County	Jun-14	8,512	7.50%	60.8%	\$ 2.15	45.64%				63.0%
Los Angeles City	Jun-14	24,009	7.50%	67.4%	\$ 5.30	24.05%				
Los Angeles City F&P	Jun-14	13,097	7.50%	86.6%	\$ 2.44	36.43%				
Los Angeles City W&P	Jun-14	8,960	7.75%	80.9%	\$ 2.10	50.62%				
Los Angeles County	Jun-14	92,466	7.50%	79.5%	\$ 11.30	19.33%				25.0%
Marin County	Jun-14	2,533	7.50%	84.3%	\$ 0.37	26.86%		595	2B	36.47%
Mendocino County	Jun-14	1,081	7.25%	69.3%	\$ 0.13	33.38%				54.0%
Merced County	Jun-14	1,924	7.75%	55.6%	\$ 0.44	49.93%		300	2	62.05%
Orange County	Dec-13	21,368	7.25%	66.0%	\$ 5.40	41.51%				57.0%
Pasadena City P&F	Jun-14	-	6.00%	81.6%	\$ 0.03	0.00%				
Sacramento County	Jun-14	12,049	7.50%	85.2%	\$ 1.30	24.37%				42.0%
San Bernardino County	Jun-14	19,497	7.50%	80.0%	\$ 1.94	27.27%				49.0%
San Diego City	Jul-14	7,272	7.25%	74.2%	\$ 2.03	60.12%				
San Diego City Airport	Jul-14	362	7.25%	95.9%	\$ 0.01	12.94%				
San Diego City Port	Jul-14	385	7.25%	76.9%	\$ 0.10	42.60%				
San Diego County	Jun-14	14,466	7.75%	80.9%	\$ 2.30	35.00%				43.0%
San Francisco City & County	Jun-14	29,516	7.50%	85.3%	\$ 1.20	30.34%				
San Joaquin County	Jan-14	5,553	7.50%	64.2%	\$ 1.30	41.93%				69.0%
San Jose City	Jun-14	3,121	7.00%	59.1%	\$ 1.32	59.93%		3121		59.9%
San Jose City F&P	Jun-14	1,654	7.00%	77.5%	\$ 0.79	82.39%				
San Luis Obispo County	Jan-14	2,521	7.25%	77.9%	\$ 0.34	20.11%				
San Mateo County	Jun-14	5,004	7.25%	78.8%	\$ 0.80	35.56%				65.0%
Santa Barbara County	Jun-14	4,177	7.50%	81.1%	\$ 0.58	37.94%		910	T	54.17%
Sonoma County	Dec-13	3,833	7.50%	81.8%	\$ 0.45	21.08%				27.0%
Stanislaus County	Jun-14	3,992	7.75%	81.1%	\$ 0.38	23.35%		689	C	34.01%
Tulare County	Jun-14	4,414	7.70%	88.1%	\$ 0.15	12.45%				18.0%
UC Regents	Jun-14	120,568	7.50%	80.0%	\$ 12.09	28.79%				
Ventura County	Jun-14	8,210	7.75%	82.7%	\$ 0.82	28.11%		1,538	T	53.79%

System	Assumed Return	Funding Ratio	UAAL (billions)
Alameda	7.80%	75.9%	\$ 1.65
Contra Costa	7.25%	76.4%	\$ 1.80
Fresno	7.25%	75.0%	\$ 1.18
Imperial	7.75%	89.4%	\$ 0.07
Kern	7.50%	60.8%	\$ 2.15
Los Angeles	7.50%	79.5%	\$ 11.30
Marin	7.50%	79.8%	\$ 0.59
Mendocino	7.25%	69.3%	\$ 0.13
Merced	7.75%	51.4%	\$ 0.52
Orange	7.25%	66.0%	\$ 5.40
Sacramento	7.50%	85.2%	\$ 1.30
San Bernardino	7.50%	80.0%	\$ 1.94
San Diego	7.75%	80.9%	\$ 2.30
San Joaquin	7.50%	64.2%	\$ 1.30
San Mateo	7.25%	78.8%	\$ 0.80
Santa Barbara	7.75%	72.4%	\$ 0.82
Sonoma	7.50%	81.8%	\$ 0.45
Stanislaus	7.75%	79.4%	\$ 0.40
Tulare	7.70%	88.1%	\$ 0.15
Ventura	7.75%	79.2%	\$ 0.95



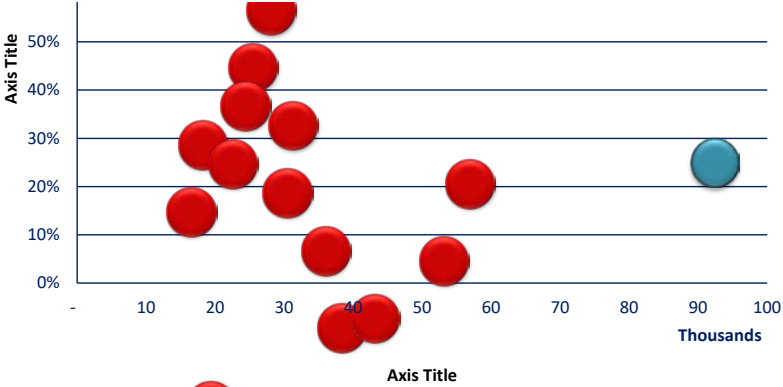
System	Active Members	County Rate
Alameda	10,877	26%
Contra Costa	9,124	44%
Fresno	6,866	54%
Imperial	1,919	18%
Kern	8,512	39%
Los Angeles	92,466	19%
Marin	2,491	26%
Mendocino	1,081	33%
Merced	1,899	50%
Orange	21,368	42%
Sacramento	12,049	24%
San Bernardino	19,497	27%
San Diego	14,466	35%
San Joaquin	5,553	42%
San Mateo	5,004	36%
Santa Barbara	4,108	39%
Sonoma	3,833	21%
Stanislaus	3,924	23%
Tulare	4,414	12%
Ventura	8,068	29%



System	Active Members	Safety Rate
Alameda	10,877	50%
Contra Costa	9,124	80%
Fresno	6,866	75%
Imperial	1,919	23%
Kern	8,512	63%



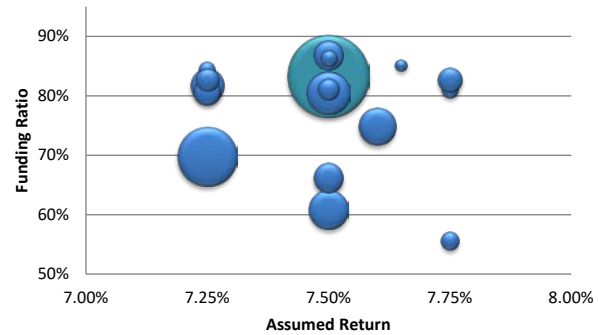
Los Angeles	92,466	25%
Marin	2,491	34%
Mendocino	1,081	54%
Merced	1,899	61%
Orange	21,368	57%
Sacramento	12,049	42%
San Bernardino	19,497	49%
San Diego	14,466	43%
San Joaquin	5,553	69%
San Mateo	5,004	65%
Santa Barbara	4,108	59%
Sonoma	3,833	27%
Stanislaus	3,924	33%
Tulare	4,414	18%
Ventura	8,068	56%



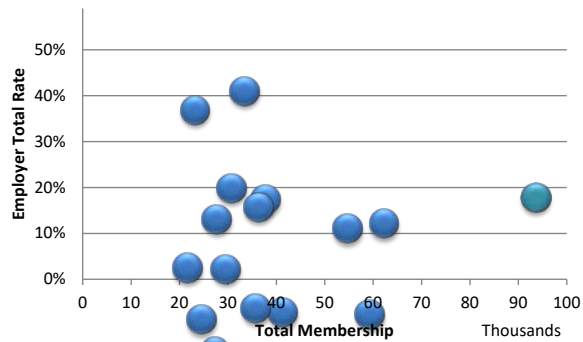
Data from Calendar Year 2016

System	Date	Active Members	Assumed Return	Funding Ratio	UAAL (billions)	Employer Rate		Safety Members	Safety Tier	Safety Rate
AC Transit	Jan-15	1,922	7.25%	66.7%	\$ 0.29	34.59%				
Alameda County	Dec-14	11,025	7.60%	74.8%	\$ 1.91	27.67%		1,408	2	54.00%
CalPERS	Jun-14	242,943	7.50%	72.1%	\$ 43.27	27.18%		65,007		31.92%
CalSTRS	Jun-14	420,887	7.50%	68.5%	\$ 72.72	31.11%				
Contra Costa County	Dec-14	9,159	7.25%	81.7%	\$ 1.50	40.06%		1,385	A&D	77.77%
Fresno City	Jun-15	1,524	7.50%	109.2%	\$ (0.09)	12.77%				
Fresno City F&P	Jun-15	880	7.50%	119.6%	\$ (0.20)	19.02%		880		19.02%
Fresno County	Jun-15	7,001	7.25%	80.7%	\$ 0.98	52.02%		842	1	75.93%
Imperial County	Jun-15	2,057	7.50%	90.0%	\$ 0.08	18.85%				
Kern County	Jun-15	8,481	7.50%	62.4%	\$ 2.13	45.11%				
Los Angeles City	Jun-15	23,895	7.50%	69.4%	\$ 5.18	23.65%				
Los Angeles City F&P	Jun-15	13,068	7.50%	91.5%	\$ 1.57	33.70%		13,068		33.70%
Los Angeles City W&P	Jun-15	9,205	7.75%	86.9%	\$ 1.47	42.77%				
Los Angeles County	Jun-15	93,674	7.50%	83.3%	\$ 9.49	17.77%		12,446	B	22.97%
Marin County	Jun-15	2,609	7.25%	83.7%	\$ 0.40	32.22%		605	COUNTY	36.49%
Mendocino County	Jun-15	1,107	7.25%	70.2%	\$ 0.18	32.55%		125	2	56.73%
Merced County	Jun-15	1,962	7.75%	59.4%	\$ 0.46	50.02%		298	2	64.03%
Orange County	Dec-14	21,459	7.25%	69.8%	\$ 4.96	37.41%		3,754	7	62.66%
Pasadena City F&P	Jun-15	-	6.00%	80.2%	\$ 0.03	0.00%				
Sacramento County	Jun-15	12,072	7.50%	86.8%	\$ 1.19	22.54%		1,979	2	39.42%
San Bernardino	Jun-15	19,938	7.50%	80.8%	\$ 1.96	27.45%		2,212	1	49.09%
San Diego City	Jun-15	7,038	7.25%	75.6%	\$ 2.00	61.98%		6,296	-	
San Diego City Airport	Jun-15	368	7.25%	97.2%	\$ 0.00	12.74%				
San Diego City Port	Jun-15	377	7.25%	78.8%	\$ 0.10	43.04%				
San Diego County	Jun-15	17,656	7.75%	80.5%	\$ 2.54	36.84%		3,626	C	44.85%
San Francisco City & County	Jun-15	30,837	7.50%	85.6%	\$ 3.32	28.96%				
San Joaquin County	Jan-15	5,706	7.50%	66.2%	\$ 1.26	41.35%		827	1	72.28%
San Jose City	Jun-15	3,236	7.00%	56.1%	\$ 1.57	58.67%				
San Jose City P&F	Jun-15	1,577	7.00%	79.2%	\$ 0.85	83.13%		1,577		83.13%
San Luis Obispo County	Jan-15	2,550	7.25%	76.7%	\$ 0.37	20.84%				
San Mateo County	Jun-15	5,095	7.25%	82.6%	\$ 0.70	32.35%		479	T	61.61%
Santa Barbara County	Jun-15	4,278	7.50%	78.4%	\$ 0.70	36.55%				
Sonoma County	Dec-14	3,922	7.50%	86.3%	\$ 0.34	19.18%		711	A	25.06%
Stanislaus County	Jun-15	3,992	7.75%	73.7%	\$ 0.63	25.00%		723	COUNTY	34.98%
Tulare County	Jun-15	4,405	7.65%	85.1%	\$ 0.20	14.11%		899	T	17.77%
UC Regents	Jun-15	123,768	7.50%	81.7%	\$ 12.08	28.44%				
Ventura County	Jun-15	8,299	7.75%	83.1%	\$ 0.88	27.77%		1,521	COMBINE	54.48%

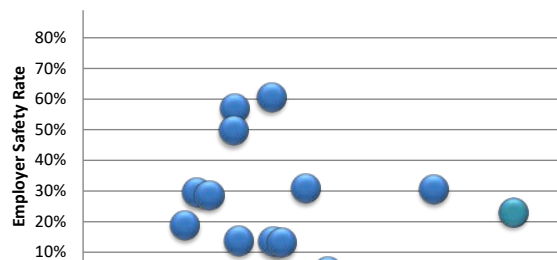
System	Assumed Return	Funding Ratio	UAAL (billions)
Alameda	7.60%	75%	\$ 1.91
Contra Cos	7.25%	82%	\$ 1.50
Fresno	7.25%	81%	\$ 0.98
Imperial	7.50%	89%	\$ 0.08
Kern	7.50%	61%	\$ 2.15
Los Angele	7.50%	83%	\$ 9.49
Marin	7.25%	84%	\$ 0.37
Mendocinc	7.25%	70%	\$ 0.18
Merced	7.75%	56%	\$ 0.44
Orange	7.25%	70%	\$ 4.96
Sacramento	7.50%	87%	\$ 1.19
San Bernar	7.50%	81%	\$ 1.96
San Diego	7.50%	81%	\$ 2.54
San Joaqui	7.50%	66%	\$ 1.26
San Mateo	7.25%	83%	\$ 0.70
Santa Barb	7.50%	81%	\$ 0.58
Sonoma	7.50%	86%	\$ 0.34
Stanislaus	7.75%	81%	\$ 0.38
Tulare	7.65%	85%	\$ 0.20
Ventura	7.75%	83%	\$ 0.82



System	Active Members	County Rate
Alameda	11,025	28%
Contra Cos	9,159	40%
Fresno	7,001	52%
Imperial	1,987	20%
Kern	8,512	39%
Los Angeles	93,674	18%
Marin	2,533	27%
Mendocinc	1,107	33%
Merced	1,924	50%
Orange	21,459	37%
Sacramento	12,072	23%
San Bernar	19,938	27%
San Diego	17,656	37%
San Joaqui	5,706	41%
San Mateo	5,095	32%
Santa Barb	4,177	38%
Sonoma	3,922	19%
Stanislaus	3,992	23%
Tulare	4,405	14%
Ventura	8,210	28%



System	Safety Members	Safety Rate
Alameda	1,408	54%
Contra Cos	1,385	78%
Fresno	842	76%
Imperial	317	27%
Kern	1,883	63%
Los Angeles	12,446	23%
Marin	595	36%
Mendocinc	125	57%
Merced	300	62%



Orange	3,754	63%
Sacrament	1,979	39%
San Bernai	2,212	49%
San Diego	3,626	45%
San Joaqui	827	72%
San Mateo	479	62%
Santa Barb	910	54%
Sonoma	711	25%
Stanislaus	689	34%
Tulare	899	18%
Ventura	1,538	54%



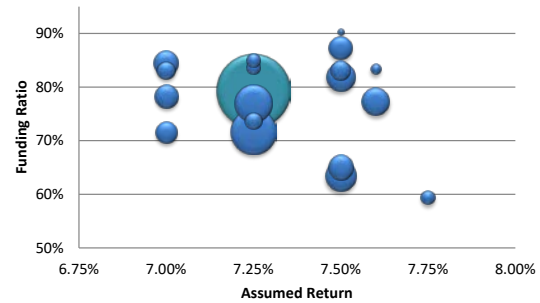
Data From Calendar Year 2017

System	Date	Active Members	Assumed Return	Funding Ratio	UAAL (billions)	Employer Rate		Safety Members	Safety Tier	Safety Rate
AC Transit	Jan-16	1,964	7.25%	68.7%	\$ 0.27	34.13%				
Alameda County	Dec-15	11,071	7.60%	77.3%	\$ 1.79	24.89%		1,103	2	52.73%
CalPERS	Jun-15	246,311	7.50%	69.4%	\$ 49.56	32.05%		66,621	combine	34.15%
CalSTRS	Jun-15	429,460	7.50%	68.5%	\$ 76.20	31.15%				
Contra Costa County	Dec-15	9,642	7.00%	84.5%	\$ 1.31	39.23%		1,429	A&D	76.40%
Fresno City	Jun-16	1,592	7.25%	111.3%	\$ (0.11)	11.39%				
Fresno City F&P	Jun-16	947	7.25%	119.6%	\$ (0.21)	18.92%		947		18.92%
Fresno County	Jun-16	7,297	7.00%	78.2%	\$ 1.19	56.74%		920	I	81.63%
Imperial County	Jun-16	2,127	7.50%	90.3%	\$ 0.08	18.64%		333	LEGACY	27.18%
Kern County	Jun-16	8,627	7.50%	63.4%	\$ 2.13	44.78%		1,839	I	65.28%
Los Angeles City	Jun-16	24,446	7.50%	71.4%	\$ 4.99	22.96%				
Los Angeles City F&P	Jun-16	13,050	7.50%	93.9%	\$ 1.15	31.76%				
Los Angeles City W&P	Jun-16	9,348	7.50%	84.2%	\$ 1.94	50.02%				
Los Angeles County	Jun-16	95,444	7.25%	79.4%	\$ 12.84	19.70%		12,528	B	26.21%
Marin County	Jul-16	2,677	7.25%	81.5%	\$ 0.48	31.81%				
Mendocino County	Jun-16	1,123	7.25%	70.7%	\$ 0.19	32.05%		180	2	57.04%
Merced County	Jun-16	2,040	7.25%	55.8%	\$ 0.53	50.58%				
Orange County	Dec-15	21,525	7.25%	71.7%	\$ 4.82	37.25%		3,686	7	61.89%
Pasadena City F&P	Jun-16	-	6.00%	80.5%	\$ 0.03	0.00%				
Sacramento County	Jun-16	12,393	7.50%	87.3%	\$ 1.20	21.13%		2,030	2	37.44%
San Bernardino County	Jun-16	20,538	7.50%	81.9%	\$ 1.93	27.55%		2,373	I	50.20%
San Diego City	Jun-16	6,748	7.00%	71.6%	\$ 2.56	78.60%		2,174	-	88.71%
San Diego City Airport	Jun-16	385	7.00%	89.4%	\$ 0.02	17.20%		-	-	-
San Diego City Port	Jun-16	362	7.00%	74.4%	\$ 0.13	52.11%		111	-	54.75%
San Diego County	Jun-16	17,768	7.25%	76.9%	\$ 3.32	42.20%		3,561	COMBINE	54.61%
San Francisco City & County	Jun-16	32,406	7.50%	84.6%	\$ 3.75	31.03%				
San Joaquin County	Jan-16	5,924	7.50%	65.0%	\$ 1.40	42.99%		793	I	73.98%
San Jose City	Jun-16	3,297	6.88%	53.7%	\$ 1.75	58.33%				
San Jose City P&F	Jun-16	1,582	6.88%	75.7%	\$ 1.06	81.25%		1,582		75.70%
San Luis Obispo County	Jan-16	2,609	7.13%	71.4%	\$ 0.50	25.01%				
San Mateo County	Jun-16	5,187	7.00%	83.1%	\$ 0.74	33.77%		495	COMBINE	60.56%
Santa Barbara County	Jun-16	4,348	7.00%	71.5%	\$ 1.02	38.71%		916	COMBINE	55.95%
Sonoma County	Dec-15	4,071	7.25%	84.9%	\$ 0.41	20.38%		705	A	28.61%
Stanislaus County	Jun-16	4,248	7.25%	72.8%	\$ 0.69	29.01%				
Tulare County	Jun-16	4,496	7.60%	83.3%	\$ 0.24	14.83%		891	COMBINE	18.72%
UC Regents	Jun-16	128,513	7.25%	82.6%	\$ 12.08	27.99%				
Ventura County	Jul-16	8,509	7.50%	84.9%	\$ 0.81	27.52%				

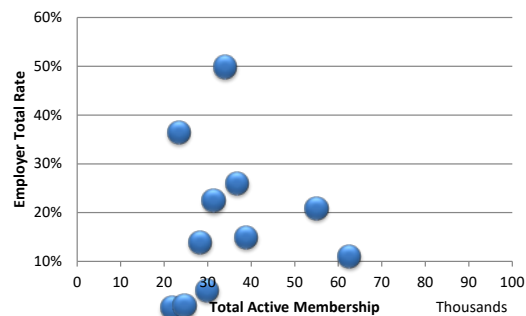
Lowered Assumption

Graph for 2017 Offsite

System	Assumed Return	Funding Ratio	UAAL (billions)
Alameda	7.60%	77.3%	\$ 1.8
Contra Costa	7.00%	84.5%	\$ 1.3
Fresno	7.00%	78.2%	\$ 1.2
Imperial	7.50%	90.3%	\$ 0.1
Kern	7.50%	63.4%	\$ 2.1
Los Angeles	7.25%	79.4%	\$ 12.8
Marin	7.25%	83.7%	\$ 0.4
Mendocino	7.25%	70.7%	\$ 0.2
Merced	7.75%	59.4%	\$ 0.5
Orange	7.25%	71.7%	\$ 4.8
Sacramento	7.50%	87.3%	\$ 1.2
San Bernardino	7.50%	81.9%	\$ 1.9
San Diego	7.25%	76.9%	\$ 3.3
San Joaquin	7.50%	65.0%	\$ 1.4
San Mateo	7.00%	83.1%	\$ 0.7
Santa Barbara	7.00%	71.5%	\$ 1.0
Sonoma	7.25%	84.9%	\$ 0.4
Stanislaus	7.25%	73.7%	\$ 0.6
Tulare	7.60%	83.3%	\$ 0.2
Ventura	7.50%	83.1%	\$ 0.9
CalPERS	7.50%	69.4%	\$ 49.6
CalSTRS	7.50%	68.5%	\$ 76.2
UC Regents	7.25%	82.6%	\$ 12.1



	Membership	Employer Rate
Tulare	4,496	14.83%
Imperial	2,127	18.64%
Sonoma	4,071	20.38%
Los Angeles	95,444	19.70%
Sacramento	12,393	21.13%
Alameda	11,071	24.89%
Stanislaus	3,992	25.00%
San Bernardino	20,538	27.55%
Ventura	8,299	27.77%
Mendocino	1,123	32.05%
Marin	2,609	32.22%
San Mateo	5,187	33.77%
Orange	21,525	37.25%
Santa Barbara	4,348	38.71%
Contra Costa	9,642	39.23%
San Diego	17,768	42.20%
San Joaquin	5,924	42.99%
Kern	8,627	44.78%
Merced	1,962	50.02%
Fresno	7,297	56.74%
CalPERS	253,534	28.91%
CalSTRS	429,460	31.15%
UC Regent	128,513	27.99%



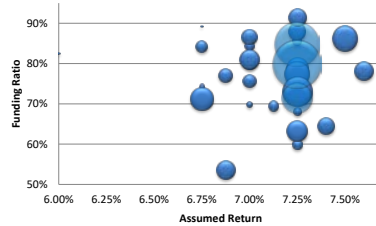
Data From Calendar Year 2018

System	Date	Active Members	Assumed Return	Funding Ratio	UAAL (billions)	Employer Rate	Asset Smooth	Amortization ben\g&l\ a&m	Safety Members	Safety Tier	Safety Rate
AC Transit	Jan-17	2,187	7.25%	68.0%	\$ 0.29	31.77%	5	x/20/20			
Alameda County	Dec-16	11,111	7.60%	78.1%	\$ 1.80	25.00%	5	15/20/20	1,041	2	53.25%
CalPERS**	Jun-16	170,986	7.38%	65.1%	\$ 59.54	28.33%	mkt	20/30/20	75,376		42.60%
CalSTRS*	Jun-16	438,537	7.25%	63.7%	\$ 96.73	38.14%	3	30 closed: 28 yr			
Contra Costa County	Dec-16	9,848	7.00%	86.5%	\$ 1.19	38.08%	5	10/18/18	1,470	ad	75.62%
Fresno City	Jun-17	1,715	7.25%	113.0%	\$ (0.11)	10.58%	5	15/15/25			
Fresno City F&P	Jun-17	990	7.25%	119.8%	\$ (0.22)	18.72%	5	15/15/25	1,086		18.72%
Fresno County	Jun-17	7,353	7.00%	80.3%	\$ 1.11	55.93%	5	15/15/15	932	1	81.75%
Imperial County	Jun-17	2,186	7.25%	86.1%	\$ 0.13	22.71%	5	15/15/20	345	legacy	32.33%
Kern County	Jun-17	8,728	7.25%	63.2%	\$ 2.28	47.69%	5	15/18/18	1,762		70.59%
Los Angeles City	Jun-17	25,457	7.25%	71.4%	\$ 5.28	23.06%	7	15/15/20			
Los Angeles City F&P	Jun-17	13,327	7.25%	91.5%	\$ 1.73	34.07%	7	15/20/20	13,327		34.07%
Los Angeles City W&P	Jul-17	9,806	7.25%	88.0%	\$ 1.52	44.62%	5	15/15/15			
Los Angeles County	Jun-17	97,211	7.25%	79.9%	\$ 13.15	20.04%	5	30/30/30	12,698		26.19%
Marin County	Jun-17	2,685	7.00%	84.4%	\$ 0.42	31.12%	mkt	x/24/22	606	county	36.82%
Mendocino County	Jun-17	1,123	7.00%	69.9%	\$ 0.19	34.92%	5	15/18/18	184	2	62.78%
Merced County	Jun-17	2,096	7.25%	59.8%	\$ 0.51	50.20%	mkt	x/24/22	313		65.15%
Orange County	Dec-16	21,746	7.25%	73.1%	\$ 4.83	36.56%	5	15/20/20	3,674	7	62.81%
Pasadena City F&P	Jun-17	-	6.00%	82.5%	\$ 0.03	0.00%	5				
Sacramento County	Jun-17	12,587	7.00%	81.1%	\$ 2.02	24.53%	7	15/20/20	2,010	2	51.49%
San Bernardino County	Jun-17	21,110	7.25%	78.7%	\$ 2.54	30.91%	5	15/20/20	2,491	1	55.57%
San Diego City	Jun-17	6,388	6.75%	71.2%	\$ 2.76	76.11%	5	5/15/30	2,131	-	82.56%
San Diego City Airport	Jun-17	394	6.75%	89.2%	\$ 0.02	17.93%	5	5/15/30	-	-	-
San Diego City Port	Jun-17	367	6.75%	74.3%	\$ 0.14	51.50%	5	5/15/30	119	-	53.75%
San Diego County	Jun-17	17,994	7.25%	77.4%	\$ 3.37	42.52%	5	15/20/20	3,576		55.42%
San Francisco City & County	Jul-17	33,447	7.50%	86.3%	\$ 3.52	23.31%	5	20/20/20	3,902	p	41.37%
San Joaquin County	Jan-17	6,102	7.40%	64.6%	\$ 1.50	43.21%	5	15/15/15	811	1	76.44%
San Jose City	Jun-17	3,410	6.88%	53.6%	\$ 1.82	56.92%	5	x/20/25			
San Jose P&F	Jun-17	1,544	6.88%	77.1%	\$ 1.02	80.80%	5	15/15/20	1,544		80.80%
San Luis Obispo County***	Jan-17	2,675	7.13%	69.4%	\$ 0.56	24.56%	5	30 closed: 23 yr	278		30.13%
San Mateo County	Jun-17	5,337	6.75%	84.3%	\$ 0.74	35.31%	5	15/15/15	503		62.85%
Santa Barbara County****	Jun-17	4,299	7.00%	75.7%	\$ 0.90	39.14%	mkt	x/19/19	949		54.45%
Sonoma County	Dec-16	4,112	7.25%	85.5%	\$ 0.41	20.10%	5	20/20/20	701	A	28.83%
Stanislaus County	Jun-17	4,309	7.25%	74.3%	\$ 0.68	31.65%	5	19/19/19	757	county	41.03%
Tulare County	Jun-17	4,536	7.25%	78.1%	\$ 0.34	19.98%	10	19/19/19	876		23.95%
UC Regents	Jun-17	129,382	7.25%	84.8%	\$ 11.08	27.00%	5	15/20/20	403		34.03%
Ventura County	Jun-17	8,636	7.50%	86.9%	\$ 0.74	27.09%	5	15/15/20	1,508		54.33%

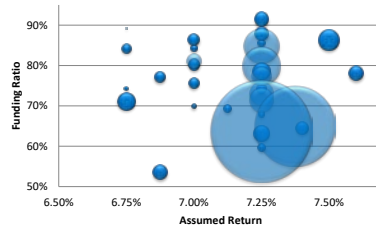
System	Assumed Return	Funding Ratio	UAAL (billions)
Fresno City F&P	7.25%	119.8%	\$ (0.22)
Fresno City	7.25%	113.0%	\$ (0.11)
San Diego City Airport	6.75%	89.2%	\$ 0.02
Pasadena City F&P	6.00%	82.5%	\$ 0.03
Imperial County	7.25%	86.1%	\$ 0.13
San Diego City Port	6.75%	74.3%	\$ 0.14
Mendocino County	7.00%	69.9%	\$ 0.19
AC Transit	7.25%	68.0%	\$ 0.29
Tulare County	7.25%	78.1%	\$ 0.34
Sonoma County	7.25%	85.5%	\$ 0.41
Marin County	7.00%	84.4%	\$ 0.42
Merced County	7.25%	59.8%	\$ 0.51
San Luis Obispo County	7.13%	69.4%	\$ 0.56
Stanislaus County	7.25%	74.3%	\$ 0.68
San Mateo County	6.75%	84.3%	\$ 0.74
Ventura County	7.50%	86.9%	\$ 0.74
Santa Barbara County	7.00%	75.7%	\$ 0.90
San Jose P&F	6.88%	77.1%	\$ 1.02
Fresno County	7.00%	80.3%	\$ 1.11
Contra Costa County	7.00%	86.5%	\$ 1.19
San Joaquin County	7.40%	64.6%	\$ 1.50
Los Angeles City W&P	7.25%	88.0%	\$ 1.52
Los Angeles City F&P	7.25%	91.5%	\$ 1.73
Alameda County	7.60%	78.1%	\$ 1.80
San Jose City	6.88%	53.6%	\$ 1.82
Sacramento County	7.00%	81.1%	\$ 2.02
Kern County	7.25%	63.2%	\$ 2.28
San Bernardino County	7.25%	78.7%	\$ 2.54
San Diego City	6.75%	71.2%	\$ 2.76
San Diego County	7.25%	77.4%	\$ 3.37
San Francisco City & County	7.50%	86.3%	\$ 3.52
Orange County	7.25%	73.1%	\$ 4.83
Los Angeles City	7.25%	71.4%	\$ 5.28
UC Regents	7.25%	84.8%	\$ 11.08
Los Angeles County	7.25%	79.9%	\$ 13.15
CalPERS	7.38%	65.1%	\$ 59.54
CalSTRS	7.25%	63.7%	\$ 96.73



Everybody but Fresno City and Fresno F&P



Everybody but CalPERS and CalSTRS and the Fresno City Plans



We Like This One!

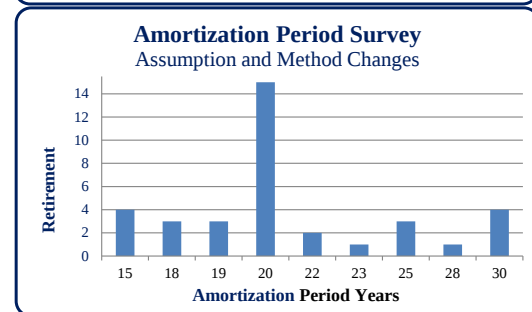
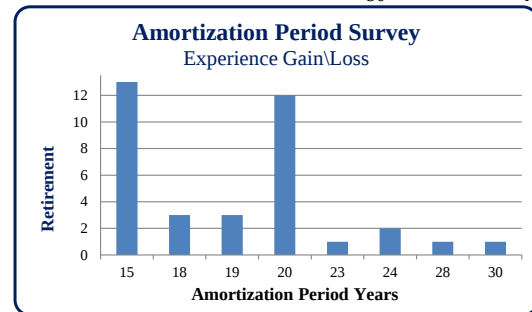
Everybody but Pasadena and the Fresno City Plans

System	Active Members	Employer Rate
AC Transit	2,187	31.77%
Alameda County	11,111	25.00%
CalPERS	170,986	28.33%
CalSTRS	438,537	38.14%
Contra Costa County	9,848	38.08%
Fresno City	1,715	10.58%
Fresno City F&P	990	18.72%
Fresno County	7,353	55.93%
Imperial County	2,186	22.71%
Kern County	8,728	47.69%
Los Angeles City	25,457	23.06%
Los Angeles City F&P	13,327	34.07%
Los Angeles City W&P	9,806	44.62%
Los Angeles County	97,211	20.04%
Marin County	2,685	31.12%
Mendocino County	1,123	34.92%
Merced County	2,096	50.20%
Orange County	21,746	36.56%
Pasadena City F&P	-	0.00%
Sacramento County	12,587	24.53%
San Bernardino County	21,110	30.91%
San Diego City	6,388	76.11%
San Diego City Airport	394	17.93%
San Diego City Port	367	51.50%
San Diego County	17,994	42.52%
San Francisco City & County	33,447	23.31%
San Joaquin County	6,102	43.21%
San Jose City	3,410	56.92%
San Jose P&F	1,544	80.80%
San Luis Obispo County	2,675	24.56%
San Mateo County	5,337	35.31%
Santa Barbara County	4,299	39.14%
Sonoma County	4,112	20.10%
Stanislaus County	4,309	31.65%
Tulare County	4,536	19.98%
UC Regents	129,382	27.00%
Ventura County	8,636	27.09%

Amortization Assumption
2018 Survey

System	Active Membership	New Benefits	Experience Gain\Loss	Assumption & Methodology
CalSTRS*	438,537	28	28	28
CalPERS**	170,986	20	20	20
UC Regents	129,382	15	20	20
Los Angeles County	97,211	30	30	30
San Francisco City & County	33,447	20	20	20
Los Angeles City	25,457	15	15	20
Orange County	21,746	15	20	20
San Bernardino County	21,110	15	20	20
San Diego County	17,994	15	20	20
Los Angeles City F&P	13,327	15	20	20
Sacramento County	12,587	15	20	20
Alameda County	11,111	15	20	20
Contra Costa County	9,848	10	18	18
Los Angeles City W&P	9,806	15	15	15
Kern County	8,728	15	18	18
Ventura County	8,636	15	15	20
Fresno County	7,353	15	15	15
San Diego City	6,888	5	15	30
San Joaquin County	6,102	15	15	15
San Mateo County	5,337	15	15	15
Tulare County	4,536	19	19	19
Stanislaus County	4,309	19	19	19
Santa Barbara County	4,299		19	19
Sonoma County	4,112	20	20	20
San Jose City	3,410		20	25
Marin County	2,685		24	22
San Luis Obispo County***	2,675	23	23	23
AC Transit	2,187		20	20
Imperial County	2,186	15	15	20
Merced County	2,096		24	22
Fresno City	1,715	15	15	25
San Jose P&F	1,544	15	15	20
Mendocino County	1,123	15	18	18
Fresno City F&P	990	15	15	25
San Diego City Airport	394	5	15	30
San Diego City Port	367	5	15	30
Pasadena City F&P	-			

Experience Gain\Loss	Assumption & Methodology
15	13
18	3
19	3
20	12
23	1
24	2
28	1
30	1
	30
	4



* CalSTRS closed amortization period to be paid off by 2046. 28 years to go.

** CalPERS changed the Experience Amortization assumption from 30 to 20 in Feb 2018 to be effective with the June 30, 2019 valuations

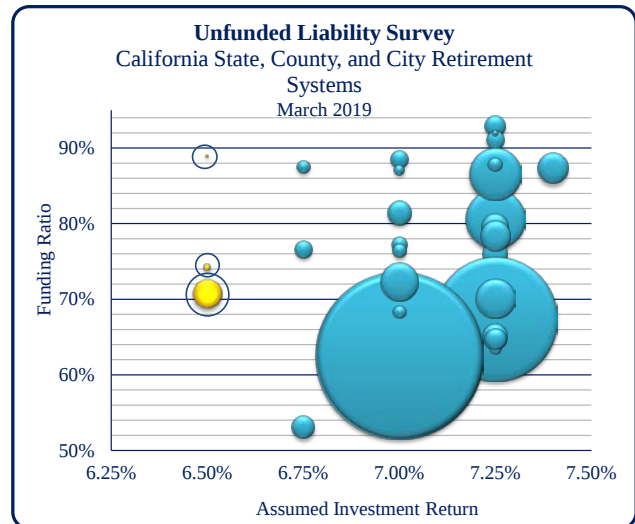
*** San Luis Obispo closed amortization period to be paid off by 2040. 23 years to go.

Data From Calendar Year 2019

System	Date	Total Members	Assumed Return	Funding Ratio	UAAL (billions)	Employer Rate	Asset Smooth	Amortization benefit
AC Transit	Jan-18	4,498	7.125%	69.5%	\$ 0.29	31.18%	5	x/20/20
Alameda County	Dec-17	21,149	7.25%	76.0%	\$ 2.16	28.03%	5	15/20/20
CalPERS**	Jun-17	458,005	7.25%	67.4%	\$ 58.70	29.30%	mkt	20/30/20
CalSTRS*	Jun-17	933,410	7.00%	62.6%	\$ 107.26	20.28%	3	30 closed: 29 yr
Contra Costa County	Dec-17	22,632	7.00%	88.5%	\$ 1.06	36.07%	5	10/18/18
Fresno City	Jun-18	4,460	7.25%	114.8%	\$ (0.16)	11.11%	5	15/15/25
Fresno City F&P	Jun-18	2,314	7.25%	120.3%	\$ (0.24)	19.59%	5	15/15/25
Fresno County	Jun-18	18,530	7.00%	81.5%	\$ 1.09	55.81%	5	15/15/15
Imperial County	Jun-18	3,854	7.25%	88.3%	\$ 0.11	21.75%	5	15/15/20
Kern County	Jun-18	19,772	7.25%	65.1%	\$ 2.24	46.72%	5	15/18/18
Los Angeles City	Jun-18	43,449	7.25%	70.1%	\$ 5.96	24.75%	7	15/15/20
Los Angeles City F&P	Jun-18	26,866	7.25%	92.9%	\$ 1.52	34.37%	7	15/20/20
Los Angeles City W&P	Jul-18	21,007	7.25%	91.1%	\$ 1.18	40.15%	5	15/15/15
Los Angeles County	Jun-18	178,260	7.25%	80.6%	\$ 13.29	20.91%	5	30/30/30
Marin County	Jun-18	6,670	7.00%	87.1%	\$ 0.37	28.90%	mkt	x/24/22
Mendocino County	Jun-18	3,149	7.00%	70.4%	\$ 0.21	34.27%	5	15/18/18
Merced County	Jun-18	5,309	7.25%	63.5%	\$ 0.48	49.15%	mkt	x/24/22
Orange County	Dec-17	44,471	7.00%	72.3%	\$ 5.44	37.97%	5	15/20/20
Pasadena City F&P	Jun-18	212	5.25%	79.9%	\$ 0.03	0.00%	5	Min 79%
Sacramento County	Jun-18	28,069	7.00%	81.4%	\$ 2.09	26.85%	7	15/20/20
San Bernardino County	Jun-18	40,392	7.25%	79.5%	\$ 2.61	31.09%	5	15/20/20
San Diego City ERS	Jun-18	18,912	6.50%	70.8%	\$ 2.98	79.42%	5	5/15/20
San Diego City Airport	Jun-18	645	6.50%	89.0%	\$ 0.02	19.24%	5	5/15/20
San Diego City Port	Jun-18	1,229	6.50%	74.2%	\$ 0.15	53.33%	5	5/15/20
San Diego County	Jun-18	42,825	7.25%	78.4%	\$ 3.40	42.97%	5	15/20/20
San Francisco City & County	Jul-18	73,094	7.40%	87.3%	\$ 3.47	32.78%	5	15/20/20
San Joaquin County	Jan-18	13,664	7.25%	64.8%	\$ 1.58	45.50%	5	15/15/15
San Jose City	Jun-18	9,213	6.75%	53.1%	\$ 1.92	58.17%	5	x/20/25
San Jose P&F	Jun-18	4,212	6.75%	76.6%	\$ 1.10	82.60%	5	15/15/20
San Luis Obispo County***	Jan-18	5,931	7.00%	68.3%	\$ 0.62	25.78%	5	30 closed: 22 yr
San Mateo County	Jun-18	12,142	6.75%	87.5%	\$ 0.62	33.67%	5	15/15/15
Santa Barbara County****	Jun-18	10,137	7.00%	77.2%	\$ 0.87	40.02%	mkt	x/19/19
Sonoma County	Dec-17	10,247	7.25%	87.7%	\$ 0.36	19.00%	5	20/20/20
Stanislaus County	Jun-18	9,126	7.00%	76.4%	\$ 0.65	30.38%	5	18/18/18
Tulare County	Jun-18	9,562	7.25%	92.0%	\$ 0.13	13.51%	10	19/19/19
UC Regents	Jun-18	298,420	7.25%	86.6%	\$ 10.30	26.33%	5	15/20/20
Ventura County	Jun-18	18,558	7.25%	87.8%	\$ 0.75	28.49%	5	15/15/20

Data From Calendar Year 2019

System	Assumed Return	Funding Ratio	UAAL (billions)
AC Transit	7.125%	69.5%	\$ 0.29
Alameda County	7.25%	76.0%	\$ 2.16
CalPERS**	7.25%	67.4%	\$ 58.70
CalSTRS*	7.00%	62.6%	\$ 107.26
Contra Costa County	7.00%	88.5%	\$ 1.06
Fresno City	7.25%	114.8%	\$ (0.16)
Fresno City F&P	7.25%	120.3%	\$ (0.24)
Fresno County	7.00%	81.5%	\$ 1.09
Imperial County	7.25%	88.3%	\$ 0.11
Kern County	7.25%	65.1%	\$ 2.24
Los Angeles City	7.25%	70.1%	\$ 5.96
Los Angeles City F&P	7.25%	92.9%	\$ 1.52
Los Angeles City W&P	7.25%	91.1%	\$ 1.18
Los Angeles County	7.25%	80.6%	\$ 13.29
Marin County	7.00%	87.1%	\$ 0.37
Mendocino County	7.00%	70.4%	\$ 0.21
Merced County	7.25%	63.5%	\$ 0.48
Orange County	7.00%	72.3%	\$ 5.44
Sacramento County	7.00%	81.4%	\$ 2.09
San Bernardino County	7.25%	79.5%	\$ 2.61
San Diego City ERS	6.50%	70.8%	\$ 2.98
San Diego City Airport	6.50%	89.0%	\$ 0.02
San Diego City Port	6.50%	74.2%	\$ 0.15
San Diego County	7.25%	78.4%	\$ 3.40
San Francisco City & County	7.40%	87.3%	\$ 3.47
San Joaquin County	7.25%	64.8%	\$ 1.58
San Jose City	6.75%	53.1%	\$ 1.92
San Jose P&F	6.75%	76.6%	\$ 1.10
San Luis Obispo County***	7.00%	68.3%	\$ 0.62
San Mateo County	6.75%	87.5%	\$ 0.62
Santa Barbara County****	7.00%	77.2%	\$ 0.87
Sonoma County	7.25%	87.7%	\$ 0.36
Stanislaus County	7.00%	76.4%	\$ 0.65
Tulare County	7.25%	92.0%	\$ 0.13
UC Regents	7.25%	86.6%	\$ 10.30
Ventura County	7.25%	87.8%	\$ 0.75
	Lowered		



* CalSTRS closed amortization period to be paid off by 2046. 28 years to go.

** CalPERS changed the Experience Amortization assumption from 30 to 20 in Feb 2018 to be effective with the June 30, 2019 valuations

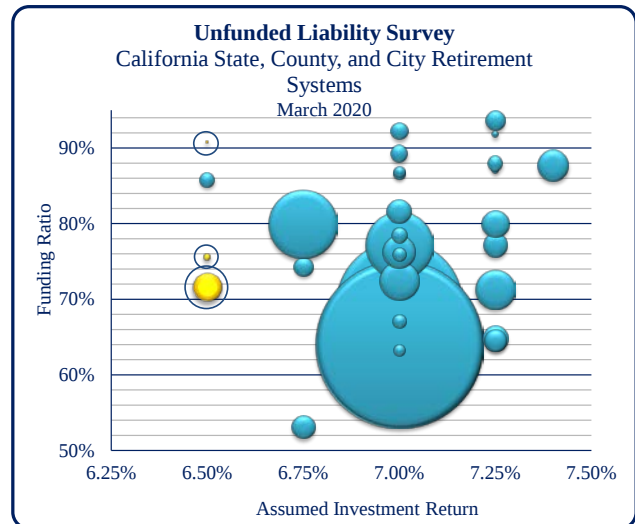
*** San Luis Obispo closed amortization period to be paid off by 2040. 22 years to go.

**** Santa Barbara uses layer 19 with ramp up and ramp down. 16 year equivalent with no ramps

AC Transit	Jan-19	4,514	\$ 0.64	7.00%	69.8%	\$ 0.30	30.97%	5	x/20/20
Alameda County	Dec-18	23,700	\$ 6.73	7.25%	77.2%	\$ 2.14	27.96%	5	15/20/20
CalPERS**	Jun-18	468,151	\$ 136.23	7.00%	69.5%	\$ 59.67	31.08%	mkt	20/30/20
CalSTRS*	Jun-18	949,512	\$ 211.37	7.00%	64.0%	\$ 107.15	10.33%	3	30 closed: 28 yr
Contra Costa County	Dec-18	23,045	\$ 8.15	7.00%	89.3%	\$ 1.03	35.73%	5	10/18/18
Fresno City	Jun-19	4,609	\$ 1.24	7.00%	111.9%	\$ (0.13)	13.03%	5	15/15/25
Fresno City F&P	Jun-19	2,329	\$ 1.50	7.00%	117.0%	\$ (0.22)	22.82%	5	15/15/25
Fresno County	Jun-19	19,200	\$ 4.93	7.00%	81.7%	\$ 1.12	60.84%	5	15/15/15
Imperial County	Jun-19	4,041	\$ 0.88	7.25%	87.1%	\$ 0.13	22.52%	5	15/15/20
Kern County	Jun-19	20,569	\$ 4.22	7.25%	64.8%	\$ 2.33	47.09%	5	15/18/18
Los Angeles City	Jun-19	46,666	\$ 17.71	7.25%	71.3%	\$ 5.97	24.56%	7	15/15/20
Los Angeles City F&P	Jun-19	27,155	\$ 21.26	7.25%	93.6%	\$ 1.44	33.99%	7	15/20/20
Los Angeles City W&P	Jun-19	21,340	\$ 12.99	7.00%	92.2%	\$ 1.07	37.97%	5	15/15/15
Los Angeles County	Jun-19	181,260	\$ 58.30	7.00%	77.2%	\$ 17.02	22.59%	5	20/20/20
Marin County	Jun-19	6,935	\$ 2.57	7.00%	86.6%	\$ 0.40	28.90%	mkt	x/24/22
Mendocino County	Jun-19	3,218	\$ 0.53	7.00%	70.6%	\$ 0.22	34.56%	5	15/18/18
Merced County	Jun-19	5,492	\$ 0.87	7.00%	63.2%	\$ 0.50	51.25%	mkt	x/24/22
Orange County	Dec-18	45,629	\$ 14.35	7.00%	72.4%	\$ 5.71	40.02%	5	15/20/20
Pasadena City F&P	Jun-19	204	\$ 0.11	5.25%	76.1%	\$ 0.03	0.00%	5	Min 79%
Sacramento County	Jun-19	28,661	\$ 9.82	7.00%	81.6%	\$ 2.19	29.44%	7	15/20/20
San Bernardino County	Jun-19	41,793	\$ 10.59	7.25%	80.0%	\$ 2.66	31.60%	5	15/20/20
San Diego City ERS	Jun-19	18,867	\$ 7.78	6.50%	71.6%	\$ 3.01	80.54%	5	5/15/20
San Diego City Airport	Jun-19	667	\$ 0.20	6.50%	90.8%	\$ 0.02	18.41%	5	5/15/20
San Diego City Port	Jun-19	1,237	\$ 0.47	6.50%	75.6%	\$ 0.15	51.93%	5	5/15/20
San Diego County	Jun-19	44,030	\$ 12.86	7.00%	76.3%	\$ 4.02	46.16%	5	15/20/20
San Francisco City & County	Jun-19	74,935	\$ 26.08	7.40%	87.7%	\$ 3.55	26.90%	5	15/20/20
San Joaquin County	Jan-19	14,108	\$ 2.84	7.25%	64.5%	\$ 1.68	47.46%	5	15/15/15
San Jose City	Jun-19	9,511	\$ 2.13	6.75%	53.1%	\$ 1.97	59.20%	5	x/20/25
San Jose P&F	Jun-19	4,352	\$ 3.59	6.75%	74.3%	\$ 1.28	84.60%	5	15/15/20
San Luis Obispo County***	Jan-19	6,082	\$ 1.27	7.00%	67.1%	\$ 0.67	28.48%	5	20/20/20
San Mateo County	Jun-19	12,369	\$ 4.72	6.50%	85.8%	\$ 0.77	37.86%	5	15/15/15
Santa Barbara County****	Jun-19	10,547	\$ 3.20	7.00%	78.4%	\$ 0.88	39.33%	mkt	19
Sonoma County	Dec-18	10,412	\$ 2.58	7.00%	86.8%	\$ 0.40	20.58%	5	20/20/20
Stanislaus County	Jun-19	9,627	\$ 2.18	7.00%	75.9%	\$ 0.70	31.45%	5	17
Tulare County	Jun-19	9,805	\$ 1.65	7.25%	91.8%	\$ 0.14	22.13%	10	19/19/19
UC Retirement Plan	Jun-19	307,875	\$ 70.3	6.75%	79.9%	\$ 17.60	33.76%	5	15/20/20
Ventura County	Jun-19	19,017	\$ 5.74	7.25%	88.0%	\$ 0.77	23.32%	5	15/15/20

Data From Calendar Year 2020

System	Assumed Return	Funding Ratio	UAAL (billions)
AC Transit	7.00%	69.8%	\$ 0.30
Alameda County	7.25%	77.2%	\$ 2.14
CalPERS**	7.00%	69.5%	\$ 59.67
CalSTRS*	7.00%	64.0%	\$ 107.15
Contra Costa County	7.00%	89.3%	\$ 1.03
Fresno City	7.00%	111.9%	\$ (0.13)
Fresno City F&P	7.00%	117.0%	\$ (0.22)
Fresno County	7.00%	81.7%	\$ 1.12
Imperial County	7.25%	87.1%	\$ 0.13
Kern County	7.25%	64.8%	\$ 2.33
Los Angeles City	7.25%	71.3%	\$ 5.97
Los Angeles City F&P	7.25%	93.6%	\$ 1.44
Los Angeles City W&P	7.00%	92.2%	\$ 1.07
Los Angeles County	7.00%	77.2%	\$ 17.02
Marin County	7.00%	86.6%	\$ 0.40
Mendocino County	7.00%	70.6%	\$ 0.22
Merced County	7.00%	63.2%	\$ 0.50
Orange County	7.00%	72.4%	\$ 5.71
Sacramento County	7.00%	81.6%	\$ 2.19
San Bernardino County	7.25%	80.0%	\$ 2.66
San Diego City ERS	6.50%	71.6%	\$ 3.01
San Diego City Airport	6.50%	90.8%	\$ 0.02
San Diego City Port	6.50%	75.6%	\$ 0.15
San Diego County	7.00%	76.3%	\$ 4.02
San Francisco City & County	7.40%	87.7%	\$ 3.55
San Joaquin County	7.25%	64.5%	\$ 1.68
San Jose City	6.75%	53.1%	\$ 1.97
San Jose P&F	6.75%	74.3%	\$ 1.28
San Luis Obispo County***	7.00%	67.1%	\$ 0.67
San Mateo County	6.50%	85.8%	\$ 0.77
Santa Barbara County****	7.00%	78.4%	\$ 0.88
Sonoma County	7.00%	86.8%	\$ 0.40
Stanislaus County	7.00%	75.9%	\$ 0.70
Tulare County	7.25%	91.8%	\$ 0.14
UC Regents	6.75%	79.9%	\$ 17.60
Ventura County	7.25%	88.0%	\$ 0.77



* CalSTRS closed amortization period to be paid off by 2046. 28 years to go.

** CalPERS changed the Experience Amortization assumption from 30 to 20 in Feb 2018 to be effective with the June 30, 2019 valuations

*** San Luis Obispo closed amortization period to be paid off by 2040. 22 years to go.

**** Santa Barbara uses layer 19 with ramp up and ramp down. 16 year equivalent with no ramps

	20	20
15	20	20
20	30	20
29	28	28
10	18	18
15	15	25
15	15	25
15	15	15
15	15	20
15	18	18
15	15	20
15	20	20
15	15	15
20	20	20
	24	22
15	18	18
	24	22
15	20	20
15	20	20
15	20	20
5	15	20
5	15	20
5	15	20
15	20	20
15	20	20
15	15	15
	20	25
15	15	20
22	20	20
15	15	15
	19	19
20	20	20
18	17	17
19	19	19
15	20	20
15	15	20

Data From Calendar Year 2021

System	Date	Total Members	Assets MVA billions	Assumed Return	Funding Ratio	UAAL (billions)	Employer Rate	Asset Smooth	Amortization benefit
AC Transit	Jan-20	4,564	\$ 0.75	7.00%	70.9%	\$ 0.30	32.83%	5	x/20/20
Alameda County	Dec-19	24,235	\$ 7.77	7.25%	77.6%	\$ 2.20	28.56%	5	15/20/20
CalPERS**	Jun-19	497,366	\$ 143.47	7.00%	70.0%	\$ 61.37	31.76%	mkt	20/20/20
CalSTRS*	Jun-19	964,661	\$ 225.47	7.00%	66.0%	\$ 105.70	10.83%	3	30 closed: 27 yr
Contra Costa County	Dec-19	23,450	\$ 9.26	7.00%	90.6%	\$ 0.95	35.66%	5	10/18/18
Fresno City	Jun-20	4,718	\$ 1.22	7.00%	109.9%	\$ (0.11)	13.35%	5	15/15/25
Fresno City F&P	Jun-20	2,328	\$ 1.48	7.00%	116.3%	\$ (0.22)	22.56%	5	15/15/25
Fresno County	Jun-20	19,725	\$ 4.94	7.00%	82.7%	\$ 1.09	54.91%	5	15/15/15
Imperial County	Jun-20	4,098	\$ 0.90	7.00%	84.8%	\$ 0.17	24.53%	5	15/15/20
Kern County	Jun-20	21,136	\$ 4.31	7.25%	64.4%	\$ 2.50	49.16%	5	15/18/18
Los Angeles City	Jun-20	47,913	\$ 17.86	7.00%	69.4%	\$ 6.90	27.88%	7	5/15/20
Los Angeles City F&P	Jun-20	27,352	\$ 21.40	7.00%	93.2%	\$ 1.62	33.52%	7	15/20/20
Los Angeles City W&P	Jun-20	21,911	\$ 13.35	7.00%	93.9%	\$ 0.88	33.55%	5	15/15/15
Los Angeles County	Jun-20	184,288	\$ 58.51	7.00%	76.3%	\$ 18.51	24.64%	5	20/20/20
Marin County	Jun-20	7,137	\$ 2.63	6.75%	84.0%	\$ 0.50	24.99%	mkt	x/24/22
Mendocino County	Jun-20	3,273	\$ 0.54	6.75%	69.3%	\$ 0.26	37.65%	5	15/18/18
Merced County	Jun-20	5,591	\$ 0.92	7.00%	65.1%	\$ 0.49	46.51%	mkt	x/24/22
Orange County	Dec-19	47,197	\$ 16.52	7.00%	73.2%	\$ 5.88	41.49%	5	15/20/20
Pasadena City F&P	Jun-20	212	\$ 0.12	5.25%	79.9%	\$ 0.03	0.00%	5	Min 79%
Sacramento County	Jun-20	29,173	\$ 9.98	6.75%	80.6%	\$ 2.46	31.42%	7	15/20/20
San Bernardino County	Jun-20	43,141	\$ 10.29	7.25%	77.9%	\$ 3.17	34.33%	5	15/20/20
SDCERS	Jun-20	18,842	\$ 8.32	6.50%	70.2%	\$ 3.34	87.98%	4	5/15/20
San Diego County	Jun-20	45,157	\$ 12.91	7.00%	77.3%	\$ 4.03	45.82%	5	15/20/20
San Francisco City & County	Jun-20	75,198	\$ 26.60	7.40%	90.5%	\$ 2.80	24.41%	5	15/20/20
San Joaquin County	Jan-20	14,523	\$ 3.24	7.00%	64.3%	\$ 1.79	49.82%	5	15/15/15
San Jose City	Jun-20	9,797	\$ 2.21	6.625%	52.3%	\$ 2.10	58.56%	5	x/20/25
San Jose P&F	Jun-20	4,435	\$ 3.70	6.625%	73.6%	\$ 1.38	87.43%	5	15/15/20
San Luis Obispo County***	Jan-20	6,251	\$ 1.44	6.875%	65.3%	\$ 0.75	47.92%	5	20/20/20
San Mateo County	Jun-20	12,736	\$ 4.78	6.50%	86.4%	\$ 0.79	38.91%	5	15/15/15
Santa Barbara County****	Jun-20	10,777	\$ 3.19	7.00%	74.3%	\$ 1.10	41.40%	mkt	19
Sonoma County	Dec-19	10,685	\$ 2.92	7.00%	89.4%	\$ 0.33	19.52%	5	20/20/20
Stanislaus County	Jun-20	9,793	\$ 2.18	7.00%	75.6%	\$ 0.74	33.20%	5	16
Tulare County	Jun-20	10,196	\$ 1.65	7.00%	89.1%	\$ 0.21	14.78%	10	19/19/19
UC Retirement Plan	Jun-20	314,854	\$ 70.9	6.75%	79.0%	\$ 19.80	34.74%	5	15/20/20
Ventura County	Jun-20	19,383	\$ 5.91	7.25%	89.6%	\$ 0.70	22.22%	5	15/15/20
Lowered									

San Diego City ERS	Jun-20	18,842	\$ 7.65	6.50%	70.2%	\$ 3.34	87.98%	4	5/15/20
San Diego City Airport	Jun-20	695	\$ 0.21	6.50%	89.6%	\$ 0.02	19.45%	4	5/15/20
San Diego City Port	Jun-20	1,248	\$ 0.46	6.50%	74.5%	\$ 0.16	58.42%	4	5/15/20
		20,785	\$ 8.32			\$ 3.52			

* CalSTRS closed amortization period to be paid off by 2046. 26 years to go.

** CalPERS changed the Experience Amortization assumption from 30 to 20 in Feb 2018 to be effective with the June 30, 2019 valuations

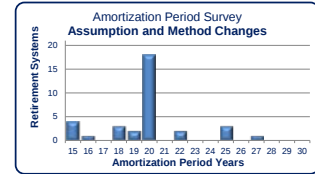
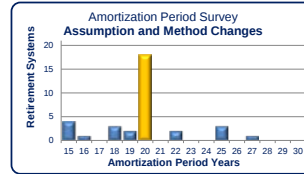
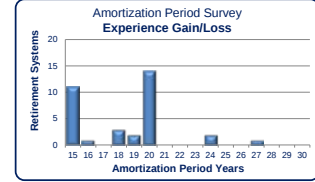
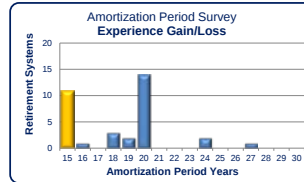
*** San Luis Obispo closed amortization period to be paid off by 2040. 20 years to go. With 2019 Val, amort period now 20 yr layered

****Santa Barbara uses layer 19 with ramp up and ramp down. 14 year equivalent with no ramps

Amortization Assumption
2021 Survey

System	Experience Gain/Loss	Assumption & Methodology
AC Transit	20	20
Alameda County	20	20
CalPERS*	20	20
CalSTRS	27	27
Contra Costa County	18	18
Fresno City	15	25
Fresno City F&P	15	25
Fresno County	15	15
Imperial County	15	20
Kern County	18	18
Los Angeles City	15	20
Los Angeles City F&P	20	20
Los Angeles City W&P	15	15
Los Angeles County	20	20
Marin County	24	22
Mendocino County	18	18
Merced County	24	22
Orange County	20	20
Pasadena City F&P		
Sacramento County	20	20
San Bernardino County	20	20
San Diego City ERS	15	20
San Diego County	20	20
San Francisco City & County	20	20
San Joaquin County	15	15
San Jose City	20	25
San Jose P&F	15	20
San Luis Obispo County***	20	20
San Mateo County	15	15
Santa Barbara County****	19	19
Sonoma County	20	20
Stanislaus County	16	16
Tulare County	19	19
UC Regents	20	20
Ventura County	15	20

2021 Survey			
Experience Gain/Loss		Assumption & Methodology	
15	11	15	4
16	1	16	1
17	0	17	0
18	3	18	3
19	2	19	2
20	14	20	18
21	0	21	0
22	0	22	2
23	0	23	0
24	2	24	0
25	0	25	3
26	0	26	0
27	1	27	1
28	0	28	0
29	0	29	0
30	0	30	0
	<u>34</u>		<u>34</u>



California Public Pension Fund Survey
Source:www documents in year of survey

	Survey 2014	Survey 2015	Survey 2016	Survey 2017	Survey 2018
AC Transit	7.375%	7.250%	7.250%	7.250%	7.250%
Alameda County	7.800%	7.800%	7.600%	7.600%	7.600%
CalPERS	7.500%	7.500%	7.500%	7.500%	7.375%
CalSTRS	7.500%	7.500%	7.500%	7.500%	7.250%
Contra Costa County	7.750%	7.250%	7.250%	7.000%	7.000%
Fresno City	7.500%	7.500%	7.500%	7.250%	7.250%
Fresno City F&P	7.500%	7.500%	7.500%	7.250%	7.250%
Fresno County	7.250%	7.250%	7.250%	7.000%	7.000%
Imperial County	7.750%	7.500%	7.500%	7.500%	7.250%
Kern County	7.750%	7.500%	7.500%	7.500%	7.250%
Los Angeles City	7.750%	7.500%	7.500%	7.500%	7.250%
Los Angeles City F&P	7.750%	7.500%	7.500%	7.500%	7.250%
Los Angeles City W&P	7.750%	7.750%	7.750%	7.500%	7.250%
Los Angeles County	7.500%	7.500%	7.500%	7.250%	7.250%
Marin County	7.500%	7.500%	7.250%	7.250%	7.000%
Mendocino County	7.750%	7.250%	7.250%	7.250%	7.000%
Merced County	7.750%	7.750%	7.750%	7.250%	7.250%
Orange County	7.250%	7.250%	7.250%	7.250%	7.250%
Pasadena City P&F	6.000%	6.000%	6.000%	6.000%	6.000%
Sacramento County	7.500%	7.500%	7.500%	7.500%	7.000%
San Bernardino County	7.750%	7.500%	7.500%	7.500%	7.250%
San Diego City	7.250%	7.250%	7.250%	7.000%	6.750%
San Diego County	7.750%	7.750%	7.750%	7.250%	7.250%
San Francisco City & County	7.580%	7.500%	7.500%	7.500%	7.500%
San Joaquin County	7.500%	7.500%	7.500%	7.500%	7.400%
San Jose City	7.250%	7.000%	7.000%	6.875%	6.875%
San Jose City F&P	7.125%	7.000%	7.000%	6.875%	6.875%
San Luis Obispo County	7.250%	7.250%	7.250%	7.125%	7.125%
San Mateo County	7.500%	7.250%	7.250%	7.000%	6.750%
Santa Barbara County	7.750%	7.500%	7.500%	7.000%	7.000%
Sonoma County	7.500%	7.500%	7.500%	7.250%	7.250%
Stanislaus County	7.750%	7.750%	7.750%	7.250%	7.250%
Tulare County	7.750%	7.700%	7.650%	7.600%	7.250%
UC Regents	7.500%	7.500%	7.500%	7.250%	7.250%
Ventura County	7.750%	7.750%	7.750%	7.500%	7.500%
	35	35	35	35	35

Data From Calendar Year 2021

System	Assumed Return	Funding Ratio	UAAL (billions)
AC Transit	7.00%	70.9%	\$ 0.30
Alameda County	7.25%	77.6%	\$ 2.20
CalPERS**	7.00%	70.0%	\$ 61.37
CalSTRS*	7.00%	66.0%	\$ 105.70
Contra Costa County	7.00%	90.6%	\$ 0.95
Fresno City	7.00%	109.9%	\$ (0.11)
Fresno City F&P	7.00%	116.3%	\$ (0.22)
Fresno County	7.00%	82.7%	\$ 1.09
Imperial County	7.00%	84.8%	\$ 0.17
Kern County	7.25%	64.4%	\$ 2.50
Los Angeles City	7.00%	69.4%	\$ 6.90
Los Angeles City F&P	7.00%	93.2%	\$ 1.62
Los Angeles City W&P	7.00%	93.9%	\$ 0.88
Los Angeles County	7.00%	76.3%	\$ 18.51
Marin County	6.75%	84.0%	\$ 0.50
Mendocino County	6.75%	69.3%	\$ 0.26
Merced County	7.00%	65.1%	\$ 0.49
Orange County	7.00%	73.2%	\$ 5.88
Sacramento County	6.75%	80.6%	\$ 2.46
San Bernardino County	7.25%	77.9%	\$ 3.17
San Diego City ERS	6.50%	70.2%	\$ 3.34
San Diego City Airport	6.50%	89.6%	\$ 0.02
San Diego City Port	6.50%	74.5%	\$ 0.16
San Diego County	7.00%	77.3%	\$ 4.03
San Francisco City & County	7.40%	90.5%	\$ 2.80
San Joaquin County	7.00%	64.3%	\$ 1.79
San Jose City	6.625%	52.3%	\$ 2.10
San Jose P&F	6.625%	73.6%	\$ 1.38
San Luis Obispo County***	6.875%	65.3%	\$ 0.75
San Mateo County	6.50%	86.4%	\$ 0.79
Santa Barbara County****	7.00%	74.3%	\$ 1.10
Sonoma County	7.00%	89.4%	\$ 0.33
Stanislaus County	7.00%	75.6%	\$ 0.74
Tulare County	7.00%	89.1%	\$ 0.21
UC Regents	6.75%	79.0%	\$ 19.80
Ventura County	7.25%	89.6%	\$ 0.70

Lowered Rate

