# **Actuarial Information 101**

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# Today's Topics

- Overview of important pages
- Answers to the most common questions
- Two sections
  - Non pooled
  - Pooled





# Non-Pooled Report – Common Questions

- What is my rate?
- Is my plan in good shape?
- Why did my rate change?
- Where is my rate headed?
- Where are my PEPRA members?
- Where can I get GASB info?
- What else should I be worried about?



What is my rate? - Cover page

Fiscal Year	Employer Contribution Rate
2015-16	19.777%
2016-17	21.5% (projected)

- Rates do not reflect any cost sharing information
- Fiscal Year 2016-17 projection reflects
  - 1<sup>st</sup> year impact of 2013-14 investment return 18%
  - 1st year impact of the 6/30/2014 assumption change



What is my rate? – Page 6

#### Required Employer Contribution

		Fiscal Year 2014-15		Fiscal Year 2015-16
Actuarially Determined Employer Contributions				
1. Contribution in Projected Dollars  a) Total Normal Cost  b) Employee Contribution <sup>1</sup> c) Employer Normal Cost [(1a) – (1b)]  d) Unfunded Liability Contribution  e) Required Employer Contribution [(1c) + (1d)]	\$ - \$	4,175,751 1,823,586 2,352,165 2,128,937 4,481,102	\$ - \$	3,965,277 1,714,390 2,250,887 2,596,180 4,847,067
Projected Annual Payroll for Contribution Year	\$	26,051,225	\$	24,508,792
Contribution as a Percentage of Payroll     a) Total Normal Cost     b) Employee Contribution <sup>1</sup> c) Employer Normal Cost [(2a) – (2b)]     d) Unfunded Liability Rate     e) Required Employer Rate [(2c) + (2d)]		16.029% 7.000% 9.029% 8.172% 17.201%		16.179% 6 995% 9.184% 10.593% 19.777%
Minimum Employer Contribution Rate <sup>2</sup> Annual Lump Sum Prepayment Option <sup>3</sup>	\$	<b>17.201%</b> 4,321,959	\$	<b>19.777</b> % 4,674,927

- Components of the employer rate
- PEPRA minimum rate
- Lump sum prepayment



Is my plan in good shape? – Page 6

#### Plan's Funded Status

	June 30, 2012	J	Jne 30, 2013
<ol> <li>Present Value of Projected Benefits</li> </ol>	\$ 246,795,797	\$	253,480,870
2. Entry Age Normal Accrued Liability	219,802,218		228,267,503
<ol><li>Market Value of Assets (MVA)</li></ol>	\$ 162,218,306	\$	178,118,108
4. Unfunded Liability [(2) – (3)]	\$ 57,583,912	\$	50,149,395
5. Funded Ratio [(3) / (2)]	73.8%		78.0%
Superfunded Status	No		No

- Unfunded Liability = UAL = Unfunded Accrued Liability
- Funded ratio indicates the health of plan
- Information as of 6/30/13



Why did my rate change? – Page 18

(Gain) /Loss Analysis 6/30/12 - 6/30/13

```
A Total (Gain)/Loss for the Year

    Unfunded Accrued Liability (UAL) as of 6/30/12.

                                                                                          25,206,659
    Expected Payment on the UAL during 2012/2013
                                                                                           1.358,426

    Interest through 6/30/13 [.075 x (A1) - ((1.075)<sup>26</sup> - 1) x (A2)]

                                                                                           1,840,479

 Expected UAL before all other changes [(A1) - (A2) + (A3)]

                                                                                          25.688.712
    Change due to plan changes
    Change due to assumption change

    Expected UAL after all other changes [(A4) + (A5) + (A6)]

                                                                                          25,688,712

    Actual UAL as of 6/30/13

         Total (Gain)/Loss for 2012/2013 [(A8) - (A7)]
                                                                                          24.460.683
                                                                                s
B Contribution (Gain)/Loss for the Year
         Contribution (Gain)/Loss [(B5) - (B6)]
                                                                                s
                                                                                            (517,045)
C Asset (Gain)/Loss for the Year
         Asset (Gain)/Loss [(C10) - (C11)]
                                                                                s
                                                                                          25,299,927
D Liability (Gain)/ Loss for the Year
         Liability (Gain)/Loss [(D1) - (D2) - (D3)]
                                                                                            (322,199)
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- Expected liability and asset values compared with actual values
- Explains changes to the UAL rate



Why did my rate change? – Page 19

#### **Schedule of Amortization Bases**

		· · · · · · · · · · · · · · · · · · ·				<u>-</u>	Amou	nts for Fiscal 20	15-16
Reason for Base	Date Established	•		Balance 6/30/14	Expected Payment 2014-15	Balance 6/30/15	Scheduled Payment for 2015-16	Payment as Percentage of Payroll	
ASSUMPTION CHANGE	06/30/03	10	\$6,787,340	\$733,910	\$6,535,457	\$755,928	\$6,241,854	\$778,606	3.177%
METHOD CHANGE	06/30/04	11	\$(599,331)	\$(60,997)	\$(581,038)	\$(62,827)	\$(559,475)	\$(64,712)	(0.264%)
BENEFIT CHANGE	06/30/06	13	\$834,227	\$76,473	\$817,505	\$78,767	\$797,150	\$81,130	0.331%
GOLDEN HANDSHAKE	06/30/09	16	\$149,097	\$12,054	\$147,781	\$12,415	\$145,993	\$12,788	0.052%
ASSUMPTION CHANGE	06/30/09	16	\$4,207,245	\$340,134	\$4,170,130	\$350,338	\$4,119,652	\$360,848	1.472%
SPECIAL (GAIN)/LOSS	06/30/09	26	\$3,975,194	\$247,178	\$4,017,054	\$254,594	\$4,054,364	\$262,232	1.070%
SPECIAL (GAIN)/LOSS	06/30/10	27	\$(2,720,110)	\$(166,128)	\$(2,751,874)	\$(171,112)	\$(2,780,851)	\$(176,245)	(0.719%)
ASSUMPTION CHANGE	06/30/11	18	\$4,800,690	\$120,826	\$5,035,466	\$392,902	\$5,005,757	\$404,689	1.651%
SPECIAL (GAIN)/LOSS	06/30/11	28	\$(2,433,443)	\$(146,130)	\$(2,464,441)	\$(150,513)	\$(2,493,218)	\$(155,029)	(0.633%)
PAYMENT (GAIN)/LOSS	06/30/12	29	\$1,414,515	\$(247,092)	\$1,776,794	\$106,697	\$1,799,428	\$109,898	0.448%
(GAIN)/LOSS	06/30/12	29	\$9,273,289	\$592,397	\$9,354,575	\$561,747	\$9,473,736	\$578,600	2.361%
(GAIN)/LOSS	06/30/13	30	\$24,460,682	\$(164,795)	\$26,466,096	\$(220,106)	\$28,679,264	\$403,375	1.646%
TOTAL			\$50,149,395	\$1,337,830	\$52,523,505	\$1,908,830	\$54,483,654	\$2,596,180	10.593%

- Pieces of the plan's UAL
- 6/30/13 GL amortized according to new smoothing policy
- All other bases are declining



Why did my rate change? – Page 20

#### Alternate Amortization Schedules

	Level Rate of Payroll Amortization											
Period 2015-16 2015-16 Total Total Difference Payment Payments Interest Current Sci												
25	14.693%	\$ 3,601,066	\$ 131,292,229	\$ 76,808,575	\$ 5,055,372							
20	16.785%	\$ 4,113,812	\$ 110,539,658	\$ 56,056,004	\$ 25,807,943							

- You can accelerate payments to your UAL
- Payoff sooner will save you in interest costs
- Compare 2015-16 rate to page 19 rate



Where are my rates headed? – Page 26

#### **Projected Rates**

	New Rate	Pr	ojected Future	e Employer Co	ntribution Ra	tes
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Contribution Rates:	19.777%	21.5%	23.0%	24.5%	25.9%	25.7%

- Assumes returns of 18% for 2013-14 and 7.5% thereafter
- Reflects new assumptions for 6/30/14 valuation
- Reflects new smoothing and amortization policy
- No demographic gains or losses after 6/30/13 included



# Where are my rates headed? – Page 27

#### Analysis of Future Investment Return Scenarios

2014-17 Investment Return Scenario	Estin	nated Employer R	ate	Estimated Change in Employer Rate between 2016-17
l iteram decinario	2017-18	2018-19	2019-20	and 2019-20
-3.8% (5th percentile)	24.4%	28.6%	33.9%	12.3%
2.8% (25th percentile)	23.6%	26.2%	29.4%	7.8%
7.5%	23.0%	24.5%	25.9%	4.4%
12.0%(75th percentile)	22.4%	22.8%	22.4%	0.9%
18.9%(95th percentile)	21.6%	20.0%	16.7%	-4.9%

- Assumes returns of 18% for 2013-14 and varies thereafter
- No demographic gains or losses after 6/30/13 included
- Reflects new smoothing and amortization policy
- Reflects new assumptions change for 6/30/14
- Confidence interval for projected rates



- Where are my PEPRA members?
  - Non pooled plans absorb PEPRA members
  - Non pooled plans require the same employer rate for all members in the plan
  - Non pooled plans require differing employee rates
    - Classic member rate is set by statute
    - PEPRA member rate can be found in Appendix D

#### DEVELOPMENT OF PEPRA MEMBER CONTRIBUTION RATE

		Basis for	Current Rate	F	Rates Effective July 1, 2015				
Rate Plan Identifier	Plan	Total Normal Cost Member Rate		Total Normal Cost	Change	Change Needed	Member Rate		
26274	Miscellaneous PEPRA	13.30% 6.750%		13.30% 0.00%		No	6.750%		
			•		•				



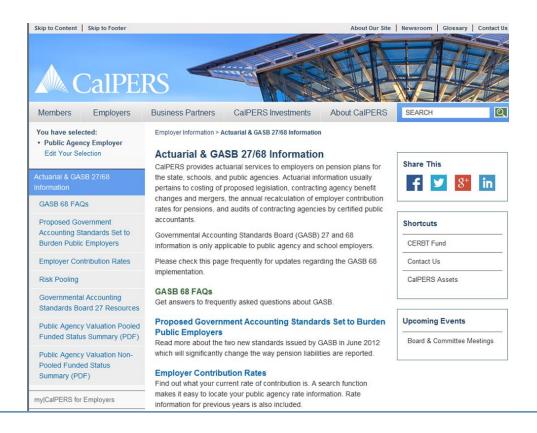
- Where can I get GASB info? Page 31
  - Contains all the information your auditor will need for GASB 27



#### • GASB 68

## See CalPERS website for up to date information

http://www.calpers.ca.gov/index.jsp?bc=/employer/actuarial-gasb/home.xml





#### GASB 68

- Separate valuation reports required
- Requests will be submitted through my|CalPERS starting in early 2015
- Fee estimate \$2,500 per report
  - Each plan requires a separate report



What else? – Page 27

#### **Analysis of Discount Rate Sensitivity**

	2015-16 Employer Contribution Rate										
As of June 30, 2013 6.50% Discount Rate (-1%)				'.50% Discount Rate (assumed rate)		8.50% Discount Rate (+1%)					
Employer Normal Cost		13.021%		9.184%		6.244%					
Accrued Liability	\$	256,037,534	\$	228,267,503	\$	205,066,678					
Unfunded Accrued Liability	\$	77,919,426	\$	50,149,395	\$	26,948,570					

- Highly sensitive to the discount rate
- CalPERS board will review the discount rate assumption again in February of 2017



What else? – Page 28

#### **Hypothetical Termination Liability**

Valuation Date	Hypothetical Termination Liability <sup>1</sup>	Market Value of Assets (MVA)	Unfunded Termination Liability	Termination Funded Ratio	Termin Liabi Disco Rat	lity unt
06/30/11	\$ 304,933,699	\$ 175,146,688	\$ 129,787,011	57.4%	4.82	2%
06/30/12	382,975,010	162,218,306	220,756,704	42.4%	2.98	3%
06/30/13	356,645,963	 178,118,108	178,527,855	49.9%	3.72	2%

- Highly sensitive to the discount rate
- Current termination liability discount rate is approximately 3.55%



- What else? Appendices
  - Appendix A
    - Assumptions and methods used in rate setting
  - Appendix B
    - Descriptions of all benefit provisions offered
  - Appendix C
    - Participant Data
    - Demographic information for the plan as of 6/30/13



- What else? Appendices
  - Appendix D
    - PEPRA Member Rate Information
  - Appendix E
    - Glossary of Actuarial Terms





# Pooled Report – Common Questions

- What changes were made to risk pools?
- What is my rate?
- What is my UAL?
- Where is my rate headed?
- Where are my PEPRA members?
- Where can I get GASB info?
- What else should I be worried about?



- What changes were made to risk pools?
  - All classic pools were combined into two pools
    - Miscellaneous
    - Safety
  - Plans are allocated a piece of the pool's UAL each year
    - Allocation is based on their share of the pool's liability



- Why changes were made to risk pools?
  - To ensure proper funding of the pools
  - To make sure employers were paying their fair share of the costs
  - To help ease the unpredictable effect of shrinking payrolls caused by PEPRA



- What changes were made to risk pools?
  - Annual rates are now billed as:
    - Normal cost percentage
    - UAL \$ amount
  - Plans within each risk pool have their own UAL
    - Employers now have the flexibility to pay off their UAL or accelerate payments towards it



- What changes were made to risk pools?
  - Section 1 contains the bulk of information
    - Contribution rate
    - Unfunded liability
    - Plan specific projections
  - Section 2 has pool specific information



What is my rate? - Cover page

Fiscal	Employer Normal		Employer Payment of
Year	Cost Rate		Unfunded Liability
2015-16	10.295%		\$ 12,229
2016-17 (projected)	10.7%	î    - 	\$ 15,081

- Rates do not reflect any cost sharing arrangements
- Fiscal Year 2016-17 projection reflects
  - 1<sup>st</sup> year impact of 2013-14 investment return 18%
  - 1st year impact of the 6/30/2014 assumption change
  - Expiring side funds (if applicable)



# What is my rate? – Page 6

#### **Required Employer Contribution**

	Fiscal Year	Fiscal Year		
Actuarially Determined Employer Contributions:	2014-15 <sup>1</sup>		2015-16	
Employer Contributions (in Projected Dollars)				
Plan's Employer Normal Cost	\$ 62,244	\$	60,724	
Plan's Payment on Amortization Bases	25,521		12,229	
Surcharge for Class 1 Benefits <sup>3</sup>				
a) FAC 1	3,898		3,862	
b) PRSA	6,428		6,381	
c) 3% COLA	7,255		7,148	
Phase out of Normal Cost Difference⁴	0		0	
Amortization of Side Fund	457		0	
Total Employer Contribution	\$ 105,803	\$	90,344	
Projected Payroll for the Contribution Fiscal Year	\$ 795,551	\$	758,766	
Required Employer Contributions (Percentage of Payroll)	 			
Plan's Net Employer Normal Cost	7.824%		8.003%	
Plan's Payment on Amortization Bases	3.208%		1.611%	
Surcharge for Class 1 Benefits <sup>3</sup>				
a) FAC 1	0.490%		0.509%	
b) PRSA	0.808%		0.841%	
c) 3% COLA	0.912%		0.942%	
Phase out of Normal Cost Difference⁴	0.000%		0.000%	
Amortization of Side Fund	0.057%		0.000%	
Total Employer Contribution Rate	 13.299%		11.906%	
Required Employer Contribution for FY 2015-16				
Employer Contribution Rate <sup>5</sup>			10.295%	
<i>Plus</i> Monthly Employer Dollar UAL Payment <sup>6</sup>		\$	1,019	
Annual Lump Sum Prepayment Option	 	\$	11,795	

For FY 2015-16 the total minimum required employer contribution is the **sum** of the Plan's Employer Contribution Rate (expressed as a percentage of payroll) **plus** the Employer Unfunded Accrued Liability (UAL) Contribution Amount (in dollars). Whereas in prior years it was possible to prepay total employer contributions for the fiscal year, beginning with FY 2015-16 and beyond, only the UAL portion of the employer contribution can be prepaid.



What is my UAL? – Page 12

#### Schedule of Plan's Side Fund and Other Amortization Bases

							Amou	nts for Fiscal 2015-16		
Reason for Base	Date Established	Amorti: zation Period	Balance 6/30/13	Expected Payment 2013-14	Balance 6/30/14	Expected Payment 2014-15	Balance 6/30/15	Scheduled Payment for 2015-16	Payment as Percentage of Payroll	
SIDEFUND	06/30/13	3	\$1,968	\$444	\$1.655	\$457	\$1,305	\$470	0.062%	
SHARE OF PRE-2013 POOL UAL	06/30/13	22	\$146,526	\$16.120	\$140.802	\$24.737	\$125.714	\$8.949	1.179%	
ASSET (GAIN)/LOSS	06/30/13	30	\$174,570	\$0	\$187,663	\$0	\$201,738	\$2,837	0.374%	
NON-ASSET (GAIN)/LOSS	06/30/13	30	\$(1,680)	\$0	\$(1,806)	\$0	\$(1,941)	\$(27)	(0.004%)	
TOTAL			\$321,384	\$16,564	\$328,314	\$25,194	\$326,816	\$12,229	1.611%	

- Side Fund has been incorporated
- Share of pre-2013 Pool UAL is the allocation of the pool's UAL
- 6/30/13 bases are subject to the new smoothing policy
- Employers can now pay off any portion of the UAL



What is my UAL? – Page 13

#### **Alternate Amortization Schedules**

Level Rate							
Period	2015-16 Payment	Total Payments	Total Interest	Savings			
25	\$ 21,601	\$ 787,557	\$ 460,741	\$ 62,376			
20	\$ 24,676	\$ 663,053	\$ 336,237	\$ 186,880			

- You can accelerate payments to your UAL
- Payoff sooner will save you in interest costs
- Compare 2015 -16 payment to page 12 payment



Where is my rate headed? – Page 18

#### **Projected Employer Contributions**

	New Rate	Projected Future Employer Contribution Rates							
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21			
Normal Cost %:	10.295%	10.7%	10.7%	10.7%	10.7%	10.7%			
UAL \$	\$ 12,229	\$ 15,081	\$ 18,092	\$ 20,754	\$ 24,091	\$ 24,351			

- Assumes returns of 18% for 2013-14 and 7.5% thereafter
- Reflects new assumptions for 6/30/14 valuation
- Reflects new smoothing and amortization policy
- No demographic gains or losses after 6/30/13 included



Where is my rate headed? – Page 19

#### **Analysis of Future Investment Return Scenarios**

2014-17 Investment	Estimated	Estimated Total Change in Employer UAL Contribution		
Return Scenario	2017-18	2018-19	2019-20	between 2016-17 and 2019-20
-3.8% (5th percentile)	\$ 21,028	\$ 29,592	\$ 41,839	\$ 26,758
2.8% (25th percentile)	\$ 19,313	\$ 24,511	\$ 31,799	\$ 16,718
7.5%	\$ 18,092	\$ 20,754	\$ 24,091	\$ 9,010
12.0%(75th percentile)	\$ 16,923	\$ 17,049	\$ 0	\$ (15,081)
18.9%(95th percentile)	\$ 15,130	<b>\$ 0</b>	\$ 0	\$ (15,081)

- Assumes returns of 18% for 2013-14 and varies thereafter
- No demographic gains or losses after 6/30/13 included
- Reflects new smoothing and amortization policy
- Reflects new assumptions change for 6/30/14
- Confidence interval for projected rates



- Where are my PEPRA members?
  - With pooled plan, classic and PEPRA rates are completely separate
  - Pooled plans require different employer rates for Classic and PEPRA members
  - Pooled plans also require different **employee** rates
  - Normal cost rate for the group is on page 14

#### **Plan's Total Normal Cost Rate**

Fiscal Year	Fiscal Year
2014-15	2015-16
14.711%	14.894%
0.490%	0.509%
0.808%	0.841%
0.912%	0.942%
16.921%	17.186%
	2014-15 14.711% 0.490% 0.808% 0.912%



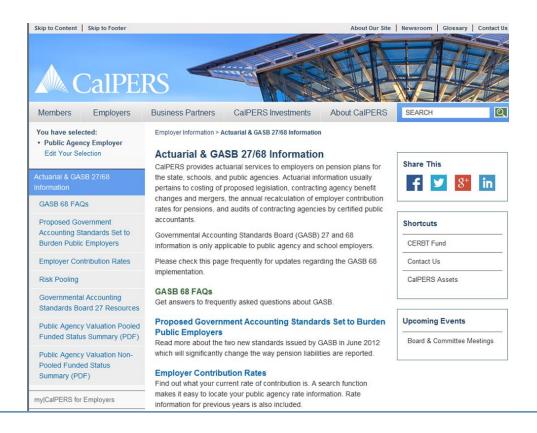
- Where can I get GASB info? Page 22
  - Contains all the information your auditor will need for GASB 27



#### GASB 68

#### See CalPERS website for up to date information

http://www.calpers.ca.gov/index.jsp?bc=/employer/actuarial-gasb/home.xml





#### GASB 68

- Separate valuation reports required
- Requests will be submitted through my|CalPERS starting in early 2015
- Fee estimate \$850 per report
  - Each plan requires a separate report



What else? – Page 19

#### **Analysis of Discount Rate Sensitivity**

2015-16 Employer Contribution						
As of June 30, 2013	6.50% Discount Rate (-1%)	7.50% Discount Rate (assumed rate)	8.50% Discount Rate (+1%)			
Plan's Employer Normal Cost	14.4%	10.3%	7.1%			
Accrued Liability	\$ 1,968,044	\$ 1,707,312	\$ 1,493,098			
Unfunded Accrued Liability	\$ 582,116	\$ 321,384	\$ 107,170			

- Highly sensitive to the discount rate
- CalPERS board will review the discount rate assumption again in February of 2017



What else? – Page 20

#### **Hypothetical Termination Liability**

Valuation Date	Hypothetical Termination Liability <sup>1</sup>	Market Value of Assets (MVA)	Unfunded Termination Liability	Termination Funded Ratio	Termination Liability Discount Rate <sup>2</sup>
06/30/2011	\$ 1,659,197	\$ 1,018,149	\$ 641,048	61.4%	\$ 4.82%
06/30/2012	2,493,117	 1,148,004	1,345,113	46.1%	2.98%
06/30/2013	2,547,179	 1,385,928	1,161,251	54.4%	 3.72%

- Highly sensitive to the discount rate
- Current termination liability discount rate is approximately 3.55%



- Now available on CalPERS online
  - See Section 1 for web address
- Has pool specific information

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

# Section 2 may be found on the CalPERS website (www.calpers.ca.gov) then selecting:

- Employers
- Actuarial & GASB 27 Information
- Risk Pooling
- Risk Pool Annual Valuation Report



# Appendices

- Appendix A Actuarial Methods and Assumptions
- Appendix B Plan Provision Descriptions
- Appendix C Optional Benefit Information
- Appendix D UAL by Benefit Formula
- Appendix E Participant Data
- Appendix F Glossary



# **Questions & Discussion**

