



## ALAMEDA COUNTY FIRE DEPARTMENT RETIREE HEALTHCARE PLAN

BARTTEL  
ASSOCIATES, LLC

June 30, 2017 Actuarial Valuation  
Final Results

### **Bartel Associates, LLC**

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May 31, 2018

### CONTENTS

<u>Topic</u>	<u>Page</u>
Benefit Summary	1
Implied Subsidy	5
Data Summary	7
Actuarial Assumption Highlights	9
Actuarial Methods	15
Assets	17
Results	21
Side Fund Calculations	33
Actuarial Certification	47
Exhibits	48



## BENEFIT SUMMARY

■ Eligibility	■ Service or disability retirement under CalPERS										
■ Medical Benefit	<div>■ Full monthly premium up to cap<sup>1</sup>:</div> <table><tr><th>Hire Date</th><th>Cap</th><th>Vesting Schedule</th></tr><tr><td>&lt; 4/1/09</td><td rowspan="2">100% of Kaiser Bay Area Premium</td><td>No</td></tr><tr><td>4/1/09-1/31/15</td><td rowspan="2">Yes</td></tr><tr><td>≥ 2/1/15<sup>2</sup></td><td>90% of Kaiser Bay Area Premium</td></tr></table> <div>■ Kaiser premium cap varies by:<ul style="list-style-type: none"><li>● Single, 2-party, family coverage;</li><li>● Medicare eligibility</li></ul></div>	Hire Date	Cap	Vesting Schedule	< 4/1/09	100% of Kaiser Bay Area Premium	No	4/1/09-1/31/15	Yes	≥ 2/1/15 <sup>2</sup>	90% of Kaiser Bay Area Premium
Hire Date	Cap	Vesting Schedule									
< 4/1/09	100% of Kaiser Bay Area Premium	No									
4/1/09-1/31/15		Yes									
≥ 2/1/15 <sup>2</sup>	90% of Kaiser Bay Area Premium										

<sup>1</sup> For special Safety group of retirees (11 as of 6/30/17) cap is \$164.94/mo. single or \$250.85/mo. 2-Party.

<sup>2</sup> MOUs indicate 1/1/15, but date adopted by CalPERS was 2/1/15.



## BENEFIT SUMMARY

■ Vesting Schedule	■ Vesting % based on CalPERS service, minimum 5 years ACFD service:			
	CalPERS Service	Vesting Percent	CalPERS Service	Vesting Percent
	<10	PEMHCA Min	15	75%
	10	50%	16	80%
	11	55%	17	85%
	12	60%	18	90%
	13	65%	19	95%
	14	70%	20+	100%
	■ 100% vesting with disability retirement.			
■ Surviving Spouse	■ 100% of retiree benefit continues to surviving spouse if retiree elects survivor annuity under CalPERS retirement plan			
■ Other Benefits	■ No dental, vision, life, or Medicare Part B reimbursements.			



## BENEFIT SUMMARY

■ Employee Contrib.	<div>■ Per current MOUs: Effective 1/1/14 employees are required to contribute to the OPEB Plan (effective 7/1/14 for unrepresented):</div> <table><thead><tr><th><u>Year</u></th><th><u>Fire</u></th><th><u>Misc</u></th></tr></thead><tbody><tr><td>2017</td><td>3.056984%</td><td>3.525443%</td></tr><tr><td>2018</td><td>3.762879%</td><td>4.284406%</td></tr></tbody></table> <div>■ 2019 and 2020: cumulative additional 25% of the yearly base wage adjustments (adjustments are based on salary surveys)</div>	<u>Year</u>	<u>Fire</u>	<u>Misc</u>	2017	3.056984%	3.525443%	2018	3.762879%	4.284406%
<u>Year</u>	<u>Fire</u>	<u>Misc</u>								
2017	3.056984%	3.525443%								
2018	3.762879%	4.284406%								
■ Cash Pay-As-You-Go Costs	<div>■ FY 2016/17 \$3,545,260</div> <div>■ FY 2015/16 \$3,171,111</div> <div>■ FY 2014/15 \$2,807,121</div> <div>■ FY 2013/14 \$2,452,762</div>									
■ Contract Agencies	<div>■ Costs allocated to contract agencies based on agencies' cost allocation percentage with ACFD</div>									



## BENEFIT SUMMARY

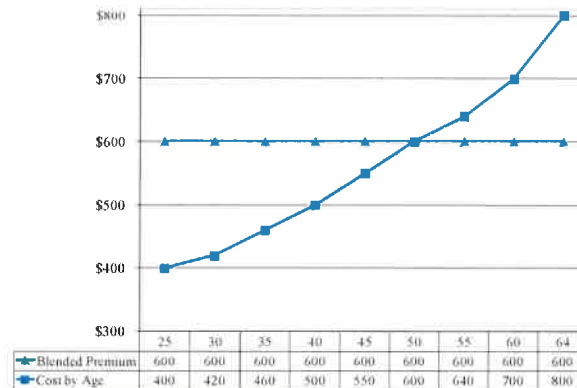
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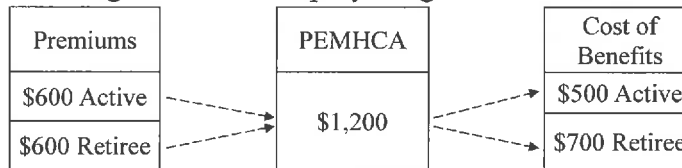
## IMPLIED SUBSIDY

- For PEMHCA, employer cost for allowing retirees to participate at active rates.

- General trend:



- Sample assuming one active employee age 40 and one retiree age 60:



## IMPLIED SUBSIDY

- GASB 45 defers to actuarial standards of practice.
- Actuarial Standards of Practice No. 6<sup>3</sup> (ASOP 6) allowed community rated plans to value liability using premiums, resulting in no implied subsidy in the past.
- In May 2014, Actuarial Standards Board released revised ASOP 6:
  - Will require implied subsidy valued for community rated plans such as PEMHCA.
  - Timing: effective with all valuations on or after March 31, 2015 with earlier implementation encouraged
- June 30, 2015 and later valuations include the PEMHCA implied subsidy.

<sup>3</sup> "Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions".



## DATA SUMMARY

### Participant Statistics

**June 30, 2017**

	Safety	Miscellaneous		Total
		Non-Dispatch	Dispatch	
■ Actives:				
• Count	346	41	32	419
• Average Age	41.6	45.5	37.6	41.7
• Average Service				
> ACFD	9.2	6.2	5.1	8.6
> CalPERS	13.0	8.8	7.3	12.1
• Average 16/17 Salary	\$127,300	\$91,600	\$85,500	\$120,600
• Total 16/17 Salary (000s)	44,047	3,757	2,737	50,541
■ Retirees:				
• Count	278	8	6	292 <sup>4</sup>
• Average Age	64.0	64.9	61.6	63.9
• Average Retirement Age				
> Service Retirement	54.2	61.0	59.2	54.6
> Disability Retirement	53.1	54.2	n/a	53.1

<sup>4</sup> Includes 16 retirees who waive medical coverage.



May 31, 2018

7



## DATA SUMMARY

### Participant Statistics

**June 30, 2015**

	Safety	Miscellaneous		Total
		Non-Dispatch	Dispatch	
■ Actives:				
• Count	352	34	35	421
• Average Age	42.6	47.2	37.7	42.6
• Average Service				
> ACFD	8.8	7.4	4.2	8.3
> CalPERS	13.8	10.9	6.9	13.0
• Average 14/15 Salary	\$122,200	\$84,500	\$77,700	\$115,500
• Total 14/15 Salary (000s)	43,015	2,873	2,718	48,607
■ Retirees:				
• Count	238	4	4	246 <sup>5</sup>
• Average Age	64.2	64.0	60.6	64.1
• Average Retirement Age				
> Service Retirement	54.2	58.6	59.8	54.4
> Disability Retirement	52.5	54.2	n/a	52.5

<sup>5</sup> Includes 18 retirees who waive medical coverage.



May 31, 2018

8



## ACTUARIAL ASSUMPTIONS HIGHLIGHTS

### Investment Return Assumption

#### ■ CERBT Investment Options

	Strategy 1	Strategy 2	Strategy 3
Global Equity	57%	40%	24%
Fixed Income	27%	39%	39%
TIPS	5%	10%	26%
Commodities	3%	3%	3%
Fixed Income	<u>8%</u>	<u>8%</u>	<u>8%</u>
Total	100%	100%	100%

#### ■ ACFD in Strategy 1

#### ■ Separate sub-accounts for each contracting agency



## ACTUARIAL ASSUMPTIONS HIGHLIGHTS

### Investment Return Assumption

#### ■ Future expected returns

- Stochastic simulations of geometric average returns over 20 years
- 5,000 trials
- 2.75% inflation assumption
- Projections based on 5 independent Investment Advisors 2017 10-year Capital Market Assumptions and where available, investment advisors anticipated long-term trends
- Confidence levels:

	Strategy 1	Strategy 2	Strategy 3
50% Confidence Level	6.75%	6.25%	5.50%
55% Confidence Level	6.50%	6.00%	5.50%
60% Confidence Level	6.00%	5.75%	5.25%



# **ACTUARIAL ASSUMPTIONS HIGHLIGHTS**

	<b>June 30, 2015 Valuation</b>	<b>June 30, 2017 Valuation</b>
■ Valuation Date	<ul style="list-style-type: none"> <li>■ June 30, 2015</li> <li>■ 2016/17 and 2017/18 ARC</li> </ul>	<ul style="list-style-type: none"> <li>■ June 30, 2017</li> <li>■ 2018/19 and 2019/20 ADC</li> </ul>
■ General Inflation	<ul style="list-style-type: none"> <li>■ 3.00%</li> <li>■ Used for economic assumptions</li> </ul>	<ul style="list-style-type: none"> <li>■ 2.75%</li> <li>■ Used for economic assumptions</li> </ul>
■ Payroll Increases	<ul style="list-style-type: none"> <li>■ Aggregate Increases – 3.25%</li> <li>■ Merit Increases – CalPERS 1997-2011 Experience Study</li> </ul>	<ul style="list-style-type: none"> <li>■ Aggregate Increases – 3.00%</li> <li>■ Merit Increases – CalPERS 1997-2015 Experience Study</li> </ul>



# **ACTUARIAL ASSUMPTIONS HIGHLIGHTS**

	<b>June 30, 2015 Valuation</b>	<b>June 30, 2017 Valuation</b>
■ Discount Rate	<ul style="list-style-type: none"> <li>■ 4.75% - approx. blended rate determined by allocating liabilities to agencies based on estimated pre-funding policies: <ul style="list-style-type: none"> <li>● 7.25% - full pre-funding rate used for Dispatch and City of Newark</li> <li>● 5.15% - partial pre-funding rate (30% of ARC less paygo) used for ALCO</li> <li>● 4.25% - employee contributions only for remaining agencies</li> </ul> </li> <li>■ 7.25% - side fund calculations, CERBT Strategy #1</li> </ul>	<ul style="list-style-type: none"> <li>■ 4.84% - approx. blended rate determined by allocating liabilities to agencies based on estimated pre-funding policies: <ul style="list-style-type: none"> <li>● 6.75% - full pre-funding rate used for Dispatch and City of Dublin</li> <li>● 5.00% - partial pre-funding rate (35% of ADC less paygo) used for ALCO, City of Newark, and Union City</li> <li>● 4.00% - employee contributions only for remaining agencies</li> </ul> </li> <li>■ 6.75% - side fund calculations, CERBT Strategy #1</li> </ul>



# **ACTUARIAL ASSUMPTIONS HIGHLIGHTS**

	<b>June 30, 2015 Valuation</b>		<b>June 30, 2017 Valuation</b>	
■ Medical Trend	<u>Non-Medicare</u>	<u>Medicare</u>	<u>Increase from Prior Year</u>	
	<u>Year</u>	<u>All Plans</u>	<u>Year</u>	<u>Non-Medicare</u> <u>Medicare</u>
	2015	Actual 2015 Premiums	2017	Actual 2017 Premiums
	2016	Actual 2016 Premiums	2018	Actual 2018 Premiums
	2017	7.0%	2019	7.50%   6.50%
	2018	6.5%	2020	7.50%   6.50%
	2019	6.0%	2021	7.25%   6.30%
	2020	5.5%	2022	7.00%   6.10%
	2021+	5.0%	2023	6.75%   5.90%
			2024	6.50%   5.70%
			2025	6.25%   5.50%
			2026	6.00%   5.30%
			2027	5.80%   5.15%
			2028	5.60%   5.00%
			2029	5.40%   4.85%
			2030	5.20%   4.70%
			2031-35	5.05%   4.60%
			2036-45	4.90%   4.50%
			2046-55	4.75%   4.45%
			2056-65	4.60%   4.40%
			2066-75	4.30%   4.20%
			2076+	4.00%   4.00%



May 31, 2018

13



# **ACTUARIAL ASSUMPTIONS HIGHLIGHTS**

	<b>June 30, 2015 Valuation</b>	<b>June 30, 2017 Valuation</b>
■ Mortality, Termination, Disability, Retirement	<ul style="list-style-type: none"> <li>■ CalPERS 1997-2011 Experience Study</li> <li>■ Post-retirement mortality projected fully generational with Scale MP-2014, modified to converge to ultimate improvement rates in 2022</li> </ul>	<ul style="list-style-type: none"> <li>■ CalPERS 1997-2015 Experience Study</li> <li>■ Pre-retirement mortality projected with 15-year 90% Scale MP-2016</li> <li>■ Post-retirement mortality projected with Scale MP-2017 with base year of 2013</li> </ul>
■ Affordable Care Act (ACA) Excise Tax	■ Not Valued	■ 2.0% liability load on cash subsidy to estimate impact
■ PEMHCA Admin. Fee	■ n/a	<ul style="list-style-type: none"> <li>■ 0.33% of retiree premiums</li> <li>■ Added to Normal Cost</li> </ul>



May 31, 2018

14





## ACTUARIAL METHODS

Method	June 30, 2015 Valuation	June 30, 2017 Valuation
■ Cost Method	<ul style="list-style-type: none"> <li>• Entry Age Normal</li> <li>• Normal Cost is a level percent of payroll</li> </ul>	<ul style="list-style-type: none"> <li>• Same</li> </ul>
■ Funding Policy	<ul style="list-style-type: none"> <li>• Partial pre-funding, varies by agency</li> </ul>	<ul style="list-style-type: none"> <li>• Same</li> </ul>
■ Amortization Method	<ul style="list-style-type: none"> <li>• Level percent of payroll</li> </ul>	<ul style="list-style-type: none"> <li>• Same</li> </ul>
■ Amortization Periods	<ul style="list-style-type: none"> <li>• 30-years - initial 6/30/08 UAAL (22 years remaining on 6/30/16)</li> <li>• 15 years – gains &amp; losses, plan changes, and assumption changes</li> </ul>	<ul style="list-style-type: none"> <li>• 30-years - initial 6/30/08 UAAL (20 years remaining on 6/30/18)</li> <li>• 15 years – gains &amp; losses, plan changes, and assumption changes</li> </ul>



## ACTUARIAL METHODS

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## ASSETS

### Market Value of Plan Assets (MVA)

(Amounts in \$000's)

	2015/16	2016/17	Projected 2017/18 <sup>6</sup>
■ <b>MVA (Beginning of Year)</b>	\$ 3,437	\$ 13,548	\$ 17,420
● Contributions – Employer	9,200	1,171	880
● Contributions – Employee	682	1,241	1,686
● Disbursements	-	-	-
● Investment Return	232	1,472	2,162
● Administrative Expenses	(2)	(7)	(9)
● Investment Expense	(1)	(5)	(7)
■ <b>MVA (End of Year)</b>	<b>13,548</b>	<b>17,420</b>	<b>22,133</b>
■ <b>Approximate Annual Return</b>	2.9%	10.2%	11.5%

<sup>6</sup> Actual assets as of 12/31/17 projected to 6/30/18 using expected contributions provided by ACFD and the expected investment return of 6.75%.



May 31, 2018

17



## ASSETS

### Actuarial Value of Plan Assets (AVA)

(Amounts in \$000's)

	2015/16	2016/17	Projected 2017/18
■ <b>AVA (Beginning of Year)</b>	\$ 3,528	\$ 13,929	\$ 17,434
● Employer Contribution	9,882	2,412	2,566
● Benefit Payment/Disbursements	-	-	-
● Expected Investment Return	614	1,097	1,263
■ <b>Expected AVA (End of Year)</b>	<b>14,024</b>	<b>17,438</b>	<b>21,264</b>
■ <b>MVA (End of Year)</b>	<b>13,548</b>	<b>17,420</b>	<b>22,133</b>
■ <b>1/5 of (MVA - Expected AVA)</b>	<b>(95)</b>	<b>(4)</b>	<b>174</b>
■ <b>Preliminary AVA</b>	<b>13,929</b>	<b>17,434</b>	<b>21,438</b>
● Minimum AVA (80% of MVA)	10,838	13,936	17,706
● Maximum AVA (120% of MVA)	16,258	20,904	26,559
■ <b>AVA (End of Year)</b>	<b>13,929</b>	<b>17,434</b>	<b>21,438</b>
■ <b>Approximate AVA return</b>	6.1%	7.2%	7.7%



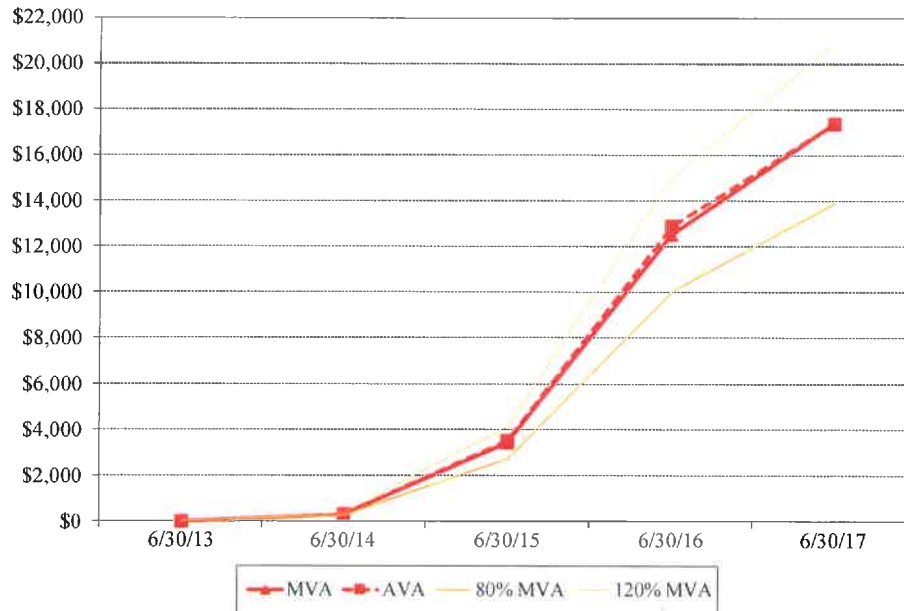
May 31, 2018

18



## ASSETS

### Historical Plan Assets (Amounts in \$000's)



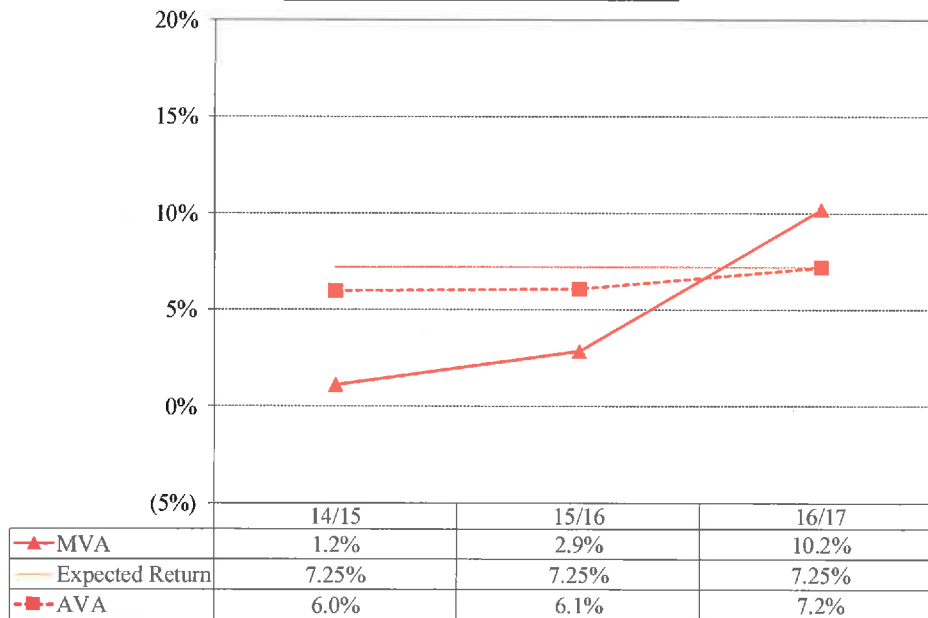
May 31, 2018

19



## ASSETS

### Annualized Asset Returns



May 31, 2018

20



## RESULTS

### Actuarial Obligations

(Amounts in \$000's)

	6/30/15 Valuation		6/30/17 Valuation	
	Actual 6/30/15	Projected 6/30/16	Actual 6/30/17	Projected 6/30/18
■ <b>Present Value of Benefits</b>				
•Actives	\$138,171		\$144,444	
•Retirees	<u>60,094</u>		<u>71,857</u>	
•Total	198,265		216,301	
■ <b>Actuarial Accrued Liability</b>				
•Actives	66,785		65,381	
•Retirees	<u>60,094</u>		<u>71,857</u>	
•Total	126,879	\$135,607	137,238	\$146,077
■ <b>Actuarial Value of Assets</b>	<u>(3,528)</u>	<u>(5,339)</u>	<u>(17,434)</u>	<u>(21,438)</u>
■ <b>Unfunded AAL</b>	123,351	130,268	119,804	124,639
■ <b>Funded Status</b>	2.8%	3.9%	12.7%	14.7%
■ <b>Normal Cost</b>	n/a	6,700	n/a	6,804
■ <b>Pay-As-You-Go</b>	3,713	4,087	4,268	4,792



May 31, 2018

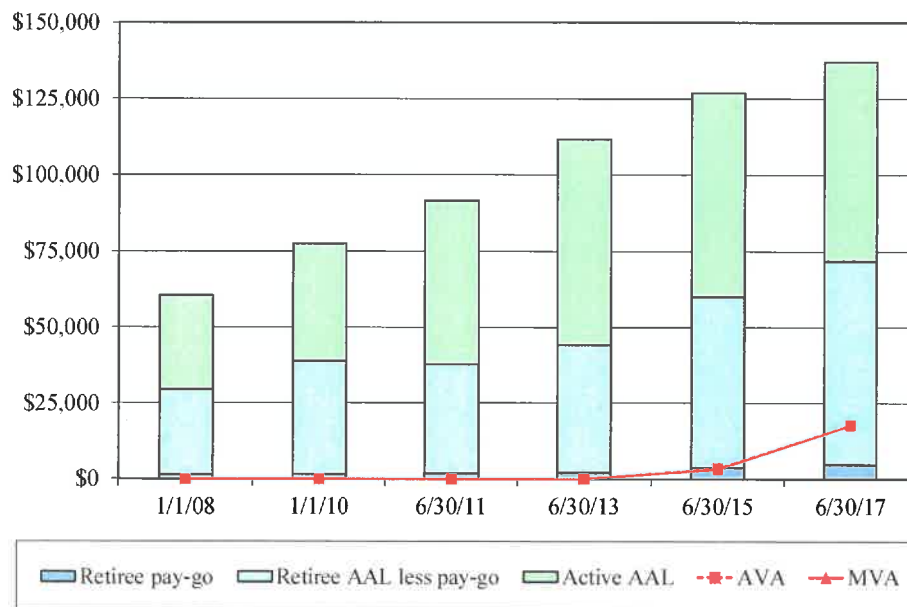
21



## RESULTS

### Historical Actuarial Accrued Liability

(Amounts in \$000's)



May 31, 2018

22



## RESULTS

### Actuarial Gains & Losses

(Amounts in \$000's)

	<b>AAL</b>
■ 6/30/15 Actual	\$126,879
■ 6/30/17 Expected	144,644
■ Experience (Gains)/Losses:	
• Premiums/Claims less than Expected	(9,879)
• Demographic & Other	(2,334)
■ Assumption Changes:	
• CalPERS 1997-2015 Experience Study	(3,363)
• Healthcare Trend	5,746
• Aggregate Pay Increase	868
• Excise Tax	2,331
• Discount Rate	(775)
■ Total Changes	(7,406)
■ 6/30/17 Actual	137,238



May 31, 2018

23



## RESULTS

### Schedule of Funding Progress

(Amounts in \$000's)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Entry Age Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as Percentage of Covered Payroll ((b-a)/c)
1/1/08	\$ 0	\$ 60,663	\$ 60,663	0.0%	\$ 46,446	130.6%
1/1/10	0	77,388	77,388	0.0%	46,942	164.9%
6/30/11	0	91,574	91,574	0.0%	48,377	189.3%
6/30/13	0	111,712	111,712	0.0%	50,708	220.3%
6/30/15	3,528	126,879	123,351	2.8%	50,186	245.8%
6/30/17	17,434	137,238	119,804	12.7%	52,057	230.1%



May 31, 2018

24



## RESULTS

### Total Annual Actuarially Determined Contribution (ADC)

(Amounts in \$000's)

	6/30/15 Valuation		6/30/17 Valuation	
	2016/17	2017/18	2018/19	2019/20
■ <b>ADC - \$</b>				
• Normal Cost	\$ 6,700	\$ 6,918	\$ 6,804	\$ 7,008
• UAAL Amortization	<u>10,175</u>	<u>11,290</u>	<u>8,987</u>	<u>9,257</u>
• Total ADC	16,875	18,208	15,791	16,265
• Employee Contributions <sup>7</sup>	<u>(1,241)</u>	<u>(1,686)</u>	<u>(2,054)</u>	<u>(2,115)</u>
• ACFD ADC	15,634	16,522	13,737	14,150
■ <b>Projected Payroll</b>	51,817	53,372	53,619	55,228
■ <b>ADC - % Pay</b>				
• Normal Cost	12.9%	13.0%	12.7%	12.7%
• UAAL Amortization	<u>19.6%</u>	<u>21.2%</u>	<u>16.8%</u>	<u>16.8%</u>
• Total ADC	32.6%	34.1%	29.5%	29.5%
• Employee Contributions	<u>(2.4%)</u>	<u>(3.2%)</u>	<u>(3.8%)</u>	<u>(3.8%)</u>
• ACFD ADC	30.2%	31.0%	25.6%	25.6%

<sup>7</sup> Estimated employee contributions for 18/19 and 19/20 based on 2018 employee contribution rates and projected payroll.



May 31, 2018

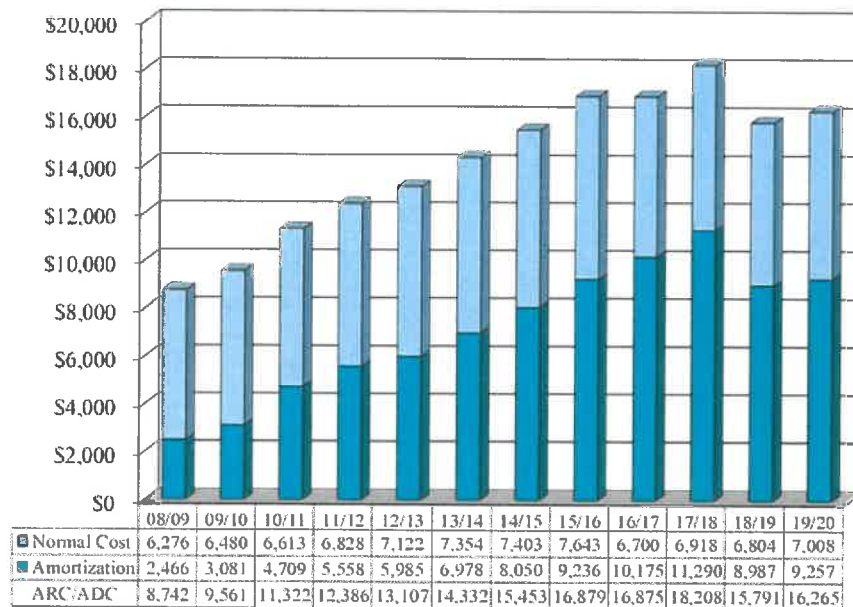
25



## RESULTS

### Historical Total Actuarially Determined Contributions

(Amounts in \$000's)



May 31, 2018

26



## RESULTS

### Amortization Bases

(Amounts in \$000's)

	6/30/15 Valuation		6/30/17 Valuation	
	6/30/16	6/30/17	6/30/18	6/30/19
■ <b>Outstanding Balance</b>				
• Initial 6/30/08 UAAL	\$62,519	\$62,040	\$61,457	\$60,640
• (Gains)/Losses				
➤ 1/1/10 Valuation	9,652	8,921	8,122	7,233
➤ 6/30/11 Valuation	(5,990)	(5,662)	(5,302)	(4,896)
➤ 6/30/13 Valuation	(398)	(382)	(365)	(344)
➤ 6/30/15 Valuation	(4,961)	(4,815)	(4,651)	(4,460)
➤ 6/30/17 Valuation	-	-	(7,727)	(7,492)
• Contribution (Gain)/Loss	<u>69,446</u>	<u>77,648</u>	<u>73,106</u>	<u>71,562</u>
• Total	130,268	137,750	124,639	122,243



## RESULTS

### Amortization Payments

(Amounts in \$000's)

	6/30/15 Valuation		6/30/17 Valuation	
	2016/17	2017/18	2018/19	2019/20
■ <b>Amortization Payment - \$</b>				
• Initial 6/30/08 UAAL	\$3,449	\$3,561	\$3,793	\$3,907
• (Gains)/Losses				
➤ 1/1/10 Valuation	1,189	1,228	1,282	1,321
➤ 6/30/11 Valuation	(612)	(632)	(662)	(682)
➤ 6/30/13 Valuation	(35)	(36)	(38)	(39)
➤ 6/30/15 Valuation	(383)	(395)	(416)	(429)
➤ 6/30/17 Valuation	-	-	(740)	(763)
• Contribution (Gain)/Loss	<u>6,567</u>	<u>7,564</u>	<u>5,768</u>	<u>5,942</u>
• Total	10,175	11,290	8,987	9,257
• Average Amort. Years	14.8	14.0	16.6	15.7



## RESULTS

### Actuarial Obligations by Agency

(Amounts in \$000's)

	Dis- patch	ALCO	San Leandro	Dublin	LBNL	LLNL	Newark	Union City	Emery- ville	Total
■ Discount Rate	6.75%	5.00%	4.00%	6.75%	4.00%	4.00%	5.00%	5.00%	4.00%	Blended
■ PVB 6/30/17										
• Actives	\$3,616	\$57,347	\$43,419	\$10,262	\$3,445	\$4,067	\$7,457	\$9,077	\$5,754	\$144,444
• Retirees	<u>607</u>	<u>29,981</u>	<u>19,920</u>	<u>6,618</u>	<u>1,581</u>	<u>1,866</u>	<u>3,898</u>	<u>4,746</u>	<u>2,640</u>	<u>71,857</u>
• Total	4,223	87,328	63,339	16,880	5,026	5,933	11,355	13,823	8,394	216,301
■ AAL 6/30/17										
• Actives	1,246	26,732	18,569	5,454	1,473	1,739	3,476	4,231	2,461	65,381
• Retirees	<u>607</u>	<u>29,981</u>	<u>19,920</u>	<u>6,618</u>	<u>1,581</u>	<u>1,866</u>	<u>3,898</u>	<u>4,746</u>	<u>2,640</u>	<u>71,857</u>
• Total	1,853	56,713	38,489	12,072	3,054	3,605	7,374	8,977	5,101	137,238
■ AVA 6/30/17	<u>(1,541)</u>	<u>(3,766)</u>	<u>(570)</u>	<u>(9,589)</u>	<u>(109)</u>	<u>(271)</u>	<u>(921)</u>	<u>(504)</u>	<u>(163)</u>	<u>(17,434)</u>
■ UAAL 6/30/17	312	52,947	37,919	2,483	2,945	3,334	6,453	8,473	4,938	119,804
■ Proj. AAL 6/30/18	2,124	60,130	40,645	12,852	3,286	4,024	7,893	9,615	5,508	146,077
■ Proj. AVA 6/30/18	<u>(1,789)</u>	<u>(4,559)</u>	<u>(930)</u>	<u>(10,565)</u>	<u>(176)</u>	<u>(439)</u>	<u>(2,002)</u>	<u>(743)</u>	<u>(235)</u>	<u>(21,438)</u>
■ Proj. UAL 6/30/18	335	55,571	39,715	2,287	3,110	3,585	5,891	8,872	5,273	124,639
■ Normal Cost (18/19)	208	1,909	1,518	482	282	705	535	703	462	6,804



May 31, 2018

29



## RESULTS

### Actuarially Determined Contribution (ADC) by Agency

2018/19 Fiscal Year

(Amounts in \$000's)

	Dis- patch	ALCO	San Leandro	Dublin	LBNL	LLNL	Newark	Union City	Emery- ville	Total
■ Discount Rate	6.75%	5.00%	4.00%	6.75%	4.00%	4.00%	5.00%	5.00%	4.00%	Blended
■ ADC - \$										
• Normal Cost	\$ 208	\$ 1,909	\$ 1,518	\$ 482	\$ 282	\$ 705	\$ 535	\$ 703	\$ 462	\$ 6,804
• UAAL Amortization	<u>28</u>	<u>4,106</u>	<u>2,745</u>	<u>190</u>	<u>215</u>	<u>248</u>	<u>435</u>	<u>656</u>	<u>364</u>	<u>8,987</u>
• Total ADC	236	6,015	4,263	672	497	953	970	1,359	826	15,791
• EE Contributions	n/a									(2,054)
• ACFD ADC	n/a									13,737
■ Projected Payroll	n/a									53,619
■ ADC - %										
• Normal Cost	n/a									12.7%
• UAAL Amortization	n/a									<u>16.8%</u>
• Total ADC	n/a									29.5%
• EE Contributions	n/a									<u>(3.8%)</u>
• ACFD ADC	n/a									25.6%



May 31, 2018

30





## RESULTS

### **Benefit Payment Projection by Cash/Implied Subsidy**

(Amounts in \$000's)

<b>Fiscal Year</b>	<b>Cash Subsidy</b>	<b>Implied Subsidy</b>	<b>Total</b>
2018/19	\$ 3,975	\$ 817	\$ 4,792
2019/20	4,333	918	5,251
2020/21	4,789	1,099	5,888
2021/22	5,157	1,198	6,355
2022/23	5,527	1,323	6,850
2023/24	5,850	1,378	7,228
2024/25	6,126	1,370	7,496
2025/26	6,512	1,447	7,959
2026/27	6,996	1,605	8,601
2027/28	7,370	1,624	8,994



## RESULTS

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## SIDE FUND CALCULATIONS

### Side Funds – Purpose

- Allow each agency in ACFD the choice of pre-funding their OPEB benefit independent of the pre-funding choice of other agencies in ACFD
- Side Funds are established for each agency within ACFD based on the full pre-funding discount rate
- They represent the amount of unfunded liability for each agency due to past service, based on ACFD retiree medical benefit
- Each agency decides how much, if any, of its own side fund to pre-fund
- If paid off would fully pre-fund past-service liability for agency



May 31, 2018

33



## SIDE FUND CALCULATIONS

### Side Funds – Methodology

- Initial side fund determined as of 6/30/08, or when joining ACFD if later, for each agency in ACFD.
- Yearly side fund calculation:
  - Allocate year's full pre-funding Normal Cost to each participating agency based on FTE, remaining is allocated based on allocation % of shared positions.
  - Each agency side fund will change:
    - (Beginning of year side fund with interest to end of year)
    - + (Allocated portion of full pre-funding NC)
    - (Allocated benefit payments with interest to end of year)
- Difference between total side fund amount and full pre-funding AAL is allocated to each agency based on FTE, remaining based on allocation % of shared positions.
- Each agency determines whether to make a pre-funding contribution to their CERBT sub-account or not, agency side fund is adjusted by any assets in sub-account:
  - (End of year side fund)
  - (End of year assets in CERBT sub-account)



May 31, 2018

34



## SIDE FUND CALCULATIONS

### Actuarial Obligations for Side Fund Calculations

#### Full Funding Discount Rate

(Amounts in \$000's)

	6/30/15 Valuation		6/30/17 Valuation	
	Projected		Projected	
	6/30/15	6/30/16	6/30/17	6/30/18
<b>Full Funding Discount Rate</b>	<b>7.25%</b>		<b>6.75%</b>	
■ <b>Present Value of Benefits</b>	\$124,038		\$150,345	
■ <b>Actuarial Accrued Liability</b>				
• Safety	86,856	\$92,755	101,410	\$107,792
• Misc Non Dispatch	2,228	2,583	3,091	3,539
• Misc Dispatch	<u>1,270</u>	<u>1,501</u>	<u>1,852</u>	<u>2,124</u>
• Total	90,354	96,839	106,353	113,455
■ <b>Actuarial Value of Assets</b>	<u>(3,528)</u>	<u>(5,339)<sup>8</sup></u>	<u>(17,434)</u>	<u>(21,438)</u>
■ <b>Unfunded AAL</b>	86,826	91,500	88,919	92,017
■ <b>Normal Cost</b>	n/a	3,903	n/a	4,463
■ <b>Pay-As-You-Go</b>	3,713	4,087	4,268	4,792

<sup>8</sup> Based on projected Actuarial Value of Assets from the 6/30/15 valuation.



May 31, 2018

35



## SIDE FUND CALCULATIONS

### Actuarially Determined Contribution (ADC) for Side Fund Calculations

	6/30/15 Valuation		6/30/17 Valuation	
	2016/17	2017/18	2018/19	2019/20
<b>Full Funding Discount Rate</b>	<b>7.25%</b>		<b>6.75%</b>	
■ <b>ADC - \$</b>				
• Normal Cost	\$ 3,903	\$ 4,029	\$4,463	\$4,597
• UAAL Amortization <sup>9</sup>	<u>8,597</u>	<u>8,877</u>	<u>7,611</u>	<u>7,840</u>
• Total ADC	12,500	12,906	12,074	12,437
• Employee Contributions <sup>10</sup>	<u>(1,241)</u>	<u>(1,686)</u>	<u>(2,054)</u>	<u>(2,115)</u>
• Total	11,259	11,220	10,021	10,322
■ <b>Projected Payroll</b>	51,817	53,501	53,619	55,228
■ <b>ADC - %Pay</b>				
• Normal Cost	7.5%	7.5%	8.3%	8.3%
• UAAL Amortization	<u>16.6%</u>	<u>16.6%</u>	<u>14.2%</u>	<u>14.2%</u>
• Total ADC	24.1%	24.1%	22.5%	22.5%
• Employee Contributions	<u>(2.4%)</u>	<u>(3.2%)</u>	<u>(3.8%)</u>	<u>(3.8%)</u>
• Total	21.7%	20.9%	18.7%	18.7%

<sup>9</sup> Based on valuation amortization periods.

<sup>10</sup> Estimated employee contributions for 18/19 and 19/20 based on 2018 employee contribution rates and projected payroll.



May 31, 2018

36



## SIDE FUND CALCULATIONS

### CERBT Sub-Accounts and AVA Calculation

**Fiscal Year 2015/16**

(Amounts in \$000's)

	Dis-patch	ALCO	San Leandro	Dublin	LBNL	LLNL	Newark	Union City	Emeryville	Total
■ MVA 6/30/15	\$1,251	\$1,002	\$164	\$94	\$31	\$78	\$677	\$94	\$47	\$3,437
• Contributions	54	1,186	126	8,272	24	60	54	72	36	9,882
• Disbursements	-	-	-	-	-	-	-	-	-	-
• Inv. Earnings	15	16	6	179	1	3	9	3	2	232
• Admin. Exp.	(1)	(1)	-	-	-	-	-	-	-	(2)
• Invest. Exp.	(1)	-	-	-	-	-	-	-	-	(1)
■ MVA 6/30/16	1,319	2,203	295	8,544	56	140	739	169	84	13,548
• AVA Ratio <sup>11</sup>	← 102.81% →									
■ AVA 6/30/16	1,356	2,265	303	8,784	58	144	759	173	87	13,929

<sup>11</sup> Ratio of valuation 6/30/16 Actuarial Value of Assets (\$13,929) to Market Value of Assets (\$13,548) = 102.81%.



May 31, 2018

37



## SIDE FUND CALCULATIONS

### CERBT Sub-Accounts and AVA Calculation

**Fiscal Year 2016/17**

(Amounts in \$000's)

	Dis-patch	ALCO	San Leandro	Dublin	LBNL	LLNL	Newark	Union City	Emeryville	Total
■ MVA 6/30/16	\$1,319	\$2,203	\$295	\$8,544	\$56	\$140	\$739	\$169	\$84	\$13,548
• Contributions	78	1,343	233	133	44	111	100	304	66	2,412
• Disbursements	-	-	-	-	-	-	-	-	-	-
• Inv. Earnings	144	220	42	912	8	20	83	31	12	1,472
• Admin. Exp.	(1)	(1)	-	(4)	-	-	-	-	-	(7)
• Invest. Exp.	(1)	(1)	-	(3)	-	-	-	-	-	(5)
■ MVA 6/30/17	1,540	3,764	569	9,581	108	271	921	503	163	17,420
• AVA Ratio <sup>12</sup>	← 100.08% →									
■ AVA 6/30/17	1,541	3,766	570	9,589	109	271	921	504	163	17,434

<sup>12</sup> Ratio of valuation 6/30/17 Actuarial Value of Assets (\$17,434) to Market Value of Assets (\$17,420) = 100.08%.



May 31, 2018

38



## SIDE FUND CALCULATIONS

### Estimated CERBT Sub-Accounts and AVA Calculation

**Fiscal Year 2017/18**

(Amounts in \$000's)

	Dis-patch	ALCO	San Leandro	Dublin	LBNL	LLNL	Newark	Union City	Emeryville	Total
■ MVA 6/30/17	\$1,540	\$3,764	\$569	\$9,581	\$108	\$271	\$921	\$503	\$163	\$17,420
• Contributions	120	477	310	179	58	144	1,017	195	66	2,566
• Disbursements	-	-	-	-	-	-	-	-	-	-
• Inv. Earnings	189	470	81	1,155	15	38	131	69	13	2,162
• Admin. Exp.	(1)	(2)	-	(5)	-	-	-	-	-	(9)
• Invest. Exp.	(1)	(1)	-	(4)	-	-	-	-	-	(7)
■ MVA 6/30/18	1,847	4,708	960	10,908	181	453	2,067	767	242	22,133
• AVA Ratio <sup>13</sup>	← 98.86% →									
■ AVA 6/30/18	1,789	4,559	930	10,565	176	439	2,002	743	235	21,438

<sup>13</sup> Ratio of valuation 6/30/18 Actuarial Value of Assets (\$21,438) to Market Value of Assets (\$22,133) = 98.86%.



May 31, 2018

39



## SIDE FUND CALCULATIONS

### Side Fund Calculations

**2015/16 Fiscal Year - 7.25% Discount Rate**

(Amounts in \$000's)

	Dis-patch	ALCO	San Leandro	Dublin	LBNL	LLNL	Newark	Union City	Emeryville	Total
■ Allocation %	0.00%	29.53%	20.00%	11.43%	3.81%	9.52%	8.57%	11.43%	5.71%	100%
■ Side Fund BOY	\$1,270	\$38,651	\$22,664	\$10,356	\$1,779	\$2,046	\$4,962	\$6,036	\$2,590	\$90,354
• Pool NC <sup>14</sup>	268	1,064	690	401	129	321	304	401	202	3,780
• BP	(39)	(980)	(664)	(380)	(127)	(316)	(285)	(380)	-	(3,171)
• Interest	91	2,768	1,619	737	124	137	350	424	188	6,438
■ Side Fund EOY	1,590	41,503	24,309	11,114	1,905	2,188	5,331	6,481	2,980	97,401
■ Balance EOY <sup>14</sup>	(89)	(145)	(96)	(55)	(18)	(45)	(42)	(55)	(17)	(562)
■ AAL EOY	1,501	41,358	24,213	11,059	1,887	2,143	5,289	6,426	2,963	96,839
■ AVA EOY	(1,356)	(2,265)	(303)	(8,784)	(58)	(144)	(759)	(173)	(87)	(13,929)
■ UAAL EOY	145	39,093	23,910	2,275	1,829	1,999	4,530	6,253	2,876	82,910

<sup>14</sup> Allocated based on FTE first, and then allocation % of shared positions, except for Dispatch which is based on actual Dispatch valuation results.



May 31, 2018

40



## SIDE FUND CALCULATIONS

### Side Fund Calculations 2016/17 Fiscal Year – 7.25% Discount Rate (Amounts in \$000's)

	Dis- patch	ALCO	San Leandro	Dublin	LBNL	LLNL	Newark	Union City	Emery- ville	Total
■ Allocation %	0.00%	29.53%	20.00%	11.43%	3.81%	9.52%	8.57%	11.43%	5.71%	100%
■ Side Fund BOY	\$1,501	\$41,358	\$24,213	\$11,059	\$1,887	\$2,143	\$5,289	\$6,426	\$2,963	\$96,839
• Pool NC <sup>15</sup>	185	1,136	725	422	135	337	321	422	220	3,903
• BP	(53)	(1,307)	(886)	(507)	(169)	(422)	(380)	(506)	-	(4,230)
• Interest	107	2,951	1,724	784	131	140	370	448	215	6,870
■ Side Fund EOY	1,740	44,138	25,776	11,758	1,984	2,198	5,600	6,790	3,398	103,382
■ Balance EOY <sup>15</sup>	112	875	581	335	109	273	253	335	98	2,971
■ AAL EOY <sup>16</sup>	1,852	45,013	26,357	12,093	2,093	2,471	5,853	7,125	3,496	106,353
■ AVA EOY	(1,541)	(3,766)	(570)	(9,589)	(109)	(271)	(921)	(504)	(163)	(17,434)
■ UAAL EOY	311	41,247	25,787	2,504	1,984	2,200	4,932	6,621	3,333	88,919

<sup>15</sup> Allocated based on FTE first, and then allocation % of shared positions, except for Dispatch which is based on actual Dispatch valuation results.

<sup>16</sup> Based on a 6.75% discount rate.



May 31, 2018

41



## SIDE FUND CALCULATIONS

### Side Fund Calculations Estimated 2017/18 Fiscal Year – 6.75% Discount Rate (Amounts in \$000's)

	Dis- patch	ALCO	San Leandro	Dublin	LBNL	LLNL	Newark	Union City	Emery- ville	Total
■ Allocation %	0.00%	29.53%	20.00%	11.43%	3.81%	9.52%	8.57%	11.43%	5.71%	100%
■ Side Fund BOY	\$1,852	\$45,013	\$26,357	\$12,093	\$2,093	\$2,471	\$5,853	\$7,125	\$3,496	106,353
• Pool NC <sup>17</sup>	191	1,170	750	436	139	349	331	436	227	4,029
• BP	(52)	(1,305)	(920)	(525)	(174)	(438)	(393)	(525)	(262)	(4,594)
• Interest	123	2,996	1,749	799	135	152	382	463	227	7,026
■ Side Fund EOY	2,114	47,874	27,936	12,803	2,193	2,534	6,173	7,499	3,688	112,814
■ Balance EOY <sup>17</sup>	10	188	125	72	24	59	54	72	37	641
■ AAL EOY	2,124	48,062	28,061	12,875	2,217	2,593	6,227	7,571	3,725	113,455
■ AVA EOY	(1,789)	(4,559)	(930)	(10,565)	(176)	(439)	(2,002)	(743)	(235)	(21,438)
■ UAAL EOY	335	43,503	27,131	2,310	2,041	2,154	4,225	6,828	3,490	92,017

<sup>17</sup> Allocated based on FTE first, and then allocation % of shared positions, except for Dispatch which is based on actual Dispatch valuation results.



May 31, 2018

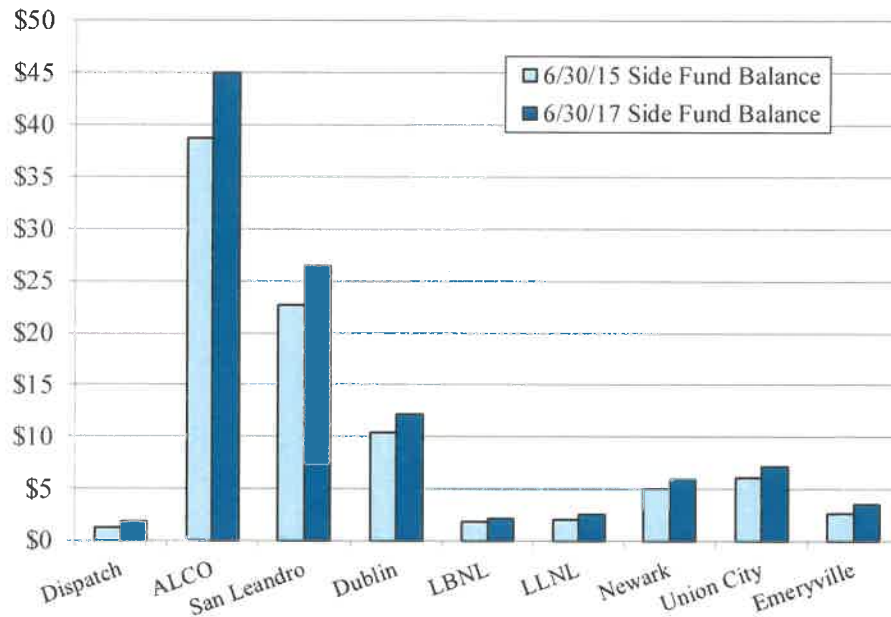
42



## SIDE FUND CALCULATIONS

### Side Fund Balances (AAL)

(Amounts in millions)



May 31, 2018

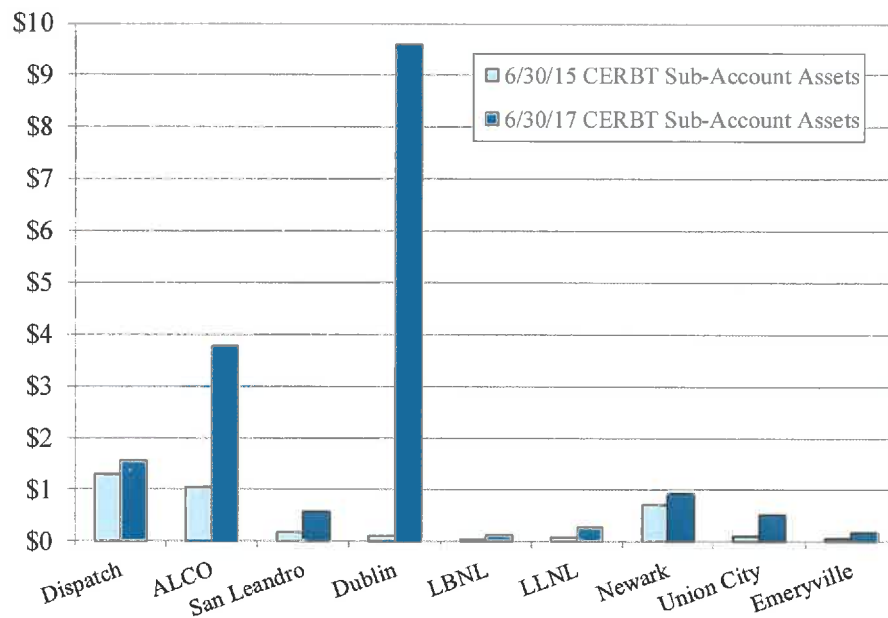
43



## SIDE FUND CALCULATIONS

### CERBT Sub-Account Assets (AVA)

(Amounts in millions)



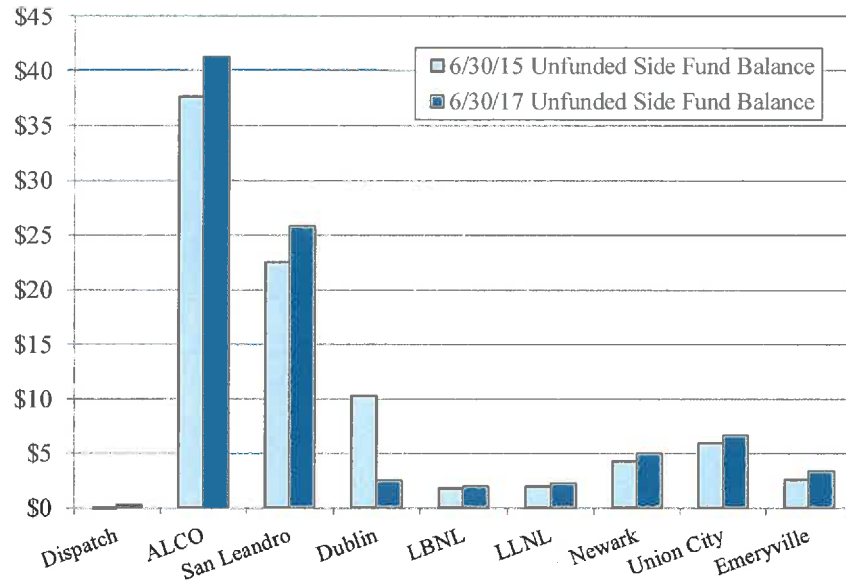
May 31, 2018

44



## SIDE FUND CALCULATIONS

### **Unfunded Side Fund Balances (UAAL)** **Side Fund Balance less CERBT Sub-Account Assets** (Amounts in millions)



May 31, 2018

45



## SIDE FUND CALCULATIONS

### **Sample 2018/19 ADCs at Varying UAAL Amortization Periods** **6.75% Discount Rate** (Amounts in \$000's)

	Dis- patch	ALCO	San Leandro	Dublin	LBNL	LLNL	Newark	Union City	Emery- ville	Total
<b>15-Year UAAL Amortization</b>										
■ 2018/19 ADC										
• Normal Cost	\$208	\$1,308	\$ 827	\$482	\$154	\$384	\$367	\$482	\$251	\$4,463
• UAAL Amort	<u>30</u>	<u>3,929</u>	<u>2,451</u>	<u>209</u>	<u>184</u>	<u>195</u>	<u>382</u>	<u>617</u>	<u>315</u>	<u>8,312</u>
• Total	238	5,237	3,278	691	338	579	749	1,099	566	12,775
<b>20-Year UAAL Amortization</b>										
■ 2018/19 ADC										
• Normal Cost	\$208	\$1,308	\$827	\$482	\$154	\$384	\$367	\$482	\$251	\$4,463
• UAAL Amort	<u>25</u>	<u>3,193</u>	<u>1,991</u>	<u>170</u>	<u>150</u>	<u>158</u>	<u>310</u>	<u>501</u>	<u>256</u>	<u>6,754</u>
• Total	233	4,501	2,818	652	304	542	677	983	507	11,217
<b>30-Year UAAL Amortization</b>										
■ 2018/19 ADC										
• Normal Cost	\$208	\$1,308	\$827	\$482	\$154	\$384	\$367	\$482	\$251	\$4,463
• UAAL Amort	<u>19</u>	<u>2,479</u>	<u>1,546</u>	<u>132</u>	<u>116</u>	<u>123</u>	<u>241</u>	<u>389</u>	<u>199</u>	<u>5,244</u>
• Total	227	3,787	2,373	614	270	507	608	871	450	9,707



May 31, 2018

46





## ACTUARIAL CERTIFICATION

This report presents the Alameda County Fire Department Retiree Healthcare Plan ("Plan") June 30, 2017 actuarial valuation. The purpose of this valuation is to:

- Determine the Plan's June 30, 2017 Funded Status and
- Calculate the 2018/19 and 2019/20 Actuarially Determined Contributions.

Information provided in this report may be useful to the Fire Department for the Plan's financial management. Future valuations may differ significantly if the Plan's experience differs from our assumptions or if there are changes in Plan design, actuarial methods, or actuarial assumptions. The project scope did not include an analysis of this potential variation.

The valuation is based on Plan provisions, participant data, and asset information provided by the Fire Department as summarized in this report, which we relied on and did not audit. We reviewed the participant data for reasonableness.

To the best of our knowledge, this report is complete and accurate and has been conducted using generally accepted actuarial principles and practices. As members of the American Academy of Actuaries meeting the Academy Qualification Standards, we certify the actuarial results and opinions herein.

Respectfully submitted,



Doug Pryor, ASA, EA, MAAA  
Vice President  
Bartel Associates, LLC  
May 31 2018



Catherine A. Wandro, ASA, MAAA, FCA  
Assistant Vice President  
Bartel Associates, LLC  
May 31, 2018



May 31, 2018

47



## EXHIBITS

<u>Topic</u>	<u>Page</u>
Premiums	E-1
Data Summary	E-3
Actuarial Assumptions	E-17
Definitions	E-25



May 31, 2018

48



**PREMIUMS**

**2017 PEMHCA Monthly Medical Premiums**

**Bay Area**

Plan	Non-Medicare Eligible			Medicare Eligible		
	Single	2-Party	Family	Single	2-Party	Family
Anthem Select	\$783.46	\$1,566.92	\$2,037.00	n/a	n/a	n/a
Anthem Traditional	990.05	1,980.10	2,574.13	n/a	n/a	n/a
Blue Shield Access+	1,024.85	2,049.70	2,664.61	n/a	n/a	n/a
Health Net SmartCare	733.29	1,466.58	1,906.55	n/a	n/a	n/a
Kaiser	733.39	1,466.78	1,906.81	\$300.48	\$600.96	\$901.44
UnitedHealthcare	1,062.26	2,124.52	2,761.88	324.21	648.42	972.63
PERS Choice	830.30	1,660.60	2,158.78	353.63	707.26	1,060.89
PERS Select	736.27	1,472.54	1,914.30	353.63	707.26	1,060.89
PERSCare	932.39	1,864.78	2,424.21	389.76	779.52	1,169.28
PORAC	699.00	1,467.00	1,876.00	464.00	924.00	1,477.00



**PREMIUMS**

**2018 PEMHCA Monthly Medical Premiums**

**Bay Area**

Plan	Non-Medicare Eligible			Medicare Eligible		
	Single	2-Party	Family	Single	2-Party	Family
Anthem Select	\$856.41	\$1,712.82	\$2,226.67	n/a	n/a	n/a
Anthem Traditional	925.47	1,850.94	2,406.22	\$370.34	\$740.68	\$1,111.02
Blue Shield Access+	889.02	1,778.04	2,311.45	n/a	n/a	n/a
Health Net SmartCare	863.48	1,726.96	2,245.05	n/a	n/a	n/a
Kaiser	779.86	1,559.72	2,027.64	316.34	632.68	949.02
UnitedHealthcare	1,371.84	2,743.68	3,566.78	330.76	661.52	992.28
Western Health Advantage	792.56	1,585.12	2,060.66	n/a	n/a	n/a
PERS Choice	800.27	1,600.54	2,080.70	345.97	691.94	1,037.91
PERS Select	717.50	1,435.00	1,865.50	345.97	691.94	1,037.91
PERSCare	882.45	1,764.90	2,294.37	382.30	764.60	1,146.90
PORAC	734.00	1,540.00	1,970.00	487.00	970.00	1,551.00



## DATA SUMMARY

### Historical Participant Statistics

	1/1/10	6/30/11	6/30/13	6/30/15	6/30/17
■ Actives:					
• Count	396	410	417	421	419
• Average Age	41.8	42.0	43.5	42.6	41.7
• Average Service					
➤ ACFD	7.1	7.7	8.6	8.3	8.6
➤ CalPERS	11.8	12.3	13.6	13.0	12.1
• Average Salary	\$118,540	\$117,992	\$111,725	\$115,456	\$120,623
• Total Salary (000s)	46,942	48,377	46,590	48,607	50,541
■ Retirees:					
• Count	179	191	208	246	292
• Average Age	62.6	63.6	64.0	64.1	63.9
• Average Retirement Age	53.8				
➤ Service Retirement	-	54.4	54.3	54.4	54.6
➤ Disability Retirement	-	52.2	52.2	52.5	53.1



## DATA SUMMARY

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## DATA SUMMARY

### Medical Plan Participation

Medical Plan	Actives	Retirees		
		Pre-65	Post-65	Total
Anthem Select	1%	2%	0%	1%
Anthem Traditional	2%	1%	0%	0%
Blue Shield Access+	7%	10%	0%	6%
Health Net SmartCare	2%	2%	0%	1%
Kaiser	61%	40%	52%	45%
UnitedHealthcare	1%	1%	9%	4%
PERS Choice	2%	7%	19%	12%
PERSCare	1%	2%	10%	5%
PORAC	25%	34%	11%	25%
Total	100%	100%	100%	100%



## DATA SUMMARY

### Current Active Medical Plan Coverage

Medical Plan	Single	2-Party	Family	Waived	Total
Anthem Select	1	1	1	-	3
Anthem Traditional	2	-	6	-	8
Blue Shield	4	5	18	-	27
Health Net SmartCare	-	1	6	-	7
Kaiser	62	43	135	-	240
UnitedHealthcare	-	-	2	-	2
PERS Choice	2	1	5	-	8
PERSCare	1	1	1	-	3
PORAC	14	22	62	-	98
Waived	-	-	-	23	23
Total	86	74	236	23	419



### DATA SUMMARY

#### Retiree Medical Plan Coverage - Pre 65

Medical Plan	Single	2-Party	Family	Waived	Total
Anthem Select	-	-	4	-	4
Anthem Traditional	-	1	-	-	1
Blue Shield	4	5	7	-	16
Health Net SmartCare	1	1	2	-	4
Kaiser	16	25	25	-	66
UnitedHealthcare	1	-	-	-	1
PERS Choice	5	3	3	-	11
PERSCare	2	2	-	-	4
PORAC	5	27	24	-	56
Waived	-	-	-	10	10
Total	34	64	65	10	173



### DATA SUMMARY

#### Retiree Medical Plan Coverage - Post 65

Medical Plan	Single	2-Party	Family	Waived	Total
Kaiser	19	37	3	-	59
UnitedHealthcare	5	3	2	-	10
PERS Choice	4	16	1	-	21
PERSCare	6	5	-	-	11
PORAC	2	9	1	-	12
Waived	-	-	-	6	6
Total	36	70	7	6	119



## DATA SUMMARY

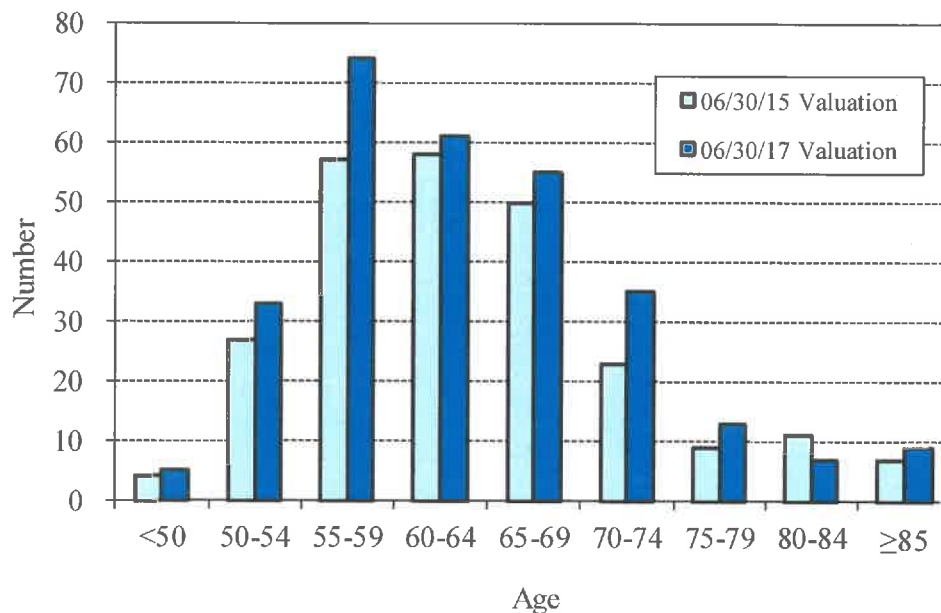
### Retirees Medical Plan Coverage by Age

Age	Medical Coverage				
	Single	2-Party	Family	Waived	Total
Under 50	-	-	3	2	5
50-54	1	10	22	-	33
55-59	14	26	29	5	74
60-64	19	28	11	3	61
65-69	12	37	4	2	55
70-74	7	23	2	3	35
75-79	6	6	1	-	13
80-84	6	1	-	-	7
85 & Over	5	3	-	1	9
Total	70	134	72	16	292
Average Age	68.4	65.2	57.5	62.7	63.9



## DATA SUMMARY

### Retiree Age Distribution



## DATA SUMMARY

### Actives by Age and Service – Safety

Age	ACFD Service							Total
	< 1	1-4	5-9	10-14	15-19	20-24	≥ 25	
< 25	-	2	-	-	-	-	-	2
25-29	9	23	2	-	-	-	-	34
30-34	10	17	30	4	-	-	-	61
35-39	4	9	22	29	3	-	-	67
40-44	1	2	20	18	10	1	-	52
45-49	-	1	33	10	7	2	-	53
50-54	-	-	24	3	4	17	-	48
55-59	-	1	13	-	1	9	-	24
60-64	-	-	1	1	1	1	1	5
≥ 65	-	-	-	-	-	-	-	-
Total	24	55	145	65	26	30	1	346



## DATA SUMMARY

### Actives by Age and Service – Miscellaneous (Non-Dispatch)

Age	ACFD Service							Total
	< 1	1-4	5-9	10-14	15-19	20-24	≥ 25	
< 25	-	-	-	-	-	-	-	-
25-29	2	1	-	-	-	-	-	3
30-34	1	3	-	-	-	-	-	4
35-39	2	1	1	1	-	-	-	5
40-44	1	4	3	1	-	-	-	9
45-49	3	2	1	-	-	-	-	6
50-54	-	2	1	-	-	1	-	4
55-59	-	1	4	1	1	1	-	8
60-64	-	-	-	-	1	-	-	1
≥ 65	-	-	-	-	1	-	-	1
Total	9	14	10	3	3	2	-	41



## DATA SUMMARY

### Actives by Age and Service – Miscellaneous (Dispatch)

Age	ACFD Service							Total
	< 1	1-4	5-9	10-14	15-19	20-24	≥ 25	
< 25	-	-	-	-	-	-	-	-
25-29	4	-	-	-	-	-	-	4
30-34	-	6	2	-	-	-	-	8
35-39	-	5	4	-	-	-	-	9
40-44	1	-	5	-	-	-	-	6
45-49	-	1	4	-	-	-	-	5
50-54	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-
≥ 65	-	-	-	-	-	-	-	-
Total	5	12	15	-	-	-	-	32



## DATA SUMMARY

### Actives by Age and Service – Total

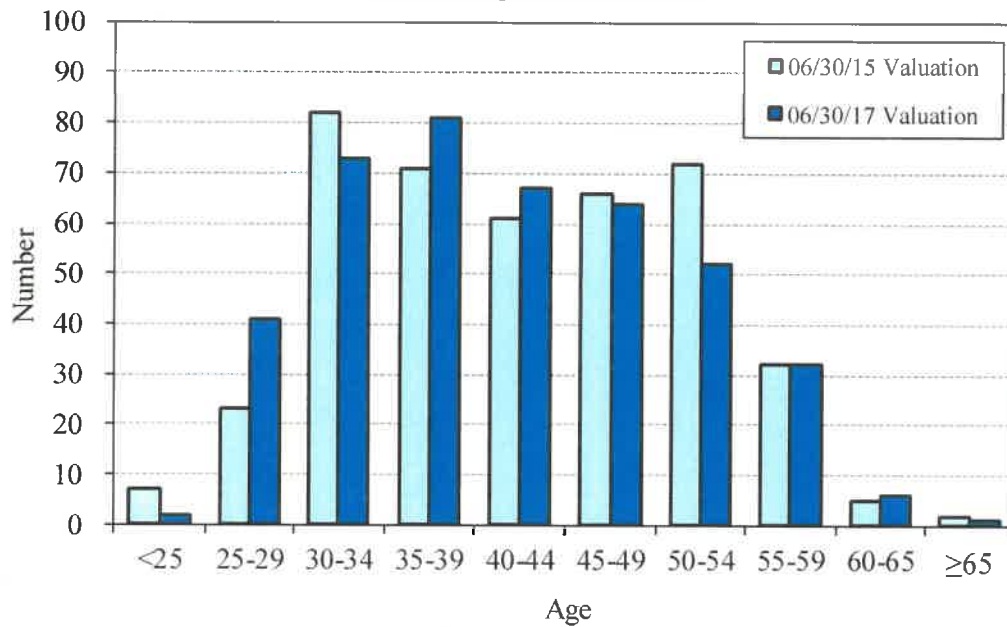
Age	ACFD Service							Total
	< 1	1-4	5-9	10-14	15-19	20-24	≥ 25	
< 25	-	2	-	-	-	-	-	2
25-29	15	24	2	-	-	-	-	41
30-34	11	26	32	4	-	-	-	73
35-39	6	15	27	30	3	-	-	81
40-44	3	6	28	19	10	1	-	67
45-49	3	4	38	10	7	2	-	64
50-54	-	2	25	3	4	18	-	52
55-59	-	2	17	1	2	10	-	32
60-64	-	-	1	1	2	1	1	6
≥ 65	-	-	-	-	1	-	-	1
Total	38	81	170	68	29	32	1	419





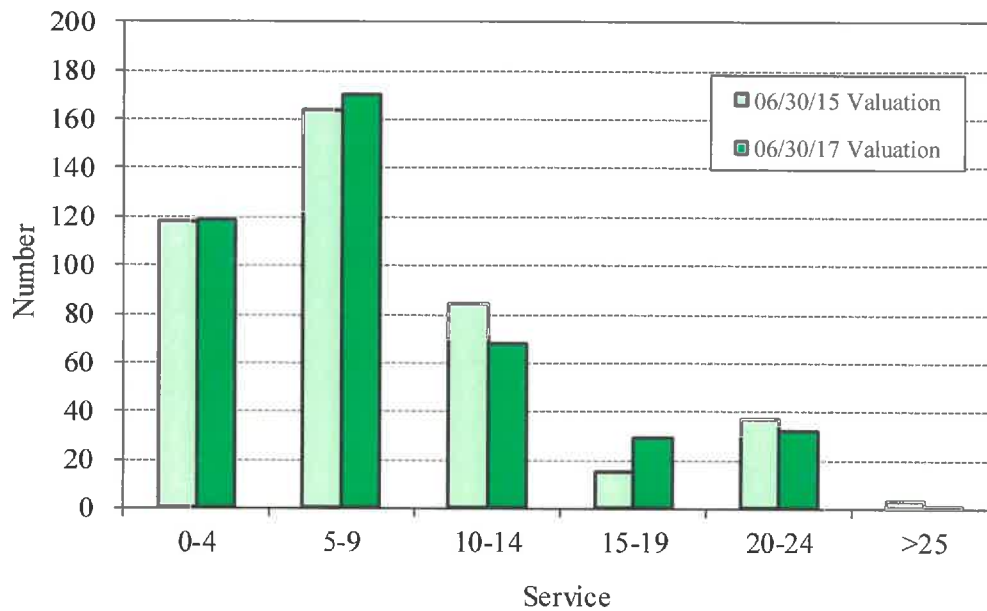
## DATA SUMMARY

### Active Age Distribution



## DATA SUMMARY

### Active Service Distribution



# **ACTUARIAL ASSUMPTIONS**

	<b>June 30, 2015 Valuation</b>	<b>June 30, 2017 Valuation</b>
■ Valuation Date	<ul style="list-style-type: none"> <li>■ June 30, 2015</li> <li>■ 2016/17 and 2017/18 ARC</li> </ul>	<ul style="list-style-type: none"> <li>■ June 30, 2017</li> <li>■ 2018/19 and 2019/20 ADC</li> </ul>
■ General Inflation	<ul style="list-style-type: none"> <li>■ 3.00%</li> <li>■ Used for economic assumptions</li> </ul>	<ul style="list-style-type: none"> <li>■ 2.75%</li> <li>■ Used for economic assumptions</li> </ul>



# **ACTUARIAL ASSUMPTIONS**

	<b>June 30, 2015 Valuation</b>	<b>June 30, 2017 Valuation</b>
■ Discount Rate	<ul style="list-style-type: none"> <li>■ 4.75% - approx. blended rate determined by allocating liabilities to agencies based on estimated pre-funding policies: <ul style="list-style-type: none"> <li>● 7.25% - full pre-funding rate used for Dispatch and City of Newark</li> <li>● 5.15% - partial pre-funding rate (30% of ARC less paygo) used for ALCO</li> <li>● 4.25% - employee contributions only for remaining agencies</li> </ul> </li> <li>■ 7.25% - side fund calculations, CERBT Strategy #1</li> </ul>	<ul style="list-style-type: none"> <li>■ 4.84% - approx. blended rate determined by allocating liabilities to agencies based on estimated pre-funding policies: <ul style="list-style-type: none"> <li>● 6.75% - full pre-funding rate used for Dispatch and City of Newark</li> <li>● 5.00% - partial pre-funding rate (30% of ACC less paygo) used for ALCO</li> <li>● 4.00% - employee contributions only for remaining agencies</li> </ul> </li> <li>■ 6.75% - side fund calculations, CERBT Strategy #1</li> </ul>



# **ACTUARIAL ASSUMPTIONS**

	<b>June 30, 2015 Valuation</b>	<b>June 30, 2017 Valuation</b>
■ Payroll Increases	<ul style="list-style-type: none"> <li>■ Aggregate Increases – 3.25%</li> <li>■ Merit Increases – CalPERS 1997-2011 Experience Study</li> </ul>	<ul style="list-style-type: none"> <li>■ Aggregate Increases – 3.00%</li> <li>■ Merit Increases – CalPERS 1997-2015 Experience Study</li> </ul>
■ Affordable Care Act (ACA) Excise Tax	■ Not Valued	■ 2.0% liability load on cash subsidy to estimate impact
■ PEMHCA Admin. Fee	■ n/a	<ul style="list-style-type: none"> <li>■ 0.33% of retiree premiums</li> <li>■ Added to Normal Cost</li> </ul>



# **ACTUARIAL ASSUMPTIONS**

	<b>June 30, 2015 Valuation</b>		<b>June 30, 2017 Valuation</b>		
■ Medical Trend		<u>Non-Medicare</u>	<u>Medicare</u>		<u>Increase from Prior Year</u>
	<u>Year</u>	<u>All Plans</u>		<u>Year</u>	<u>Non-Medicare</u> <u>Medicare</u>
	2015	Actual 2015 Premiums		2017	Actual 2017 Premiums
	2016	Actual 2016 Premiums		2018	Actual 2018 Premiums
	2017	7.0%	7.2%	2019	7.50%   6.50%
	2018	6.5%	6.7%	2020	7.50%   6.50%
	2019	6.0%	6.1%	2021	7.25%   6.30%
	2020	5.5%	5.6%	2022	7.00%   6.10%
	2021+	5.0%	5.0%	2023	6.75%   5.90%
				2024	6.50%   5.70%
				2025	6.25%   5.50%
				2026	6.00%   5.30%
				2027	5.80%   5.15%
				2028	5.60%   5.00%
				2029	5.40%   4.85%
				2030	5.20%   4.70%
				2031-35	5.05%   4.60%
				2036-45	4.90%   4.50%
				2046-55	4.75%   4.45%
				2056-65	4.60%   4.40%
				2066-75	4.30%   4.20%
				2076+	4.00%   4.00%



# **ACTUARIAL ASSUMPTIONS**

	June 30, 2015 Valuation	June 30, 2017 Valuation
■ Bargaining Unit 002 Cap Incr.	■ 0%	■ Same
■ Mortality, Termination, Disability, Retirement	■ CalPERS 1997-2011 Experience Study ■ Post-retirement mortality projected fully generational with Scale MP-2014, modified to converge to ultimate improvement rates in 2022	■ CalPERS 1997-2015 Experience Study ■ Pre-retirement mortality projected with 15-year 90% Scale MP-2016 (CalPERS assumption) ■ Post-retirement mortality projected with Scale MP-2017 with base year of 2013
■ Deferred Vested Retirement Age	■ Age 54	■ Same



# **ACTUARIAL ASSUMPTIONS**

	June 30, 2015 Valuation	June 30, 2017 Valuation
■ Retirement Age	■ CalPERS 1997-2011 Experience Study  <div style="text-align: center;"> <u>Classic</u>  <u>Safety</u>      <u>Misc</u>              Benefit   3%@50   2%@55  <u>PEPRA</u>  <u>Safety</u>      <u>Misc</u>              Benefit   2.7%@57   2%@62           </div>	■ Same, but CalPERS 1997-2015 Experience Study
■ Waived Retirees	■ Pre65: 40% re-elect at age 65 ■ Post 65: 0% re-elect	■ Same
■ Medical Plan at Retirement	■ Currently covered: same as current medical plan ■ Currently waived: Kaiser Bay Area	■ Same



# **ACTUARIAL ASSUMPTIONS**

	June 30, 2015 Valuation	June 30, 2017 Valuation										
■ Participation at Retirement	<div>■ Hired before 4/1/09:<ul style="list-style-type: none"><li>● Currently covered - 100%</li><li>● Currently waived - 90%</li></ul></div> <div>■ Hired on or after 4/1/09:<table><tr><td><u>Service</u></td><td><u>Participation</u></td></tr><tr><td>&lt; 10</td><td>60%</td></tr><tr><td>10-14</td><td>90%</td></tr><tr><td>15-19</td><td>95%</td></tr><tr><td>≥ 20</td><td>100%</td></tr></table></div>	<u>Service</u>	<u>Participation</u>	< 10	60%	10-14	90%	15-19	95%	≥ 20	100%	■ Same
<u>Service</u>	<u>Participation</u>											
< 10	60%											
10-14	90%											
15-19	95%											
≥ 20	100%											
■ Medicare Eligibility	<div>■ Actives and pre-65 retirees: 100%</div> <div>■ Post-65 retirees: Current Medicare status</div> <div>■ Everyone eligible for Medicare will elect Part B coverage</div>	■ Same										



# **ACTUARIAL ASSUMPTIONS**

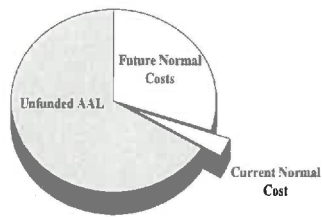
	<b>June 30, 2015 Valuation</b>	<b>June 30, 2017 Valuation</b>
■ Marital Status at Retirement	■ Actives: <ul style="list-style-type: none"> <li>• Currently covered - current marital status</li> <li>• Currently waived - 80% married</li> </ul> ■ Retirees - current marital status	■ Same
■ Spouse Age	■ Actives: Males 3 years older than females ■ Retirees: Males 3 years older than females if spouse birth date not available	■ Same
■ Dependents	■ % electing family coverage at retirement <ul style="list-style-type: none"> <li>• Misc: 10%</li> <li>• Safety: 20%</li> </ul> ■ No family coverage ≥ 65	■ Same



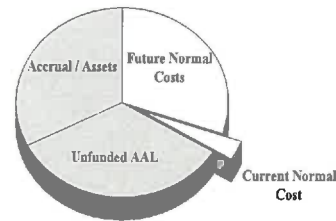
## DEFINITIONS

### Present Value of Projected Benefits (PVPB)

**Without Assets**



**With Assets**



#### ■ **PVPB - Present Value of all Projected Benefits**

- Discounted value, at measurement date (June 30, 2017) of all future expected benefit payments
- Expected benefit payments based on various actuarial assumptions



## DEFINITIONS

#### ■ **AAL – Actuarial Accrued Liability / Actuarial Obligation**

- Discounted value at measurement date (June 30, 2017) of benefits “earned” through measurement date based on actuarial cost method
- Portion of PVPB “earned” at measurement

#### ■ **NC - Normal Cost**

- Value of benefits “earned” during current year
- Portion of PVPB allocated to current year

#### ■ **Actuarial Cost Method**

- Determines how benefits are “earned” or allocated to each year of service
- Has no effect on PVPB
- Has significant effect on Actuarial Obligations and Normal Cost

#### ■ **Pay-As-You-Go Cost (PayGo)**

- Cash Subsidy – Actual cash benefit payments to retirees
- Implied Subsidy – Difference between cost of retiree benefits and retiree premiums
- PayGo is the expected retiree benefit payments for the year while Normal Cost is the expense for benefits accrued by active employees during the year

