



BARTEL
ASSOCIATES, LLC

**Contra Costa Water District
Retirement Plan**

**June 30, 2014 Actuarial Valuation
For Calendar Year 2015 Funding**

Final Results

December 2014

ACTUARIAL VALUATION

RETIREMENT PLAN OF THE CONTRA COSTA WATER DISTRICT

We are pleased to present the results of our June 30, 2014 actuarial valuation of the Retirement Plan of the Contra Costa Water District (Plan).

The purpose of this valuation is to:

- Determine the Plan's June 30, 2014 Funded Status, and
- Calculate the 2015 calendar year Actuarially Determined Contribution.

The information in this report may not be appropriate for purposes other than Plan funding but may be useful to the District for the Plan's financial management. Future valuations may differ significantly if the District's experience differs from the 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 the Plan's benefit provisions summarized in Section 7, participant data, and on the Plan's financial information, all furnished by the District. We reviewed the financial and participant data for reasonableness, including comparing to prior year data, but did not perform an audit.

Actuarial valuations before June 30, 2013 were performed by Buck Consultants, LLC. Results from those valuations have been included in this report for comparative purposes, and the amortization amounts determined in those valuations have been maintained.

Effective June 20, 2014 and 2015, the Plan and the District respectively are required to account for the Plan and its obligations in accordance with GASB Statements 67 and 68. The required accounting information is provided separately.

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 Academy Qualification Standards, we certify the actuarial results and opinions herein.

Respectfully submitted,



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SECTION 1

EXECUTIVE SUMMARY

Following are the valuation results. See discussion following the table. Results from the June 30, 2013 valuation were prepared by Buck Consultants and included for comparative purposes.

(amounts in \$000s)

	June 30, 2013	June 30, 2014	% change
■ Participant Counts			
• Actives	290	288	(0.7%)
• Vested Terminated & Reciprocal	90	90	0.0%
• Retirees & Beneficiaries	273	290	6.2%
• Total	<u>653</u>	<u>668</u>	2.3%
■ Projected Payroll for Contribution Year¹	\$ 26,452	\$ 27,617	4.4%
■ Assets			
• Market Value of Assets	\$ 130,886	\$ 151,465	15.7%
• Approximate Annual Rate of Return	11.8%	15.4%	
• Actuarial Value of Assets	\$ 126,095	\$ 140,843	11.7%
• Approximate Annual Rate of Return	5.1%	11.4%	
■ Plan Funded Status			
• Actuarial Accrued Liability	\$ 152,849	\$ 164,326	7.5%
• Actuarial Value of Plan Assets	<u>126,095</u>	<u>140,843</u>	11.7%
• Unfunded Actuarial Accrued Liability	26,754	23,483	(12.2%)
• Funded Ratio, Actuarial Value Basis	82.5%	85.7%	3.9%
• Funded Ratio, Market Value Basis	85.6%	92.2%	7.7%
	2014	2015	% change
■ Actuarially Determined Contribution Rate (ADC)²			
• Total Normal Cost ³	17.16%	16.56%	(3.5%)
• Employee Normal Cost	<u>8.81%</u>	<u>8.59%</u>	(2.5%)
• Net District Normal Cost	8.35%	7.97%	(4.6%)
• Amortization of Unfunded Liability	<u>12.88%</u>	<u>11.70%</u>	(9.2%)
• Total District ADC	21.23%	19.67%	(7.3%)
• Total District ADC after 2014 COLA	21.54%	19.67%	(8.7%)

¹ 6/30/13 Valuation for 2014 contributions: Payroll for year following valuation date adjusted for Confidential employees. 2014 contribution rates were calculated as applicable to all payroll except the Confidential unit.

² Excludes amounts paid by District and credited to Member accounts.

³ 6/30/13 Valuation for 2014 contributions: Adjusted for Confidential employees.

SECTION 1

EXECUTIVE SUMMARY

The following table lists various measures of retirement plan risk, or contribution volatility

(amounts in \$000s)

	June 30, 2013	June 30, 2014
■ Risk Measures – Market Value of Assets		
• Actuarial Accrued Liability	\$ 152,849	\$ 164,326
• Market Value of Assets	130,886	151,465
• Unfunded AAL (on MVA)	21,963	12,861
• Funded Ratio (MVA/AAL)	85.6%	92.2%
• UAAL (on MVA)/Payroll	80.2%	47.3%
■ Payroll for year following valuation date	\$ 27,375	\$ 27,179
■ Risk Measures – Actuarial Value of Assets		
• Actuarial Accrued Liability	\$ 152,849	\$ 164,326
• Actuarial Value of Assets	126,095	140,843
• Unfunded AAL (on AVA)	26,754	23,483
• Funded Ratio (AVA/AAL)	82.5%	85.7%
• UAAL (on AVA)/Payroll	97.7%	86.4%
■ Volatility Ratios		
• Asset Volatility Index (MVA/Payroll)	4.8	5.6
• Liability Volatility Index (AAL/Payroll)	5.6	6.0
• Maturity Ratio (Retiree Count/Total Count)	44.4%	43.4%
• Maturity Ratio (Retiree AAL/Total AAL)	45.9%	50.5%

SECTION 1

EXECUTIVE SUMMARY

Purpose of Actuarial Valuation

The actual costs of a defined benefit plan are determined entirely by the amount of the benefit promise, the actual salaries and service of the plan participants, and how long they and their beneficiaries live to receive payments. An actuarial valuation is a mathematical model which attempts to quantify this actual cost by setting assumptions that will duplicate reality as closely as possible. In addition, the actuarial funding methodology provides a reasonable plan, or method, towards funding the expected plan costs in a logical manner taking into account the often conflicting needs of stakeholders.

The information in this report on the valuation is to assist the Plan trustees in making informed decisions regarding Plan, benefits and investments.

Discussion of Results

Changes since the prior valuation and their effects on the contribution rate are detailed in Section 5 of the report.

During fiscal year 2014, Plan investments earned approximately 15% on a market value basis and 11% on the smoothed actuarial asset value used to determine the contribution rate. This actuarial gain reduced the 2015 contribution rate. There was a small net loss from demographic experiences caused mainly by employees retiring with larger than projected benefits.

An Experience Study was conducted in 2014 which examined the actual demographic experience of Plan participants over the period June 30, 2009 through June 30, 2014. We understand that the most recent full experience study was in 2004, with an update in 2008. Based on the 2014 study results, Bartel Associates recommended and the District adopted a set of actuarial assumptions which are the basis of this actuarial valuation. The assumption regarding projected salary increases was changed to a two-factor assumption, consisting of assumed future inflation plus a table dependent on service and classification. This reflects the compensation patterns produced by the Districts step increases. The new assumptions also include a change in the discount rate from 7.5% to 7.25%. In addition, the mortality tables were changed to reflect recent increases in longevity as well as our expectation that mortality will continue to improve in the future.

Other Changes

Previous actuarial valuations produced contribution rates anticipating that no contributions would be paid for the Confidential group since their liabilities were deemed to be fully funded. However, the District's actual funding policy has been to apply the total contribution rate to all members' covered earnings. Therefore we have calculated the 2015 contribution rate assuming that it will be applied to all covered earnings and have made no adjustment for the Confidential group.

Accounting

Beginning June 14, 2014, the Retirement Plan is accounted for under GASB Statement 67 and the District's pension disclosures are governed by GASB Statement 68 beginning with the 2015 fiscal year. Plan and Employer accounting information is not included in this report.

SECTION 2

LIABILITY INFORMATION & FUNDED STATUS

A comparison of the Present Value of Benefits, Actuarial Accrued Liability, Employer Normal Cost, and the Funded Ratio for the current and prior valuations follow. (Note that numbers throughout the report may not add due to rounding.)

	(amounts in \$000s)	
	June 30, 2013	June 30, 2014
■ Present Value of Projected Benefits		
• Active Employees	\$ 112,895	\$ 109,496
• Vested Terminated & Reciprocal	5,544	8,959
• Service Retirees	70,119	76,830
• Disabled Participants	N/A	489
• Beneficiaries	N/A	5,687
• Total	188,559	201,461
■ Actuarial Accrued Liability		
• Active Employees	\$ 77,186	\$ 72,361
• Vested Terminated & Reciprocal	5,544	8,959
• Service Retirees	70,119	76,830
• Disabled Participants	N/A	489
• Beneficiaries	N/A	5,687
• Total	152,849	164,326
	2014	2015
■ Normal Cost (payable middle of contribution year)		
• Total Normal Cost	\$ 4,615	\$ 4,573
• Employee Normal Cost	2,329	2,373
• Total Employer Normal Cost ⁴	2,286	2,200
• Final Employer Normal Cost ⁵	2,210	2,200
	June 30, 2013	June 30, 2014
■ Plan Funded Status		
• Total Actuarial Accrued Liability	\$ 152,849	\$ 164,326
• Actuarial Value of Assets	126,095	140,843
• Unfunded Actuarial Accrued Liability	26,754	23,483
• Funded Ratio	82.5%	85.7%

⁴ Before adjustment for Confidential employees

⁵ After adjustment for Confidential employees

SECTION 3

ASSET INFORMATION

Assets for the Plan are held in trust. Trust monies may be used to pay benefits to Plan participants and their beneficiaries. The trust is managed under the direction of the District. Asset information is provided by the Contra Costa Water District, and has not yet been audited.

Asset Reconciliation – Market Value of Assets

Following reconciles the June 30, 2012 through June 30, 2014 market value of assets.

	(amounts in \$000s)	
	2012/13	2013/14
■ Beginning of Year Balance:	\$ 112,760	\$ 130,886
■ Additions		
• Member Contributions ⁶	1,851	2,397
• District Contributions	9,467	5,457
• Investment Income, net of investment expense	13,531	20,190
• Total Additions	24,849	28,045
■ Deductions		
• Benefit Payments	(6,724)	(7,466)
• Administrative Expenses	-	-
• Total Deductions	(6,724)	(7,466)
■ Net Assets at End of Year	130,886	151,465
■ Approximate Return on Assets	11.8%	15.4%

⁶ Includes amounts paid by District and credited to member accounts (\$566 in FY 2014)

SECTION 3

ASSET INFORMATION

Asset Allocation – Market Value of Assets

The June 30, 2014 trust asset allocation is provided by the Contra Costa Water District. Details are shown below.

(amounts in \$000s)

	Market Value	Percentage
■ Cash & Cash Equivalents	\$ 6,746	4.5%
■ Investments		
• U.S. Treasury Securities	12,632	8.3%
• Federal Agency Securities	746	0.5%
• Mortgage/Asset-Backed Securities	13,178	8.7%
• Pooled Funds	8,810	5.8%
• Real Estate Investment Fund	5,745	3.8%
• Corporate Bonds	11,173	7.4%
• Equity Securities	1,087	0.7%
• Equity Mutual Funds	90,742	59.9%
• Total Investments	144,112	95.1%
■ Total Cash & Investments	150,858	99.6%
■ Receivables		
• Accrued Income	314	0.2%
• Contribution Due from District	232	0.2%
• Contribution Due from Participants	66	0.0%
• Total Receivables	613	0.4%
■ Total Assets	151,471	100.0%

Target Allocation by Asset Class

The Board Directors of Contra Costa Water District last revised the asset allocation in January 2014, as shown below.

	Low	Normal	High
■ Broad Domestic Equity	31%	35%	39%
■ International Equity	11%	14%	17%
■ Domestic Fixed Income	24%	28%	32%
■ Real Estate	5%	8%	11%
■ Emerging Markets Debt	3%	5%	7%
■ Multi-Asset Class	7%	10%	13%

SECTION 3

ASSET INFORMATION

Development of Actuarial Value of Assets

The Actuarial Value of Assets is based upon a five year smoothing of market assets. This method reduces volatility in contribution rates, and also reduces volatility in the size of the actuarial gains and losses due to asset returns.

		(amounts in \$000s)
		2013/14
■	Market Value of Assets June 30, 2013	\$ 130,886
	• Contributions (Employee + Employer)	7,855
	• Expected Earnings	9,831
	• Benefit Payments	(7,466)
		141,106
■	Expected Market Value of Assets June 30, 2014	141,106
■	Market Value of Assets June 30, 2014	151,465
■	Difference between MVA & Expected MVA	10,359

Year Ending June 30	Asset Gain/(Loss)	Percentage Not Yet Recognized as of June 30, 2014	Amount Not Yet Recognized as of June 30, 2014
2010	\$ 2,730	0%	\$ -
2011	12,052	20%	2,410
2012	(7,117)	40%	(2,847)
2013	4,618	60%	2,771
2014	10,359	80%	8,287

(1) Total Amount Not Yet Recognized as of June 30, 2014	10,622
(2) Net Market Value of Assets	151,465
(3) Net Actuarial Value of Assets (2) – (1)	140,843

SECTION 3

ASSET INFORMATION

Historical Return on Retirement Plan Assets

Year Ended	Rate of Return on Market Value	Rate of Return on Actuarial Value
June 30, 1995	17.8%	7.1%
June 30, 1996	16.4%	10.3%
June 30, 1997	22.6%	13.3%
June 30, 1998	15.6%	13.8%
June 30, 1999	8.7%	14.1%
June 30, 2000	13.0%	13.5%
June 30, 2001	2.6%	11.1%
June 30, 2002	(6.0%)	5.7%
June 30, 2003	5.9%	4.3%
June 30, 2004	13.6%	4.6%
June 30, 2005	7.8%	5.0%
June 30, 2006	8.9%	5.9%
June 30, 2007	17.4%	11.1%
June 30, 2008	(7.8%)	9.2%
June 30, 2009	(18.3%)	0.2%
June 30, 2010	11.3%	0.6%
June 30, 2011	21.0%	3.1%
June 30, 2012	1.4%	0.3%
June 30, 2013	11.8%	5.1%
June 30, 2014	15.4%	11.4%
20-year compound average	8.5%	7.4%

SECTION 4

CONTRIBUTION DEVELOPMENT

Actuarially Determined Contribution

Following is the development of the 2015 Actuarially Determined Contribution. The 2014 Actuarially Determined Contribution, which was calculated in the June 30, 2013 actuarial valuation by the prior actuary, is shown for comparison.

	(amounts in \$000s)	
Contribution Year	2014	2015
■ Actuarially Determined Contribution		
• Total Normal Cost	\$ 4,615	\$ 4,573
• Employee Normal Cost	2,329	2,373
• District Normal Cost before Confidential employee adjustment	2,286	2,200
• Net District Normal Cost after adjustment	2,210	2,200
• Amortization of Unfunded Liability	3,407	3,232
• Total District Actuarially Determined Contribution	5,617	5,432
■ Projected Payroll for Contribution Year ⁷	26,452	27,617
■ Actuarially Determined Contribution (ADC) (as a percent of Plan payroll)		
• Total Normal Cost ⁸	17.05%	16.56%
• Employee Normal Cost	8.80%	8.59%
• Net District Normal Cost	8.35%	7.97%
• Amortization of Unfunded Liability	12.88%	11.70%
• Total District ADC	21.23%	19.67%
• Total District ADC Increased for 2014 COLA	21.54%	19.67%

2015 District Contribution Rates by Group⁹

	Clerical/ Maintenance	Professional/ Supervisory	Unrep- resented	Confidential	Directors	Total
• Normal Cost	7.51%	7.47%	10.96%	9.27%	3.86%	7.96%
• UAAL Amortization	11.32%	11.93%	12.88%	10.70%	13.20%	11.70%
• Total Rate	18.83%	19.41%	23.84%	19.98%	17.06%	19.67%
• Total Annual Amount (\$000s)	\$ 2,553	\$ 1,890	\$ 778	\$ 205	\$ 5	\$ 5,432

⁷ 2014: payroll for year following valuation date excluding Confidential employees

⁸ 2014: adjusted for Confidential employees

⁹ Does not include the contributions made by the District and credited to the employee accounts

SECTION 4

CONTRIBUTION DEVELOPMENT

The following schedule shows the amortization bases arising in previous years' valuations. Each amount is funded over 15 years as a level dollar amount.

(amounts in \$000s)

Schedule of UAAL Amortization Bases	Original Amount	Number of Remaining Payments	Outstanding Balance as of June 30, 2014	Annual Contribution for 2015
2004 Base	\$ 2,107	5	\$ 928	\$ 228
2005 Base	2,157	6	1,215	257
2006 Base	1,223	7	822	154
2007 Base	(4,019)	8	(3,046)	(515)
2008 Base	889	9	734	114
2009 Base	1,657	10	1,434	207
2010 Base	8,504	11	7,614	1,028
2011 Base	6,369	12	5,876	750
2012 Base	16,207	13	15,304	1,857
2013 Base	(5,815)	14	(5,593)	(649)
2014 COLA	759	14	704	82
2014 Base	(2,546)	15	(2,510)	(280)
Total			23,483	3,232

SECTION 4

CONTRIBUTION DEVELOPMENT

History of the Plan's Unfunded Actuarial Accrued Liability, Funded Ratio and District Contribution Rate

(amounts in \$000s)

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll	District Contribution Rate
6/30/95	\$25,059	\$31,167	\$6,108	80.4%	\$13,906	43.9%	N/A
6/30/96	29,117	34,507	5,390	84.4%	14,360	37.5%	N/A
6/30/97	34,217	38,281	4,064	89.4%	15,822	25.7%	N/A
6/30/98	40,184	42,511	2,327	94.5%	17,190	13.5%	N/A
6/30/99	46,725	46,197	(528)	101.1%	17,462	(3.0%)	N/A
6/30/00	53,495	50,773	(2,722)	105.4%	18,348	(14.8%)	N/A
6/30/01	59,537	56,002	(3,535)	106.3%	19,438	(18.2%)	N/A
6/30/02	62,724	62,183	(541)	100.9%	20,777	(2.6%)	N/A
6/30/03	72,447	71,628	(819)	101.1%	21,308	(3.8%)	N/A
6/30/04	75,560	77,667	2,107	97.3%	21,651	9.7%	N/A
6/30/05	78,950	83,194	4,244	94.9%	22,160	19.2%	7.02%
6/30/06	83,533	88,926	5,393	93.9%	23,034	23.4%	7.56%
6/30/07	93,937	95,166	1,229	98.7%	22,991	5.3%	6.24%
6/30/08	101,765	103,699	1,934	98.1%	24,578	7.9%	7.27%
6/30/09	102,581	105,933	3,352	96.8%	26,049	12.9%	8.52%
6/30/10	102,277	113,841	11,564	89.8%	26,769	43.2%	19.68%
6/30/11	105,068	122,542	17,475	85.7%	27,893	62.7%	21.84%
6/30/12	104,867	138,161	33,294	75.9%	27,604	120.6%	19.11%
6/30/13	126,095	152,849	26,754	82.5%	27,375	97.7%	21.23%
6/30/14	140,843	164,326	23,483	85.7%	27,179	86.4%	19.67%

SECTION 5

ACTUARIAL GAIN/LOSS ANALYSIS

The gain/loss analysis of Plan assets, actuarial liability, and unfunded actuarial liability for the one year period between valuation dates is shown below.

(amounts in \$000s)

	Actuarial Accrued Liability (Gain)/Loss	Actuarial Value of Assets Gain/(Loss)	Unfunded Accrued Liability (Gain)/Loss	Contribution Rate Increase/ (Decrease)
■ June 30, 2013 Actual Value	\$ 152,849	\$ 126,095	\$ 26,754	21.23%
• 2014 Retiree COLA	759	-	759	0.31%
• Difference matching with Prior Actuary (1.3% of AAL)	2,013	-	2,013	(0.04%)
• Differences in contribution payroll ¹⁰	-	-	-	(0.40%)
■ June 30, 2014 Expected Value	164,233	135,955	28,278	21.10%
• Demographic (gain)/loss	1,088	-	1,088	0.86%
• Projection of mortality improvement	1,078	-	1,078	0.61%
• Discount rate changed from 7.50% to 7.25%	4,565	-	4,565	2.56%
• Other changes in actuarial assumptions	(6,638)	-	(6,638)	(3.49%)
• Investment gain/loss	-	4,888	(4,888)	(1.97%)
■ Total Gain or Loss	93	4,888	(4,795)	(1.43%)
■ June 30, 2014 Actual Value	164,326	140,843	23,483	19.67%

¹⁰ 2014 contribution rates were calculated to apply to payroll excluding the Confidential unit. 2015 rates apply to all groups. This item changes rates from the 2014 to 2015 basis.

SECTION 6

CALCULATIONS UNDER PEPRA

This chart updates our previous PEPRA Normal Cost calculations.

	Total Normal Cost Rate	Employee Normal Cost Rate
■ Cost estimate in September 2014 PEPRA study based on 2013 actuarial valuation and assumptions	12.81%	6.50%
■ PEPRA study costs updated to reflect June 30, 2014 actuarial valuation assumptions	11.54%	5.75%

The above rates should be applied to the salary below the PEPRA compensation limit.

■ Number of participants in PEPRA study	56
■ Number of actual PEPRA participants as of June 30, 2014	20

For stability purposes, we recommend:

1. Until the number of actual PEPRA participants is $\frac{1}{2}$ of the study group, use the normal cost rate based on the study group.
2. When the number of actual PEPRA participants is $\frac{1}{2}$ of the number in the study, determine the employee normal cost rate as $\frac{1}{2}$ of the rate for the study group and $\frac{1}{2}$ of the rate for the actual PEPRA participants.
3. When the number of actual PEPRA participants equals or exceeds the number in the study, determine the employee normal cost rate as the rate for the actual PEPRA participants.

SECTION 8 METHODS AND ASSUMPTIONS

A. Plan Effective Date

Originally established effective February 17, 1962. The most recent amendment was December 11, 2013

B. Plan Year

July 1 to June 30

C. Participation

All permanent full-time employees, all project employees, and all directors of the District

D. Eligibility to Retire

Meet vesting requirements and:

	Classic Members	PEPRA Members
Clerical and Maintenance	Age 50	Age 52
Directors	Age 55	Age 55
Confidential, Professional/Supervisory, and Unrepresented	Age 50	Age 52

E. Vesting

100% vested with:

- Clerical and Maintenance, and Directors – 10 years of service
- Confidential, Professional/Supervisory, and Unrepresented – 5 years of service
- Age 62 (Normal Retirement Age)
- Disability

Vesting service includes reciprocal service

F. Final Average Compensation

Basic Compensation: Regular salary excluding overtime, shift premium, and all other irregular compensation

Final Average Compensation for Classic Members:

- Non-directors – Highest 12 consecutive months
- Directors – Highest 36 consecutive months during the last 5 years

Final Average Compensation for PEPRA Members:

- Highest 36 consecutive months up to PEPRA compensation limit(\$115,064 in 2014)

G. Service Retirement Benefit

Benefit factor × Final Average Compensation

Classic Members:

- Non-directors – benefit factor = “2.35% at 55”
- Directors – benefit factor = “2.35% at 62”

PEPRA Members: benefit factor = “2.00% at age 62”

SECTION 8

METHODS AND ASSUMPTIONS

Inactive Participants: Benefit formula varies by bargaining groups and separation dates

Sample benefit factors are shown below:

Years of Service	Age at Retirement = 55			Age at Retirement = 62		
	2.35% at 55	2.35% at 62	2.00% at 62	2.35% at 55	2.35% at 62	2.00% at 62
10	23.50%	11.02%	13.00%	26.58%	23.50%	20.00%
15	35.25%	16.53%	19.50%	39.87%	35.25%	30.00%
20	47.00%	22.04%	26.00%	53.16%	47.00%	40.00%
25	58.75%	27.55%	32.50%	66.45%	58.75%	50.00%
30	70.50%	33.06%	39.00%	79.74%	70.50%	60.00%
35	82.25%	N/A	45.50%	93.02%	82.25%	70.00%

H. Termination Benefit

Non-vested: Return of contributions plus interest in a lump sum

Vested: Return of contributions plus interest in a lump sum, or a deferred benefit

I. Disability Benefit

Clerical and Maintenance with 10 years of service and Social Security disability:

- 30% of current Basic Compensation
- Not less than service retirement benefit

Others:

- 100% vested immediately
- Return of contributions plus interest in a lump sum, or a deferred benefit

J. Death Benefit – Before Retirement

Non-vested: Return of contributions plus interest in a lump sum

Vested:

- Non-directors – 85% of member’s accrued service retirement benefit
- Directors – 50% of benefit that would have been paid under the 50% J&S option, upon retirement at the later of age 55 and death, and commencing no earlier than age 55

K. Death Benefit – After Retirement

Return of contributions plus interest less any monthly payments received to a designated beneficiary if joint annuitant option not in effect

SECTION 8 METHODS AND ASSUMPTIONS

L. Benefit Forms

Normal Form: Single life annuity

Optional Forms:

- Joint and survivor annuity
- Joint and survivor annuity with “pop-up”
- Calculated as actuarially equivalent to the normal form

M. Cost of Living Increases

Ad Hoc increases as granted by the Board

Recent History:

January 1 st	Increase	January 1 st	Increase
2005	2.3%	2010	0.0%
2006	2.5%	2011	0.0%
2007	1.8%	2012	1.8%
2008	3.0%	2013	1.8%
2009	2.0%	2014	1.2%

N. Employee Contributions

- Classic Members (% of Basic Compensation):

Group	Employee Paid (2014)	District Paid (2014)	Total
Professional/Supervisory	6.43%	3.00%	9.43%
Confidential	6.28%	3.00%	9.28%
Unrepresented:			
< 7 years of service ¹¹	4.00%	2.00%	6.00%
7 to 9 years of service ¹¹	3.00%	3.00%	6.00%
≥ 10 years of service ¹¹	2.00%	4.00%	6.00%
Clerical and Maintenance	8.00%	1.00%	9.00%
Directors	1.00%	0.00%	1.00%

- PEPRA Members:

50% of the normal cost rate of the Plan, rounded to the nearest quarter of 1%. The contribution rate is applied to pay up to each year’s PEPRA compensation limit.

¹¹ Employee-paid contributions increase 1% and District-paid contributions decrease 1% effective January 1, 2015 for Unrepresented employees.

SECTION 8

METHODS AND ASSUMPTIONS

Actuarial Cost Method

The actuarial cost method used for this valuation is the Entry Age (EA) method. Under this method, the Present Value of Projected Benefits (PVPB) is the present value of all future benefits for current plan participants. The Normal Cost is calculated by allocating each employee's PVPB as a level percent of pay from entry through the last expected retirement age. The Actuarial Accrued Liability (AAL) represents the portion of the PVPB attributable to past service and is calculated as the PVPB less the present value of all future Normal Costs.

Funding Policy

The Unfunded Actuarial Accrued Liability arising in each year, whether from actuarial gains and losses, assumption changes or plan changes, is amortized as a level dollar payment over a fixed (closed) 15-year period beginning on the January 1st following the valuation date.

Any Ad-hoc COLA is funded as a level dollar payment over a fixed (closed) 15-year period from the January 1st on which it is effective as an increase to the employer contribution rate.

Contribution rates determined in the valuation are for the calendar year following the valuation date, and are assumed to be applied to payroll for each payroll period during the year.

Asset Valuation Method

The Actuarial Value of Assets is a 5-year smoothed market value. Gains and losses are recognized over a five year period.

Data Quality

The District provided participant data as of 6/30/14. We reviewed the data, but did not perform an audit.

Basis for Assumptions

The assumptions are based on a study of 2009-2014 Plan experience, except for the mortality assumption. Because of the small group population, Society of Actuaries tables based on nationwide pensioner experience have been used.

SECTION 8 METHODS AND ASSUMPTIONS

Actuarial Assumptions

Assumptions used in the valuation are as follows:

June 30, 2013 Valuation (Buck Consultants)	June 30, 2014 Valuation (Bartel Associates)																																																																																						
<p>■ Discount Rate</p> <ul style="list-style-type: none"> • 7.50% 	<p>■ Discount Rate</p> <ul style="list-style-type: none"> • 7.25% 																																																																																						
<p>■ Inflation</p> <ul style="list-style-type: none"> • 3.0% for 2 years • 4.0% thereafter 	<p>■ Inflation</p> <ul style="list-style-type: none"> • 3.0% 																																																																																						
<p>■ Salary Increases</p> <ul style="list-style-type: none"> • CPI plus • 1% productivity increase 	<p>■ Salary Increases</p> <ul style="list-style-type: none"> • 3.00% CPI plus • Pay increase based on years of District service, employment group, and Entry Age with the District. Sample rates: (Entry Age = EA) <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Service</th> <th style="text-align: left;">Clerical</th> <th style="text-align: left;">Directors</th> <th style="text-align: left;">Other EA < 40</th> <th style="text-align: left;">Other EA > 40</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>3.75%</td> <td>0.00%</td> <td>5.25%</td> <td>2.75%</td> </tr> <tr> <td>7</td> <td>1.00%</td> <td>0.00%</td> <td>2.25%</td> <td>0.75%</td> </tr> <tr> <td>12</td> <td>1.00%</td> <td>0.00%</td> <td>1.75%</td> <td>0.75%</td> </tr> <tr> <td>17</td> <td>0.75%</td> <td>0.00%</td> <td>0.75%</td> <td>0.75%</td> </tr> </tbody> </table>	Service	Clerical	Directors	Other EA < 40	Other EA > 40	2	3.75%	0.00%	5.25%	2.75%	7	1.00%	0.00%	2.25%	0.75%	12	1.00%	0.00%	1.75%	0.75%	17	0.75%	0.00%	0.75%	0.75%																																																													
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SECTION 8

METHODS AND ASSUMPTIONS

June 30, 2013 Valuation (Buck Consultants)	June 30, 2014 Valuation (Bartel Associates)																																																																																
<p>■ Healthy Mortality</p> <ul style="list-style-type: none"> • Society of Actuaries RP-2000 combined mortality table. Scale AA mortality improvement scale projected through 2028 for pre-retirement rates and Scale AA projected through 2020 for post-retirement rates. Sample rates of base tables are as follows: <table style="margin-left: 40px; border-collapse: collapse; width: 80%;"> <thead> <tr> <th></th> <th colspan="2" style="text-align: center;"><u>Pre-Retirement</u></th> <th colspan="2" style="text-align: center;"><u>Post-Retirement</u></th> </tr> <tr> <th style="text-align: left;"><u>Age</u></th> <th style="text-align: center;"><u>Male</u></th> <th style="text-align: center;"><u>Female</u></th> <th style="text-align: center;"><u>Male</u></th> <th style="text-align: center;"><u>Female</u></th> </tr> </thead> <tbody> <tr><td>50</td><td style="text-align: center;">0.2%</td><td style="text-align: center;">0.2%</td><td style="text-align: center;">0.2%</td><td style="text-align: center;">0.2%</td></tr> <tr><td>60</td><td style="text-align: center;">0.7%</td><td style="text-align: center;">0.5%</td><td style="text-align: center;">0.7%</td><td style="text-align: center;">0.5%</td></tr> <tr><td>70</td><td style="text-align: center;">2.2%</td><td style="text-align: center;">1.7%</td><td style="text-align: center;">2.2%</td><td style="text-align: center;">1.7%</td></tr> <tr><td>80</td><td style="text-align: center;">6.4%</td><td style="text-align: center;">4.6%</td><td style="text-align: center;">6.4%</td><td style="text-align: center;">4.6%</td></tr> <tr><td>90</td><td style="text-align: center;">18.3%</td><td style="text-align: center;">13.2%</td><td style="text-align: center;">18.3%</td><td style="text-align: center;">13.2%</td></tr> <tr><td>100</td><td style="text-align: center;">34.5%</td><td style="text-align: center;">23.7%</td><td style="text-align: center;">34.5%</td><td style="text-align: center;">23.7%</td></tr> </tbody> </table>		<u>Pre-Retirement</u>		<u>Post-Retirement</u>		<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	50	0.2%	0.2%	0.2%	0.2%	60	0.7%	0.5%	0.7%	0.5%	70	2.2%	1.7%	2.2%	1.7%	80	6.4%	4.6%	6.4%	4.6%	90	18.3%	13.2%	18.3%	13.2%	100	34.5%	23.7%	34.5%	23.7%	<p>■ Healthy Mortality</p> <ul style="list-style-type: none"> • Society of Actuaries RP-2014 employee mortality table and healthy annuitant mortality table used. Fully-generational mortality improvement Scale AA applied to both tables. Sample rates of base tables are as follows: <table style="margin-left: 40px; border-collapse: collapse; width: 80%;"> <thead> <tr> <th></th> <th colspan="2" style="text-align: center;"><u>Pre-Retirement</u></th> <th colspan="2" style="text-align: center;"><u>Post-Retirement</u></th> </tr> <tr> <th style="text-align: left;"><u>Age</u></th> <th style="text-align: center;"><u>Male</u></th> <th style="text-align: center;"><u>Female</u></th> <th style="text-align: center;"><u>Male</u></th> <th style="text-align: center;"><u>Female</u></th> </tr> </thead> <tbody> <tr><td>50</td><td style="text-align: center;">0.2%</td><td style="text-align: center;">0.1%</td><td style="text-align: center;">0.4%</td><td style="text-align: center;">0.2%</td></tr> <tr><td>60</td><td style="text-align: center;">0.5%</td><td style="text-align: center;">0.2%</td><td style="text-align: center;">0.8%</td><td style="text-align: center;">0.5%</td></tr> <tr><td>70</td><td style="text-align: center;">1.4%</td><td style="text-align: center;">0.6%</td><td style="text-align: center;">1.7%</td><td style="text-align: center;">1.3%</td></tr> <tr><td>80</td><td style="text-align: center;">3.9%</td><td style="text-align: center;">1.8%</td><td style="text-align: center;">4.5%</td><td style="text-align: center;">3.5%</td></tr> <tr><td>90</td><td style="text-align: center;">N/A</td><td style="text-align: center;">N/A</td><td style="text-align: center;">13.6%</td><td style="text-align: center;">10.7%</td></tr> <tr><td>100</td><td style="text-align: center;">N/A</td><td style="text-align: center;">N/A</td><td style="text-align: center;">31.4%</td><td style="text-align: center;">27.1%</td></tr> </tbody> </table>		<u>Pre-Retirement</u>		<u>Post-Retirement</u>		<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	50	0.2%	0.1%	0.4%	0.2%	60	0.5%	0.2%	0.8%	0.5%	70	1.4%	0.6%	1.7%	1.3%	80	3.9%	1.8%	4.5%	3.5%	90	N/A	N/A	13.6%	10.7%	100	N/A	N/A	31.4%	27.1%
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<p>■ Post-Retirement Disabled Mortality</p> <ul style="list-style-type: none"> • 1993 PBGC Mortality Table for disabled male participants receiving Social Security disability benefit payments. Sample rates are as follows: <table style="margin-left: 40px; border-collapse: collapse; width: 60%;"> <thead> <tr> <th style="text-align: left;"><u>Age</u></th> <th style="text-align: center;"><u>Rates</u></th> </tr> </thead> <tbody> <tr><td>50</td><td style="text-align: center;">3.8%</td></tr> <tr><td>60</td><td style="text-align: center;">6.0%</td></tr> <tr><td>70</td><td style="text-align: center;">8.4%</td></tr> <tr><td>80</td><td style="text-align: center;">14.5%</td></tr> <tr><td>90</td><td style="text-align: center;">25.0%</td></tr> <tr><td>100</td><td style="text-align: center;">44.0%</td></tr> </tbody> </table>	<u>Age</u>	<u>Rates</u>	50	3.8%	60	6.0%	70	8.4%	80	14.5%	90	25.0%	100	44.0%	<p>■ Post-Retirement Disabled Mortality</p> <ul style="list-style-type: none"> • Society of Actuaries RP-2014 disabled retiree mortality table with fully-generational mortality improvement Scale AA applied. Sample rates of base table are as follows: <table style="margin-left: 40px; border-collapse: collapse; width: 60%;"> <thead> <tr> <th style="text-align: left;"><u>Age</u></th> <th style="text-align: center;"><u>Male</u></th> <th style="text-align: center;"><u>Female</u></th> </tr> </thead> <tbody> <tr><td>50</td><td style="text-align: center;">2.0%</td><td style="text-align: center;">1.2%</td></tr> <tr><td>60</td><td style="text-align: center;">2.7%</td><td style="text-align: center;">1.7%</td></tr> <tr><td>70</td><td style="text-align: center;">4.0%</td><td style="text-align: center;">2.8%</td></tr> <tr><td>80</td><td style="text-align: center;">7.7%</td><td style="text-align: center;">6.1%</td></tr> <tr><td>90</td><td style="text-align: center;">17.3%</td><td style="text-align: center;">13.3%</td></tr> <tr><td>100</td><td style="text-align: center;">32.7%</td><td style="text-align: center;">27.8%</td></tr> </tbody> </table>	<u>Age</u>	<u>Male</u>	<u>Female</u>	50	2.0%	1.2%	60	2.7%	1.7%	70	4.0%	2.8%	80	7.7%	6.1%	90	17.3%	13.3%	100	32.7%	27.8%																																													
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<p>■ Marriage</p> <ul style="list-style-type: none"> • 100% of employees are assumed to be married. Wives are assumed to be four years younger than husbands. 	<p>■ Marriage</p> <ul style="list-style-type: none"> • 80% of employees are assumed to be married. Wives are assumed to be three years younger than husbands. 																																																																																
<p>■ Optional benefit forms</p> <ul style="list-style-type: none"> • N/A 	<p>■ Optional benefit forms</p> <ul style="list-style-type: none"> • Single: 100% are assumed to elect single life annuity. • Married: 25% of married employees are assumed to elect single life annuity. The remainder are assumed to elect joint and survivor. 65% of employees with joint and survivor benefits are assumed to elect 100% joint and survivor and the remainder are assumed to elect 50% joint and survivor. 																																																																																

SECTION 8

METHODS AND ASSUMPTIONS

June 30, 2013 Valuation (Buck Consultants)	June 30, 2014 Valuation (Bartel Associates)
<ul style="list-style-type: none"> ■ Reciprocity and Terminations <ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> ■ Reciprocity and Terminations <ul style="list-style-type: none"> • 50% of vested terminated members are assumed to be employed by reciprocal agencies and receive 3.25% annual pay increases until retirement. • Vested terminated members are assumed to retire at age 60. • Terminated employees not meeting the service requirements for early retirement are assumed to receive an immediate refund of contributions with interest.
<ul style="list-style-type: none"> ■ Limits on Benefits and Compensation <ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> ■ Limits on Benefits and Compensation <ul style="list-style-type: none"> • IRS Limits: Assumed to increase 3.0% per year (CPI) • PEPPRA Compensation limits assumed to increase 3% per year (CPI) from \$115,064 in 2014.
<ul style="list-style-type: none"> ■ Other <ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> ■ Other <ul style="list-style-type: none"> • Decrements are assumed to occur in the middle of the year.

SECTION 9 PARTICIPANT DATA

Data Summary

Following summarizes participant demographic information for the June 30, 2013 and June 30, 2014 actuarial valuations.

	June 30, 2013	June 30, 2014
■ Participant Counts		
• Actives	290	288
• Vested Terminated & Reciprocals	90	90
• Service Retirees	245	246
• Disabled Participants	N/A	4
• Beneficiaries	28	40
• Total	653	668
■ Actives		
• Average Age	48.6	48.3
• Average Service	12.3	12.2
• Salary		
> Total (\$000s)	\$ 27,375	\$ 27,179
> Average	94,398	94,370
■ Vested Terminated & Reciprocals		
• Average Age	50.3	50.1
■ Retirees, Disabled & Beneficiaries		
• Average Age	67.5	67.4
• Average Service Retirement Age	N/A	58.3
• Average Disabled Retirement Age	N/A	45.9
• Average Monthly Benefit	\$ 2,234	\$ 2,261

SECTION 9 PARTICIPANT DATA

Active Participant Statistics

June 30, 2014

Bargaining Unit	Clerical/ Maintenance	Professional/ Supervisory	Unrepresented	Confidential	Directors	Total
BU #	10	20	30	40	90	
■ Actives						
• Count	170	84	19	10	5	288
• Average Age	47.6	48.2	48.9	50.7	69.2	48.3
• Average Service	11.9	12.3	13.3	10.6	17.7	12.2
• Average Pay ¹²	\$ 78,473	\$ 114,104	\$ 169,032	\$ 101,200	\$ 6,000	\$ 94,370
• Total Payroll (\$000s)	13,340	9,585	3,212	1,012	30	27,179

June 30, 2013

Bargaining Unit	Clerical/ Maintenance	Professional/ Supervisory	Unrepresented	Confidential	Directors	Total
BU #	10	20	30	40	90	
■ Actives						
• Count	172	85	19	9	5	290
• Average Age	47.6	49.2	48.6	49.2	68.2	48.6
• Average Service	12.0	12.8	12.7	11.3	16.7	12.3
• Average Pay	\$ 78,144	\$ 115,083	\$ 166,740	\$ 102,568	\$ 12,300	\$ 94,398
• Total Payroll (\$000s)	13,441	9,782	3,168	923	62	27,375

¹² \$500/month assumed for the Directors.

SECTION 9 PARTICIPANT DATA

Data Reconciliation June 30, 2013 to June 30, 2014

	Actives	Vested Terminated	Receiving Payments			Total
			Disabled	Benefic.	Retirees	
■ June 30, 2013	290	90	N/A	28	245	653
• New Hires	22	-	-	-	-	22
• Disabled	-	-	-	-	-	-
• Terminated	(6)	6	-	-	-	-
• Cashed Out	(2)	(1)	-	-	-	(3)
• Deceased	-	-	-	(2)	(2)	(4)
• New Beneficiaries	-	-	-	1	(1)	-
• Retired	(16)	(5)	-	-	21	-
• Adjustment	<u>-</u>	<u>-</u>	<u>4</u>	<u>13¹³</u>	<u>(17)</u>	<u>-</u>
■ June 30, 2014	288	90	4	40	246	668

¹³ 2013 valuation included QDROs as retirees. 2014 valuation includes QDROs as beneficiaries.

SECTION 9 PARTICIPANT DATA

Active Age/Service/Salary

Following are active counts by age and service groups with average salary.

Age	Service							Total Number	Average Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Over		
Under 25	2	-	-	-	-	-	-	2	\$87,454
25-29	7	-	-	-	-	-	-	7	\$67,945
30-34	11	9	-	-	-	-	-	20	\$88,928
35-39	7	20	10	3	-	-	-	40	\$98,692
40-44	8	9	11	2	-	-	-	30	\$94,799
45-49	11	16	8	9	3	3	-	50	\$95,011
50-54	2	16	15	11	8	9	7	68	\$96,139
55-59	6	9	9	6	7	7	1	45	\$97,160
60-64	1	2	4	5	3	2	-	17	\$104,166
65 & Over	-	2	4	-	1	-	2	9	\$58,549
Total Number	55	83	61	36	22	21	10	288	\$94,370
Average Salary	\$85,433	\$94,640	\$95,111	\$108,113	\$94,971	\$94,467	\$85,776	\$94,370	

SECTION 9 PARTICIPANT DATA

Retiree Age/Years of Retirement/Average Monthly Benefit

Following are retiree and beneficiary counts and average monthly benefit by age and years retired.

Age	Years of Retirement							Total Number	Average Benefit
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Over		
Under 45	2	-	-	-	-	-	-	2	\$ 1,597
45-49	-	-	-	-	-	-	-	-	N/A
50-54	8	3	-	-	-	-	-	11	\$ 1,678
55-59	30	7	1	-	-	-	-	38	\$ 2,313
60-64	34	20	15	1	1	2	1	74	\$ 2,604
65-69	15	26	15	11	1	2	-	70	\$ 2,163
70-74	1	10	17	10	1	1	2	42	\$ 2,602
75-79	-	1	9	15	4	-	-	29	\$ 1,971
80-84	-	-	-	4	3	1	1	9	\$ 1,407
85 & Over	-	-	-	-	6	3	6	15	\$ 1,528
Total Number	90	67	57	41	16	9	10	290	\$ 2,261
Average Benefit	\$ 2,663	\$ 2,543	\$ 2,092	\$ 1,819	\$ 1,796	\$ 1,407	\$ 1,039	\$ 2,261	