

BARTEL
ASSOCIATES, LLC

County of Marin Retiree Healthcare Plan

Actuarial Valuation as of July 1, 2017 For Fiscal Years 2017/18 & 2018/19 Funding Information

December 2017

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ACTUARIAL VALUATION CERTIFICATION

This report presents the July 1, 2017 actuarial valuation for the County of Marin Retiree Healthcare Plan (“Plan”). The purpose of this valuation is to:

- determine the Plan benefit obligations and funded status as of July 1, 2017, and
- calculate the County’s 2017/18 & 2018/19 fiscal year Actuarially Determined Contributions for the Plan.

Use of this valuation for other purposes may not be appropriate.

This report includes the following sections:

- Section 1 presents a staff summary of the valuation results.
- Section 2 provides the results of the actuarial valuation.
- Sections 3, 4, 5 and 6 summarize the census data, premium rates, Plan provisions, funding method, and actuarial assumptions that form the basis for this valuation.

This report presents Bartel Associates’ valuation of the County of Marin Retiree Healthcare Plan in accordance with accepted actuarial principles. 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.

We have relied on demographic and premium information supplied by the County, which has been reviewed for general reasonableness, but not audited.

The undersigned are members of the American Academy of Actuaries and meet Academy Qualification Standards to render the actuarial results and opinions in this report.

Respectfully submitted,
Bartel Associates, LLC



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Actuarial and Accounting Terminology Used in this Report

- AAL – Actuarial Accrued Liability
- ADC – Actuarially Determined Contribution (under new GASBS 75)
- EAN – Entry Age Normal Cost Method
- GASBS 75 – Governmental Accounting Standards Board Statement No. 75
- NC – Normal Cost
- OPEB – Other (than pensions) Post-Employment Benefits
- PVPB – Present Value of Projected Benefits
- UAAL – Unfunded Actuarial Accrued Liability

SECTION 1 STAFF SUMMARY

Plan Provisions

Under the current practice, the County allows eligible service and disability retirees and their dependents to continue health coverage in the County's medical and dental plans. The County pays a portion of the premiums based on date of hire.

- Plan 1: For retirees hired before October 1, 1987, the County pays 100% of the eligible retiree's single health plan premiums and Medicare Part B premiums.
- Plan 2: For retirees hired between October 1, 1987 and September 30, 1993, the County pays the retiree's single health plan premiums up to \$2,275 per year.
- Plan 3: For retirees hired between October 1, 1993 and December 31, 2007, the County pays a percentage of the retiree's single premium up to a dollar cap based on years of service at retirement, where the dollar cap is reviewed each year. Through January 1, 2007, the cap was increased to cover single Anthem Blue Cross Prudent Buyer Classic and Delta Dental premiums. Due to the amount of unfunded liability the County faces, the Board of Supervisors has implemented a policy to limit annual increases in the maximum allocation for Plan 3 to no more than 3%, subject to annual approval regarding whether any increase will be granted and, if so, the amount of the increase. Cap increases were 3% effective January 1, 2008 and January 1, 2009. No cap increases have been adopted since that time and the Plan 3 Cap remains \$8,853 per year. The most recent action by the Board of Supervisors was on August 8, 2017 when it approved no change to the Plan 3 Cap for 2018.
- Plan 4: For retirees hired on or after January 1, 2008, the County pays \$150 per year of service up to \$3,000 per year for the retiree's single health plan premiums only.

At retirement, retirees eligible for Plans 1 and 2 may elect Plan 3 instead; and retirees eligible for Plans 1, 2, or 3 may elect Plan 4 instead. Plan selections may not be changed after retirement. Retirees eligible for Plan 1 are eligible for Medicare Part B premium reimbursement even after electing another Plan.

Medical coverage is provided through Anthem Blue Cross and Kaiser. Anthem Blue Cross premiums vary by status (employee, retiree under age 65, retiree age 65 or over with Medicare). Kaiser premiums are the same for employees and retirees under age 65. To the extent these premium structures result in subsidies of retiree claim costs from premiums paid for employees by the County, an implied subsidy exists which according to Actuarial Standard of Practices must be included in County post-retirement healthcare calculations.

Funding Policy

Through the 2011/12 fiscal year, the County used pay-as-you-go funding in conjunction with contributions to a reserve intended to be used to fund the plan. The County transferred the reserve balance to the CalPERS California Employers' Retiree Benefit Trust (CERBT) Fund with Asset Allocation Strategy 2 and began contributing the prefunding contribution beginning in the 2012/13 fiscal year. The County changed their investment to Asset Allocation Strategy 1 in the 2014/15 fiscal year.

SECTION 1
STAFF SUMMARY

Plan Changes since the Prior Valuation

There were no changes to the Plan.

Changes to Actuarial Valuation Assumptions and Methods

The medical trend rates were revised. Short-term trend was developed in consultation with Axene Health Partners' healthcare actuaries. Long-term trend was developed using Society of Actuaries' Getzen Model of Long-Run Medical Cost Trends.

Medicare Part B trend rates were also revised. Short-term trend was developed using projections by Centers for Medicare and Medicaid Services.

The estimated liability due to the Patient Protection and Affordable Care Act Cadillac Tax was added.

The future mortality improvement scale was updated to a newer scale (MP-2017) developed by the Society of Actuaries.

Asset smoothing was eliminated and the market value of assets is reflected.

Results

The July 1, 2017 benefit obligations and the 2017/18 Plan cost are as follows using a 5.50% discount rate, based on the assumption that the County will contribute the full Actuarially Determined Contribution. (amounts in 000's):

	<u>July 1, 2017</u>
■ Present Value of Projected Benefits (PVPB)	\$ 417,740
The Present Value of Projected Benefits is a measure of the total County obligation for expected retiree healthcare benefits due to both past and future service for current employees and retirees.	
■ Actuarial Accrued Liability (AAL)	370,692
The Actuarial Accrued Liability is a measure of the County obligation for benefits earned or allocated to past service.	
■ Plan Assets	84,626
Plan Assets include funds that have been segregated and restricted in a trust so that they can only be used to pay plan benefits.	
■ Unfunded Actuarial Accrued Liability (UAAL)	286,066
The Unfunded Actuarial Accrued Liability is the excess of the AAL over Plan Assets. This represents the amount of the Actuarial Accrued Liability at the valuation date that must still be funded.	

SECTION 1
STAFF SUMMARY

July 1, 2017

■ **Funded Ratio**

22.8%

The Funded Ratio is the ratio of Plan Assets to the Actuarial Accrued Liability.

2017/18
Plan Cost

■ **Normal Cost (NC)**

\$ 6,063

The Normal Cost is the value of County-provided benefits expected to be earned or allocated to the 2017/18 fiscal year.

■ **Actuarially Determined Contribution (ADC)**

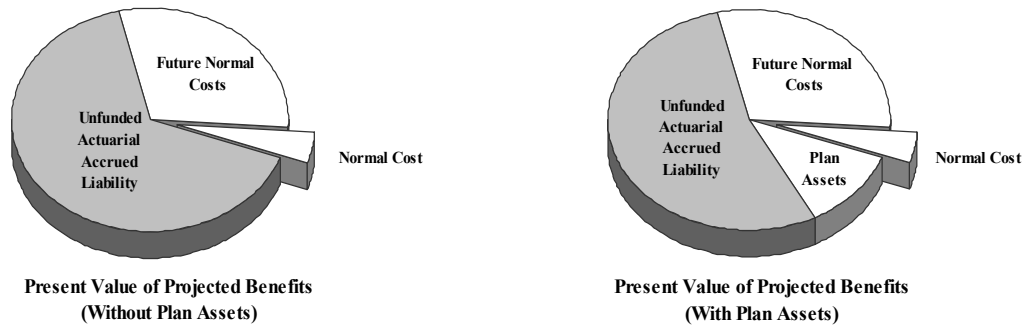
21,561

The Actuarially Determined Contribution is the sum of the Normal Cost, administrative expense, and amortization of the Unfunded Actuarial Accrued Liability. It is determined as of the middle of the 2017/18 fiscal year.

SECTION 2 ACTUARIAL VALUATION RESULTS

Actuarial Obligations

This report develops the AAL and Normal Cost using the Entry Age Normal actuarial cost method. It is designed to produce a Normal Cost that, if all assumptions are met and the plan is not changed, will generally be a level percent of payroll. The following charts illustrate a sample PVPB, both with and without plan assets, with the shaded area representing the unfunded AAL:



- **The Present Value of Projected Benefits (PVPB)** is a measure of the total County obligation for expected retiree healthcare benefits due to both past and future service for current employees and retirees.
- **The Actuarial Accrued Liability (AAL)** is a measure of the County obligation for benefits earned or allocated to past service.
- **The Normal Cost (NC)** is the value of County-provided benefits expected to be earned or allocated to the current fiscal year determined as of the middle of the fiscal year.
- **Plan Assets** must be segregated in a trust for the sole purpose of paying Plan benefits in order to be considered Plan Assets for GASBS 75.
- **The Unfunded Actuarial Accrued Liability (UAAL)** is the difference between the AAL and the Plan Assets.
- **Expected Benefit Payments** are the County-paid retiree healthcare benefit payments for the current fiscal year. It includes payments for current retirees and active employees expected to retire during the year.
- **The Actuarially Determined Contribution (ADC)** is the sum of the Normal Cost plus a 25-year level percent of pay amortization of the Unfunded Actuarial Accrued Liability (or less an amortization of excess assets) determined as of the middle of the fiscal year.
- An **Implied Subsidy** exists when the premium for a group of employees is determined by aggregating the experience of the group.

SECTION 2
ACTUARIAL VALUATION RESULTS

Asset Reconciliation – Market Value of Assets
(amounts in 000's)

	<u>2015/16</u>	<u>2016/17</u>
■ Market Value of Assets (Beginning of Year)	\$ 53,960	\$ 68,114
• Contributions	13,179	9,150
• Disbursements ¹	-	-
• Investment Expenses	(20)	(26)
• Administrative Expenses	(28)	(36)
• Investment Earnings	1,023	7,424
	<hr/>	<hr/>
■ Market Value of Assets (End of Year)	68,114	84,626

¹ Paid directly by the County outside of the trust.

SECTION 2
ACTUARIAL VALUATION RESULTS

Benefit Obligations as of July 1, 2017
5.50% Interest Rate
(amounts in 000's)

■ Present Value of Benefits	
• Actives	\$ 178,631
• Retirees	<u>239,109</u>
• Total	417,740
■ Actuarial Accrued Liability	
• Actives	131,583
• Retirees	<u>239,109</u>
• Total	370,692
■ Market Value of Assets	<u>84,626</u>
■ Unfunded AAL @ 7/1/2017	286,066

SECTION 2
ACTUARIAL VALUATION RESULTS

Actuarially Determined Contribution (ADC) for 2017/18 and 2018/19²
5.50% Interest Rate
(amounts in 000's)

	<u>2017/18</u>	<u>2018/19</u>
■ ADC - \$		
• Normal Cost ³	\$ 6,107	\$ 5,841
• UAAL Amortization	<u>15,454</u>	<u>15,910</u>
• ADC	21,561	21,751
■ Projected Payroll⁴	186,192	191,778
■ ADC - %		
• Normal Cost	3.3%	3.0%
• UAAL Amortization	<u>8.3%</u>	<u>8.3%</u>
• ADC	11.6%	11.3%

Schedule of Unfunded Actuarial Accrued Liability Amortization Bases
(amounts in 000's)

	<u>2017/18</u>	<u>2018/19</u>
■ Outstanding Balance		
• 7/1/2017 Investment (gain)/loss	\$ (394)	\$ (408)
• Remaining UAAL	<u>286,460</u>	<u>286,334</u>
• Total	286,066	285,926
■ Amortization Payment⁵		
• 7/1/2017 Investment (gain)/loss	\$ (7)	\$ (15)
• Remaining UAAL	<u>15,462</u>	<u>15,926</u>
• Total	15,454	15,910

² Payable at middle of fiscal year.

³ Normal Cost includes CERBT administrative expense of \$44,000 for 2017/18 and \$51,000 for 2018/19.

⁴ Payroll projected using aggregate payroll increase assumption.

⁵ Amortized as a level percent of payroll over 25 years. Investment gain/loss includes a 3-year phrase-in.

SECTION 2
ACTUARIAL VALUATION RESULTS

Comparison of July 1, 2015 and July 1, 2017 Valuations
(amounts in 000's)

	<u>July 1, 2015</u>	<u>July 1, 2017</u>
■ Interest Rate	<u>5.50%</u>	<u>5.50%</u>
■ Present Value of Benefits		
• Actives	\$ 193,740	\$ 178,631
• Retirees	<u>210,824</u>	<u>239,109</u>
• Total	404,564	417,740
■ Actuarial Accrued Liability		
• Actives	138,239	131,583
• Retirees	<u>210,824</u>	<u>239,109</u>
• Total	349,063	370,692
■ Assets	<u>54,688</u>	<u>84,626</u>
■ Unfunded AAL	294,375	286,066
■ Funded Ratio	15.7%	22.8%
	<u>2015/16</u>	<u>2017/18⁶</u>
■ ADC - \$		
• Normal Cost	\$ 6,905	\$ 6,107
• UAAL Amortization ⁷	<u>15,032</u>	<u>15,454</u>
• ADC	21,937	21,561
■ Projected Payroll⁸	165,972	186,192
■ ADC - %		
• Normal Cost	4.2%	3.3%
• UAAL Amortization	<u>9.1%</u>	<u>8.3%</u>
• ADC	13.2%	11.6%

⁶ Normal Cost includes CERBT administrative expense of \$44,000 for 2017/18 and \$51,000 for 2018/19.

⁷ Amortized as a level percent of payroll over closed 30-year period beginning 2012/13. 27 years remaining 7/1/2015. 25 years remaining 7/1/2017. Investment gain/loss includes a 3-year phrase-in beginning 2017/18.

⁸ Payroll projected using aggregate payroll increase assumption.

SECTION 2
ACTUARIAL VALUATION RESULTS

Actuarial Gains/Losses
(amounts in 000's)

The impacts on the Unfunded Actuarial Accrued Liability of experience gains and losses as well as assumption and method changes are shown below.

- Factors decreasing the Actuarial Accrued Liability included:
 - Lower 2017 and 2018 premiums and claims than anticipated
 - No increases to the Plan 3 cap for 2017 or 2018
 - Updating the mortality projection scale
- Factors increasing the Actuarial Accrued Liability included:
 - The impact of significant premium increase for Blue Cross PPO in 2019 assuming no subsidization from stabilization reserve.
 - Estimate for liability due to Patient Protection and Affordable Care Act Cadillac Tax is valued.
 - Changes to medical trend

	<u>AAAL</u>	<u>(Assets)</u>	<u>UAAL</u>
■ Actual – 7/1/2015	\$ 349,063	\$ (54,688)	\$ 294,375
■ Expected – 7/1/2017	374,612	(79,157)	295,455
■ Experience (Gains)/Losses			
• Contribution (gain)/loss	-	(5,885)	(5,885)
• Investment (gain)/loss	-	(394)	(394)
• Premium / Claims (gain)/loss	(12,779)	-	(12,779)
• Plan 3 cap	(10,406)	-	(10,406)
• Demographic & other	3,165	-	3,165
• Total	(20,020)	(6,279)	(26,299)
■ Assumptions and Method Changes			
• Market value of assets used	-	810	810
• Blue Cross PPO premium increase without stabilization reserve	11,947	-	11,947
• Mortality projection scale	(13,689)	-	(13,689)
• Medical trend rates	11,974	-	11,974
• PPACA Cadillac Tax	5,868	-	5,868
• Total	16,100	810	16,910
■ Total Change	(3,920)	(5,469)	(9,389)
■ Actual – 7/1/2017	370,692	(84,626)	286,066

SECTION 2
ACTUARIAL VALUATION RESULTS

Benefit Payment Projection
(amounts in 000's)

Fiscal Year	Estimated Cash Benefit Payments	Implied Subsidy Benefit Payments	Total
2017/18	\$ 12,899	\$ 1,272	\$ 14,171
2018/19	13,886	1,510	15,396
2019/20	15,081	1,851	16,932
2020/21	16,013	2,013	18,026
2021/22	16,951	2,287	19,238
2022/23	17,814	2,558	20,372
2023/24	18,754	2,847	21,601
2024/25	19,571	3,077	22,648
2025/26	20,383	3,336	23,719
2026/27	21,300	3,605	24,905

SECTION 2
ACTUARIAL VALUATION RESULTS

Interest Rate Sensitivity
July 1, 2017
(amounts in 000's)

■ Interest Rate	<u>4.50%</u>	<u>5.50%</u>	<u>6.50%</u>
■ Present Value of Benefits			
• Actives	\$ 221,753	\$ 178,631	\$ 146,012
• Retirees	<u>268,474</u>	<u>239,109</u>	<u>214,682</u>
• Total	490,227	417,740	360,694
■ Actuarial Accrued Liability			
• Actives	156,595	131,583	111,583
• Retirees	<u>268,474</u>	<u>239,109</u>	<u>214,682</u>
• Total	425,069	370,692	326,265
■ Assets	<u>84,626</u>	<u>84,626</u>	<u>84,626</u>
■ Unfunded AAL	340,443	286,066	241,639
■ 2017/18 ADC - \$			
• Normal Cost ⁹	\$ 7,881	\$ 6,108	\$ 4,782
• UAAL Amortization ¹⁰	<u>16,481</u>	<u>15,454</u>	<u>14,487</u>
• ADC	24,362	21,561	19,269
■ 2017/18 Projected Payroll	186,192	186,192	186,192
■ 2017/18 ADC - %			
• Normal Cost	4.2%	3.3%	2.6%
• UAAL Amortization	<u>8.9%</u>	<u>8.3%</u>	<u>7.8%</u>
• ADC	13.1%	11.6%	10.3%

⁹ Includes CERBT administrative expense.

¹⁰ Amortized as a level percent of payroll over 25 years. Investment gain/loss includes a 3-year phrase-in.

SECTION 2
ACTUARIAL VALUATION RESULTS

Healthcare Trend Sensitivity
July 1, 2017
(amounts in 000's)

Healthcare Trend	-1%	Current Healthcare Trend	+1%
■ Present Value of Benefits			
• Actives	\$ 173,493	\$ 178,631	\$ 182,930
• Retirees	<u>223,409</u>	<u>239,109</u>	<u>254,756</u>
• Total	396,902	417,740	437,686
■ Actuarial Accrued Liability			
• Actives	127,595	131,583	133,903
• Retirees	<u>223,409</u>	<u>239,109</u>	<u>254,756</u>
• Total	351,004	370,692	388,659
■ Assets	<u>84,626</u>	<u>84,626</u>	<u>84,626</u>
■ Unfunded AAL	266,378	286,066	304,033
■ 2017/18 ADC - \$			
• Normal Cost ¹¹	\$ 5,976	\$ 6,108	\$ 6,271
• UAAL Amortization ¹²	<u>14,392</u>	<u>15,454</u>	<u>16,424</u>
• ADC	20,368	21,561	22,695
■ 2017/18 Projected Payroll	186,192	186,192	186,192
■ 2017/18 ADC - %			
• Normal Cost	3.2%	3.3%	3.4%
• UAAL Amortization	<u>7.7%</u>	<u>8.3%</u>	<u>8.8%</u>
• ADC	10.9%	11.6%	12.2%

¹¹ Includes CERBT administrative expense.

¹² Amortized as a level percent of payroll over 25 years. Investment gain/loss includes a 3-year phrase-in.

SECTION 3
DEMOGRAPHIC INFORMATION

Participant Statistics – July 1, 2017

	Miscellaneous	Safety	Total
Actives			
Count	1,684	356	2,040
Average Age	48.6	40.6	47.2
Average Service	10.0	11.4	10.3
Average Pay	\$ 88,245	\$ 105,581	\$ 91,270
Total Pay (000's)	148,605	37,587	186,192
Retirees			
Count	1,295	296	1,591
Average Age	73.3	64.7	71.7

Participant Statistics – July 1, 2015

	Miscellaneous	Safety	Total
Actives			
Count	1,611	353	1,964
Average Age	49.2	41.2	47.7
Average Service	10.4	11.6	10.6
Average Pay	\$ 80,395	\$ 96,374	\$ 83,267
Total Pay (000's)	129,517	34,020	163,537
Retirees			
Count	1,237	264	1,501
Average Age	73.1	64.2	71.5

SECTION 3
DEMOGRAPHIC INFORMATION

Medical Coverage – July 1, 2017

Medical Plan	Employees	Retirees Under 65	Retirees 65+	Total
Kaiser Plan L	1,068	232	674	1,974
Kaiser Plan S	576	33	22	631
Kaiser – Out of State	-	6	21	27
Anthem Blue Cross PPO	130	85	375	590
Waived	266	32	111	409
Total	2,040	388	1,203	3,631

Plan Coverage – July 1, 2017

Plan	Plan 1	Plan 2	Plan 3	Plan 4	Self-Paying¹³	Total
Retirees	726	24	744	4	93	1,591
Actives	53	97	895	995	-	2,040

Medical Coverage – July 1, 2015

Medical Plan	Employees	Retirees Under 65	Retirees 65+	Total
Kaiser Plan L	1,000	227	634	1,861
Kaiser Plan S	478	24	12	514
Kaiser – Out of State	-	9	17	26
Anthem Blue Cross PPO	141	94	363	598
Waived	345	29	92	466
Total	1,964	383	1,118	3,465

Plan Coverage – July 1, 2015

Plan	Plan 1	Plan 2	Plan 3	Plan 4	Self-Paying¹⁴	Total
Retirees	769	26	613	2	91	1,501
Actives	83	116	1,024	741	-	1,964

¹³ Includes surviving spouses and Plan 4 retirees with less than 5 years of service.

¹⁴ Includes surviving spouses.

SECTION 3
DEMOGRAPHIC INFORMATION

Miscellaneous Employees
Age & Service Distribution

July 1, 2017

Age	County Service							Total
	Under 1	1-4	5-9	10-14	15-19	20-24	25 & Over	
Under 25	15	4	-	-	-	-	-	19
25-29	36	59	2	-	-	-	-	97
30-34	27	110	20	6	-	-	-	163
35-39	29	79	34	37	5	-	-	184
40-44	19	54	28	49	27	2	-	179
45-49	15	57	24	52	44	19	3	214
50-54	15	54	34	46	56	29	21	255
55-59	17	50	26	37	50	25	31	236
60-64	5	34	26	50	45	17	31	208
65 & Over	1	9	14	30	40	18	17	129
Total	179	510	208	307	267	110	103	1,684

SECTION 3
DEMOGRAPHIC INFORMATION

Safety Employees
Age & Service Distribution

July 1, 2017

Age	County Service							Total
	Under 1	1-4	5-9	10-14	15-19	20-24	25 & Over	
Under 25	10	4	-	-	-	-	-	14
25-29	6	32	3	-	-	-	-	41
30-34	2	30	23	3	-	-	-	58
35-39	2	11	15	30	4	-	-	62
40-44	-	3	5	22	20	1	-	51
45-49	1	1	2	20	18	20	6	68
50-54	-	4	4	2	8	10	10	38
55-59	-	-	3	2	2	3	5	15
60-64	-	-	1	2	1	1	1	6
65 & Over	-	-	1	-	-	-	2	3
Total	21	85	57	81	53	35	24	356

SECTION 3
DEMOGRAPHIC INFORMATION

All Employees
Age & Service Distribution

July 1, 2017

Age	County Service							Total
	Under 1	1-4	5-9	10-14	15-19	20-24	25 & Over	
Under 25	25	8	-	-	-	-	-	33
25-29	42	91	5	-	-	-	-	138
30-34	29	140	43	9	-	-	-	221
35-39	31	90	49	67	9	-	-	246
40-44	19	57	33	71	47	3	-	230
45-49	16	58	26	72	62	39	9	282
50-54	15	58	38	48	64	39	31	293
55-59	17	50	29	39	52	28	36	251
60-64	5	34	27	52	46	18	32	214
65 & Over	1	9	15	30	40	18	19	132
Total	200	595	265	388	320	145	127	2,040

SECTION 4
PREMIUM RATES

2017 Monthly Premium Rates

Actives

Plan	Single	2-Party	Family
Kaiser Plan L	\$760.84	\$1,521.69	\$2,023.85
Kaiser Plan S	687.11	1,374.22	1,827.72
Anthem Blue Cross PPO	1,162.67	2,355.02	2,984.17

Retirees

Plan	Non-Medicare			Medicare		
	Single	2-Party	Family	Single	2-Party	Family
Kaiser Plan L ¹⁵	\$ 760.84	\$1,521.69	\$2,023.85	\$397.83	\$ 795.66	n/a
Kaiser Plan S ¹⁶	687.11	1,374.22	1,827.72	289.68	579.36	n/a
Anthem Blue Cross PPO ¹⁷	1,209.59	2,271.23	3,143.03	615.81	1,231.62	n/a

Delta Dental 2017 monthly premiums are \$47.64 for single coverage, \$89.82 for 2-party coverage and \$141.12 for family coverage.

2018 Monthly Premium Rates

Actives

Plan	Single	2-Party	Family
Kaiser Plan L	\$741.77	\$1,483.54	\$1,973.11
Kaiser Plan S	670.03	1,340.05	1,782.26
Anthem Blue Cross PPO	1,162.67	2,355.02	2,984.17

Retirees

Plan	Non-Medicare			Medicare		
	Single	2-Party	Family	Single	2-Party	Family
Kaiser Plan L ¹⁸	\$741.77	\$1,483.54	\$1,973.11	\$410.13	\$820.26	n/a
Kaiser Plan S ¹⁹	670.03	1,340.05	1,782.26	297.94	595.88	n/a
Anthem Blue Cross PPO ²⁰	1,209.59	2,271.23	3,143.03	\$631.41	\$1,262.82	n/a

Delta Dental 2018 monthly premiums are \$51.16 for single coverage, \$96.47 for 2-party coverage and \$151.55 for family coverage.

¹⁵ With Senior Advantage for Medicare.

¹⁶ With Senior Advantage for Medicare.

¹⁷ Medical (\$296.85/month) + Rx (\$318.96/month) for Medicare premiums.

¹⁸ With Senior Advantage for Medicare.

¹⁹ With Senior Advantage for Medicare.

²⁰ Medical (\$296.85/month) + Rx (\$334.56/month) for Medicare premiums.

**SECTION 4
PREMIUM RATES**

Medical Plan Summaries

	Kaiser Plan L	Kaiser Plan S	Anthem Blue Cross PPO
	Network	Network	Network
Calendar Year Deductible	None	None	\$500/member \$1,000/family
Annual Out-of-Pocket Maximums	\$1,500/member \$3,000/family	\$1,500/member \$3,000/family	\$3,000/member \$6,000/family
Lifetime Maximum	None	None	None
Hospital			
Inpatient Services	No charge	No charge	20%
Outpatient Surgery	\$5/procedure	\$25/procedure	20%
Physician Services			
Physician Office Visit	\$5/visit	\$25/visit	\$20/visit
Preventive Care	No charge	No charge	No charge
Diagnostic X-Ray and Lab	No charge	No charge	20%
Ambulance Service	\$50/trip	\$50/trip	20%
Emergency	\$50/visit	\$50/visit	\$50 ded. + 20%
Prescription Drugs			
Retail (30-day supply)	\$5/generic \$5/brand-name	\$10/generic \$25/brand-name	\$5/generic \$15/formulary brand-name
Mail Order (90-day supply)	\$5/generic \$5/brand-name	\$20/generic \$50/brand-name	\$10/generic \$25/brand-name

SECTION 5
PLAN PROVISIONS

Benefits

Under current practice, the County allows eligible service and disability retirees and their dependents to continue health coverage in the County’s medical and dental plans. The County pays a portion of the premiums based on date of hire. Retirees must retire directly from the County, have 5 years of County service, and continuity of coverage to be eligible. Retirees are not eligible for open enrollment and those waiving coverage may not re-enroll.

	Plan 1	Plan 2	Plan 3	Plan 4
Eligibility	Hired before 10/1/87	Hired between 10/1/87 and 9/30/93	Hired between 10/1/93 and 12/31/07	Hired on or after 1/1/08 and at least 5 years continuous coverage under the same medical plan
Benefits	The County pays 100% of the eligible retiree’s single health plan premiums and Medicare Part B premiums.	The County pays the retiree’s single health plan premiums up to \$2,275 per year.	The County pays a percentage of the retiree’s single premium (and those for spouses of eligible retiree’s with 30 years of service) up to a dollar cap (\$8,853 per year from 2009 through 2018) based on years of service at retirement ²¹	The County pays \$150 per year of service up to \$3,000 per year for the retiree’s single health plan premiums only.

- The Plan 3 dollar cap is reviewed each year. Through January 1, 2007, the cap was increased to cover single Anthem Blue Cross Prudent Buyer Classic and Delta Dental premiums. Due to the amount of unfunded liability the County faces, the Board has implemented a policy to limit annual increases in the maximum allocation for Plan 3 to no more than 3%, subject to annual approval regarding whether any increase will be granted and, if so, the amount of the increase. The last cap increase was at 3% on January 1, 2009.
- Retirees eligible for Plans 1 and 2 may elect Plan 3 instead; and retirees eligible for Plans 1, 2, or 3 may elect Plan 4 instead. Retirees eligible for Plan 1 are eligible for Medicare Part B premium reimbursement even after electing another Plan.

The County also implicitly subsidizes a portion of retirees’ benefits because non-Medicare retirees are charged the same premiums as employees for Kaiser participants. Anthem Blue Cross retirees are also charged premiums that are somewhat lower than the cost. Under Actuarial Standard of Practices, the value of the implied subsidy must be included in the County’s ADC and AAL calculations.

The County also provides retirees with 20 years of service \$10,000 of life insurance and, on an 8-year phase-out basis, continuance of supplemental life coverage.

²¹ 100% for 20 years of service, prorated for those with less than 20 years of service.

SECTION 6
ACTUARIAL METHODS AND ASSUMPTIONS AND DATA

Data

Results were based on the demographic data as of July 1, 2017 provided by the County. Data has been reviewed for reasonability but not audited.

Actuarial Methods

Actuarial Cost Method

The actuarial cost method used for this valuation is the Entry Age Normal (EAN) cost method. Under the EAN cost method, the plan's Normal Cost is developed as a level percent of payroll payable throughout the participants' working lifetime. The Actuarial Accrued Liability (AAL) is the cumulative value, on the valuation date, of prior Normal Costs. For retirees, the AAL is the present value of all projected benefits.

Amortization of Unfunded AAL

Investment gain/loss from 2015/16 and 2016/17 fiscal years is amortized over a closed 25-year period that includes a 3-year phase-in as a level percentage of payroll from July 1, 2017. The remaining unfunded AAL is amortized over a closed 25-year period as a level percentage of payroll from July 1, 2017.

Actuarial Value of Assets

Market value of assets (Prior method – Smoothed based on market results over a period of 5 years. 1/5 of the difference between actual investment earnings and the assumed investment earnings recognized each year. 120% / 80% market value corridor also applied.)

Actuarial Assumptions – Economic Assumptions

Interest (Discount) rate

5.50%, assuming that the County continues to prefund with CERBT Asset Allocation Strategy 1 (66% global equity, 18% fixed income, 5% TIPS, 3% commodities, and 8% REITs). The 5.50% assumption is based on a median long-term rate of return of 6.75% net of investment expenses and a margin for adverse deviation of 1.25%. Capital market real rates of return underlying the 6.75% rate are 4.8% global equity, 1.5% fixed income, 1.3% TIPS, 0.8% commodities, and 3.8% REITs and are based on a study of investment consultant and investment bank 2017 capital market short and long-term assumptions adjusted in some cases for long-term trends in investment returns.

CERBT Administrative Expenses

0.05% of trust balance added to the Normal Cost

Inflation

Assumed to increase 2.75% per annum.

Aggregate Payroll

Assumed to increase 3.00% per annum. (Used to amortize unfunded AAL.)

Plan 3 Cap Trend Rate

SECTION 6
ACTUARIAL METHODS AND ASSUMPTIONS AND DATA

Assumed to increase at 3.00% per year

Dental Care Cost Trend Rate

Assumed to increase at 3.75% per year.

Medical Care Cost Trend Rates

Based on initial rates provided by Axene Health partners, with long-term rates calculated using the Society of Actuaries Getzen Model.

Year	Current Assumption			Prior Assumption		
	Anthem Blue Cross / Kaiser		Medicare B Premiums	Anthem Blue Cross / Kaiser		Medicare B Premiums
	Non-Medicare	Medicare		Non-Medicare	Medicare	
2016	n/a	n/a	n/a	n/a	n/a	6.25%
2017	n/a	n/a	n/a	6.50%	6.50%	6.25%
2018	n/a	n/a	n/a	6.00%	6.00%	6.00%
2019	7.50%	6.50%	0.00%	5.50%	5.50%	5.50%
2020	7.50%	6.50%	3.70%	5.25%	5.25%	5.25%
2021	7.25%	6.30%	4.40%	5.00%	5.00%	5.00%
2022	7.00%	6.10%	5.10%	4.75%	4.75%	4.75%
2023	6.75%	5.90%	5.90%	4.75%	4.75%	4.75%
2024	6.50%	5.70%	5.70%	4.75%	4.75%	4.75%
2025	6.25%	5.50%	5.50%	4.75%	4.75%	4.75%
2026	6.00%	5.30%	5.30%	4.75%	4.75%	4.75%
2027	5.80%	5.15%	5.15%	4.75%	4.75%	4.75%
2028	5.60%	5.00%	5.00%	4.75%	4.75%	4.75%
2029	5.40%	4.85%	4.85%	4.75%	4.75%	4.75%
2030	5.20%	4.70%	4.70%	4.75%	4.75%	4.75%
2031-35	5.05%	4.60%	4.60%	4.75%	4.75%	4.75%
2036-45	4.90%	4.50%	4.50%	4.75%	4.75%	4.75%
2046-55	4.75%	4.45%	4.45%	4.75%	4.75%	4.75%
2056-65	4.60%	4.40%	4.40%	4.75%	4.75%	4.75%
2066-75	4.30%	4.20%	4.20%	4.75%	4.75%	4.75%
2076+	4.00%	4.00%	4.00%	4.75%	4.75%	4.75%

2019 increase for Anthem Blue Cross: Premiums were held constant by using stabilization reserve in 2018 and partially subsidized in 2017. It's our understanding that the stabilization reserve was nearly exhausted after the 2018 premium renewal. Based on the Anthem renewal materials, we have assumed an additional increase of 58.8% for non-Medicare and 3.4% for the medical portion of Medicare premiums in 2019 to reflect no further reserve buy-down for Anthem Blue Cross plan premium rates.



SECTION 6
ACTUARIAL METHODS AND ASSUMPTIONS AND DATA

Monthly Claims Costs

The AHP Cost Model™, which is based on Axene Health Partners, LLC’s proprietary claims database, was used in the determination of age/ gender/ plan specific claims factors. Blue Cross and Kaiser Plans offered by the County were run through the cost model to determine benefit values by age and gender. These benefit values were then used to develop the corresponding age / gender-based claims factors for the valuation.

The same AHP Cost Model was used to determine the benefit value of Medicare for purposes of reflecting coordination in the projected claims costs for Medicare participants. The model was run using the 2017 Medicare benefits for Part A and Part B for individuals aged 65 and older. The resulting benefit value was then subtracted from the non-Medicare benefit value at each age over 65 to develop the claims cost value for participants receiving Medicare.

Premium rates for each health plan were used in the claims cost projections. Current (CY 2018) premiums were reviewed; however, these premiums were not audited against actual claims and we do not attest herein to their adequacy.

It is Kaiser’s policy not to release any demographic information summaries for its Northern California Senior Advantage pool. Public agency client enrollment data for entities covered by CalPERS Northern California Kaiser Senior Advantage was used for determination of age-gender based claim costs for the Kaiser Medicare plans.

Age	2018 Age/Gender Claims Costs			
	Kaiser Plan L Non-Medicare		Kaiser Plan L Medicare	
	Male	Female	Male	Female
30	\$344	\$603	n/a	n/a
35	374	596	n/a	n/a
40	422	609	n/a	n/a
45	494	636	n/a	n/a
50	601	684	n/a	n/a
55	774	788	n/a	n/a
60	1,026	945	n/a	n/a
65	1,148	995	\$314	\$271
70	1,293	1,085	383	321
75	1,572	1,296	466	383
80	1,889	1,547	560	458
85	2,220	1,818	658	538

SECTION 6
ACTUARIAL METHODS AND ASSUMPTIONS AND DATA

Age	2018 Age/Gender Claims Costs			
	Kaiser Plan S Non-Medicare		Kaiser Plan S Medicare	
	Male	Female	Male	Female
30	\$308	\$545	n/a	n/a
35	335	538	n/a	n/a
40	379	549	n/a	n/a
45	445	574	n/a	n/a
50	543	618	n/a	n/a
55	701	713	n/a	n/a
60	932	857	n/a	n/a
65	1,044	903	\$229	\$197
70	1,175	984	279	233
75	1,429	1,176	339	278
80	1,718	1,404	408	332
85	2,019	1,650	479	390

Age	2018 Age/Gender Claims Costs (With use of stabilization reserve)			
	Anthem Blue Cross PPO Non-Medicare		Anthem Blue Cross PPO Medicare	
	Male	Female	Male	Female
30	\$425	\$767	n/a	n/a
35	463	758	n/a	n/a
40	525	775	n/a	n/a
45	620	811	n/a	n/a
50	763	877	n/a	n/a
55	1,000	1,020	n/a	n/a
60	1,353	1,240	n/a	n/a
65	1,526	1,311	\$462	\$385
70	1,719	1,427	564	456
75	2,089	1,704	685	544
80	2,512	2,034	824	650
85	2,952	2,391	968	764

Demographic Assumptions – Health Plans

Participation, Medical Plan Coverage, and Health Plan Election assumptions below were based on a study of experience between 2011 and 2014.

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ACTUARIAL METHODS AND ASSUMPTIONS AND DATA

Percentage of Future Retirees Participating in Medical Plans

	<10	10-14	15-19	20+
Plan 1	100.0%	100.0%	100.0%	100.0%
Plan 2/3	37.5%	85.0%	85.0%	100.0%
Plan 4	30.0%	37.5%	40.0%	42.5%

Percentage of Future Retirees Participating in Dental Plans

	Current Employees
Plan 1	97.5%
Plan 2/3	90.0%
Plan 4	90.0%

Medical Plan Coverage after Retirement

Current Employees:

	Plan 1	Plan 2/3	Plan 4
Anthem PPO	35.0%	20.0%	10.0%
Kaiser Plan L	60.0%	70.0%	60.0%
Kaiser Plan S	5.0%	10.0%	30.0%
Total	100.0%	100.0%	100.0%

Current Retirees and Beneficiaries:

Current medical plan election. Annual open enrollment is only available for employees and does not apply to retirees.

Election of Plan 3 at Retirement by Currently Employed Plan 1 and 2 Members

Plan 1 members with 30 years' service and eligible spouses are assumed to elect Plan 3. All Plan 2 members are assumed to elect Plan 3.

Medicare Coverage

100% except 10% of those hired between July 1, 1967 and March 31, 1986 are assumed to be ineligible for Medicare.

Spouse Coverage

30 years of service at retirement: 80% of male retirees and 50% of female retirees cover a spouse. All others: 35% of male retirees and 20% of female retirees cover a spouse. Female spouse is assumed to be 3 years younger than male spouse.

Patient Protection and Affordable Care Act (PPACA) Cadillac Tax

Assumed to increase employer costs by 2% of the cash benefit costs. (Prior assumption – No Cadillac Tax included. The County is assumed to adjust their plans so that they are not subject to the Cadillac Tax.)

SECTION 6
ACTUARIAL METHODS AND ASSUMPTIONS AND DATA

Demographic Assumptions –Turnover, Disablement, Salary Merit and Longevity Increases, Retirement, Mortality

Assumptions based on the Marin County Employees’ Retirement Association 2011-2014 Experience Study except for the allowance for future post-retirement mortality improvement, which is based on the most recent mortality projection scale developed by the Society of Actuaries.

Miscellaneous Employees

Age	Withdrawal and Vested Termination Male (by service)								
	0	1	2	3	4	5-9	10-14	15-29	30+
20	.150	.090	.070	.070	.070	.070	.053	.030	.000
35	.150	.090	.070	.070	.070	.068	.045	.025	.000
55	.150	.090	.070	.070	.070	.012	.000	.000	.000
Age	Withdrawal and Vested Termination Female (by service)								
	0	1	2	3	4	5-9	10-14	15-29	30+
20	.150	.090	.070	.070	.070	.078	.053	.030	.000
35	.150	.090	.070	.070	.070	.078	.045	.025	.000
55	.150	.090	.070	.070	.070	.022	.000	.000	.000

Age	Disability Ordinary	Disability Duty – Male	Disability Duty – Female
20	.00000	.00025	.00012
35	.00008	.00080	.00040
55	.00078	.00165	.00082

Safety Employees

Age	Withdrawal and Vested Termination (by service)								
	0	1	2	3	4	5-9	10-14	15-19	20+
20	.080	.050	.040	.040	.040	.021	.021	.021	.000
35	.080	.050	.040	.040	.040	.034	.034	.034	.000
55	.080	.050	.040	.040	.040	.001	.001	.001	.000

Age	Disability Ordinary	Disability Duty
20	.00020	.00061
35	.00070	.00302
55	.00460	.02145

SECTION 6
ACTUARIAL METHODS AND ASSUMPTIONS AND DATA

Salary Merit and Longevity Increases

Assumptions based on the Marin County Employees' Retirement Association 2011-2014 Experience Study.

Service	Miscellaneous	Safety
0	8.00%	5.00%
1	8.00%	5.00%
2	8.00%	5.00%
3	6.00%	2.00%
4	2.00%	1.25%
5+	0.75%	1.25%

Retirement Probabilities:

Age	Miscellaneous (by service)			Safety (by service)					
	All			3%@50			3%@55 & PEPRA		
	<20	20-29	30+	<20	20-29	30+	<20	20-29	30+
40-49	n/a	n/a	n/a	0%	3%	3%	0%	1%	1%
50	4%	4%	4%	25%	25%	50%	5%	5%	30%
51	4%	4%	4%	10%	10%	20%	5%	5%	30%
52	4%	4%	4%	10%	10%	20%	5%	5%	30%
53	4%	4%	4%	10%	10%	20%	5%	5%	30%
54	4%	4%	4%	10%	10%	20%	5%	15%	30%
55	8%	10%	25%	25%	25%	50%	20%	40%	50%
56	4%	4%	25%	25%	25%	50%	10%	30%	50%
57	4%	6%	25%	25%	25%	50%	10%	20%	50%
58	4%	8%	25%	25%	25%	50%	10%	20%	50%
59	8%	10%	25%	25%	25%	50%	10%	20%	50%
60-61	8%	10%	35%	50%	50%	50%	30%	30%	50%
62-64	20%	20%	35%	50%	50%	50%	30%	30%	50%
65-69	20%	20%	35%	100%	100%	100%	100%	100%	100%
70-74	20%	20%	35%	100%	100%	100%	100%	100%	100%
75-79	25%	25%	35%	100%	100%	100%	100%	100%	100%
80+	100%	100%	100%	100%	100%	100%	100%	100%	100%

For PEPRA Miscellaneous members, the rates are only applied once a member is eligible to retire (i.e. at age 52 with 5 years of service).

SECTION 6
ACTUARIAL METHODS AND ASSUMPTIONS AND DATA

Pre-retirement Mortality:

CalPERS 1997-2011 Experience Study Pre-Retirement Non-Industrial Death rates (plus Duty-Related Death rates for Safety members), projected fully generational using Projection Scale MP-2017. [Prior assumption – CalPERS 1997-2011 Experience Study Pre-Retirement Non-Industrial Death rates (plus Duty-Related Death rates for Safety members), projected fully generational using Projection Scale MP-2014 modified to converge to ultimate improvement rates in 2022.]

Post-retirement Mortality:

Service Retirements and Spouses: CalPERS 1997-2011 Experience Study Post-Retirement Healthy Mortality rates, adjusted by 110% for Safety males and 95% for Miscellaneous and Safety females, projected fully generational using Projection Scale MP-2017. (Prior assumption – Service Retirements and Spouses: CalPERS 1997-2011 Experience Study Post-Retirement Healthy Mortality rates, adjusted by 110% for Safety males and 95% for Miscellaneous and Safety females, projected fully generational using Projection Scale MP-2014 modified to converge to ultimate improvement rates in 2022.)

Mortality after Disability Retirement:

CalPERS 1997-2011 Experience Study Disability Mortality rates (Non-Industrial rates for Miscellaneous members and Industrial Disability rates for Safety members), adjusted by 90% for Males and Females, projected fully generational using Projection Scale MP-2017. [Prior assumption – CalPERS 1997-2011 Experience Study Disability Mortality rates (Non-Industrial rates for Miscellaneous members and Industrial Disability rates for Safety members), adjusted by 90% for Males and Females, projected fully generational using Projection Scale MP-2014 modified to converge to ultimate improvement rates in 2022.]

Sample life expectancies are shown below.

7/1/2017 Age	Miscellaneous				Safety			
	Service		Disability		Service		Disability	
	Male	Female	Male	Female	Male	Female	Male	Female
50	34.7	37.5	27.0	31.3	33.3	37.5	34.0	36.4
55	30.1	32.9	23.4	27.4	28.7	32.9	29.2	31.7
60	25.5	28.2	20.2	23.6	24.2	28.2	24.6	26.9
65	21.2	23.6	17.2	19.8	20.0	23.6	20.3	22.4
70	17.0	19.1	14.2	16.2	15.9	19.1	16.3	18.1
75	13.1	14.9	11.1	12.7	12.1	14.9	12.6	14.2
80	9.6	11.1	8.4	9.5	8.8	11.1	9.4	10.8
85	6.8	7.9	6.2	6.9	6.1	7.9	6.9	8.0