



**Marin/Sonoma  
Mosquito & Vector Control District**

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**B**ARTEL  
ASSOCIATES, LLC

**Retiree Healthcare Plan  
July 1, 2017 Actuarial Valuation**

June 2018

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June 27, 2018



## BACKGROUND

The District provides medical benefits through Marin County's medical plans, paying the 2-party premium for employees who retire directly from the District under the Marin County Employees' Retirement System (MCERA) before July 1, 2009 with 10 years District service. The District pays the retiree-only premium for employees hired on or after July 1, 2009 with 10 years District service. The District does not pay retiree medical premium for employees hired after July 30, 2014. These employees receive contributions into a Health Reimbursement Account while active and are not eligible to continue coverage under the District medical plans after retirement.

The District commenced pre-funding the plan during the 2014/15 fiscal year with contributions that would phase into the full Actuarially Determined Contribution (ADC) over nine years. The phase-in period has since shortened, and the District is now scheduled to begin contributing the full ADC beginning in the 2021/22 fiscal year. Funds are held in the CERBT under Asset Allocation Strategy #1 (57% Global Equity, 27% Fixed Income, 8% Real Estate Investment Trusts, 5% Treasury Inflation-Protected Securities, 3% Commodities).

Previous valuations were prepared to provide information under the Governmental Accounting Standards Board Statement No. 45, "Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions". GASBS 45 has been replaced by GASBS 75 effective for 2017/18 fiscal years. However, the District adopted GASBS 75 early and implemented it for the 2016/17 fiscal year. GASBS 75 delinks funding contributions and accounting, and requires recognition of a liability equal to the OPEB unfunded liability in the District's financial statements, rather than simply in the footnotes. It also requires a lower discount rate to value the liabilities if projected assets (only considering irrevocable trust assets) do not cover projected benefit payments.

## CHANGES SINCE THE LAST VALUATION

**Assumptions:** The following assumptions are updated.

- The discount rate was changed from rates phasing in from 5.19% to 7.00% over 5 years, to a single rate of 6.50%, reflecting lower returns anticipated by investment consultants.
- Mortality improvement scale was updated from Scale MP-2014 with convergence to 2022 to a more recent scale, MP-2016, developed by the Society of Actuaries.
- 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.
- Estimated liability due to Patient Protection and Affordable Care Act Cadillac Tax was added.

**Benefit Terms:** Employees hired after July 30, 2014 were considered ineligible to participate in the District's retiree medical plans after retirement, thus closing the retiree healthcare plan.

**Methods:** Taking into account the closed nature of the retiree healthcare plan, amortization payments towards the Unfunded Actuarial Accrued Liability (UAAL) were changed from level percent of pay to level dollar amortization. Under the level percent of pay method amortization payments are calculated to increase with projected payroll (at 3% per year under current assumptions). Under the level dollar method payments are calculated as constant dollar amounts and produce higher payments toward the UAAL in the early years of the amortization period, and lower payments in the later years.



**VALUATION RESULTS**

**Summary of Results:** The unfunded actuarial accrued liability (UAAL) as of June 30, 2015 was \$9.1 million. Had the District contributed the full pre-funding contribution and assumptions and methods remained the same, a June 30, 2017 UAAL of \$8.5 would have been expected. However, the actual UAAL was \$9.5 million. The \$1.0 million difference is primarily due to \$0.8 million in losses due to the phase-in of contributions and the increase in the UAAL due to assumption changes mentioned earlier which, net of favorable liability experience, resulted in a net loss of \$0.2 million.

In this report, it is assumed that the District will adopt a level \$ amortization policy, on a phase-in basis, reaching the full Actuarially Determined Contribution in the 2021/22 fiscal year. As in the past, we have also applied the additional criteria adopted by the Board that the resulting contributions to the trust must at least equal the trust contributions projected in the July 1, 2013 valuation. (Under the prior level % of pay method, the phase-in period would have ended in the 2019/2020 fiscal year.)

The current funded ratio (portion of actuarial accrued liability covered by assets) rose to 7% in this valuation. Under the level dollar amortization schedule, the funded ratio would be expected to increase to 39% over the next 7 years, as compared to 35% under the prior level % of pay method.

Projected contribution amounts if a contribution phase-in schedule to 2021/22 were used without the 2013 trust contribution minimum are shown in the Appendix, along with contribution amounts used for budgeting that were based on the July 1, 2015 valuation updated to include many of the assumption changes, but not the level dollar amortization method, incorporated in this valuation.

**Plan Assets:** To be considered Plan Assets for GASBS 75 purposes, funds must be set aside in a trust that cannot legally be used for any purpose other than to pay retiree healthcare benefits. The following table shows the asset reconciliation for 2015/16 and 2016/17 fiscal years (000's omitted):

	<u>2015/16</u>	<u>2016/17</u>
■ Market Value of Assets (Beginning of Year)	\$120	\$292
• Contributions	169	378
• Investment Income	3	57
• Benefit Payments	-	-
• Expense	<u>(0)</u>	<u>(1)</u>
■ Market Value of Assets (End of Year)	292	726



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**Funded Status:** The funded status of the plan is equal to the Actuarial Accrued Liability less Plan Assets. When assets equal liabilities, a plan is considered on track for funding. The following table summarizes the Plan's funded status for the current valuation and the prior valuation (000's omitted):

	<u>July 1, 2015 Valuation</u>	<u>July 1, 2017 Valuation</u>
	Select & Ultimate:	
■ Discount Rate	3.75% to 7% <sup>1</sup>	6.50%
■ Present Value of Benefits (PVB)		
• Actives	\$ 6,411	\$ 6,755
• Retirees	<u>4,831</u>	<u>5,324</u>
• Total	11,242	12,079
■ Actuarial Accrued Liability (AAL)		
• Actives	4,389	4,902
• Retirees	<u>4,831</u>	<u>5,324</u>
• Total	9,220	10,226
■ Market Value of Assets	<u>120</u>	<u>726</u>
■ Unfunded AAL	9,100	9,500
■ Funded Ratio (Assets/AAL)	1%	7%

**Actuarially Determined Contribution (ADC):** An agency's Actuarially Determined Contribution is simply the current employer Normal Cost plus an amortization of the unfunded liability. In other words, the ADC is the value of benefits actuarially considered earned during the year plus an amount to keep the plan on track for funding. For the current valuation, we calculated the 2018/19 ADC as the Normal Cost plus a 21-year amortization (as a level dollar amount) of the Unfunded AAL. Had we used level % of pay amortization, the 2018/19 UAAL amortization would have been \$655 rather than \$836, reducing the ADC to \$900. ADCs are shown as of the middle of the fiscal year (000's omitted).

	<u>July 1, 2015 Valuation</u>		<u>July 1, 2017 Valuation</u>	
	Select & Ultimate:			
■ Discount Rate	3.75% to 7%		6.50%	
■ Fiscal Year	<u>2016/17</u>	<u>2017/18</u>	<u>2018/19</u>	<u>2019/20</u>
■ Normal Cost	\$ 238	\$ 237	\$ 244	\$ 228
■ CERBT Administrative Expense	-	-	1	1
■ UAAL Amortization	<u>579</u>	<u>620</u>	<u>836</u>	<u>865</u>
■ Actuarially Determined Contribution (ADC)	817	857	1,081	1,094
■ Estimated Covered Payroll <sup>2</sup>	2,887	2,974	2,808	2,650
■ ADC as a % of estimated payroll	28.3%	28.8%	38.5%	41.3%

<sup>1</sup> See page 8 for more details. During the select period the discount rate increases each year until the ultimate rate is reached. The ultimate rate is then used for all future years.

<sup>2</sup> Payroll projected on a closed group basis for the 7/1/17 valuation.



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**Actuarial Gains/Losses:** The gain/loss analysis of Actuarial Accrued Liability for the 2 year period between valuation dates is shown below (000's omitted). Demographic and other experience over the 2-year period reduced the Actuarial Accrued Liability. In particular more retirees were eligible for Medicare than anticipated. In addition, a number of changes were made to the assumptions:

- Discount rate was lowered to 6.50%.
- Medical trend rates and Medicare Part B trend rates were reviewed and updated.
- A new scale for future mortality improvement was implemented.
- Additional liability due to Patient Protection and Affordable Care Act (PPACA) Cadillac Tax was included.

	<b>Actuarial Accrued Liability (Gain)/Loss</b>
■ <b>July 1, 2015 Actual Value</b>	\$ 9,220
■ <b>July 1, 2017 Expected Value</b>	10,025
• Demographic & other experience <sup>3</sup>	(776)
• Premium (gain)	(148)
• Mortality projection scale	(218)
• Medical trend rates	881
• Medicare Part B trend rates	(129)
• PPACA Cadillac Tax	153
• Discount rate	438
■ <b>July 1, 2017 Actual Value</b>	10,226

<sup>3</sup> \$0.4 million due to more than expected retirees being eligible for Medicare.



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**Projected Benefit Payments:** Following is a 10-year projection of benefit payments starting in 2017/18 (000's omitted):

<u>Year</u>	<u>Cash Payments</u>	<u>Implied Subsidy Payments</u>	<u>Total Benefit Payments</u>	<u>Year</u>	<u>Cash Payments</u>	<u>Implied Subsidy Payments</u>	<u>Total Benefit Payments</u>
2017/18	\$ 233	\$ 39	\$ 272	2022/23	\$ 448	\$ 105	\$ 553
2018/19	273	44	317	2023/24	476	104	580
2019/20	332	59	391	2024/25	514	116	630
2020/21	363	72	435	2025/26	549	119	668
2021/22	395	83	478	2026/27	588	122	710

**Contributions Projection**

The following table illustrates the estimated contribution amounts for the next 10 years (000's omitted):

<u>Year</u>	<u>Benefit Payments</u>	<u>Trust Contribution<sup>4</sup></u>	<u>Total Contribution</u>	<u>Normal Cost</u>	<u>UAAL Amortization</u>	<u>ADC</u>
2017/18	\$272	\$ 355	\$627	237	620	\$857
2018/19	317	449	766	245	836	1,081
2019/20	391	546	937	229	865	1,094
2020/21	435	627	1,062	225	879	1,104
2021/22	478	622	1,100	217	883	1,100
2022/23	553	523	1,076	193	883	1,076
2023/24	580	485	1,065	182	883	1,065
2024/25	630	422	1,052	169	883	1,052
2025/26	668	369	1,037	154	883	1,037
2026/27	710	312	1,022	139	883	1,022

The normal cost decreases as the number of covered employees decline. The UAAL amortization payment increases in the early years to make up for contributions less than the ADC, but becomes constant once the Total Contribution equals the ADC.

<sup>4</sup> Includes CERBT administrative expense.





## BASIC DEFINITIONS

**Present Value of Benefits (PVB):** When an actuary prepares an actuarial valuation, the first step is gathering participant data (including active employees and participants and beneficiaries in payment status) at the valuation date (for example July 1, 2017). Using this data and actuarial assumptions, future benefit payments are projected. (The assumptions predict, among other things, when people will retire, terminate, die or become disabled, as well as what salary increases, general (and healthcare) inflation and investment return might be). Those future benefit payments are discounted, using expected future investment return, back to the valuation date. This discounted present value is the plan's present value of benefits. It represents the amount the plan needs as of the valuation date to pay all future benefits – if all assumptions are met and no future contributions (employee or employer) are made. The District's July 1, 2017 retiree healthcare Present Value of Benefits is \$12.1 million using a 6.50% discount rate, with \$5.3 million of this for former employees who have already retired.

**Actuarial Accrued Liability (AAL):** This represents the portion of the present value of benefits that participants have earned (on an actuarial, not actual, basis) through the valuation date. The District's July 1, 2017 retiree healthcare Actuarial Accrued Liability is \$10.2 million using a 6.50% discount rate, with \$5.3 million of this for former employees who have already retired.

**Plan Assets:** This includes funds that have been segregated and restricted in a trust so they can only be used to pay plan benefits. The market value of the District's July 1, 2017 assets is \$726,000.

**Unfunded Actuarial Accrued Liability (UAAL):** This is the difference between the Actuarial Accrued Liability and Plan Assets. This represents the amount of the Actuarial Accrued Liability that must still be funded. As of July 1, 2017, the District has an Unfunded Actuarial Accrued Liability of \$9.5 million.

**Normal Cost (NC):** The Normal Cost represents the portion of the present value of benefits expected to be earned (on an actuarial, not actual, basis) in the coming year. The District's 2018/19 retiree healthcare Normal Cost as of the middle of the fiscal year is \$244,000 (8.7% of covered payroll) using a 6.50% discount rate.

**Actuarial Cost Method:** This determines the method in which benefits are actuarially earned (allocated) to each year of service. It has no effect on the Present Value of Benefits, but has significant effect on the Actuarial Accrued Liability and Normal Cost. The District's July 1, 2017 retiree healthcare valuation was prepared using the Entry Age Normal cost method. Under the Entry Age Normal cost method, the Plan's Normal Cost is developed as a level percent of payroll throughout the participant's working lifetime.

**Implied Subsidy:** An implied subsidy exists when premiums charged for employees subsidize retiree premiums. This occurs when premiums for retirees are not sufficient to pay anticipated claims.



**SUMMARY OF RETIREE HEALTHCARE BENEFITS**

<b>Benefit Summary</b>	
<p>■ Eligibility</p>	<p>■ Hired July 30, 2014 or earlier:</p> <ul style="list-style-type: none"> <li>● Retire directly from the District under Marin County Employees' Retirement Association (Service Retirement at Age 50 with 10 years MCERA service or Age 52 with 5 years MCERA service depending on Retirement Tier, or disability retirement)</li> <li>● 10 years of District service</li> </ul> <p>■ Hired after July 30, 2014:</p> <ul style="list-style-type: none"> <li>● Not eligible for District payment of retiree medical premiums or coverage under District's medical plans after retirement.</li> </ul>
<p>■ Medical Benefit</p>	<p>■ Hired July 30, 2014 or earlier:</p> <ul style="list-style-type: none"> <li>● District pays the full medical and Medicare B premiums for retirees</li> <li>● For retirees hired prior to July 1, 2009, the District also pays the premium for 1 dependent</li> </ul> <p>■ Hired after July 30, 2014:</p> <ul style="list-style-type: none"> <li>● No District contributions towards retiree medical premiums, and may not participate in District medical plans</li> <li>● Eligible for Health Reimbursement Account (HRA) contributions after 2 years of service with the District</li> </ul>
<p>■ Surviving Spouse Medical Benefit</p>	<p>■ Premium paid for those hired prior to July 1, 2009</p> <p>■ Same benefit continues to surviving spouse</p>
<p>■ Dental, Vision &amp; Life</p>	<p>■ None</p>
<p>■ Medical Plans</p>	<p>■ County of Marin Medical Plans</p>

**2017 Monthly Medical Premiums**  
**Actives**

Medical Plan	Non Medicare Eligible		
	Single	2-Party	Family
Kaiser Plan L	\$ 760.84	\$1,521.69	\$2,023.85
Anthem Blue Cross PPO	1,162.67	2,355.02	2,984.17

**Retirees**

Medical Plan	Non Medicare Eligible			Medicare Eligible		
	Single	2-Party	Family	Single	2-Party	Family
Kaiser Plan L	\$ 760.84	\$1,521.69	\$2,023.85	\$397.83	\$ 795.66	n/a
Anthem Blue Cross PPO	1,209.59	2,271.23	3,143.03	615.81	1,231.62	n/a

**ACTUARIAL METHODS AND ASSUMPTIONS**

**Actuarial Methods**

The actuarial cost method used for this valuation is the Entry Age Normal (“EAN”) cost method. Under the EAN cost method, the Normal Cost for each participant is determined as a level percent of payroll throughout the participant’s working career. The actuarial value of assets is market value as of the valuation date.

The July 1, 2017 Unfunded Actuarial Accrued Liability was amortized as a level dollar amount over a fixed 21-year period starting in 2018/19. Projected July 1, 2018 UAAL is \$9,735,000. 2018/19 UAAL payment is \$836,000.

**Actuarial Assumptions**

Actuarial assumptions are shown below. Where appropriate the demographic assumptions used by the Marin County Employees’ Retirement Association (MCERA) in their June 30, 2016 valuation have been used.

Actuarial Assumptions	July 1, 2015 Valuation	July 1, 2017 Valuation																				
<p>■ Discount Rate</p>	<ul style="list-style-type: none"> <li>● 3.75%, no prefunding</li> <li>● 7.00%, pre-funded through CalPERS CERBT Asset Allocation Strategy #1 (57% Global Equity, 27% Fixed Income, 8% Real Estate Investment Trusts, 5% Treasury Inflation-Protected Securities, 3% Commodities)</li> <li>● Select &amp; Ultimate rate with 9-year phase-in starting in 2014/15</li> </ul> <p style="text-align: center;"><u>Year</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 60%;">2013/14</td><td style="text-align: right;">3.75%</td></tr> <tr><td>2014/15</td><td style="text-align: right;">4.11%</td></tr> <tr><td>2015/16</td><td style="text-align: right;">4.47%</td></tr> <tr><td>2016/17</td><td style="text-align: right;">4.83%</td></tr> <tr><td>2017/18</td><td style="text-align: right;">5.19%</td></tr> <tr><td>2018/19</td><td style="text-align: right;">5.56%</td></tr> <tr><td>2019/20</td><td style="text-align: right;">5.92%</td></tr> <tr><td>2020/21</td><td style="text-align: right;">6.28%</td></tr> <tr><td>2021/22</td><td style="text-align: right;">6.64%</td></tr> <tr><td>2022/23+</td><td style="text-align: right;">7.00%</td></tr> </table>	2013/14	3.75%	2014/15	4.11%	2015/16	4.47%	2016/17	4.83%	2017/18	5.19%	2018/19	5.56%	2019/20	5.92%	2020/21	6.28%	2021/22	6.64%	2022/23+	7.00%	<ul style="list-style-type: none"> <li>● 6.50%, pre-funded through CalPERS CERBT Asset Allocation Strategy #1 (57% Global Equity, 27% Fixed Income, 8% Real Estate Investment Trusts, 5% Treasury Inflation-Protected Securities, 3% Commodities)</li> </ul>
2013/14	3.75%																					
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2019/20	5.92%																					
2020/21	6.28%																					
2021/22	6.64%																					
2022/23+	7.00%																					
<p>■ General Inflation Rate</p>	<ul style="list-style-type: none"> <li>● 2.75% per year</li> </ul>	<ul style="list-style-type: none"> <li>● Same</li> </ul>																				



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<b>Actuarial Assumptions</b>	<b>July 1, 2015 Valuation</b>	<b>July 1, 2017 Valuation</b>
<ul style="list-style-type: none"> <li>■ Aggregate Payroll Increases</li> </ul>	<ul style="list-style-type: none"> <li>● 3% per year</li> <li>● Used to amortize Unfunded AAL</li> </ul>	<ul style="list-style-type: none"> <li>● Same</li> </ul>
<ul style="list-style-type: none"> <li>■ Pay Merit and Longevity Increases</li> </ul>	<ul style="list-style-type: none"> <li>● MCERA 6/30/2014 Experience Study</li> </ul>	<ul style="list-style-type: none"> <li>● Same</li> </ul>
<ul style="list-style-type: none"> <li>■ Mortality, Termination</li> </ul>	<ul style="list-style-type: none"> <li>● MCERA 6/30/2014 Experience Study</li> <li>● In addition, Post-retirement mortality improvement projected fully generational using Scale MP-2014 with convergence to 2022</li> </ul>	<ul style="list-style-type: none"> <li>● MCERA 6/30/2014 Experience Study</li> <li>● In addition, Post-retirement mortality improvement projected fully generational using Scale MP-2016</li> </ul>
<ul style="list-style-type: none"> <li>■ Disability</li> </ul>	<ul style="list-style-type: none"> <li>● MCERA 6/30/2014 Experience Study</li> </ul>	<ul style="list-style-type: none"> <li>● Same</li> </ul>
<ul style="list-style-type: none"> <li>■ Service Retirement</li> </ul>	<ul style="list-style-type: none"> <li>● MCERA 6/30/2014 Experience Study</li> </ul>	<ul style="list-style-type: none"> <li>● Same</li> </ul>
<ul style="list-style-type: none"> <li>■ Participation at Retirement</li> </ul>	<ul style="list-style-type: none"> <li>● Hired 7/30/2014 or earlier: 100%</li> <li>● Hired after 7/30/2014: Assumed to be eligible for medical coverage through district plans, 65% assumed to participate</li> </ul>	<ul style="list-style-type: none"> <li>● Hired 7/30/2014 or earlier: 100%</li> <li>● Hired after 7/30/2014: Ineligible for medical coverage through district plans</li> </ul>



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<b>Actuarial Assumptions</b>	<b>July 1, 2015 Valuation</b>	<b>July 1, 2017 Valuation</b>																																																																											
<p>■ Medical Trend</p>	<p>● Increases from prior year:</p> <table border="1"> <thead> <tr> <th><u>Year</u></th> <th><u>All Plans</u></th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>Actual Premiums</td> </tr> <tr> <td>2016</td> <td>Actual Premiums</td> </tr> <tr> <td>2017</td> <td>6.50%</td> </tr> <tr> <td>2018</td> <td>6.00%</td> </tr> <tr> <td>2019</td> <td>5.50%</td> </tr> <tr> <td>2020</td> <td>5.25%</td> </tr> <tr> <td>2021</td> <td>5.00%</td> </tr> <tr> <td>2022+</td> <td>4.75%</td> </tr> </tbody> </table>	<u>Year</u>	<u>All Plans</u>	2015	Actual Premiums	2016	Actual Premiums	2017	6.50%	2018	6.00%	2019	5.50%	2020	5.25%	2021	5.00%	2022+	4.75%	<p>● Increases from prior year:</p> <table border="1"> <thead> <tr> <th><u>Year</u></th> <th><u>Non-Medicare</u></th> <th><u>Medicare</u></th> </tr> </thead> <tbody> <tr> <td>2017</td> <td colspan="2">Actual Premiums</td> </tr> <tr> <td>2018-20</td> <td>7.50%</td> <td>6.50%</td> </tr> <tr> <td>2021</td> <td>7.25%</td> <td>6.30%</td> </tr> <tr> <td>2022</td> <td>7.00%</td> <td>6.10%</td> </tr> <tr> <td>2023</td> <td>6.75%</td> <td>5.90%</td> </tr> <tr> <td>2024</td> <td>6.50%</td> <td>5.70%</td> </tr> <tr> <td>2025</td> <td>6.25%</td> <td>5.50%</td> </tr> <tr> <td>2026</td> <td>6.00%</td> <td>5.30%</td> </tr> <tr> <td>2027</td> <td>5.80%</td> <td>5.15%</td> </tr> <tr> <td>2028</td> <td>5.60%</td> <td>5.00%</td> </tr> <tr> <td>2029</td> <td>5.40%</td> <td>4.85%</td> </tr> <tr> <td>2030</td> <td>5.20%</td> <td>4.70%</td> </tr> <tr> <td>2031-35</td> <td>5.05%</td> <td>4.60%</td> </tr> <tr> <td>2036-45</td> <td>4.90%</td> <td>4.50%</td> </tr> <tr> <td>2046-55</td> <td>4.75%</td> <td>4.45%</td> </tr> <tr> <td>2056-65</td> <td>4.60%</td> <td>4.40%</td> </tr> <tr> <td>2066-75</td> <td>4.30%</td> <td>4.20%</td> </tr> <tr> <td>2076+</td> <td>4.00%</td> <td>4.00%</td> </tr> </tbody> </table>	<u>Year</u>	<u>Non-Medicare</u>	<u>Medicare</u>	2017	Actual Premiums		2018-20	7.50%	6.50%	2021	7.25%	6.30%	2022	7.00%	6.10%	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%
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2022+	4.75%																																																																												
<u>Year</u>	<u>Non-Medicare</u>	<u>Medicare</u>																																																																											
2017	Actual Premiums																																																																												
2018-20	7.50%	6.50%																																																																											
2021	7.25%	6.30%																																																																											
2022	7.00%	6.10%																																																																											
2023	6.75%	5.90%																																																																											
2024	6.50%	5.70%																																																																											
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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%																																																																											
<p>■ Medicare B Trend</p>	<p>● Increases from prior year:</p> <table border="1"> <thead> <tr> <th><u>Year</u></th> <th><u>Actual Premiums</u></th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>Actual Premiums</td> </tr> <tr> <td>2016</td> <td>Actual Premiums</td> </tr> <tr> <td>2017</td> <td>6.25%</td> </tr> <tr> <td>2018</td> <td>6.00%</td> </tr> <tr> <td>2019+</td> <td>Same as medical trend</td> </tr> </tbody> </table>	<u>Year</u>	<u>Actual Premiums</u>	2015	Actual Premiums	2016	Actual Premiums	2017	6.25%	2018	6.00%	2019+	Same as medical trend	<p>● Increases from prior year:</p> <table border="1"> <thead> <tr> <th><u>Year</u></th> <th><u>Actual Premiums<sup>5</sup></u></th> </tr> </thead> <tbody> <tr> <td>2017</td> <td>Actual Premiums<sup>5</sup></td> </tr> <tr> <td>2018</td> <td>0.00%</td> </tr> <tr> <td>2019</td> <td>0.00%</td> </tr> <tr> <td>2020</td> <td>3.70%</td> </tr> <tr> <td>2021</td> <td>4.40%</td> </tr> <tr> <td>2022</td> <td>5.10%</td> </tr> <tr> <td>2023+</td> <td>Same as Medicare Medical Trend above</td> </tr> </tbody> </table>	<u>Year</u>	<u>Actual Premiums<sup>5</sup></u>	2017	Actual Premiums <sup>5</sup>	2018	0.00%	2019	0.00%	2020	3.70%	2021	4.40%	2022	5.10%	2023+	Same as Medicare Medical Trend above																																															
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<p>■ Medicare Eligibility Rate for those hired before Medicare Contributions Required (4/1/1986)</p>	<p>● Current pre-Medicare retirees: 50% where unable to determine eligibility</p> <p>● Current employees: None hired before 4/1/1986</p>	<p>● Same</p>																																																																											
<p>■ Medical Plan at Retirement</p>	<p>● Same plan as current election</p>	<p>● Same</p>																																																																											
<p>■ Marital Status</p>	<p>● Based on current medical coverage election</p>	<p>● Same</p>																																																																											

<sup>5</sup> Provided by the District. Varies by individual.



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**July 1, 2017 Actuarial Valuation**  
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<b>Actuarial Assumptions</b>	<b>July 1, 2015 Valuation</b>	<b>July 1, 2017 Valuation</b>
<ul style="list-style-type: none"> <li>■ Spouse Participation</li> </ul>	<ul style="list-style-type: none"> <li>● 100%, if benefit paid by the District</li> <li>● 50%, if benefit not paid by the District</li> </ul>	<ul style="list-style-type: none"> <li>● Same</li> </ul>
<ul style="list-style-type: none"> <li>■ Surviving Spouse Participation</li> </ul>	<ul style="list-style-type: none"> <li>● 100%</li> </ul>	<ul style="list-style-type: none"> <li>● Same</li> </ul>
<ul style="list-style-type: none"> <li>■ Non-Spouse Dependent Participation</li> </ul>	<ul style="list-style-type: none"> <li>● 0%</li> </ul>	<ul style="list-style-type: none"> <li>● Same</li> </ul>
<ul style="list-style-type: none"> <li>■ Implied Subsidy</li> </ul>	<ul style="list-style-type: none"> <li>● Valued</li> </ul>	<ul style="list-style-type: none"> <li>● Same</li> </ul>
<ul style="list-style-type: none"> <li>■ Kaiser Senior Advantage Methodology</li> </ul>	<ul style="list-style-type: none"> <li>● Based on projected claims</li> </ul>	<ul style="list-style-type: none"> <li>● Same</li> </ul>
<ul style="list-style-type: none"> <li>■ Patient Protection and Affordable Care Act (PPACA) Cadillac Tax</li> </ul>	<ul style="list-style-type: none"> <li>● No Cadillac Tax included.</li> <li>● The County is assumed to adjust their plans so that they are not subject to the Cadillac Tax</li> </ul>	<ul style="list-style-type: none"> <li>● Assumed to increase employer costs by 2% of the cash benefit costs</li> </ul>

**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 Marin 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 2015 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.

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.

For Kaiser plans outside California, age-gender based claim costs were developed using the County’s Kaiser Plan L plans as a proxy. This assumption has negligible impact due to the relatively small proportion of enrollees outside California.

2015 claims developed under the model were then adjusted to reflect actual 2017 premiums.



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Age	2017 Age/Gender Claims Costs			
	Kaiser Plan L Non-Medicare		Kaiser Plan L Medicare	
	Male	Female	Male	Female
30	\$375	\$655	n/a	n/a
35	407	647	n/a	n/a
40	458	660	n/a	n/a
45	537	690	n/a	n/a
50	652	742	n/a	n/a
55	839	854	n/a	n/a
60	1,111	1,024	n/a	n/a
65	1,243	1,078	\$302	\$261
70	1,400	1,175	369	309
75	1,702	1,403	448	369
80	2,045	1,675	539	440
85	2,404	1,969	633	517

Age	2017 Age/Gender Claims Costs			
	Anthem Blue Cross PPO Non-Medicare		Anthem Blue Cross PPO Medicare	
	Male	Female	Male	Female
30	\$435	\$781	n/a	n/a
35	473	772	n/a	n/a
40	536	789	n/a	n/a
45	633	826	n/a	n/a
50	777	893	n/a	n/a
55	1,018	1,038	n/a	n/a
60	1,376	1,261	n/a	n/a
65	1,551	1,333	\$461	\$385
70	1,746	1,451	562	455
75	2,123	1,733	684	544
80	2,552	2,069	822	650
85	3,000	2,431	966	763





**SUMMARY OF PARTICIPANT DATA**

**Participant Statistics**

Statistic	July 1, 2015		July 1, 2017	
	Actives	Retirees	Actives	Retirees
■ Count	32	15	29	17
■ Average Age	50.1	65.3	51.8	66.8
■ Average Retirement Age				
• Service	n/a	57.2	n/a	57.7
• Disability	n/a	48.7	n/a	48.7
■ Average Service	12.9	n/a	15.1	n/a
■ Payroll				
• Total	\$ 2,803,000	n/a	\$ 2,749,000	n/a
• Average	\$ 87,605	n/a	\$ 94,783	n/a

**Participant Medical Coverage Elections**  
**July 1, 2017**

Medical Plan	Actives					
	EE Only	EE+ Spouse	EE+ Child(ren)	Family	Waived	Total
Kaiser Plan L	2	8	6	10	-	26
Anthem Blue Cross	2	-	-	-	-	2
Waived	-	-	-	-	1	1
Total	4	8	6	10	1	29

Medical Plan	Retirees					
	EE Only	EE+ Spouse	EE+ Child(ren)	Family	Waived	Total
Kaiser Plan L	5	7	-	-	-	12
Anthem Blue Cross	3	2	-	-	-	5
Total	8	9	-	-	-	17



**ACTUARIAL CERTIFICATION**

This report presents the Marin/Sonoma Mosquito Vector Control District Retiree Healthcare Plan (“Plan”) July 1, 2017 actuarial valuation. The purpose of this valuation is to:

- Determine the Plan’s July 1, 2017 Funded Status, and
- Calculate the 2018/19 and 2019/20 Actuarially Determined Contributions.

Information provided in this report may be useful to the District 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 District 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,



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Marilyn Oliver, FSA, MAAA, EA, FCA  
Vice President  
Bartel Associates, LLC  
June 27, 2018



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Catherine A Wandro, ASA, MAAA, FCA  
Assistant Vice President  
Bartel Associates, LLC  
June 27, 2018



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Tak Frazita, ASA, MAAA, EA  
Associate Actuary  
Bartel Associates, LLC  
June 27, 2018



**Marin/Sonoma Mosquito & Vector Control District Retiree Healthcare Plan**  
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**Appendix A**

**CONTRIBUTION PHASE-IN ILLUSTRATION**

**Contributions Projection**

The following tables illustrate the estimated contribution amounts through 2022/23 fiscal year (000's omitted).

(A) July 1, 2017 valuation with minimum of trust contribution based on July 1, 2013 valuation (UAAL amortized as level dollar):

<u>Year</u>	<u>Benefit Payments</u>	<u>Trust Contribution</u>	<u>Total Contribution</u>	<u>ADC</u>
2017/18	\$272	\$ 355	\$627	\$857
2018/19	317	449	766	1,081
2019/20	391	546	937	1,094
2020/21	435	627	1,062	1,104
<b>2021/22</b>	478	622	<b>1,100</b>	<b>1,100</b>
2022/23	553	523	1,076	1,076

(B) July 1, 2017 valuation with phase-in to 2021/22 of change in level dollar amortization and without July 1, 2013 minimum (UAAL amortized as level dollar):

<u>Year</u>	<u>Benefit Payments</u>	<u>Trust Contribution</u>	<u>Total Contribution</u>	<u>ADC</u>
2017/18	\$272	\$ 355	\$627	\$857
2018/19	317	449	766	1,081
2019/20	391	509	900	1,094
2020/21	435	580	1,015	1,108
<b>2021/22</b>	478	630	<b>1,108</b>	<b>1,108</b>
2022/23	553	530	1,083	1,083

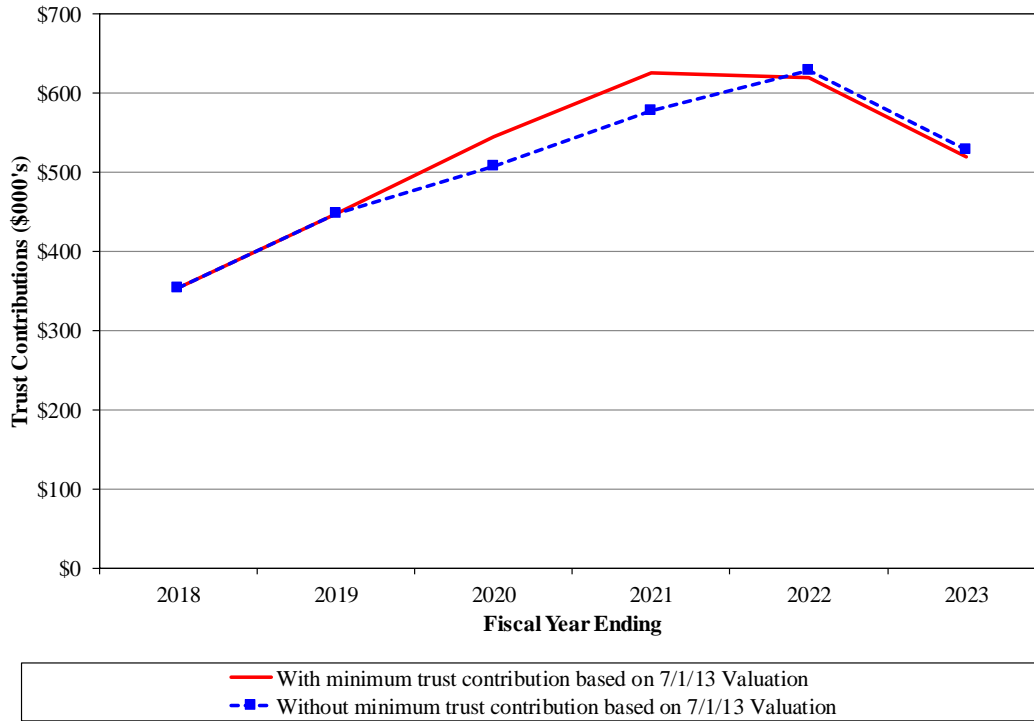
For comparison budgeted amounts based on 6.50% investment return projection provided on July 5, 2017 based on July 1, 2015 valuation (UAAL amortized as level percent of pay) are shown below.

<u>Year</u>	<u>Benefit Payments</u>	<u>Trust Contribution</u>	<u>Total Contribution</u>	<u>ADC</u>
2017/18	\$299	\$354	\$653	\$857
2018/19	342	449	791	938
<b>2019/20</b>	439	508	<b>947</b>	<b>947</b>
2020/21	483	482	965	965
2021/22	522	460	982	982
2022/23	599	385	984	984



**Marin/Sonoma Mosquito & Vector Control District Retiree Healthcare Plan  
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 Appendix A**

**Projected Trust Contributions**



**Projected Total Contributions**

