

**East Bay Municipal Utility District  
Employees' Retirement System – Health  
Insurance Benefit Valuation**

**Review of Contribution Rates and Funding Status  
as of June 30, 2018**

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*January 10, 2019*

*Ms. Sophia Skoda  
Director of Finance  
East Bay Municipal Utility District  
375 Eleventh Street  
Oakland, California 94607-4240*

*Dear Sophia:*

*We are pleased to submit our Health Insurance Benefit (HIB) Valuation as of June 30, 2018 for the prefunded \$450 (\$550 for a retiree with a spouse or EBMUD domestic partner) monthly health insurance subsidy. The Governmental Accounting Standards Board (GASB) requires employers, such as EBMUD, that pool health insurance premium rates for actives and retirees under age 65 to also calculate the liability associated with such pooled premiums for retirees under age 65 on an accrual basis. While that liability referred to as the implicit subsidy has to be disclosed, it is not required to be prefunded. The contribution rate developed in this report only includes the prefunding requirement for the \$450/\$550 benefit. The obligation required for financial disclosure purposes under GASB Statements No. 74 (plan reporting) and 75 (employer reporting) will be provided in separate reports.*

*This valuation is based on financial statements and census data furnished by East Bay Municipal Utility District Employees' Retirement System (EBMUDERS). The actuarial calculations were completed under the supervision of Andy Yeung, ASA, MAAA, Enrolled Actuary and Melissa A. Krumholz, FSA, MAAA. The undersigned are members of the American Academy of Actuaries and meet the qualification requirements to render the actuarial opinion contained herein.*

*Sincerely,*

*Segal Consulting, a Member of the Segal Group, Inc.*

By: *Andy Yeung*  
*Andy Yeung, ASA, MAAA, FCA, EA  
Vice President and Actuary*

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*VZP/*

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## **SECTION 1: Valuation Summary for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation**

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### **CONTRIBUTION RECOMMENDATIONS AND FUNDING STATUS**

- The results of this valuation reflect the changes in the actuarial assumptions (7.00% investment return, 2.75% inflation, etc.) adopted by the Board on September 20, 2018.
- The recommended employer contribution rate decreased from 5.21% of payroll in the June 30, 2017 valuation to 4.95% of payroll in the June 30, 2018 valuation. A reconciliation of the change in the employer's rate is provided in Chart 3. We have maintained the allocation of 0.09% of the member contribution to the HIB plan used in last year's valuation.
- The Unfunded Actuarial Accrued Liability (UAAL) component of the District's contribution rate recommended in the June 30, 2018 valuation has been calculated with the layered amortization approach as explained in Section 2A. In the aggregate, the total payment from all the UAAL layers was about the same as amortizing the entire UAAL over a period of 13 years.
- The funded ratio measured on a valuation value of assets basis increased from 26.7% at June 30, 2017 to 29.7% at June 30, 2018. The funded ratio if measured on a market value of assets basis increased from 27.3% to 30.4%. The UAAL decreased from \$86.21 million as of June 30, 2017 to \$85.09 million as of June 30, 2018 primarily as a result an investment gain on the actuarial value of assets.
- As indicated in Section 2, Subsection B (see Chart 1) of this report, the total unrecognized investment gain as of June 30, 2018 is \$38.9 million for the assets for the pension and HIB plans (note that in the previous valuation, this amount was a deferred gain of \$32.0 million). This investment gain will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years. This implies that earning the assumed rate of investment return of 7.00% per year (net of expenses) on a market value basis will produce investment gains on the actuarial value of assets after June 30, 2018.

The deferred gains of \$38.9 million represent 2.2% of the market value of assets as of June 30, 2018. Unless offset by future investment losses or other unfavorable experience, the recognition of the \$38.9 million market gain is expected to have an impact on the System's future funded percentage and contribution rate requirements. This potential impact may be illustrated as follows:

- If the HIB plan portion of the deferred gains were recognized immediately and entirely in the valuation value of assets, the funded percentage would increase from 29.7% to 30.4%.
- If the HIB plan portion of the deferred gains were recognized immediately and entirely in the valuation value of assets, the aggregate recommend employer rate would decrease from 4.95% to about 4.92% of payroll.
- This report assumes the HIB subsidy limit will remain at the current levels of \$450/\$550. Future increases in the HIB subsidy will increase the cost of the plan as a percent of pay.

**SECTION 1: Valuation Summary for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation**

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- The following tables summarizes the contribution rate recommendations for the employer and the employee:

	<b>June 30, 2018</b>		<b>June 30, 2017</b>	
<b>Employer Contribution Rates:</b> <i>(payable at the <u>end of each pay period</u>)</i>	<u>Total Rate</u>	Estimated <u>Annual Amount<sup>(1)</sup></u>	<u>Total Rate</u>	Estimated <u>Annual Amount<sup>(1)</sup></u>
1955/1980 Plan	5.03%	\$7,459,000	5.32%	\$7,886,000
2013 Tier	4.73%	\$2,592,000	4.92%	\$2,694,000
Combined	4.95%	\$10,051,000	5.21%	\$10,580,000
<b>Average Member Contribution Rates:</b> <i>(payable at the <u>end of each pay period</u>)</i>	<u>Total Rate</u>	Estimated <u>Annual Amount<sup>(1)</sup></u>	<u>Total Rate</u>	Estimated <u>Annual Amount<sup>(1)</sup></u>
1955/1980 Plan	0.09%	\$134,000	0.09%	\$134,000
2013 Tier	0.09%	\$49,000	0.09%	\$49,000
Combined	0.09%	\$183,000	0.09%	\$183,000

<sup>(1)</sup> Based on June 30, 2018 projected payroll of \$202,994,918, \$148,241,558 for 1955/1980 Plan members and \$54,753,360 for 2013 Tier members.

- The following table compares the valuation value of assets and liabilities for the Health Insurance Benefit as of June 30, 2018 and June 30, 2017:

	<b><u>June 30, 2018</u></b>	<b><u>June 30, 2017</u></b>
1. Valuation Value of Assets	\$35,946,843	\$31,451,690
2. Actuarial Accrued Liabilities:		
Current Recipients	\$85,730,029	\$82,229,442
Future Recipients	<u>\$35,306,855</u>	<u>\$35,429,619</u>
Total	\$121,036,884	\$117,659,061
3. Liabilities minus Valuation Value of Assets (2) – (1)	\$85,090,041	\$86,207,371
4. Funding Ratio (1) ÷ (2)	29.70%	26.73%

## SECTION 1: Valuation Summary for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation

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### Important Information about Actuarial Valuations

In order to prepare an actuarial valuation, Segal Consulting (“Segal”) relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by the System.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, termination, and retirement of each participant for each year. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The valuation is prepared at the request of the Board to assist the sponsors of the Fund in preparing items related to the HIB plan in their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If the System is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

## **SECTION 1: Valuation Summary for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation**

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- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.

As Segal has no discretionary authority with respect to the management or assets of the Retirement System, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Retirement System.

## SECTION 2: Valuation Results for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation

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### A. INTRODUCTION

Pursuant to Section 36 of the Ordinance, the Retirement Board is authorized to administer a Health Insurance Benefit (HIB) through an IRC Section 401(h) account. The HIB may be used for the payment of sickness, accident, hospitalization, and medical expenses as permitted under the IRC and as authorized by the Retirement Board. In particular, the Retirement Board has authorized the use of the HIB towards the payment of medical insurance premiums.

This report does not provide information required for disclosure under GASB Statements 74 and 75. Such information will be provided in separate reports.

In this valuation, we have used a layered amortization approach to determine the contribution rate to fund the Unfunded Actuarial Accrued Liability (UAAL). Plan changes, assumption changes, and experience gains/losses prior to July 1, 2011 are amortized over separate decreasing 30-year amortization periods. On or after July 1, 2011, plan changes are amortized over separate decreasing 15-year periods; assumption changes are amortized over separate decreasing 25-year periods; and experience gains/losses (including health assumption changes) are amortized over separate decreasing 20-year periods. The above payments would continue to be expressed as a level percent of a growing payroll base.

Even though it has been our intent to amortize any UAAL that resulted from the year-to-year change in the health assumptions over 20-year periods used for gains/losses, we have noticed as part of this year's review that the UAALs in some prior valuations related to changes in the spouse age difference and spousal coverage percentage were inadvertently amortized over 25-year periods used for other assumption changes reviewed at the quadrennial experience

studies and out-of-cycle review of economic assumptions.<sup>(1)</sup> We have used a 20-year period in this valuation and we will make sure that a 20-year period would be used for such changes going forward.

The cost of the HIB is funded by both employer and employee contributions. The contribution rates for the employer are calculated to provide for the ongoing normal cost, plus any amounts necessary to fund any shortfall between the valuation value of assets and the actuarial accrued liabilities.

A summary of the Health Insurance Benefit provisions is displayed in Section 3, Exhibit III.

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<sup>(1)</sup> If we had used the 20-year period instead to amortize the change in UAAL for these assumptions in the June 30, 2017 valuation, the annual contribution would have been lowered by about \$4,000.



## SECTION 2: Valuation Results for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation

### B. FINANCIAL INFORMATION

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

### CHART 1

#### Determination of Actuarial Value of Assets for Year Ended June 30, 2018 (for pension and HIB plans)

1. Market value of assets:					
(a) Pension plan					\$1,716,478,000
(b) HIB plan					<u>36,762,000</u>
(c) Total					\$1,753,240,000
2. Calculation of deferred return:	Actual Market	Expected Market	Investment	Deferred	Deferred
	<u>Return (net)</u>	<u>Return (net)</u>	<u>Gain / (Loss)</u>	<u>Factor</u>	<u>Return</u>
(a) Year ended June 30, 2013	\$218,575,000	\$87,289,839	\$131,285,161	0%	\$0
(b) Year ended June 30, 2014	58,937,000	101,068,500	(42,131,500)	20%	(8,426,300)
(c) Year ended June 30, 2015	12,894,000	105,466,650	(92,572,650)	40%	(37,029,060)
(d) Year ended June 30, 2016	200,254,000	102,606,314	97,647,686	60%	58,588,611
(e) Year ended June 30, 2017	148,798,000	116,619,368	32,178,632	80%	<u>25,742,906</u>
(f) Total unrecognized return*					\$38,876,157
3. Preliminary actuarial value: (1c) - (2f)					\$1,714,363,843
4. Adjustment to be within 30% corridor of market value					0
5. Final actuarial value of assets for pension and HIB plans: (3) + (4)					\$1,714,363,843
6. Actuarial value as a percentage of market value: (5) ÷ (1c)					97.8%
7. Valuation value of HIB plan assets: (1b) ÷ (1c) x (5)					\$35,946,843

\* The amount of deferred return that will be recognized in each subsequent valuation is as follows (amounts may not total exactly due to rounding):

6/30/2019	\$(975,567)
6/30/2020	7,450,733
6/30/2021	25,965,263
6/30/2022	<u>6,435,726</u>
Total	\$38,876,157

The chart shows the determination of the actuarial value of assets as of the valuation date.

## SECTION 2: Valuation Results for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation

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### C. FUNDING RATIO

The funding of the Health Insurance Benefit comes from the following sources:

1. The valuation value of HIB assets, which equals \$35,946,843 as of June 30, 2018;
2. Contributions from the employer; and
3. Contributions from the employees.

The following table provides the funding status of the Health Insurance Benefit as of June 30, 2018 and June 30, 2017:

	<u>June 30, 2018</u>	<u>June 30, 2017</u>
1. Valuation Value of Assets	35,946,843	\$31,451,690
2. Actuarial Accrued Liabilities:		
Current Recipients	85,730,029	\$82,229,442
Future Recipients	<u>\$35,306,855</u>	<u>\$35,429,619</u>
Total	\$121,036,884	\$117,659,061
3. Liabilities minus Valuation Value of Assets (2) – (1)	\$85,090,041	\$86,207,371
4. Funding Ratio (1) ÷ (2)	29.70%	26.73%

The contribution requirements are determined based on the Entry Age Funding Method. The excess of the actuarial accrued liability over assets (Item 3 in the above table) is amortized as a level percentage of payroll for current active members. The employer contribution rates are derived on the following page.

## SECTION 2: Valuation Results for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation

### D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the HIB is comprised of a net employer normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount is then divided by the projected payroll for active members to determine the contribution rate of 4.95% of payroll for this year's valuation compared to 5.21% of payroll recommended for last year's valuation.

### CHART 2

#### Recommended Contribution (% of payroll) Payable at End of Pay Period

*The chart compares this valuation's recommended contribution with the prior valuation.*

	June 30, 2018			June 30, 2017		
	1955/1980 Plan	2013 Tier	Combined	1955/1980 Plan	2013 Tier	Combined <sup>(1)</sup>
1. Total Normal Cost	1.14%	0.84%	1.06%	1.23%	0.83%	1.12%
2. Expected employee contributions	<u>-0.09%</u>	<u>-0.09%</u>	<u>-0.09%</u>	<u>-0.09%</u>	<u>-0.09%</u>	<u>-0.09%</u>
3. Employer normal cost: (1) + (2)	1.05%	0.75%	0.97%	1.14%	0.74%	1.03%
4. Unfunded/(overfunded) actuarial accrued liability	<u>3.98%</u>	<u>3.98%</u>	<u>3.98%</u>	<u>4.18%</u>	<u>4.18%</u>	<u>4.18%</u>
5. Total recommended contribution, end of each pay period	5.03%	4.73%	4.95%	5.32%	4.92%	5.21%

<sup>(1)</sup> Based on June 30, 2018 projected payroll of \$202,994,918, \$148,241,558 for 1955/1980 Plan members and \$54,753,360 for 2013 Tier members.

## SECTION 2: Valuation Results for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation

### E. RECONCILIATION OF RECOMMENDED EMPLOYER CONTRIBUTION

The chart below details the changes in the recommended employer contribution from the prior valuation to the current year's valuation.

CHART 3	Contribution Rate
Recommended Contribution Rate as of June 30, 2017 <sup>(1)</sup>	5.21%
Effect of actuarial experience during fiscal 2017/2018	
1. Effect of investment gain (after smoothing)	(0.04)%
2. Effect of updating average HIB subsidies for future retirees, spouse coverage assumption, and future trends	(0.03)%
3. Effect of higher than expected growth in total payroll	(0.32)%
4. Effect of one-year lag in implementing contribution rates	(0.01)%
5. Effect of other demographic experience gains/losses <sup>(2)</sup>	(0.04)%
6. Effect of changes in actuarial assumptions <sup>(3)</sup>	0.18%
Subtotal	(0.26)%
Recommended Contribution Rate as of June 30, 2018	4.95%

<sup>(1)</sup> The recommended contribution rate as of June 30, 2017 was adopted.

<sup>(2)</sup> Includes reflecting actual HIB subsidies on record for current retirees and beneficiaries.

<sup>(3)</sup> Includes refinement in the method used in the allocation of liability between normal cost and actuarial accrued liability.

**SECTION 2: Valuation Results for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation**

**F. TABLE OF AMORTIZATION BASES**

**CHART 4**

**Amortization Bases**

Type	Date Established	Initial Years	Initial Amount	Outstanding Balance	Years Remaining	Annual Payment*
Initial HIB Base	6/30/1997	30	\$15,829,000	\$15,098,075	10	\$1,926,695
Combined Base	6/30/1998	30	(195,000)	(195,046)	11	(22,781)
Combined Base	6/30/1999	30	6,467,754	6,717,153	12	725,272
Combined Base	6/30/2000	30	5,543,694	5,929,444	13	596,705
Combined Base	6/30/2001	30	794,097	868,765	14	82,046
Combined Base	6/30/2002	30	18,413,242	20,485,782	15	1,826,215
Combined Base	6/30/2003	30	6,628,441	7,462,124	16	631,074
Combined Base	6/30/2004	30	1,942,176	2,258,152	17	181,961
Combined Base	6/30/2005	30	8,019,739	8,935,868	18	688,692
Combined Base	6/30/2006	30	(1,769,952)	(2,015,717)	19	(149,087)
Experience Loss	6/30/2007	30	2,878,105	3,269,248	20	232,744
Combined Base	6/30/2008	30	12,125,015	13,700,846	21	941,363
Combined Base	6/30/2009	30	(1,240,538)	(1,391,129)	22	(92,470)
Combined Base	6/30/2010	30	463,026	514,192	23	33,137
Combined Base	6/30/2011	30	(60,151)	(66,068)	24	(4,136)
Experience Gain	6/30/2012	20	(1,251,821)	(1,195,790)	15	(106,599)
Assumption Changes	6/30/2012	25	3,374,832	3,488,375	20	248,344
Experience Gain	6/30/2013	20	(1,155,658)	(1,120,626)	16	(94,772)
Experience Loss	6/30/2014	20	21,287	20,864	17	1,681
Assumption Changes	6/30/2014	25	2,555,790	2,624,401	22	174,446
Experience Gain	6/30/2015	20	(810,969)	(802,215)	18	(61,827)
Assumption Changes	6/30/2016	25	2,459,846	2,499,535	24	156,484
Experience Gain	6/30/2016	20	(1,569,600)	(1,561,853)	19	(115,518)
Assumption Changes	6/30/2017	25	(403,768)	(407,345)	25	(24,818)
Experience Gain	6/30/2017	20	(664,072)	(663,317)	20	(47,223)
Experience Gain	6/30/2018	20	(2,295,237)	(2,295,237)	20	(157,702)
Assumption Changes	6/30/2018	25	2,931,560	<u>2,931,560</u>	25	<u>174,103</u>
<b>Total</b>				\$85,090,041		\$7,816,070

\* Beginning of year payment, reflecting level percentage of payroll

Note: The equivalent single amortization period is about 13 years.

**SECTION 3: Supporting Exhibits for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation**

**EXHIBIT I**

**Summary of Participant Data**

*This exhibit summarizes the participant data used for the current and prior valuations.*

	June 30, 2018	June 30, 2017
<b>Retirees</b>		
Number of retirees	1,400	1,353
Average age of retirees	69.8	69.5
<b>Surviving Spouses</b>		
Number	191	195
Average age	78.1	78.3
<b>Eligible for Deferred Benefit</b>		
Number	284	267
Average age	49.1	49.0
<b>Active Participants</b>		
Number	1,828	1,802
Average age	47.8	48.0
Average years of service	12.4	12.8
Average expected retirement age	62.2	62.2

### SECTION 3: Supporting Exhibits for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation

#### EXHIBIT II

##### Actuarial Assumptions/Methods

###### Rationale for Assumptions:

The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2012 through June 30, 2016 Actuarial Experience Study report dated November 10, 2016, the Review of Economic Actuarial Assumptions report dated September 12, 2018 and the Retiree Health assumptions letter dated January 8, 2019. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both tiers.

###### Demographic Assumptions:

###### Mortality Rates:

*After Service Retirement and  
All Beneficiaries*

Males

Headcount-weighted RP-2014 Healthy Annuitant Mortality Table projected 20 years with the two-dimensional improvement scale MP-2015, set forward two years for males

Females

Headcount-weighted RP-2014 Healthy Annuitant Mortality Table projected 20 years with the two-dimensional improvement scale MP-2015, set forward one year for females

*After Disability Retirement:*

Males

Headcount-weighted RP-2014 Healthy Annuitant Mortality Table projected 20 years with the two-dimensional improvement scale MP-2015, set forward nine years for males

Females

Headcount-weighted RP-2014 Healthy Annuitant Mortality Table projected 20 years with the two-dimensional improvement scale MP-2015, set forward nine years for females

*Pre-retirement*

Males

Headcount-weighted RP-2014 Employee Mortality Table projected 20 years with the two-dimensional improvement scale MP-2015, set forward two years for males

Females

Headcount-weighted RP-2014 Employee Mortality Table projected 20 years with the two-dimensional improvement scale MP-2015, set forward one year for females

The above mortality tables contain a margin slightly less than 20% for males and females combined, based on actual to expected deaths, as a provision to reflect future mortality improvement, based on a review of mortality experience as of the measurement date.

**SECTION 3: Supporting Exhibits for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation**

**Disability Rates:**

Age	Rate (%)		Age	Rate (%)	
	Male	Female		Male	Female
25	0.000	0.000	50	0.200	0.380
30	0.006	0.030	55	0.200	0.460
35	0.016	0.068	60	0.230	0.560
40	0.068	0.212	65	0.310	0.660
45	0.160	0.330			

*Note: Disability rates applicable after eight years of service.*

**Termination Rates:**

Service	Rate (%)	
	Ordinary Withdrawal*	
	Male	Female
0	2.25	3.00
1	1.00	2.50
2	0.75	2.25
3	0.50	2.00
4	0.25	1.25

  

Age	Rate (%)			
	Ordinary Withdrawal**		Vested Termination	
	Male	Female	Male	Female
25	0.230	0.640	6.40	7.00
30	0.205	0.540	5.40	6.40
35	0.180	0.440	3.50	4.80
40	0.155	0.340	2.20	3.40
45	0.130	0.240	1.70	2.40
50	0.105	0.140	0.96	1.40
55	0.080	0.085	0.48	0.70
60	0.055	0.060	0.34	0.50

\* *Applicable for members with less than five years of service.*

\*\* *Applicable after five years of service.*



**SECTION 3: Supporting Exhibits for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation**

**Retirement Rates:**

Age	Rate (%)			
	1955/1980 Plan		2013 Tier	
	Male	Female	Male	Female
52	0.00	0.00	2.00	1.00
53	0.00	0.00	2.00	1.00
54*	6.00	6.00	3.00	2.00
55	7.00	7.00	5.00	4.00
56	7.00	8.00	6.00	5.00
57	9.00	8.00	6.00	5.00
58	10.00	9.00	6.00	5.00
59	10.00	12.00	8.00	7.00
60	13.00	13.00	8.00	7.00
61	13.00	19.00	10.00	11.00
62	25.00	19.00	19.00	15.00
63	20.00	17.00	16.00	12.00
64	15.00	17.00	8.00	12.00
65	25.00	17.00	26.00	17.00
66	25.00	30.00	25.00	20.00
67	20.00	30.00	35.00	25.00
68	25.00	30.00	35.00	35.00
69	40.00	30.00	40.00	35.00
70	100.00	100.00	100.00	100.00

\* The rate for 1955/1980 Plan members age 54 with 30 or more years of service (i.e., eligible for unreduced benefits) is 50% for males and females.

### SECTION 3: Supporting Exhibits for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation

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<b>Retirement Age for Inactive Vested Participants:</b>	59
<b>Unknown Data for Participants:</b>	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
<b>Spouse/Domestic Partner Coverage:</b>	70% of males and 40% of females are assumed to elect spouse/domestic partner HIB coverage at retirement*. For current retirees, we relied upon the coverage indicated in the data.
<b>Age of Spouse/Domestic Partner:</b>	Spouses/domestic partners of male members are 3 years younger than the member. Spouses/domestic partners of female members are 2 years older than the member.
<b>Future Benefit Accruals:</b>	1.0 year of service per year.**

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#### **Economic Assumptions:**

<b>Net Investment Return:</b>	7.00%, net of investment and administrative expenses.
<b>Inflation:</b>	2.75%
<b>Across the Board Salary Increases:</b>	0.50%
<b>Payroll Growth:</b>	3.25%

\* Based on past practice, this is not necessarily the same as the percent married/domestic partnership assumption used in the pension valuation. Some of those members may not elect HIB spouse/domestic partner coverage upon retirement due to the additional cost to the member.

\*\* We have not applied the 0.036 years of additional service for each year of employment, applied in the Pension valuation to anticipate conversion of unused sick leave, based on our understanding of the HIB plan provisions.

**SECTION 3: Supporting Exhibits for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation**

**Salary Increases:**

<b>Annual Rate of Compensation Increase</b>	
Inflation: 2.75% per year; plus across the board salary increases of 0.50% per year; plus the following merit and promotional increases based on years of service:	
<b>Years of Service</b>	<b>Merit and Promotional Increases</b>
0	6.00%
1	5.00
2	4.00
3	3.00
4	2.00
5	1.00
6	0.80
7+	0.50

<b>Actuarial Value of Assets:</b>	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 30% of the market value.
<b>Actuarial Cost Method:</b>	Entry Age Cost Method. Entry Age is the age at the member's hire date. Actuarial Accrued Liability is calculated on an individual basis and is based on costs allocated as a level percentage of compensation. The Normal Cost is calculated on an individual basis where the Entry Age Normal Cost is calculated as the sum of the individual Normal Costs.

### SECTION 3: Supporting Exhibits for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation

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#### **Participation in Health Insurance Benefit Plan:**

95% of future eligible retirees are assumed to enroll in the HIB plan. All current pensioners and beneficiaries with a retiree health insurance cash subsidy were valued.

For deferred vested members, we assume an election equal to 50% of the future retiree election percent.

#### **Average HIB Subsidy:**

The enrollment percent of 75% is used to estimate the proportion of future retirees expected to participate in the EBMUD medical insurance plans (Kaiser, Blue Cross, Health Net). The difference between the 95% of all future retirees expected to be provided with an HIB subsidy and 75% (i.e. 20%) is what we used to anticipate future retirees who receive reimbursement for medical expenses through the HIB plan without being enrolled in an EBMUD medical insurance plan.

For current retirees, we have used the HIB benefit on record. For the expected 95% future retirees who received an HIB, we have assumed that:

- Retirees under age 65 with single HIB coverage will receive an average \$450 monthly benefit as of July 1, 2018,
- Retirees under age 65 with spouse/domestic partner HIB coverage will receive an average \$530 monthly benefit as of July 1, 2018,
- Retirees age 65 and over with single HIB coverage will receive an average \$434 monthly benefit as of July 1, 2018,
- Retirees age 65 and over with spouse/domestic partner HIB coverage will receive an average \$542 monthly benefit as of July 1, 2018.

The maximum monthly HIB subsidy is \$450 for a retiree with single coverage and \$550 for a retiree with spouse/domestic partner coverage

#### **Projected HIB Subsidy Increase:**

We have projected the HIB medical benefit to increase with medical trend until it reaches the limits described in the Summary of Plan Provisions. The benefit limits are projected to remain unchanged at the current levels of \$450/\$550.

### SECTION 3: Supporting Exhibits for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation

#### Health care cost trend rates

Trends to be applied in following fiscal years, to all health plans.

Trend is to be applied to premium for shown fiscal year to calculate next fiscal year's projected premium

First Fiscal Year (July 1, 2019 through June 30, 2020)

PLAN			Non-Medicare			Medicare		
			Kaiser	Blue Cross	Health Net <sup>(1)</sup>	Kaiser	Blue Cross	Health Net <sup>(2)</sup>
Trend to be applied to 2018-2019 Fiscal Year premium			6.60%	5.46%	-27.10%	7.69%	3.96%	0.51%
Fiscal Year			The fiscal year trend rates are based on the following calendar year trend rates:					
Trend			Calendar Year			Trend (applied to calculate following year premium)		
	Non-Medicare	Medicare	Non-Medicare			Medicare		
2019-2020 <sup>(3)</sup>	7.725%	7.025%	2019	7.00%		6.50%		
2020-2021	6.625%	6.125%	2020	6.75%		6.25%		
2021-2022	6.375%	5.875%	2021	6.50%		6.00%		
2022-2023	6.125%	5.625%	2022	6.25%		5.75%		
2023-2024	5.875%	5.375%	2023	6.00%		5.50%		
2024-2025	5.625%	5.125%	2024	5.75%		5.25%		
2025-2026	5.375%	4.875%	2025	5.50%		5.00%		
2026-2027	5.125%	4.625%	2026	5.25%		4.75%		
2027-2028	4.875%	4.500%	2027	5.00%		4.50%		
2028-2029	4.625%	4.500%	2028	4.75%		4.50%		
2029-2030 and later	4.500%	4.500%	2029 and later	4.50%		4.50%		

<sup>(1)</sup> Reflects change in medical carrier from Health Net HMO in 2018 to Sutter Health Plus in 2019.

<sup>(2)</sup> Reflects change in medical carrier from Health Net Seniority Plus in 2018 to Anthem Cal Care in 2019.

<sup>(3)</sup> The 2019-2020 assumed trends include additional estimated increases of 0.85% (non-Medicare) and 0.65% (Medicare) from the impact of the Health Insurance Tax (HIT).

**SECTION 3: Supporting Exhibits for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation**

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**Medical Carrier Election**

<b>Medical Carrier</b>	<b>Non-Medicare Election%</b>	<b>Medicare Election%</b>
Kaiser	72	63
Blue Cross	24	27
Health Net 2018 / Sutter Health Plus 2019 / Anthem Cal Care 2019 <sup>(1)(2)</sup>	4	10

<sup>(1)</sup> Reflects change in medical carrier from Health Net HMO in 2018 to Sutter Health Plus in 2019.

<sup>(2)</sup> Reflects change in medical carrier from Health Net Seniority Plus in 2018 to Anthem Cal Care in 2019.

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**Changes in Actuarial Assumptions**

- Medical trends were updated.
- The average HIB subsidy for future retirees was updated.
- Updated spouse/domestic partner coverage assumption.
- Updated economic assumptions (salary scale and discount rate).

**SECTION 3: Supporting Exhibits for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation**

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**EXHIBIT III**  
**Summary of Plan**

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**Plan Year:** July 1 through June 30

**Census Date:** June 30

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**Normal or Unreduced Retirement Eligibility:**

*Age and Service Requirement*

*1955/1980 Plan*

Age 65;  
Age 62 with 5 years of service;  
Age 59 with 20 years of service;  
Age 54 with 30 years of service;  
Other combinations of age and service between ages 54 and 59.

*2013 Tier*

Age 67 with 5 years of service (for unreduced benefit).

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**Early Retirement Eligibility:**

*Age and Service Requirement*

*1955/1980 Plan*

Age 54 with 5 years of service.

*2013 Tier*

Age 52 with 5 years of service.

**Covered Members:** All members with at least 5 years of service.

**Member Contribution Rate:** 0.09%

**Employer Contribution Rate:** 100% of total cost net of the 0.09% rate paid by the employee.

**SECTION 3: Supporting Exhibits for the East Bay Municipal Utility District Employees' Retirement System Health Insurance Benefit Valuation**

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**Benefit Formula:**

For members entering the System prior to July 1, 1996, a monthly allowance of up to \$450 (\$550 for married retirees and retirees with EBMUD domestic partners) is paid to retirees with at least five years of full-time service to reimburse member-paid medical expenses.

For members entering the System after June 30, 1996, the members shall receive the full monthly allowance multiplied by the applicable percentage below based on years of full-time service.

<u>Years of Full-time Service</u>	<u>Percent of HIB</u>
Less than 5	0%
5-9	25%
10-14	50%
15-19	75%
20 or more	100%

An eligible surviving spouse/domestic partner may receive a Health Insurance Benefit of up to \$450 per month.

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