East Bay Municipal Utility District Employees' Retirement System

Health Insurance Benefit Valuation

Review of Contribution Rates and Funding Status
as of June 30, 2021

Segal

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January 11, 2022

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, 2021 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. The health care trend and other related medical assumptions have been reviewed by Mary Kirby, FCA, 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

Andy Yeung

Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Actuary

Mary Kirby

Mary Kirby, FSA, MAAA, FCA
Senior Vice President and Consulting Actuary

JAC/mv

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Contribution Recommendations and Funding Status

- The adopted and recommended aggregate employer contribution rate from the June 30, 2020 valuation was 4.68%. The recommended aggregate employer rate is 4.66% based on the June 30, 2021 valuation. A reconciliation of the change in the employer's rate is provided in Section 2, Subsection E. We have maintained the allocation of 0.09% of the member contribution to the HIB plan used in last year's valuation.
- As shown in Section 2, Subsection E, the decrease in the recommended contribution rate is primarily due to the lower HIB subsidy projected net of some valuation program refinements we have made to this year's valuation to calculate the normal cost and higher than expected return on the valuation value of assets (after smoothing), offset somewhat by amortizing the prior year's UAAL over a smaller than expected payroll.
- The UAAL component of the District's contribution rate recommended in the June 30, 2021 valuation has been calculated with the layered amortization approach as explained in Section 2, Subsection A. In the aggregate, the total payment from all the UAAL layers was about the same as amortizing the entire UAAL over a period of about 10 years.
- The funded ratio measured on a valuation value of assets basis increased from 35.9% at June 30, 2020 to 42.4% at June 30, 2021. The funded ratio if measured on a market value of assets basis increased from 34.9% to 47.1%. The UAAL decreased from $80.85 million as of June 30, 2020 to $70.82 million as of June 30, 2021, primarily as a result of lower HIB subsidy projected and favorable investment experience.
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment gain as of June 30, 2021 is $231.0 million for the assets for the pension and HIB plans (note that in the previous valuation, this amount was a deferred loss of $56.7 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, 2021.

  The deferred gains of $231.0 million represent 9.9% of the market value of assets as of June 30, 2021. Unless offset by future investment losses or other unfavorable experience, the recognition of the $231.0 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 42.4% to 47.1%.

Section 1: Actuarial Valuation Summary

  - If the HIB plan portion of the deferred gains were recognized immediately and entirely in the valuation value of assets, the aggregate recommended employer rate would decrease from 4.66% to about 4.48% 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.
- As noted above this actuarial valuation is based on plan assets as of June 30, 2021. Due to the COVID-19 pandemic, market conditions have changed significantly since the onset of the Public Health Emergency. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the Plan Year. Also, this valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after June 30, 2021. While it is impossible to determine how the pandemic will continue to affect market conditions prior to next year's valuation, Segal is available to prepare projections of potential outcomes upon request.

Section 1: Actuarial Valuation Summary

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

	June 30, 2021		June 30, 2020	
Employer	**Total Rate**[1]	**Estimated Annual Amount**[2]	**Total Rate**[1]	**Estimated Annual Amount**[2]
1955/1980 Plan	4.78%	$6,354,000	4.79%	$6,364,000
2013 Tier	4.48%	4,104,000	4.52%	4,137,000
Combined	4.66%	$10,458,000	4.68%	$10,501,000
Average Member	**Total Rate**[1]	**Estimated Annual Amount**[2]	**Total Rate**[1]	**Estimated Annual Amount**[2]
1955/1980 Plan	0.09%	$120,000	0.09%	$120,000
2013 Tier	0.09%	82,000	0.09%	82,000
Combined	0.09%	$202,000	0.09%	$202,000

The following table compares the valuation value of assets and liabilities for the Health Insurance Benefit as of June 30, 2021 and June 30, 2020:

	June 30, 2021	June 30, 2020
1. Valuation Value of Assets	$52,209,459	$45,360,832
2. Actuarial Accrued Liabilities:		
Current Recipients	88,450,609	90,916,549
Future Recipients	34,576,547	35,297,028
Total	$123,027,156	$126,213,577
3. Liabilities minus Valuation Value of Assets (2) – (1)	$70,817,697	$80,852,745
4. Funding Ratio (1) ÷ (2)	42.44%	35.94%

[1] Payable at the **end** of each pay period.
[2] Based on June 30, 2021 projected annual payroll of:

1955/1980 Plan	$132,857,022
2013 Tier	91,534,531
Combined	$224,391,553

Important Information about Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of an OPEB plan. It is an estimated forecast – 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.

In order to prepare a valuation, 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 System. The System uses a “Actuarial Value of Assets” that differs from market value to gradually reflect year-to-year changes in the Market Value of Assets in determining the contribution requirements.
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, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to health care plan trend and enrollment. 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.
Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Section 1: Actuarial Valuation Summary

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. 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 Board 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.
- 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.
- Sections of this report include actuarial results that are not rounded, but that does not imply precision.
- Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in plan enrollment, emerging claims experience, health care trend, and investment losses, not just the current valuation results.
- While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.

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

Section 2: Actuarial Valuation Results

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; experience gains/losses and 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.

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 4, Exhibit II.

B. Determination of Actuarial Value of Assets

To minimize volatility in the calculation of the Actuarially Determined Contribution, the Board has approved an asset valuation method that gradually adjusts to market value over a five-year period. 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.

Determination of Actuarial Value of Assets for Year Ended June 30, 2021 (for pension and HIB plans)

1. Market value of assets:					
(a) Pension plan					**$2,270,763,000**
(b) HIB plan					**57,959,000**
(c) Total					**$2,328,722,000**
2. Calculation of unrecognized return:	**Actual Return**	**Expected Return**	**Investment Gain / (Loss)**	**Percent Deferred**	**Deferred Return**
(a) Year ended June 30, 2017	$200,254,000	$102,606,314	$97,647,686	0%	$0
(b) Year ended June 30, 2018	148,798,000	116,619,368	32,178,632	20%	6,435,726
(c) Year ended June 30, 2019	91,744,000	122,306,135	(30,562,135)	40%	(12,224,854)
(d) Year ended June 30, 2020	39,376,000	127,791,930	(88,415,930)	60%	(53,049,558)
(e) Year ended June 30, 2021	491,625,000	129,314,710	362,310,290	80%	289,848,232
(f) Total unrecognized return[1]					$231,009,546
3. Preliminary actuarial value: (1c) - (2f)					**$2,097,712,454**
4. Adjustment to be within 30% corridor of market value					0
5. Final actuarial value of assets for pension and HIB plans: (3) + (4)					**$2,097,712,454**
6. Actuarial value as a percentage of market value: (5) ÷ (1c)					90.1%
7. Valuation value of HIB plan assets: (1b) ÷ (1c) x (5)					**$52,209,459**

[1] Deferred return as of June 30, 2021 that will be recognized in each of the next four years (amounts may not total exactly due to rounding):

(a) Amount recognized on June 30, 2022	$55,102,171
(b) Amount recognized on June 30, 2023	48,666,445
(c) Amount recognized on June 30, 2024	54,778,872
(d) Amount recognized on June 30, 2025	72,462,058
(e) Total unrecognized return as of June 30, 2021	$231,009,546

C. Funding Ratio

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

1. The valuation value of HIB assets, which equals $52,209,459 as of June 30, 2021;
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, 2021 and June 30, 2020:

		June 30, 2021	June 30, 2020
1.	Valuation Value of Assets	$52,209,459	$45,360,832
2.	Actuarial Accrued Liabilities:		
	Current Recipients	88,450,609	90,916,549
	Future Recipients	34,576,547	35,297,028
	Total	$123,027,156	$126,213,577
3.	Liabilities minus Valuation Value of Assets (2) – (1)	$70,817,697	$80,852,745
4.	Funding Ratio (1) ÷ (2)	42.44%	35.94%

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.

D. Recommended Contribution

The amount of annual contribution required to find 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 4.66% of payroll for this year's valuation compared to 4.68% of payroll recommended for last year's valuation.

Recommended Contribution (% of Payroll) Payable at End of Pay Period

	June 30, 2021			June 30, 2020		
	1955/1980 Plan	2013 Tier	Combined[1]	1955/1980 Plan	2013 Tier	Combined[1]
1. Total Normal Cost	1.14%	0.84%	1.02%	1.06%	0.79%	0.95%
2. Expected employee contributions	0.09%	0.09%	0.09%	0.09%	0.09%	0.09%
3. Employer normal cost: (1) - (2)	**1.05%**	**0.75%**	**0.93%**	**0.97%**	**0.70%**	**0.86%**
4. Unfunded actuarial accrued liability	3.73%	3.73%	3.73%	3.82%	3.82%	3.82%
5 Total recommended contribution, end of each pay period	**4.78%**	**4.48%**	**4.66%**	**4.79%**	**4.52%**	**4.68%**

[1] Based on June 30, 2021 projected annual payroll of:

1955/1980 Plan	$132,857,022
2013 Tier	91,534,531
Combined	$224,391,553

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.

	Contribution Rate
Average Recommended Employer Contribution Rate as of June 30, 2020	**4.68%**
Effect of actuarial experience during fiscal 2020/2021	
1. Effect of investment gain (after smoothing)	(0.04)%
2. Effect of lower than expected growth in total payroll	0.15%
3. Effect of one-year lag in implementing contribution rates	(0.01)%
4. Effect of lower than expected HIB subsidy net of some valuation program refinements to calculate normal cost	(0.12)%
Total change	(0.02)%
Average Recommended Employer Contribution Rate as of June 30, 2021	**4.66%**

F. Table of Amortization Bases

Type	Date Established	Initial Years	Initial Amount	Outstanding Balance	Years Remaining	Annual Payment[1]
Initial HIB Base	6/30/1997	30	$15,829,000	$11,660,199	6	$2,120,720
Combined Base	6/30/1998	30	(195,000)	(158,116)	7	(25,076)
Combined Base	6/30/1999	30	6,467,754	5,655,658	8	798,309
Combined Base	6/30/2000	30	5,543,694	5,146,814	9	656,795
Combined Base	6/30/2001	30	794,097	773,187	10	90,308
Combined Base	6/30/2002	30	18,413,242	18,616,859	11	2,010,121
Combined Base	6/30/2003	30	6,628,441	6,902,478	12	694,626
Combined Base	6/30/2004	30	1,942,176	2,120,765	13	200,285
Combined Base	6/30/2005	30	8,019,739	8,503,459	14	758,045
Combined Base	6/30/2006	30	(1,769,952)	(1,940,404)	15	(164,101)
Experience Loss	6/30/2007	30	2,878,105	3,179,233	16	256,182
Combined Base	6/30/2008	30	12,125,015	13,444,327	17	1,036,161
Combined Base	6/30/2009	30	(1,240,538)	(1,376,125)	18	(101,781)
Combined Base	6/30/2010	30	463,026	512,343	19	36,475
Combined Base	6/30/2011	30	(60,151)	(66,262)	20	(4,553)
Experience Gain	6/30/2012	20	(1,251,821)	(1,086,697)	11	(117,334)
Assumption Changes	6/30/2012	25	3,374,832	3,392,327	16	273,353
Experience Gain	6/30/2013	20	(1,155,658)	(1,036,581)	12	(104,316)
Experience Loss	6/30/2014	20	21,287	19,595	13	1,851
Assumption Changes	6/30/2014	25	2,555,790	2,596,099	18	192,013
Experience Gain	6/30/2015	20	(810,969)	(763,397)	14	(68,053)
Assumption Changes	6/30/2016	25	2,459,846	2,506,859	20	172,242
Experience Gain	6/30/2016	20	(1,569,600)	(1,503,497)	15	(127,151)
Assumption Changes	6/30/2017	25	(403,768)	(410,966)	21	(27,317)
Experience Gain	6/30/2017	20	(664,072)	(645,053)	16	(51,978)

[1] Beginning of year payment, reflecting level percentage of payroll.

F. Table of Amortization Bases (continued)

Type	Date Established	Initial Years	Initial Amount	Outstanding Balance	Years Remaining	Annual Payment[1]
Experience Gain	6/30/2018	20	$(2,295,237)	$(2,252,263)	17	$(173,583)
Assumption Changes	6/30/2018	25	2,931,560	2,973,598	22	191,636
Experience Gain	6/30/2019	20	(504,689)	(499,809)	18	(36,967)
Assumption Changes	6/30/2020	25	1,899,682	1,911,941	24	116,487
Experience Gain	6/30/2020	20	(542,065)	(540,158)	19	(38,455)
Experience Gain	6/30/2021	20	(6,818,716)	(6,818,716)	20	(468,503)
Total				**$70,817,697**		**$8,096,441**

Note: The equivalent single amortization period is about 10 years.

[1] Beginning of year payment, reflecting level percentage of payroll.

Section 3: Supplemental Information

Exhibit A: Summary of Participant Data

	June 30, 2021	June 30, 2020
Retired Members		
Number	1,532	1,508
Average age	70.5	70.2
Surviving Spouses		
Number	203	193
Average age	78.3	78.7
Eligible for Deferred Benefit		
Number[1]	327	312
Average age	48.9	49.0
Active Participants		
Number	1,896	1,903
Average age	47.4	47.3
Average years of service	11.6	11.7
Average expected retirement age	62.3	62.2

[1] Includes inactive members due a refund of Pension Plan member contributions.

Section 4: Actuarial Valuation Basis

Exhibit I: Actuarial Assumptions and 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, 2016 through June 30, 2020 Actuarial Experience Study report dated November 12, 2020 and the Retiree Health assumptions letter dated January 6, 2022. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both tiers.
<u>Economic Assumptions</u>	
Net Investment Return:	7.00%, net of investment and administrative expenses.
Inflation:	2.75%
Across the Board Salary Increases:	0.50%
Payroll Growth:	Inflation of 2.75% per year plus real “across the board” salary increases of 0.50% per year, used to amortize the Unfunded Actuarial Accrued Liability as a level percentage of payroll.
Salary Increases:	The annual rate of compensation Increase includes inflation at 2.75%, plus “across the board” salary increases of 0.50% per year, plus the following merit and promotional increases:

Years of Service	Rate (%)
Less than 1	6.25
1 – 2	6.00
2 – 3	5.00
3 – 4	3.75
4 – 5	2.50
5 – 6	1.50
6 – 7	1.25
7 – 8	1.25
8 – 9	1.00
9 – 10	1.00
10 & Over	0.75

Demographic Assumptions	
Mortality:	*Post-Retirement Healthy Members:* • Pub-2010 General Healthy Retiree Headcount-Weighted Above-Median Mortality Tables with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2020. *Post-Retirement Disabled Members:* • Pub-2010 Non-Safety Disabled Retiree Headcount-Weighted Mortality Tables with rates increased by 5% for males, projected generationally with the two-dimensional mortality improvement scale MP-2020. *Pre-Retirement:* • Pub-2010 General Employee Headcount-Weighted Above-Median Mortality Tables, projected generationally with the two-dimensional mortality improvement scale MP-2020. *Beneficiaries:* • Pub-2010 Contingent Survivor Headcount-Weighted Above-Median Mortality Tables with rates increased by 5% for males and females, projected generationally with the two-dimensional mortality improvement scale MP-2020 The Pub-2010 mortality tables and adjustments as shown above reasonably reflect the mortality experience as of the measurement date. These mortality tables were adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.
Disability Incidence:	See table below. Note: Disability rates are applicable after eight years of service.

Age	Rate (%)
25	0.000
30	0.006
35	0.022
40	0.084
45	0.150
50	0.170
55	0.182
60	0.220
65	0.288

Termination:

Less Than Five Years of Service

Years of Service	Rate (%)
Less than 1	6.75
1 – 2	4.25
2 – 3	4.00
3 – 4	3.50
4 – 5	2.50

Five or More Years of Service

Years of Service	Rate (%)
25	2.34
30	2.24
35	2.14
40	2.04
45	1.85
50	1.60
55	1.35
60	1.10

No termination is assumed after a member is eligible for retirement (as long as a retirement rate is present).

Retirement:

	Rate (%)		
	1955/1980 Plan		
Age	Unreduced Pension[1]	Reduced Pension	**2013 Tier**
52	0.00	0.00	1.75
53	0.00	0.00	1.75
54	55.00	7.00	2.75
55	16.00	7.00	4.75
56	16.00	7.00	5.75
57	16.00	7.00	5.75
58	16.00	7.00	5.75
59	16.00	7.00	7.75
60	16.00	7.00	7.75
61	16.00	12.00	10.25
62	16.00	N/A[2]	18.00
63	16.00	N/A	15.00
64	16.00	N/A	9.00
65	16.00	N/A	23.75
66	27.00	N/A	23.75
67	27.00	N/A	32.50
68	27.00	N/A	35.00
69	27.00	N/A	38.75
70 & Over	100.00	N/A	100.00

[1] For example, a 1955/1980 Plan member age 54 with 30 or more years of service would be eligible for an unreduced pension benefit.

[2] For ages 62 and over, all 1955/1980 Plan members who are eligible for retirement are eligible for an unreduced pension benefit.

Section 4: Actuarial Valuation Basis

Unknown Data for Participants:	Same as those exhibited by members are similar known characteristics. If not specified, members are assumed to be male.
Retirement Age for Inactive Vested Participants:	59
Percent Married/Domestic Partnership:	For all active and inactive vested participants: 70% of male members and 35% of female members are assumed to elect spouse/domestic partner HIB coverage at retirement. For retired participants: Actual data included in census. 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.
Age of Spouse/Domestic Partner:	For all active and inactive vested participants, male participants are assumed to have a female spouse who is 3 years younger than the participant and female participants are assumed to have a male spouse who is 2 years older than the participant.
Future Benefit Accruals:	1.0 year of service per year. We have not applied the 0.038 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.
<u>Actuarial Funding Policy</u>	
Actuarial Cost Method:	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.
Actuarial Value of Assets:	Market value of assets (MVA) less unrecognized returns in each of the last five years. Unrecognized returns are equal to the difference between the actual market returns and the expected returns on the market value, and are recognized over a five-year period. The actuarial value of assets (AVA) is limited by a 30% corridor; the AVA cannot be less than 70% of MVA, nor greater than 130% of MVA.
Valuation Value of Assets:	The proportion of the Actuarial Value of Assets allocated to the HIB plan, based on the proportion of the MVA attributable to the HIB plan.
<u>Retiree Health Assumptions</u>	
Participation:	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.

Section 4: Actuarial Valuation Basis

Average HIB Subsidy:	The enrollment percent of 70% is used to estimate the proportion of future retirees expected to participate in the EBMUD medical insurance plans (Kaiser, Blue Cross, Sutter Health Plus<65, and UHC Medicare Advantage PPO 65+). The difference between the 95% of all future retirees expected to be provided with an HIB subsidy and 70% (i.e. 25%) 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. The HIB subsidy may be used to defray any other allowed health benefits (e.g., Medicare Part B premiums, dental costs) in addition to medical premiums. For current retirees, we have used the HIB on record. For the expected 95% future retirees who received an HIB, we have assumed, based on the average HIB on record for current retirees at 100% vesting level, that: • Retirees at 100% vesting level under age 65 with single HIB coverage will receive an average $439 monthly benefit as of July 1, 2021, • Retirees at 100% vesting level under age 65 with spouse HIB coverage will receive an average $525 monthly benefit as of July 1, 2021, • Retirees at 100% vesting level age 65 and over with single HIB coverage will receive an average $445 monthly benefit as of July 1, 2021, and • Retirees at 100% vesting level age 65 and over with spouse HIB coverage will receive an average $544 monthly benefit as of July 1, 2021. The maximum (100% vesting level) 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 4: Actuarial Valuation Basis

Health Care Cost Trend Rates:

Trend is to be applied to premium for shown fiscal year to calculate next fiscal year's projected premium.
First Fiscal Year (July 1, 2021 through June 30, 2022)

Plan	Rate (%) Anthem Blue Cross PPO, Under Age 65	Sutter Health Plus HMO, Under Age 65	Kaiser HMO, Under Age 65	Kaiser Senior Advantage	Anthem Blue Cross Medicare Supplement / UHC Medicare Advantage PPO[1]	Anthem Cal Care HMO / UHC Medicare Advantage PPO[2]
Trend to be applied to 2021-2022 Fiscal Year premium	1.09	7.05	5.45	-0.60	-15.81	-22.22

The fiscal year trend rates are based on the following calendar year trend rates:

Fiscal Year	Approximate Trend Rate (%) Non-Medicare	Approximate Trend Rate (%) Medicare	Calendar Year	Trend Rate Applied to Calculate Following Year Premium (%) Non-Medicare	Trend Rate Applied to Calculate Following Year Premium (%) Medicare
2022-2023	7.375	6.375	2022	7.50	6.50
2023-2024	7.125	6.125	2023	7.25	6.25
2024-2025	6.875	5.875	2024	7.00	6.00
2025-2026	6.625	5.625	2025	6.75	5.75
2026-2027	6.375	5.375	2026	6.50	5.50
2027-2028	6.125	5.125	2027	6.25	5.25
2028-2029	5.875	4.875	2028	6.00	5.00
2029-2030	5.625	4.625	2029	5.75	4.75
2030-2031	5.375	4.500	2030	5.50	4.50
2031-2032	5.125	4.500	2031	5.25	4.50
2032-2033	4.875	4.500	2032	5.00	4.50
2033-2034	4.625	4.500	2033	4.75	4.50
2034 and later	4.500	4.500	2034	4.50	4.50

[1] Anthem Blue Cross Medicare Supplement for first 6 months of 2021-2022, then UHC Medicare Advantage PPO thereafter.
[2] Anthem Cal Care HMO for first 6 months of 2021-2022, then UHC Medicare Advantage PPO thereafter.

Section 4: Actuarial Valuation Basis

Medical Carrier Election	(see table below)

Medical Carrier	Non-Medicare Election (%)	Medicare Election (%)
Kaiser	70	67
Blue Cross[1]	25	27
Sutter Health Plus < 65 / Anthem Cal Care 65+[1]	5	6

[1] Participants enrolled in Blue Cross Medicare Supplement Plan and Anthem Cal Care HMO are assumed to enroll in the UHC Medicare Advantage PPO plan in 2022.

Assumption Changes Since Prior Valuation:

The following assumptions were changed since the prior valuation:

- The average HIB subsidy for future retirees was updated.
- The future trend for projecting medical costs below the subsidy limit were updated.

Exhibit II: Summary of Plan

This exhibit summarizes the major benefit provisions as included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all benefit provisions

Normal or Unreduced Retirement Eligibility:	
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)
Early Retirement Eligibility:	
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 4: Actuarial Valuation Basis

Benefit Formula:	For members entering 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.

Years of Full-time Service	Percent of HIB
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.
Changes in Plan Provisions:	None since the prior valuation.

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