GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

STATE OF HAWAII RETIREE HEALTH CARE PLAN

ACTUARIAL VALUATION REPORT

AS OF JULY 1, 2015

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January 26, 2016

Mr. Wesley Machida
Director of Finance
State of Hawaii
250 South Hotel Street
Honolulu, Hawaii 96813

Dear Mr. Machida:

Submitted in this report are the results of an actuarial valuation for the State of Hawaii of the liabilities associated with the employer financed retiree health benefits provided through the Hawaii Employer-Union Health Benefits Trust Fund (EUTF). The date of the valuation was July 1, 2015. The annual required contribution has been calculated for the fiscal year beginning July 1, 2016.

The actuarial calculations were prepared to determine the annual required employer contribution to satisfy the requirements of ACT 268, SLH 2013 ("ACT 268") and to comply with the requirements of Statements 43 and 45 of the Governmental Accounting Standards Board (GASB). The calculations reported herein have been made on a basis consistent with our understanding of these accounting standards. Determinations of the liability associated with the benefits described in this report for purposes other than satisfying the Trust's financial reporting requirements may produce significantly different results. This report may be provided to parties other than the State of Hawaii only in its entirety and only with the permission of the State of Hawaii.

The valuation was based upon information, furnished by the EUTF and the Employees' Retirement System of the State of Hawaii (ERS), concerning retiree health benefits, members' census and financial data. Data was checked for internal consistency but was not otherwise audited. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.

The signing actuaries are independent of the plan sponsor. To the best of our knowledge, this report is complete and accurate and was made in accordance with generally recognized actuarial methods. Joseph Newton and Mehdi Riazi are members of the American Academy of Actuaries and meet the Qualification Standards of the Academy of Actuaries to render the actuarial opinion herein.

Respectfully submitted,

Joseph P. Newton, FSA, FCA, EA Senior Consultant	Lewis Ward Consultant	Mehdi Riazi, FSA, EA Consultant

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SECTION A

OVERVIEW

The following table summarizes the key results of the July 1, 2015 Other Post-Employment Benefits (OPEB) valuation for the State of Hawaii.

Executive Summary		
	July 1, 2015	**July 1, 2013**
Membership		
Number of		
-Retirees	33,938	32,519
-Deferred Inactives	5,281	5,369
-Active Employees	51,097	50,768
Covered Payroll*	$ 3,093,493,000	$ 2,926,092,000
Actuarial Summary		
Discount Rate	7.0%	7.0%
Payroll Growth Rate	3.5%	3.5%
Present Value of Benefits	$ 11,082,903,000	$ 10,295,875,000
Actuarial Accrued Liability	$ 9,287,120,000	$ 8,529,546,000
Market Value of Assets	$ 221,194,000	$ 0
Unfunded Actuarial Accrued Liability	$ 9,065,926,000	$ 8,529,546,000
Funded Ratio	2.4%	0.0%
ARC as % of Payroll	23.2%	23.7%
Fiscal Year Ending	June 30, 2017	June 30, 2015
ACT 268 Minimum Contribution Summary		
Fiscal Year Ending	June 30, 2017	June 30, 2015
Annual Required Contribution (ARC)	$ 744,248,000	$ 717,689,000
Projected pay-as-you-go benefits	$ (360,606,000)	$ (302,738,000)
OPEB Trust Contribution to Fully Fund ARC	$ 383,642,000	$ 414,951,000
ACT 268 Phase-In	60%	20%
Minimum OPEB Trust Contribution	**$ 230,185,000**	**$ 82,990,000**
Fiscal Year Ending	June 30, 2018	June 30, 2016
Annual Required Contribution (ARC)	$ 770,297,000	$ 742,808,000
Projected pay-as-you-go benefits	$ (398,968,000)	$ (333,770,000)
OPEB Trust Contribution to Fully Fund ARC	$ 371,329,000	$ 409,038,000
ACT 268 Phase-In	80%	40%
Minimum OPEB Trust Contribution	**$ 297,063,000**	**$ 163,615,000**

*The Covered Payroll for the June 30, 2015 valuation is equal to the projected payroll for FYE June 30, 2016.

This report provides information for the State of Hawaii to comply with accounting standards issued by the Government Accounting Standards Board (GASB), Statements No. 43 and 45, relating to Other Post-Employment Benefits (OPEB). These benefits primarily include medical, prescription drug, dental, vision, and life insurance benefits provided to eligible retirees. Any other OPEB benefits offered to the employees of the Employer are outside the scope of this report. It is important to note that GASB Statement No. 75 will replace Statement No. 45 starting in fiscal year ending June 30, 2018. A separate actuarial report will provide the information needed to comply with GASB No. 75 for fiscal year ending June 30, 2018.

This report also provides the minimum OPEB trust contribution required to satisfy the funding requirements of ACT 268. The Annual Required Contributions (ARC) developed in this report are for the fiscal years ending June 30, 2017 and June 30, 2018. Subsequently, each biennial valuation will be applicable for the two fiscal years which begin one year after the valuation date. The one year lag between the valuation date and the applicable fiscal years will allow appropriate time for budgeting and management of the appropriations.

Section C provides a 30-year projection of liability and contribution information useful to management for the operation of the OPEB program.

Agent Multiple-Employer Plans under GASB 43 & 45

Under GASB 43, an **Agent multiple-employer plan** is defined as, "An aggregation of single-employer plans, with pooled administrative and investment functions. Separate accounts are maintained for each employer so that the employer's contributions provide benefits only for the employees of that employer. A separate actuarial valuation is performed for each individual employer's plan to determine the employer's periodic contribution rate and other information for the individual plan, based on the benefit formula selected by the employer and the individual plan's proportionate share of the pooled assets. The results of the individual valuations are aggregated at the administrative level."

In a cost-sharing arrangement, such as the Employees' Retirement System of the State of Hawaii (ERS), the plan's assets can be used to pay the benefits for the retirees of any participating employer. By contrast, the assets of the participating government employers in an *agent multiple-employer plan* are pooled for investment purposes but separate accounts are maintained for each individual employer. As such, the State of Hawaii's assets at EUTF can only be used to pay benefits for the State of Hawaii's retirees. The State of Hawaii's unfunded actuarial accrued liability and the annual required contribution for retiree medical benefits will be determined based solely on the State of Hawaii's membership and assets.

ACT 268

Pursuant to ACT 268, the EUTF created a separate trust fund (The OPEB Trust), as of June 30, 2013, specifically for pre-funding the participating employers OPEB benefits. Previous pre-funding contributions and related net investment earnings were transferred to each employer's respective OPEB Trust account. As required by ACT 268, contributions to the OPEB Trust shall be irrevocable and the assets of the fund shall be dedicated exclusively to providing health and other benefits to retirees and their eligible dependents. The assets in the OPEB Trust shall not be subject to appropriation for any other purpose and shall not be subject to claims by creditors of the employers or the board or plan administrator.

ACT 268 establishes an "annual required contribution" (ARC) equal to (a) the normal cost, plus (b) an amortization payment to fund the unfunded actuarial accrued liability over a period of thirty years. Moreover, employers are required to contribute 100% of the ARC starting in fiscal year ending June 30, 2019. ACT 268 establishes mechanisms for funding the ARC if the employer fails to do so. Full funding of the ARC is phased-in according to the following schedule:

Fiscal Year	ARC Phase-in
2014-2015	20%
2015-2016	40%
2016-2017	60%
2017-2018	80%
2018-2019	100%

For financial reporting purposes, the discount rate used in the valuation should equal the estimated long-term investment yield on the investments that are expected to be used to finance the payment of benefits. Based on the provisions of GASB statements 43 and 45, the investments expected to be used to finance the payment of benefits are "the plan assets for plans for which the funding policy is to contribute consistently an amount at least equal to the ARC". ACT 268 has established a funding policy which ensures the ARC will be consistently met. As a result, the liabilities in this valuation have been calculated using a 7.0% assumed long-term investment return on the OPEB Trust's assets. The 7.0% return assumption is based on the OPEB Trust's investment policy and we believe the assumption is consistent with the target asset allocation.

Actuarial Assumptions and Methods

In any long-term Actuarial Valuation (such as for Pensions and OPEB), certain demographic, economic and behavioral assumptions are made concerning the population, the investment discount rates and the benefits provided. These Actuarial Assumptions form the basis for the actuarial model which is used to project the future population, the future benefits provided, and the future contributions collected. Then the investment discount rate assumption is used to discount those projected net OPEB benefits to a present value. This and other related present values are used to calculate the Annual Required Contribution.

Actuarial Assumptions and Methods (Continued)

This Actuarial Valuation of the State of Hawaii's OPEB is similar to the Actuarial Valuations performed for the State's pension plans. In fact, the demographic assumptions used in this OPEB Valuation were identical to those used in the June 30, 2013 ERS valuation. Because the assumptions were based upon the most recent actuarial experience study adopted by the Trustees of ERS, they were deemed reasonable for this OPEB Valuation and were employed in this report.

There are some economic and behavioral assumptions which are unique to medical benefits. It would be instructive to review the Section of this Report titled, "Actuarial Assumptions and Methods" for a detailed discussion and disclosure of all the relevant Actuarial Assumptions used in this Valuation.

GASB Statement No. 45 provides an acceptable range of flexibility to governmental employers (and their actuaries) in the use of various actuarial cost methods. The Entry Age Normal Cost Method was used in this valuation. This is both an acceptable and reasonable cost method. Furthermore, the Normal Costs and the amortization of any Unfunded Actuarial Accrued Liabilities were calculated using a level percent of pay.

Summary of Changes

The actuarial accrued liability increased from $8.53 billion to $9.29 billion. The increase was less than expected mainly because of the favorable claims experience compared to the prior trend assumption and the revised Part B trend assumption. The impact of the large increase to the BMC in 2016 was mitigated by the 2015 BMC experience (BMC remained level in 2015) and the revised Part B trend assumption for 2017 and 2018.

The market value of assets increased from zero to $221.2 million, primarily due to employer contributions. The funded ratio of the plan, increased from 0.0% to 2.4%. The unfunded actuarial accrued liability increased from $8.53 billion to $9.07 billion.

SECTION B

VALUATION RESULTS

Liabilities

The liabilities shown in the following exhibit were calculated as of July 1, 2015.

	Medical/ Prescription Drug/ Dental/Vision/Life	Medicare Part B*	Total
Present Value of Benefits (PVB)			
Retirees	$ 3,851,803,000	$ 801,832,000	$ 4,653,635,000
Deferred Inactives	518,046,000	142,895,000	660,941,000
Actives	4,657,517,000	1,110,810,000	5,768,327,000
Total PVB	$ 9,027,366,000	$ 2,055,537,000	$ 11,082,903,000
Actuarial Accrued Liability (AAL)			
Retirees	$ 3,851,803,000	$ 801,832,000	$ 4,653,635,000
Deferred Inactives	518,046,000	142,895,000	660,941,000
Actives	3,272,516,000	700,028,000	3,972,544,000
Total AAL	$ 7,642,365,000	$ 1,644,755,000	$ 9,287,120,000
Normal Cost	$ 170,991,000	$ 53,056,000	$ 224,047,000

* The plan reimburses retirees for their Medicare Part B premiums.

Plan Assets

Statement of Changes in Plan Net Assets

	Year Ended June 30, 2015	Year Ended June 30, 2014
Assets available at beginning of year	$ 100,002,466	$ -
Adjustment*	0	0
	100,002,466	-
Contributions	117,400,000	100,000,000
Net Investment Earnings	3,791,346	2,466
Increase in net assets	121,191,346	100,002,466
Assets available at end of year	$ 221,193,812	$ 100,002,466
Investment Return, net of expenses	2.39%	0.00%

* Change due to difference between asset value used for prior valuation and audited asset value reported the following year.

Projected Benefits

The table below provides the State of Hawaii's estimated benefit payments (pay-as-you-go) for the 15 years following the valuation date.

Projected Benefit Payments			
Year Ending June 30,	Medical/ Prescription Drug/ Dental/Vision/Life	Medicare Part B*	Total
2016	$ 269,190,000	$ 50,800,000	$ 319,990,000
2017	302,044,000	58,562,000	360,606,000
2018	331,774,000	67,194,000	398,968,000
2019	363,439,000	72,700,000	436,139,000
2020	397,539,000	78,938,000	476,477,000
2021	433,448,000	85,422,000	518,870,000
2022	471,424,000	92,041,000	563,465,000
2023	505,443,000	98,880,000	604,323,000
2024	535,008,000	106,025,000	641,033,000
2025	565,157,000	113,436,000	678,593,000
2026	595,379,000	121,147,000	716,526,000
2027	626,646,000	129,207,000	755,853,000
2028	658,945,000	137,602,000	796,547,000
2029	691,548,000	146,286,000	837,834,000
2030	723,067,000	155,460,000	878,527,000

* The plan reimburses retirees for their Medicare Part B premiums.

Determination of the ARC

Amortization of the Unfunded Actuarial Accrued Liability (UAAL)

Date Established	Projected UAAL Balance 7/1/2015	Projected UAAL Balance 7/1/2016	Period Remaining 7/1/2016	Amortization Payment FYE17
7/1/2013	$ 9,259,567,000	$ 9,384,114,000	28	$ 523,927,000
7/1/2015	$ (193,641,000)	$ (207,196,000)	28	$ (11,568,000)
Total	$ 9,065,926,000	$ 9,176,918,000	28.0	$ 512,359,000

The unfunded liability is amortized over a period of 30 years, ending June 30, 2043. Closed bases will be established at each valuation for new unfunded liabilities. If experience produces a loss during a valuation cycle, the new base will be amortized over a period of 30 years. If experience produces a gain during a valuation cycle, the new base will be netted against the most recent loss base which has not yet been completely offset by gains. For example, the 2015 gain is amortized over the same 28 year period as the 2013 loss. This process substantially reduces volatility as bases are fully amortized. For fiscal year ending June 30, 2017, the Equivalent Single Amortization Period equals 28.0. For fiscal year ending June 30, 2018, the Equivalent Single Amortization Period equals 27.0.

Annual Required Contribution
Entry Age Normal Cost Actuarial Method

	FYE 6/30/2017	FYE 6/30/2018
Discount Rate Used	7.0%	7.0%
Normal Cost	$ 231,889,000	$ 240,005,000
Amortization of UAAL	$ 512,359,000	$ 530,292,000
Total ARC	$ 744,248,000	$ 770,297,000
% Payroll	23.2%	23.2%
Factor for NOO Adjustment	17.9	17.5

The Annual Required Contribution is equal to the Normal Cost, the present value of benefits earned by your current employees in the respective fiscal year, plus an amortization payment to fund the liability attributable to past service. Consistent with the payroll growth assumption, the ARC for fiscal year ending June 30, 2018 is 3.5% higher than the ARC for fiscal year ending June 30, 2017.

GASB Accounting Schedules

Schedule of Funding Progress

Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (b) - (a)	Funded Ratio (a)/(b)	Covered Payroll (c)	Unfunded AAL as a % of Covered Payroll (b - a)/(c)
July 1, 2007	$ 0	$ 8,788,892,000	$ 8,788,892,000	0.0%	$ 2,633,810,000	333.7%
July 1, 2009	$ 0	$ 14,007,480,000	$ 14,007,480,000	0.0%	$ 2,610,348,000	536.6%
July 1, 2011	$ 0	$ 13,566,836,000	$ 13,566,836,000	0.0%	$ 2,592,961,000	523.2%
July 1, 2013	$ 0	$ 8,529,546,000	$ 8,529,546,000	0.0%	$ 2,926,092,000	291.5%
July 1, 2015	$ 221,194,000	$ 9,287,120,000	$ 9,065,926,000	2.4%	$ 3,093,493,000	293.1%

The July 1, 2007, 2009, and 2011 AAL was calculated based on a 4.0% discount rate. The July, 1 2013 and July 1, 2015 AAL was calculated using a 7.0% discount rate.

Schedule of Employer Contributions - Including University of Hawaii

Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation/(Asset)
6/30/2013	$ 1,010,169,000	27.5%	$ 3,935,218,000
6/30/2014	$ 757,648,000	50.2%	$ 4,312,668,000
6/30/2015	$ 788,952,000	49.9%	$ 4,708,220,000

OPEB Cost for Fiscal Year Ending June 30, 2016

Net OPEB Obligation (NOO) - as of June 30, 2015	$ 4,708,220,000
Annual Required Contribution (ARC) for FYE16	$ 742,808,000
Interest on OPEB Obligation (NOO * 7.0%)	$ 329,575,000
Adjustment to ARC (NOO / 18.3)	$ (257,280,000)
Annual OPEB Cost for FYE16	$ 815,103,000

The adjustment to the ARC is based on an amortization factor corresponding to the Single Equivalent Amortization Period.

Actuarial Methods and Assumptions

Actuarial Methods and Assumptions

Inflation rate	3.00%
Investment rate of return	7.00%
Actuarial Cost method	Entry Age Normal
Amortization method	Level percent, closed
Amortization Period	28.0
Payroll Growth	3.50%
Asset Method	Market
Healthcare cost trend rate	
PPO*	Initial rate of 9.00%, declining to a rate of 5.00% after 8 years
HMO*	Initial rate of 7.00%, declining to a rate of 5.00% after 8 years
Part B	Initial rate of 3.00% for the first two years, 5.00% afterwards
Dental	4.00%
Vision	3.00%
Life Insurance	0.00%

* Includes prescription drug assumptions.

Trend Sensitivity

Actuarial valuations are based on the cost of benefits to be paid in the future. The payments considered will range from one month in the future to decades from the valuation date. When the benefits being valued are health benefits, a key factor is the future cost of the medical benefits being promised. The future benefits are projected using the current cost of the health care benefits and assumed future health care cost increases. The final cost of providing retiree health care benefits will depend upon how the charges for health care services actually increase in the future.

In order to demonstrate how the cost of these benefits can vary depending upon future health care cost increases, we have performed additional valuations based upon alternative health care cost increase assumptions. The following table shows the impact of a 1.0% increase or decrease in the assumed healthcare trend rates.

	-1% Trend	Baseline	+1% Trend
Present Value of Benefits (PVB)	$ 9,453,544,502	$ 11,082,903,000	$ 13,175,745,178
Funded Status			
Actuarial Accrued Liability	$ 8,077,750,000	$ 9,287,120,000	$ 10,797,977,000
Assets	221,194,000	221,194,000	221,194,000
Unfunded AAL	7,856,556,000	9,065,926,000	10,576,783,000
ARC for FYE17	$ 624,239,000	$ 744,248,000	$ 896,049,000

SECTION C

PROJECTIONS

Summary of Funding Projections

The projections in this section provide estimated future liabilities, assets, contributions and benefit payments based on census data as of July 1, 2015 and the actuarial assumptions/methods described in Section G of this report. The projections provide insight into how the employer's contributions and the financial condition of the plan are assumed to change over time. Key items from the projections are:

- Prefunding the OPEB liability will require a significant commitment. However, the long-term savings will also be significant. Once the plan is well funded, the percentage of the benefits paid for by investment earnings is typically over 50%.
- The Annual Required Contribution (ARC) is developed using a level percentage of payroll amortization. Said another way, the ARC is assumed to grow at the same rate as payroll, 3.50%.
- The ARC is expected to remain level, as a percentage of payroll, until the initial amortization base is paid off.
- The first scenario assumes the employer will contribute the full ARC starting in fiscal year ending June 30, 2016. The second scenario assumes the employer will phase into the full ARC by paying the minimum amount required by ACT 268.
- Under both scenarios, the prefunding period is 29 years. For this purpose, the prefunding period is defined as the number of years before the benefit payments exceed the employer's contributions. When the prefunding period ends, the employer's annual cost for financing the retiree medical benefit becomes less than what it would have been under a pay-as-you-go approach.
- The additional cost of prefunding and the projected assets at the end of the prefunding period are shown at the top of each projection.
- Upcoming changes to the accounting rules will require employers to recognize a balance sheet liability similar to the Unfunded Actuarial Accrued Liability (UAAL). Currently, the balance sheet liability is equal to the Net OPEB Obligation.
- The projections include liabilities for future employees. However, the total number of active employees is assumed to remain level.

Please bear in mind that, depending on plan experience, actual results could deviate significantly from the actuarial projections. The key assumptions in the projections are:

1. the assumed 7.00% rate of investment return
2. future medical inflation
3. that the benefits and cost sharing provisions will remain the same as they currently are

Scenario 1 - Full Funding of the ARC (Starting in FYE15)

Over the next 29 years, the additional cost of prefunding is $9.9 billion.

However, at the end of the prefunding period, the State of Hawaii's projected assets are $32.0 billion.

Fiscal Year Ending	Payroll	Actuarial Accrued Liability (AAL)	Beginning of Year Assets	Unfunded AAL (UAAL)	Funded Ratio	Annual Required Contribution	Contribution as % of Payroll	Benefit Payment Total	Benefits as % of Payroll	Additional Cost of Prefunding	Net OPEB Obligation*
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
2016	$ 3,093,493,000	$ 9,287,120,000	$ 221,194,000	$ 9,065,926,000	2.4%	$ 742,808,000	24.0%	$ 319,990,000	10.3%	$ 422,818,000	$4,708,220,000
2017	3,177,798,000	9,823,390,000	674,294,000	9,149,096,000	6.9%	744,248,000	23.4%	360,606,000	11.3%	383,642,000	4,780,515,000
2018	3,271,815,000	10,369,889,000	1,118,564,000	9,251,325,000	10.8%	770,297,000	23.5%	398,968,000	12.2%	371,329,000	N/A
2019	3,372,075,000	10,922,408,000	1,581,189,000	9,341,219,000	14.5%	785,534,000	23.3%	436,139,000	12.9%	349,395,000	N/A
2020	3,478,173,000	11,483,105,000	2,053,496,000	9,429,609,000	17.9%	812,870,000	23.4%	476,477,000	13.7%	336,393,000	N/A
2021	3,590,258,000	12,049,940,000	2,545,408,000	9,504,532,000	21.1%	841,457,000	23.4%	518,870,000	14.5%	322,587,000	N/A
2022	3,707,005,000	12,621,828,000	3,057,464,000	9,564,364,000	24.2%	871,434,000	23.5%	563,465,000	15.2%	307,969,000	N/A
2023	3,829,857,000	13,197,490,000	3,590,234,000	9,607,256,000	27.2%	902,778,000	23.6%	604,323,000	15.8%	298,455,000	N/A
2024	3,958,292,000	13,781,704,000	4,150,451,000	9,631,253,000	30.1%	935,515,000	23.6%	641,033,000	16.2%	294,482,000	N/A
2025	4,091,742,000	14,380,075,000	4,745,771,000	9,634,304,000	33.0%	969,662,000	23.7%	678,593,000	16.6%	291,069,000	N/A
2026	4,230,319,000	14,993,378,000	5,379,231,000	9,614,147,000	35.9%	1,005,385,000	23.8%	716,526,000	16.9%	288,859,000	N/A
2027	4,374,247,000	15,623,050,000	6,054,746,000	9,568,304,000	38.8%	1,042,613,000	23.8%	755,853,000	17.3%	286,760,000	N/A
2028	4,523,289,000	16,269,590,000	6,775,375,000	9,494,215,000	41.6%	1,081,551,000	23.9%	796,547,000	17.6%	285,004,000	N/A
2029	4,677,453,000	16,933,589,000	7,544,631,000	9,388,958,000	44.6%	1,122,275,000	24.0%	837,834,000	17.9%	284,441,000	N/A
2030	4,837,682,000	17,616,563,000	8,367,152,000	9,249,411,000	47.5%	1,164,778,000	24.1%	878,527,000	18.2%	286,251,000	N/A
2031	5,003,795,000	18,321,338,000	9,249,122,000	9,072,216,000	50.5%	1,209,162,000	24.2%	919,743,000	18.4%	289,419,000	N/A
2032	5,176,619,000	19,049,884,000	10,196,109,000	8,853,775,000	53.5%	1,255,447,000	24.3%	962,088,000	18.6%	293,359,000	N/A
2033	5,355,329,000	19,803,698,000	11,213,464,000	8,590,234,000	56.6%	1,303,706,000	24.3%	1,005,683,000	18.8%	298,023,000	N/A
2034	5,539,923,000	20,584,276,000	12,306,860,000	8,277,416,000	59.8%	1,354,130,000	24.4%	1,048,991,000	18.9%	305,139,000	N/A
2035	5,731,302,000	21,394,903,000	13,484,159,000	7,910,744,000	63.0%	1,406,772,000	24.5%	1,091,605,000	19.0%	315,167,000	N/A
2036	5,929,077,000	22,239,578,000	14,754,248,000	7,485,330,000	66.3%	1,461,513,000	24.6%	1,133,640,000	19.1%	327,873,000	N/A
2037	6,132,696,000	23,122,404,000	16,126,394,000	6,996,010,000	69.7%	1,518,704,000	24.8%	1,176,677,000	19.2%	342,027,000	N/A
2038	6,343,397,000	24,046,289,000	17,609,239,000	6,437,050,000	73.2%	1,578,318,000	24.9%	1,220,935,000	19.2%	357,383,000	N/A
2039	6,561,745,000	25,014,097,000	19,211,777,000	5,802,320,000	76.8%	1,640,489,000	25.0%	1,265,859,000	19.3%	374,630,000	N/A
2040	6,787,700,000	26,029,563,000	20,944,344,000	5,085,219,000	80.5%	1,705,286,000	25.1%	1,312,025,000	19.3%	393,261,000	N/A
2041	7,021,741,000	27,096,110,000	22,817,473,000	4,278,637,000	84.2%	1,772,857,000	25.2%	1,359,449,000	19.4%	413,408,000	N/A
2042	7,264,122,000	28,217,477,000	24,842,573,000	3,374,904,000	88.0%	1,843,217,000	25.4%	1,407,533,000	19.4%	435,684,000	N/A
2043	7,515,097,000	29,398,273,000	27,032,486,000	2,365,787,000	92.0%	1,916,584,000	25.5%	1,456,948,000	19.4%	459,636,000	N/A
2044	7,775,218,000	30,642,881,000	29,400,483,000	1,242,398,000	95.9%	1,993,155,000	25.6%	1,508,334,000	19.4%	484,821,000	N/A
2045	8,045,052,000	31,955,362,000	31,960,306,000	(4,944,000)	100.0%	728,997,000	9.1%	1,561,472,000	19.4%	(832,475,000)	N/A
2046	8,324,118,000	33,340,362,000	33,335,916,000	4,446,000	100.0%	764,679,000	9.2%	1,616,658,000	19.4%	(851,979,000)	N/A
2047	8,612,744,000	34,802,625,000	34,787,632,000	14,993,000	100.0%	802,169,000	9.3%	1,674,350,000	19.4%	(872,181,000)	N/A

*The Net OPEB Obligation (NOO) is as of the beginning of the fiscal year. GASB 75, which will be effective for FYE18, will require balance sheet recognition of the Net OPEB Liability.
The projection includes liabilites for future employees.

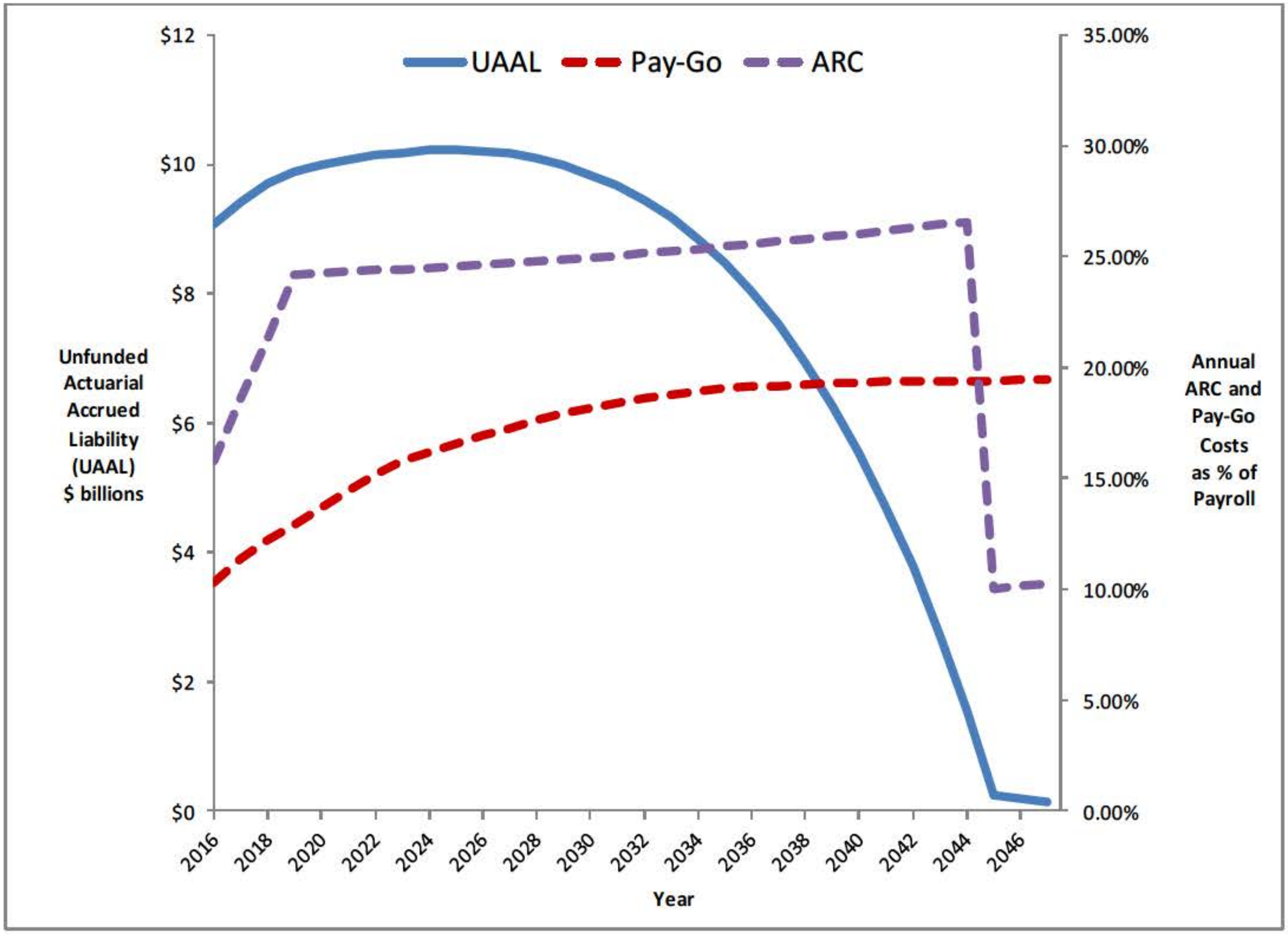
Scenario 2 - Minimum Contribution Required by ACT 268

Over the next 29 years, the additional cost of prefunding is $10.6 billion.
However, at the end of the prefunding period, the State of Hawaii's projected assets are $31.7 billion.

Fiscal Year Ending	Payroll	Actuarial Accrued Liability (AAL)	Beginning of Year Assets	Unfunded AAL (UAAL)	Funded Ratio	Annual Required Contribution	Actual Contribution	Contribution as % of Payroll	Benefit Payment Total	Benefits as % of Payroll	Additional Cost of Prefunding	Net OPEB Obligation*
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
2016	$ 3,093,493,000	$ 9,287,120,000	$ 221,194,000	$ 9,065,926,000	2.4%	$ 742,808,000	$ 483,605,000	15.8%	$ 319,990,000	10.3%	$ 163,615,000	$ 4,708,220,000
2017	3,177,798,000	9,823,390,000	411,724,000	9,411,666,000	4.2%	744,248,000	590,791,000	18.6%	360,606,000	11.3%	230,185,000	5,039,718,000
2018	3,271,815,000	10,369,889,000	678,787,000	9,691,102,000	6.5%	770,297,000	696,031,000	21.3%	398,968,000	12.2%	297,063,000	N/A
2019	3,372,075,000	10,922,408,000	1,033,762,000	9,888,646,000	9.5%	811,313,000	811,313,000	24.1%	436,139,000	12.9%	375,174,000	N/A
2020	3,478,173,000	11,483,105,000	1,494,431,000	9,988,674,000	13.0%	839,550,000	839,550,000	24.1%	476,477,000	13.7%	363,073,000	N/A
2021	3,590,258,000	12,049,940,000	1,974,822,000	10,075,118,000	16.4%	873,193,000	873,193,000	24.3%	518,870,000	14.5%	354,323,000	N/A
2022	3,707,005,000	12,621,828,000	2,479,784,000	10,142,044,000	19.6%	904,286,000	904,286,000	24.4%	563,465,000	15.2%	340,821,000	N/A
2023	3,829,857,000	13,197,490,000	3,006,118,000	10,191,372,000	22.8%	936,791,000	936,791,000	24.5%	604,323,000	15.8%	332,468,000	N/A
2024	3,958,292,000	13,781,704,000	3,560,651,000	10,221,053,000	25.8%	970,732,000	970,732,000	24.5%	641,033,000	16.2%	329,699,000	N/A
2025	4,091,742,000	14,380,075,000	4,151,135,000	10,228,940,000	28.9%	1,006,128,000	1,006,128,000	24.6%	678,593,000	16.6%	327,535,000	N/A
2026	4,230,319,000	14,993,378,000	4,780,713,000	10,212,665,000	31.9%	1,043,149,000	1,043,149,000	24.7%	716,526,000	16.9%	326,623,000	N/A
2027	4,374,247,000	15,623,050,000	5,453,417,000	10,169,633,000	34.9%	1,081,722,000	1,081,722,000	24.7%	755,853,000	17.3%	325,869,000	N/A
2028	4,523,289,000	16,269,590,000	6,172,430,000	10,097,160,000	37.9%	1,122,057,000	1,122,057,000	24.8%	796,547,000	17.6%	325,510,000	N/A
2029	4,677,453,000	16,933,589,000	6,941,403,000	9,992,186,000	41.0%	1,164,233,000	1,164,233,000	24.9%	837,834,000	17.9%	326,399,000	N/A
2030	4,837,682,000	17,616,563,000	7,765,124,000	9,851,439,000	44.1%	1,208,242,000	1,208,242,000	25.0%	878,527,000	18.2%	329,715,000	N/A
2031	5,003,795,000	18,321,338,000	8,649,937,000	9,671,401,000	47.2%	1,254,189,000	1,254,189,000	25.1%	919,743,000	18.4%	334,446,000	N/A
2032	5,176,619,000	19,049,884,000	9,601,584,000	9,448,300,000	50.4%	1,302,097,000	1,302,097,000	25.2%	962,088,000	18.6%	340,009,000	N/A
2033	5,355,329,000	19,803,698,000	10,625,605,000	9,178,093,000	53.7%	1,352,040,000	1,352,040,000	25.2%	1,005,683,000	18.8%	346,357,000	N/A
2034	5,539,923,000	20,584,276,000	11,727,877,000	8,856,399,000	57.0%	1,404,212,000	1,404,212,000	25.3%	1,048,991,000	18.9%	355,221,000	N/A
2035	5,731,302,000	21,394,903,000	12,916,482,000	8,478,421,000	60.4%	1,458,667,000	1,458,667,000	25.5%	1,091,605,000	19.0%	367,062,000	N/A
2036	5,929,077,000	22,239,578,000	14,200,545,000	8,039,033,000	63.9%	1,515,289,000	1,515,289,000	25.6%	1,133,640,000	19.1%	381,649,000	N/A
2037	6,132,696,000	23,122,404,000	15,589,590,000	7,532,814,000	67.4%	1,574,432,000	1,574,432,000	25.7%	1,176,677,000	19.2%	397,755,000	N/A
2038	6,343,397,000	24,046,289,000	17,092,537,000	6,953,752,000	71.1%	1,636,072,000	1,636,072,000	25.8%	1,220,935,000	19.2%	415,137,000	N/A
2039	6,561,745,000	25,014,097,000	18,718,682,000	6,295,415,000	74.8%	1,700,346,000	1,700,346,000	25.9%	1,265,859,000	19.3%	434,487,000	N/A
2040	6,787,700,000	26,029,563,000	20,478,684,000	5,550,879,000	78.7%	1,767,325,000	1,767,325,000	26.0%	1,312,025,000	19.3%	455,300,000	N/A
2041	7,021,741,000	27,096,110,000	22,383,427,000	4,712,683,000	82.6%	1,837,159,000	1,837,159,000	26.2%	1,359,449,000	19.4%	477,710,000	N/A
2042	7,264,122,000	28,217,477,000	24,444,696,000	3,772,781,000	86.6%	1,909,866,000	1,909,866,000	26.3%	1,407,533,000	19.4%	502,333,000	N/A
2043	7,515,097,000	29,398,273,000	26,675,739,000	2,722,534,000	90.7%	1,985,669,000	1,985,669,000	26.4%	1,456,948,000	19.4%	528,721,000	N/A
2044	7,775,218,000	30,642,881,000	29,090,267,000	1,552,614,000	94.9%	2,064,767,000	2,064,767,000	26.6%	1,508,334,000	19.4%	556,433,000	N/A
2045	8,045,052,000	31,955,362,000	31,702,494,000	252,868,000	99.2%	803,232,000	803,232,000	10.0%	1,561,472,000	19.4%	(758,240,000)	N/A
2046	8,324,118,000	33,340,362,000	33,136,890,000	203,472,000	99.4%	841,634,000	841,634,000	10.1%	1,616,658,000	19.4%	(775,024,000)	N/A
2047	8,612,744,000	34,802,625,000	34,654,322,000	148,303,000	99.6%	881,949,000	881,949,000	10.2%	1,674,350,000	19.4%	(792,401,000)	N/A

*The Net OPEB Obligation (NOO) is as of the beginning of the fiscal year. GASB 75, which will be effective for FYE18, will require balance sheet recognition of the Net OPEB Liability.
The projection includes liabilites for future employees.

Scenario 2 – Minimum Contribution Required by ACT 268
Trust contribution is less than benefits paid starting in fiscal year ending June 30, 2045



SECTION D

DEVELOPMENT OF BASELINE COSTS

DEVELOPMENT OF BASELINE COSTS

The underlying retiree claims costs were estimated using the plan premiums effective January 1, 2016, and are used for both current and future retirees. An inherent assumption in this methodology is that the projected future retirees will have a similar distribution by plan type as the current retirees (82% PPO and 18% HMO). The fully-insured retiree plans are separate from the active plans and are underwritten using the claims experience of the retired members only. The contracts for the retiree plans do not allow for any cross subsidization of premiums or rates. The prescription drug benefit for the PPO plan is self-insured. Based on conversations with EUTF's health care consultant (Segal), we did not believe it was necessary to independently verify the premiums for the PPO prescription drug benefit. The estimated age-adjusted claims shown below include administrative expenses and are net of prescription drug rebates.

Age graded and sex distinct premiums are utilized by this valuation. These costs are appropriate for the unique age and sex distribution currently existing. Over the future years covered by this valuation, the age and sex distribution will most likely change. Therefore, our process "distributes" the average premium over all age/sex combinations and assigns a unique premium for each combination. The age/sex specific costs more accurately reflect the health care utilization and cost at that age.

Baseline Costs for Retirees and Spouses (Medical and Prescription Drug) (Expected Monthly Per Capita Costs for Calendar Year 2016)								
	HMSA				Kaiser			
	EUTF		HSTA		EUTF		HSTA	
Age	Male	Female	Male	Female	Male	Female	Male	Female
50	$411.42	$466.16	$418.51	$474.19	$436.27	$494.32	$430.43	$487.70
55	537.71	552.72	546.98	562.25	570.20	586.11	562.57	578.27
60	675.52	649.33	687.16	660.52	716.33	688.55	706.74	679.34
65	351.41	323.60	350.83	323.07	353.32	325.36	361.80	333.17
70	405.35	364.49	404.68	363.89	407.55	366.47	417.34	375.27
75	450.01	399.37	449.27	398.71	452.45	401.54	463.32	411.18
80	482.50	425.31	481.71	424.61	485.12	427.62	496.77	437.89

Dental and vision benefits are not included in the benefits shown above. The underlying claims for the dental and vision benefits were not age-rated. Premiums for all medical, prescription drug, dental, and vision plans are shown in Section E.

SECTION E

SUMMARY OF BENEFIT PROVISIONS

SUMMARY OF THE SUBSTANTIVE PLAN PROVISIONS

PLAN PARTICIPANTS

Plan participants are retired members of the employees' retirement system; the county pension system; or the police, firefighters, or bandsmen pension system of the State or county.

BASE MONTHLY CONTRIBUTION AMOUNT

January 1, 2016 - Base Monthly Contribution			
	Self	Two-Party	Family
Non-Medicare	$855.18	$1,723.76	$2,522.92
Medicare	609.20	1,221.02	1,778.40

The Base Monthly Contribution (BMC) determines the maximum amount provided by the employer to cover premiums for medical, prescription drug, dental and vision care. The BMC is adjusted annually based on the change in the Medicare Part B premium. The employer's costs for providing the Medicare Part B premium reimbursement and the life insurance benefit are in addition to the contribution related to the BMC.

DEFERRED RETIREMENT

Employees who terminate employment are eligible for retiree health care benefits upon commencing a retirement or pension allowance.

DISABILITY RETIREMENT

Employees who terminate due to disability are eligible for retiree health care benefits upon commencing a retirement or pension allowance from the State or county.

NON-DUTY DEATH IN SERVICE RETIREMENT

If an active employee dies while in service and is eligible to retire at the time of death, the retirement system will retire the employee and the surviving spouse, domestic or civil union partner and eligible dependents are eligible for retiree medical benefits. If the member was not eligible for retirement at the time of death, the surviving spouse, domestic or civil union partner and eligible dependents are eligible for COBRA benefits only.

DUTY DEATH IN SERVICE RETIREMENT

The surviving spouse, domestic or civil union partner and eligible dependents of an employee who is killed in the performance of the employee's duty are eligible for retiree health care benefits. Regardless of the employee's date of hire or years of service, the employer will pay up to the BMC for a spouse, domestic or civil union partner and eligible dependents of an employee who is killed in the performance of duty. Coverage ends when the surviving spouse or domestic or civil union partner remarries or enters into another domestic or civil union partnership or when the surviving child reaches age 19 or 24 if the child is a full-time student.

SURVIVING SPOUSES OF RETIRED EMPLOYEES

The employer's contribution percentage for a surviving spouse, domestic or civil union partner and eligible dependent of a retiree who was hired prior to July 1, 2001 will remain the same as the deceased retiree. For a surviving spouse, domestic or civil union partner and eligible dependent of a retiree who was hired after June 30, 2001, the employer's contribution percentage will be half of the deceased retirees' employer contribution percentage.

LIFE INSURANCE

Retiree life insurance benefit is $2,235 as of July 1, 2015, and is provided at no cost to the retiree.

MEDICARE PART B REIMBURSEMENT

Retirees and spouse/domestic and civil union partners are required to enroll in Medicare Part B coverage when they become eligible and enrolled in a medical and/or prescription drug plan. The employer reimburses the premium for both retiree and spouse/domestic or civil union partner at 100%. Surviving spouses/domestic or civil union partners, regardless of hire date, continue to receive the Part B reimbursement. The 2016 Medicare Part B premium is $104.90 per month for most retirees and $121.80 per month for retirees enrolling in Part B for the first time or not enrolled in Social Security. EUTF will reimburse the entire Part B premium for retirees who pay income adjusted Part B premiums if they submit proof.

EMPLOYER'S CONTRIBUTION

The Employer's percentage of the BMC for the year determines the maximum employer contribution payable. Any difference between the maximum employer contribution and the total premium for plans selected (medical, prescription drug, dental and vision) will be paid by the retiree.

Hire Date	Year of Service	% of BMC*
Before 7/1/1996	< 10	50%
	10+	100%
Post 7/1/1996	< 10	0%
	10-14	50%
	15-24	75%
	25+	100%

*Employees hired after 6/30/2001 only receive the % of the "Self" BMC.

EUTF Monthly Retiree Rates
Effective January 1, 2016 through December 31, 2016

Benefit Plan	Type of Enrollment	Total Contribution Required
MEDICAL PLANS - MEDICARE		
HMSA PPO Medicare	Self	$211.74
	Two-Party	$412.60
	Family	$611.64
United Healthcare (UHC) Medicare Advantage PPO	Self	$53.06
	Two-Party	$106.12
Medicare Prescription Drug	Self	$205.20
	Two-Party	$399.58
	Family	$592.44
Kaiser HMO Medicare	Self	$418.92
	Two-Party	$817.12
Kaiser Prescription Drug	Family	$1,211.14
MEDICAL PLANS - NON-MEDICARE		
HMSA PPO Non-Medicare	Self	$469.86
	Two-Party	$915.60
	Family	$1,357.32
Non-Medicare Prescription Drug	Self	$198.10
	Two-Party	$385.84
	Family	572.06
Kaiser HMO Non-Medicare	Self	$688.18
	Two-Party	$1,393.02
Kaiser Prescription Drug	Family	$2,056.52
DENTAL PLAN		
HDS Dental - Retiree	Self	$36.06
	Two-Party	$70.32
	Family	$86.14
VISION PLAN		
VSP Vision - Retiree	Self	$5.48
	Two-Party	$10.96
	Family	$14.70
LIFE INSURANCE		
Royal State National Life Insurance (Retiree only)	Self	$4.12

HSTA VB Monthly Retiree Rates
Effective January 1, 2016 through December 31, 2016

Benefit Plan	Type of Enrollment	Total Contribution Required
MEDICAL PLANS - MEDICARE		
	Self	$419.62
HSTA VB Retiree - HMSA PPO Medicare	Two-Party	$817.88
Medical, Drug RSN Chiropractic, VSP Vision	Family	$1,209.74
	Self	$432.46
HSTA VB Retiree - Kaiser HMO Medicare	Two-Party	$843.96
Medical, Drug RSN Chiropractic, VSP Vision	Family	$1,248.16
MEDICAL PLANS - NON-MEDICARE		
	Self	$682.96
HSTA VB Retiree - HMSA PPO Non-Medicare	Two-Party	$1,330.88
Medical, Drug, RSN Chiropractic, VSP Vision	Family	$1,970.34
	Self	$682.56
HSTA VB Retiree - Kaiser PPO Non-Medicare	Two-Party	$1,380.76
Medical, Drug, RSN Chiropractic, VSP Vision	Family	$2,035.38
DENTAL PLAN		
	Self	$35.84
HDS Dental - Retiree	Two-Party	$69.84
	Family	$85.56
VISION PLAN ***(Only for retirees enrolled in an out-of-state Kaiser Multi-Site or Sr. Advantage Plan - not a HSTA VEBA Plan)***		
	Self	$5.48
VSP Vision - Retiree	Two-Party	$10.96
	Family	$14.70
LIFE INSURANCE		
Royal State National Life Insurance (Retiree only)	Self	$4.12

Medical Plan Coverage Chart (HMSA and Kaiser) – EUTF Non-Medicare Retirees

Plan Provisions	HMSA PPO		Kaiser HMO
General			
Calendar Year Deductible Single/Family	$100 per person Maximum $300 per family		None/None
Calendar Year Out-of-pocket limit Single/Family	$2,500 per person Maximum $7,500 per family		$2,000 per person Maximum $6,000 per family
Lifetime Benefit Maximum	None		None
	Your Copayment		
	In-Network	**Out-of-Network**	
Physician Services			
Primary Care Office Visit	10%*	30%	$15
Specialist Office Visit	10%*	30%	$15
Routine physical exams	Not Covered	Not Covered	No Charge
Mammography	20%*	30%*	No Charge
Second opinion – surgery	10%*	30%	$15
Emergency Room (ER care)	10%*	10%*	$50 in area / 20% out
Ambulance	20%	30%	20%
Inpatient Hospital Services			
Room & Board	10%*	30%	No Charge
Ancillary Services	10%*	30%	No Charge
Physician services	10%*	30%	No Charge
Surgery	10%*	30%	No Charge
Anesthesia	10%*	30%	No Charge
Outpatient Services			
Chemotherapy	20%	30%	$15
Radiation Therapy	20%*	30%	$15
Surgery	10%* (Cutting)	30%	$15
Allergy Testing	20%	30%	$15
Other Diag. Lab, X-ray & Psych Testing	20%*	30%	$15
Anesthesia	10%*	30%	No Charge; $15 office visit copay applies
Mental Health Services			
Inpatient care	10%*	30%	No Charge
Outpatient Care	10%*	30%	$15
Other Services			
Durable Medical Equipment	20%	30%	20%
Home Health care	No Charge*	30%	No Charge
Hospice Care	No Charge*	Not Covered	No Charge
Nursing facility - skilled care	10%*, 120 days per year	30%, 120 days per year	No Charge, 100 days per benefit period
Physical & Occupational Therapy	20%	30%	$15

*Deductible does not apply

Medical Plan Coverage Chart (HMSA and Kaiser) – HSTA VB Non-Medicare Retirees

SUMMARY OF YOUR PAYMENT OBLIGATIONS UNDER EACH PLAN Benefits will be administered as described in each plan's documents.			
Plan Provisions	**HMSA PPO**		**Kaiser HMO**
General			
Calendar Year Deductible Single/Family	$100 per person Maximum $300 per family		None/None
Calendar Year Out-of-pocket limit Single/Family	$2,000 per person Maximum $6,000 per family		$2,000 per person Maximum $6,000 per family
Lifetime Benefit Maximum	$2,000,000		None
	Your Copayment		
	In-Network	**Out-of-Network**	
Physician Services			
Primary Care Office Visit	10%*	30%	$15
Specialist Office Visit	10%*	30%	$15
Routine physical exams	No Charge*; limited to combined CY dollar max depending on age scale	No Charge*; limited to combined CY dollar max depending on age scale	No Charge
Mammography	10%*	30%	No Charge
Second opinion – surgery	10%*	30%	$15
Emergency Room (ER care)	10%*	10%*	$50 in area /20% out
Ambulance	10%*	30%	20%
Inpatient Hospital Services			
Room & Board	10%*	30%	No Charge
Ancillary Services	10%*	30%	No Charge
Physician services	10%*	30%	No Charge
Surgery	10%*	30%	No Charge
Anesthesia	10%*	30%	No Charge
Outpatient Services			
Chemotherapy	10%*	30%	$15
Radiation Therapy	10%*	30%	$15
Surgery	10%*	30%	$15
Allergy Testing	10%*	30%	$15
Other Diag. Lab, X-ray & Psych Testing	10%*	30%	$15
Anesthesia	10%*	30%	No Charge; $15 office visit copay applies
Mental Health Services			
Inpatient care	10%*	30%	No Charge
Outpatient Care	10%*	30%	$15
Other Services			
Durable Medical Equipment	10%*	30%	20%
Home Health care	No Charge*	30%	No Charge
Hospice Care	No Charge*	Not Covered	No Charge
Nursing facility - skilled care	10%*; 120 days per year	30%; 120 days per year	No Charge, 100 days benefit period
Physical & Occupational Therapy	10%*	30%	$15

*Deductible does not apply.

PPO and HMO Prescription Drug Plans – EUTF
Non-Medicare Retirees

COVERAGE	PPO Prescription Drug Plan (administered by CVS Caremark)*		HMO Prescription Drug Plan (Kaiser)
	Participating Pharmacy	Non-participating Pharmacy**	Copayment up to
RETAIL & MAIL PRESCRIPTION PROGRAM (30/90 day supply) **Maintenance medications must be filled in a 90-day supply after the first 3-30 day initial fills. +**			
Generic	$5/$10 copayment	$5 + 20% of eligible charges	$15/$30 mail only
Preferred Brand Name	$15/$30 copayment	$15 + 20% of eligible charges	$15/$30 mail only
Other Brand Name	$30/$60 copayment	$30 + 20% of eligible charges	$15/$30 mail only
Injectables and Specialty Drug	20% of eligible charges; Up to $250 maximum per prescription fill; $2,000 out-of-pocket maximum per plan year; $30 copay oral oncology specialty medications. Specialty drugs are not available through mail-order and only dispensed up to a 30-day supply.		Injectables: $15/ Not available through mail-order Specialty Drugs: $15/$30 mail-order for eligible drugs
Insulin			
Preferred Insulin	$5/$10 copayment	$5 + 20% of eligible charges	$15 Not available through mail-order
Other Insulin	$15/$30 copayment	$15 + 20% of eligible charges	$15 Not available through mail-order
Diabetic Supplies			
Preferred Diabetic Supplies	No copayment	No copayment	$15/$30 mail only
Other Diabetic Supplies	$15/$30 copayment	$15 + 20% of eligible charges	$15/$30 mail only

*This plan is the prescription drug coverage for the HIVISA PPO medical plan options and is administered by CVS Caremark.

* *If you receive services from a non-participating (out-of-network) pharmacy you will pay full price for the prescription and must file a claim for reimbursement. You are responsible for the copayment (including the penalty %) and any difference between the actual charge and the eligible charge.

+Note: Maintenance medication can be filled through mail-order, at Longs Drugs/CVS, or at any retail network pharmacy.

PPO and HMO Prescription Drug Plans – HSTA VB
Non-Medicare Retirees

COVERAGE	PPO Prescription Drug Plan (administered by CVS Caremark)*		HMO Prescription Drug Plan (Kaiser)
	Participating Pharmacy	Non-participating Pharmacy**	Copayment up to
RETAIL & MAIL PRESCRIPTION PROGRAM (30/90 day supply)			
Generic and Insulin	$5/$9 copayment	$5 + 30% of eligible charges	$10/$20 mail only. Insulin not available through mail-order
All covered Brand Name	$15/$27 copayment	$15 + 30% of eligible charges	$10/$20 mail only
Specialty Drug & Injectables	Specialty medications are subject to the applicable Brand/Generic copayment. Specialty drugs are not available through mail-order and only dispensed up to a 30-day supply		Injectables: $10/ Not available through mail-order Specialty Drugs: $10/$20 mail- order for eligible drugs
Lancets, Strips and Meters	No copayment		50% coinsurance

*This plan is the prescription drug coverage for the HNISA PPO medical plan options and is administered by CVS Caremark.

**If you receive services from a nonparticipating (out-of-network) pharmacy you will pay full price for the prescription and must file a claim for reimbursement. You are responsible for the copayment (including the penalty %) and any difference between the actual charge and the eligible charge.

Medical Plan Coverage Chart (HMSA and Kaiser) – EUTF Medicare Retirees

Plan Provisions	HMSA PPO		Kaiser HMO**
General	**Your HMSA coverage coordinates with your Medicare Coverage.**		**Kaiser Senior Advantage Plan**
Calendar Year Deductible Single/Family	$100 per person Maximum $300 per family		None/None
Calendar Year Out-of-pocket limit Single/Family	$2,500 per person Maximum $7,500 per family		$2,000 per person Maximum $6,000 per family
Lifetime Benefit Maximum	None		None
	Your Copayment		
	In-Network	**Out-of-Network**	
Physician Services			
Primary Care Office Visit	10%*	30%	$15
Specialist Office Visit	10%*	30%	$15
Routine physical exams	Not Covered	Not Covered	No Charge
Mammography	20%*	30%*	No Charge
Second opinion – surgery	10%*	30%	$15
Emergency Room (ER care)	10%*	10%*	$50
Ambulance	20%	30%	20%
Inpatient Hospital Services			
Room & Board	10%*	30%	No Charge
Ancillary Services	10%*	30%	No Charge
Physician services	10%*	30%	No Charge
Surgery	10%*	30%	No Charge
Anesthesia	10%*	30%	No Charge
Outpatient Services			
Chemotherapy	20%	30%	$15
Radiation Therapy	20%*	30%	$15
Surgery	10%* (Cutting)	30%	$15
Allergy Testing	20%	30%	$15
Other Diag. Lab, X-ray & Psych Testing	20%*	30%	No Charge
Anesthesia	10%*	30%	$15
Mental Health Services			
Inpatient care	10%*	30%	No Charge
Outpatient Care	10%*	30%	$15
Other Services			
Durable Medical Equipment	20%	30%	20%
Home Health care	No Charge*	30%	No Charge
Hospice Care	No Charge*	Not Covered	No Charge, Home Care
Nursing facility - skilled care	10%*, 120 days per year	30%, 120 days per year	No Charge, 100 days per benefit period
Physical & Occupational Therapy	20%	30%	$15

*HMSA Deductible does not apply. **If you and/or your dependent are Medicare eligible, you must enroll in the Kaiser Senior Advantage Plan.

Medical Plan Coverage Chart (UnitedHealthcare)
Medicare Advantage PPO

Plan Provisions	UnitedHealthcare Group Medicare Advantage (PPO)[3]	
Annual Deductible	$100	
Annual Out-of-pocket limit	$2,500	
Lifetime Benefit Maximum	None	
	Your Copayment	
	In-Network	**Out-of-Network**
Physician Services		
Primary Care Office Visit	10%[1]	10%
Specialist Office Visit	10%[1]	10%
Annual Wellness Visit	No Charge	No Charge
Mammography	20%[1]	20%
Second opinion – surgery	10%[1]	10%
Emergency Room (ER care)	$50[1]	$50[1]
Ambulance	20%	20%
Inpatient Hospital Services		
Room & Board	10%[1]	10%
Ancillary Services	10%[1]	10%
Physician services	10%[1]	10%
Surgery	10%[1]	10%
Anesthesia	10%[1]	10%
Outpatient Services		
Chemotherapy	20%[1]	20%
Radiation Therapy	20%[1]	20%
Surgery	10%[1]	10%
Allergy Testing	20%[1]	20%
Other Diag. Lab, X-ray & Psych Testing	20%[1]	20%
Anesthesia	10%[1]	10%
Mental Health Services		
Inpatient care	10%[1]	10%
Outpatient Care	10%[1]	30%
Other Services		
Durable Medical Equipment	20%	20%
Home Health care	No Charge	No Charge
Hospice Care	No Charge	No Charge
Nursing facility - skilled care	10%, 100 days per year[1]	10%, 100 days per year
Physical & Occupational Therapy	20%	20%
Routine Eye Examination every 12 months	10%[1,2]	10%[1,2]
Routine Hearing Exam – every 12 months	No Charge	No Charge
Hearing Aid Allowance – includes Digital hearing aids	$500 allowance every 36 months[1,2]	$500 allowance every 36 months[1,2]

[1] The Plan Deductible does not apply to this service.
[2] Covered Services that do not count towards out-of-pocket amount.
[3] Please contact UnitedHealthcare for questions regarding the Medicare Advantage PPO Plan.

Medical Plan Coverage Chart (HMSA and Kaiser) – HSTA VB Medicare Retirees

SUMMARY OF YOUR PAYMENT OBLIGATIONS UNDER EACH PLAN Benefits will be administered as described in each plan's documents.			
Plan Provisions	**HMSA PPO**		**Kaiser HMO****
General	**HSMA coverage coordinates with your Medicare coverage.**		
Calendar Year Deductible Single/Family	$100 per person Maximum $300 per family		None/None
Calendar Year Out-of-pocket limit Single/Family	$2,000 per person Maximum $6,000 per family		$2,000 per person Maximum $6,000 per family
Lifetime Benefit Maximum	$2,000,000		None
	Your Copayment		
	In-Network	**Out-of-Network**	
Physician Services			
Primary Care Office Visit	10%*	30%	$15
Specialist Office Visit	10%*	30%	$15
Routine physical exams	No Charge*; limited to combined CY dollar max depending on age scale	No Charge*; limited to combined CY dollar max depending on age scale	No Charge
Mammography	10%*	30%	No Charge
Second opinion – surgery	10%*	30%	$15
Emergency Room (ER care)	10%*	10%*	$50
Ambulance	10%*	30%	20%
Inpatient Hospital Services			
Room & Board	10%*	30%	No Charge
Ancillary Services	10%*	30%	No Charge
Physician services	10%*	30%	No Charge
Surgery	10%*	30%	No Charge
Anesthesia	10%*	30%	No Charge
Outpatient Services			
Chemotherapy	10%*	30%	$15
Radiation Therapy	10%*	30%	$15
Surgery	10%*	30%	$15
Allergy Testing	10%*	30%	$15
Other Diag. Lab, X-ray & Psych Testing	10%*	30%	No Charge
Anesthesia	10%*	30%	No Charge; $15 office visit copay applies
Mental Health Services			
Inpatient care	10%*	30%	No Charge
Outpatient Care	10%*	30%	$15
Other Services			
Durable Medical Equipment	10%*	30%	20%
Home Health care	No Charge*	30%	No Charge
Hospice Care	No Charge*	Not Covered	No Charge, Home Care
Nursing facility - skilled care	10%*; 120 days per year	30%; 120 days per year	No Charge, 100 days benefit period
Physical & Occupational Therapy	10%*	30%	$15

*HMSA Deductible does not apply. **If you and your dependent are Medicare eligible, you must enroll in the Kaiser Senior Advantage Plan.

Medicare Part D Prescription Drug Plans – EUTF

COVERAGE	PPO Prescription Drug Plan (Administered by SilverScript)	HMO Prescription Drug Plan (Kaiser)
RETAIL PRESCRIPTION PROGRAM (30/60/90 day supply)	**Participating Pharmacy**	**Copayment up to**
Generic	$5/$10/$10 copayment	$15/$30/$45 copayment
Preferred Brand Name	$15/$30/$30 copayment	$15/$30/$45 copayment
Non-Preferred Brand Name	$30/$60/$60 copayment	$15/$30/$45 copayment
Specialty Drug	20% coinsurance Up to a $250 copay max per fill, $2,000 out-of-pocket maximum per calendar year	$15/$30/$45 copayment
Insulin		
Covered Insulin Products	$5/$10/$10 copayment	$15/$30/$45 copayment
Diabetic Supplies		
Lancets, Strips and Meters	No copayment	$15/$30/$45 copayment
MAIL ORDER PRESCRIPTION PROGRAM (30/60/90 day supply)	**SilverScript Mail Order**	
Generic	$5/$10/$10 copayment	$15/$30/$30 copayment
Preferred Brand Name	$15/$30/$30 copayment	$15/$30/$30 copayment
Non-Preferred Brand Name	$30/$60/$60 copayment	$15/$30/$30 copayment
Specialty Drug	Not Available	$15/$30/$30 copayment
Insulin		
Covered Insulin Products	$5/$10/$10 copayment	Not available through Mail Order
Diabetic Supplies		
Lancets, Strips and Meters	Not available through Mail Order	$15/$30/$30 copayment

Medicare Part D Prescription Drug Plans – HSTA VB

COVERAGE	**PPO Prescription Drug Plan (Administered by SilverScript)**	**HMO Prescription Drug Plan (Kaiser)**
RETAIL PRESCRIPTION PROGRAM (30/60/90 day supply)	**Participating Pharmacy**	**Copayment up to**
Generic and Covered Insulin Products	$3/$9/$9 copayment	$10/$20/$30 copayment
All Covered Brand Name	$9/$27/$27 copayment	$10/$20/$30 copayment
Specialty	Specialty medications are subject to the applicable Brand/Generic copayment	$10/$20/$30 copayment
Diabetic Supplies		
Lancets, Strips and Meters	No copayment	20%
MAIL ORDER PRESCRIPTION PROGRAM (30/60/90 day supply)	**SilverScript Mail Order**	
Generic and Covered Insulin Products	$3/$9/$9 copayment	$10/$20/$20 copayment; Insulin not available through Mail Order
All Covered Brand Name	$9/$27/$27 copayment	$10/$20/$20 copayment
Specialty	Not available	$10/$20/$20 copayment
Diabetic Supplies		
Lancets, Strips and Meters	Not available through Mail Order	20%

ALL RETIREES

Dental Plan Benefits (Hawaii Dental Service [HDS]) – EUTF

BENEFIT	PLAN COVERS
PLAN :MAXIMUM per calendar year per member (Jan 1 — Dec 31)	$2,000
DIAGNOSTIC	
Examinations - twice per calendar year	100%
Bitewing X-rays - twice per calendar year through age 14; once per calendar year thereafter	100%
Other X-rays (full mouth X-rays limited to once every 5 years)	100%
PREVENTIVE	
Cleanings — twice per calendar year	100%
• Diabetic Patients — four Cleanings or *Periodontal Maintenance per calendar year	
• Expectant Mothers — three Cleanings or *Periodontal Maintenance per calendar year	
*Periodontal Maintenance benefit level	*60%
• Fluoride (twice per calendar year through age 19)	100%
• Fluoride — high risk — once per calendar year	100%
Space maintainers (through age 17)	100%
Sealants (through age 18) — one treatment application. once per lifetime only to permanent molars with no prior occlusal restorations. regardless of the number of surfaces sealed.	100%
RESTORATIVE	
Amalgam (silver-colored) fillings	60%
Composite (white-colored) fillings — limited to the anterior (front) teeth	60%
Crowns and gold restorations (once every 5 years when teeth cannot be restored with amalgam or composite fillings)	60%
Note: Composite (white) and porcelain (white) restorations on posterior (back) teeth will be processed as the alternate benefit of the metallic equivalent — the patient is responsible for the cost difference up to the amount charged by the dentist.	
ENDODONTICS	60%
Pulpal therapy	
Root canal treatment, retreatment, apexification, apicoectomy	
PERIODONTICS	60%
Periodontal scaling and root planing (once every two years)	
Gingivectomy, flap curettage and osseous surgery (once every three years)	
Periodontal Maintenance — twice per calendar year after qualifying periodontal treatment	
PROSTHODONTICS	60%
Fixed bridges (once every 5 years; ages 16 and older)	
Dentures (complete and partial — once every 5 years; ages 16 and older)	
Implants Services	
ORAL SURGERY	60%
ADJUNCTIVE GENERAL SERVICES	60%
Palliative treatment (for relief of pain but not to cure)	100%

The annual plan maximum is $2,000 per calendar year for EUTF retirees enrolled in the dental plan provided by HDS.

Dental Plan Benefits (Hawaii Dental Service [HDS]) – HSTA VB

BENEFIT	PLAN COVERS
PLAN MAXIMUM per calendar year per member (Jan 1 — Dec 31)	$1.000
DIAGNOSTIC	
Examinations - twice per calendar year	100%
Bitewing X-rays - twice per calendar year through age 14; once per calendar year thereafter	100%
Other X-rays (full mouth X-rays limited to once every 5 years)	100%
PREVENTIVE	
Cleanings — twice per calendar year	100%
• Diabetic Patients — four Cleanings or *Periodontal Maintenance per calendar year	
• Expectant Mothers — three Cleanings or *Periodontal Maintenance per calendar year	
*Periodontal Maintenance benefit level	*60%
• Fluoride (once per calendar year through age 19)	100%
• Fluoride — high risk — once per calendar year	100%
Space maintainers (through age 17)	100%
Sealants (through age 18) — one treatment application. once per lifetime only to permanent molars with no prior occlusal restorations, regardless of the number of surfaces sealed.	100%
RESTORATIVE	
Amalgam (silver-colored) fillings	60%
Composite (white-colored) fillings — limited to the anterior (front) teeth	60%
Crowns and gold restorations (once every 5 years when teeth cannot be restored with amalgam or composite fillings)	60%
Note: Composite (white) and porcelain (white) restorations on posterior (back) teeth will be processed as the alternate benefit of the metallic equivalent — the patient is responsible for the cost difference up to the amount charged by the dentist.	
ENDODONTICS	60%
Pulpal therapy	
Root canal treatment, retreatment, apexification, apicoectomy	
PERIODONTICS	60%
Periodontal scaling and root planing (once every two years)	
Gingivectomy, flap curettage and osseous surgery (once every three years)	
Periodontal Maintenance — twice per calendar year after qualifying periodontal treatment	
PROSTHODONTICS	60%
Fixed bridges (once every 5 years; ages 16 and older)	
Dentures (complete and partial — once every 5 years; ages 16 and older)	
Implants (covered as alternate benefit) when one tooth is missing between two natural teeth	
ORAL SURGERY	60%
ADJUNCTIVE GENERAL SERVICES	60%
Palliative treatment (for relief of pain but not to cure)	100%

The annual plan maximum is $1,000 per calendar year for HSTA VB retirees enrolled in the dental plan provided by HDS.

Vision Plan Benefits (Vision Service Plan [VSP]) – EUTF & HSTA VB

Your coverage with VSP Doctors and Affiliate Providers:

Exam covered in full .... every calendar year, after $10 Copay

Prescription Glasses

Lenses covered in full .... every calendar year, after $25 Copay

- Single vision, lined bifocal and lined trifocal lenses
- Polycarbonate lenses for dependent children up to age 18

Frame .... every other calendar year

- $120 allowance, plus 20% off any out-of-pocket costs; or $65 allowance at Costco

  —OR—

Contact Lenses .... every calendar year

- $120 allowance (applies to cost of contacts and fitting & evaluation)

Extra Discounts and Savings from VSP Doctors*

Glasses & Sunglasses

- Average 35-40% savings on all non-covered lens options (such as tints, progressive lenses, anti-scratch coatings, etc.) UV coating is covered at no extra charge.
- 30% off additional glasses & sunglasses, including lens options, from the same VSP doctor on the same day as your Exam. Or 20% off from any VSP doctor within 12 months of your last Exam.

Retinal Screening

Guaranteed pricing on retinal screening as an enhancement to your Exam.

Contact Lenses

- 15% off cost of contact lens exam (fitting & evaluation)
- VSP has partnered with leading contact lens manufacturers to provide VSP members exclusive offers. Check out www.vsp.com for details.

Laser Vision Correction

- Average 15% off the regular price or 5% off the promotional price from VSP-contracted facilities.
- After surgery, use your frame allowance (if eligible) for sunglasses from any VSP doctor.

**Costco Pricing applies; there are no additional discounts. All other affiliate provider locations 20% off additional glasses and 15% off contact lens services within one year. Discounts available only through a VSP Preferred Provider: LVC discounts, Retinal screening not to exceed pricing, contact lens rebates.*

If you see a non-VSP provider, you'll typically pay more out-of-pocket.

Summary of Benefit Eligibility
(For Members Hired Prior to 7/1/2012)

	Noncontributory Plan	Contributory Plan	Hybrid Plan
Normal Retirement	Age 62 and 10 years credited service; or age 55 and 30 years credited service	Age 55 and 5 years credited service	Age 62 and 5 years credited service; or age 55 and 30 years credited service
Early Retirement	Age 55 and 20 years credited service	Any age and 25 years credited service	Age 55 with 20 years credited service
Deferred Vesting	10 years credited service	5 years credited service and contributions left in the ERS	5 years credited service and contributions left in the ERS
Ordinary Disability	10 years credited service	10 years credited service	10 years credited service
Service-Connected Disability	Any age or credited service	Any age or credited service	Any age or credited service
Ordinary Death	Active employee at time of death with at least 10 years of credited service	Active employee at time of death with at least 1 year of service	Active employee at time of death with at least 5 years of service
Service-Connected Death	Any age or service	Any age or service	Any age or service

The benefit eligibilities summarized above apply to teachers and most State and County employees. Special provisions applicable to other groups of employees are outlined below:

Police officers, firefighters, investigators of the Department of the Prosecuting Attorney and the Attorney General, narcotic enforcement investigators, and public safety investigators may retire at age 55 with 5 years of credited service or at any age with 25 years of credited service.

Judges, elected officials, and legislative officers may retire at age 55 with at least 5 years of credited service, or at any age with at least 10 years of credited service. Judges hired after June 30, 1999 require 25 years of credited service in order to retire before age 55.

Sewer workers in specified classifications, water safety officers, and emergency medical technicians (EMTs) may retire at any age if they are credited with 25 years of such service with the last 5 or more years in these occupations. (The 25-year feature is phased in through 7/1/2008 for EMTs.)

Sewer workers in specified classifications, water safety officers, and emergency medical technicians (EMTs) that transfer to the Hybrid Plan may retire at age 62 with 5 years of credited service or at any age if they are credited with 25 years of such service with the last 5 or more years in these occupations.

Summary of Benefit Eligibility
(For Members Hired After 6/30/2012)

	Contributory Plan (for Police/Fire)	Contributory Plan (for Judges/Elected Officers)	Hybrid Plan
Normal Retirement	Age 60 and 10 years credited service	Age 60 and 10 years credited service	Age 65 and 10 years credited service; or Age 60 and 30 years credited service Sewer workers, water safety officers, and EMTs may retire with 25 years credited service at age 55.
Early Retirement	Age 55 and 25 years credited service	Age 55 and 25 years credited service any age with 10 years for elected officers	Age 55 with 20 years credited service Sewer workers, water safety officers, and emergency medical technicians (EMTs) may retire with 25 years credited service.
Deferred Vesting	10 years credited service and contributions left in the ERS	10 years credited service and contributions left in the ERS	10 years credited service and contributions left in the ERS
Ordinary Disability	10 years credited service	10 years credited service	10 years credited service
Service-Connected Disability	Any age or credited service	Any age or credited service	Any age or credited service
Ordinary Death	Active employee at time of death with at least 1 years of credited service	Active employee at time of death with at least 1 years of credited service	Active employee at time of death with at least 10 years of service
Service-Connected Death	Any age or service	Any age or service	Any age or service

SECTION F

SUMMARY OF PARTICIPANT DATA

Active Employee Age/Service Distribution

Attained	Years of Credited Service												
Age	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total
Under 25	247	119	21	13	3	-	-	-	-	-	-	-	403
25-29	862	640	540	341	196	211	-	-	-	-	-	-	2,790
30-34	781	544	493	435	378	1,767	201	-	-	-	-	-	4,599
35-39	641	432	411	362	304	1,774	1,626	139	-	-	-	-	5,689
40-44	473	304	312	270	222	1,439	1,655	1,287	173	2	-	-	6,137
45-49	398	268	226	245	211	1,262	1,405	1,262	1,482	215	-	-	6,974
50-54	318	235	196	197	146	1,270	1,322	970	1,431	1,405	166	1	7,657
55-59	250	202	203	158	144	1,027	1,155	1,004	1,238	1,335	633	110	7,459
60-64	172	113	120	117	103	803	939	761	930	880	560	482	5,980
65 & Over	137	41	72	50	57	471	550	409	439	434	250	499	3,409
Total	4,279	2,898	2,594	2,188	1,764	10,024	8,853	5,832	5,693	4,271	1,609	1,092	51,097

Inactive Age Distribution

Age	Deferred Inactives	Retirees	Total
<35	247	8	255
35-39	375	3	378
40-44	520	17	537
45-49	792	40	832
50-54	957	138	1,095
55-59	1,088	975	2,063
60-64	1,007	3,760	4,767
65-69	239	7,638	7,877
70-74	49	6,894	6,943
75-79	6	4,923	4,929
80-84	1	4,318	4,319
85-89	0	3,170	3,170
90-94	0	1,582	1,582
95+	0	472	472
Total	5,281	33,938	39,219

State of Hawaii
Distribution by Health Plan and Coverage Type

Actives

	Single	Two-Party	Family	Waived	Total
PPO	15,148	4,755	7,580	N/A	27,483
HMO	6,649	1,872	2,477	N/A	10,998
Others	0	0	0	N/A	0
Waived				12,616	12,616
Total Medical					**51,097**
Dental	20,821	9,311	11,837	9,128	**51,097**
Vision	20,682	8,179	10,654	11,582	**51,097**

Retirees

	Single	Two-Party	Family	Total
PPO	16,115	10,112	702	26,929
HMO	3,457	1,692	141	5,290
Others	99	57	3	159
Total Medical				**32,378**
Dental	19,717	11,916	803	**32,436**
Vision	19,678	12,116	865	**32,659**
Life				**30,694**

SECTION G

ACTUARIAL ASSUMPTIONS AND METHODS

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

The actuarial assumptions used in the valuation are shown in this Section. Assumptions that are specific to certain groups (i.e. General Employees, Teachers, Police and Firefighters) are discussed under the first subsection that follows. Assumptions that are common to all types of members and unique to this valuation are then shown on the following pages.

Demographic and Certain Economic Assumptions

This Actuarial Valuation of the OPEB is similar to the Actuarial Valuations performed for ERS. All of the demographic assumptions and most of the economic assumptions used in this OPEB Valuation were identical to those used in the June 30, 2015 retirement system valuations performed by Gabriel, Roeder, Smith and Company. The assumptions which are common to the pension and OPEB valuations are described in Appendix A of this report.

Healthcare and Other Economic Assumptions

General Inflation was assumed to be 3.00% per year.

The rate of investment return was assumed to be 7.00% a year, compounded annually net after investment expenses. The assumed real return is the rate of return in excess of price inflation. Considering other assumptions used in the valuation, the nominal rate translates to a net real return of 4.00% a year.

Health Cost and Premium Increases *– See table below*

Year	*HMSA (PPO)*	*Kaiser (HMO)*	*Dental*	*Vision*	*Part B Premiums**
2016	9.00%	7.00%	4.00%	3.00%	3.00%
2017	9.00%	6.75%	4.00%	3.00%	3.00%
2018	9.00%	6.50%	4.00%	3.00%	5.00%
2019	9.00%	6.25%	4.00%	3.00%	5.00%
2020	9.00%	6.00%	4.00%	3.00%	5.00%
2021	9.00%	5.75%	4.00%	3.00%	5.00%
2022	5.50%	5.50%	4.00%	3.00%	5.00%
2023	5.25%	5.25%	4.00%	3.00%	5.00%
2024 & Beyond	5.00%	5.00%	4.00%	3.00%	5.00%

The premiums for 2015 and 2016 were known at the time of the valuation. Therefore, the first trend rate shown above (2016) is assumed to occur at 1/1/2017. Future increases are also assumed to occur on 1/1. The HMSA and Kaiser trend rates are blended rates used to project both medical and prescription drug costs.

** The trend rates shown above for the Part B premiums apply to the BMC and the Part B premiums that will be $121.80/mo. in 2016. As a result of the "hold harmless" provision in the Part B statutes, retirees who were enrolled in Social Security in 2015 will not see an increase in their Part B premium in 2016. As a result, it was assumed that the Part B premiums for the participants who were retired as of the valuation date would increase by 19.60% effective 1/1/2017. Said another way, it was assumed that there would be a single Part B premium for all retirees starting in 2017.*

The assumed trend rates for the PPO plan reflect a gradual wear-away of the savings associated with the EGWP Wrap Plan design.

Healthcare and Other Economic Assumptions (Continued)

Plan Participation

The plan participation rates were assumed to vary based on the employer contribution percentage, as follows:

Employer Contribution	Rates of Participation		
	Medical, Prescription Drug, Dental and Vision	Life Insurance	Medicare Part B
0%	25%	100%	98%
50%	65%	100%	98%
75%	90%	100%	98%
100%	98%	100%	98%

The same assumptions were used for terminated participants with vested pension benefits. However, current active employees who terminate service prior to the age of 35 are not assumed to ever participate in the retiree health plan.

For current retirees, the actual family coverage election is used. For future retirees, the family coverage assumptions are 50% single / 45% two-party / 5% family prior to age 65 and 50% single / 50% two-party after the age of 65. For those that elect two-party or family coverage, it was assumed that coverage would continue to the spouse upon death of the retiree.

Plan Elections

For current retirees, plan elections were based on the plan in which they are currently enrolled. For future retirees, plan participation was assumed to be 82% HMSA / 18% Kaiser.

Administration Fees

The following table provides the assumed 2016 administration fees. For the purpose of the OPEB valuation, it was assumed that the administration fees would be in addition to the premiums shown in Section E.

Monthly Fee	Single Party	Two-Party	Family
Medical and Drug	$3.44	$6.88	$10.32
Dental	$0.24	$0.48	$0.72
Vision	$0.04	$0.08	$0.12
Life	$0.02	n/a	n/a

Healthcare and Other Economic Assumptions (Continued)

Aging Factors: In any given year, the cost of medical and prescription drug benefits vary by age. As the ages of retirees in the covered population increase so does the cost of benefits. Morbidity tables are employed to develop Per Capita Costs at every relevant age. The following table represents the percent by which the cost of medical and prescription drug benefits at one age is higher than the cost for the previous age. For example, according to the following table, the cost of benefits for a male age 55 is 5.13% higher than for one age 54. These percentages below are separate from the annual Medical Trend, which operates to increase costs independent of and in addition to the Aging Factors shown below.

Sample Ages	Cost Increases by Age	
	Male	Female
45	6.43%	2.89%
50	6.01%	3.36%
55	5.13%	3.48%
60	4.35%	3.10%
65	3.40%	2.73%
70	2.57%	2.19%
75	1.82%	1.61%
80	1.14%	1.04%
85	0.57%	0.49%
90	0.00%	0.00%

Actuarial Methods

The individual entry age actuarial cost method was used in determining liabilities and normal cost. Differences between assumed experience and actual experience ("actuarial gains and/or losses") become part of actuarial accrued liabilities.

Unfunded actuarial accrued liabilities are amortized to produce payments (principal & interest) which are a level percent of payroll. Closed bases will be established at each valuation for new unfunded liabilities. If experience produces a gain during a valuation cycle, the new base will be netted against the most recent loss base which has not yet been completely offset by gains. This process substantially reduces volatility as bases are fully amortized.

Miscellaneous and Technical Assumptions

Actuarial Value of Assets:	Market Value
Marriage Assumption:	100% of males and females are assumed to be married for purposes of death-in-service benefits. For future retirees, husbands are assumed to be four years older than wives.
Pay Increase Timing:	Beginning of (fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	Except for teachers, decrements of all types are assumed to occur mid-year. For teachers, the normal retirement, early retirement and termination decrements are assumed to occur at the beginning of the year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement Operation:	Disability and mortality decrements are added to the termination decrements during the first 5 years. Disability is added to the retirement decrement during retirement eligibility.
Deferred Age:	Terminated employees with vested pension benefits are assumed to commence their benefit at age 62 or their current age if they are older than 62 as of the valuation date.
Incidence of ARC Contributions:	The ARC is assumed to be received at the middle of the year.
Administrative Expenses:	Administrative expenses are included in the age-rated costs the premiums.
Reliance on Other Actuaries	We have relied on the premiums develop by Segal Consulting for the self-insured PPO prescription drug benefit.

<u>Miscellaneous and Technical Assumptions (continued)</u>

Excise Tax and Health Care Reform	The excise tax is expected to increase the present value of projected medical and Rx benefits by 5.5% for pre-65 retirees by 1.4% for post-65 retirees. There is no anticipated impact on the liability associated with the employer paid Part B premiums, dental, vision or life insurance benefits. In addition, the employer caps will limit the liability for retirees who receive 75% or 50% of the BMC. The overall impact of the excise tax, after considering the percentage of the OPEB liability attributable to each type of benefit, was determined to be 1.6% of the present value of future benefits. The component of the ultimate trend assumption related to the excise tax produces approximately the same impact on the liabilities.
Assumption/Method Changes	1. The trend rate assumption on the Part B premiums/BMC was decreased from 5.0% to 3.0% effective 1/1/2017 and 1/1/2018 to reflect the anticipated adjustment to the Part B premiums once the "hold harmless" provision no longer applies. This change decreased the ARC and associated liabilities. 2. The ultimate trend assumption includes an explicit component related to the anticipated impact of the excise tax.

APPENDIX A

DEMOGRAPHIC AND CERTAIN ECONOMIC ASSUMPTIONS

DEMOGRAPHIC AND CERTAIN ECONOMIC ASSUMPTIONS

A. Economic Assumptions

1. Payroll growth rate: 3.50% per annum.
2. Salary increase rate: As shown below:

	General Employees		Teachers	
Years of Service	Service-related Component	Total Annual Rate of Increase Including 3.00% Inflation Component and 1.00% General Increase Rate	Service-related Component	Total Annual Rate of Increase Including 3.00% Inflation Component and 1. 50% General Increase Rate
(1)	(2)	(3)	(2)	(3)
1	4.00%	8.00%	4.00%	8.50%
2	3.00%	7.00%	3.25%	7.75%
3	2.00%	6.00%	2.50%	7.00%
4	1.25%	5.25%	2.00%	6.50%
5	1.00%	5.00%	1.50%	6.00%
6	0.75%	4.75%	1.00%	5.50%
7	0.50%	4.50%	1.00%	5.50%
8	0.50%	4.50%	0.75%	5.25%
9	0.50%	4.50%	0.75%	5.25%
10	0.25%	4.25%	0.75%	5.25%
11-14	0.25%	4.25%	0.50%	5.00%
15 or more	0.00%	4.00%	0.00%	4.50%

	Police & Firefighters	
Years of Service	Service-related Component	Total Annual Rate of Increase Including 3.00% Inflation Component and 2.00% General Increase Rate
(1)	(2)	(3)
0	14.00%	19.00%
1	12.00%	17.00%
2 or more	0.00%	5.00%

Salary increases are assumed to occur once a year, on July 1. Therefore the pay used for the period between the valuation date and the first anniversary of the valuation date is equal to the reported pay for the prior year, annualized if necessary, and then increased by the salary increase assumption.

B. Demographic Assumptions

1. Post-Retirement Mortality rates

General Employees

a. Healthy males – Client Specific Table for males, 89% multiplier.
b. Healthy females - Client Specific Table for females, 89% multiplier.
c. Disabled males - 1994 US Group Annuity Mortality Static Table for males set forward nine years.
d. Disabled females - 1994 US Group Annuity Mortality Static Table for females set forward nine years.

Teachers

a. Healthy males – Client Specific Table for male teachers, 65% multiplier.
b. Healthy females - Client Specific Table for female teachers, 67% multiplier.
c. Disabled males - 1994 US Group Annuity Mortality Static Table for males set forward five years.
d. Disabled females - 1994 US Group Annuity Mortality Static Table for females set forward six years.

Police and Fire

a. Healthy males – 1994 US Group Annuity Mortality Static Table for males, 85% multiplier.
b. Healthy females - 1994 US Group Annuity Mortality Static Table for females, 85% multiplier.
c. Disabled males - 1994 US Group Annuity Mortality Static Table for males set forward three years.
d. Disabled females - 1994 US Group Annuity Mortality Static Table for females set forward three years.

Mortality Improvement: To account for future mortality improvement, the healthy mortality rates were chosen so that the assumed mortality rates are smaller than the rates observed in the most recent experience study for the Employee's Retirement System of the State of Hawaii (dated 12-20-2010). The margin at the time of the study was at least 7% for all groups (i.e. 7% more actual male deaths than expected). No future mortality improvement after the measurement date is assumed except as described above.

2. Pre-retirement Mortality Rates

The male pre-retirement mortality rates are multiples of a table that has the RP-2000 Male Employee rates for ages 1 to 70 and the RP-2000 Combined Male rates for ages above 70. Similarly, the female pre-retirement rates are multiples of a table that has the RP-2000 Female Employee rates for ages 1 to 70 and the RP-2000 Combined Female rates for ages above 70. The following table shows the factors that are used in conjunction with the tables described above to derive the final ordinary and accidental death rates.

	General Employees		Teachers		Police and Fire	
Type	Males	Females	Males	Females	Males	Females
Ordinary	64%	48%	50%	40%	15%	15%
Accidental	16%	12%	10%	5%	35%	35%

3. Disability rates – The assumed total disability rates for employees covered by the contributory plan, hybrid plan and the noncontributory plan at select ages are multiples of the client specific table that follows:

Age	Male & Female
25	0.000%
30	0.001%
35	0.008%
40	0.026%
45	0.064%
50	0.146%
55	0.198%
60	0.217%

Note: The disability rates project the percentage of employees at each age that is assumed to become disabled before retiring. Multiples of the rates above are assumed to be ordinary disability or accidental disability, and vary by employee group as follows:

	General Employees		Teachers		Police and Fire
Type	Male	Female	Male	Female	Male & Female
Ordinary	135%	85%	50%	40%	70%
Duty	30%	7%	5%	5%	35%

4. Termination Rates - Separate male and female rates, based on both age and service. Rates reflect terminations for causes other than death, disability or retirement. Employees eligible for retirement are assumed to have no probability of termination. Sample rates are shown below:

<u>For first 6 years of service</u>

	Expected Terminations per 100 Lives (Male Members)					
	Years of Service					
Group	0	1	2	3	4	5
General Employees	15.5	12.5	10.5	9.0	7.0	6.0
Teachers	33.0	23.0	15.0	13.0	11.0	9.0
Police & Fire	12.0	9.0	4.0	4.0	4.0	4.0

	Expected Terminations per 100 Lives (Female Members)					
	Years of Service					
Group	0	1	2	3	4	5
General Employees	18.5	16.5	12.5	10.0	8.0	7.0
Teachers	28.0	23.0	16.0	14.0	12.0	8.0
Police & Fire	12.0	9.0	4.0	4.0	4.0	4.0

After first 6 years of service

	Expected Terminations per 100 Lives				
	Years of Service				
Age	General Employees Males	General Employees Females	Teachers Males	Teachers Females	Police & Fire
(1)	(2)	(3)	(4)	(5)	(6)
20	7.15	8.12	6.22	7.12	2.03
25	6.50	7.83	4.98	6.72	1.91
30	5.46	5.84	4.12	6.15	2.53
35	4.40	4.04	3.95	4.99	2.75
40	3.60	3.30	3.60	3.70	2.01
45	3.02	2.65	2.88	2.88	1.18
50	2.54	2.41	2.34	2.36	0.79
55	2.52	2.41	2.34	2.36	0.24
60	2.52	2.41	2.34	2.36	0.00

5. Retirement rates - Separate male and female rates, based on age, developed from the 2010 Experience Study for the Employee's Retirement System of the State of Hawaii. Sample rates are shown below:

Contributory Plan and Hybrid Plan

	Expected Retirements per 100 Lives				
	General Employees		Teachers		Police and Fire
Age	Male	Female	Male	Female	Male & Female
45	2	1	0	0	13
46	2	1	0	0	13
47	2	1	0	0	13
48	2	1	0	0	13
49	2	1	0	0	13
50	2	1	1	0	15
51	2	1	1	1	15
52	2	1	1	1	15
53	2	2	2	2	15
54	3	3	3	3	15
55	16	13	20	18	20
56	14	13	15	16	20
57	14	13	15	16	20
58	14	13	15	16	20
59	14	13	15	16	20
60	14	15	14	18	30
61	15	15	14	18	30
62	25	25	14	25	30
63	20	20	14	20	30
64	20	20	14	15	30
65	25	25	20	25	100
66	25	25	15	25	100
67	20	20	15	20	100
68	20	20	15	20	100
69	20	20	15	20	100
70	20	20	15	20	100
71	20	20	15	20	100
72	20	20	15	20	100
73	20	20	15	20	100
74	20	20	15	20	100
75	100	100	100	100	100

Retirement rates for 25 & out group ages 50-54 are 10% for both males and females

Noncontributory Plan

	Expected Retirements per 100 Lives							
	General Employees				Teachers			
	Unreduced Retirement		Reduced Retirement		Unreduced Retirement		Reduced Retirement	
Age	Male	Female	Male	Female			Male	Female
55	13	12	2	2	10	13	2	3
56	13	12	2	2	10	13	2	3
57	13	12	2	2	10	14	2	3
58	13	12	2	2	10	15	2	3
59	13	12	3	3	10	16	3	3
60	14	15	4	4	10	17	5	5
61	14	18	5	5	10	18	10	5
62	25	25			16	25		
63	25	25			12	20		
64	20	20			10	18		
65	25	22			20	30		
66	25	22			15	25		
67	25	22			15	25		
68	25	22			15	25		
69	25	22			15	25		
70	20	20			15	25		
71	20	20			15	25		
72	20	20			15	25		
73	20	20			15	25		
74	20	20			15	25		
75	100	100			100	100		

Retirement rates for the 25 & out group ages 50-54 are 10% for both males and females

For Hybrid plan, early retirement rates are reduced by a factor of 10% for each year prior to age 65 (if hired after June 30, 2012) or 62 (if hired before July 1, 2012) for a maximum of 10 years.

APPENDIX B

GLOSSARY

Glossary

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Equivalent. A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Annual Required Contribution (ARC). The ARC is the normal cost plus the portion of the unfunded actuarial accrued liability to be amortized in the current period. The ARC is an amount that is actuarially determined in accordance with the requirements so that, if paid on an ongoing basis, it would be expected to provide sufficient resources to fund both the normal cost for each year and the amortized unfunded liability.

Governmental Accounting Standards Board (GASB). GASB is the private, nonpartisan, nonprofit organization that works to create and improve the rules U.S. state and local governments follow when accounting for their finances and reporting them to the public.

Medical Trend Rate (Health Inflation). The increase in the plan's cost over time. Trend includes all elements that may influence a plan's cost, assuming that enrollments and the plan benefits do not change. Trend includes such elements as, pure price inflation, changes in utilization, advances in medical technology, and cost shifting.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Other Post-Employment Employee Benefits (OPEB). OPEB are post-employment benefits other than pensions. OPEB generally takes the form of health insurance and dental, vision, prescription drugs or other healthcare benefits.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."

Valuation Assets. The value of current plan assets recognized for valuation purposes.