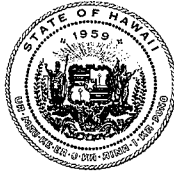


DAVID Y. IGE
GOVERNOR



THOMAS WILLIAMS
EXECUTIVE DIRECTOR

KANOE MARGOL
DEPUTY EXECUTIVE DIRECTOR

STATE OF HAWAII
EMPLOYEES' RETIREMENT SYSTEM

September 11, 2017

TO: Board of Trustees of the
Employees' Retirement System of the State of Hawaii

FROM: Thomas Williams, Executive Director
Employees' Retirement System of the State of Hawaii

SUBJECT: GASB Statement No. 67 and 68 Report for June 30, 2016

Attached for your review and acceptance is the Governmental Accounting Standards Board (GASB) Statement NO. 67 and 68 Report as of June 30, 2016 as prepared by Gabriel, Roeder, Smith and Company, actuaries for the Employees' Retirement System of the State of Hawaii.

Board Action Requested: Acceptance of the GASB 67/68 Report for the Year Ending June 30, 2016.

Attachment



Employees' Retirement System
of the State of Hawaii

City Financial Tower • 201 Merchant Street, Suite 1400 • Honolulu, Hawaii 96813-2980
Telephone (808) 586-1735 • Fax (808) 586-1677 • <http://ers.ehawaii.gov>

**EMPLOYEES' RETIREMENT SYSTEM OF THE STATE OF
HAWAII**

**GASB STATEMENT NO. 67 AND 68 ACCOUNTING AND FINANCIAL
REPORTING FOR PENSIONS**

JUNE 30, 2016

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August 5, 2017

The Board of Trustees
Employees' Retirement System of
The State of Hawaii
City Financial Tower
201 Merchant St., Ste. 1400
Honolulu, HI 96813-9280

Dear Trustees:

This report provides information required by the Employees' Retirement System of the State of Hawaii ("ERS") in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67 "Financial Reporting for Pension Plans." Additionally, this report provides information required by the employers covered by ERS in connection with the GASB Statement No. 68, "Accounting and Financial Reporting for Pensions." It is intended that the employers covered by ERS will use this information in financial reporting for their fiscal years ending June 30, 2016.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB Statement Nos. 67 and 68. The calculation of the plan's liability for this report may not be applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the ERS only in its entirety and only with the permission of ERS.

This report is based upon information, furnished to us by ERS, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not otherwise audited.

Certain tables included in the Required Supplementary Information should include a 10-year history of information. As provided for in GASB No. 67, this historical information is only presented for the years in which the information was measured in conformity with the requirements of GASB No. 67. The historical information in this report will begin with the information presented for the fiscal year ending 4.

Section E of the report details the calculation of the single discount rate and is not required to be included in your financial statements. However, this information may be requested by your auditors, therefore, we have included it in this report. It should be noted that we reflected the enactment of SB936.SD2.HD1.CD1 in the single discount rate determination. In particular we reflected the increasing employer contributions rates over the next four fiscal years.

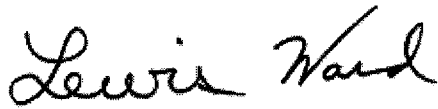
Section F currently contains the aggregate GASB No. 68 information on a plan wide level. The schedules with the individual employers' information are not yet available. A revised report will be issued with the schedules when the necessary information for completing these schedules has been received.

This report complements the actuarial valuation report that was provided to ERS and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2016 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, this report is complete, accurate, and in accordance with generally recognized actuarial methods. One or more of the undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the Academy of Actuaries to render the actuarial opinion herein.

The signing actuaries are independent of the plan sponsor.

Respectfully submitted,



By _____
Lewis Ward
Consultant



By _____
Joe Newton
FSA, EA, MAAA

SECTION A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY
as of June 30, 2016

	<u>2016</u>
Actuarial Valuation Date	June 30, 2016
Pension Plan's Fiscal Year Ending Date (Measurement Date & Reporting Date)	June 30, 2016
Membership	
Number of	
- Retirees and Beneficiaries	45,506
- Inactive, Nonretired Members	22,295
- Active Members	<u>67,377</u>
- Total	135,178
Reported Payroll for Fiscal Year	\$ 4,112,227,306
Net Pension Liability	
Total Pension Liability	\$ 27,439,233,629
Plan Fiduciary Net Position	<u>14,069,978,917</u>
Net Pension Liability	\$ 13,369,254,712
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	51.28%
Net Pension Liability as a Percentage of Covered Payroll	325.11%
Development of the Single Discount Rate	
Single Discount Rate	7.00%
Long-Term Expected Rate of Return	7.00%
Long-Term Municipal Bond Rate*	2.85%
Last year ending June 30 in the 2016 to 2115 projection period for which projected benefit payments are fully funded	None

*Source: "State and Local Bonds" rate from Federal Reserve statistical release (H.15) as of June 30, 2016. The statistical release describes this rate as the "Bond Buyer Index, general obligation, 20 years to maturity, mixed quality." In describing this index, the Bond Buyer notes that the bonds' average credit quality is roughly equivalent to Moody's Investor Service's Aa2 rating and Standard & Poor's Corp AA.

DISCUSSION

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67, "Financial Reporting for Pension Plans," replaces the requirements of GASB Statement No. 25, "Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans," and GASB Statement No. 50, "Pension Disclosures." GASB Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability of employers and non-employer contributing entities for benefits provided through the pension plan.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

GASB Statement No. 67 requires defined benefit pension plans to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position.

The *statement of fiduciary net position* presents the following items as of the end of the pension plan's reporting period, such as:

- assets;
- deferred inflows and outflows of resources;
- liabilities; and
- fiduciary net position (assets, plus deferred outflows, minus liabilities, minus deferred inflows).

The *statement of changes in fiduciary net position* presents the following for the plan's reporting period:

- additions, such as contributions and investment income;
- deductions, such as benefit payments and expenses; and
- net increase or decrease in the fiduciary net position (the difference between additions and deductions).

Notes to Financial Statements

GASB Statement No. 67 also requires the notes of the plan's financial statements to include additional disclosure information. This disclosure information should include:

- a description of the types of benefits provided by the plan, as well as automatic or ad hoc COLAs;
- the number and classes of employees covered by the benefit terms;
- the composition of the pension plan's Board and the authority under which benefit terms may be amended;
- a description of the plan's funding policy, which includes member and employer contribution requirements;
- the pension plan's investment policies;
- a description of how fair value is determined;
- concentrations of investments greater than or equal to 5%;
- annual money-weighted rate of return on pension plan investments;
- the portion of the present value of benefits to be provided through the pension plan to current active and inactive plan members;
- the pension plan's fiduciary net position;
- the net pension liability;
- the pension plan's fiduciary net position as a percentage of the total pension liability;
- significant assumptions and methods used to calculate the total pension liability;
- inputs to the discount rates; and
- certain information about mortality assumptions and the dates of experience studies.

Required Supplementary Information

Statement No. 67 requires a 10-year fiscal history of:

- sources of changes in the net pension liability;
- information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll;
- comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy; and
- the annual money-weighted rate of return on pension plan investments for each year.

As shown above, you will need to include a determination of the annual money-weighted rate of return for your Notes to Financial Statements and Required Supplementary Information. Statement No. 67 requires that this information be determined using cash-flows with a frequency of not less than a monthly basis. We do not have the detailed financial information to determine this number. If you need our assistance please let us know.

Measurement of the Net Pension Liability

The net pension liability is to be measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2016 and a measurement date of June 30, 2016.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a single discount rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating (which is published by the Federal Reserve) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.00% the municipal bond rate is 2.85% (based on the weekly rate closest to but not later than the measurement date of the 20-Year Bond Buyer Index as published by the Federal Reserve); and the resulting single discount rate is 7.00%.

Effective Date and Transition

GASB Statements No. 67 is effective for a pension plan's fiscal years beginning after June 15, 2013, however, earlier application is encouraged by the GASB. GASB Statement No. 68 is effective for an employer's fiscal year beginning after June 30, 2014.

SECTION B

FINANCIAL STATEMENTS

STATEMENT OF FIDUCIARY NET POSITION
as of June 30, 2016

	2016
Assets	
Cash and Deposits	\$ 524,140,752
Receivables	
Accounts receivable and others	\$ 5,546,300
Investment sales proceeds	197,451,653
Accrued investment income	49,758,195
Employer contributions	78,921,403
Member contributions	-
Other	-
Total Receivables	\$ 331,677,551
Investments	
Equity securities	\$ 8,541,857,929
Fixed income securities	3,117,134,649
Real estate investments	967,131,489
Alternative investments	1,010,360,689
Total Investments	\$ 13,636,484,756
Invested Securities Lending Collateral	\$ 1,268,719,491
Equipment at cost, net of depreciation	\$ 6,287,484
Total Assets	\$ 15,767,310,034
 Liabilities	
Payables	
Accounts and other payables	\$ 46,683,310
Payables for securities purchased	211,762,793
Securities lending collateral	1,268,719,491
Notes payable	170,165,523
Total Liabilities	\$ 1,697,331,117
Net Position Restricted for Pensions	\$ 14,069,978,917

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
for Year Ended June 30, 2016

	<u>Year Ending June 30, 2016</u>
Additions	
Contributions	
Non-Employer Contributing Entity	\$ -
Employer	756,558,222
Employer (picked-up employee contributions)	235,079,968
Employee	1,721,893
Other	-
Total Contributions	<u>\$ 993,360,083</u>
Investment Income	
Net Appreciation in Fair Value of Investments	\$ (526,781,374)
Interest and Dividends	260,106,168
Less Investment Expense	<u>(87,271,479)</u>
Net Investment Income	<u>\$ (353,946,685)</u>
Other	\$ 184,578,575
Total Additions	<u>\$ 823,991,973</u>
Deductions	
Benefit payments, including refunds of employee contributions	\$ 1,245,517,025
Pension Plan Administrative Expense	13,960,587
Other	-
Total Deductions	<u>\$ 1,259,477,612</u>
Net Increase in Net Position	\$ (435,485,639)
Net Position Restricted for Pensions	
Beginning of Year	<u>\$ 14,505,464,556</u>
End of Year	<u>\$ 14,069,978,917</u>

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS
Fiscal Year Ended June 30, 2016

A. Total pension liability	
1. Service Cost	\$ 484,278,499
2. Interest on the Total Pension Liability	1,748,619,873
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the Total Pension Liability	297,534,219
5. Changes of assumptions	2,915,922,677
6. Benefit payments, including refunds of employee contributions	(1,245,517,025)
7. Net change in total pension liability	\$ 4,200,838,243
8. Total pension liability – beginning	23,238,395,386
9. Total pension liability – ending	<u>\$ 27,439,233,629</u>
B. Plan fiduciary net position	
1. Contributions – employer	\$ 756,558,222
2. Contributions – employer (picked-up employee contributions)	235,079,968
3. Contributions – employee	1,721,893
4. Net investment income	(169,368,110)
5. Benefit payments, including refunds of employee contributions	(1,245,517,025)
6. Pension Plan Administrative Expense	(13,960,587)
7. Other	-
8. Net change in plan fiduciary net position	\$ (435,485,639)
9. Plan fiduciary net position – beginning	14,505,464,556
10. Plan fiduciary net position – ending	<u>\$ 14,069,978,917</u>
C. Net pension liability	<u>\$ 13,369,254,712</u>
D. Plan fiduciary net position as a percentage of the total pension liability	51.28 %
E. Covered-employee payroll	\$ 4,112,227,306
F. Net pension liability as a percentage of covered employee payroll	325.11 %

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION
Schedule of the Employers' Net Pension Liability
Last 10 Fiscal Years (which may be built prospectively)

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2007						
2008						
2009						
2010						
2011						
2012						
2013	\$ 21,243,744,377	\$ 12,311,827,950	\$ 8,931,916,427	57.96%	\$ 3,720,809,962	240.05%
2014	22,220,097,547	14,203,015,303	8,017,082,244	63.92%	3,829,002,983	209.38%
2015	23,238,395,386	14,505,464,556	8,732,930,830	62.42%	3,995,447,345	218.57%
2016	27,439,233,629	14,069,978,917	13,369,254,712	51.28%	4,112,227,306	325.11%

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION
Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

Last 10 Fiscal Years (which may be built prospectively)

Fiscal year ending June 30,	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Total Pension Liability										
Service Cost	\$ 484,278,499	\$ 437,901,029	\$ 421,956,129							
Interest on the Total Pension Liability	1,748,619,873	1,693,252,684	1,618,917,776							
Benefit Changes	-	-	-							
Difference between Expected and Actual Experience	297,534,219	(192,816,757)	66,400,876							
Assumption Changes	2,915,922,677	261,213,541	-							
Benefit Payments	(1,232,589,353)	(1,170,744,770)	(1,122,445,642)							
Refunds	(12,927,672)	(10,507,888)	(8,475,969)							
Net Change in Total Pension Liability	4,200,838,243	1,018,297,839	976,353,170							
Total Pension Liability - Beginning	23,238,395,386	22,220,097,547	21,243,744,377							
Total Pension Liability - Ending (a)	<u>\$ 27,439,233,629</u>	<u>\$ 23,238,395,386</u>	<u>\$ 22,220,097,547</u>							
Plan Fiduciary Net Position										
Employer Contributions	\$ 756,558,222	\$ 717,792,981	\$ 653,127,697							
Employer Contributions (picked-up employee contributions)	235,079,968	\$ 221,909,859	\$ 204,821,010							
Employee Contributions	1,721,893	1,595,560	1,306,327							
Pension Plan Net Investment Income	(169,368,110)	556,436,475	2,175,479,960							
Benefit Payments	(1,232,589,353)	(1,170,744,770)	(1,122,445,642)							
Refunds	(12,927,672)	(10,507,888)	(8,475,969)							
Pension Plan Administrative Expense	(13,960,587)	(14,032,964)	(12,626,030)							
Other	-	-	-							
Net Change in Plan Fiduciary Net Position	(435,485,639)	302,449,253	1,891,187,353							
Plan Fiduciary Net Position - Beginning	14,505,464,556	14,203,015,303	12,311,827,950							
Plan Fiduciary Net Position - Ending (b)	<u>\$ 14,069,978,917</u>	<u>\$ 14,505,464,556</u>	<u>\$ 14,203,015,303</u>							
Net Pension Liability - Ending (a) - (b)	13,369,254,712	8,732,930,830	8,017,082,244							
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	51.28 %	62.42 %	63.92 %							
Covered Employee Payroll	\$ 4,112,227,306	\$ 3,995,447,345	\$ 3,829,002,983							
Net Pension Liability as a Percentage of Covered Employee Payroll	325.11 %	218.57 %	209.38 %							
Notes to Schedule:										
N/A										

SECTION D

NOTES TO FINANCIAL STATEMENTS

Single Discount Rate

A single discount rate of 7.00% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.00%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the plan's net pension liability, calculated using a single discount rate of 7.00%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher:

**Sensitivity of Net Pension Liability
to the Single Discount Rate Assumption**

1% Decrease	Current Single Discount Rate Assumption	1% Increase
6.00%	7.00%	8.00%
\$17,153,325,506	\$13,369,254,712	\$10,238,060,621

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	45,506
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	22,295
Active Plan Members	67,377
Total Plan Members	135,178

SECTION E

CALCULATION OF THE SINGLE DISCOUNT RATE

CALCULATION OF THE SINGLE DISCOUNT RATE

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a tax-exempt municipal bond rate is required, as described in the following paragraph.

The *single discount rate* (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating (which is published by the Federal Reserve) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.00%; the municipal bond rate is 2.85%; and the resulting single discount rate is 7.00%.

The tables in this section provide background for the development of the single discount rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate (SDR). It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

As noted in the cover letter, in determining the single discount rate we reflected the enactment of SB936.SD2.HD1.CD1. In particular we reflected the increasing employer contributions rates over the next four fiscal years

SINGLE DISCOUNT RATE DEVELOPMENT
Projection of Contributions Beginning July 1, 2016

Year	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Employer Contributions for Future Employees	Total Contributions
1	4,059,659,144	\$ 199,269,473	\$ 4,258,928,617	\$ 233,430,401	\$ 727,084,953	\$ 27,509,824	\$ 988,025,178
2	3,888,754,007	\$ 519,237,112	4,407,991,119	223,603,355	744,307,517	78,069,053	1,045,979,925
3	3,744,427,830	\$ 817,842,978	4,562,270,808	215,304,600	762,365,506	132,943,138	1,110,613,244
4	3,614,332,644	\$ 1,107,617,642	4,721,950,286	207,824,127	852,621,071	215,823,038	1,276,268,236
5	3,492,159,723	\$ 1,395,058,823	4,887,218,546	200,799,184	823,800,479	271,831,922	1,296,431,585
6	3,373,541,158	\$ 1,684,730,037	5,058,271,195	193,978,617	874,759,222	367,698,019	1,436,435,858
7	3,256,499,554	\$ 1,978,811,133	5,235,310,687	187,248,724	844,410,334	431,882,211	1,463,541,269
8	3,138,219,154	\$ 2,280,327,407	5,418,546,561	180,447,601	813,740,227	497,689,156	1,491,876,984
9	3,016,977,460	\$ 2,591,218,231	5,608,195,691	173,476,204	782,302,255	565,542,129	1,521,320,588
10	2,894,585,921	\$ 2,909,896,619	5,804,482,540	166,438,690	750,566,129	635,094,763	1,552,099,582
11	2,773,202,198	\$ 3,234,437,231	6,007,639,429	159,459,126	719,091,330	705,926,847	1,584,477,303
12	2,653,514,615	\$ 3,564,392,194	6,217,906,809	152,577,090	688,056,340	777,940,632	1,618,574,062
13	2,536,269,200	\$ 3,899,264,347	6,435,533,547	145,835,479	657,654,604	851,027,610	1,654,517,693
14	2,420,031,858	\$ 4,240,745,363	6,660,777,221	139,151,832	627,514,261	925,556,995	1,692,223,088
15	2,304,787,927	\$ 4,589,116,497	6,893,904,424	132,525,306	597,631,509	1,001,590,171	1,731,746,986
16	2,188,736,029	\$ 4,946,455,050	7,135,191,079	125,852,322	567,539,252	1,079,580,517	1,772,972,091
17	2,070,721,269	\$ 5,314,201,497	7,384,922,767	119,066,473	536,938,025	1,159,842,421	1,815,846,919
18	1,952,209,356	\$ 5,691,185,708	7,643,395,064	112,252,038	506,207,886	1,242,120,498	1,860,580,422
19	1,834,523,351	\$ 6,076,390,540	7,910,913,891	105,485,093	475,691,905	1,326,192,753	1,907,369,751
20	1,715,920,638	\$ 6,471,875,239	8,187,795,877	98,665,437	444,938,221	1,412,508,624	1,956,112,282
21	1,597,660,860	\$ 6,876,707,873	8,474,368,733	91,865,499	414,273,461	1,500,864,714	2,007,003,674
22	1,480,200,244	\$ 7,290,771,395	8,770,971,638	85,111,514	383,815,923	1,591,235,475	2,060,162,912
23	1,364,937,910	\$ 7,713,017,735	9,077,955,646	78,483,930	353,928,400	1,683,392,165	2,115,804,495
24	1,252,118,122	\$ 8,143,565,971	9,395,684,093	71,996,792	324,674,229	1,777,360,771	2,174,031,792
25	1,141,796,489	\$ 8,582,736,548	9,724,533,036	65,653,298	296,067,830	1,873,211,233	2,234,932,361
26	1,033,879,886	\$ 9,031,011,807	10,064,891,693	59,448,093	268,085,054	1,971,048,822	2,298,581,969
27	929,622,621	\$ 9,487,540,281	10,417,162,902	53,453,301	241,051,146	2,070,687,703	2,365,192,150
28	829,407,599	\$ 9,952,356,004	10,781,763,604	47,690,937	215,065,390	2,172,135,304	2,434,891,631
29	732,837,066	\$ 10,426,288,264	11,159,125,330	42,138,131	190,024,651	2,275,572,620	2,507,735,402
30	640,126,338	\$ 10,909,568,378	11,549,694,716	36,807,264	165,984,759	2,381,050,137	2,583,842,160
31	554,008,297	\$ 11,399,925,734	11,953,934,031	31,855,477	143,654,352	2,488,072,285	2,663,582,114
32	476,464,421	\$ 11,895,857,302	12,372,321,722	27,396,704	123,547,224	2,596,311,025	2,747,254,953
33	406,154,256	\$ 12,399,198,726	12,805,352,983	23,353,870	105,315,799	2,706,166,990	2,834,836,659
34	342,563,851	\$ 12,910,976,486	13,253,540,337	19,697,421	88,826,807	2,817,864,214	2,926,388,442
35	284,978,961	\$ 13,432,435,288	13,717,414,249	16,386,290	73,895,045	2,931,674,359	3,021,955,694
36	233,576,168	\$ 13,963,947,579	14,197,523,748	13,430,630	60,566,300	3,047,678,711	3,121,675,641
37	188,794,686	\$ 14,505,642,393	14,694,437,079	10,855,694	48,954,462	3,165,905,433	3,225,715,589
38	150,881,571	\$ 15,057,860,806	15,208,742,376	8,675,690	39,123,591	3,286,428,966	3,334,228,247
39	119,596,625	\$ 15,621,451,735	15,741,048,360	6,876,806	31,011,405	3,409,434,590	3,447,322,801
40	93,869,960	\$ 16,198,115,092	16,291,985,052	5,397,523	24,340,481	3,535,293,315	3,565,031,319
41	73,232,352	\$ 16,788,972,177	16,862,204,529	4,210,860	18,989,149	3,664,249,869	3,687,449,878
42	56,176,615	\$ 17,396,205,072	17,452,381,688	3,230,155	14,566,596	3,796,780,498	3,814,577,249
43	43,006,695	\$ 18,020,208,352	18,063,215,047	2,472,885	11,151,636	3,932,971,321	3,946,595,842
44	32,688,646	\$ 18,662,738,928	18,695,427,573	1,879,597	8,476,166	4,073,205,789	4,083,561,552
45	24,613,271	\$ 19,325,154,268	19,349,767,538	1,415,263	6,382,221	4,217,780,174	4,225,577,658
46	18,141,782	\$ 20,008,867,620	20,027,009,402	1,043,152	4,704,164	4,367,002,922	4,372,750,238
47	13,028,652	\$ 20,714,926,079	20,727,954,731	749,148	3,378,330	4,521,102,564	4,525,230,042
48	9,033,855	\$ 21,444,399,292	21,453,433,147	519,447	2,342,478	4,680,312,556	4,683,174,481
49	5,897,648	\$ 22,198,405,659	22,204,303,307	339,115	1,529,260	4,844,876,992	4,846,745,367
50	3,517,673	\$ 22,977,936,250	22,981,453,923	202,266	912,133	5,015,012,176	5,016,126,575

SINGLE DISCOUNT RATE DEVELOPMENT
Projection of Contributions Beginning July 1, 2016
 (Continued)

Year	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Employer Contributions for Future Employees	Total Contributions
51	1,910,601	\$ 23,783,894,209	23,785,804,810	109,860	495,419	5,190,915,222	5,191,520,501
52	915,460	\$ 24,617,392,518	24,618,307,978	52,639	237,379	5,372,829,042	5,373,119,060
53	381,300	\$ 25,479,567,458	25,479,948,758	21,925	98,871	5,561,001,634	5,561,122,430
54	188,173	\$ 26,371,558,791	26,371,746,964	10,820	48,793	5,755,681,754	5,755,741,367
55	83,965	\$ 27,294,674,143	27,294,758,108	4,828	21,772	5,957,154,797	5,957,181,397
56	31,117	\$ 28,250,043,524	28,250,074,642	1,789	8,069	6,165,667,390	6,165,677,248
57	13,051	\$ 29,238,814,203	29,238,827,254	750	3,384	6,381,469,930	6,381,474,064
58	9,414	\$ 30,262,176,794	30,262,186,208	541	2,441	6,604,822,271	6,604,825,253
59	4,176	\$ 31,321,358,550	31,321,362,725	240	1,083	6,835,992,266	6,835,993,589
60	-	\$ 32,417,610,421	32,417,610,421	-	-	7,075,252,938	7,075,252,938
61	-	\$ 33,552,226,785	33,552,226,785	-	-	7,322,886,791	7,322,886,791
62	-	\$ 34,726,554,723	34,726,554,723	-	-	7,579,187,829	7,579,187,829
63	-	\$ 35,941,984,138	35,941,984,138	-	-	7,844,459,403	7,844,459,403
64	-	\$ 37,199,953,583	37,199,953,583	-	-	8,119,015,482	8,119,015,482
65	-	\$ 38,501,951,958	38,501,951,958	-	-	8,403,181,024	8,403,181,024
66	-	\$ 39,849,520,277	39,849,520,277	-	-	8,697,292,359	8,697,292,359
67	-	\$ 41,244,253,487	41,244,253,487	-	-	9,001,697,592	9,001,697,592
68	-	\$ 42,687,802,359	42,687,802,359	-	-	9,316,757,008	9,316,757,008
69	-	\$ 44,181,875,441	44,181,875,441	-	-	9,642,843,503	9,642,843,503
70	-	\$ 45,728,241,082	45,728,241,082	-	-	9,980,343,026	9,980,343,026
71	-	\$ 47,328,729,520	47,328,729,520	-	-	10,329,655,031	10,329,655,031
72	-	\$ 48,985,235,053	48,985,235,053	-	-	10,691,192,958	10,691,192,958
73	-	\$ 50,699,718,280	50,699,718,280	-	-	11,065,384,711	11,065,384,711
74	-	\$ 52,474,208,419	52,474,208,419	-	-	11,452,673,176	11,452,673,176
75	-	\$ 54,310,805,714	54,310,805,714	-	-	11,853,516,737	11,853,516,737
76	-	\$ 56,211,683,914	56,211,683,914	-	-	12,268,389,823	12,268,389,823
77	-	\$ 58,179,092,851	58,179,092,851	-	-	12,697,783,467	12,697,783,467
78	-	\$ 60,215,361,101	60,215,361,101	-	-	13,142,205,888	13,142,205,888
79	-	\$ 62,322,898,739	62,322,898,739	-	-	13,602,183,094	13,602,183,094
80	-	\$ 64,504,200,195	64,504,200,195	-	-	14,078,259,502	14,078,259,502
81	-	\$ 66,761,847,202	66,761,847,202	-	-	14,570,998,585	14,570,998,585
82	-	\$ 69,098,511,854	69,098,511,854	-	-	15,080,983,536	15,080,983,536
83	-	\$ 71,516,959,769	71,516,959,769	-	-	15,608,817,959	15,608,817,959
84	-	\$ 74,020,053,361	74,020,053,361	-	-	16,155,126,588	16,155,126,588
85	-	\$ 76,610,755,229	76,610,755,229	-	-	16,720,556,018	16,720,556,018
86	-	\$ 79,292,131,662	79,292,131,662	-	-	17,305,775,479	17,305,775,479
87	-	\$ 82,067,356,270	82,067,356,270	-	-	17,911,477,621	17,911,477,621
88	-	\$ 84,939,713,739	84,939,713,739	-	-	18,538,379,338	18,538,379,338
89	-	\$ 87,912,603,720	87,912,603,720	-	-	19,187,222,614	19,187,222,614
90	-	\$ 90,989,544,850	90,989,544,850	-	-	19,858,775,406	19,858,775,406
91	-	\$ 94,174,178,920	94,174,178,920	-	-	20,553,832,545	20,553,832,545
92	-	\$ 97,470,275,182	97,470,275,182	-	-	21,273,216,684	21,273,216,684
93	-	\$ 100,881,734,814	100,881,734,814	-	-	22,017,779,268	22,017,779,268
94	-	\$ 104,412,595,532	104,412,595,532	-	-	22,788,401,543	22,788,401,543
95	-	\$ 108,067,036,376	108,067,036,376	-	-	23,585,995,597	23,585,995,597
96	-	\$ 111,849,382,649	111,849,382,649	-	-	24,411,505,442	24,411,505,442
97	-	\$ 115,764,111,042	115,764,111,042	-	-	25,265,908,133	25,265,908,133
98	-	\$ 119,815,854,928	119,815,854,928	-	-	26,150,214,918	26,150,214,918
99	-	\$ 124,009,409,851	124,009,409,851	-	-	27,065,472,440	27,065,472,440
100	-	\$ 128,349,739,195	128,349,739,195	-	-	28,012,763,975	28,012,763,975

SINGLE DISCOUNT RATE DEVELOPMENT

Projection of Plan Fiduciary Net Position Beginning July 1, 2016

Year	Projected Beginning		Projected Total		Projected Benefit		Projected		Projected Investment		Projected Ending Plan	
	Plan Net Position		Contributions		Payments		Administrative Expenses		Earnings at 7.00 %		Net Position	
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)						
1	\$	14,069,978,917	\$	988,025,178	\$	1,392,571,511	\$	14,449,208	\$	970,481,707	\$	14,621,465,083
2		14,621,465,083		1,045,979,925		1,401,302,720		13,632,350		1,010,807,531		15,263,317,470
3		15,263,317,470		1,110,613,244		1,482,800,867		13,003,435		1,055,178,552		15,933,304,965
4		15,933,304,965		1,276,268,236		1,565,210,191		12,465,653		1,104,960,502		16,736,857,858
5		16,736,857,858		1,296,431,585		1,648,972,566		11,986,469		1,159,037,374		17,531,367,783
6		17,531,367,783		1,436,435,858		1,734,538,204		11,544,455		1,216,541,404		18,438,262,386
7		18,438,262,386		1,463,541,269		1,820,522,988		11,120,995		1,278,012,673		19,348,172,344
8		19,348,172,344		1,491,876,984		1,908,638,659		10,705,440		1,339,663,757		20,260,368,987
9		20,260,368,987		1,521,320,588		1,998,804,988		10,290,984		1,401,442,433		21,174,036,036
10		21,174,036,036		1,552,099,582		2,090,697,584		9,872,381		1,463,310,730		22,088,876,384
11		22,088,876,384		1,584,477,303		2,182,462,436		9,458,770		1,525,320,391		23,006,752,873
12		23,006,752,873		1,618,574,062		2,273,869,444		9,055,337		1,587,613,693		23,930,015,847
13		23,930,015,847		1,654,517,693		2,363,011,663		8,661,093		1,650,425,207		24,863,285,990
14		24,863,285,990		1,692,223,088		2,451,054,230		8,277,208		1,714,035,322		25,810,212,962
15		25,810,212,962		1,731,746,986		2,537,701,906		7,897,592		1,778,711,835		26,775,072,285
16		26,775,072,285		1,772,972,091		2,623,940,911		7,520,024		1,844,716,139		27,761,299,578
17		27,761,299,578		1,815,846,919		2,709,199,156		7,140,697		1,912,306,771		28,773,113,414
18		28,773,113,414		1,860,580,422		2,792,315,229		6,758,945		1,981,826,205		29,816,445,868
19		29,816,445,868		1,907,369,751		2,872,266,565		6,380,757		2,053,731,450		30,898,899,747
20		30,898,899,747		1,956,112,282		2,950,203,965		6,005,824		2,128,511,584		32,027,313,823
21		32,027,313,823		2,007,003,674		3,024,219,818		5,628,853		2,206,717,873		33,211,186,699
22		33,211,186,699		2,060,162,912		3,093,600,880		5,252,792		2,289,043,752		34,461,539,692
23		34,461,539,692		2,115,804,495		3,158,073,054		4,879,254		2,376,277,471		35,790,669,350
24		35,790,669,350		2,174,031,792		3,217,302,130		4,510,510		2,469,294,766		37,212,183,268
25		37,212,183,268		2,234,932,361		3,270,143,966		4,150,290		2,569,090,420		38,741,911,793
26		38,741,911,793		2,298,581,969		3,316,843,379		3,796,341		2,676,766,818		40,396,620,861
27		40,396,620,861		2,365,192,150		3,356,059,307		3,450,886		2,793,550,922		42,195,853,740
28		42,195,853,740		2,434,891,631		3,387,766,479		3,113,967		2,920,816,057		44,160,680,983
29		44,160,680,983		2,507,735,402		3,411,675,777		2,787,617		3,060,048,933		46,314,001,924
30		46,314,001,924		2,583,842,160		3,428,018,233		2,470,447		3,212,848,685		48,680,204,089
31		48,680,204,089		2,663,582,114		3,434,800,420		2,166,524		3,381,003,628		51,287,822,886
32		51,287,822,886		2,747,254,953		3,431,068,742		1,890,642		3,566,553,854		54,168,672,309
33		54,168,672,309		2,834,836,659		3,417,532,464		1,638,005		3,771,701,279		57,356,039,777
34		57,356,039,777		2,926,388,442		3,394,755,646		1,404,967		3,998,758,843		60,885,026,449
35		60,885,026,449		3,021,955,694		3,363,692,644		1,192,802		4,250,152,310		64,792,249,008
36		64,792,249,008		3,121,675,641		3,324,586,544		997,028		4,528,441,358		69,116,782,434
37		69,116,782,434		3,225,715,589		3,277,480,209		821,020		4,836,365,401		73,900,562,196
38		73,900,562,196		3,334,228,247		3,222,461,638		666,012		5,176,862,108		79,188,524,901
39		79,188,524,901		3,447,322,801		3,159,884,401		533,963		5,553,068,563		85,028,497,902
40		85,028,497,902		3,565,031,319		3,090,414,181		425,572		5,968,310,857		91,471,000,324
41		91,471,000,324		3,687,449,878		3,014,349,275		335,003		6,426,118,571		98,569,884,495
42		98,569,884,495		3,814,577,249		2,932,882,415		262,791		6,930,220,267		106,381,536,806
43		106,381,536,806		3,946,595,842		2,845,891,974		202,354		7,484,573,680		114,966,612,000
44		114,966,612,000		4,083,561,552		2,754,216,104		156,249		8,093,397,639		124,389,198,839
45		124,389,198,839		4,225,577,658		2,658,477,343		119,625		8,761,160,658		134,717,340,186
46		134,717,340,186		4,372,750,238		2,559,205,657		90,155		9,492,611,231		146,023,405,844
47		146,023,405,844		4,525,230,042		2,456,888,995		66,618		10,292,803,685		158,384,483,958
48		158,384,483,958		4,683,174,481		2,351,880,516		47,769		11,167,127,497		171,882,857,650
49		171,882,857,650		4,846,745,367		2,244,640,038		32,932		12,121,332,255		186,606,262,302
50		186,606,262,302		5,016,126,575		2,135,571,740		21,449		13,161,551,879		202,648,347,567

SINGLE DISCOUNT RATE DEVELOPMENT

Projection of Plan Fiduciary Net Position Beginning July 1, 2016

(Continued)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00 %	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
51	202,648,347,567	5,191,520,501	\$ 2,024,968,712	12,624	14,294,338,746	\$ 220,109,225,477
52	220,109,225,477	5,373,119,060	\$ 1,913,328,299	6,743	15,526,690,182	\$ 239,095,699,676
53	239,095,699,676	5,561,122,430	\$ 1,801,170,363	3,102	16,866,071,464	\$ 259,721,720,104
54	259,721,720,104	5,755,741,367	\$ 1,688,996,845	1,272	18,320,449,085	\$ 282,108,912,440
55	282,108,912,440	5,957,181,397	\$ 1,577,399,388	629	19,898,323,578	\$ 306,387,017,398
56	306,387,017,398	6,165,677,248	\$ 1,466,768,142	262	21,608,771,477	\$ 332,694,697,720
57	332,694,697,720	6,381,474,064	\$ 1,357,465,813	138	23,461,495,129	\$ 361,180,200,962
58	361,180,200,962	6,604,825,253	\$ 1,249,853,898	114	25,466,868,150	\$ 392,002,040,354
59	392,002,040,354	6,835,993,589	\$ 1,144,293,776	106	27,635,983,075	\$ 425,329,723,135
60	425,329,723,135	7,075,252,938	\$ 1,041,160,167	70	29,980,701,942	\$ 461,344,517,779
61	461,344,517,779	7,322,886,791	\$ 940,848,865	68	32,513,709,679	\$ 500,240,265,317
62	500,240,265,317	7,579,187,829	\$ 843,785,963	-	35,248,570,571	\$ 542,224,237,754
63	542,224,237,754	7,844,459,403	\$ 750,431,272	-	38,199,788,270	\$ 587,518,054,155
64	587,518,054,155	8,119,015,482	\$ 661,279,908	-	41,382,869,879	\$ 636,358,659,608
65	636,358,659,608	8,403,181,024	\$ 576,857,712	-	44,814,394,644	\$ 688,999,377,564
66	688,999,377,564	8,697,292,359	\$ 497,692,601	-	48,512,088,613	\$ 745,711,065,935
67	745,711,065,935	9,001,697,592	\$ 424,270,067	-	52,494,907,113	\$ 806,783,400,573
68	806,783,400,573	9,316,757,008	\$ 357,007,760	-	56,783,125,480	\$ 872,526,275,301
69	872,526,275,301	9,642,843,503	\$ 296,215,423	-	61,398,438,455	\$ 943,271,341,835
70	943,271,341,835	9,980,343,026	\$ 242,078,564	-	66,364,068,553	\$ 1,019,373,674,850
71	1,019,373,674,850	10,329,655,031	\$ 194,620,157	-	71,704,883,958	\$ 1,101,213,593,682
72	1,101,213,593,682	10,691,192,958	\$ 153,736,115	-	77,447,524,829	\$ 1,189,198,575,354
73	1,189,198,575,354	11,065,384,711	\$ 119,172,015	-	83,620,538,035	\$ 1,283,765,326,085
74	1,283,765,326,085	11,452,673,176	\$ 90,535,633	-	90,254,521,746	\$ 1,385,381,985,375
75	1,385,381,985,375	11,853,516,737	\$ 67,321,565	-	97,382,278,890	\$ 1,494,550,459,437
76	1,494,550,459,437	12,268,389,823	\$ 48,940,157	-	105,038,979,514	\$ 1,611,808,888,617
77	1,611,808,888,617	12,697,783,467	\$ 34,741,044	-	113,262,332,715	\$ 1,737,734,263,755
78	1,737,734,263,755	13,142,205,888	\$ 24,065,125	-	122,092,768,018	\$ 1,872,945,172,536
79	1,872,945,172,536	13,602,183,094	\$ 16,275,398	-	131,573,626,578	\$ 2,018,104,706,809
80	2,018,104,706,809	14,078,259,502	\$ 10,778,877	-	141,751,363,959	\$ 2,173,923,551,393
81	2,173,923,551,393	14,570,998,585	\$ 7,039,510	-	152,675,765,932	\$ 2,341,163,276,400
82	2,341,163,276,400	15,080,983,536	\$ 4,586,284	-	164,400,178,677	\$ 2,520,639,852,330
83	2,520,639,852,330	15,608,817,959	\$ 3,028,182	-	176,981,754,353	\$ 2,713,227,396,460
84	2,713,227,396,460	16,155,126,588	\$ 2,058,375	-	190,481,713,222	\$ 2,919,862,177,895
85	2,919,862,177,895	16,720,556,018	\$ 1,455,636	-	204,965,623,982	\$ 3,141,546,902,260
86	3,141,546,902,260	17,305,775,479	\$ 1,069,462	-	220,503,704,232	\$ 3,379,355,312,508
87	3,379,355,312,508	17,911,477,621	\$ 810,535	-	237,171,142,884	\$ 3,634,437,122,478
88	3,634,437,122,478	18,538,379,338	\$ 627,578	-	255,048,446,338	\$ 3,908,023,320,576
89	3,908,023,320,576	19,187,222,614	\$ 491,333	-	274,221,810,321	\$ 4,201,431,862,178
90	4,201,431,862,178	19,858,775,406	\$ 385,569	-	294,783,518,689	\$ 4,516,073,770,704
91	4,516,073,770,704	20,553,832,545	\$ 301,281	-	316,832,370,743	\$ 4,853,459,672,710
92	4,853,459,672,710	21,273,216,684	\$ 233,064	-	340,474,138,831	\$ 5,215,206,795,161
93	5,215,206,795,161	22,017,779,268	\$ 177,452	-	365,822,058,257	\$ 5,603,046,455,234
94	5,603,046,455,234	22,788,401,543	\$ 132,704	-	392,997,351,607	\$ 6,018,832,075,680
95	6,018,832,075,680	23,585,995,597	\$ 97,017	-	422,129,789,917	\$ 6,464,547,764,177
96	6,464,547,764,177	24,411,505,442	\$ 68,933	-	453,358,293,256	\$ 6,942,317,493,942
97	6,942,317,493,942	25,265,908,133	\$ 47,089	-	486,831,573,416	\$ 7,454,414,928,403
98	7,454,414,928,403	26,150,214,918	\$ 30,649	-	522,708,821,660	\$ 8,003,273,934,332
99	8,003,273,934,332	27,065,472,440	\$ 18,804	-	561,160,444,703	\$ 8,591,499,832,671
100	8,591,499,832,671	28,012,763,975	\$ 10,775	-	602,368,852,311	\$ 9,221,881,438,182

SINGLE DISCOUNT RATE DEVELOPMENT

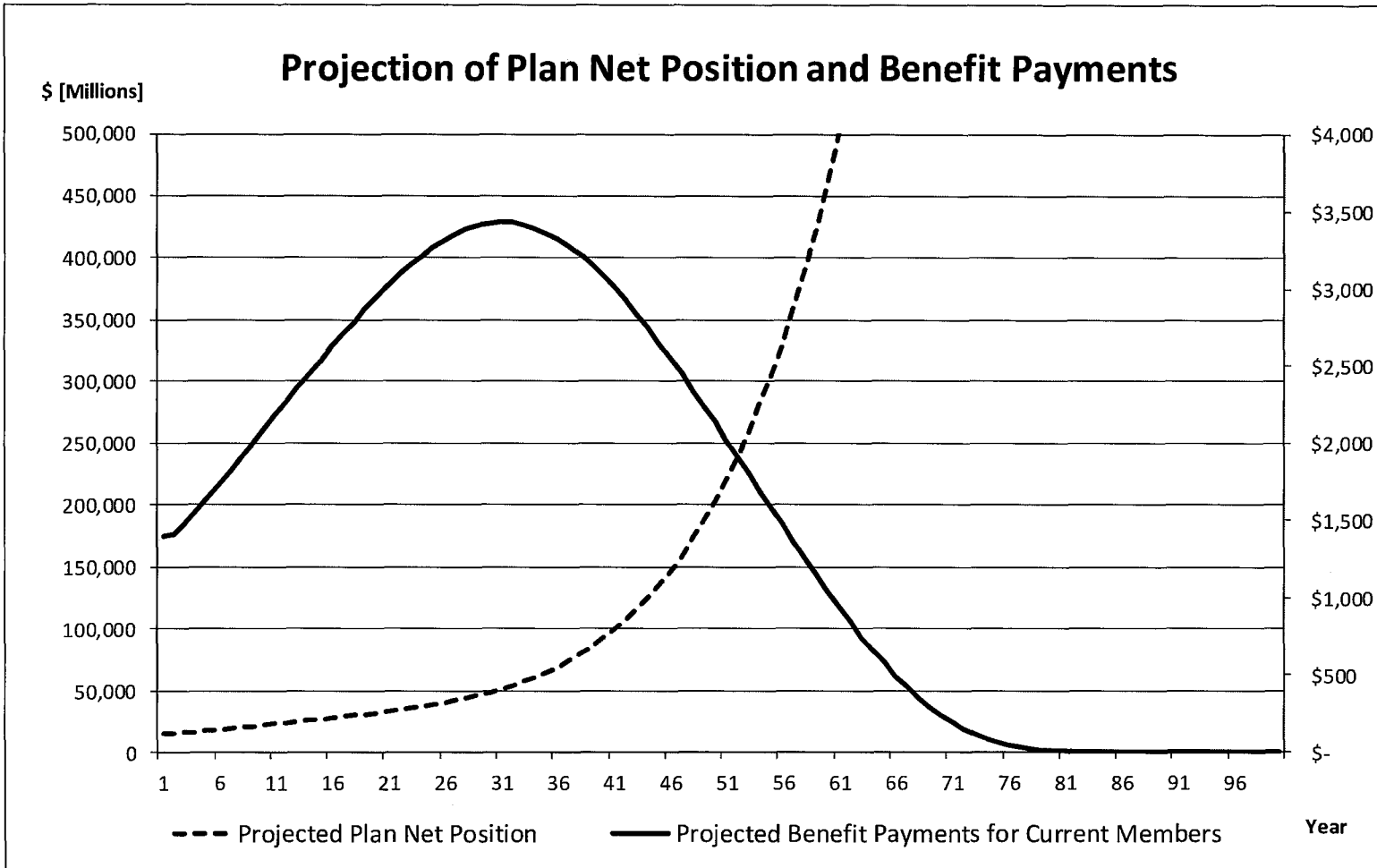
Present Values of Projected Benefit Payments Beginning July 1, 2016

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ⁿ ((a)-.5)	(g)=(e)*vf ⁿ ((a)-.5)	(h)=((c)/(1+sdr)) ⁿ ((a)-.5)
1	\$ 14,069,978,917	\$ 1,392,571,511	\$ 1,392,571,511	\$ -	\$ 1,346,249,694	\$ -	\$ 1,346,249,694
2	14,621,465,083	1,401,302,720	1,401,302,720	-	1,266,065,861	-	1,266,065,861
3	15,263,317,470	1,482,800,867	1,482,800,867	-	1,252,054,943	-	1,252,054,943
4	15,933,304,965	1,565,210,191	1,565,210,191	-	1,235,177,708	-	1,235,177,708
5	16,736,857,858	1,648,972,566	1,648,972,566	-	1,216,148,002	-	1,216,148,002
6	17,531,367,783	1,734,538,204	1,734,538,204	-	1,195,564,725	-	1,195,564,725
7	18,438,262,386	1,820,522,988	1,820,522,988	-	1,172,739,659	-	1,172,739,659
8	19,348,172,344	1,908,638,659	1,908,638,659	-	1,149,067,082	-	1,149,067,082
9	20,260,368,987	1,998,804,988	1,998,804,988	-	1,124,626,504	-	1,124,626,504
10	21,174,036,036	2,090,697,584	2,090,697,584	-	1,099,373,665	-	1,099,373,665
11	22,088,876,384	2,182,462,436	2,182,462,436	-	1,072,548,925	-	1,072,548,925
12	23,006,752,873	2,273,869,444	2,273,869,444	-	1,044,364,455	-	1,044,364,455
13	23,930,015,847	2,363,011,663	2,363,011,663	-	1,014,305,182	-	1,014,305,182
14	24,863,285,990	2,451,054,230	2,451,054,230	-	983,268,036	-	983,268,036
15	25,810,212,962	2,537,701,906	2,537,701,906	-	951,427,784	-	951,427,784
16	26,775,072,285	2,623,940,911	2,623,940,911	-	919,402,111	-	919,402,111
17	27,761,299,578	2,709,199,156	2,709,199,156	-	887,173,580	-	887,173,580
18	28,773,113,414	2,792,315,229	2,792,315,229	-	854,571,363	-	854,571,363
19	29,816,445,868	2,872,266,565	2,872,266,565	-	821,532,702	-	821,532,702
20	30,898,899,747	2,950,203,965	2,950,203,965	-	788,621,072	-	788,621,072
21	32,027,313,823	3,024,219,818	3,024,219,818	-	755,519,908	-	755,519,908
22	33,211,186,699	3,093,600,880	3,093,600,880	-	722,292,428	-	722,292,428
23	34,461,539,692	3,158,073,054	3,158,073,054	-	689,107,813	-	689,107,813
24	35,790,669,350	3,217,302,130	3,217,302,130	-	656,104,582	-	656,104,582
25	37,212,183,268	3,270,143,966	3,270,143,966	-	623,252,916	-	623,252,916
26	38,741,911,793	3,316,843,379	3,316,843,379	-	590,797,479	-	590,797,479
27	40,396,620,861	3,356,059,307	3,356,059,307	-	558,675,361	-	558,675,361
28	42,195,853,740	3,387,766,479	3,387,766,479	-	527,059,420	-	527,059,420
29	44,160,680,983	3,411,675,777	3,411,675,777	-	496,055,293	-	496,055,293
30	46,314,001,924	3,428,018,233	3,428,018,233	-	465,823,808	-	465,823,808
31	48,680,204,089	3,434,800,420	3,434,800,420	-	436,210,673	-	436,210,673
32	51,287,822,886	3,431,068,742	3,431,068,742	-	407,230,617	-	407,230,617
33	54,168,672,309	3,417,532,464	3,417,532,464	-	379,087,858	-	379,087,858
34	57,356,039,777	3,394,755,646	3,394,755,646	-	351,926,497	-	351,926,497
35	60,885,026,449	3,363,692,644	3,363,692,644	-	325,893,708	-	325,893,708
36	64,792,249,008	3,324,586,544	3,324,586,544	-	301,032,604	-	301,032,604
37	69,116,782,434	3,277,480,209	3,277,480,209	-	277,352,569	-	277,352,569
38	73,900,562,196	3,222,461,638	3,222,461,638	-	254,856,722	-	254,856,722
39	79,188,524,901	3,159,884,401	3,159,884,401	-	233,558,541	-	233,558,541
40	85,028,497,902	3,090,414,181	3,090,414,181	-	213,480,135	-	213,480,135
41	91,471,000,324	3,014,349,275	3,014,349,275	-	194,603,469	-	194,603,469
42	98,569,884,495	2,932,882,415	2,932,882,415	-	176,957,053	-	176,957,053
43	106,381,536,806	2,845,891,974	2,845,891,974	-	160,475,175	-	160,475,175
44	114,966,612,000	2,754,216,104	2,754,216,104	-	145,145,536	-	145,145,536
45	124,389,198,839	2,658,477,343	2,658,477,343	-	130,934,730	-	130,934,730
46	134,717,340,186	2,559,205,657	2,559,205,657	-	117,799,461	-	117,799,461
47	146,023,405,844	2,456,888,995	2,456,888,995	-	105,691,454	-	105,691,454
48	158,384,483,958	2,351,880,516	2,351,880,516	-	94,555,286	-	94,555,286
49	171,882,857,650	2,244,640,038	2,244,640,038	-	84,339,979	-	84,339,979
50	186,606,262,302	2,135,571,740	2,135,571,740	-	74,992,386	-	74,992,386

SINGLE DISCOUNT RATE DEVELOPMENT

PVs of Projected Benefit Payments Beginning July 1, 2016 (continued)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf^((a)-.5)	(h)=((c)/(1+sdr)^(a-.5))
51	\$ 202,648,347,567	\$ 2,024,968,712	\$ 2,024,968,712	\$ -	\$ 66,456,512	\$ -	\$ 66,456,512
52	220,109,225,477	1,913,328,299	1,913,328,299	-	58,684,707	-	58,684,707
53	239,095,699,676	1,801,170,363	1,801,170,363	-	51,630,516	-	51,630,516
54	259,721,720,104	1,688,996,845	1,688,996,845	-	45,247,723	-	45,247,723
55	282,108,912,440	1,577,399,388	1,577,399,388	-	39,493,515	-	39,493,515
56	306,387,017,398	1,466,768,142	1,466,768,142	-	34,321,148	-	34,321,148
57	332,694,697,720	1,357,465,813	1,357,465,813	-	29,685,575	-	29,685,575
58	361,180,200,962	1,249,853,898	1,249,853,898	-	25,544,184	-	25,544,184
59	392,002,040,354	1,144,293,776	1,144,293,776	-	21,856,798	-	21,856,798
60	425,329,723,135	1,041,160,167	1,041,160,167	-	18,585,865	-	18,585,865
61	461,344,517,779	940,848,865	940,848,865	-	15,696,445	-	15,696,445
62	500,240,265,317	843,785,963	843,785,963	-	13,156,185	-	13,156,185
63	542,224,237,754	750,431,272	750,431,272	-	10,935,152	-	10,935,152
64	587,518,054,155	661,279,908	661,279,908	-	9,005,658	-	9,005,658
65	636,358,659,608	576,857,712	576,857,712	-	7,342,011	-	7,342,011
66	688,999,377,564	497,692,601	497,692,601	-	5,920,028	-	5,920,028
67	745,711,065,935	424,270,067	424,270,067	-	4,716,515	-	4,716,515
68	806,783,400,573	357,007,760	357,007,760	-	3,709,135	-	3,709,135
69	872,526,275,301	296,215,423	296,215,423	-	2,876,199	-	2,876,199
70	943,271,341,835	242,078,564	242,078,564	-	2,196,766	-	2,196,766
71	1,019,373,674,850	194,620,157	194,620,157	-	1,650,561	-	1,650,561
72	1,101,213,593,682	153,736,115	153,736,115	-	1,218,529	-	1,218,529
73	1,189,198,575,354	119,172,015	119,172,015	-	882,776	-	882,776
74	1,283,765,326,085	90,535,633	90,535,633	-	626,775	-	626,775
75	1,385,381,985,375	67,321,565	67,321,565	-	435,575	-	435,575
76	1,494,550,459,437	48,940,157	48,940,157	-	295,931	-	295,931
77	1,611,808,888,617	34,741,044	34,741,044	-	196,329	-	196,329
78	1,737,734,263,755	24,065,125	24,065,125	-	127,100	-	127,100
79	1,872,945,172,536	16,275,398	16,275,398	-	80,335	-	80,335
80	2,018,104,706,809	10,778,877	10,778,877	-	49,724	-	49,724
81	2,173,923,551,393	7,039,510	7,039,510	-	30,349	-	30,349
82	2,341,163,276,400	4,586,284	4,586,284	-	18,479	-	18,479
83	2,520,639,852,330	3,028,182	3,028,182	-	11,403	-	11,403
84	2,713,227,396,460	2,058,375	2,058,375	-	7,244	-	7,244
85	2,919,862,177,895	1,455,636	1,455,636	-	4,788	-	4,788
86	3,141,546,902,260	1,069,462	1,069,462	-	3,287	-	3,287
87	3,379,355,312,508	810,535	810,535	-	2,328	-	2,328
88	3,634,437,122,478	627,578	627,578	-	1,685	-	1,685
89	3,908,023,320,576	491,333	491,333	-	1,233	-	1,233
90	4,201,431,862,178	385,569	385,569	-	904	-	904
91	4,516,073,770,704	301,281	301,281	-	660	-	660
92	4,853,459,672,710	233,064	233,064	-	477	-	477
93	5,215,206,795,161	177,452	177,452	-	340	-	340
94	5,603,046,455,234	132,704	132,704	-	237	-	237
95	6,018,832,075,680	97,017	97,017	-	162	-	162
96	6,464,547,764,177	68,933	68,933	-	108	-	108
97	6,942,317,493,942	47,089	47,089	-	69	-	69
98	7,454,414,928,403	30,649	30,649	-	42	-	42
99	8,003,273,934,332	18,804	18,804	-	24	-	24
100	8,591,499,832,671	10,775	10,775	-	13	-	13
Totals					\$ 32,417,804,618	\$ -	\$ 32,417,804,618



SECTION F

GASB NO. 68 INFORMATION

GASB No. 68 DISCLOSURE INFORMATION

This section of the report shows the GASB No. 68 information for the employers covered by ERS. Pages F-1, F-2 and F-3 show the aggregate pension expense and Deferred Outflows and (Inflows) of resources for the employers with employees covered by ERS. Pages F-4 through F-6 show the disclosure information for the individual employers that need to be incorporated into the employers' financial statements.

Page F-4 shows the employers their proportionate share of the Net Pension Liability and Pension Expense. Page F-5 shows the employers their deferred inflows and outflows by component. Page F-6 shows the employers the deferred outflows and inflows of resources to be recognized in future years' pension expense.

PENSION EXPENSE

The table below shows the aggregate Pension Expense for the ERS employers for the fiscal year ending June 30, 2016. Pension Expense for each employer is determined on a proportionate share basis and is shown on page F-4.

A. Expense

1. Service Cost	\$ 484,278,499
2. Interest on the Total Pension Liability	1,748,619,873
3. Current-Period Benefit Changes	0
4. Employee Contributions (made negative for addition here)	(236,801,861)
5. Projected Earnings on Plan Investments (made negative for addition here)	(1,099,489,043)
6. Pension Plan Administrative Expense	13,960,587
7. Other Changes in Plan Fiduciary Net Position	0
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	581,570,182
9. Recognition of Outflow (Inflow) of Resources due to Assets	114,196,546
10. Total Pension Expense	\$ 1,606,334,783

Recognition of Deferred Outflows and Inflows of Resources

According to paragraph 33 of GASB No. 68, *differences between expected and actual experience and changes in assumptions* are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the 2016 fiscal year, the expected remaining service lives of all employees was 765,540 years. Additionally, the plan membership (active employees and inactive employees) was 132,846. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the 2016 fiscal year is 5.7626 years.

Additionally, *differences between projected and actual earnings on pension plan investments* should be recognized in pension expense using a systematic and rational method over a closed five-year period.

For this purpose, the deferred outflows and inflows of resources are recognized in the pension expense as a level dollar amount over the closed period identified above.

The current year's Deferred Outflows and (Inflows) are shown below. The aggregate Deferred Outflows and (Inflows) for the current and prior reporting periods is shown on the following page. The amounts by employer are shown on pages F-5 and F-6.

Statement of Outflows and Inflows Arising from Current Reporting Period
for Fiscal Year Ending June 30, 2016

A. Outflows (Inflows) of Resources due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ 297,534,219
2. Assumption Changes (gains) or losses	\$ 2,915,922,677
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	5.7626
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the Difference between expected and actual experience of the Total Pension Liability	\$ 51,631,941
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ 506,008,170
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	<u>\$ 557,640,111</u>
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the Difference between expected and actual experience of the Total Pension Liability	\$ 245,902,278
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ 2,409,914,507
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	<u>\$ 2,655,816,785</u>

B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ 1,268,857,153
2. Recognition period for Assets {in years}	5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$ 253,771,431
3. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ 1,015,085,722

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods
for Fiscal Year Ending June 30, 2016

A. Outflows and Inflows of Resources due to Liabilities and Assets to be recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. due to Liabilities	\$ 634,153,968	\$ 52,583,786	\$ 581,570,182
2. due to Assets	\$ 360,662,474	\$ 246,465,928	\$ 114,196,546
3. Total	\$ 994,816,442	\$ 299,049,714	\$ 695,766,728

B. Outflows and Inflows of Resources by Source to be recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 80,734,319	\$ 52,583,786	\$ 28,150,533
2. Assumption Changes	553,419,649	-	553,419,649
3. Net Difference between projected and actual earnings on pension plan investments	360,662,474	246,465,928	114,196,546
4. Total	\$ 994,816,442	\$ 299,049,714	\$ 695,766,728

C. Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	\$ 334,403,827	\$ 179,470,349	\$ 154,933,478
2. Assumption Changes	2,576,305,090	-	2,576,305,090
3. Net Difference between projected and actual earnings on pension plan investments	1,335,758,843	492,931,848	842,826,995
4. Total	\$ 4,246,467,760	\$ 672,402,197	\$ 3,574,065,563

D. Deferred Outflows and Deferred Inflows of Resources by Year to be recognized in Future Pension Expenses

Year Ending June 30	Net Deferred Outflows of Resources
2017	\$ 695,766,728
2018	695,766,736
2019	939,539,114
2020	817,736,644
2021	425,256,341
Thereafter	0
Total	\$ 3,574,065,563

**Schedule of Employer Allocations
and Pension Amounts
At June 30, 2016
Exhibit 1**

Employer	Proportionate Share as of June 30, 2016	Change in Proportioante Share	Proportionate Share of Net Pension Liability as of June 30, 2016 7.00%	Sensitivity Analysis		Proportionate Share of Pension Expense as of June 30, 2016
				Proportionate Share of Net Pension Liability 1% Decrease 6.00%	Proportionate Share of Net Pension Liability 1% Increase 8.00%	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
State of Hawaii	56.59965313%	-0.63838106%	7,566,951,793	9,678,636,828	5,819,601,896	898,413,286
City and County of Honolulu	18.16775824%	0.75630888%	2,428,893,874	3,141,321,371	1,839,383,559	309,331,876
County of Hawaii	4.62351194%	0.24845366%	618,129,088	799,364,579	468,162,682	79,460,631
County of Maui	4.43090802%	0.06376887%	592,379,379	764,885,350	449,636,363	71,774,629
County of Kauai	2.04019079%	-0.00332021%	272,758,303	352,084,352	207,118,607	32,567,637
BWS City and County of Honolulu	0.87022739%	-0.06332579%	116,342,916	148,774,341	89,506,979	15,437,218
DWS County of Hawaii	0.21876767%	0.00188670%	29,247,607	37,400,588	22,501,284	3,696,028
DOW County of Kauai	0.12656751%	-0.00294230%	16,921,133	21,638,020	13,018,064	2,228,808
HART	0.17323641%	-0.00532507%	23,160,417	29,616,550	17,818,180	2,939,281
University of Hawaii	12.74917891%	-0.35712369%	1,704,470,202	2,179,603,527	1,311,313,007	190,485,389

Schedule of Employer Allocations
and Pension Amounts
At June 30, 2016
Exhibit 2

Deferred Outflows and Inflows of Resources by Source to be recognized in Future Pension Expenses

Employer	Deferred Outflows					Deferred Inflows				
	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
State of Hawaii	153,476,953	736,451,474	1,423,943,027	25,447,381	2,339,318,835	108,951,893	272,519,092	0	24,141,923	405,612,908
City and County of Honolulu	90,433,760	258,915,619	496,445,315	41,895,660	887,690,354	26,492,769	94,926,617	0	11,477,592	132,896,978
County of Hawaii	22,931,024	65,845,762	126,260,518	18,375,458	233,412,762	6,759,333	24,142,764	0	5,773,781	36,675,878
County of Maui	20,572,233	62,334,905	119,658,360	5,488,317	208,053,815	6,766,833	22,883,004	0	10,633,937	40,283,774
County of Kauai	9,349,232	28,634,435	54,978,333	4,175,504	97,137,504	3,141,122	10,514,081	0	7,878,849	21,534,052
BWS City and County of Honolulu	2,316,873	11,299,595	21,852,328	6,993,084	42,461,880	1,683,977	4,182,262	0	3,576,177	9,442,416
DWS County of Hawaii	582,442	2,840,621	5,493,487	2,386,904	11,303,454	423,337	1,051,385	0	2,018,877	3,493,599
DOW County of Kauai	336,970	1,643,434	3,178,244	860,461	6,019,109	244,921	608,276	0	93,183	946,380
HART	461,221	2,249,414	4,350,149	642,616	7,703,400	335,230	832,564	0	171,079	1,338,873
University of Hawaii	33,943,119	165,543,584	320,145,329	0	519,632,032	24,670,934	61,271,803	0	40,499,987	126,442,724

**Schedule of Employer Allocations
and Pension Amounts**

At June 30, 2016

Exhibit 3

Deferred Outflows and (Inflows) to be Recognized in Future Years

Employer	Total	Total	Total	Total	Total	Total
	Deferred Outflow and (Inflow) 2017	Deferred Outflow and (Inflow) 2018	Deferred Outflow and (Inflow) 2019	Deferred Outflows of 2020	Deferred Outflows of 2021	Deferred Outflows of Thereafter
(1)	(2)	(3)	(4)	(5)	(6)	(7)
State of Hawaii	374,202,486	374,202,489	507,220,782	442,747,435	235,332,735	-
City and County of Honolulu	151,225,764	151,225,768	198,699,605	169,283,136	84,359,101	-
County of Hawaii	39,203,620	39,203,620	51,591,632	44,572,275	22,165,736	-
County of Maui	32,848,294	32,848,294	44,376,653	38,443,861	19,252,940	-
County of Kauai	14,613,799	14,613,799	20,155,628	17,725,822	8,494,404	-
BWS City and County of Honolulu	7,366,831	7,366,831	8,991,075	6,309,939	2,984,789	-
DWS County of Hawaii	1,667,202	1,667,203	2,015,569	1,497,749	962,131	-
DOW County of Kauai	1,055,036	1,055,036	1,355,900	1,098,096	508,662	-
HART	1,332,707	1,332,707	1,693,375	1,324,958	680,780	-
University of Hawaii	72,250,989	72,250,989	103,438,895	94,733,373	50,515,063	-

SECTION G

GLOSSARY OF TERMS

GLOSSARY OF TERMS

Actuarial Accrued Liability (AAL)

The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability".

Actuarial Assumptions

These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.

Accrued Service

Service credited under the system which was rendered before the date of the actuarial valuation.

Actuarial Equivalent

A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.

Actuarial Cost Method

A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.

Actuarial Gain (Loss)

The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.

Actuarial Present Value

The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.

Actuarial Valuation

The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.

Actuarial Valuation Date

The date as of which an actuarial valuation is performed.

Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)

A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

GLOSSARY OF TERMS (CONTINUED)

Amortization Payment

The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.

Amortization Method

The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be "open" (meaning, reset each year) or "closed" (the number of years remaining will decline each year).

Cost-of-Living Adjustments

Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.

Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)

A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.

Covered-Employee Payroll

The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.

Deferred Retirement Option Program (DROP)

A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.

Deferred Inflows and Outflows

The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.

Discount Rate

For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically:

1. The benefit payments to be made while the pension plans' fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period and;
2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

GLOSSARY OF TERMS (CONTINUED)**Entry Age Actuarial Cost Method (EAN)**

The EAN is a funding method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit ages(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.

GASB

The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.

Fiduciary Net Position

The fiduciary net position is the value of the assets of the trust.

Long-Term Expected Rate of Return

The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.

Money-Weighted Rate of Return

The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.

Multiple-Employer Defined Benefit Pension Plan

A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.

Municipal Bond Rate

The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.

Net Pension Liability (NPL)

The NPL is the liability of employers and nonemployer contribution entities to plan members for benefits provided through a defined benefit pension plan.

Nonemployer Contribution Entities

Nonemployer contribution entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB Accounting statement plan members are not considered nonemployer contribution entities.

Normal Cost

The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.

GLOSSARY OF TERMS (CONTINUED)**Other Postemployment Benefits (OPEB)**

All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other post-employment benefits do not include termination benefits.

Real Rate of Return

The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.

Service Cost

The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.

Total Pension Expense

The total pension expense is the sum of the following pension expense items that are recognized from the beginning to the end of the employer's fiscal year:

1. Total service cost;
2. Interest on total pension liability;
3. Current-period benefit changes;
4. Member contributions;
5. Projected earnings on plan investments;
6. Administrative expense;
7. Other Changes in Plan Fiduciary Net Position;
8. Recognition of beginning deferred outflows (inflows) due to liabilities; and
9. Recognition of beginning deferred outflows (inflows) due to assets.

Total Pension Liability (TPL)

The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.

Unfunded Actuarial Accrued Liability (UAAL)

The UAAL is the difference between actuarial accrued liability and valuation assets.

Valuation Assets

The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of the GASB Statement No. 67, the valuation asset is equal to the market value of assets.

