

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

GASB STATEMENT NO. 67 ACCOUNTING AND FINANCIAL
REPORTING FOR PENSIONS

JUNE 30, 2014

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January 19, 2015

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."

Our actuarial calculations for this report were prepared for the purpose of complying with the requirements of GASB Statement No. 67. These calculations have been made on a basis that is consistent with our understanding of this Statement.

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. 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 No. 67 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 June 30, 2014.

The last section of the report which details the calculation of the single discount rate 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.

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, 2014 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 _____
Joseph P. Newton
FSA, EA, MAAA

SECTION A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

as of June 30, 2014

	2014
Actuarial Valuation Date	June 30, 2014
Pension Plan's Fiscal Year Ending Date (Measurement Date & Reporting Date)	June 30, 2014
 Membership	
Number of	
- Retirees and Beneficiaries	43,087
- Inactive, Nonretired Members	19,352
- Active Members	67,206
- Total	129,645
Reported Payroll for Fiscal Year	\$ 3,829,002,983
 Net Pension Liability	
Total Pension Liability	\$ 22,220,097,547
Plan Fiduciary Net Position	14,203,015,303
Net Pension Liability	\$ 8,017,082,244
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	63.92%
Net Pension Liability as a Percentage of Covered Payroll	209.38%
 Development of the Single Discount Rate	
Single Discount Rate	7.75%
Long-Term Expected Rate of Return	7.75%
Long-Term Municipal Bond Rate*	4.29%
Last year ending June 30 in the 2014 to 2113 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 26, 2014. 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, 2014 and a measurement date of June 30, 2014.

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 7.75% the municipal bond rate is 4.29% (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 7.75%.

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.

SECTION B

FINANCIAL STATEMENTS

STATEMENT OF FIDUCIARY NET POSITION
as of June 30, 2014

	2014
Assets	
Cash and Deposits	\$ 421,279,485
Receivables	
Accounts receivable and others	\$ 8,509,083
Investment sales proceeds	77,605,229
Accrued investment income	42,264,207
Employer contributions	55,910,549
Member contributions	5,464,431
Other	-
Total Receivables	\$ 189,753,499
Investments	
Equity securities	\$ 9,450,253,187
Fixed income securities	2,669,398,695
Real estate investments	1,192,580,996
Alternative investments	751,113,517
Total Investments	\$ 14,063,346,395
Invested Securities Lending Collateral	\$ 1,233,104,953
Equipment at cost, net of depreciation	\$ 10,104,068
Total Assets	\$ 15,917,588,400
 Liabilities	
Payables	
Accounts and other payables	\$ 48,127,972
Payables for securiites purchased	182,232,054
Securities lending collateral	1,233,104,953
Notes payable	251,108,118
Total Liabilities	\$ 1,714,573,097
 Net Position Restricted for Pensions	 \$ 14,203,015,303

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
for Year Ended June 30, 2014

	<u>Year Ending June 30, 2014</u>
Additions	
Contributions	
Non-Employer Contributing Entity	\$ -
Employer	653,127,697
Employee	206,127,337
Other	-
Total Contributions	<u>\$ 859,255,034</u>
Investment Income	
Net Appreciation in Fair Value of Investments	\$ 1,801,813,303
Interest and Dividends	407,762,710
Less Investment Expense	(34,096,053)
Net Investment Income	<u>\$ 2,175,479,960</u>
Other	\$ -
Total Additions	<u>\$ 3,034,734,994</u>
 Deductions	
Benefit payments, including refunds of employee contributions	\$ 1,130,921,611
Pension Plan Administrative Expense	12,626,030
Other	-
Total Deductions	<u>\$ 1,143,547,641</u>
 Net Increase in Net Position	 \$ 1,891,187,353
 Net Position Restricted for Pensions	
Beginning of Year	<u>\$ 12,311,827,950</u>
End of Year	<u>\$ 14,203,015,303</u>

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS
Fiscal Year Ended June 30, 2014

A. Total pension liability	
1. Service Cost	\$ 421,956,129
2. Interest on the Total Pension Liability	1,618,917,777
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the Total Pension Liability	66,400,876
5. Changes of assumptions	0
6. Benefit payments, including refunds of employee contributions	(1,130,921,611)
7. Net change in total pension liability	\$ 976,353,170
8. Total pension liability – beginning	21,243,744,377
9. Total pension liability – ending	<u><u>\$ 22,220,097,547</u></u>
B. Plan fiduciary net position	
1. Contributions – employer	\$ 653,127,697
2. Contributions – employee	206,127,337
3. Net investment income	2,175,479,960
4. Benefit payments, including refunds of employee contributions	(1,130,921,611)
5. Pension Plan Administrative Expense	(12,626,030)
6. Other	-
7. Net change in plan fiduciary net position	\$ 1,891,187,353
8. Plan fiduciary net position – beginning	12,311,827,950
9. Plan fiduciary net position – ending	<u><u>\$ 14,203,015,303</u></u>
C. Net pension liability	<u><u>\$ 8,017,082,244</u></u>
D. Plan fiduciary net position as a percentage of the total pension liability	63.92%
E. Covered-employee payroll	\$ 3,829,002,983
F. Net pension liability as a percentage of covered employee payroll	209.38%

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
2005						
2006						
2007						
2008						
2009						
2010						
2011						
2012						
2013	\$ 21,243,744,377	\$ 12,357,825,626	\$ 8,885,918,751	58.17%	\$ 3,720,809,962	238.82%
2014	22,220,097,547	14,203,015,303	8,017,082,244	63.92%	3,829,002,983	209.38%

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,	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Total Pension Liability										
Service Cost	\$ 421,956,129									
Interest on the Total Pension Liability	1,618,917,777									
Benefit Changes	-									
Difference between Expected and Actual Experience	66,400,876									
Assumption Changes	-									
Benefit Payments	(1,122,445,642)									
Refunds	(8,475,969)									
Net Change in Total Pension Liability	976,353,170									
Total Pension Liability - Beginning	21,243,744,377									
Total Pension Liability - Ending (a)	\$ 22,220,097,547									
Plan Fiduciary Net Position										
Employer Contributions	\$ 653,127,697									
Employee Contributions	206,127,337									
Pension Plan Net Investment Income	2,175,479,960									
Benefit Payments	(1,122,445,642)									
Refunds	(8,475,969)									
Pension Plan Administrative Expense	(12,626,030)									
Other	-									
Net Change in Plan Fiduciary Net Position	1,891,187,353									
Plan Fiduciary Net Position - Beginning	12,311,827,950									
Plan Fiduciary Net Position - Ending (b)	\$ 14,203,015,303									
Net Pension Liability - Ending (a) - (b)	8,017,082,244									
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	63.92 %									
Covered Employee Payroll	\$ 3,829,002,983									
Net Pension Liability as a Percentage of Covered Employee Payroll	209.38 %									
Notes to Schedule:										
N/A										

SECTION D

NOTES TO FINANCIAL STATEMENTS

Single Discount Rate

A single discount rate of 7.75% 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 7.75%. 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 7.75%, 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

	Current Single Discount Rate Assumption	
1% Decrease 6.75%	7.75%	1% Increase 8.75%
\$10,239,091,999	\$8,017,082,244	\$5,795,072,490

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	43,087
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	19,352
Active Plan Members	<u>67,206</u>
Total Plan Members	129,645

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 7.75%; the municipal bond rate is 4.29%; and the resulting single discount rate is 7.75%.

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.

SINGLE DISCOUNT RATE DEVELOPMENT

Projection of Contributions Beginning July 1, 2014

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	3,827,617,369	\$ 164,022,910	\$ 3,991,640,279	\$ 199,801,627	\$ 661,795,043	\$ 25,677,271	\$ 887,273,941
2	3,671,521,782	\$ 459,825,907	4,131,347,689	191,653,437	654,999,486	74,513,342	921,166,265
3	3,532,385,265	\$ 743,559,593	4,275,944,858	184,390,511	630,177,531	120,491,494	935,059,536
4	3,400,709,657	\$ 1,024,893,271	4,425,602,928	177,517,044	606,686,603	166,080,731	950,284,378
5	3,275,736,719	\$ 1,304,762,311	4,580,499,030	170,993,457	584,391,431	211,432,629	966,817,517
6	3,156,727,704	\$ 1,584,088,792	4,740,816,496	164,781,186	563,160,222	256,696,607	984,638,015
7	3,039,095,176	\$ 1,867,649,897	4,906,745,074	158,640,768	542,174,579	302,646,792	1,003,462,139
8	2,920,652,414	\$ 2,157,828,737	5,078,481,151	152,458,056	521,044,391	349,669,361	1,023,171,808
9	2,801,899,241	\$ 2,454,328,750	5,256,227,992	146,259,140	499,858,825	397,716,256	1,043,834,221
10	2,682,998,334	\$ 2,757,197,637	5,440,195,971	140,052,513	478,646,903	446,795,206	1,065,494,622
11	2,563,780,750	\$ 3,066,822,081	5,630,602,830	133,829,355	457,378,486	496,968,874	1,088,176,715
12	2,444,031,557	\$ 3,383,642,373	5,827,673,929	127,578,447	436,015,230	548,308,606	1,111,902,283
13	2,323,444,212	\$ 3,708,198,304	6,031,642,517	121,283,788	414,502,447	600,901,874	1,136,688,109
14	2,201,734,593	\$ 4,041,015,412	6,242,750,005	114,930,546	392,789,451	654,833,839	1,162,553,836
15	2,081,145,056	\$ 4,380,101,199	6,461,246,255	108,635,772	371,276,278	709,781,625	1,189,693,675
16	1,961,103,109	\$ 4,726,286,765	6,687,389,874	102,369,582	349,860,795	765,879,907	1,218,110,284
17	1,841,373,376	\$ 5,080,075,143	6,921,448,520	96,119,690	328,501,010	823,210,201	1,247,830,901
18	1,721,193,184	\$ 5,442,506,034	7,163,699,218	89,846,284	307,060,864	881,940,987	1,278,848,135
19	1,600,420,764	\$ 5,814,007,926	7,414,428,690	83,541,964	285,515,064	942,141,701	1,311,198,729
20	1,481,214,822	\$ 6,192,718,872	7,673,933,695	77,319,414	264,248,724	1,003,510,618	1,345,078,756
21	1,364,379,706	\$ 6,578,141,667	7,942,521,374	71,220,621	243,405,340	1,065,967,170	1,380,593,131
22	1,249,001,722	\$ 6,971,507,900	8,220,509,622	65,197,890	222,821,907	1,129,710,931	1,417,730,728
23	1,136,186,055	\$ 7,372,041,403	8,508,227,459	59,308,912	202,695,592	1,194,616,126	1,456,620,630
24	1,026,880,115	\$ 7,779,135,305	8,806,015,420	53,603,142	183,195,412	1,260,584,412	1,497,382,966
25	921,914,363	\$ 8,192,311,597	9,114,225,959	48,123,930	164,469,522	1,327,538,331	1,540,131,783
26	822,276,369	\$ 8,610,947,499	9,433,223,868	42,922,826	146,694,104	1,395,376,963	1,584,993,893
27	728,204,666	\$ 9,035,182,038	9,763,386,703	38,012,284	129,911,712	1,464,122,835	1,632,046,831
28	639,176,310	\$ 9,465,928,928	10,105,105,238	33,365,003	114,029,054	1,533,924,014	1,681,318,071
29	555,976,813	\$ 9,902,807,109	10,458,783,921	29,021,990	99,186,263	1,604,718,750	1,732,927,003
30	478,819,048	\$ 10,346,022,311	10,824,841,359	24,994,354	85,421,318	1,676,540,379	1,786,956,051
31	408,497,422	\$ 10,795,213,384	11,203,710,806	21,323,565	72,875,940	1,749,330,380	1,843,529,885
32	345,856,613	\$ 11,249,984,072	11,595,840,684	18,053,715	61,700,820	1,823,024,540	1,902,779,075
33	290,351,953	\$ 11,711,343,155	12,001,695,108	15,156,372	51,798,789	1,897,786,329	1,964,741,490
34	241,965,995	\$ 12,179,788,442	12,421,754,437	12,630,625	43,166,733	1,973,696,414	2,029,493,772
35	199,557,097	\$ 12,656,958,745	12,856,515,842	10,416,880	35,600,986	2,051,020,361	2,097,038,227
36	162,699,601	\$ 13,143,794,296	13,306,493,897	8,492,919	29,025,609	2,129,910,531	2,167,429,059
37	130,826,402	\$ 13,641,394,781	13,772,221,183	6,829,138	23,339,430	2,210,545,125	2,240,713,693
38	103,925,162	\$ 14,150,323,763	14,254,248,925	5,424,893	18,540,249	2,293,015,466	2,316,980,608
39	81,996,478	\$ 14,671,151,159	14,753,147,637	4,280,216	14,628,172	2,377,413,908	2,396,322,296
40	64,190,596	\$ 15,205,317,209	15,269,507,804	3,350,749	11,451,602	2,463,973,836	2,478,776,187
41	49,679,391	\$ 15,754,261,187	15,803,940,578	2,593,264	8,862,803	2,552,928,481	2,564,384,548
42	38,008,141	\$ 16,319,070,357	16,357,078,498	1,984,025	6,780,652	2,644,454,031	2,653,218,708
43	28,893,590	\$ 16,900,682,655	16,929,576,245	1,508,245	5,154,617	2,738,702,475	2,745,365,337
44	21,694,717	\$ 17,500,416,696	17,522,111,414	1,132,464	3,870,338	2,835,887,490	2,840,890,292
45	16,134,372	\$ 18,119,250,942	18,135,385,313	842,214	2,878,372	2,936,167,634	2,939,888,220
46	11,678,276	\$ 18,758,445,523	18,770,123,799	609,606	2,083,404	3,039,747,106	3,042,440,116
47	8,345,860	\$ 19,418,732,272	19,427,078,132	435,654	1,488,901	3,146,744,497	3,148,669,052
48	5,704,192	\$ 20,101,321,675	20,107,025,867	297,759	1,017,628	3,257,355,963	3,258,671,350
49	3,723,941	\$ 20,807,047,831	20,810,771,772	194,390	664,351	3,371,716,667	3,372,575,408
50	2,271,700	\$ 21,536,877,084	21,539,148,784	118,583	405,271	3,489,983,203	3,490,507,057

SINGLE DISCOUNT RATE DEVELOPMENT
Projection of Contributions Beginning July 1, 2014
 (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	1,216,449	\$ 22,291,802,542	22,293,018,992	63,499	217,015	3,612,316,499	3,612,597,013
52	464,898	\$ 23,072,809,758	23,073,274,656	24,268	82,938	3,738,876,262	3,738,983,468
53	132,627	\$ 23,880,706,642	23,880,839,269	6,923	23,661	3,869,793,412	3,869,823,996
54	53,975	\$ 24,716,614,669	24,716,668,644	2,817	9,629	4,005,249,679	4,005,262,125
55	17,465	\$ 25,581,734,581	25,581,752,046	912	3,116	4,145,439,640	4,145,443,668
56	3,363	\$ 26,477,110,005	26,477,113,368	176	600	4,290,532,411	4,290,533,187
57	-	\$ 27,403,812,336	27,403,812,336	-	-	4,440,701,610	4,440,701,610
58	-	\$ 28,362,945,768	28,362,945,768	-	-	4,596,126,166	4,596,126,166
59	-	\$ 29,355,648,869	29,355,648,869	-	-	4,756,990,582	4,756,990,582
60	-	\$ 30,383,096,580	30,383,096,580	-	-	4,923,485,252	4,923,485,252
61	-	\$ 31,446,504,960	31,446,504,960	-	-	5,095,807,236	5,095,807,236
62	-	\$ 32,547,132,634	32,547,132,634	-	-	5,274,160,489	5,274,160,489
63	-	\$ 33,686,282,276	33,686,282,276	-	-	5,458,756,106	5,458,756,106
64	-	\$ 34,865,302,156	34,865,302,156	-	-	5,649,812,570	5,649,812,570
65	-	\$ 36,085,587,731	36,085,587,731	-	-	5,847,556,010	5,847,556,010
66	-	\$ 37,348,583,302	37,348,583,302	-	-	6,052,220,471	6,052,220,471
67	-	\$ 38,655,783,717	38,655,783,717	-	-	6,264,048,187	6,264,048,187
68	-	\$ 40,008,736,147	40,008,736,147	-	-	6,483,289,874	6,483,289,874
69	-	\$ 41,409,041,912	41,409,041,912	-	-	6,710,205,019	6,710,205,019
70	-	\$ 42,858,358,379	42,858,358,379	-	-	6,945,062,195	6,945,062,195
71	-	\$ 44,358,400,923	44,358,400,923	-	-	7,188,139,372	7,188,139,372
72	-	\$ 45,910,944,955	45,910,944,955	-	-	7,439,724,250	7,439,724,250
73	-	\$ 47,517,828,028	47,517,828,028	-	-	7,700,114,598	7,700,114,598
74	-	\$ 49,180,952,009	49,180,952,009	-	-	7,969,618,609	7,969,618,609
75	-	\$ 50,902,285,330	50,902,285,330	-	-	8,248,555,261	8,248,555,261
76	-	\$ 52,683,865,316	52,683,865,316	-	-	8,537,254,695	8,537,254,695
77	-	\$ 54,527,800,602	54,527,800,602	-	-	8,836,058,609	8,836,058,609
78	-	\$ 56,436,273,623	56,436,273,623	-	-	9,145,320,660	9,145,320,660
79	-	\$ 58,411,543,200	58,411,543,200	-	-	9,465,406,883	9,465,406,883
80	-	\$ 60,455,947,212	60,455,947,212	-	-	9,796,696,124	9,796,696,124
81	-	\$ 62,571,905,365	62,571,905,365	-	-	10,139,580,489	10,139,580,489
82	-	\$ 64,761,922,052	64,761,922,052	-	-	10,494,465,806	10,494,465,806
83	-	\$ 67,028,589,324	67,028,589,324	-	-	10,861,772,109	10,861,772,109
84	-	\$ 69,374,589,951	69,374,589,951	-	-	11,241,934,133	11,241,934,133
85	-	\$ 71,802,700,599	71,802,700,599	-	-	11,635,401,827	11,635,401,827
86	-	\$ 74,315,795,120	74,315,795,120	-	-	12,042,640,891	12,042,640,891
87	-	\$ 76,916,847,949	76,916,847,949	-	-	12,464,133,323	12,464,133,323
88	-	\$ 79,608,937,627	79,608,937,627	-	-	12,900,377,989	12,900,377,989
89	-	\$ 82,395,250,444	82,395,250,444	-	-	13,351,891,219	13,351,891,219
90	-	\$ 85,279,084,210	85,279,084,210	-	-	13,819,207,411	13,819,207,411
91	-	\$ 88,263,852,157	88,263,852,157	-	-	14,302,879,671	14,302,879,671
92	-	\$ 91,353,086,983	91,353,086,983	-	-	14,803,480,459	14,803,480,459
93	-	\$ 94,550,445,027	94,550,445,027	-	-	15,321,602,275	15,321,602,275
94	-	\$ 97,859,710,603	97,859,710,603	-	-	15,857,858,355	15,857,858,355
95	-	\$ 101,284,800,474	101,284,800,474	-	-	16,412,883,397	16,412,883,397
96	-	\$ 104,829,768,491	104,829,768,491	-	-	16,987,334,316	16,987,334,316
97	-	\$ 108,498,810,388	108,498,810,388	-	-	17,581,891,017	17,581,891,017
98	-	\$ 112,296,268,751	112,296,268,751	-	-	18,197,257,203	18,197,257,203
99	-	\$ 116,226,638,158	116,226,638,158	-	-	18,834,161,205	18,834,161,205
100	-	\$ 120,294,570,493	120,294,570,493	-	-	19,493,356,847	19,493,356,847

SINGLE DISCOUNT RATE DEVELOPMENT

Projection of Plan Fiduciary Net Position Beginning July 1, 2014

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.75%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
1	\$ 14,203,015,303	\$ 887,273,941	\$ 1,192,437,003	\$ 13,067,941	\$ 1,088,632,324	\$ 14,973,416,623
2	14,973,416,623	921,166,265	\$ 1,273,358,595	12,311,156	1,146,578,823	15,755,491,961
3	15,755,491,961	935,059,536	\$ 1,353,515,210	11,715,554	1,204,692,517	16,530,013,249
4	16,530,013,249	950,284,378	\$ 1,434,077,002	11,188,314	1,262,253,399	17,297,285,711
5	17,297,285,711	966,817,517	\$ 1,513,763,235	10,701,224	1,319,334,016	18,058,972,785
6	18,058,972,785	984,638,015	\$ 1,593,563,774	10,248,905	1,376,025,052	18,815,823,172
7	18,815,823,172	1,003,462,139	\$ 1,675,818,964	9,821,901	1,432,285,103	19,565,929,549
8	19,565,929,549	1,023,171,808	\$ 1,758,509,942	9,402,718	1,488,039,299	20,309,227,995
9	20,309,227,995	1,043,834,221	\$ 1,840,910,193	8,983,992	1,543,313,148	21,046,481,179
10	21,046,481,179	1,065,494,622	\$ 1,922,656,691	8,571,187	1,598,181,075	21,778,928,999
11	21,778,928,999	1,088,176,715	\$ 2,004,731,685	8,164,371	1,652,702,719	22,506,912,376
12	22,506,912,376	1,111,902,283	\$ 2,086,322,882	7,759,999	1,706,936,353	23,231,668,131
13	23,231,668,131	1,136,688,109	\$ 2,166,807,097	7,359,088	1,761,002,128	23,955,192,183
14	23,955,192,183	1,162,553,836	\$ 2,245,967,465	6,959,267	1,815,063,812	24,679,883,099
15	24,679,883,099	1,189,693,675	\$ 2,322,058,283	6,562,803	1,869,380,976	25,410,336,664
16	25,410,336,664	1,218,110,284	\$ 2,395,561,986	6,175,254	1,924,291,339	26,151,001,048
17	26,151,001,048	1,247,830,901	\$ 2,465,762,907	5,792,526	1,980,168,040	26,907,444,556
18	26,907,444,556	1,278,848,135	\$ 2,533,400,149	5,412,689	2,037,414,307	27,684,894,160
19	27,684,894,160	1,311,198,729	\$ 2,597,752,157	5,033,942	2,096,464,137	28,489,770,928
20	28,489,770,928	1,345,078,756	\$ 2,657,476,907	4,659,900	2,157,873,514	29,330,586,391
21	29,330,586,391	1,380,593,131	\$ 2,711,929,488	4,295,911	2,222,330,391	30,217,284,514
22	30,217,284,514	1,417,730,728	\$ 2,761,891,676	3,941,690	2,290,575,285	31,159,757,161
23	31,159,757,161	1,456,620,630	\$ 2,805,945,586	3,593,533	2,363,433,783	32,170,272,456
24	32,170,272,456	1,497,382,966	\$ 2,843,359,973	3,256,846	2,441,888,834	33,262,927,437
25	33,262,927,437	1,540,131,783	\$ 2,874,249,570	2,932,852	2,527,032,886	34,452,909,683
26	34,452,909,683	1,584,993,893	\$ 2,897,818,932	2,623,903	2,620,077,957	35,757,538,698
27	35,757,538,698	1,632,046,831	\$ 2,913,556,484	2,332,940	2,722,388,599	37,196,084,704
28	37,196,084,704	1,681,318,071	\$ 2,921,650,514	2,058,390	2,835,452,200	38,789,146,071
29	38,789,146,071	1,732,927,003	\$ 2,921,364,177	1,800,689	2,960,897,676	40,559,805,883
30	40,559,805,883	1,786,956,051	\$ 2,913,340,152	1,560,040	3,100,492,653	42,532,354,394
31	42,532,354,394	1,843,529,885	\$ 2,896,971,717	1,337,958	3,256,147,381	44,733,721,985
32	44,733,721,985	1,902,779,075	\$ 2,871,328,883	1,138,994	3,429,989,122	47,194,022,306
33	47,194,022,306	1,964,741,490	\$ 2,836,879,369	963,227	3,624,335,335	49,945,256,535
34	49,945,256,535	2,029,493,772	\$ 2,793,497,870	808,212	3,841,673,883	53,022,118,108
35	53,022,118,108	2,097,038,227	\$ 2,742,372,058	672,649	4,084,648,481	56,460,760,110
36	56,460,760,110	2,167,429,059	\$ 2,684,156,141	553,099	4,356,038,308	60,299,518,237
37	60,299,518,237	2,240,713,693	\$ 2,619,652,667	449,711	4,658,785,659	64,578,915,211
38	64,578,915,211	2,316,980,608	\$ 2,549,008,674	360,287	4,996,028,903	69,342,555,762
39	69,342,555,762	2,396,322,296	\$ 2,472,414,880	285,504	5,371,143,644	74,637,321,317
40	74,637,321,317	2,478,776,187	\$ 2,390,838,465	224,465	5,787,727,872	80,512,762,446
41	80,512,762,446	2,564,384,548	\$ 2,305,120,573	175,010	6,249,591,459	87,021,442,870
42	87,021,442,870	2,653,218,708	\$ 2,215,725,098	134,997	6,760,793,247	94,219,594,730
43	94,219,594,730	2,745,365,337	\$ 2,123,135,117	102,959	7,325,676,209	102,167,398,201
44	102,167,398,201	2,840,890,292	\$ 2,028,158,197	77,889	7,948,876,141	110,928,928,548
45	110,928,928,548	2,939,888,220	\$ 1,931,193,099	58,329	8,635,347,368	120,572,912,709
46	120,572,912,709	3,042,440,116	\$ 1,832,992,946	43,236	9,390,390,708	131,172,707,349
47	131,172,707,349	3,148,669,052	\$ 1,733,805,332	31,216	10,219,686,619	142,807,226,473
48	142,807,226,473	3,258,671,350	\$ 1,634,285,413	22,122	11,129,329,693	155,560,919,980
49	155,560,919,980	3,372,575,408	\$ 1,534,850,632	15,011	12,125,853,841	169,524,483,586
50	169,524,483,586	3,490,507,057	\$ 1,435,948,953	9,739	13,216,275,736	184,795,307,688

SINGLE DISCOUNT RATE DEVELOPMENT

Projection of Plan Fiduciary Net Position Beginning July 1, 2014

(Continued)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.75%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
51	184,795,307,688	3,612,597,013	\$ 1,338,065,396	5,902	14,408,129,677	201,477,963,079
52	201,477,963,079	3,738,983,468	\$ 1,241,613,222	3,177	15,709,509,453	219,684,839,600
53	219,684,839,600	3,869,823,996	\$ 1,146,828,823	1,224	17,129,122,291	239,536,955,841
54	239,536,955,841	4,005,262,125	\$ 1,054,176,309	376	18,676,334,929	261,164,376,211
55	261,164,376,211	4,145,443,668	\$ 964,156,307	132	20,361,213,885	284,706,877,325
56	284,706,877,325	4,290,533,187	\$ 877,111,902	36	22,194,585,076	310,314,883,649
57	310,314,883,649	4,440,701,610	\$ 793,390,724	-	24,188,099,681	338,150,294,216
58	338,150,294,216	4,596,126,166	\$ 713,315,582	-	26,354,299,341	368,387,404,142
59	368,387,404,142	4,756,990,582	\$ 637,185,628	-	28,706,687,539	401,213,896,635
60	401,213,896,635	4,923,485,252	\$ 565,285,112	-	31,259,806,155	436,831,902,930
61	436,831,902,930	5,095,807,236	\$ 497,870,529	-	34,029,318,099	475,459,157,736
62	475,459,157,736	5,274,160,489	\$ 435,160,013	-	37,032,097,273	517,330,255,484
63	517,330,255,484	5,458,756,106	\$ 377,321,626	-	40,286,326,380	562,698,016,345
64	562,698,016,345	5,649,812,570	\$ 324,459,819	-	43,811,603,321	611,834,972,417
65	611,834,972,417	5,847,556,010	\$ 276,601,504	-	47,629,056,908	665,034,983,831
66	665,034,983,831	6,052,220,471	\$ 233,695,289	-	51,761,472,156	722,614,981,169
67	722,614,981,169	6,264,048,187	\$ 195,627,019	-	56,233,424,738	784,916,827,075
68	784,916,827,075	6,483,289,874	\$ 162,216,073	-	61,071,425,411	852,309,326,288
69	852,309,326,288	6,710,205,019	\$ 133,217,041	-	66,304,075,742	925,190,390,008
70	925,190,390,008	6,945,062,195	\$ 108,332,210	-	71,962,235,383	1,003,989,355,376
71	1,003,989,355,376	7,188,139,372	\$ 87,220,857	-	78,079,201,490	1,089,169,475,381
72	1,089,169,475,381	7,439,724,250	\$ 69,515,256	-	84,690,901,092	1,181,230,585,468
73	1,181,230,585,468	7,700,114,598	\$ 54,834,696	-	91,836,097,238	1,280,711,962,608
74	1,280,711,962,608	7,969,618,609	\$ 42,803,228	-	99,556,609,909	1,388,195,387,899
75	1,388,195,387,899	8,248,555,261	\$ 33,060,885	-	107,897,552,958	1,504,308,435,233
76	1,504,308,435,233	8,537,254,695	\$ 25,269,508	-	116,907,588,775	1,629,728,009,195
77	1,629,728,009,195	8,836,058,609	\$ 19,114,644	-	126,639,202,417	1,765,184,155,577
78	1,765,184,155,577	9,145,320,660	\$ 14,312,771	-	137,148,996,662	1,911,464,160,128
79	1,911,464,160,128	9,465,406,883	\$ 10,612,495	-	148,498,009,636	2,069,416,964,152
80	2,069,416,964,152	9,796,696,124	\$ 7,795,353	-	160,752,057,003	2,239,957,921,926
81	2,239,957,921,926	10,139,580,489	\$ 5,677,521	-	173,982,100,620	2,424,073,925,514
82	2,424,073,925,514	10,494,465,806	\$ 4,104,984	-	188,264,645,912	2,622,828,932,248
83	2,622,828,932,248	10,861,772,109	\$ 2,950,593	-	203,682,170,379	2,837,369,924,144
84	2,837,369,924,144	11,241,934,133	\$ 2,111,820	-	220,323,585,559	3,068,933,332,015
85	3,068,933,332,015	11,635,401,827	\$ 1,508,686	-	238,284,734,990	3,318,851,960,146
86	3,318,851,960,146	12,042,640,891	\$ 1,077,170	-	257,668,931,149	3,588,562,455,016
87	3,588,562,455,016	12,464,133,323	\$ 769,523	-	278,587,534,282	3,879,613,353,098
88	3,879,613,353,098	12,900,377,989	\$ 550,814	-	301,160,576,265	4,193,673,756,538
89	4,193,673,756,538	13,351,891,219	\$ 395,228	-	325,517,433,131	4,532,542,685,660
90	4,532,542,685,660	13,819,207,411	\$ 284,117	-	351,797,549,984	4,898,159,158,938
91	4,898,159,158,938	14,302,879,671	\$ 204,417	-	380,151,222,286	5,292,613,056,478
92	5,292,613,056,478	14,803,480,459	\$ 147,417	-	410,740,437,847	5,718,156,827,367
93	5,718,156,827,367	15,321,602,275	\$ 106,479	-	443,739,784,252	6,177,218,107,415
94	6,177,218,107,415	15,857,858,355	\$ 76,913	-	479,337,426,777	6,672,413,315,634
95	6,672,413,315,634	16,412,883,397	\$ 55,488	-	517,736,162,152	7,206,562,305,694
96	7,206,562,305,694	16,987,334,316	\$ 39,829	-	559,154,554,107	7,782,704,154,289
97	7,782,704,154,289	17,581,891,017	\$ 28,589	-	603,828,156,993	8,404,114,173,710
98	8,404,114,173,710	18,197,257,203	\$ 20,657	-	652,010,834,314	9,074,322,244,571
99	9,074,322,244,571	18,834,161,205	\$ 14,956	-	703,976,179,555	9,797,132,570,375
100	9,797,132,570,375	19,493,356,847	\$ 10,712	-	760,019,047,182	10,576,644,963,692

SINGLE DISCOUNT RATE DEVELOPMENT

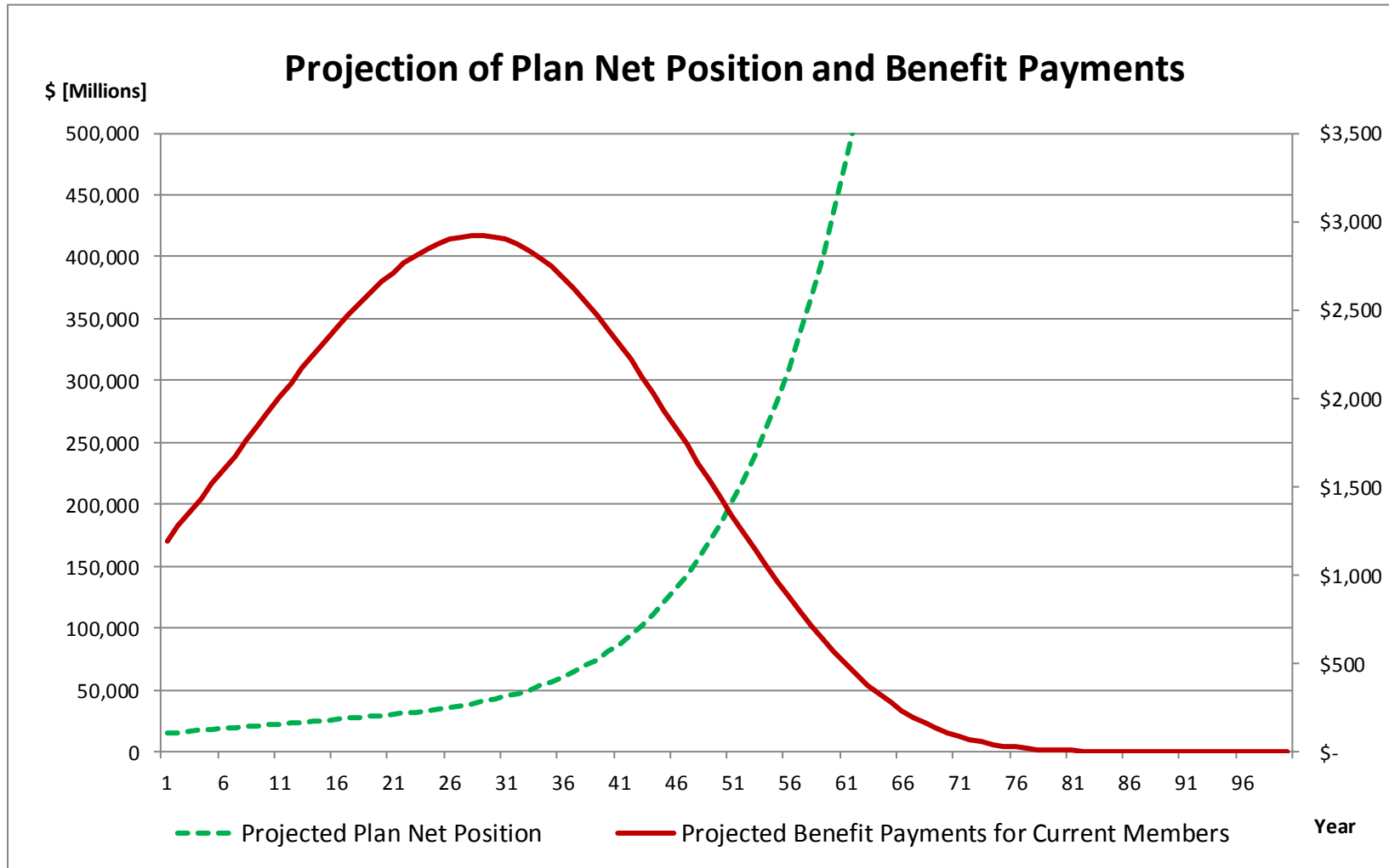
Present Values of Projected Benefit Payments Beginning July 1, 2014

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})
1	\$ 14,203,015,303	\$ 1,192,437,003	\$ 1,192,437,003	\$ -	\$ 1,148,753,387	\$ -	\$ 1,148,753,387
2	14,973,416,623	1,273,358,595	1,273,358,595	-	1,138,478,428	-	1,138,478,428
3	15,755,491,961	1,353,515,210	1,353,515,210	-	1,123,103,921	-	1,123,103,921
4	16,530,013,249	1,434,077,002	1,434,077,002	-	1,104,363,375	-	1,104,363,375
5	17,297,285,711	1,513,763,235	1,513,763,235	-	1,081,882,756	-	1,081,882,756
6	18,058,972,785	1,593,563,774	1,593,563,774	-	1,056,998,607	-	1,056,998,607
7	18,815,823,172	1,675,818,964	1,675,818,964	-	1,031,608,206	-	1,031,608,206
8	19,565,929,549	1,758,509,942	1,758,509,942	-	1,004,651,037	-	1,004,651,037
9	20,309,227,995	1,840,910,193	1,840,910,193	-	976,080,715	-	976,080,715
10	21,046,481,179	1,922,656,691	1,922,656,691	-	946,101,203	-	946,101,203
11	21,778,928,999	2,004,731,685	2,004,731,685	-	915,534,737	-	915,534,737
12	22,506,912,376	2,086,322,882	2,086,322,882	-	884,265,772	-	884,265,772
13	23,231,668,131	2,166,807,097	2,166,807,097	-	852,323,110	-	852,323,110
14	23,955,192,183	2,245,967,465	2,245,967,465	-	819,917,577	-	819,917,577
15	24,679,883,099	2,322,058,283	2,322,058,283	-	786,724,315	-	786,724,315
16	25,410,336,664	2,395,561,986	2,395,561,986	-	753,250,781	-	753,250,781
17	26,151,001,048	2,465,762,907	2,465,762,907	-	719,558,677	-	719,558,677
18	26,907,444,556	2,533,400,149	2,533,400,149	-	686,122,106	-	686,122,106
19	27,684,894,160	2,597,752,157	2,597,752,157	-	652,947,188	-	652,947,188
20	28,489,770,928	2,657,476,907	2,657,476,907	-	619,915,595	-	619,915,595
21	29,330,586,391	2,711,929,488	2,711,929,488	-	587,116,353	-	587,116,353
22	30,217,284,514	2,761,891,676	2,761,891,676	-	554,926,093	-	554,926,093
23	31,159,757,161	2,805,945,586	2,805,945,586	-	523,227,391	-	523,227,391
24	32,170,272,456	2,843,359,973	2,843,359,973	-	492,068,759	-	492,068,759
25	33,262,927,437	2,874,249,570	2,874,249,570	-	461,637,567	-	461,637,567
26	34,452,909,683	2,897,818,932	2,897,818,932	-	431,947,172	-	431,947,172
27	35,757,538,698	2,913,556,484	2,913,556,484	-	403,056,151	-	403,056,151
28	37,196,084,704	2,921,650,514	2,921,650,514	-	375,105,210	-	375,105,210
29	38,789,146,071	2,921,364,177	2,921,364,177	-	348,091,367	-	348,091,367
30	40,559,805,883	2,913,340,152	2,913,340,152	-	322,167,309	-	322,167,309
31	42,532,354,394	2,896,971,717	2,896,971,717	-	297,315,295	-	297,315,295
32	44,733,721,985	2,871,328,883	2,871,328,883	-	273,488,240	-	273,488,240
33	47,194,022,306	2,836,879,369	2,836,879,369	-	250,772,152	-	250,772,152
34	49,945,256,535	2,793,497,870	2,793,497,870	-	229,176,195	-	229,176,195
35	53,022,118,108	2,742,372,058	2,742,372,058	-	208,799,885	-	208,799,885
36	56,460,760,110	2,684,156,141	2,684,156,141	-	189,668,136	-	189,668,136
37	60,299,518,237	2,619,652,667	2,619,652,667	-	171,795,995	-	171,795,995
38	64,578,915,211	2,549,008,674	2,549,008,674	-	155,139,846	-	155,139,846
39	69,342,555,762	2,472,414,880	2,472,414,880	-	139,654,879	-	139,654,879
40	74,637,321,317	2,390,838,465	2,390,838,465	-	125,333,660	-	125,333,660
41	80,512,762,446	2,305,120,573	2,305,120,573	-	112,148,599	-	112,148,599
42	87,021,442,870	2,215,725,098	2,215,725,098	-	100,045,787	-	100,045,787
43	94,219,594,730	2,123,135,117	2,123,135,117	-	88,969,937	-	88,969,937
44	102,167,398,201	2,028,158,197	2,028,158,197	-	78,876,966	-	78,876,966
45	110,928,928,548	1,931,193,099	1,931,193,099	-	69,703,854	-	69,703,854
46	120,572,912,709	1,832,992,946	1,832,992,946	-	61,400,882	-	61,400,882
47	131,172,707,349	1,733,805,332	1,733,805,332	-	53,901,006	-	53,901,006
48	142,807,226,473	1,634,285,413	1,634,285,413	-	47,152,764	-	47,152,764
49	155,560,919,980	1,534,850,632	1,534,850,632	-	41,098,701	-	41,098,701
50	169,524,483,586	1,435,948,953	1,435,948,953	-	35,684,836	-	35,684,836

SINGLE DISCOUNT RATE DEVELOPMENT

PVs of Projected Benefit Payments Beginning July 1, 2014 (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	\$ 184,795,307,688	\$ 1,338,065,396	\$ 1,338,065,396	\$ -	\$ 30,860,628	\$ -	\$ 30,860,628
52	201,477,963,079	1,241,613,222	1,241,613,222	-	26,576,419	-	26,576,419
53	219,684,839,600	1,146,828,823	1,146,828,823	-	22,781,980	-	22,781,980
54	239,536,955,841	1,054,176,309	1,054,176,309	-	19,435,192	-	19,435,192
55	261,164,376,211	964,156,307	964,156,307	-	16,497,029	-	16,497,029
56	284,706,877,325	877,111,902	877,111,902	-	13,928,233	-	13,928,233
57	310,314,883,649	793,390,724	793,390,724	-	11,692,594	-	11,692,594
58	338,150,294,216	713,315,582	713,315,582	-	9,756,368	-	9,756,368
59	368,387,404,142	637,185,628	637,185,628	-	8,088,261	-	8,088,261
60	401,213,896,635	565,285,112	565,285,112	-	6,659,467	-	6,659,467
61	436,831,902,930	497,870,529	497,870,529	-	5,443,410	-	5,443,410
62	475,459,157,736	435,160,013	435,160,013	-	4,415,566	-	4,415,566
63	517,330,255,484	377,321,626	377,321,626	-	3,553,299	-	3,553,299
64	562,698,016,345	324,459,819	324,459,819	-	2,835,722	-	2,835,722
65	611,834,972,417	276,601,504	276,601,504	-	2,243,572	-	2,243,572
66	665,034,983,831	233,695,289	233,695,289	-	1,759,212	-	1,759,212
67	722,614,981,169	195,627,019	195,627,019	-	1,366,721	-	1,366,721
68	784,916,827,075	162,216,073	162,216,073	-	1,051,786	-	1,051,786
69	852,309,326,288	133,217,041	133,217,041	-	801,634	-	801,634
70	925,190,390,008	108,332,210	108,332,210	-	605,002	-	605,002
71	1,003,989,355,376	87,220,857	87,220,857	-	452,066	-	452,066
72	1,089,169,475,381	69,515,256	69,515,256	-	334,383	-	334,383
73	1,181,230,585,468	54,834,696	54,834,696	-	244,795	-	244,795
74	1,280,711,962,608	42,803,228	42,803,228	-	177,340	-	177,340
75	1,388,195,387,899	33,060,885	33,060,885	-	127,124	-	127,124
76	1,504,308,435,233	25,269,508	25,269,508	-	90,176	-	90,176
77	1,629,728,009,195	19,114,644	19,114,644	-	63,306	-	63,306
78	1,765,184,155,577	14,312,771	14,312,771	-	43,993	-	43,993
79	1,911,464,160,128	10,612,495	10,612,495	-	30,273	-	30,273
80	2,069,416,964,152	7,795,353	7,795,353	-	20,638	-	20,638
81	2,239,957,921,926	5,677,521	5,677,521	-	13,950	-	13,950
82	2,424,073,925,514	4,104,984	4,104,984	-	9,361	-	9,361
83	2,622,828,932,248	2,950,593	2,950,593	-	6,244	-	6,244
84	2,837,369,924,144	2,111,820	2,111,820	-	4,148	-	4,148
85	3,068,933,332,015	1,508,686	1,508,686	-	2,750	-	2,750
86	3,318,851,960,146	1,077,170	1,077,170	-	1,822	-	1,822
87	3,588,562,455,016	769,523	769,523	-	1,208	-	1,208
88	3,879,613,353,098	550,814	550,814	-	803	-	803
89	4,193,673,756,538	395,228	395,228	-	534	-	534
90	4,532,542,685,660	284,117	284,117	-	357	-	357
91	4,898,159,158,938	204,417	204,417	-	238	-	238
92	5,292,613,056,478	147,417	147,417	-	159	-	159
93	5,718,156,827,367	106,479	106,479	-	107	-	107
94	6,177,218,107,415	76,913	76,913	-	72	-	72
95	6,672,413,315,634	55,488	55,488	-	48	-	48
96	7,206,562,305,694	39,829	39,829	-	32	-	32
97	7,782,704,154,289	28,589	28,589	-	21	-	21
98	8,404,114,173,710	20,657	20,657	-	14	-	14
99	9,074,322,244,571	14,956	14,956	-	10	-	10
100	9,797,132,570,375	10,712	10,712	-	6	-	6
Totals					\$ 25,724,030,555	\$ -	\$ 25,724,030,555



SECTION F

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 sued 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.