

**CITY OF AUSTIN EMPLOYEE RETIREMENT SYSTEM**  
**GASB STATEMENT NO. 67 PLAN REPORTING AND**  
**ACCOUNTING SCHEDULES**  
**DECEMBER 31, 2015**



June 1, 2016

Mr. Christopher Hanson  
Executive Director  
City of Austin Employee Retirement System  
418 E. Highland Mall Blvd

Dear Mr. Hanson:

This report provides information required by the Retirement System in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67, "Financial Reporting for Pension Plans."

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB No. 67. The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is also not an appropriate measure for assessing the need for or amount of future employer contributions. 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 City of Austin Employee Retirement System ("COAERS") only in its entirety and only with the permission of COAERS.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of December 31, 2015. It is our opinion that the recommended assumptions are internally consistent, reasonable, and comply with the requirements under GASB No. 67.

This report compliments the December 31, 2015 actuarial valuation report that was previously provided to COAERS and should be considered together as a complete report for the plan year ending December 31, 2015. Please see the actuarial valuation report as December 31, 2015 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

This report is based upon information, furnished to us by COAERS, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. If your understanding of this information is different, please let us know. This information was checked for internal consistency, but it was not otherwise audited. GRS is not responsible for the accuracy or completeness of the information provided to us by COAERS.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the City of Austin Employee Retirement System. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Mr. Falls is a member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,



Lewis Ward  
Consultant



R. Ryan Falls, FSA, EA, MAAA  
Senior Consultant

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**SECTION A**  
EXECUTIVE SUMMARY

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**EXECUTIVE SUMMARY  
AS OF DECEMBER 31, 2015**

	<b>2015</b>
Actuarial Valuation Date	December 31, 2015
Pension Plan's Fiscal Year Ending Date (Measurement Date & Reporting Date)	December 31, 2015
 <b>Membership</b>	
Number of	
- Retirees and Beneficiaries	5,679
- Inactive, Nonretired Members	2,389
- Active Members	9,063
- Total	17,131
Covered Payroll*	\$ 558,248,300
 <b>Net Pension Liability</b>	
Total Pension Liability	\$ 3,391,796,116
Plan Fiduciary Net Position	2,144,804,122
Net Pension Liability	\$ 1,246,991,994
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	63.24%
Net Pension Liability as a Percentage of Covered Payroll*	223.38%
 <b>Development of the Single Discount Rate</b>	
Single Discount Rate	7.50%
Long-Term Expected Rate of Return	7.50%
Long-Term Municipal Bond Rate**	3.57%
Last year ending December 31 in the 2015 to 2114 projection period for which projected benefit payments are fully funded	2114

\*Imputed payroll based on employer contributions for calendar year 2015

\*\*Source: "State & local bonds" rate from Federal Reserve statistical release (H.15) as of December 31, 2015.

The statistical release describes this rate as "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 Investors Service's Aa2 rating and Standard & Poor's Corp.'s 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,” 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 this new accounting standard. 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 your internal staff will be responsible for preparing that information to comply with this accounting standard. Wherever possible we have indicated whether the disclosure information is contained this report

### 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).

COAERS provided this information to GRS in conjunction with the preparation of the actuarial valuation. Therefore, the information is **not included in this report**.

## 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 **(not included in this report)**;
- the number and classes of employees covered by the benefit terms **(not included in this report)**;
- the composition of the pension plan's Board and the authority under which benefit terms may be amended **(not included in this report)**;
- a description of the plan's funding policy, which includes member and employer contribution requirements **(not included in this report)**;
- the pension plan's investment policies **(not included in this report)**;
- a description of how fair value is determined **(not included in this report)**;
- concentrations of investments greater than or equal to 5% **(not included in this report)**;
- annual money-weighted rate of return on pension plan investments **(not included in this report)**;
- the portion of the present value of benefits to be provided through the pension plan to current active and inactive plan members **(not included in this report)**;
- the pension plan's fiduciary net position **(not included in this report)**;
- the net pension liability **(included in Section B of this report)**;
- the pension plan's fiduciary net position as a percentage of the total pension liability **(included in Section B of this report)**;
- significant assumptions and methods used to calculate the total pension liability **(included in Section B of this report)**;
- inputs to the discount rates **(included in Executive Summary of this report)**; and
- certain information about mortality assumptions and the dates of experience studies **(included in Section B of this report)**.
- A description of the terms of the plan's deferred retirement option program (DROP) and the total DROP balance for those members currently participating in the DROP **(not included in this report)**. Because COAERS's DROP is a "Back-DROP", no member is ever actually in DROP nor does a DROP account balance ever exist on the valuation date. Therefore, we believe this disclosure item is not necessary. However, we suggest that you confirm this with your external auditor.

## Required Supplementary Information

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

- sources of changes in the net pension liability **(included in Section B of this report)**;
- 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 **(included in Section B of this report)**;



- comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy (**included in Section B of this report**); and
- the annual money-weighted rate of return on pension plan investments for each year (**not included in this report**). Note that this calculation is to be determined on at least a monthly basis.

While GASB No. 67 requests a 10-year schedule of these items they allow for the tables to be built prospectively. Therefore, for these three items we are providing the tables on a prospective basis.

### **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. If the actuarial valuation is not calculated as of the plan's fiscal year end, the total pension liability is required to be rolled forward from the actuarial valuation date to the pension plan's fiscal year end.

The total pension liability shown in this report is based on an actuarial valuation performed as of December 31, 2015 and a measurement date of December 31, 2015.

### **General Implications of Current Contribution Policy on Future Expected Plan Contributions and Funded Status**

Given the current contribution policy, if all actuarial assumptions are met (including the assumption of the plan earning 7.50% on the actuarial value of assets), it is expected that:

- 1) The employer normal cost as a percentage of payroll will decrease over time until the vast majority of active members are eligible for Group B benefits. At that time, the employer normal cost as a percentage of pay will remain level as a percentage of payroll going forward.
- 2) The unfunded liability will increase in dollar amount for a number of years. However, the most recent actuarial valuation for funding purposes indicates that this unfunded liability is ultimately expected to be eliminated.
- 3) The funded status of the plan will increase gradually towards a 100% funded ratio over time.

This current contribution policy does not result in a crossover date for GASB purposes. The projections in this report are strictly for the purposes of determining the GASB discount rate and are different from a funding projection for the ongoing plan.

**Single Discount Rate**

Projected benefit payments are discounted to develop 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 7.50%; the municipal bond rate is 3.57% (based on the weekly rate closest to but not later than the measurement date of the "state & local bonds" rate from Federal Reserve statistical release (H.15)); and the resulting Single Discount Rate is 7.50%.

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**SECTION B**

REQUIRED SUPPLEMENTARY INFORMATION

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**SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS MULTIYEAR**  
**Last 10 Fiscal Years (which may be built prospectively)**

Fiscal year ending December 31,	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
<b>Total Pension Liability</b>										
Service Cost	\$ 93,506,590	\$ 89,235,267								
Interest on the Total Pension Liability	236,843,912	222,709,911								
Benefit Changes	0	0								
Difference between Expected and Actual Experience	13,413,789	33,911,010								
Assumption Changes	123,493,165	0								
Benefit Payments	(165,464,616)	(157,563,807)								
Refunds	(4,052,436)	(4,154,419)								
<b>Net Change in Total Pension Liability</b>	297,740,404	184,137,962								
<b>Total Pension Liability - Beginning</b>	3,094,055,712	2,909,917,750								
<b>Total Pension Liability - Ending (a)</b>	\$ 3,391,796,116	\$ 3,094,055,712								
<b>Plan Fiduciary Net Position</b>										
Employer Contributions	\$ 100,484,694	\$ 93,331,482								
Employee Contributions	54,065,793	50,489,091								
Pension Plan Net Investment Income	(47,607,661)	99,704,100								
Benefit Payments	(165,464,616)	(157,563,807)								
Refunds	(4,052,436)	(4,154,419)								
Pension Plan Administrative Expense	(2,421,331)	(2,631,218)								
Other	0	0								
<b>Net Change in Plan Fiduciary Net Position</b>	(64,995,557)	79,175,229								
<b>Plan Fiduciary Net Position - Beginning</b>	2,209,799,679	2,130,624,450								
<b>Plan Fiduciary Net Position - Ending (b)</b>	\$ 2,144,804,122	\$ 2,209,799,679								
<b>Net Pension Liability - Ending (a) - (b)</b>	1,246,991,994	884,256,033								
<b>Plan Fiduciary Net Position as a Percentage of Total Pension Liability</b>	63.24 %	71.42 %								
<b>Covered Employee Payroll</b>	\$ 558,248,300	\$ 518,508,233								
<b>Net Pension Liability as a Percentage of Covered Employee Payroll</b>	223.38 %	170.54 %								

**Notes to Schedule:**

Covered payroll is imputed from the actual employer contributions during the calendar year.

**SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF THE NET PENSION LIABILITY MULTIYEAR**  
**Last 10 Fiscal Years (which may be built prospectively)**

<u>FY Ending December 31,</u>	<u>Total Pension Liability</u>	<u>Plan Net Position</u>	<u>Net Pension Liability</u>	<u>Plan Net Position as a % of Total Pension Liability</u>	<u>Covered Payroll</u>	<u>Net Pension Liability as a % of Covered Payroll</u>
2014	\$ 3,094,055,712	\$ 2,209,799,679	\$ 884,256,033	71.42%	\$ 518,508,233	170.54%
2015	3,391,796,116	2,144,804,122	1,246,991,994	63.24%	558,248,300	223.38%

**SCHEDULE OF CONTRIBUTIONS MULTIYEAR  
LAST 10 FISCAL YEARS**

<b>FY Ending December 31,</b>	<b>Actuarially Determined Contribution</b>	<b>Actual Contribution</b>	<b>Contribution Deficiency (Excess)</b>	<b>Covered Payroll</b>	<b>Actual Contribution as a % of Covered Payroll</b>
2014	\$ 94,627,753	\$ 93,331,482	\$ 1,296,271	\$ 518,508,233	18.00%
2015	98,419,175	100,484,694	(2,065,519)	558,248,300	18.00%

## NOTES TO SCHEDULE OF CONTRIBUTIONS

<b>Valuation Date:</b>	December 31, 2015
Notes	<p>Members and employers contribute based on statutorily fixed or negotiated rates. A funding period is solved for through open group projections.</p> <p>A new set of assumptions was adopted for the December 31, 2015 actuarial valuation and will be first reflected for the Actuarially Determined Contribution determined for the 2016 plan year.</p>
<b>Methods and Assumptions Used to Determine Contribution Rates:</b>	
Actuarial Cost Method	Entry Age Normal
Amortization Method	N/A
Remaining Amortization Period	N/A
Asset Valuation Method	20% of market plus 80% of expected actuarial value
Inflation	3.25%
Salary Increases	4.50% to 6.00%
Investment Rate of Return	7.75%
Retirement Age	Experience-based table of rates that are gender specific. Last updated for December 31, 2012 valuation pursuant to an experience study of the 5-year period ending December 31, 2011.
Mortality	RP-2000 Mortality Table with White Collar adjustment and multipliers of 110% for males and 120% for females. Generational mortality improvements in accordance with Scale AA are projected from the year 2000.

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**SECTION C**

NOTES TO FINANCIAL STATEMENTS

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### Single Discount Rate

A Single Discount Rate of 7.50% 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 7.50%. 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 in accordance with the Supplemental Funding Plan. 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 7.50%, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

#### SENSITIVITY OF NET PENSION LIABILITY TO THE SINGLE DISCOUNT RATE ASSUMPTION

1% Decrease 6.50%	Current Single Discount Rate Assumption 7.50%	1% Increase 8.50%
\$1,654,882,675	\$1,246,991,994	\$906,948,563

**SUMMARY OF POPULATION STATISTICS**

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	5,679
Inactive Plan Members Entitled to But Not Yet Receiving Benefits*	2,389
Active Plan Members	<u>9,063</u>
Total Plan Members	17,131

Note: The Inactive Plan Members Entitled to But Not Yet Receiving Benefits includes 1,404 non-vested terminated members entitled to a refund of their member contributions.

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## **SECTION D**

### CALCULATION OF THE SINGLE DISCOUNT RATE

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## 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 “risk-free” 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 7.50%; the municipal bond rate is 3.57%; and the resulting Single Discount Rate is 7.50%.

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) as instructed by GASB. The Total Employee Payroll is expected to increase at 3.75% per year which is the average rate of payroll increase over the funding period as determined by the open group projection developed for funding purposes.

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 ENDING DECEMBER 31 FOR 2015 TO 2064**

Year	Projected Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Projected Contributions from Current Employees	Employer Contributions for Current Employees	Contributions Related to Payroll of Future Employees	Projected Total Contributions
0							
1	\$ 549,773,064	\$ 10,056,440	\$ 559,829,504	\$ 43,981,845	\$ 98,959,152	\$ 1,242,976	\$ 144,183,973
2	530,805,475	50,017,635	580,823,110	42,464,438	95,544,986	6,182,180	144,191,604
3	514,716,627	87,887,350	602,603,977	41,177,330	92,648,993	10,862,876	144,689,199
4	499,799,440	125,402,186	625,201,626	39,983,955	89,963,899	15,499,710	145,447,564
5	484,815,852	163,830,835	648,646,687	38,785,268	87,266,853	20,233,108	146,285,229
6	468,628,812	204,342,126	672,970,938	37,490,305	84,353,186	25,215,818	147,059,309
7	450,928,655	247,278,693	698,207,348	36,074,292	81,167,158	30,514,191	147,755,641
8	431,876,719	292,513,405	724,390,124	34,550,137	77,737,809	36,096,154	148,384,100
9	411,712,242	339,842,512	751,554,754	32,936,979	74,108,204	41,936,566	148,981,749
10	390,595,069	389,142,988	779,738,057	31,247,606	70,307,112	48,020,245	149,574,963
11	369,192,011	439,786,223	808,978,234	29,535,361	66,454,562	54,313,599	150,303,522
12	347,600,809	491,714,109	839,314,918	27,808,065	62,568,146	60,775,864	151,152,075
13	325,145,841	545,643,386	870,789,227	26,011,667	58,526,251	67,496,027	152,034,005
14	301,403,848	602,039,975	903,443,823	24,112,308	54,252,693	74,592,753	152,957,754
15	276,464,219	660,858,747	937,322,966	22,117,138	49,763,559	81,946,485	153,827,182
16	251,194,642	721,277,935	972,472,577	20,095,571	45,215,036	89,582,720	154,893,327
17	227,198,035	781,742,264	1,008,940,299	18,175,843	40,895,646	97,248,738	156,320,227
18	204,789,100	841,986,460	1,046,775,560	16,383,128	36,862,038	104,995,712	158,240,878
19	183,382,059	902,647,585	1,086,029,644	14,670,565	33,008,771	112,740,683	160,420,019
20	164,131,016	962,624,740	1,126,755,756	13,130,481	29,543,583	120,424,355	163,098,419
21	147,829,247	1,021,179,850	1,169,009,097	11,826,340	26,609,264	128,055,953	166,491,557
22	133,919,738	1,078,927,200	1,212,846,938	10,713,579	24,105,553	135,621,149	170,440,281
23	121,949,836	1,136,378,862	1,258,328,698	9,755,987	21,950,970	143,183,737	174,890,694
24	111,946,991	1,193,569,033	1,305,516,024	8,955,759	20,150,458	150,628,412	179,734,629
25	103,229,494	1,251,243,381	1,354,472,875	8,258,360	18,581,309	158,282,288	185,121,957
26	95,248,337	1,310,017,271	1,405,265,608	7,619,867	17,144,701	166,110,190	190,874,758
27	87,443,068	1,370,520,000	1,457,963,068	6,995,445	15,739,752	174,193,092	196,928,289
28	79,162,519	1,433,474,164	1,512,636,683	6,333,002	14,249,253	182,624,608	203,206,863
29	69,992,892	1,499,367,667	1,569,360,559	5,599,431	12,598,721	191,319,314	209,517,466
30	60,548,351	1,567,663,229	1,628,211,580	4,843,868	10,898,703	200,504,127	216,246,698
31	52,348,272	1,636,921,242	1,689,269,514	4,187,862	9,422,689	209,689,611	223,300,162
32	45,231,020	1,707,386,101	1,752,617,121	3,618,482	8,141,584	219,057,637	230,817,703
33	38,718,282	1,779,621,981	1,818,340,263	3,097,463	6,969,291	228,503,462	238,570,216
34	32,503,826	1,854,024,197	1,886,528,023	2,600,306	5,850,689	238,427,512	246,878,507
35	26,811,797	1,930,461,027	1,957,272,824	2,144,944	4,826,123	248,450,334	255,421,401
36	21,960,181	2,008,710,374	2,030,670,555	1,756,815	3,952,833	258,721,896	264,431,544
37	17,609,497	2,089,211,204	2,106,820,701	1,408,760	3,169,709	269,299,324	273,877,793
38	13,696,107	2,172,130,370	2,185,826,477	1,095,689	2,465,299	279,987,605	283,548,593
39	10,495,570	2,257,299,400	2,267,794,970	839,646	1,889,203	291,191,623	293,920,472
40	8,013,773	2,344,823,508	2,352,837,281	641,102	1,442,479	302,482,233	304,565,814
41	6,018,172	2,435,050,507	2,441,068,679	481,454	1,083,271	314,121,515	315,686,240
42	4,478,363	2,528,130,391	2,532,608,754	358,269	806,105	326,128,820	327,293,194
43	3,318,775	2,624,262,807	2,627,581,582	265,502	597,380	338,529,902	339,392,784
44	2,426,761	2,723,689,130	2,726,115,891	194,141	436,817	351,355,898	351,986,856
45	1,767,192	2,826,578,045	2,828,345,237	141,375	318,095	364,628,568	365,088,038
46	1,241,964	2,933,166,219	2,934,408,183	99,357	223,554	378,085,126	378,408,037
47	848,422	3,043,600,068	3,044,448,490	67,874	152,716	392,320,049	392,540,639
48	571,770	3,158,043,538	3,158,615,308	45,742	102,919	407,071,812	407,220,473
49	363,845	3,276,699,537	3,277,063,382	29,108	65,492	422,366,570	422,461,170
50	211,956	3,399,741,303	3,399,953,259	16,957	38,152	438,226,654	438,281,763

**SINGLE DISCOUNT RATE DEVELOPMENT PROJECTION  
OF PLAN FIDUCIARY NET POSITION ENDING DECEMBER 31 FOR 2015 TO 2064**

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.500%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
1	\$ 2,144,804,122	\$ 144,183,973	\$ 189,062,692	\$ 2,803,843	\$ 159,104,539	\$ 2,256,226,098
2	2,256,226,098	144,191,604	193,109,873	2,707,108	167,316,004	2,371,916,726
3	2,371,916,726	144,689,199	205,747,478	2,625,055	175,548,802	2,483,782,195
4	2,483,782,195	145,447,564	218,546,048	2,548,977	183,498,169	2,591,632,902
5	2,591,632,902	146,285,229	231,775,510	2,472,561	191,133,494	2,694,803,555
6	2,694,803,555	147,059,309	245,566,667	2,390,007	198,395,017	2,792,301,206
7	2,792,301,206	147,755,641	260,098,651	2,299,736	205,201,208	2,882,859,669
8	2,882,859,669	148,384,100	275,201,478	2,202,571	211,463,694	2,965,303,414
9	2,965,303,414	148,981,749	290,590,220	2,099,732	217,106,123	3,038,701,334
10	3,038,701,334	149,574,963	306,233,595	1,992,035	222,060,754	3,102,111,420
11	3,102,111,420	150,303,522	321,563,118	1,882,879	226,282,893	3,155,251,838
12	3,155,251,838	151,152,075	336,696,847	1,772,764	229,746,469	3,197,680,770
13	3,197,680,770	152,034,005	351,976,348	1,658,244	232,402,707	3,228,482,892
14	3,228,482,892	152,957,754	367,591,082	1,537,160	234,176,373	3,246,488,776
15	3,246,488,776	153,827,182	383,558,361	1,409,968	234,975,563	3,250,323,191
16	3,250,323,191	154,893,327	399,272,679	1,281,093	234,728,514	3,239,391,260
17	3,239,391,260	156,320,227	413,763,723	1,158,710	233,432,077	3,214,221,131
18	3,214,221,131	158,240,878	426,533,438	1,044,424	231,149,040	3,176,033,188
19	3,176,033,188	160,420,019	437,857,934	935,249	227,952,214	3,125,612,237
20	3,125,612,237	163,098,419	446,941,597	837,068	223,938,402	3,064,870,393
21	3,064,870,393	166,491,557	453,313,728	753,929	219,276,133	2,996,570,425
22	2,996,570,425	170,440,281	457,381,011	682,991	214,151,882	2,923,098,587
23	2,923,098,587	174,890,694	459,330,566	621,944	208,735,829	2,846,772,599
24	2,846,772,599	179,734,629	459,183,650	570,930	203,197,031	2,769,949,679
25	2,769,949,679	185,121,957	457,414,656	526,470	197,700,460	2,694,830,969
26	2,694,830,969	190,874,758	454,383,415	485,767	192,391,502	2,623,228,047
27	2,623,228,047	196,928,289	450,558,961	445,960	187,386,477	2,556,537,892
28	2,556,537,892	203,206,863	446,626,826	403,729	182,762,249	2,495,476,450
29	2,495,476,450	209,517,466	442,857,817	356,964	178,555,515	2,440,334,651
30	2,440,334,651	216,246,698	438,846,017	308,797	174,817,161	2,392,243,696
31	2,392,243,696	223,300,162	433,402,499	266,976	171,672,044	2,353,546,427
32	2,353,546,427	230,817,703	426,552,333	230,678	169,300,134	2,326,881,253
33	2,326,881,253	238,570,216	418,623,735	197,463	167,878,880	2,314,509,150
34	2,314,509,150	246,878,507	410,183,576	165,770	167,568,852	2,318,607,163
35	2,318,607,163	255,421,401	400,873,174	136,740	168,534,667	2,341,553,317
36	2,341,553,317	264,431,544	390,630,213	111,997	170,965,479	2,386,208,129
37	2,386,208,129	273,877,793	379,670,039	89,808	175,066,813	2,455,392,888
38	2,455,392,888	283,548,593	368,184,742	69,850	181,035,417	2,551,722,305
39	2,551,722,305	293,920,472	355,698,400	53,527	189,102,411	2,678,993,260
40	2,678,993,260	304,565,814	342,432,419	40,870	199,528,663	2,840,614,448
41	2,840,614,448	315,686,240	328,607,600	30,693	212,569,162	3,040,231,557
42	3,040,231,557	327,293,194	314,294,172	22,840	228,495,177	3,281,702,915
43	3,281,702,915	339,392,784	299,707,703	16,926	247,588,382	3,568,959,452
44	3,568,959,452	351,986,856	284,942,488	12,376	270,140,215	3,906,131,660
45	3,906,131,660	365,088,038	270,151,804	9,013	296,455,291	4,297,514,172
46	4,297,514,172	378,408,037	255,455,283	6,334	326,840,704	4,747,301,297
47	4,747,301,297	392,540,639	240,839,757	4,327	361,633,378	5,260,631,229
48	5,260,631,229	407,220,473	226,428,078	2,916	401,204,385	5,842,625,092
49	5,842,625,092	422,461,170	212,273,258	1,856	445,936,367	6,498,747,514
50	6,498,747,514	438,281,763	198,382,502	1,081	496,239,611	7,234,885,305

**SINGLE DISCOUNT RATE DEVELOPMENT PRESENT VALUES  
OF PROJECTED BENEFITS ENDING DECEMBER 31 FOR 2015 TO 2064**

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected 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 All Benefit Payments using Single Discount Rate (SDR)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v <sup>^(a)-5</sup>	(g)=(e)*vf <sup>^(a)-5</sup>	(h)=(c)/(1+SDR) <sup>^(a)-5</sup>
1	\$ 2,144,804,122	\$ 189,062,692	\$ 189,062,692	\$ -	\$ 182,348,253	\$ -	\$ 182,348,253
2	2,256,226,098	193,109,873	193,109,873	-	173,257,395	-	173,257,395
3	2,371,916,726	205,747,478	205,747,478	-	171,717,026	-	171,717,026
4	2,483,782,195	218,546,048	218,546,048	-	169,673,232	-	169,673,232
5	2,591,632,902	231,775,510	231,775,510	-	167,389,979	-	167,389,979
6	2,694,803,555	245,566,667	245,566,667	-	164,976,795	-	164,976,795
7	2,792,301,206	260,098,651	260,098,651	-	162,548,543	-	162,548,543
8	2,882,859,669	275,201,478	275,201,478	-	159,987,953	-	159,987,953
9	2,965,303,414	290,590,220	290,590,220	-	157,148,069	-	157,148,069
10	3,038,701,334	306,233,595	306,233,595	-	154,053,803	-	154,053,803
11	3,102,111,420	321,563,118	321,563,118	-	150,479,506	-	150,479,506
12	3,155,251,838	336,696,847	336,696,847	-	146,568,860	-	146,568,860
13	3,197,680,770	351,976,348	351,976,348	-	142,530,457	-	142,530,457
14	3,228,482,892	367,591,082	367,591,082	-	138,468,408	-	138,468,408
15	3,246,488,776	383,558,361	383,558,361	-	134,402,926	-	134,402,926
16	3,250,323,191	399,272,679	399,272,679	-	130,148,269	-	130,148,269
17	3,239,391,260	413,763,723	413,763,723	-	125,462,157	-	125,462,157
18	3,214,221,131	426,533,438	426,533,438	-	120,310,895	-	120,310,895
19	3,176,033,188	437,857,934	437,857,934	-	114,888,520	-	114,888,520
20	3,125,612,237	446,941,597	446,941,597	-	109,090,196	-	109,090,196
21	3,064,870,393	453,313,728	453,313,728	-	102,926,061	-	102,926,061
22	2,996,570,425	457,381,011	457,381,011	-	96,604,231	-	96,604,231
23	2,923,098,587	459,330,566	459,330,566	-	90,247,442	-	90,247,442
24	2,846,772,599	459,183,650	459,183,650	-	83,924,257	-	83,924,257
25	2,769,949,679	457,414,656	457,414,656	-	77,768,317	-	77,768,317
26	2,694,830,969	454,383,415	454,383,415	-	71,863,213	-	71,863,213
27	2,623,228,047	450,558,961	450,558,961	-	66,286,842	-	66,286,842
28	2,556,537,892	446,626,826	446,626,826	-	61,124,038	-	61,124,038
29	2,495,476,450	442,857,817	442,857,817	-	56,379,742	-	56,379,742
30	2,440,334,651	438,846,017	438,846,017	-	51,971,167	-	51,971,167
31	2,392,243,696	433,402,499	433,402,499	-	47,745,589	-	47,745,589
32	2,353,546,427	426,552,333	426,552,333	-	43,712,505	-	43,712,505
33	2,326,881,253	418,623,735	418,623,735	-	39,906,971	-	39,906,971
34	2,314,509,150	410,183,576	410,183,576	-	36,374,306	-	36,374,306
35	2,318,607,163	400,873,174	400,873,174	-	33,068,537	-	33,068,537
36	2,341,553,317	390,630,213	390,630,213	-	29,975,425	-	29,975,425
37	2,386,208,129	379,670,039	379,670,039	-	27,101,753	-	27,101,753
38	2,455,392,888	368,184,742	368,184,742	-	24,448,284	-	24,448,284
39	2,551,722,305	355,698,400	355,698,400	-	21,971,314	-	21,971,314
40	2,678,993,260	342,432,419	342,432,419	-	19,676,169	-	19,676,169
41	2,840,614,448	328,607,600	328,607,600	-	17,564,460	-	17,564,460
42	3,040,231,557	314,294,172	314,294,172	-	15,627,340	-	15,627,340
43	3,281,702,915	299,707,703	299,707,703	-	13,862,392	-	13,862,392
44	3,568,959,452	284,942,488	284,942,488	-	12,259,959	-	12,259,959
45	3,906,131,660	270,151,804	270,151,804	-	10,812,627	-	10,812,627
46	4,297,514,172	255,455,283	255,455,283	-	9,511,078	-	9,511,078
47	4,747,301,297	240,839,757	240,839,757	-	8,341,316	-	8,341,316
48	5,260,631,229	226,428,078	226,428,078	-	7,295,049	-	7,295,049
49	5,842,625,092	212,273,258	212,273,258	-	6,361,870	-	6,361,870
50	6,498,747,514	198,382,502	198,382,502	-	5,530,755	-	5,530,755

**SINGLE DISCOUNT RATE DEVELOPMENT PRESENT VALUES  
OF PROJECTED BENEFITS ENDING DECEMBER 31 FOR 2065 TO 2114 (CONCLUDED)**

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected 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 All Benefit Payments using Single Discount Rate (SDR)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v <sup>^</sup> ((a)-.5)	(g)=(e)*vf <sup>^</sup> ((a)-.5)	(h)=((c)/(1+SDR)) <sup>^</sup> ((a)-.5)
51	\$ 7,234,885,305	\$ 184,784,791	\$ 184,784,791	\$ -	\$ 4,792,242	\$ -	\$ 4,792,242
52	8,056,993,436	171,541,293	171,541,293	-	4,138,403	-	4,138,403
53	8,972,148,806	158,684,158	158,684,158	-	3,561,141	-	3,561,141
54	9,987,594,364	146,221,149	146,221,149	-	3,052,512	-	3,052,512
55	11,111,132,465	134,192,918	134,192,918	-	2,605,963	-	2,605,963
56	12,351,133,700	122,608,633	122,608,633	-	2,214,886	-	2,214,886
57	13,716,612,939	111,496,026	111,496,026	-	1,873,618	-	1,873,618
58	15,217,259,951	100,872,098	100,872,098	-	1,576,828	-	1,576,828
59	16,863,501,959	90,755,513	90,755,513	-	1,319,708	-	1,319,708
60	18,666,558,739	81,164,327	81,164,327	-	1,097,897	-	1,097,897
61	20,638,503,809	72,115,149	72,115,149	-	907,433	-	907,433
62	22,792,331,127	63,623,146	63,623,146	-	744,723	-	744,723
63	25,142,026,818	55,702,592	55,702,592	-	606,522	-	606,522
64	27,702,645,770	48,365,935	48,365,935	-	489,894	-	489,894
65	30,490,394,974	41,623,994	41,623,994	-	392,191	-	392,191
66	33,522,722,974	35,480,424	35,480,424	-	310,981	-	310,981
67	36,818,421,801	29,934,214	29,934,214	-	244,065	-	244,065
68	40,398,393,165	24,977,958	24,977,958	-	189,446	-	189,446
69	44,283,862,119	20,598,875	20,598,875	-	145,333	-	145,333
70	48,498,337,343	16,777,236	16,777,236	-	110,111	-	110,111
71	53,067,155,928	13,486,204	13,486,204	-	82,337	-	82,337
72	58,017,629,558	10,690,602	10,690,602	-	60,715	-	60,715
73	63,379,202,992	8,351,106	8,351,106	-	44,119	-	44,119
74	69,183,620,155	6,424,613	6,424,613	-	31,574	-	31,574
75	75,465,102,369	4,864,584	4,864,584	-	22,239	-	22,239
76	82,260,539,666	3,622,672	3,622,672	-	15,406	-	15,406
77	89,609,694,839	2,652,159	2,652,159	-	10,492	-	10,492
78	97,555,419,305	1,908,373	1,908,373	-	7,023	-	7,023
79	106,143,884,798	1,349,774	1,349,774	-	4,621	-	4,621
80	115,424,831,409	938,730	938,730	-	2,989	-	2,989
81	125,451,833,497	642,243	642,243	-	1,902	-	1,902
82	136,282,584,885	432,812	432,812	-	1,193	-	1,193
83	147,979,204,635	287,970	287,970	-	738	-	738
84	160,608,566,341	189,683	189,683	-	452	-	452
85	174,242,652,829	124,111	124,111	-	275	-	275
86	188,958,937,816	81,054	81,054	-	167	-	167
87	204,840,796,869	53,151	53,151	-	102	-	102
88	221,977,950,136	35,154	35,154	-	63	-	63
89	240,466,939,130	23,511	23,511	-	39	-	39
90	260,411,639,840	15,881	15,881	-	25	-	25
91	281,923,814,939	10,845	10,845	-	16	-	16
92	305,123,707,839	7,464	7,464	-	10	-	10
93	330,140,681,887	5,149	5,149	-	6	-	6
94	357,113,907,777	3,537	3,537	-	4	-	4
95	386,193,102,784	2,403	2,403	-	3	-	3
96	417,539,325,676	1,602	1,602	-	2	-	2
97	451,325,831,466	1,040	1,040	-	1	-	1
98	487,738,990,450	652	652	-	1	-	1
99	526,979,276,360	391	391	-	0	-	0
100	569,262,328,821	229	229	-	0	-	0
<b>Totals</b>					\$ 4,196,354,663	\$ -	\$ 4,196,354,663



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## **SECTION E**

### **GLOSSARY OF TERMS**

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## GLOSSARY OF TERMS

<b><i>Accrued Service</i></b>	Service credited under the system which was rendered before the date of the actuarial valuation.
<b><i>Actuarial Accrued Liability (AAL)</i></b>	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."
<b><i>Actuarial Assumptions</i></b>	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.
<b><i>Actuarial Cost Method</i></b>	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.
<b><i>Actuarial Gain (Loss)</i></b>	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.
<b><i>Actuarial Present Value (APV)</i></b>	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.
<b><i>Actuarial Valuation</i></b>	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.
<b><i>Actuarial Valuation Date</i></b>	The date as of which an actuarial valuation is performed.
<b><i>Actuarially Determined Contribution (ADC)</i></b>	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.
<b><i>Amortization Method</i></b>	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).
<b><i>Amortization Payment</i></b>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.

## GLOSSARY OF TERMS

<b><i>Cost-of-Living Adjustments</i></b>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<b><i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i></b>	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.
<b><i>Covered-Employee Payroll</i></b>	The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.
<b><i>Deferred Inflows and Outflows</i></b>	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.
<b><i>Discount Rate</i></b>	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: <ol style="list-style-type: none"><li>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</li><li>2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.</li></ol>
<b><i>Entry Age Actuarial Cost Method (EAN)</i></b>	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.
<b><i>Fiduciary Net Position</i></b>	The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.
<b><i>GASB</i></b>	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
<b><i>Long-Term Expected Rate of Return</i></b>	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.

## GLOSSARY OF TERMS

<b><i>Money-Weighted Rate of Return</i></b>	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.
<b><i>Multiple-Employer Defined Benefit Pension Plan</i></b>	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
<b><i>Municipal Bond Rate</i></b>	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.
<b><i>Net Pension Liability (NPL)</i></b>	The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan.
<b><i>Non-Employer Contribution Entities</i></b>	Non-employer 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 statements, plan members are not considered non-employer contribution entities.
<b><i>Normal Cost</i></b>	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.
<b><i>Real Rate of Return</i></b>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<b><i>Service Cost</i></b>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<b><i>Total Pension Expense</i></b>	The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year: <ol style="list-style-type: none"><li>1. Service Cost</li><li>2. Interest on the Total Pension Liability</li><li>3. Current-Period Benefit Changes</li><li>4. Employee Contributions (made negative for addition here)</li><li>5. Projected Earnings on Plan Investments (made negative for addition here)</li><li>6. Pension Plan Administrative Expense</li><li>7. Other Changes in Plan Fiduciary Net Position</li><li>8. Recognition of Outflow (Inflow) of Resources due to Liabilities</li><li>9. Recognition of Outflow (Inflow) of Resources due to Assets</li></ol>
<b><i>Total Pension Liability (TPL)</i></b>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<b><i>Valuation Assets</i></b>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.