



FLORIDA RETIREMENT SYSTEM PENSION PLAN

GASB 67 DISCLOSURE AS OF June 30, 2017 MEASUREMENT DATE
Fiscal Year: July 1, 2016 to June 30, 2017

Prepared by

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GASB 67 Disclosure for Fiscal Year Ending June 30, 2017

Florida Retirement System Pension Plan

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Certification

Actuarial computations presented in this report under Statement No. 67 of the Governmental Accounting Standards Board are for purposes of assisting the Florida Department of Management Services in fulfilling its financial accounting requirements. No attempt is being made to offer any accounting opinion or advice. This report is for fiscal year July 1, 2016 to June 30, 2017. The reporting date for determining plan assets and obligations is June 30, 2017. The calculations enclosed in this report have been made on a basis consistent with our understanding of the plan provisions. Determinations for purposes other than meeting financial reporting requirements may be significantly different than the results contained in this report. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security or meeting employer funding requirements.

In preparing this report, we relied, without audit, on information as of June 30, 2016 and June 30, 2017 furnished by the Florida Department of Management Services. This information includes, but is not limited to, statutory provisions, member census data, and financial information. Please note that this report is based on the June 30, 2017 assets for the program as reported to us by the Florida State Board of Administration. Please see Milliman's funding valuation report dated December 1, 2017 for more information on the plan's participant group as of July 1, 2017 as well as a summary of the plan provisions and a summary of the actuarial methods and assumptions used for funding purposes.

We performed a limited review of the census and financial information used directly in our analysis and have found them to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

We hereby certify that, to the best of our knowledge, this report, including all costs and liabilities based on actuarial assumptions and methods, is complete and accurate and determined in conformance with generally recognized and accepted actuarial principles and practices, which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Code of Professional Conduct and supporting Recommendations of the American Academy of Actuaries.

This valuation report is only an estimate of the Plan's financial condition as of a single date. It can neither predict the Plan's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of Plan benefits, only the timing of Plan contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as, but not limited to, the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuarial assignment, we did not perform an analysis of the potential range of such future measurements.

Certification

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No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and has been prepared in accordance with generally recognized accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.



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Overview of GASB 67 and GASB 68

The Governmental Accounting Standards Board (GASB) released new accounting standards for public pension plans and participating employers in 2012. These standards, GASB Statements No. 67 and 68, have substantially revised the accounting requirements previously mandated under GASB Statements No. 25 and 27. The most notable change is the distinct separation of funding from financial reporting. The Annual Required Contribution (ARC) has been eliminated under GASB 67 and 68 and is no longer relevant for financial reporting purposes. As a result, plan sponsors have been encouraged to establish a formal funding policy that is separate from financial reporting calculations.

GASB 67 applies to financial reporting for public pension plans. Under GASB 67, enhancements to the financial statement disclosures are required, along with certain required supplementary information.

GASB 68 governs the specifics of accounting for public pension plan obligations for participating employers. GASB 68 requires a liability for pension obligations, known as the Net Pension Liability, to be recognized on the balance sheets of participating employers. Changes in the Net Pension Liability will be immediately recognized as Pension Expense on the income statement or reported as deferred inflows/outflows of resources depending on the nature of the change.

Relationship Between Valuation Date and Measurement Date

Relationship Between Valuation Date and Measurement Date

The Valuation Date is July 1, 2017. This is the date as of which the actuarial valuation is performed. The Measurement Date is June 30, 2017.

Schedule of Employer Contributions

Fiscal Year Ending June 30	Actuarially Determined Contribution ¹	Actual Employer Contribution	Contribution Deficiency (Excess)	Covered Payroll ²	Contribution as a % of Covered Payroll
2008	\$2,612,672,000	\$2,796,651,000	(\$183,979,000)	\$26,872,418,000	10.41%
2009	2,535,854,000	2,808,418,000	(272,564,000)	26,554,114,000	10.58%
2010	2,447,374,000	2,721,618,000	(274,244,000)	25,747,369,000	10.57%
2011	3,680,042,000	3,050,684,000	629,358,000	25,668,958,000	11.88%
2012	1,962,816,000	1,185,310,000	777,506,000	24,476,272,000	4.84%
2013	2,091,343,000	1,388,656,000	702,687,000	24,553,693,402	5.66%
2014	2,190,424,344	2,190,424,344	0	24,723,564,758	8.86%
2015	2,438,084,925	2,438,084,925	0	32,726,034,000	7.45%
2016	2,438,659,458	2,438,659,458	0	33,214,217,000	7.34%
2017	2,603,246,196	2,603,246,196	0	33,775,800,000	7.71%

¹ For fiscal years prior to 2013-14 the Annual Required Contribution (ARC) under GASB Statement No. 27 is shown.

² For the fiscal years ending 2014 and before, covered payroll shown includes Pension Plan actives and members in DROP, but excludes the payroll for Investment Plan members and other payroll on which only statutory UAL rates are charged. For the fiscal years ending 2015 and later, covered payroll shown includes the payroll for Investment Plan members and other payroll on which only statutory UAL rates are charged.

Actuarial Methods and Assumptions Used for Funding Policy

The following actuarial methods and assumptions were used in the July 1, 2017 funding valuation. Please see the actuarial valuation report for funding purposes dated December 1, 2017 for further details.

Valuation Timing	Actuarially determined contribution rates for a given plan year are calculated in the valuation conducted as of the beginning of the preceding plan year (e.g., rates for the 2018-2019 plan year are calculated in the 7/1/2017 actuarial valuation).
Actuarial Cost Method	Ultimate entry age
Amortization Method	
Level percent or level dollar	Level percent
Closed, open, or layered periods	Closed, layered
Amortization period at 07/01/2017	30 years
Payroll growth rate	3.25%
Asset Valuation Method	
Smoothing period	5 years
Recognition method	Asymptotic
Corridor	80% - 120% of fair market value
Inflation	2.60%
Salary Increases	Varies by membership class, length of service and sex; details in valuation report
Investment Rate of Return¹	7.50%
Cost of Living Adjustments	3% for pre-July 2011 benefit service; 0% thereafter
Retirement Age	Varies by tier, membership class, age, and sex; details in valuation report
Turnover	Varies by membership class, length of service, age and sex; details in valuation report
Mortality	Generational RP-2000 with Projection Scale BB, details in actuarial valuation report for plan funding purposes

¹The 7.50% return was chosen by the 2017 FRS Actuarial Assumptions Conference, and differs from the 7.10% investment return assumption that is used as the discount rate for GASB calculations in this report.

Statement of Fiduciary Net Position

	June 30, 2016	June 30, 2017
Assets		
Cash and cash equivalents	\$ 137,044,262	\$ 130,731,187
State treasury investment pool	1,993,615	60,429,448
Total cash and cash equivalents	139,037,877	191,160,635
Investments:		
Certificates of deposit	775,061,750	800,168,500
U.S. government and federally guaranteed obligations	11,074,341,487	10,910,710,262
Federal agencies	7,725,368,565	8,418,178,463
Commercial paper	3,516,125,179	4,050,193,462
Other Investments	38,673,495	17,211,447
Repurchase agreements	850,000,000	750,000,000
International bonds and notes	1,717,404,822	1,952,266,136
Bonds and Notes	6,593,710,408	6,859,418,307
Real estate contracts	10,581,549,014	10,984,655,199
International Equity commingled	5,452,109,522	7,911,256,458
Short-term investment funds	1,097,231	16,866,516
Domestic equity / domestic equity commingled	41,029,901,819	45,250,542,923
Alternative investments	22,440,286,022	24,004,242,055
International equity	31,814,912,316	34,509,634,866
Total investments	143,610,541,630	156,435,344,594
Receivables:		
Contributions receivable	155,931,273	189,585,664
Pending investment sales	1,499,739,882	1,221,252,475
Forward contracts receivable	4,040,802,822	4,510,178,954
Other receivables	1,031,730,332	855,430,166
Total receivables	6,728,204,309	6,776,447,259
Security lending collateral	1,915,672,097	1,289,851,618
Prepaid items; furniture & equipment net accumulated depreciation	8,139,499	8,145,291
Total assets	152,401,595,412	164,700,949,397
Liabilities		
Accrued DROP liability ¹	411,260,011	216,703,029
Obligations under security lending agreements	1,960,173,146	1,328,234,288
Pending investment purchases	3,168,482,487	3,701,087,157
Forward contracts payable	4,008,031,731	4,494,947,721
Other liabilities and payables	1,072,727,522	906,714,234
Total liabilities	10,620,674,897	10,647,686,429
Fiduciary Net Position		
Held in trust for pension benefits	\$ 141,780,920,515	\$ 154,053,262,968

¹Per our understanding, the accrued DROP liability represents lump sum DROP exit payments made early in the subsequent plan year for members exiting the DROP on or shortly before the asset measurement date.

Statement of Changes in Fiduciary Net Position

	<u>June 30, 2016</u>	<u>June 30, 2017</u>
Additions		
Member contributions	\$ 710,716,815	\$ 744,839,410
Employer contributions	2,438,659,458	2,603,246,196
Total contributions	<u>3,149,376,273</u>	<u>3,348,085,606</u>
Transfers from the Investment Plan	54,889,558	71,109,940
Investment income (loss):		
Interest	732,373,981	683,643,798
Dividends	1,856,399,033	1,790,068,722
Net increase in fair value of investments	(3,293,230,449)	14,192,417,077
Securities lending income	52,954,963	63,625,418
Net real estate operating income	481,636,140	469,305,831
Other investment income	1,555,188,508	2,186,430,639
Less investment expenses:		
Direct investment expense	555,437,751	571,859,418
Securities lending expense	12,959,914	14,200,232
Net investment income	<u>816,924,511</u>	<u>18,799,431,835</u>
Other income	3,657,861	2,484,713
Total additions	<u>4,024,848,203</u>	<u>22,221,112,094</u>
Deductions		
Benefit payments ¹	10,056,869,186	9,348,035,738
Transfers to the Investment Plan	612,301,153	568,911,732
Refunds of member contributions	10,644,011	13,481,914
Administrative expenses	18,507,240	18,340,257
Total deductions	<u>10,698,321,590</u>	<u>9,948,769,641</u>
Net increase (decrease)	\$ (6,673,473,387)	\$ 12,272,342,453
Net position restricted for pensions		
Beginning of year	\$ 148,454,393,902	\$ 141,780,920,515
End of year	<u>\$ 141,780,920,515</u>	<u>\$ 154,053,262,968</u>

¹Includes transfers to other funds and general revenue-funded benefit payments.

Money-Weighted Rate of Return

Fiscal Year Ending June 30	Net Money-Weighted Rate of Return
2014	17.57%
2015	3.77%
2016	0.57%
2017	13.59%

Calculation of Money-Weighted Rate of Return

The money-weighted rate of return considers the changing amounts estimated as invested during a period and weights the amount of pension plan investments by the proportion of time they are available to earn a return during that period. Cash flows are estimated on a monthly basis and are assumed to occur at the beginning of each month. Cash inflows are netted with cash outflows, resulting in a net cash flow in each month. The money-weighted rate of return is calculated net of investment expenses.

	Net External Cash Flows	Periods Invested	Period Weight	Net External Cash Flows with Interest
Beginning value - July 1, 2016	\$141,780,920,515	12	1.00	\$161,054,279,430
Monthly net external cash flows:				
July	(544,131,175)	12	1.00	(618,099,064)
August	(544,131,175)	11	0.92	(611,828,534)
September	(544,131,175)	10	0.83	(604,850,195)
October	(544,131,175)	9	0.75	(598,714,073)
November	(544,131,175)	8	0.67	(592,640,201)
December	(544,131,175)	7	0.58	(585,880,718)
January	(544,131,175)	6	0.50	(579,937,039)
February	(544,131,175)	5	0.42	(574,053,658)
March	(544,131,175)	4	0.33	(567,506,168)
April	(544,131,175)	3	0.25	(561,748,896)
May	(544,131,175)	2	0.17	(556,050,031)
June	(544,131,175)	1	0.08	(549,707,885)
Ending value - June 30, 2017				154,053,262,968
Money-weighted plan rate of return			13.59% ¹	

¹The money-weighted plan rate of this return is an estimate using estimated level monthly net external cash flows. It can differ from the more precise return calculated by the Florida State Board of Administration.

Long-Term Expected Rate of Return

The long-term expected rate of return assumption of 7.1% used in GASB discount rate calculations consists of two building block components: 1) a real (in excess of inflation) return of 4.5%, consistent with the currently articulated real return target in the current Florida State Board of Administration's investment policy, developed using capital market assumptions calculated by Aon Hewitt Investment Consulting; 2) a long-term average annual inflation assumption of 2.6% as most recently adopted in October 2017 by the FRS Actuarial Assumption Conference. In our opinion, both components and the overall 7.1% return assumption are reasonable and appropriate per Actuarial Standards of Practice.

For reference, the table below contains a summary of Milliman's assumptions for each of the asset classes in which the plan was invested at that time based on the long-term target asset allocation. Each asset class assumption is based on a consistent set of underlying assumptions, and includes an adjustment for the inflation assumption. They are not based on historical returns, but instead are based on a forward-looking capital market economic model. The table is a summary of the model output listed in more detail on slide 42 of Milliman's presentation to the 2017 FRS Actuarial Assumption Conference on October 5, 2017.

Asset Class	Target Allocation*	Annual Arithmetic Return	Compound Annual (Geometric) Return	Annual Standard Deviation
Cash Equivalents	1%	3.0%	3.0%	1.8%
Fixed income	18%	4.5%	4.4%	4.2%
Global equity	53%	7.8%	6.6%	17.0%
Real estate	10%	6.6%	5.9%	12.8%
Private equity	6%	11.5%	7.8%	30.0%
Strategic investments	12%	6.1%	5.6%	9.7%
Assumed inflation - mean			2.6%	1.9%

* As outlined in the Plan's investment policy

Depletion Date Projection

In order to determine if the plan's fiduciary net position is projected to be sufficient to make projected benefit payments, we have prepared a depletion date projection using the following techniques and assumptions:

- Current active members contribute the required employee contribution amounts.
- The employer contributes the actuarially determined contribution amounts based on the 7.50% investment rate of return assumption selected by the 2017 FRS Actuarial Assumption Conference.
- Benefit payments are projected based on the actuarial assumptions and the current plan provisions.
- Members are assumed to receive pay increases, terminate, retire, become disabled, die, and so forth according to the actuarial assumptions used for the 7/1/2017 valuation.
- Terminating and retiring members are replaced in a manner such that the proportions of Pension Plan and Investment Plan payroll modify gradually to 50% and 50% over a thirty-year timeframe.
- All cash flows are assumed to occur on average halfway through the year.
- In the depletion date test's projections, the actual return achieved each year on invested assets is 7.10%.
- The funding policy used to determine actuarially determined contributions does not change.
- The actuarial assumptions do not change.

Projection of Payroll Measures

Year	Current Member Non-DROP PP Payroll	Future Member Non-DROP PP Payroll	Total Member Non-DROP PP Payroll	Payroll for Statutory UAL Rate Contributions	DROP PP Payroll
1	\$ 23,721,614,515	\$ 327,667,812	\$ 24,049,282,328	\$ 34,293,680,000	\$ 2,119,248,234
2	22,938,159,994	1,495,910,851	24,434,070,845	35,783,163,680	2,188,123,802
3	22,247,727,506	2,577,288,472	24,825,015,978	36,946,116,500	2,259,237,825
4	21,614,929,976	3,607,286,258	25,222,216,234	38,146,865,286	2,332,663,054
5	21,061,337,406	4,564,434,288	25,625,771,694	39,386,638,408	2,408,474,604
6	20,515,049,136	5,520,734,905	26,035,784,041	40,666,704,156	2,486,750,028
7	19,946,658,955	6,505,697,630	26,452,356,585	41,988,372,041	2,567,569,404
8	19,366,514,317	7,509,079,973	26,875,594,291	43,352,994,132	2,651,015,410
9	18,789,430,125	8,516,173,675	27,305,603,799	44,761,966,442	2,737,173,411
10	18,196,902,902	9,545,590,558	27,742,493,460	46,216,730,351	2,826,131,547
11	17,582,501,422	10,603,871,933	28,186,373,356	47,718,774,087	2,917,980,822
12	16,944,990,748	11,692,364,582	28,637,355,329	49,269,634,245	3,012,815,199
13	16,287,402,185	12,808,150,830	29,095,553,015	50,870,897,358	3,110,731,693
14	15,601,576,703	13,959,505,160	29,561,081,863	52,524,201,522	3,211,830,473
15	14,895,577,933	15,138,481,239	30,034,059,173	54,231,238,072	3,316,214,963
16	14,191,615,819	16,322,988,300	30,514,604,119	55,993,753,309	3,423,991,949
17	13,474,325,430	17,528,512,355	31,002,837,785	57,813,550,292	3,535,271,688
18	12,766,007,865	18,732,875,325	31,498,883,190	59,692,490,676	3,650,168,017
19	12,062,085,082	19,940,780,239	32,002,865,321	61,632,496,623	3,768,798,478
20	11,359,075,628	21,155,835,538	32,514,911,166	63,635,552,763	3,891,284,428
21	10,713,443,765	22,321,705,979	33,035,149,745	65,703,708,228	4,017,751,172
22	10,116,249,571	23,447,462,569	33,563,712,141	67,839,078,746	4,148,328,086
23	9,540,558,952	24,560,172,582	34,100,731,535	70,043,848,805	4,283,148,748
24	8,949,205,250	25,697,137,989	34,646,343,239	72,320,273,891	4,422,351,083
25	8,417,736,656	26,782,948,075	35,200,684,731	74,670,682,792	4,566,077,493
26	7,876,800,172	27,887,095,515	35,763,895,687	77,097,479,983	4,714,475,011
27	7,313,826,958	29,022,291,059	36,336,118,018	79,603,148,083	4,867,695,449
28	6,666,220,176	30,251,275,730	36,917,495,906	82,190,250,395	5,025,895,551
29	5,955,508,895	31,552,666,945	37,508,175,841	84,861,433,533	5,189,237,157
30	5,242,061,134	32,866,245,521	38,108,306,654	87,619,430,123	5,357,887,364

Projection of Payroll Measures

Year	Current Member Non-DROP PP Payroll	Future Member Non-DROP PP Payroll	Total Member Non-DROP PP Payroll	Payroll for Statutory UAL Rate Contributions	DROP PP Payroll
31	\$ 4,601,342,124	\$ 34,116,697,437	\$ 38,718,039,561	\$ 90,467,061,602	\$ 5,532,018,704
32	4,017,746,632	35,958,629,215	39,976,375,846	93,407,241,104	5,620,531,003
33	3,471,631,346	37,803,976,715	41,275,608,061	96,442,976,440	5,710,459,499
34	3,085,661,970	39,531,403,353	42,617,065,323	99,577,373,174	5,801,826,851
35	2,754,219,021	41,247,900,925	44,002,119,946	102,813,637,802	5,894,656,081
36	2,445,024,237	42,987,164,607	45,432,188,845	106,155,081,031	5,988,970,578
37	2,157,923,144	44,750,811,838	46,908,734,982	109,605,121,164	6,084,794,107
38	1,891,350,232	46,541,918,637	48,433,268,869	113,167,287,602	6,182,150,813
39	1,646,584,972	48,360,765,135	50,007,350,107	116,845,224,449	6,281,065,226
40	1,421,528,019	50,211,060,966	51,632,588,986	120,642,694,244	6,381,562,269
41	1,216,674,466	52,093,973,661	53,310,648,128	124,563,581,807	6,483,667,266
42	1,030,902,507	54,012,341,684	55,043,244,192	128,611,898,216	6,587,405,942
43	864,599,081	55,967,550,547	56,832,149,628	132,791,784,908	6,692,804,437
44	717,897,802	57,961,296,689	58,679,194,491	137,107,517,917	6,799,889,308
45	591,032,028	59,995,236,284	60,586,268,312	141,563,512,249	6,908,687,537
46	481,752,216	62,073,569,816	62,555,322,032	146,164,326,398	7,019,226,538
47	388,815,543	64,199,554,455	64,588,369,998	150,914,667,005	7,131,534,162
48	312,201,108	66,375,290,915	66,687,492,023	155,819,393,683	7,245,638,709
49	248,299,352	68,606,536,161	68,854,835,514	160,883,523,978	7,361,568,928
50	195,127,298	70,897,490,370	71,092,617,668	166,112,238,507	7,479,354,031
51	152,379,144	73,250,748,598	73,403,127,742	171,510,886,259	7,599,023,695
52	116,711,009	75,672,018,385	75,788,729,394	177,084,990,062	7,720,608,075
53	86,679,843	78,165,183,256	78,251,863,099	182,840,252,239	7,844,137,804
54	61,620,920	80,733,427,730	80,795,048,650	188,782,560,437	7,969,644,009
55	41,318,883	83,379,568,848	83,420,887,731	194,917,993,651	8,097,158,313
56	25,801,491	86,106,265,091	86,132,066,582	201,252,828,445	8,226,712,846
57	14,440,384	88,916,918,362	88,931,358,746	207,793,545,369	8,358,340,251
58	7,369,570	91,814,258,336	91,821,627,905	214,546,835,594	8,492,073,695
59	3,762,642	94,802,068,170	94,805,830,812	221,519,607,750	8,627,946,874
60	1,680,911	97,885,339,402	97,887,020,314	228,718,995,002	8,765,994,024

Projection of Payroll Measures

Year	Current Member Non-DROP PP Payroll	Future Member Non-DROP PP Payroll	Total Member Non-DROP PP Payroll	Payroll for Statutory UAL Rate Contributions	DROP PP Payroll
61	\$ 531,272	\$ 101,067,817,202	\$ 101,068,348,474	\$ 236,152,362,340	\$ 8,906,249,929
62	88,378	104,352,981,421	104,353,069,799	243,827,314,116	9,195,703,051
63	25,351	107,744,519,216	107,744,544,568	251,751,701,825	9,494,563,401
64	5,409	111,246,236,857	111,246,242,266	259,933,632,134	9,803,136,711
65	478	114,861,744,661	114,861,745,140	268,381,475,178	10,121,738,654
66	-	118,594,751,857	118,594,751,857	277,103,873,122	10,450,695,161
67	-	122,449,081,292	122,449,081,292	286,109,748,998	10,790,342,753
68	-	126,428,676,434	126,428,676,434	295,408,315,841	11,141,028,893
69	-	130,537,608,418	130,537,608,418	305,009,086,105	11,503,112,332
70	-	134,780,080,692	134,780,080,692	314,921,881,404	11,876,963,483
71	-	139,160,433,314	139,160,433,314	325,156,842,549	12,262,964,796
72	-	143,683,147,397	143,683,147,397	335,724,439,932	12,661,511,152
73	-	148,352,849,688	148,352,849,688	346,635,484,230	13,073,010,264
74	-	153,174,317,302	153,174,317,302	357,901,137,468	13,497,883,098
75	-	158,152,482,615	158,152,482,615	369,532,924,435	13,936,564,298

Projection of Crossover Test-Eligible Contributions

Year	Current Non-DROP Member		UAL Contributions		DROP	Net NC	Total Test-Eligible Contributions
	Member Contributions	Employer Normal Cost Contributions	Blended Statutory UAL Rate	Statutory UAL Rate Contributions	Payroll Normal Cost Contributions	Contributions from Future Employees ¹	
1	\$ 711,648,435	\$ 1,046,123,200	4.78%	\$ 1,639,237,904	\$ 93,458,847	\$ (2,260,908)	\$ 3,488,207,479
2	688,144,800	1,011,572,856	5.15%	1,842,832,930	96,496,260	(10,321,785)	3,628,725,060
3	667,431,825	981,124,783	5.05%	1,865,778,883	99,632,388	(17,783,290)	3,596,184,589
4	648,447,899	953,218,412	4.98%	1,899,713,891	102,870,441	(24,890,275)	3,579,360,368
5	631,840,122	928,804,980	4.94%	1,945,699,937	106,213,730	(31,494,597)	3,581,064,173
6	615,451,474	904,713,667	4.92%	2,000,801,844	109,665,676	(38,093,071)	3,592,539,591
7	598,399,769	879,647,660	4.93%	2,070,026,742	113,229,811	(44,889,314)	3,616,414,667
8	580,995,430	854,063,281	4.95%	2,145,973,210	116,909,780	(51,812,652)	3,646,129,048
9	563,682,904	828,613,869	4.99%	2,233,622,125	120,709,347	(58,761,598)	3,687,866,647
10	545,907,087	802,483,418	5.04%	2,329,323,210	124,632,401	(65,864,575)	3,736,481,541
11	527,475,043	775,388,313	5.10%	2,433,657,478	128,682,954	(73,166,716)	3,792,037,072
12	508,349,722	747,274,092	5.16%	2,542,313,127	132,865,150	(80,677,316)	3,850,124,776
13	488,622,066	718,274,436	5.24%	2,665,635,022	137,183,268	(88,376,241)	3,921,338,550
14	468,047,301	688,029,533	5.42%	2,846,811,723	141,641,724	(96,320,586)	4,048,209,694
15	446,867,338	656,894,987	5.42%	2,939,333,103	146,245,080	(104,455,521)	4,084,884,988
16	425,748,475	625,850,258	5.50%	3,079,656,432	150,998,045	(112,628,619)	4,169,624,590
17	404,229,763	594,217,751	5.59%	3,231,777,461	155,905,481	(120,946,735)	4,265,183,722
18	382,980,236	562,980,947	5.68%	3,390,533,470	160,972,410	(129,256,840)	4,368,210,223
19	361,862,552	531,937,952	6.57%	4,049,255,028	166,204,013	(137,591,384)	4,971,668,162
20	340,772,269	500,935,235	6.66%	4,238,127,814	171,605,643	(145,975,265)	5,105,465,696
21	321,403,313	472,462,870	6.75%	4,435,000,305	177,182,827	(154,019,771)	5,252,029,544
22	303,487,487	446,126,606	6.84%	4,640,192,986	182,941,269	(161,787,492)	5,410,960,856
23	286,216,769	420,738,650	6.92%	4,847,034,337	188,886,860	(169,465,191)	5,573,411,425
24	268,476,158	394,659,952	2.90%	2,097,287,943	195,025,683	(177,310,252)	2,778,139,482
25	252,532,100	371,222,187	3.01%	2,247,587,552	201,364,017	(184,802,342)	2,887,903,514
26	236,304,005	347,366,888	2.56%	1,973,695,488	207,908,348	(192,420,959)	2,572,853,769
27	219,414,809	322,539,769	2.67%	2,125,404,054	214,665,369	(200,253,808)	2,681,770,192
28	199,986,605	293,980,310	2.24%	1,841,061,609	221,641,994	(208,733,803)	2,347,936,715
29	178,665,267	262,637,942	2.45%	2,079,105,122	228,845,359	(217,713,402)	2,531,540,287
30	157,261,834	231,174,896	2.43%	2,129,152,152	236,282,833	(226,777,094)	2,527,094,621

¹Reflects the net effect of a 4.41% employer normal cost rate contribution being made for future members using the 7.50% assumption adopted by the 2017 FRS Actuarial Assumption Conference, compared to the employer normal cost rate of 5.1% of payroll for those members under the 7.10% discount rate used in the GASB crossover test.

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Projection of Crossover Test-Eligible Contributions

Year	Current Non-DROP Member		UAL Contributions		DROP Payroll Normal Cost Contributions	Net NC Contributions from Future Employees ¹	Total Test-Eligible Contributions
	Member Contributions	Employer Normal Cost Contributions	Blended Statutory UAL Rate	Statutory UAL Rate Contributions			
31	\$ 138,040,264	\$ 202,919,188	2.09%	\$ 1,890,761,587	\$ 243,962,025	\$ (235,405,212)	\$ 2,240,277,851
32	120,532,399	177,182,626	1.70%	1,587,923,099	247,865,417	(248,114,542)	1,885,389,000
33	104,148,940	153,098,942	1.88%	1,813,127,957	251,831,264	(260,847,439)	2,061,359,664
34	92,569,859	136,077,693	2.02%	2,011,462,938	255,860,564	(272,766,683)	2,223,204,371
35	82,626,571	121,461,059	2.13%	2,189,930,485	259,954,333	(284,610,516)	2,369,361,931
36	73,350,727	107,825,569	2.22%	2,356,642,799	264,113,602	(296,611,436)	2,505,321,262
37	64,737,694	95,164,411	2.28%	2,498,996,763	268,339,420	(308,780,602)	2,618,457,686
38	56,740,507	83,408,545	2.32%	2,625,481,072	272,632,851	(321,139,239)	2,717,123,737
39	49,397,549	72,614,397	2.35%	2,745,862,775	276,994,976	(333,689,279)	2,811,180,418
40	42,645,841	62,689,386	2.36%	2,847,167,584	281,426,896	(346,456,321)	2,887,473,386
41	36,500,234	53,655,344	2.36%	2,939,700,531	285,929,726	(359,448,418)	2,956,337,417
42	30,927,075	45,462,801	2.36%	3,035,240,798	290,504,602	(372,685,158)	3,029,450,118
43	25,937,972	38,128,819	2.36%	3,133,886,124	295,152,676	(386,176,099)	3,106,929,493
44	21,536,934	31,659,293	2.36%	3,235,737,423	299,875,118	(399,932,947)	3,188,875,821
45	17,730,961	26,064,512	2.36%	3,340,898,889	304,673,120	(413,967,130)	3,275,400,352
46	14,452,566	21,245,273	2.36%	3,449,478,103	309,547,890	(428,307,632)	3,366,416,201
47	11,664,466	17,146,765	2.36%	3,561,586,141	314,500,657	(442,976,926)	3,461,921,104
48	9,366,033	13,768,069	2.36%	3,677,337,691	319,532,667	(457,989,507)	3,562,014,953
49	7,448,981	10,950,001	2.36%	3,796,851,166	324,645,190	(473,385,100)	3,666,510,238
50	5,853,819	8,605,114	2.36%	3,920,248,829	329,839,513	(489,192,684)	3,775,354,591
51	4,571,374	6,719,920	2.36%	4,047,656,916	335,116,945	(505,430,165)	3,888,634,990
52	3,501,330	5,146,956	2.36%	4,179,205,765	340,478,816	(522,136,927)	4,006,195,940
53	2,600,395	3,822,581	2.36%	4,315,029,953	345,926,477	(539,339,764)	4,128,039,642
54	1,848,628	2,717,483	2.36%	4,455,268,426	351,461,301	(557,060,651)	4,254,235,186
55	1,239,567	1,822,163	2.36%	4,600,064,650	357,084,682	(575,319,025)	4,384,892,036
56	774,045	1,137,846	2.36%	4,749,566,751	362,798,036	(594,133,229)	4,520,143,449
57	433,212	636,821	2.36%	4,903,927,671	368,602,805	(613,526,737)	4,660,073,772
58	221,087	324,998	2.36%	5,063,305,320	374,500,450	(633,518,383)	4,804,833,473
59	112,879	165,933	2.36%	5,227,862,743	380,492,457	(654,134,270)	4,954,499,742
60	50,427	74,128	2.36%	5,397,768,282	386,580,336	(675,408,842)	5,109,064,332

¹Reflects the net effect of a 4.41% employer normal cost rate contribution being made for future members using the 7.50% assumption adopted by the 2017 FRS Actuarial Assumption Conference, compared to the employer normal cost rate of 5.1% of payroll for those members under the 7.10% discount rate used in the GASB crossover test.

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Projection of Crossover Test-Eligible Contributions

Year	Current Non-DROP Member		UAL Contributions		DROP Payroll Normal Cost Contributions	Net NC Contributions from Future Employees ¹	Total Test-Eligible Contributions
	Member Contributions	Employer Normal Cost Contributions	Blended Statutory UAL Rate	Statutory UAL Rate Contributions			
61	\$ 15,938	\$ 23,429	2.36%	\$ 5,573,195,751	\$ 392,765,622	\$ (697,367,939)	\$ 5,268,632,802
62	2,651	3,897	2.36%	5,754,324,613	405,530,505	(720,035,572)	5,439,826,095
63	761	1,118	2.36%	5,941,340,163	418,710,246	(743,437,183)	5,616,615,105
64	162	239	2.36%	6,134,433,718	432,318,329	(767,599,034)	5,799,153,414
65	14	21	2.36%	6,333,802,814	446,368,675	(792,546,038)	5,987,625,486
66	-	-	2.36%	6,539,651,406	460,875,657	(818,303,788)	6,182,223,274
67	-	-	2.36%	6,752,190,076	475,854,115	(844,898,661)	6,383,145,531
68	-	-	2.36%	6,971,636,254	491,319,374	(872,357,867)	6,590,597,761
69	-	-	2.36%	7,198,214,432	507,287,254	(900,709,498)	6,804,792,188
70	-	-	2.36%	7,432,156,401	523,774,090	(929,982,557)	7,025,947,934
71	-	-	2.36%	7,673,701,484	540,796,747	(960,206,990)	7,254,291,242
72	-	-	2.36%	7,923,096,782	558,372,642	(991,413,717)	7,490,055,707
73	-	-	2.36%	8,180,597,428	576,519,753	(1,023,634,663)	7,733,482,518
74	-	-	2.36%	8,446,466,844	595,256,645	(1,056,902,789)	7,984,820,699
75	-	-	2.36%	8,720,977,017	614,602,486	(1,091,252,130)	8,244,327,372

¹Reflects the net effect of a 4.41% employer normal cost rate contribution being made for future members using the 7.50% assumption adopted by the 2017 FRS Actuarial Assumption Conference, compared to the employer normal cost rate of 5.1% of payroll for those members under the 7.10% discount rate used in the GASB crossover test.

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Projection of Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position	Projected Test-Eligible Contributions	Projected Payments for Current PP Members	Projected Administrative Expenses	Projected Investment Earnings	Projected Ending Fiduciary Net Position
1	\$ 154,053,262,968	\$ 3,488,207,479	\$ 9,772,425,903	\$ 18,340,257	\$ 10,718,517,129	\$ 158,469,221,415
2	158,469,221,415	3,628,725,060	10,401,223,340	18,707,062	11,015,013,460	162,693,029,534
3	162,693,029,534	3,596,184,589	11,152,578,266	19,081,203	11,287,552,708	166,405,107,362
4	166,405,107,362	3,579,360,368	11,957,086,173	19,462,827	11,522,452,890	169,530,371,619
5	169,530,371,619	3,581,064,173	12,180,044,840	19,852,084	11,736,626,782	172,648,165,650
6	172,648,165,650	3,592,539,591	12,045,214,481	20,249,126	11,963,094,957	176,138,336,591
7	176,138,336,591	3,616,414,667	12,293,487,874	20,654,108	12,203,067,545	179,643,676,822
8	179,643,676,822	3,646,129,048	12,752,141,509	21,067,190	12,436,980,454	182,953,577,625
9	182,953,577,625	3,687,866,647	13,235,159,353	21,488,534	12,656,586,570	186,041,382,955
10	186,041,382,955	3,736,481,541	13,730,466,291	21,918,305	12,860,235,083	188,885,714,983
11	188,885,714,983	3,792,037,072	14,239,801,056	22,356,671	13,046,349,711	191,461,944,039
12	191,461,944,039	3,850,124,776	14,755,305,112	22,803,804	13,213,302,123	193,747,262,021
13	193,747,262,021	3,921,338,550	15,275,562,433	23,259,880	13,359,891,987	195,729,670,245
14	195,729,670,245	4,048,209,694	15,799,615,620	23,725,078	13,486,784,774	197,441,324,016
15	197,441,324,016	4,084,884,988	16,329,421,231	24,199,580	13,591,106,234	198,763,694,427
16	198,763,694,427	4,169,624,590	16,852,880,313	24,683,571	13,669,687,041	199,725,442,174
17	199,725,442,174	4,265,183,722	17,359,003,024	25,177,243	13,723,646,035	200,330,091,664
18	200,330,091,664	4,368,210,223	17,834,885,312	25,680,787	13,753,566,726	200,591,302,513
19	200,591,302,513	4,971,668,162	18,276,327,987	26,194,403	13,777,765,619	201,038,213,904
20	201,038,213,904	5,105,465,696	18,687,432,051	26,718,291	13,799,820,743	201,229,350,001
21	201,229,350,001	5,252,029,544	19,045,293,076	27,252,657	13,806,018,973	201,214,852,785
22	201,214,852,785	5,410,960,856	19,340,388,003	27,797,710	13,800,238,745	201,057,866,673
23	201,057,866,673	5,573,411,425	19,580,020,168	28,353,664	13,786,399,765	200,809,304,030
24	200,809,304,030	2,778,139,482	19,776,957,181	28,920,738	13,664,349,761	197,445,915,355
25	197,445,915,355	2,887,903,514	19,926,098,996	29,499,153	13,424,175,223	193,802,395,944
26	193,802,395,944	2,572,853,769	20,028,110,303	30,089,136	13,150,933,543	189,467,983,818
27	189,467,983,818	2,681,770,192	20,101,428,356	30,690,918	12,844,432,356	184,862,067,092
28	184,862,067,092	2,347,936,715	20,165,508,078	31,304,737	12,503,528,560	179,516,719,553
29	179,516,719,553	2,531,540,287	20,225,034,507	31,930,831	12,128,338,097	173,919,632,600
30	173,919,632,600	2,527,094,621	20,260,271,324	32,569,448	11,729,560,350	167,883,446,799

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Projection of Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position	Projected Test-Eligible Contributions	Projected Payments for Current PP Members	Projected Administrative Expenses	Projected Investment Earnings	Projected Ending Fiduciary Net Position
31	\$ 167,883,446,799	\$ 2,240,277,851	\$ 20,232,832,723	\$ 33,220,837	\$ 11,291,941,117	\$ 161,149,612,207
32	161,149,612,207	1,885,389,000	20,124,604,247	33,885,254	10,805,232,561	153,681,744,267
33	153,681,744,267	2,061,359,664	19,953,543,658	34,562,959	10,287,122,308	146,042,119,623
34	146,042,119,623	2,223,204,371	19,701,604,408	35,254,218	9,759,146,418	138,287,611,786
35	138,287,611,786	2,369,361,931	19,363,618,114	35,959,302	9,225,468,769	130,482,865,070
36	130,482,865,070	2,505,321,262	18,976,316,714	36,678,488	8,689,588,999	122,664,780,128
37	122,664,780,128	2,618,457,686	18,552,995,110	37,412,058	8,153,222,685	114,846,053,331
38	114,846,053,331	2,717,123,737	18,093,315,398	38,160,299	7,617,574,491	107,049,275,861
39	107,049,275,861	2,811,180,418	17,595,010,740	38,923,505	7,084,671,547	99,311,193,582
40	99,311,193,582	2,887,473,386	17,062,000,680	39,701,975	6,556,527,079	91,653,491,391
41	91,653,491,391	2,956,337,417	16,495,038,900	40,496,015	6,035,015,012	84,109,308,905
42	84,109,308,905	3,029,450,118	15,899,363,186	41,305,935	5,522,712,952	76,720,802,854
43	76,720,802,854	3,106,929,493	15,278,920,151	42,132,054	5,022,480,442	69,529,160,584
44	69,529,160,584	3,188,875,821	14,637,790,262	42,974,695	4,537,102,909	62,574,374,357
45	62,574,374,357	3,275,400,352	13,981,410,291	43,834,189	4,069,233,989	55,893,764,218
46	55,893,764,218	3,366,416,201	13,315,331,734	44,710,873	3,621,326,676	49,521,464,489
47	49,521,464,489	3,461,921,104	12,643,496,641	45,605,090	3,195,666,885	43,489,950,746
48	43,489,950,746	3,562,014,953	11,968,288,233	46,517,192	2,794,480,712	37,831,640,986
49	37,831,640,986	3,666,510,238	11,295,185,410	47,447,536	2,419,872,126	32,575,390,404
50	32,575,390,404	3,775,354,591	10,627,864,529	48,396,486	2,073,759,748	27,748,243,728
51	27,748,243,728	3,888,634,990	9,968,318,273	49,364,416	1,757,997,260	23,377,193,288
52	23,377,193,288	4,006,195,940	9,321,215,627	50,351,705	1,474,332,784	19,486,154,681
53	19,486,154,681	4,128,039,642	8,689,318,430	51,358,739	1,224,368,042	16,097,885,197
54	16,097,885,197	4,254,235,186	8,074,187,791	52,385,913	1,009,666,742	13,235,213,420
55	13,235,213,420	4,384,892,036	7,476,575,230	53,433,632	831,827,311	10,921,923,906
56	10,921,923,906	4,520,143,449	6,896,883,657	54,502,304	692,529,045	9,183,210,438
57	9,183,210,438	4,660,073,772	6,336,009,823	55,592,350	593,532,356	8,045,214,392
58	8,045,214,392	4,804,833,473	5,794,290,485	56,704,197	536,686,782	7,535,739,964
59	7,535,739,964	4,954,499,742	5,273,002,695	57,838,281	523,924,556	7,683,323,285
60	7,683,323,285	5,109,064,332	4,774,348,096	58,995,047	557,194,637	8,516,239,112

This work product was prepared solely for the Florida Department of Management Services for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

Projection of Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position	Projected Test-Eligible Contributions	Projected Payments for Current PP Members	Projected Administrative Expenses	Projected Investment Earnings	Projected Ending Fiduciary Net Position
61	\$ 8,516,239,112	\$ 2,240,277,851	\$ 4,299,450,386	\$ 60,174,948	\$ 3,666,823,960	\$ 10,063,715,590
62	10,063,715,590	1,885,389,000	3,849,118,973	61,378,447	4,324,462,739	12,363,069,909
63	12,363,069,909	2,061,359,664	3,424,210,553	62,606,016	4,509,529,246	15,447,142,250
64	15,447,142,250	2,223,204,371	3,025,664,456	63,858,136	4,769,466,774	19,350,290,804
65	19,350,290,804	2,369,361,931	2,654,022,798	65,135,299	5,108,447,929	24,108,942,567
66	24,108,942,567	2,505,321,262	2,309,643,121	66,438,005	5,523,756,286	29,761,938,988
67	29,761,938,988	2,618,457,686	1,992,747,407	67,766,765	6,030,972,205	36,350,854,708
68	36,350,854,708	2,717,123,737	1,703,407,285	69,122,100	6,624,905,130	43,920,354,190
69	43,920,354,190	2,811,180,418	1,441,495,967	70,504,542	7,299,089,287	52,518,623,386
70	52,518,623,386	2,887,473,386	1,206,787,841	71,914,633	8,070,334,861	62,197,729,159
71	62,197,729,159	2,956,337,417	998,780,320	73,352,926	8,932,255,495	73,014,188,825
72	73,014,188,825	3,029,450,118	816,657,741	74,819,984	9,877,456,517	85,029,617,735
73	85,029,617,735	3,106,929,493	659,273,108	76,316,384	10,910,484,237	98,311,441,973
74	98,311,441,973	3,188,875,821	525,141,206	77,842,712	12,036,335,163	112,933,669,040
75	112,933,669,040	3,275,400,352	412,530,235	79,399,566	13,260,479,094	128,977,618,686

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Net Pension Liability

Net Pension Liability	June 30, 2016	June 30, 2017
Total pension liability	\$167,030,999,000	\$183,632,592,000
Fiduciary net position	141,780,920,515	154,053,262,968
Net pension liability	25,250,078,485	29,579,329,032
Fiduciary net position as a % of total pension liability	84.88%	83.89%
Covered payroll	33,214,217,000	33,775,800,000
Net pension liability as a % of covered payroll	76.02%	87.58%

The total pension liability was determined by an actuarial valuation as of the valuation date, calculated based on the discount rate and actuarial assumptions below. The total pension liability is calculated using the Individual Entry Age Normal cost allocation method, which differs from the Ultimate Entry Age Normal cost allocation method used in the actuarial valuation for funding purposes for the System.

Discount Rate

Discount rate	7.60%	7.10%
Long-term expected rate of return, net of investment expense	7.60%	7.10%
Municipal bond rate	N/A	N/A

The plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees if future experience follows assumptions and the Actuarially Determined Contribution (ADC) is contributed in full each year. Therefore, the discount rate for calculating the total pension liability is equal to the long-term expected rate of return. The 7.1% rate of return assumption used in the June 30, 2017 calculations in Milliman's professional opinion is reasonable and appropriate per Actuarial Standard of Practice Number 27 (ASOP 27).

Other Key Actuarial Assumptions

The actuarial assumptions that determined the total pension liability as of June 30, 2017 were based on the results of an actuarial experience study for the July 1, 2008 - June 30, 2013 experience observation period.

Valuation date	July 1, 2016	July 1, 2017
Measurement date	June 30, 2016	June 30, 2017
Inflation	2.60%	2.60%
Salary increases including inflation	3.25%	3.25%
Mortality	Generational RP-2000 with Projection Scale BB*	Generational RP-2000 with Projection Scale BB**
Actuarial cost method	Individual Entry Age	Individual Entry Age

* See July 1, 2016 Actuarial Valuation Report for funding purposes for details

** See July 1, 2017 Actuarial Valuation Report for funding purposes for details

Changes in Net Pension Liability

Changes in Net Pension Liability	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances as of June 30, 2016	\$ 167,030,999,000	\$ 141,780,920,515	\$ 25,250,078,485
Changes for the year:			
Service cost	2,073,753,788		2,073,753,788
Interest on total pension liability	12,484,167,203		12,484,167,203
Effect of plan changes	92,185,000		92,185,000
Effect of economic/demographic gains or losses	1,412,462,453		1,412,462,453
Effect of assumptions changes or inputs	10,398,344,000		10,398,344,000
Benefit payments ¹	(9,859,319,444)	(9,859,319,444)	0
Employer contributions		2,603,246,196	(2,603,246,196)
Member contributions		744,839,410	(744,839,410)
Net investment income		18,801,916,548	(18,801,916,548)
Administrative expenses		(18,340,257)	18,340,257
Balances as of June 30, 2017	\$ 183,632,592,000	\$ 154,053,262,968	\$ 29,579,329,032

¹ Benefit payments shown above include outbound transfers to the Investment Plan and returns of contributions, net of \$71,109,940 inbound transfers from the Investment Plan.

Sensitivity Analysis

The following presents the net pension liability of the Pension Plan, calculated using the discount rate of 7.10%, as well as what the Pension Plan's net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.10%) or one percentage point higher (8.10%) than the current rate.

	1% Decrease 6.10%	Current Discount Rate 7.10%	1% Increase 8.10%
Total pension liability	\$207,590,062,000	\$183,632,592,000	\$163,742,403,000
Fiduciary net position	<u>154,053,262,968</u>	<u>154,053,262,968</u>	<u>154,053,262,968</u>
Net pension liability	\$ 53,536,799,032	\$ 29,579,329,032	\$ 9,689,140,032

Schedule of Changes in Net Pension Liability and Related Ratios¹

(in 1,000s)

	<u>June 30, 2014</u>	<u>June 30, 2015</u>	<u>June 30, 2016</u>	<u>June 30, 2017</u>
Total Pension Liability				
Service cost	\$2,256,738	\$2,114,047	\$2,132,906	\$2,073,754
Interest on total pension liability	11,489,921	11,721,563	12,109,114	12,484,167
Effect of plan changes	0	0	32,310	92,185
Effect of economic/demographic (gains) or losses	(448,818)	1,620,863	980,192	1,412,462
Effect of assumption changes or inputs	1,256,045	0	1,030,667	10,398,344
Benefit payments	(8,714,251)	(10,201,501)	(10,624,925)	(9,859,319)
Net change in total pension liability	<u>5,839,635</u>	<u>5,254,972</u>	<u>5,660,264</u>	<u>16,601,593</u>
Total pension liability, beginning	<u>150,276,128</u>	<u>156,115,763</u>	<u>161,370,735</u>	<u>167,030,999</u>
Total pension liability, ending (a)	<u><u>156,115,763</u></u>	<u><u>161,370,735</u></u>	<u><u>167,030,999</u></u>	<u><u>183,632,592</u></u>
Fiduciary Net Position				
Employer contributions	\$2,190,424	\$2,438,085	\$2,438,659	\$2,603,246
Member contributions	682,507	698,304	710,717	744,839
Investment income net of investment expenses	22,812,286	5,523,287	820,582	18,801,917
Benefit payments	(8,714,251)	(10,201,501)	(10,624,925)	(9,859,319)
Administrative expenses	(18,352)	(18,074)	(18,507)	(18,340)
Net change in plan fiduciary net position	<u>16,952,615</u>	<u>(1,559,898)</u>	<u>(6,673,473)</u>	<u>12,272,342</u>
Fiduciary net position, beginning	<u>133,061,677</u>	<u>150,014,292</u>	<u>148,454,394</u>	<u>141,780,921</u>
Fiduciary net position, ending (b)	<u><u>150,014,292</u></u>	<u><u>148,454,394</u></u>	<u><u>141,780,921</u></u>	<u><u>154,053,263</u></u>
Net pension liability, ending = (a) - (b)	\$6,101,471	\$12,916,341	\$25,250,078	\$29,579,329
Fiduciary net position as a % of total pension liability	96.09%	92.00%	84.88%	83.89%
Covered payroll ²	\$24,723,565	\$32,726,034	\$33,214,217	\$33,775,800
Net pension liability as a % of covered payroll	24.68%	39.47%	76.02%	87.58%

¹This exhibit will fill in to a ten-year schedule as results for new fiscal years are calculated.

² For the fiscal years ending 2014 and before, covered payroll shown includes Pension Plan actives and members in DROP, but excludes the payroll for Investment Plan members and other payroll on which only statutory UAL rates are charged. For the fiscal years ending 2015 and later, covered payroll shown includes the payroll for Investment Plan members and other payroll on which only statutory UAL rates are charged.

*Amounts shown in exhibit are rounded to the nearest thousand. As such, sums may differ from amounts displayed due to rounding.

Glossary

Actuarially Determined Contribution	A target contribution to a defined benefit pension plan for the reporting period, determined based on the funding policy and the most recent actuarial measurement available when the contribution for the reporting period was adopted.
Deferred Inflows/Outflows of Resources	Portion of changes in net pension liability that is not immediately recognized in pension expense. These changes include differences between expected and actual experience, changes in assumptions, and differences between expected and actual earnings on plan investments.
Discount Rate	Single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the sum of: <ol style="list-style-type: none">1) The actuarial present value of benefit payments projected to be made in future periods where the plan assets are projected to be sufficient to meet benefit payments, calculated using the Long-Term Expected Rate of Return.2) The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.
Fiduciary Net Position	Equal to market value of assets.
Long-Term Expected Rate of Return	Long-term expected rate of return on pension plan investments expected to be used to finance the payment of benefits, net of investment
Money-Weighted Rate of Return	The internal rate of return on pension plan investments, net of investment expenses.
Municipal Bond Rate	Yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.
Net Pension Liability	Total pension liability minus the plan's fiduciary net position.
Projected Benefit Payments	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and expected future service.
Service Cost	The portion of the actuarial present value of projected benefit payments that is attributed to a valuation year by the cost allocation method.
Total Pension Liability	The portion of actuarial present value of projected benefit payments that is attributable to past periods of member service using the individual entry age cost allocation method based on the requirements of GASB 67 and 68.