
Oklahoma Municipal Retirement Fund

ACTUARIAL VALUATIONS UNDER GASB STATEMENT 68

For Fiscal Years Ending on or Before July 1, 2018

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GASB Statement 68

Introduction

Discount Rate

Valuation Results

Retiree Health Plans

Introduction

Determines pension expense and balance sheet recognition for government entities on accrual method accounting

Effective for fiscal years beginning after June 15, 2014

Balance sheet entries determined on a measurement date no earlier than the end of the prior fiscal year

Pension expense determined over the 12-month period ending on the measurement date

Measurement date: July 1, 2017

Terminology

Funding Valuation

normal cost

actuarial liability

market value of assets

unfunded actuarial liability

Accounting Valuation

service cost

total pension liability

plan fiduciary net position

net pension liability

Funding vs Accounting

Funding Valuation

Accounting Valuation

Expected return on assets

Expected total return, net investment and administrative expenses

Expected total return, net investment expenses only

Administrative expenses

Implicit recognition through net return assumption

Explicit recognition as component of pension expense

Discount rate

Expected return on assets

Blended rate reflecting expected return on assets and 20-year investment grade municipal bond rate

Funding vs Accounting

	<i>Funding Valuation</i>	<i>Accounting Valuation</i>
Asset value	Market value, with 5-yr smoothing of investment gains and losses	Market value
Contribution/ expense	<ul style="list-style-type: none">• normal cost• plus amortization of unfunded liability, if any• minus interest on surplus, if any• minus employee contributions	<ul style="list-style-type: none">• service cost• plus interest on liability• minus expected return on assets• plus administrative expenses• minus employee contributions• plus amortization amounts• plus or minus effect of benefit changes
Floor rate	Municipal contribution not less than zero	None: expense may be negative

Funding vs Accounting

Funding Valuation

Accounting Valuation

Amortization

- Unfunded liability is amortized mortgage-style over a fixed period
 - Fixed period initially set at 30 years
 - Unfunded liability is re-determined each year and amortized over the remaining fixed period
 - No amortization of surplus
- Straight-line (no interest) amortization of gains and losses over fixed period
 - Each base maintained separately until fully amortized
 - Fixed period varies by type of base
 - investment gains and losses: 5 years
 - demographic gains and losses: the average future working lifetime of all participants (AFWL)
 - gains and losses due to assumption changes: AFWL

Funding vs Accounting

Funding Valuation

Accounting Valuation

Benefit changes due to plan amendments

Effect on unfunded liability reflected in amortization amount

Full amount included in expense on first measurement date after amendment takes effect

Valuation date/measurement date

July 1 to determine the contribution rate to take effect the subsequent July 1

July 1 to determine expense and balance sheet recognition for fiscal year containing that July 1

Discount Rate

General Rule

General Rule Applied to Funding Policy

Possible Exceptions

Sample Projection

General Rule

A single blended discount rate reflecting

- the expected long term rate of return to the extent assets are expected to be sufficient to meet benefit payments
- the yield on 20-year, tax exempt general obligation municipal bonds rated AA/Aa or higher on payments due after assets are depleted

Benefit payments are for all current participants, including expected future accruals

Assets include anticipated future contributions on behalf of current participants, and other contributions expected to be applied to the current unfunded liability

General Rule Applied to Funding Policy

The funding policy is designed to fund all participants' benefits over their working lifetimes

Unfunded liabilities may arise from:

- granting of past service upon joining OkMRF
- benefit improvements applied to past service
- actual experience less favorable than assumed

Unfunded liabilities funded over a fixed period not to exceed 30 years

General conclusion: member cities that faithfully contribute their actuarially determined contribution will not face a projected depletion date

Possible Exceptions

Plans with large unfunded liabilities relative to payroll

- Mountain Park MCD: 240%
- Foss Reservoir PWA: 168%

Plans with unfunded liabilities and an unusually high average employee age

- Billings: 60.2
- Braman: 57.5

Plans with unfunded liabilities and a high ratio of retirees to active employees

- Drumright: 153%
- Bethany/ Warr Acres: 150%

**Oklahoma Municipal Retirement Fund
Employee Retirement System of Billings, Oklahoma**

Table 1: Projection of Contributions

Year	Projected Covered-Employee Pay			Projected Contributions			
	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Contributions from Current Employees (d)	Employer Contributions for Current Employees (e)	Contributions Related to Payroll of Future Employees (f)	Total Contributions (g) = (d) + (e) + (f)
1	115,837	0	115,837	4,344	7,415	0	11,759
2	76,210	41,712	117,922	2,858	4,088	428	7,374
3	72,899	47,145	120,044	2,734	3,914	486	7,134
4	69,606	52,600	122,205	2,610	3,872	645	7,127
5	66,334	58,070	124,405	2,488	3,725	742	6,955
6	63,127	63,517	126,644	2,367	3,425	691	6,484
7	54,357	74,567	128,924	2,038	2,927	781	5,746
8	49,782	81,462	131,244	1,867	2,667	831	5,366
9	37,394	96,213	133,607	1,402	1,994	959	4,355
10	30,042	105,969	136,012	1,127	1,595	1,031	3,752
11	24,224	114,236	138,460	908	1,281	1,084	3,273
12	17,533	123,419	140,952	657	923	1,143	2,723
13	12,675	130,814	143,489	475	664	1,181	2,321
14	6,766	139,306	146,072	254	353	1,226	1,833
15	4,886	143,815	148,701	183	254	1,234	1,671
16	0	151,378	151,378	0	0	1,265	1,265
17	0	154,103	154,103	0	0	1,253	1,253
18	0	156,877	156,877	0	0	1,241	1,241
19	0	159,700	159,700	0	0	1,227	1,227
20	0	162,575	162,575	0	0	1,212	1,212
21	0	165,501	165,501	0	0	1,195	1,195
22	0	168,480	168,480	0	0	1,175	1,175
23	0	171,513	171,513	0	0	1,149	1,149
24	0	174,600	174,600	0	0	1,115	1,115
25	0	177,743	177,743	0	0	1,062	1,062
26	0	180,942	180,942	0	0	939	939
27	0	184,199	184,199	0	0	0	0
28	0	187,515	187,515	0	0	0	0
29	0	190,890	190,890	0	0	0	0
30	0	194,326	194,326	0	0	0	0
31	0	197,824	197,824	0	0	0	0
32	0	201,385	201,385	0	0	0	0
33	0	205,010	205,010	0	0	0	0
34	0	208,700	208,700	0	0	0	0
35	0	212,457	212,457	0	0	0	0
36	0	216,281	216,281	0	0	0	0

**Oklahoma Municipal Retirement Fund
Employee Retirement System of Billings, Oklahoma**

Table 2: Projection of the Pension Plan's Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
1	273,500	11,759	10,056	686	20,550	295,067
2	295,067	7,374	10,507	734	21,988	313,188
3	313,188	7,134	11,563	777	23,297	331,279
4	331,279	7,127	12,696	821	24,611	349,500
5	349,500	6,955	13,892	865	25,925	367,624
6	367,624	6,484	16,270	907	27,178	384,109
7	384,109	5,746	17,381	946	28,345	399,873
8	399,873	5,366	21,473	980	29,361	412,147
9	412,147	4,355	32,358	995	29,843	412,993
10	412,993	3,752	34,375	994	29,810	411,187
11	411,187	3,273	36,826	986	29,567	406,216
12	406,216	2,723	38,511	971	29,113	398,570
13	398,570	2,321	39,445	950	28,491	388,986
14	388,986	1,833	40,113	925	27,730	377,512
15	377,512	1,671	39,933	896	26,872	365,226
16	365,226	1,265	40,741	864	25,907	350,792
17	350,792	1,253	39,677	829	24,864	336,404
18	336,404	1,241	38,595	794	23,826	322,082
19	322,082	1,227	37,429	760	22,795	307,915
20	307,915	1,212	36,304	726	21,775	293,872
21	293,872	1,195	35,029	692	20,769	280,114
22	280,114	1,175	33,845	659	19,781	266,566
23	266,566	1,149	32,612	627	18,811	253,287
24	253,287	1,115	31,314	595	17,863	240,356
25	240,356	1,062	29,946	565	16,942	227,849
26	227,849	939	28,507	535	16,054	215,800
27	215,800	0	27,011	506	15,172	203,455
28	203,455	0	25,457	477	14,304	191,825
29	191,825	0	23,863	450	13,492	181,004
30	181,004	0	22,239	425	12,741	171,081
31	171,081	0	20,575	402	12,059	162,163
32	162,163	0	18,908	382	11,452	154,325
33	154,325	0	17,226	364	10,927	147,661
34	147,661	0	15,488	350	10,491	142,314
35	142,314	0	13,736	339	10,155	138,395
36	138,395	0	11,999	331	9,926	135,991
37	135,991	0	10,267	327	9,809	135,206

Table 2: Projection of the Pension Plan's Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
38	135,206	0	8,587	327	9,812	136,104
39	136,104	0	7,006	332	9,938	138,704
40	138,704	0	5,561	340	10,186	142,989
41	142,989	0	4,311	352	10,552	148,877
42	148,877	0	3,260	368	11,032	156,282
43	156,282	0	2,398	388	11,619	165,114
44	165,114	0	1,766	411	12,303	175,241
45	175,241	0	1,330	436	13,078	186,553
46	186,553	0	1,062	465	13,935	198,960
47	198,960	0	850	496	14,872	212,487
48	212,487	0	682	530	15,892	227,167
49	227,167	0	550	567	16,996	243,046
50	243,046	0	446	607	18,190	260,182
51	260,182	0	364	650	19,476	278,645
52	278,645	0	299	696	20,862	298,511
53	298,511	0	247	746	22,352	319,870
54	319,870	0	204	799	23,953	342,820
55	342,820	0	169	857	25,674	367,468
56	367,468	0	84	919	27,523	393,989
57	393,989	0	42	985	29,511	422,473
58	422,473	0	21	1,056	31,646	453,042
59	453,042	0	11	1,133	33,936	485,835
60	485,835	0	5	1,215	36,393	521,008
61	521,008	0	3	1,303	39,028	558,730
62	558,730	0	1	1,397	41,853	599,185
63	599,185	0	1	1,498	44,884	642,570
64	642,570	0	0	1,606	48,134	689,097
65	689,097	0	0	1,723	51,619	738,993
66	738,993	0	0	1,847	55,356	792,502
67	792,502	0	0	1,981	59,365	849,885
68	849,885	0	0	2,125	63,663	911,424

**Oklahoma Municipal Retirement Fund
Employee Retirement System of Billings, Oklahoma**

Table 3: Actuarial Present Values of Projected Benefit Payments

Year (a)	Projected Beginning Fiduciary Net Position (b)	Projected Benefit Payments (c)	Projected Benefit Payments		Actuarial Present Values of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments (d)	"Unfunded" Portion of Benefit Payments (e)	Present Value of "Funded" Benefit Payments (f) = (d) / (1 + 7.50%) ^ (a)	Present Value of "Unfunded" Benefit Payments (g) = (e) / (1 + 2.91%) ^ (a)	Present Value of Benefit Payments Using the Single Discount Rate (h) = (c) / (1 + 7.50%) ^ (a)
1	273,500	10,056	10,056	0	9,354	0	9,354
2	295,067	10,507	10,507	0	9,092	0	9,092
3	313,188	11,563	11,563	0	9,308	0	9,308
4	331,279	12,696	12,696	0	9,506	0	9,506
5	349,500	13,892	13,892	0	9,676	0	9,676
6	367,624	16,270	16,270	0	10,542	0	10,542
7	384,109	17,381	17,381	0	10,476	0	10,476
8	399,873	21,473	21,473	0	12,040	0	12,040
9	412,147	32,358	32,358	0	16,877	0	16,877
10	412,993	34,375	34,375	0	16,678	0	16,678
11	411,187	36,826	36,826	0	16,621	0	16,621
12	406,216	38,511	38,511	0	16,169	0	16,169
13	398,570	39,445	39,445	0	15,406	0	15,406
14	388,986	40,113	40,113	0	14,574	0	14,574
15	377,512	39,933	39,933	0	13,496	0	13,496
16	365,226	40,741	40,741	0	12,809	0	12,809
17	350,792	39,677	39,677	0	11,604	0	11,604
18	336,404	38,595	38,595	0	10,500	0	10,500
19	322,082	37,429	37,429	0	9,472	0	9,472
20	307,915	36,304	36,304	0	8,546	0	8,546
21	293,872	35,029	35,029	0	7,671	0	7,671
22	280,114	33,845	33,845	0	6,895	0	6,895
23	266,566	32,612	32,612	0	6,180	0	6,180
24	253,287	31,314	31,314	0	5,520	0	5,520
25	240,356	29,946	29,946	0	4,910	0	4,910
26	227,849	28,507	28,507	0	4,348	0	4,348
27	215,800	27,011	27,011	0	3,833	0	3,833
28	203,455	25,457	25,457	0	3,360	0	3,360
29	191,825	23,863	23,863	0	2,930	0	2,930
30	181,004	22,239	22,239	0	2,540	0	2,540
31	171,081	20,575	20,575	0	2,186	0	2,186
32	162,163	18,908	18,908	0	1,869	0	1,869
33	154,325	17,226	17,226	0	1,584	0	1,584
34	147,661	15,488	15,488	0	1,325	0	1,325
35	142,314	13,736	13,736	0	1,093	0	1,093
36	138,395	11,999	11,999	0	888	0	888
37	135,991	10,267	10,267	0	707	0	707
38	135,206	8,587	8,587	0	550	0	550
39	136,104	7,006	7,006	0	417	0	417

Table 3: Actuarial Present Values of Projected Benefit Payments

Year (a)	Projected Beginning Fiduciary Net Position (b)	Projected Benefit Payments (c)	Projected Benefit Payments		Actuarial Present Values of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments (d)	"Unfunded" Portion of Benefit Payments (e)	Present Value of "Funded" Benefit Payments (f) = (d) / (1 + 7.50%) ^ (a)	Present Value of "Unfunded" Benefit Payments (g) = (e) / (1 + 2.91%) ^ (a)	Present Value of Benefit Payments Using the Single Discount Rate (h) = (c) / (1 + 7.50%) ^ (a)
40	138,704	5,561	5,561	0	308	0	308
41	142,989	4,311	4,311	0	222	0	222
42	148,877	3,260	3,260	0	156	0	156
43	156,282	2,398	2,398	0	107	0	107
44	165,114	1,766	1,766	0	73	0	73
45	175,241	1,330	1,330	0	51	0	51
46	186,553	1,062	1,062	0	38	0	38
47	198,960	850	850	0	28	0	28
48	212,487	682	682	0	21	0	21
49	227,167	550	550	0	16	0	16
50	243,046	446	446	0	12	0	12
51	260,182	364	364	0	9	0	9
52	278,645	299	299	0	7	0	7
53	298,511	247	247	0	5	0	5
54	319,870	204	204	0	4	0	4
55	342,820	169	169	0	3	0	3
56	367,468	84	84	0	1	0	1
57	393,989	42	42	0	1	0	1
58	422,473	21	21	0	0	0	0
59	453,042	11	11	0	0	0	0
60	485,835	5	5	0	0	0	0
61	521,008	3	3	0	0	0	0
62	558,730	1	1	0	0	0	0
63	599,185	1	1	0	0	0	0
64	642,570	0	0	0	0	0	0
65	689,097	0	0	0	0	0	0
66	738,993	0	0	0	0	0	0
67	792,502	0	0	0	0	0	0
68	849,885	0	0	0	0	0	0
Total					302,619 +	0 =	302,619

0

Valuation Results

Summary for all OkMRF plans combined

Sample Exhibits -- Altus

**Oklahoma Municipal Retirement Fund
All Plans Combined**

CHANGES IN NET PENSION LIABILITY

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
Balance at 7/1/2016	<u>\$ 545,796,983</u>	<u>\$ 487,694,010</u>	<u>\$ 58,102,973</u>
Changes for the Year:			
Service cost	15,626,001		15,626,001
Interest cost	41,183,450		41,183,450
Difference between expected and actual experience	(3,907,408)		(3,907,408)
Assumption changes	11,550,341		11,550,341
Contributions -- Employer		18,138,331	(18,138,331)
Contributions -- Employee		6,445,905	(6,445,905)
Net investment income		59,931,192	(59,931,192)
Benefit payments, including ee contributions refunds	(29,342,644)	(29,342,644)	0
Benefit changes due to plan amendments	2,547,202		2,547,202
Administrative expense		(1,054,626)	1,054,626
Other changes		(64,111)	64,111
Net changes	<u>37,656,942</u>	<u>54,054,047</u>	<u>(16,397,105)</u>
Balance at 7/1/2017	<u><u>\$ 583,453,925</u></u>	<u><u>\$ 541,748,057</u></u>	<u><u>\$ 41,705,868</u></u>

SENSITIVITY OF NET PENSION LIABILITY TO CHANGES IN THE DISCOUNT RATE

	1% Decrease	Current Disc Rate	1% Increase
	<u>6.50%</u>	<u>7.50%</u>	<u>8.50%</u>
Net Pension Liability	\$ 112,774,527	\$ 41,705,868	\$ (18,716,401)

**Oklahoma Municipal Retirement Fund
All Plans Combined**

PENSION EXPENSE

Service Cost	\$ 15,626,001
Interest Cost	41,183,450
Expected Return on Plan Investments	(37,575,231)
Administrative Expenses	1,054,626
Employee Contributions	(6,445,905)
Amortization of Deferred Outflows and Inflows	
Actuarial gains and losses	(3,010,501)
Changes in assumptions	2,724,452
Investment gains and losses	(740,481)
Benefit Changes Due to Plan Amendments	<u>2,547,202</u>
Pension Expense for Fiscal 2017	<u><u>\$ 15,363,613</u></u>

**Oklahoma Municipal Retirement Fund
All Plans Combined**

AMORTIZATION OF DEFERRED (INFLOWS) AND OUTFLOWS

Fiscal Year Established	Deferred (Inflow)/Outflow	Amortization Years	Balance before Current Recognition	Current Recognition	Balance after Current Recognition
Actuarial (gains)/losses					
2015	\$ 0	N/A	\$ 0	\$ 0	\$ 0
2016	(4,759,419)	0.00-9.64	(2,667,662)	(1,090,375)	(1,577,287)
2017	(6,581,799)	0.00-9.19	(4,063,762)	(1,064,203)	(2,999,559)
2018	(3,907,408)	0.00-8.40	(3,907,408)	(855,923)	(3,051,485)
Total current recognition				<u>\$ (3,010,501)</u>	
Remaining deferred (inflows)				\$	(12,119,776)
Remaining deferred outflows				\$	4,491,445
Changes in assumptions					
2018	\$ 11,550,341	0.00-8.40	\$ 11,550,341	<u>\$ 2,724,452</u>	<u>\$ 8,825,889</u>
Total current recognition				<u>\$ 0</u>	
Remaining deferred (inflows)				\$	(23,007)
Remaining deferred outflows				\$	8,848,896
Investment (gains)/losses					
2015	\$ (35,763,637)	5	\$ (14,305,458)	\$ (7,152,781)	\$ (7,152,677)
2016	22,323,644	5	13,394,159	4,464,709	8,929,450
2017	32,093,780	5	25,675,026	6,418,781	19,256,245
2018	(22,355,961)	5	(22,355,961)	(4,471,190)	(17,884,771)
Total current recognition				<u>\$ (740,481)</u>	
Remaining deferred (inflows)				\$	(25,041,782)
Remaining deferred outflows				\$	28,190,029

**Oklahoma Municipal Retirement Fund
Employee Retirement System of Altus, Oklahoma**

CHANGES IN NET PENSION LIABILITY

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
Balance at 7/1/2016	\$ 21,697,963	\$ 18,415,252	\$ 3,282,711
Changes for the Year:			
Service cost	552,041		552,041
Interest cost	1,635,659		1,635,659
Difference between expected and actual experience	379,928		379,928
Assumption changes	535,786		535,786
Contributions -- Employer		703,894	(703,894)
Contributions -- Employee		203,438	(203,438)
Net investment income		2,269,790	(2,269,790)
Benefit payments, including refunds of employee contributions	(1,207,910)	(1,207,910)	0
Benefit changes due to plan amendments	585,286		585,286
Administrative expense		(40,904)	40,904
Other changes			0
Net changes	<u>2,480,790</u>	<u>1,928,308</u>	<u>552,482</u>
Balance at 7/1/2017	<u>\$ 24,178,753</u>	<u>\$ 20,343,560</u>	<u>\$ 3,835,193</u>

SENSITIVITY OF NET PENSION LIABILITY TO CHANGES IN THE DISCOUNT RATE

	1% Decrease 6.50%	Current Discount Rate 7.50%	1% Increase 8.50%
Total Pension Liability	\$ 26,812,088	\$ 24,178,753	\$ 21,955,691
Plan Fiduciary Net Position	20,343,560	20,343,560	20,343,560
Net Pension Liability	<u>\$ 6,468,528</u>	<u>\$ 3,835,193</u>	<u>\$ 1,612,131</u>

The discount rate used to value benefits was the long-term expected rate of return on plan investments, 7.50% (see Exhibit 11), as prescribed by paragraph 26 of GASB 68 when the plan's fiduciary net position is projected to be sufficient to make projected benefit payments.

The employer has adopted a funding method that is designed to fund all benefits payable to participants over the course of their working careers. Any differences between actual and expected experience are funded over a fixed period to ensure all funds necessary to pay benefits have been contributed to the trust before those benefits are payable. Thus, in accordance with paragraph 29, the evaluations required by paragraph 27 to determine the sufficiency pension plan assets can be made without a separate projection of cashflows.

**Oklahoma Municipal Retirement Fund
Employee Retirement System of Altus, Oklahoma**

PENSION EXPENSE

Service Cost	\$ 552,041
Interest Cost	1,635,659
Expected Return on Plan Investments	(1,414,197)
Administrative Expenses	40,904
Contributions -- Employee	(203,438)
Amortization of Deferred (Inflows) and Outflows	
Actuarial (gains) and losses	(95,075)
Changes in assumptions	126,663
Investment (gains) and losses	(80,117)
Benefit Changes Due to Plan Amendments	<u>585,286</u>
Pension Expense for Fiscal 2018	<u><u>\$ 1,147,726</u></u>

**Oklahoma Municipal Retirement Fund
Employee Retirement System of Altus, Oklahoma**

AMORTIZATION OF DEFERRED (INFLOWS) AND OUTFLOWS

	Fiscal Year Established	Deferred (Inflow)/Outflow	Amortization Years	Balance before Current Recognition	Current Recognition	Balance after Current Recognition
Actuarial (gains)/losses						
	2015	\$ 0	N/A	\$ 0	\$ 0	\$ 0
	2016	(663,485)	4.57	(373,119)	(145,182)	(227,937)
	2017	(185,051)	4.66	(145,340)	(39,710)	(105,630)
	2018	379,928	4.23	379,928	89,817	290,111
Total current recognition					\$ (95,075)	
Remaining deferred (inflows)						\$ (333,567)
Remaining deferred outflows						\$ 290,111
Changes in assumptions						
	2018	\$ 535,786	4.23	\$ 535,786	\$ 126,663	\$ 409,123
Total current recognition						
Remaining deferred (inflows)						\$ 0
Remaining deferred outflows						\$ 409,123
Investment (gains)/losses						
	2015	\$ (1,553,357)	5	\$ (621,343)	\$ (310,672)	\$ (310,671)
	2016	757,806	5	454,684	151,561	303,123
	2017	1,250,562	5	1,000,450	250,113	750,337
	2018	(855,593)	5	(855,593)	(171,119)	(684,474)
Total current recognition					\$ (80,117)	
Remaining deferred (inflows)						\$ (995,145)
Remaining deferred outflows						\$ 1,053,460

Amounts reported as deferred (inflows) of resources and deferred outflows of resources related to pensions will be recognized in pension expense as follows:

Fiscal 2019	\$ (48,529)
Fiscal 2020	324,573
Fiscal 2021	269,265
Fiscal 2022	(121,327)
Fiscal 2023	0
Thereafter	0

**Oklahoma Municipal Retirement Fund
Employee Retirement System of Altus, Oklahoma**

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

SINCE INITIAL APPLICATION

	Fiscal Year 2018	Fiscal Year 2017	Fiscal Year 2016	Fiscal Year 2015
Total Pension Liability				
Service cost	\$ 552,041	\$ 481,258	\$ 483,967	\$ 440,674
Interest cost	1,635,659	1,602,907	1,609,715	1,578,993
Benefit changes due to plan amendments	585,286	0	0	0
Difference between expected and actual experience	379,928	(185,051)	(663,485)	0
Changes of assumptions	535,786	0	0	0
Benefit payments, including refunds of employee contributions	(1,207,910)	(1,735,260)	(1,308,780)	(1,061,024)
Net change in total pension liability	<u>2,480,790</u>	<u>163,854</u>	<u>121,417</u>	<u>958,644</u>
Total pension liability -- beginning	<u>21,697,963</u>	<u>21,534,109</u>	<u>21,412,692</u>	<u>20,454,048</u>
Total pension liability -- ending	<u>\$ 24,178,753</u>	<u>\$ 21,697,963</u>	<u>\$ 21,534,109</u>	<u>\$ 21,412,692</u>
Plan Fiduciary Net Position				
Contributions -- Employer	\$ 703,894	\$ 694,586	\$ 628,869	\$ 627,063
Contributions -- Employee	203,438	200,692	181,678	192,278
Net investment income	2,269,790	152,627	530,947	2,728,622
Benefit payments, including refunds of employee contributions	(1,207,910)	(1,735,260)	(1,308,780)	(1,061,024)
Administrative expense	(40,904)	(37,277)	(39,417)	(40,333)
Other	0	0	0	0
Net change in total pension liability	<u>1,928,308</u>	<u>(724,632)</u>	<u>(6,703)</u>	<u>2,446,606</u>
Plan fiduciary net position -- beginning	<u>18,415,252</u>	<u>19,139,884</u>	<u>19,146,587</u>	<u>16,699,981</u>
Plan fiduciary net position -- ending	<u>\$ 20,343,560</u>	<u>\$ 18,415,252</u>	<u>\$ 19,139,884</u>	<u>\$ 19,146,587</u>
Net pension liability -- ending	<u>\$ 3,835,193</u>	<u>\$ 3,282,711</u>	<u>\$ 2,394,225</u>	<u>\$ 2,266,105</u>
Plan fiduciary net position as percentage of total pension liability	84.14%	84.87%	88.88%	89.42%
Covered employee payroll	\$ 4,700,997	\$ 5,125,738	\$ 4,622,461	\$ 4,713,305
Net pension liability position as percentage of covered employee payroll	81.58%	64.04%	51.80%	48.08%

Oklahoma Municipal Retirement Fund

SUMMARY OF ACTUARIAL ASSUMPTIONS IN EFFECT THROUGH JUNE 30, 2017

Interest Rates <i>Purpose</i>	<i>Rate</i>	Age	Rates per Thousand					Annual Pay Increase	
			Mortality (M)	Mortality (F)	Turnover	Disability	Retire-N		Retire-E
Long-term rate of return	7.75%	20	0.545	0.305	214.60	0.80	0	0	7.42%
20-yr tax-free bond yield	2.10%	21	0.570	0.308	197.80	0.85	0	0	7.19%
Admin expense load	0.25%	22	0.598	0.311	182.30	0.91	0	0	6.97%
		23	0.633	0.313	167.90	0.96	0	0	6.77%
Mortality Tables		24	0.671	0.313	154.60	1.01	0	0	6.59%
Before retirement	UP 1994	25	0.711	0.313	142.30	1.07	0	0	6.42%
After retirement	UP 1994	26	0.749	0.316	131.10	1.15	0	0	6.26%
with projected mortality improvement		27	0.782	0.324	120.90	1.23	0	0	6.12%
		28	0.811	0.338	111.60	1.31	0	0	6.00%
Pay Increase Assumption		29	0.838	0.356	103.20	1.39	0	0	5.88%
Annual rates of pay increase		30	0.862	0.377	95.60	1.47	0	0	5.77%
as shown		31	0.883	0.401	88.70	1.60	0	0	5.68%
		32	0.902	0.427	82.70	1.73	0	0	5.59%
COLA Increase Assumption		33	0.912	0.454	77.30	1.87	0	0	5.52%
For benefits subject to adjustment		34	0.913	0.482	72.50	2.00	0	0	5.45%
based on change in CPI	3.00%	35	0.915	0.514	68.40	2.13	0	0	5.39%
		36	0.927	0.550	64.80	2.40	0	0	5.33%
Turnover		37	0.958	0.593	61.70	2.67	0	0	5.28%
Select and ultimate rates		38	1.010	0.643	59.10	2.93	0	0	5.24%
Ultimate rates are age-related as shown		39	1.075	0.701	56.90	3.20	0	0	5.20%
Additional rates per thousand are		40	1.153	0.763	55.00	3.47	0	0	5.16%
added during the first 5 years:		41	1.243	0.826	53.50	3.97	0	0	5.13%
Year 1:	215	42	1.346	0.888	52.30	4.48	0	0	5.09%
Year 2:	140	43	1.454	0.943	51.30	4.99	0	0	5.06%
Year 3:	95	44	1.568	0.992	50.40	5.49	0	0	5.03%
Year 4:	65	45	1.697	1.046	49.80	6.00	0	0	5.00%
Year 5:	40	46	1.852	1.111	49.20	6.00	0	0	4.96%
		47	2.042	1.196	48.60	6.00	0	0	4.93%
Retirement Age		48	2.260	1.297	48.00	6.00	0	0	4.89%
Normal (N) and early (E) rates		49	2.501	1.408	47.40	6.00	0	0	4.84%
Normal rates apply when employee		50	2.773	1.536	46.70	6.00	0	0	4.80%
is at or above normal retirement age.		51	3.088	1.686	45.90	6.80	0	0	4.74%
Early rates apply when employee		52	3.455	1.864	44.80	7.60	0	0	4.69%
is eligible for early (reduced) retirement.		53	3.854	2.051	43.50	8.40	0	0	4.62%
		54	4.278	2.241	42.00	9.20	0	0	4.55%
Other Assumptions		55	4.758	2.466	40.10	10.00	350	70	4.46%
Percent married	100%	56	5.322	2.755	40.00	11.23	200	70	4.37%
Spouse age difference	3	57	6.001	3.139	40.00	12.45	200	70	4.27%
(female spouses younger)		58	6.774	3.612	40.00	13.68	200	70	4.16%
		59	7.623	4.154	40.00	14.91	200	70	4.04%
		60	8.576	4.773	40.00	16.13	200	70	4.00%
		61	9.663	5.476	40.00	16.13	100	70	4.00%
		62	10.944	6.271	40.00	16.13	300	300	4.00%
		63	12.335	7.179	40.00	16.13	300	175	4.00%
		64	13.914	8.194	40.00	16.13	150	175	4.00%
		65	15.629	9.286	40.00	0.00	300		4.00%
		66	17.462	10.423	40.00	0.00	300		4.00%
		67	19.391	11.574	40.00	0.00	300		4.00%
		68	21.354	12.648	40.00	0.00	300		4.00%
		69	23.364	13.665	40.00	0.00	300		4.00%
		70	25.516	14.763	40.00	0.00	1000		4.00%

Base mortality rates are shown; valuation rates are projected for mortality improvement by the Society of Actuaries' table AA based on the employee's year of birth.

Oklahoma Municipal Retirement Fund

SUMMARY OF ACTUARIAL ASSUMPTIONS IN EFFECT JULY 1, 2017
(changes in bold text)

Interest Rates <i>Purpose</i>	<i>Rate</i>	Age	Rates per Thousand					Annual Pay Increase	
			Mortality (M)	Mortality (F)	Turnover	Disability	Retire-N		Retire-E
Long-term rate of return	7.50%	20	0.545	0.305	150.00	0.80	0	0	7.50%
20-yr tax-free bond yield	2.91%	21	0.570	0.308	145.90	0.85	0	0	7.50%
Admin expense load	0.25%	22	0.598	0.311	141.80	0.91	0	0	7.50%
		23	0.633	0.313	137.70	0.96	0	0	7.50%
Mortality Tables		24	0.671	0.313	133.70	1.01	0	0	7.50%
Before retirement	UP 1994	25	0.711	0.313	129.60	1.07	0	0	7.50%
After retirement	UP 1994	26	0.749	0.316	125.60	1.15	0	0	7.20%
with projected mortality improvement		27	0.782	0.324	121.60	1.23	0	0	6.90%
		28	0.811	0.338	117.60	1.31	0	0	6.60%
Pay Increase Assumption		29	0.838	0.356	113.60	1.39	0	0	6.30%
Annual rates of pay increase		30	0.862	0.377	109.60	1.47	0	0	6.00%
as shown		31	0.883	0.401	105.70	1.60	0	0	6.10%
		32	0.902	0.427	101.70	1.73	0	0	6.20%
COLA Increase Assumption		33	0.912	0.454	97.80	1.87	0	0	6.30%
For benefits subject to adjustment		34	0.913	0.482	93.90	2.00	0	0	6.40%
based on change in CPI	2.75%	35	0.915	0.514	90.00	2.13	0	0	6.50%
		36	0.927	0.550	87.30	2.40	0	0	6.40%
Turnover		37	0.958	0.593	84.60	2.67	0	0	6.30%
Select and ultimate rates		38	1.010	0.643	81.90	2.93	0	0	6.20%
Ultimate rates are age-related as shown		39	1.075	0.701	79.20	3.20	0	0	6.10%
Additional rates per thousand are		40	1.153	0.763	76.50	3.47	0	0	6.00%
added during the first 5 years:		41	1.243	0.826	73.80	3.97	0	0	5.82%
Year 1:	225	42	1.346	0.888	71.10	4.48	0	0	5.64%
Year 2:	140	43	1.454	0.943	68.50	4.99	0	0	5.49%
Year 3:	100	44	1.568	0.992	65.80	5.49	0	0	5.34%
Year 4:	70	45	1.697	1.046	63.20	6.00	0	0	5.21%
Year 5:	40	46	1.852	1.111	60.50	6.00	0	0	5.09%
		47	2.042	1.196	57.90	6.00	0	0	4.99%
Retirement Age		48	2.260	1.297	55.20	6.00	0	0	4.89%
Normal (N) and early (E) rates		49	2.501	1.408	52.60	6.00	0	0	4.82%
Normal rates apply when employee		50	2.773	1.536	50.00	6.00	0	0	4.75%
is at or above normal retirement age.		51	3.088	1.686	53.30	6.80	0	0	4.71%
Early rates apply when employee		52	3.455	1.864	56.50	7.60	0	0	4.67%
is eligible for early (reduced) retirement.		53	3.854	2.051	59.80	8.40	0	0	4.63%
		54	4.278	2.241	63.10	9.20	0	0	4.61%
Other Assumptions		55	4.758	2.466	66.40	10.00	250	70	4.58%
Percent married	100%	56	5.322	2.755	69.70	11.23	170	70	4.55%
Spouse age difference	3	57	6.001	3.139	73.00	12.45	170	70	4.54%
(female spouses younger)		58	6.774	3.612	76.40	13.68	170	70	4.53%
		59	7.623	4.154	79.70	14.91	170	70	4.51%
		60	8.576	4.773	83.10	16.13	170	70	4.50%
		61	9.663	5.476	86.40	16.13	170	70	4.50%
		62	10.944	6.271	89.80	16.13	300	300	4.50%
		63	12.335	7.179	93.20	16.13	200	175	4.50%
		64	13.914	8.194	96.60	16.13	150	175	4.50%
		65	15.629	9.286	100.00	0.00	300		4.50%
		66	17.462	10.423	100.00	0.00	300		4.50%
		67	19.391	11.574	100.00	0.00	300		4.50%
		68	21.354	12.648	100.00	0.00	300		4.50%
		69	23.364	13.665	100.00	0.00	300		4.50%
		70	25.516	14.763			1000		

Base mortality rates are shown; valuation rates are projected for mortality improvement by the Society of Actuaries' table AA based on the employee's year of birth.

Oklahoma Municipal Retirement Fund

LONG-TERM RATE OF RETURN

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation (2.75%). Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of July 1, 2017 are summarized in the following table:

	<u>Target Allocation</u>	<u>Real Return</u>	<u>Weighted Return</u>
Large cap stocks S&P 500	25%	5.80%	1.45%
Small/mid cap stocks Russell 2500	10%	6.40%	0.64%
Long/short equity MSCI ACWI	10%	5.00%	0.50%
International stocks MSCI EAFE	20%	6.20%	1.24%
Fixed income bonds Barclay's Capital Aggregate	30%	2.30%	0.69%
Real estate NCREIF	5%	4.60%	0.23%
Cash equivalents 3 month Treasury	0%	0.00%	0.00%
	100%		
		Average Real Return	4.75%
		Inflation	2.75%
		Long term expected return	7.50%

A Note on Retiree Health Plans

Covered by GASB Statement 75

Relevance to OkMRF

Effect of Plan Design