



**STATE OF ALASKA TEACHERS' RETIREMENT SYSTEM
DEFINED BENEFIT PENSION PLAN**

Schedule of Employer and Nonemployer Allocations and Schedule of
Pension Amounts by Employer and Nonemployer

June 30, 2017

(With Independent Auditors' Report Thereon)

**STATE OF ALASKA TEACHERS' RETIREMENT SYSTEM
DEFINED BENEFIT PENSION PLAN**

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Independent Auditors' Report

The Division of Retirement and Benefits and
Members of the Alaska Retirement Management Board
State of Alaska Teachers' Retirement System:

We have audited the accompanying schedule of employer and nonemployer allocations of the State of Alaska Teachers' Retirement System Defined Benefit Pension Plan as of and for the year ended June 30, 2017, and the related notes. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total employer pension expense (specified column totals) included in the accompanying schedule of pension amounts by employer and nonemployer of the State of Alaska Teachers' Retirement System Defined Benefit Pension Plan as of and for the year ended June 30, 2017, and the related notes.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the schedules that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on the schedule of employer and nonemployer allocations and the specified column totals included in the schedule of pension amounts by employer and nonemployer based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer and nonemployer allocations and specified column totals included in the schedule of pension amounts by employer and nonemployer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer and nonemployer allocations and specified column totals included in the schedule of pension amounts by employer and nonemployer. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedule of employer and nonemployer allocations and specified column totals included in the schedule of pension amounts by employer and nonemployer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the schedule of employer and nonemployer allocations and specified column totals included in the schedule of pension amounts by employer and nonemployer in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer and nonemployer allocations and specified column totals included in the schedule of pension amounts by employer and nonemployer.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.



Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer and nonemployer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total employer pension expense for the total of all participating entities for the State of Alaska Teachers' Retirement System Defined Benefit Pension Plan as of and for the year ended June 30, 2017, in accordance with U.S. generally accepted accounting principles.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America the financial statements of the State of Alaska Teachers' Retirement System, which includes the Defined Benefit Pension Plan, as of and for the year ended June 30, 2017, and our report thereon, dated December 5, 2017, expressed an unmodified opinion on those financial statements.

Other Information

The supplemental schedule of employer allocations of special funding amounts, supplemental schedule of special funding amounts by employer, and supplemental schedule of employer and nonemployer contributions have not been subject to the auditing procedures applied in the audit of the schedule of employer and nonemployer allocations and schedule of pension amounts by employer and nonemployer and accordingly, we do not express an opinion or provide any assurance on them.

Restriction on Use

Our report is intended solely for the information and use of the State of Alaska Teachers' Retirement System management, the members of the Alaska Retirement Management Board, State of Alaska Teachers' Retirement System Defined Benefit Pension Plan employers and nonemployers, and their auditors, and is not intended to be and should not be used by anyone other than these specified parties.

KPMG LLP

June 20, 2018

**STATE of ALASKA TEACHERS' RETIREMENT SYSTEM
DEFINED BENEFIT PENSION PLAN**

Schedule of Employer and Nonemployer Allocations

As of and for the year ended June 30, 2017

Employer/ Nonemployer	Employer number	Present value of projected future contributions	Allocation percentage
Employers:			
Anchorage SD	701	\$ 271,744,000	12.69911%
Cordova City SD	704	1,914,000	0.08944%
Craig City SD	705	2,281,000	0.10660%
Fairbanks North Star Borough SD	706	75,982,000	3.55078%
Haines Borough SD	707	1,690,000	0.07898%
Hoonah City SD	708	1,080,000	0.05047%
Hydaburg City SD	709	661,000	0.03089%
Juneau Borough SD	710	29,663,000	1.38621%
Kake City SD	712	1,101,000	0.05145%
Ketchikan Gateway Borough SD	714	14,700,000	0.68696%
Klawock City SD	717	1,224,000	0.05720%
Kodiak Island Borough SD	718	14,206,000	0.66387%
Nenana City SD	719	2,217,000	0.10360%
Nome City SD	720	4,483,000	0.20950%
Matanuska-Susitna Borough SD	722	100,425,000	4.69305%
Pelican City SD	723	-	0.00312%
Petersburg City SD	724	3,482,000	0.16272%
Sitka Borough SD	727	9,230,000	0.43134%
Skagway City SD	728	962,000	0.04496%
Unalaska City SD	729	2,744,000	0.12823%
Valdez City SD	730	4,923,000	0.23006%
Wrangell Public SD	731	1,938,000	0.09057%
Yakutat SD	732	560,000	0.02617%
University of Alaska	733	34,486,000	1.61160%
Galena City SD	735	5,591,000	0.26128%
North Slope Borough SD	736	14,040,000	0.65612%
State of Alaska	737	14,361,000	0.67112%
Bristol Bay Borough SD	742	665,000	0.03108%
Southeast Regional Resource Center	743	757,000	0.03538%
Dillingham City SD	744	3,633,000	0.16978%
Kenai Peninsula Borough SD	746	50,753,000	2.37178%
Saint Mary's SD	748	1,172,000	0.05477%

**STATE of ALASKA TEACHERS' RETIREMENT SYSTEM
DEFINED BENEFIT PENSION PLAN**

Schedule of Employer and Nonemployer Allocations

As of and for the year ended June 30, 2017

Employer/ Nonemployer	Employer number	Present value of projected future contributions	Allocation percentage
Northwest Arctic Borough SD	751	\$ 14,441,000	0.67486%
Bering Strait SD	752	15,616,000	0.72977%
Lower Yukon SD	753	12,581,000	0.58793%
Lower Kuskokwim SD	754	27,671,000	1.29312%
Kuspuk SD	755	3,082,000	0.14403%
Southwest Region SD	756	4,365,000	0.20398%
Lake And Peninsula Borough SD	757	3,499,000	0.16351%
Aleutian Region SD	758	337,000	0.01575%
Pribilof SD	759	472,000	0.02206%
Iditarod Area SD	761	1,436,000	0.06711%
Yukon / Koyukuk SD	762	4,427,000	0.20688%
Yukon Flats SD	763	2,018,000	0.09430%
Denali Borough SD	764	2,352,000	0.10991%
Delta/Greely SD	765	4,209,000	0.19669%
Alaska Gateway SD	766	2,592,000	0.12113%
Copper River SD	767	1,989,000	0.09295%
Chatham SD	768	1,407,000	0.06575%
Southeast Island SD	769	1,637,000	0.07650%
Annette Island SD	770	2,228,000	0.10412%
Chugach SD	771	1,524,000	0.07122%
Tanana SD	775	463,000	0.02164%
Kashunamiut SD	777	1,994,000	0.09318%
Yupit SD	778	2,398,000	0.11206%
Special Education Service Agency	779	890,000	0.04159%
Aleutians East Borough SD	780	2,308,000	0.10786%
Total present value of projected future employer contributions		788,604,000	36.85609%
Total Nonemployer: State of Alaska	999	1,351,195,000	63.14391%
Total for all entities		\$ 2,139,799,000	100.00000%

See accompanying notes to schedule of employer and nonemployer allocations and schedule of pension amounts by employer and nonemployer.

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STATE OF ALASKA TEACHERS' RETIREMENT SYSTEM
DEFINED BENEFIT PENSION PLAN
Schedule of Pension Amounts by Employer and Nonemployer
As of and for the year ended June 30, 2017

Employer/ Nonemployer	Employer / nonemployer number	Net pension liability	Changes of assumptions	Deferred outflows of resources		
				Net difference between projected and actual investment earnings on pension plan investments	Changes in proportion and differences between employer contributions and proportionate share of contributions	Total deferred outflows of resources
Employer:						
Anchorage SD	701	\$ 257,361,782	-	11,766,569	1,603,848	13,370,417
Cordova City SD	704	1,812,700	-	82,877	13,192	96,069
Craig City SD	705	2,160,277	-	98,768	14,806	113,574
Fairbanks North Star Borough SD	706	71,960,606	-	3,290,036	504,356	3,794,392
Haines Borough SD	707	1,600,556	-	73,177	9,067	82,244
Hoonah City SD	708	1,022,840	-	46,764	-	46,764
Hydaburg City SD	709	626,016	-	28,621	37,511	66,132
Juneau Borough SD	710	28,093,067	-	1,284,414	168,355	1,452,769
Take City SD	712	1,042,729	-	47,674	12,136	59,810
Ketchikan Gateway Borough SD	714	13,921,993	-	636,513	104,206	740,719
Klawock City SD	717	1,159,219	-	52,999	12,404	65,403
Kodiak Island Borough SD	718	13,454,139	-	615,123	97,114	712,237
Nenana City SD	719	2,099,664	-	95,997	29,042	125,039
Nome City SD	720	4,245,734	-	194,115	46,462	240,577
Matanuska-Susitna Borough SD	722	95,109,945	-	4,348,422	730,282	5,078,704
Pelican City SD	723	63,179	-	2,889	-	2,889
Petersburg City SD	724	3,297,713	-	150,771	12,079	162,850
Sitka Borough SD	727	8,741,497	-	399,661	54,041	453,702
Skagway City SD	728	911,086	-	41,655	11,127	52,782
Unalaska City SD	729	2,598,772	-	118,816	13,560	132,376
Valdez City SD	730	4,662,447	-	213,167	44,058	257,225
Wrangell Public SD	731	1,835,430	-	83,916	24,047	107,963
Yakutat SD	732	530,362	-	24,248	-	24,248
University of Alaska	733	32,660,807	-	1,493,251	65,718	1,558,969
Galena City SD	735	5,295,093	-	242,091	33,532	275,623
North Slope Borough SD	736	13,296,924	-	607,935	142,403	750,338
State of Alaska	737	13,600,935	-	621,834	-	621,834
Bristol Bay Borough SD	742	629,804	-	28,795	5,183	33,978
Southeast Regional Resource Center	743	716,935	-	32,778	20,069	52,847
Dillingham City SD	744	3,440,721	-	157,310	16,314	173,624
Kenai Peninsula Borough SD	746	48,066,866	-	2,197,615	399,106	2,596,721
Saint Mary's SD	748	1,109,971	-	50,748	5,878	56,626
Northwest Arctic Borough SD	751	13,676,701	-	625,298	179,273	804,571
Bering Strait SD	752	14,789,514	-	676,176	100,499	776,675
Lower Yukon SD	753	11,915,143	-	544,760	101,860	646,620
Lower Kuskokwim SD	754	26,206,495	-	1,198,160	96,594	1,294,754
Kuspuk SD	755	2,918,883	-	133,451	53,891	187,342
Southwest Region SD	756	4,133,980	-	189,005	33,048	222,053
Lake And Peninsula Borough SD	757	3,313,813	-	151,507	34,146	185,653
Aleutian Region SD	758	319,164	-	14,592	-	14,592
Pribilof SD	759	447,019	-	20,438	-	20,438
Iditarod Area SD	761	1,359,999	-	62,179	20,101	82,280
Yukon / Koyukuk SD	762	4,192,698	-	191,690	71,907	263,597
Yukon Flats SD	763	1,911,196	-	87,380	-	87,380
Denali Borough SD	764	2,227,519	-	101,842	2,188	104,030
Delta/Greely SD	765	3,986,236	-	182,251	24,701	206,952
Alaska Gateway SD	766	2,454,817	-	112,234	17,845	130,079
Copper River SD	767	1,883,731	-	86,124	17,495	103,619
Chatham SD	768	1,332,534	-	60,923	20,547	81,470
Southeast Island SD	769	1,550,361	-	70,882	13,419	84,301
Annette Island SD	770	2,110,082	-	96,473	31,566	128,039
Chugach SD	771	1,443,341	-	65,990	14,595	80,585
Tanana SD	775	438,495	-	20,048	-	20,048
Kashunamiut SD	777	1,888,466	-	86,341	16,375	102,716
Yupitit SD	778	2,271,084	-	103,834	22,392	126,226
Special Education Service Agency	779	842,896	-	38,537	4,296	42,833
Aleutians East Borough SD	780	2,185,848	-	99,937	36,094	136,031
Total attributable to employer contributions		746,929,824	-	34,149,601	5,142,728	39,292,329
Nonemployer:						
State of Alaska	999	1,279,682,176	-	58,507,007	94,718,736	153,225,743
Total for all entities		\$ 2,026,612,000	-	92,656,608	99,861,464	192,518,072

See accompanying notes to schedule of employer and nonemployer allocations and schedule of pension amounts by employer and nonemployer.

Deferred inflows of resources			Pension expense			
Difference between expected and actual experience	Changes of assumptions	Changes in proportion and differences between employer contributions and proportionate share of contributions	Total deferred inflows of resources	Proportionate share of allocable plan pension expense	Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	Total employer pension expense
4,292,247	-	31,628,396	35,920,643	20,912,947	(16,591,936)	4,321,011
30,232	-	178,948	209,180	147,298	(67,235)	80,063
36,029	-	233,606	269,635	175,542	(96,290)	79,252
1,200,150	-	10,557,994	11,758,144	5,847,443	(6,059,185)	(211,742)
26,694	-	144,194	170,888	130,059	(58,243)	71,816
17,059	-	7,954	25,013	83,115	(24,790)	58,325
10,441	-	-	10,441	50,869	109,401	160,270
468,533	-	2,877,258	3,345,791	2,282,813	(1,263,117)	1,019,696
17,390	-	75,008	92,398	84,731	48,874	133,605
232,189	-	1,564,634	1,796,823	1,131,286	(571,592)	559,694
19,333	-	124,662	143,995	94,197	(15,010)	79,187
224,386	-	1,339,204	1,563,590	1,093,269	(465,105)	628,164
35,018	-	241,470	276,488	170,616	27,199	197,815
70,810	-	693,202	764,012	345,004	(265,090)	79,914
1,586,232	-	10,845,415	12,431,647	7,728,534	(3,881,240)	3,847,294
1,054	-	2,468	3,522	5,134	(6,779)	(1,645)
54,999	-	220,041	275,040	267,969	(106,379)	161,590
145,790	-	931,618	1,077,408	710,325	(446,069)	264,256
15,195	-	51,843	67,038	74,034	60,000	134,034
43,342	-	442,835	486,177	211,173	(321,544)	(110,371)
77,760	-	397,021	474,781	378,866	(363)	378,503
30,611	-	157,763	188,374	149,145	57,758	206,903
8,845	-	90,031	98,876	43,097	(180,929)	(137,832)
544,713	-	5,111,306	5,656,019	2,653,983	(4,905,377)	(2,251,394)
88,311	-	472,391	560,702	430,274	(163,973)	266,301
221,764	-	2,509,072	2,730,836	1,080,494	(1,232,990)	(152,496)
226,835	-	731,216	958,051	1,105,198	(1,119,434)	(14,236)
10,504	-	137,002	147,506	51,177	(89,506)	(38,329)
11,957	-	2,353	14,310	58,257	10,043	68,300
57,384	-	498,214	555,598	279,589	(352,148)	(72,559)
801,653	-	7,175,299	7,976,952	3,905,863	(3,551,578)	354,285
18,512	-	55,217	73,729	90,195	6,089	96,284
228,098	-	1,631,654	1,859,752	1,111,354	67,539	1,178,893
246,658	-	1,295,025	1,541,683	1,201,780	(278,618)	923,162
198,719	-	2,193,309	2,392,028	968,212	(1,205,235)	(237,023)
437,069	-	2,760,970	3,198,039	2,129,512	(1,799,037)	330,475
48,681	-	470,296	518,977	237,185	40,231	277,416
68,946	-	654,292	723,238	335,923	(347,724)	(11,801)
55,267	-	559,929	615,196	269,277	(234,484)	34,793
5,323	-	23,225	28,548	25,935	(33,533)	(7,598)
7,455	-	52,964	60,419	36,324	(64,118)	(27,794)
22,682	-	613,075	635,757	110,512	(446,219)	(335,707)
69,925	-	907,668	977,593	340,694	(249,465)	91,229
31,875	-	355,161	387,036	155,302	(377,412)	(222,110)
37,150	-	80,546	117,696	181,006	(33,192)	147,814
66,482	-	403,007	469,489	323,917	(149,405)	174,512
40,941	-	439,261	480,202	199,476	(280,225)	(80,749)
31,417	-	345,295	376,712	153,070	(202,037)	(48,967)
22,224	-	82,834	105,058	108,280	111,732	220,012
25,857	-	332,629	358,486	125,981	(213,882)	(87,901)
35,192	-	523,276	558,468	171,463	(229,979)	(58,516)
24,072	-	148,157	172,229	117,284	(10,330)	106,954
7,313	-	2,899	10,212	35,632	(5,880)	29,752
31,496	-	247,736	279,232	153,455	(66,417)	87,038
37,877	-	834,369	872,246	184,546	(635,591)	(451,045)
14,058	-	122,074	136,132	68,493	(82,483)	(13,990)
36,455	-	240,993	277,448	177,620	96,425	274,045
12,457,204	-	94,818,279	107,275,483	60,694,729	(48,145,877)	12,548,852
21,342,372	-	5,043,185	26,385,557	103,985,622	48,145,877	152,131,499
33,799,576	-	99,861,464	133,661,040	164,680,351	-	164,680,351

**STATE OF ALASKA TEACHERS' RETIREMENT SYSTEM
DEFINED BENEFIT PENSION PLAN**

Notes to Schedule of Employer and Nonemployer Allocations and
Schedule of Pension Amounts by Employer and Nonemployer

June 30, 2017

(1) Plan Description

The State of Alaska Teachers' Retirement System Defined Benefit Pension Plan (Plan) is a cost-sharing multiple-employer defined benefit pension plan that provides pension benefits for teachers and other eligible members.

Benefit and contribution provisions are established by Chapter 14 of Alaska Statute Title 14, and may be amended only by the state legislature. The 24th Alaska State Legislature enacted into law Senate Bill 141, which closed the Plan to new members effective July 1, 2006.

There are two tiers within the Plan: 1) Employees hired between July 1, 1955 and June 30, 1990, and 2) Employees hired between July 1, 1990 and June 30, 2006.

Vested members hired prior to July 1, 1990 are entitled to pension benefits beginning at normal retirement age, 55, or early retirement age, 50. For members hired after June 30, 1990, the normal and early retirement ages are 60 and 55, respectively. Members may also retire at any age and receive a normal benefit when they accumulate the required credited service.

The normal annual pension benefit is based on years of service and average base salary. The average base salary is based upon the members' three highest contract years' salaries.

The benefit related to all years of credited service prior to July 1, 1990 and for years of service through a total of 20 years is equal to 2% of the employee's average base salary. The benefit for each year over 20 years of service subsequent to June 30, 1990 is equal to 2.5% of the employee's base salary.

Minimum benefits for members eligible for retirement are \$25 per month for each year of credited service.

Married members must receive their benefits in the form of a joint and survivor annuity unless their spouse consents to another form of benefit or benefits are payable under the 1% supplemental contributions provision.

The Plan has two types of postretirement pension adjustments (PRPA). The automatic PRPA is issued annually to all eligible benefit recipients when the cost of living increases in the previous calendar year. The automatic PRPA increase is paid beginning July 1 of each year. The discretionary PRPA may be granted to eligible recipients by the Plan's administrator if the cost of living in the previous calendar year rises and the financial condition of the Plan's permits. If both an automatic and discretionary PRPA are granted, and a retiree is eligible for both adjustments, the one that provides the retiree the greater increase will be paid.

(2) Basis of Presentation

The schedule of employer and nonemployer allocations and the schedule of pension amounts by employer and nonemployer (collectively, the Schedules) present amounts that are considered elements of the financial statements of the Plan, its participating employers, or the State of Alaska (State) as a nonemployer entity. Accordingly, they do not purport to be a complete presentation of the financial position or changes in financial position of the Plan, its participating employers, or the State. The amounts presented in the Schedules are prepared in accordance with U.S. generally accepted accounting principles. Such preparation requires management of the Plan to make a number of estimates and assumptions

**STATE OF ALASKA TEACHERS' RETIREMENT SYSTEM
DEFINED BENEFIT PENSION PLAN**

Notes to Schedule of Employer and Nonemployer Allocations and
Schedule of Pension Amounts by Employer and Nonemployer

June 30, 2017

relating to the reported amounts. Due to the inherent nature of these estimates, actual results could differ from those estimates.

(3) Allocation Methodology

GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, requires participating employers in the Plan to recognize their proportionate share of the collective net pension liability, collective deferred outflows of resources, collective deferred inflows of resources and collective employer pension expense. The employer and nonemployer allocation percentages presented in the schedule of employer and nonemployer allocations and applied to amounts presented in the schedule of pension amounts by employer and nonemployer are based on the ratio of the present value of projected future contributions for each employer to the total present value of projected future contributions for the fiscal years 2019 to 2039 to the Plan. Employer and nonemployer allocation percentages have been rounded for presentation purposes; therefore, amounts presented in the schedule of pension amounts by employer and nonemployer may result in immaterial differences.

(4) Contributions

Employer contributions are actuarially determined and adopted by the Alaska Retirement Management Board (Board). As set by Alaska Statute 14.25.070(a), employer contributions were 12.56% of annual payroll for the fiscal year 2017. Each employer is also required to make an additional contribution to the Plan for employees that participate in the TRS Defined Contribution Retirement (DCR) Plan for the difference between the statutory employer contribution rate of 12.56% on eligible salaries of participants in the DCR less the total of employer matching contributions to the DCR.

Alaska Statute 14.25.085 requires the State, as a nonemployer contributing entity, contribute each July 1, or as soon after July 1 for the ensuing fiscal year, an amount that when combined with the total employer contributions is sufficient to pay the Plan's past service liability at the actuarially determined contribution rate adopted by the Board for that fiscal year.

**STATE OF ALASKA TEACHERS' RETIREMENT SYSTEM
DEFINED BENEFIT PENSION PLAN**

Notes to Schedule of Employer and Nonemployer Allocations and
Schedule of Pension Amounts by Employer and Nonemployer

June 30, 2017

(5) Collective Net Pension Liability

Components of Net Pension Liability

The components of the net pension liability of the Plan as of June 30, 2017, is as follows:

Total pension liability	\$	7,338,907,000
Plan fiduciary net position		<u>5,312,295,000</u>
Net pension liability	\$	<u><u>2,026,612,000</u></u>

The total pension liability for the June 30, 2017 measurement date was determined by an actuarial valuation as of June 30, 2016, which was rolled forward to June 30, 2017. This actuarial valuation used the following actuarial assumptions:

Inflation rate	3.12%
Salary increases:	Graded by service, from 8.11% to 3.87%
Investment rate of return	8.00%, net of pension plan investment expenses. This is based on average inflation rate of 3.12% and a real rate of return of 4.88%.

Pre-termination mortality rates were based upon the 2010-2013 actual mortality experience, 68% of male and 60% of female post-termination rates. Deaths are assumed to be non-occupational 85% of the time. Post-termination mortality rates were based on 94% of the male and 97% of the female rates of the RP-2000 Mortality Table, 2000 Base Year projected to 2018 with Projection Scale BB, with a 3-year setback for males and a 4-year setback for females.

The actuarial assumptions used in the June 30, 2016 actuarial valuation were based on the results of an actuarial experience study for the period July 1, 2009 to June 30, 2013, resulting in changes in actuarial assumptions adopted by the Board to better reflect expected future experience.

Long-term Expected 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 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 weighing the expected future real rates of return by an asset allocation percentage, which is based on the nature and mix of current and expected plan investments, and by adding expected inflation. Best estimates of arithmetic real rates of return for each

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major asset class included in the System's current and expected asset allocation is summarized in the following table (note that the rates shown below exclude the inflation component):

Asset class	Long-term expected real rate of return
Domestic equity	8.83%
Global ex-U.S. equity	7.79
Intermediate treasuries	1.29
Opportunistic	4.76
Real assets	4.94
Absolute return	4.76
Private equity	12.02
Cash equivalents	0.63

Discount Rate

The discount rate used to measure the total pension liability was 8.0%. The projection of cash flows used to determine the discount rate assumed that employer and nonemployer contributions will continue to follow the current funding policy, which meets State statutes. Based on those assumptions, the Plans 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.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the Plan as of June 30, 2017, calculated using the discount rate of 8.0%, as well as what the Plans net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

1% Decrease (7%)	Current discount rate (8%)	1% Increase (9%)
\$ 2,856,759,000	2,026,612,000	1,329,198,000

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(6) Collective Deferred Outflows of Resources and Deferred Inflows of Resources

The following presents a summary of changes in the collective deferred outflows of resources and deferred inflows of resources (excluding employer specific amounts) for the year ended June 30, 2017:

	Year of Deferral	Amortization Period	Beginning of year balance	Additions	Deductions	End of year balance
Deferred Outflows of Resources:						
Changes in assumptions	2015	2.1 years	\$ 7,469,238	—	7,469,238	—
Difference between projected and actual earnings on pension plan investments	2014	5 years	(133,871,184)	—	(66,935,592)	(66,935,592)
	2015	5 years	130,104,000	—	43,368,000	86,736,000
	2016	5 years	352,671,200	—	88,167,800	264,503,400
	2017	5 years	—	(239,559,000)	(47,911,800)	(191,647,200)
Total difference between projected and actual earnings on pension plan investments			<u>348,904,016</u>	<u>(239,559,000)</u>	<u>16,688,408</u>	<u>92,656,608</u>
Total Deferred Outflows of Resources			<u>\$ 356,373,254</u>	<u>(239,559,000)</u>	<u>24,157,646</u>	<u>92,656,608</u>
Deferred Inflows of Resources:						
Difference between expected and actual experience	2015	2.1 years	\$ 271,110	—	271,110	—
	2016	2.1 years	29,166,762	—	26,515,238	2,651,524
	2017	1.9 years	—	65,756,999	34,608,947	31,148,052
Total Deferred Inflows of Resources			<u>\$ 29,437,872</u>	<u>65,756,999</u>	<u>61,395,295</u>	<u>33,799,576</u>

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

Year ending June 30:	
2018	\$ (17,111,168)
2019	83,624,000
2020	40,256,000
2021	(47,911,800)
2022	—
Total	<u>\$ 58,857,032</u>

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(7) Pension Expense

The components of the pension expense (excluding employer specific amounts) for the year ending June 30, 2017 are as follows:

Service cost	\$ 68,376,000
Interest on total pension liability	559,165,000
Member contributions	(39,878,000)
Administrative expense	2,890,000
Expected investment return net of investment expenses	(388,625,000)
Other	(10,000)
Recognition (amortization) of deferred outflows/inflows of resources:	
Difference between projected and actual investment earnings on pension plan investments	16,688,408
Difference between expected and actual experience	(61,395,295)
Change in assumptions	<u>7,469,238</u>
Pension expense	<u>\$ 164,680,351</u>

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Supplemental Schedule of Employer Allocations of Special Funding Amounts (Unaudited)

As of and for the year ended June 30, 2017

Employer	Employer Number	Present value of projected future state contributions	Employer Proportionate Share
Anchorage SD	701	\$ 474,247,000	35.09833%
Cordova City SD	704	3,348,000	0.24778%
Craig City SD	705	3,987,000	0.29507%
Fairbanks North Star Borough SD	706	132,607,000	9.81405%
Haines Borough SD	707	2,948,000	0.21818%
Hoonah City SD	708	1,886,000	0.13958%
Hydaburg City SD	709	1,156,000	0.08555%
Juneau Borough SD	710	51,767,000	3.83120%
Kake City SD	712	1,922,000	0.14224%
Ketchikan Gateway Borough SD	714	25,657,000	1.89884%
Klawock City SD	717	2,135,000	0.15801%
Kodiak Island Borough SD	718	24,792,000	1.83482%
Nenana City SD	719	3,869,000	0.28634%
Nome City SD	720	7,827,000	0.57927%
Matanuska-Susitna Borough SD	722	175,257,000	12.97052%
Pelican City SD	723	-	0.00000%
Petersburg City SD	724	6,077,000	0.44975%
Sitka Borough SD	727	16,107,000	1.19206%
Skagway City SD	728	1,675,000	0.12396%
Unalaska City SD	729	4,784,000	0.35406%
Valdez City SD	730	8,588,000	0.63559%
Wrangell Public SD	731	3,383,000	0.25037%
Yakutat SD	732	976,000	0.07223%
University of Alaska	733	60,181,000	4.45391%
Galena City SD	735	9,758,000	0.72218%
North Slope Borough SD	736	24,506,000	1.81365%
State of Alaska	737	-	0.00000%
Bristol Bay Borough SD	742	1,162,000	0.08600%
Southeast Regional Resource Center	743	1,319,000	0.09762%
Dillingham City SD	744	6,340,000	0.46921%
Kenai Peninsula Borough SD	746	88,573,000	6.55516%
Saint Mary's SD	748	2,043,000	0.15120%
Northwest Arctic Borough SD	751	25,209,000	1.86568%
Bering Strait SD	752	27,252,000	2.01688%
Lower Yukon SD	753	21,952,000	1.62464%
Lower Kuskokwim SD	754	48,289,000	3.57380%
Kuspuk SD	755	5,380,000	0.39817%
Southwest Region SD	756	7,611,000	0.56328%
Lake And Peninsula Borough SD	757	6,110,000	0.45219%
Aleutian Region SD	758	586,000	0.04337%
Pribilof SD	759	823,000	0.06091%
Iditarod Area SD	761	2,509,000	0.18569%

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Supplemental Schedule of Employer Allocations of Special Funding Amounts (Unaudited)

As of and for the year ended June 30, 2017

<u>Employer</u>	<u>Employer Number</u>	<u>Present value of projected future state contributions</u>	<u>Employer Proportionate Share</u>
Yukon / Koyukuk SD	762	\$ 7,727,000	0.57186%
Yukon Flats SD	763	3,525,000	0.26088%
Denali Borough SD	764	4,106,000	0.30388%
Delta/Greely SD	765	7,342,000	0.54337%
Alaska Gateway SD	766	4,522,000	0.33467%
Copper River SD	767	3,467,000	0.25659%
Chatham SD	768	2,453,000	0.18154%
Southeast Island SD	769	2,855,000	0.21129%
Annette Island SD	770	3,891,000	0.28797%
Chugach SD	771	2,661,000	0.19694%
Tanana SD	775	804,000	0.05950%
Kashunamiut SD	777	3,482,000	0.25770%
Yupiit SD	778	4,185,000	0.30973%
Special Education Service Agency	779	1,552,000	0.11486%
Aleutians East Borough SD	780	4,025,000	0.29788%
Total Present Value of Projected Future State Contributions		\$ <u>1,351,195,000</u>	<u>100.00000%</u>

See accompanying independent auditors' report

**STATE OF ALASKA TEACHERS' RETIREMENT SYSTEM
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Supplemental Schedule of Special Funding Amounts by Employer (Unaudited)

As of and for the year ended June 30, 2017

<u>Employer</u>	<u>Employer Number</u>	<u>State Proportionate Share of Net Pension Liability Attributable to Employer</u>	<u>Employer Pension Expense and Related Revenue Attributable to Special Funding Situation</u>
Anchorage SD	701	\$ 449,147,187	36,497,226
Cordova City SD	704	3,170,805	257,656
Craig City SD	705	3,775,986	306,833
Fairbanks North Star Borough SD	706	125,588,693	10,205,205
Haines Borough SD	707	2,791,975	226,873
Hoonah City SD	708	1,786,182	145,143
Hydaburg City SD	709	1,094,818	88,964
Juneau Borough SD	710	49,027,200	3,983,898
Take City SD	712	1,820,277	147,914
Ketchikan Gateway Borough SD	714	24,299,087	1,974,518
Klawock City SD	717	2,022,004	164,306
Kodiak Island Borough SD	718	23,479,868	1,907,949
Nenana City SD	719	3,664,231	297,752
Nome City SD	720	7,412,751	602,352
Matanuska-Susitna Borough SD	722	165,981,415	13,487,475
Pelican City SD	723	-	-
Petersburg City SD	724	5,755,371	467,675
Sitka Borough SD	727	15,254,527	1,239,567
Skagway City SD	728	1,586,350	128,905
Unalaska City SD	729	4,530,804	368,168
Valdez City SD	730	8,133,475	660,918
Wrangell Public SD	731	3,203,953	260,350
Yakutat SD	732	924,345	75,111
University of Alaska	733	56,995,884	4,631,425
Galena City SD	735	9,241,552	750,959
North Slope Borough SD	736	23,209,005	1,885,939
State of Alaska	737	-	-
Bristol Bay Borough SD	742	1,100,500	89,425
Southeast Regional Resource Center	743	1,249,191	101,508
Dillingham City SD	744	6,004,452	487,915
Kenai Peninsula Borough SD	746	83,885,219	6,816,424
Saint Mary's SD	748	1,934,873	157,226
Northwest Arctic Borough SD	751	23,874,798	1,940,041
Bering Strait SD	752	25,809,671	2,097,267
Lower Yukon SD	753	20,790,177	1,689,388
Lower Kuskokwim SD	754	45,733,275	3,716,238
Kuspuk SD	755	5,095,260	414,035
Southwest Region SD	756	7,208,183	585,729
Lake And Peninsula Borough SD	757	5,786,625	470,215

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DEFINED BENEFIT PENSION PLAN**

Supplemental Schedule of Special Funding Amounts by Employer (Unaudited)

As of and for the year ended June 30, 2017

Employer	Employer Number	State Proportionate Share of Net Pension Liability Attributable to Employer	Employer Pension Expense and Related Revenue Attributable to Special Funding Situation
Aleutian Region SD	758	\$ 554,986	45,098
Pribilof SD	759	779,442	63,337
Iditarod Area SD	761	2,376,210	193,088
Yukon / Koyukuk SD	762	7,318,044	594,657
Yukon Flats SD	763	3,338,437	271,278
Denali Borough SD	764	3,888,687	315,991
Delta/Greely SD	765	6,953,420	565,028
Alaska Gateway SD	766	4,282,670	348,005
Copper River SD	767	3,283,507	266,814
Chatham SD	768	2,323,173	188,779
Southeast Island SD	769	2,703,897	219,716
Annette Island SD	770	3,685,066	299,445
Chugach SD	771	2,520,165	204,786
Tanana SD	775	761,448	61,874
Kashunamiut SD	777	3,297,713	267,968
Yupiiit SD	778	3,963,506	322,070
Special Education Service Agency	779	1,469,859	119,439
Aleutians East Borough SD	780	3,811,974	309,757
Total for all employers		\$ <u>1,279,682,173</u>	<u>103,985,622</u>

See accompanying independent auditors' report

**STATE OF ALASKA TEACHERS' RETIREMENT SYSTEM
DEFINED BENEFIT PENSION PLAN**

Supplemental Schedule of Employer and Nonemployer Contributions (Unaudited)

As of and for the year ended June 30, 2017

<u>Employer/Nonemployer</u>	<u>Employer number</u>	<u>Actual Contributions</u>
Employers:		
Anchorage SD	701	\$ 12,990,980
Cordova City SD	704	110,356
Craig City SD	705	122,462
Fairbanks North Star Borough SD	706	3,813,656
Haines Borough SD	707	65,343
Hoonah City SD	708	39,307
Hydaburg City SD	709	28,581
Juneau Borough SD	710	1,428,279
Kake City SD	712	38,986
Ketchikan Gateway Borough SD	714	728,835
Klawock City SD	717	64,679
Kodiak Island Borough SD	718	610,298
Nenana City SD	719	108,600
Nome City SD	720	200,341
Matanuska-Susitna Borough SD	722	4,891,947
Pelican City SD	723	609
Petersburg City SD	724	144,372
Sitka Borough SD	727	456,554
Skagway City SD	728	44,914
Unalaska City SD	729	133,598
Valdez City SD	730	299,121
Wrangell Public SD	731	79,314
Yakutat SD	732	31,855
University of Alaska	733	2,003,498
Galena City SD	735	281,796
North Slope Borough SD	736	588,274
State of Alaska	737	1,021,449
Bristol Bay Borough SD	742	20,636
Southeast Regional Resource Center	743	20,947
Dillingham City SD	744	107,311
Kenai Peninsula Borough SD	746	2,404,196
Saint Mary's SD	748	60,148
Northwest Arctic Borough SD	751	527,860
Bering Strait SD	752	522,909
Lower Yukon SD	753	474,846
Lower Kuskokwim SD	754	1,163,146
Kuspuk SD	755	106,666
Southwest Region SD	756	149,933
Lake And Peninsula Borough SD	757	108,448

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Supplemental Schedule of Employer and Nonemployer Contributions (Unaudited)

As of and for the year ended June 30, 2017

Employer/Nonemployer	Employer number	Actual Contributions
Aleutian Region SD	758	\$ 10,585
Pribilof SD	759	17,772
Iditarod Area SD	761	45,348
Yukon / Koyukuk SD	762	177,044
Yukon Flats SD	763	77,229
Denali Borough SD	764	94,972
Delta/Greely SD	765	184,543
Alaska Gateway SD	766	115,657
Copper River SD	767	94,597
Chatham SD	768	42,348
Southeast Island SD	769	54,175
Annette Island SD	770	67,477
Chugach SD	771	85,760
Tanana SD	775	17,018
Kashunamiut SD	777	62,184
Yupiit SD	778	95,206
Special Education Service Agency	779	30,287
Aleutians East Borough SD	780	86,296
Total Employer Contributions		<u>37,353,548</u>
Nonemployer:		
State of Alaska		<u>115,980,238</u>
Total for all entities		<u>\$ 153,333,786</u>

See accompanying independent auditor's report