

State of Alaska

National Guard and Naval Militia Retirement System

Actuarial Valuation
Report
As of June 30, 2018

August 2019

BUCK



August 9, 2019

State of Alaska
The Alaska Retirement Management Board
The Department of Revenue, Treasury Division
The Department of Administration, Division of Retirement and Benefits
P.O. Box 110203
Juneau, AK 99811-0203

Certification of Actuarial Valuation

Dear Members of The Alaska Retirement Management Board, The Department of Revenue and The Department of Administration:

This report summarizes the annual actuarial valuation results of the State of Alaska National Guard and Naval Militia Retirement System (NGNMRS) as of June 30, 2018 performed by Buck Global, LLC (Buck).

The actuarial valuation is based on financial information provided in the financial statements audited by KPMG LLP and member data provided by the Division of Retirement and Benefits as summarized in this report. The benefits considered are those delineated in Alaska statutes effective June 30, 2018. The actuary did not verify the data submitted, but did perform tests for consistency and reasonableness.

All costs, liabilities and other factors under NGNMRS were determined in accordance with generally accepted actuarial principles and procedures. An actuarial cost method is used to measure the actuarial liabilities which we believe is reasonable. Buck is solely responsible for the actuarial data and actuarial results presented in this report. This report fully and fairly discloses the actuarial position of NGNMRS as of June 30, 2018.

The contribution requirements reflect the cost of benefits accruing in the upcoming year, and an amortization as a level dollar amount of the initial unfunded actuarial accrued liability and subsequent gains/losses over a period of 20 years less average military service of active members. The contribution levels are recommended by the actuary and adopted by the Board each year. This objective is currently being met and is projected to continue to be met. Absent future gains/losses, actuarially determined contributions are expected to remain zero and the funded status is expected to remain at or above 100%.

The Board and staff of the State of Alaska may use this report for the review of the operations of NGNMRS. Use of this report, for any other purpose or by anyone other than the Board or staff of the State of Alaska may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods or inapplicability of the report for that purpose. Because of the risk of misinterpretation of actuarial results, you should ask Buck to review any statement you wish to make on the results contained in this report. Buck will not accept any liability for any such statement made without the review by Buck.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of such future differences is beyond the scope of this valuation.

In my opinion, the actuarial assumptions used are reasonable, taking into account the experience of the plan and reasonable long-term expectations, and represent my best estimate of the anticipated long-term experience under the plan. The actuary performs an analysis of plan experience periodically and recommends changes if, in the opinion of the actuary, assumption changes are needed to more accurately reflect expected future experience. The last full experience analysis was performed for the period July 1, 2013 to June 30, 2017. Based on that experience study, the Board adopted new assumptions effective beginning with the June 30, 2018 valuation to better reflect expected future experience. A summary of the actuarial assumptions and methods used in this actuarial valuation is shown in Sections 5.2 and 5.3.

This report was prepared under my supervision and in accordance with all applicable Actuarial Standards of Practice. I am a Fellow of the Society of Actuaries, an Enrolled Actuary, a Fellow of the Conference of Consulting Actuaries and a Member of the American Academy of Actuaries. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

I am available to discuss this report with you at your convenience. I can be reached at (602) 803-6174.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'D. J. Kershner', is written over a light gray rectangular background.

David J. Kershner, FSA, EA, MAAA, FCA
Principal
Buck

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Executive Summary

Overview

The State of Alaska National Guard and Naval Militia Retirement System (NGNMRS) provides pension benefits to the National Guard, naval militia and other eligible members. The Commissioner of the Department of Administration is responsible for administering the plan. The Alaska Retirement Management Board has fiduciary responsibility over the assets of the plan. This report presents the results of the actuarial valuation of NGNMRS as of the valuation date of June 30, 2018.

Purpose

An actuarial valuation is performed on the plan once every two years as of the end of the fiscal year, and roll-forward valuations are performed every other year. The main purposes of the actuarial valuation detailed in this report are:

1. To determine the Employer contribution necessary to meet the Board's funding policy for the plan;
2. To disclose the funding assets and liability measures as of the valuation date;
3. To review the current funded status of the plan and assess the funded status as an appropriate measure for determining future actuarially determined contributions;
4. To compare actual and expected experience under the plan during the last fiscal year; and
5. To report trends in contributions, assets, liabilities, and funded status over the last several years.

The actuarial valuation provides a "snapshot" of the funded position of NGNMRS based on the plan provisions, membership data, assets, and actuarial methods and assumptions as of the valuation date.

Funded Status

Where presented, references to “funded ratio” and “unfunded actuarial accrued liability” typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded actuarial accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities.

Funded Status as of June 30		2016	2018
a.	Actuarial Accrued Liability	\$ 31,184,361	\$ 21,934,014
b.	Valuation Assets	<u>38,439,835</u>	<u>41,031,353</u>
c.	Unfunded Actuarial Accrued Liability, (a) – (b)	\$ (7,255,474)	\$ (19,097,339)
d.	Funded Ratio based on Valuation Assets, (b) ÷ (a)	123.3%	187.1%
e.	Fair Value of Assets	\$ 35,826,154	\$ 39,418,117
f.	Funding Ratio based on Fair Value of Assets, (e) ÷ (a)	114.9%	179.7%

Recommended Contribution Amounts		FY19	FY21
a.	Normal Cost	\$ 610,686	\$ 483,551
b.	Past Service Cost	(1,135,568)	(2,988,961)
c.	Expense Load	<u>241,000</u>	<u>242,000</u>
d.	Total Annual Contribution, (a) + (b) + (c), not less than 0	\$ 0	\$ 0

The recommended contribution amount for FY20 based on a roll-forward valuation as of June 30, 2017 was \$0.

The funded ratio (based on Actuarial Value of Assets) increased from 123.3% at June 30, 2016 to 187.1% as of June 30, 2018. The key reasons for this change are described on the following page.

1. Investment Experience

The approximate investment returns based on fair value of assets were 8.23% for FY17 and 4.59% for FY18, compared to the expected investment return of 7.00%. This resulted in a gain of approximately \$0.7 million for FY17 and a loss of approximately \$0.7 million for FY18 from investment experience. Due to the asset valuation method that recognizes investment gains and losses over a 5-year period, the approximate rates of return based on actuarial value of assets were 4.8% for FY17 and 5.3% for FY18.

2. Demographic Experience

Section 4 provides statistics on active and inactive participants. The number of active participants decreased 6.8% from 4,054 at June 30, 2016 to 3,777 at June 30, 2018 due to members retiring and terminating, and the recognition of cashed out participants. The average age of active participants increased from 33.71 to 33.92 and average credited service remains unchanged at 6.69 years.

The number of retirees and QDROs increased 11.2% from 676 to 752, and their average age increased from 58.28 to 59.18.

There was a 58.8% decrease in the number of vested terminated participants from 1,427 to 588, primarily due to the recognition of cashed out participants (including 737 participants who cashed out prior to June 30, 2016). Their average age decreased from 58.37 to 56.10.

The elimination of 798 active and vested terminated participants who had cashed out prior to June 30, 2016 reduced the June 30, 2018 Actuarial Accrued Liability by approximately \$10.7 million.

3. Changes in Methods Since the Prior Valuation

There have been no changes in asset or valuation methods since the prior valuation.

4. Changes in Assumptions Since the Prior Valuation

Effective for the June 30, 2018 valuation, the Board adopted changes to the demographic and economic assumptions recommended by the actuary, based on the results of an experience analysis performed on the population experience from July 1, 2013 to June 30, 2017. The changes in assumptions were adopted by the Board during the January 2019 Board meeting. The effect of the new assumptions was an increase in the Actuarial Accrued Liability of approximately \$0.2 million.

5. Changes in Benefit Provisions Since the Prior Valuation

There have been no changes in benefit provisions since the prior valuation

Section 1: Actuarial Funding Results

Section 1.1: Actuarial Liabilities and Normal Cost

As of June 30, 2018	Present Value of Projected Benefits	Actuarial Accrued Liability
Active Members		
Retirement Benefits	\$ 11,937,765	\$ 9,450,081
Termination Benefits	0	0
Death Benefits	259,281	186,395
Disability Benefits	<u>124,436</u>	<u>99,515</u>
Subtotal	\$ 12,321,482	\$ 9,735,991
Inactive Members		
Vested Terminated	\$ 6,103,123	\$ 6,103,123
Retirees (including QDROs)	<u>6,094,900</u>	<u>6,094,900</u>
Subtotal	\$ 12,198,023	\$ 12,198,023
Total	\$ 24,519,505	\$ 21,934,014

As of June 30, 2018	Normal Cost
Active Members	
Retirement Benefits	\$ 465,294
Termination Benefits	0
Death Benefits	13,595
Disability Benefits	<u>4,662</u>
Subtotal	\$ 483,551
Expense Load	
Administrative Expense	\$ 242,000
Total	\$ 725,551

Section 1.2: Actuarial Contributions as of June 30, 2018 (for FY21)

1. Actuarial Accrued Liability	\$ 21,934,014
2. Valuation Assets	<u>41,031,353</u>
3. Total Unfunded Actuarial Accrued Liability, (1) – (2)	\$ (19,097,339)
4. Past Service Cost Amortization Payment ¹	(2,988,961)
5. Normal Cost, including Expense Load	<u>725,551</u>
6. Total Contribution, (4) + (5), not less than 0	\$ 0

¹ Calculated on a level dollar basis over an 8-year period as of June 30, 2018.

Section 1.3: Actuarial Gain/(Loss) for FY18

1. Expected Actuarial Accrued Liability		
a. Actuarial Accrued Liability, June 30, 2017	\$	32,483,912
b. Normal Cost for FY18		610,686
c. Interest on (a) and (b) at 7.00%		2,316,622
d. Actual Benefit Payments for FY18		(1,359,467)
e. Interest on (d) at 7.00%, adjusted for timing		(46,777)
f. Change in Actuarial Assumptions		<u>155,756</u>
g. Expected Actuarial Accrued Liability as of June 30, 2018, (a) + (b) + (c) + (d) + (e) + (f)	\$	34,160,732
2. Actual Actuarial Accrued Liability, June 30, 2018		<u>21,934,014</u>
3. Liability Gain/(Loss), (1)(g) – (2)	\$	12,226,718¹
4. Expected Actuarial Asset Value		
a. Actuarial Asset Value, June 30, 2017	\$	39,638,736
b. Interest on (a) at 7.00%		2,774,712
c. Employer Contributions for FY18		907,231
d. Interest on (c) at 7.00%, adjusted for timing		31,216
e. Benefit Payments for FY18		(1,359,467)
f. Interest on (e) at 7.00%, adjusted for timing		(46,777)
g. Administrative expenses		(226,466)
h. Interest on (g) at 7.00%, adjusted for timing		<u>(7,792)</u>
i. Expected Actuarial Asset Value as of June 30, 2018, (a) + (b) + (c) + (d) + (e) + (f) + (g) + (h)	\$	41,711,393
5. Actuarial Asset Value, June 30, 2018		<u>41,031,353</u>
6. Actuarial Asset Gain/(Loss), (5) – (4)(i)	\$	(680,040)
7. Actuarial Gain/(Loss), (3) + (6)	\$	11,546,678

¹ \$10,670,694 of the total liability gain is due to the elimination of 798 active and vested terminated participants who had cashed out prior to June 30, 2016.

Section 1.4: Development of Change in Unfunded Liability during FY18

1. 2017 Unfunded Liability	\$ (7,154,824)
a. Interest on Unfunded Liability	(500,838)
b. Normal Cost	610,686
c. Employer Contributions	(907,231)
d. Interest on (b) and (c)	11,532
e. Administrative expenses	226,466
f. Interest on (e) at 7.00%, adjusted for timing	7,792
g. Change in Actuarial Assumptions	<u>155,756</u>
h. Expected Change in Unfunded Liability during FY18	(395,837)
<hr/>	
2. Expected 2018 Unfunded Liability, (1) + (1)(h)	\$ (7,550,661)
a. Liability (gain)/loss	(12,226,718)
b. Asset (gain)/loss	<u>680,040</u>
c. Actuarial (gain)/loss during FY18	(11,546,678)
<hr/>	
3. Actual 2018 Unfunded Liability, (2) + (2)(c)	\$ (19,097,339)

Section 1.5: History of Unfunded Liability and Funded Ratio

Valuation Date	Total Actuarial Accrued Liability	Valuation Assets	Assets as a Percent of Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (UAAL)
June 30, 2000	\$ 17,967,471	\$ 13,734,397	76.4%	\$ 4,233,074
June 30, 2002	\$ 20,545,214	\$ 12,114,025	59.0%	\$ 8,431,189
June 30, 2004	\$ 19,749,305	\$ 13,391,055	67.8%	\$ 6,358,250
June 30, 2006	\$ 25,457,589	\$ 15,587,569	61.2%	\$ 9,870,020
June 30, 2007	\$ 26,289,978	\$ 16,882,529	64.2%	\$ 9,407,449
June 30, 2008	\$ 28,904,645	\$ 28,370,756	98.2%	\$ 533,889
June 30, 2009	\$ 30,208,411	\$ 30,123,348	99.7%	\$ 85,063
June 30, 2010	\$ 30,034,407	\$ 32,000,585	106.5%	\$ (1,966,178)
June 30, 2011	\$ 31,324,457	\$ 33,019,577	105.4%	\$ (1,695,120)
June 30, 2012	\$ 32,771,017	\$ 33,682,091	102.8%	\$ (911,074)
June 30, 2013	\$ 33,907,968	\$ 34,178,622	100.8%	\$ (270,654)
June 30, 2014	\$ 36,715,287	\$ 36,271,836	98.8%	\$ 443,451
June 30, 2015	\$ 38,313,473	\$ 37,855,133	98.8%	\$ 458,340
June 30, 2016	\$ 31,184,361	\$ 38,439,835	123.3%	\$ (7,255,474)
June 30, 2017	\$ 32,483,912	\$ 39,638,736	122.0%	\$ (7,154,824)
June 30, 2018	\$ 21,934,014	\$ 41,031,353	187.1%	\$ (19,097,339)

Section 2: Plan Assets

Section 2.1 Summary of Fair Value of Assets

Fair Value of Assets as of June 30	2017	2018
Assets		
1. Cash and Cash Equivalents	\$ 289,944	\$ 147,855
2. Receivables	431	431
3. Domestic Equity Pool	11,108,146	9,898,944
4. International Equity Pool	6,280,168	5,113,722
5. Tactical Fixed Income Pool	339,559	437,028
6. Domestic Fixed Income Pool	15,084,541	18,848,835
7. International Fixed Income Pool	1,890,437	0
8. Emerging Market Debt	252,290	0
9. Emerging Market Equity Pool	951,932	1,424,559
10. Taxable Municipal Bonds	319,273	1,138,471
11. High Yield Pool	1,893,056	0
12. Alternative Equity	<u>0</u>	<u>2,561,992</u>
13. Total Assets	\$ 38,409,777	\$ 39,571,837
Liabilities		
14. Accrued expenses	\$ 17,020	\$ 26,479
15. Due to State of Alaska General Fund	2,617	4,888
16. Securities Lending Collateral Payable	<u>258,153</u>	<u>122,353</u>
17. Total Liabilities	\$ 277,790	\$ 153,720
Fair Value of Assets, (13) – (17)	\$ 38,131,987	\$ 39,418,117

Section 2.2: Changes in Fair Value of Assets

Fair Value of Assets as of June 30	2017	2018
1. Fair Value of Assets at beginning of year	35,826,154	38,131,987
2. Additions		
a. Employer Contributions	\$ 866,905	\$ 907,231
b. Investment Income	3,195,763	1,977,362
c. Other	0	0
d. Total Additions	\$ 4,062,668	\$ 2,884,593
3. Disbursements		
a. Retirement Benefits	\$ 1,485,669	\$ 1,359,467
b. Administrative Expenses	257,396	226,466
c. Investment Expenses	13,770	12,530
d. Total Deductions	\$ 1,756,835	\$ 1,598,463
4. Fair Value of Assets at end of year, (1) + (2)(d) - (3)(d)	\$ 38,131,987	\$ 39,418,117
Approximate Fair Value Investment Return Rate Net of All Expenses	8.2%	4.6%

Section 2.3: Development of Actuarial Value of Assets

The actuarial value of assets was equal to the market value at June 30, 2006. Future investment gains and losses will be recognized 20% per year over 5 years. In no event may valuation assets be less than 80% or more than 120% of market value as of the valuation date.

1. Investment Gain/(Loss) for FY18		
a. Market Value, June 30, 2017		\$ 38,131,987
b. Contributions for FY18		907,231
c. Benefit Payments for FY18		1,359,467
d. Actual Investment Return (net of expenses)		1,964,832
e. Expected Return Rate (net of expenses)		7.00%
f. Expected Return - Weighted for Timing		2,645,886
g. Investment Gain/(Loss) for the Year, (d) – (f)		(681,054)
2. Actuarial Value, June 30, 2018		
a. Market Value, June 30, 2018		\$ 39,418,117
b. Deferred Investment Gain/(Loss)		<u>(1,613,236)</u>
c. Preliminary Actuarial Value, June 30, 2018, (a) – (b)		\$ 41,031,353
d. Upper Limit: 120% of Market Value, June 30, 2018		\$ 47,301,740
e. Lower Limit: 80% of Market Value, June 30, 2018		\$ 31,534,494
f. Actuarial Value, June 30, 2018, [(c) limited by (d) and (e)]		\$ 41,031,353
g. Ratio of Actuarial Value of Assets to Market Value of Assets		104.1%
h. Approximate Actuarial Value Investment Return Rate During FY18 Net of All Expenses		5.3%

The table below shows the development of gains/(losses) to be recognized in the current year:

Plan Year Ended	Asset Gain/(Loss)	Gain/(Loss) Recognized in Prior Years	Gain/(Loss) Recognized This Year	Gain/(Loss) Deferred to Future Years
6/30/2014	1,951,966	1,561,572	390,394	0
6/30/2015	(2,241,223)	(1,344,735)	(448,245)	(448,243)
6/30/2016	(2,606,836)	(1,042,734)	(521,367)	(1,042,735)
6/30/2017	704,309	140,862	140,862	422,585
6/30/2018	(681,054)	0	(136,211)	(544,843)
Total	\$ (2,872,838)	\$ (685,035)	\$ (574,567)	\$ (1,613,236)

Section 2.4: Historical Asset Rates of Return

Year Ending	Actuarial Value		Fair Value	
	Annual	Cumulative*	Annual	Cumulative*
June 30, 2005	N/A	N/A	6.4%	6.4%
June 30, 2006	N/A	N/A	5.2%	5.8%
June 30, 2007	8.4%	8.4%	13.1%	8.2%
June 30, 2008	6.4%	7.4%	(2.3)%	5.5%
June 30, 2009	2.8%	5.8%	(9.8)%	2.2%
June 30, 2010	3.0%	5.1%	11.8%	3.8%
June 30, 2011	4.6%	5.0%	13.4%	5.1%
June 30, 2012	3.4%	4.7%	0.5%	4.5%
June 30, 2013	4.6%	4.7%	7.6%	4.8%
June 30, 2014	8.8%	5.2%	13.4%	5.7%
June 30, 2015	7.0%	5.4%	0.9%	5.2%
June 30, 2016	4.2 %	5.3%	(0.2)%	4.8%
June 30, 2017	4.8 %	5.3%	8.2%	5.0%
June 30, 2018	5.3 %	5.3%	4.6%	5.0%

*Cumulative since FYE June 30, 2005.

Section 3: Accounting Information*

Section 3.1: Historical Exhibits

Schedule of Employer Contributions

The exhibit below shows the pension disclosure under GASB No. 25 for fiscal years ending in 1998 through 2013.

Fiscal Year Ended June 30	Annual Required Contribution	Actual Annual Contribution	Supplemental Contributions	Total Contributions	Percentage Contributed
1996	\$ 1,359,862	\$ 1,104,400	\$ 8,000,000 ¹	\$ 9,104,400	669.5%
1997	1,626,000	1,434,900	0	1,434,900	88.2%
1998	1,626,000	1,434,900	0	1,434,900	88.2%
1999	1,104,519	1,104,519	0	1,104,519	100.0%
2000	1,104,519	1,104,500	0	1,104,500	100.0%
2001	879,784	879,800	0	879,800	100.0%
2002	879,784	879,800	0	879,800	100.0%
2003	1,322,502	1,322,500	0	1,322,500	100.0%
2004	1,322,502	1,322,500	0	1,322,500	100.0%
2005	2,025,257	1,996,800	0	1,996,800	98.6%
2006	2,025,257	2,053,800	0	2,053,800	101.4%
2007	1,737,406	1,737,406	0	1,737,406	100.0%
2008	1,737,406	1,737,406	10,000,000 ²	11,737,406	675.6%
2009	2,473,282	2,473,300	0	2,473,300	100.0%
2010	2,415,077	2,603,300	0	2,603,300	107.8%
2011	965,329	965,375	0	965,375	100.0%
2012	895,565	895,611	0	865,611	100.0%
2013	431,367	739,100	0	739,100	171.3%

*Pension accounting figures for fiscal years after 2013 are contained in separate GASB 67 reports.

¹ During the year ended June 30, 1996, the System received an \$8,000,000 supplemental appropriation from the State of Alaska General Fund to increase System funding. This appropriation was in addition to the amount designated for the 1996 actuarial required contribution. The original contribution requirements for the years ended June 30, 1998 and 1997 were calculated to be \$2,584,919. These contribution requirements were revised to \$1,626,000 as a result of the supplemental contribution in fiscal year 1996

² During the year ended June 30, 2008, the System received a \$10,000,000 supplemental appropriation from the State of Alaska General Fund to increase System funding.

Schedule of Funding Progress

Note: Prior to adoption of GASB Statements No. 25 and 26 in 1997, information which does not meet the parameters of GASB 25 was used to determine funding requirements. Therefore, the history prior to 1997 has not been shown.

Actuarial Valuation Date	Total Actuarial Accrued Liability	Valuation Assets	Assets as a Percent of Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (UAAL)	Annual Active Member Payroll	UAAL as a Percentage of Annual Active Member Payroll
June 30, 1998	\$ 14,252,184	\$ 12,671,276	88.9%	\$ 1,580,908	N/A	N/A
June 30, 2000	17,967,471	13,734,397	76.4%	4,233,074	N/A	N/A
June 30, 2002	20,545,214	12,114,025	59.0%	8,431,189	N/A	N/A
June 30, 2004	19,749,305	13,391,055	67.8%	6,358,250	N/A	N/A

The exhibit below shows the pension disclosure under GASB No. 25 through June 30, 2013.

Actuarial Valuation Date	Total Actuarial Accrued Liability	Valuation Assets	Assets as a Percent of Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (UAAL)	Annual Active Member Payroll	UAAL as a Percentage of Annual Active Member Payroll
June 30, 2006	25,457,589	15,587,569	61.2%	9,870,020	N/A	N/A
June 30, 2008	28,904,645	28,370,756	98.2%	533,889	N/A	N/A
June 30, 2010	30,034,407	32,000,585	106.5%	(1,966,178)	N/A	N/A
June 30, 2012	32,771,017	33,682,091	102.8%	(911,074)	N/A	N/A

Section 3.2: Notes to Trend Data

Valuation Date	June 30, 2018
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level dollar, open
Equivalent Single Amortization Period	20 years less average military service of active members
Asset Valuation Method	5-year smoothed market
Actuarial Assumptions:	
Investment rate of return	7.00% per annum, net of investment expenses
Projected salary increases	None
Cost-of-living adjustment	None

Section 4: Member Data

Section 4.1: Summary of Members Included

Census Information as of June 30	2016	2018
Active Air Guard Members		
1. Number	2,174	2,139
2. Number Vested	417	364
3. Average Age	35.16	34.98
4. Average Alaska Guard Service	7.55	7.24
5. Average Total Military Service	13.08	12.68
Active Army Guard Members		
1. Number	1,820	1,575
2. Number Vested	199	193
3. Average Age	32.00	32.45
4. Average Alaska Guard Service	5.72	6.00
5. Average Total Military Service	10.41	10.34
Active Naval Militia Members		
1. Number	60	63
2. Number Vested	6	8
3. Average Age	33.26	34.48
4. Average Alaska Guard Service	4.93	5.44
5. Average Total Military Service	10.72	11.86
Total Active Members		
1. Number	4,054	3,777
2. Number Vested	622	565
3. Average Age	33.71	33.92
4. Average Alaska Guard Service	6.69	6.69
5. Average Total Military Service	11.85	11.69
Vested Terminated Members		
1. Number	1,427	588
2. Average Age	58.37	56.10
3. Average Alaska Guard Service	14.41	13.84
4. Average Total Military Service	24.69	24.42
Retirees (including QDROs)		
1. Number	676	752
2. Average Age	58.28	59.18
3. Average Years Remaining	12.00	11.53

Section 4.2(a): Age and Service Distributions of Active Members – All Actives

Total Alaska Guard Service										
Age Group	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
0-19	135	0	0	0	0	0	0	0	0	135
20-24	524	79	0	0	0	0	0	0	0	603
25-29	428	242	50	0	0	0	0	0	0	720
30-34	334	215	132	15	0	0	0	0	0	696
35-39	234	189	167	74	3	0	0	0	0	667
40-44	108	116	108	59	40	8	0	0	0	439
45-49	47	58	64	56	35	19	2	0	0	281
50-54	22	22	31	26	19	26	11	1	0	158
55-59	8	10	13	9	12	14	6	3	0	75
60-64	0	0	1	0	1	0	0	0	0	2
65-69	0	0	1	0	0	0	0	0	0	1
70-74	0	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	0	0
Total	1,840	931	567	239	110	67	19	4	0	3,777

Section 4.2(b): Age and Service Distributions of Active Members – Air Actives

Total Alaska Guard Service										
Age Group	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
0-19	43	0	0	0	0	0	0	0	0	43
20-24	233	38	0	0	0	0	0	0	0	271
25-29	227	143	14	0	0	0	0	0	0	384
30-34	191	125	86	9	0	0	0	0	0	411
35-39	151	131	108	48	1	0	0	0	0	439
40-44	63	74	66	39	28	7	0	0	0	277
45-49	24	35	36	40	23	15	2	0	0	175
50-54	13	11	16	13	14	18	8	1	0	94
55-59	6	4	5	5	4	12	5	2	0	43
60-64	0	0	0	0	1	0	0	0	0	1
65-69	0	0	1	0	0	0	0	0	0	1
70-74	0	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	0	0
Total	951	561	332	154	71	52	15	3	0	2,139

Section 4.2(c): Age and Service Distributions of Active Members – Army Actives

Total Alaska Guard Service										
Age Group	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
0-19	92	0	0	0	0	0	0	0	0	92
20-24	278	40	0	0	0	0	0	0	0	318
25-29	196	95	35	0	0	0	0	0	0	326
30-34	135	87	46	6	0	0	0	0	0	274
35-39	76	57	58	26	2	0	0	0	0	219
40-44	41	40	39	19	12	1	0	0	0	152
45-49	22	22	27	16	11	4	0	0	0	102
50-54	9	11	15	11	5	8	3	0	0	62
55-59	2	5	8	4	6	2	1	1	0	29
60-64	0	0	1	0	0	0	0	0	0	1
65-69	0	0	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	0	0
Total	851	357	229	82	36	15	4	1	0	1,575

Section 4.2(d): Age and Service Distributions of Active Members – Navy Actives

Total Alaska Guard Service										
Age Group	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
0-19	0	0	0	0	0	0	0	0	0	0
0-24	13	1	0	0	0	0	0	0	0	14
25-29	5	4	1	0	0	0	0	0	0	10
30-34	8	3	0	0	0	0	0	0	0	11
35-39	7	1	1	0	0	0	0	0	0	9
40-44	4	2	3	1	0	0	0	0	0	10
45-49	1	1	1	0	1	0	0	0	0	4
50-54	0	0	0	2	0	0	0	0	0	2
55-59	0	1	0	0	2	0	0	0	0	3
60-64	0	0	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	0	0
Total	38	13	6	3	3	0	0	0	0	63

Section 4.3: Member Data Reconciliation

	Active Members	Vested Members	Benefit Recipients	Total
Total at June 30, 2016	4,054	1,427	676	6,157
New Entrants	780	0	0	780
Rehires	35	(3)	0	32
Non-vested Terminations	(818)	(77)	0	(895)
Vested Terminations	(136)	136	0	0
Retirements	(50)	(71)	121	0
New Survivors	0	0	0	0
New QDROs	0	0	5	5
Deaths	0	0	(7)	(7)
Data Changes/Expiration of Benefits	(88) ¹	(824) ²	(43) ³	(955)
Total at June 30, 2018	3,777	588	752	5,117

¹ Includes 61 participants who cashed out prior to June 30, 2016, 24 participants who cashed out on or after June 30, 2016, and 3 removals (data corrections).

² Includes 737 participants who cashed out prior to June 30, 2016, 87 participants who cashed out on or after June 30, 2016, 4 additions and 4 removals (data corrections).

³ Includes 55 participants with an expiration of benefits and 12 additions (data corrections).

Section 5: Basis of the Actuarial Valuation

Section 5.1: Summary of Plan Provisions

1. Effective Date

January 1, 1973

2. Members Included

Members of the Alaska National Guard who were active on or after January 1, 1973, and members of the Alaska Naval Militia who were active on or after July 1, 1980.

3. Eligibility Service

Eligibility service is defined as the combined Alaska guard service, guard service in any other state, active military service and the reserves of them. A member must have 20 years of eligibility service to be vested in the National Guard and Naval Militia Retirement System.

4. Benefit Service

Benefit service is defined as satisfactory service in any branch of the Alaska guard. A member must have 5 years of benefit service to be vested in the National Guard and Naval Militia Retirement System. Benefit service is also used to determine the length of the member's pension retirement benefit.

5. Retirement

a. Eligibility:

Members are eligible for voluntary retirement after completing 20 years of satisfactory service in the Alaska National Guard, Alaska Naval Militia or U.S. Armed Forces, and the reserve of them or any combination of that service if they have at least five years of Alaska National Guard or Naval Militia service. Credit is also allowed for Territorial Guard service rendered to the former territory of Alaska.

Members are eligible for involuntary retirement at any time assuming there has been no misconduct.

b. Benefit:

Eligible members may elect to receive:

- i. monthly benefits of \$100 which are payable for a period equal to the number of months that they were active members;
- ii. a lump sum benefit equal to the actuarial equivalent of (i); or
- iii. monthly payments until age 72 equal to the actuarial equivalent of (i).

6. Vesting

Members are 100% vested after 20 years of total service in the Alaska National Guard, Alaska Naval Militia, U.S. Armed Forces or Reserves, or any combination of that service if members have at least five years of Alaska National Guard or Naval Militia service.

7. Survivor's Benefits

- a. Active Members: If the member has at least five years of active service in the Alaska National Guard or Naval Militia, the designated beneficiary will receive a lump sum benefit equal to the benefit in 5(b) above.
- b. Retired or Terminated Vested Members: The designated beneficiary will receive a lump sum benefit equal to the remaining benefits payable in 5(b) above.

8. Disability Benefits

Members are eligible to receive monthly disability benefits of \$100 (which are payable for a period equal to the number of months that they were active members) at any age if they become incapacitated and are vested in the plan.

9. Changes Since the Prior Valuation

There have been no changes in benefit provisions since the prior valuation.

Section 5.2: Descriptions of Actuarial Methods and Valuation Procedures

Actuarial Method – Entry Age Actuarial Cost.

Liabilities and contributions shown in the report are computed using the Entry Age Normal Actuarial Cost Method (level dollar basis). Any funding surplus or unfunded accrued liability is amortized over 20 years less the average total military service of active members.

The Actuarial Accrued Liability under this method at any point in time is the theoretical amount of the fund that would have been accumulated had annual contributions equal to the normal cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date).

The Unfunded Actuarial Accrued Liability is the excess of the actuarial accrued liability over the actuarial value of system assets measured on the valuation date.

Under this method, differences between the actual experience and that assumed in the determination of costs and liabilities will emerge as adjustments in the Unfunded Actuarial Accrued Liability, subject to amortization.

Valuation of Assets

Effective June 30, 2006, the asset valuation method recognizes 20% of the investment gain or loss in each of the current and preceding four years. This method will be phased in over five years. Assets are initialized at market value as of June 30, 2006. All assets are valued at market value. Assets are accounted for on an accrued basis and are taken directly from financial statements audited by KPMG LLP. Valuation assets are constrained to a range of 80% to 120% of the market value of assets.

Data Remediation

Our data remediation process identified a number of previously valued participants who had cashed out prior to June 30, 2016, resulting in decreased liabilities for active and terminated vested participants.

Changes in Methods Since the Prior Valuation

There have been no changes in methods since the prior valuation.

Section 5.3: Summary of Actuarial Assumptions

Investment Return	7.00% per year, net of investment expenses.				
Pre-termination Mortality	100% (male and female) of RP-2014 employee table with MP-2017 generational improvement.				
Post-termination Mortality	91% of male and 96% of female rates of RP-2014 healthy annuitant table with MP-2017 generational improvement.				
Disability Mortality	RP-2014 disabled table with MP-2017 generational improvement.				
Administrative Expenses	The expense load is equal to the average of the prior 2 years actual administrative expenses rounded to the nearest \$1,000 as follows:				
	Fiscal Year Ending June 30		Amount		
	2017		\$	257,396	
	2018			<u>226,466</u>	
	Total		\$	483,862	
				<u>2</u>	
	Expense Load (Rounded)		\$	242,000	
Turnover	Ultimate rates of turnover based upon the 2013-2017 actual experience. Sample rates are shown below.				
	Select Rates of Turnover During the First 5 Years of Employment		Ultimate Rates of Turnover After the First 5 Years of Employment		
	Year of Employment	Unisex Rate	Age	Male Rate	Female Rate
	1	20.00%	30	11.09%	14.05%
	2	10.00%	40	9.09%	11.52%
	3	10.00%	50	4.89%	6.19%
	4	10.00%			
	5	10.00%			
Disability	Incidence rates based upon the 2013-2017 actual experience of the State of Alaska Public Employees' Retirement System for the Peace Officer/Firefighter group. Sample rates are shown below.				
	Age	Male Rate	Female Rate		
	20	0.0179%	0.0112%		
	25	0.0374%	0.0234%		
	30	0.0570%	0.0356%		
	35	0.0679%	0.0425%		
	40	0.0822%	0.0514%		
	45	0.1157%	0.0723%		
	50	0.1714%	0.1071%		
	55	0.2954%	0.1846%		
	60	0.5110%	0.3194%		

Retirement

Retirement rates based upon the 2013-2017 actual experience. Active members are assumed to retire beginning at the earliest eligible retirement age according to the following rates:

Age	Rate	Age	Rate
<51	13%	58	45%
51	13	59	50
52	13	60	55
53	15	61	60
54	20	62	60
55	25	63	60
56	35	64	60
57	40	65+	100

Vested Terminated members are assumed to retire at current age or age 50, whichever is later.

Form of Payment

70% of members are assumed to elect a lump sum benefit. 30% of members are assumed to elect a monthly annuity with the number of payments equal to the number of months they were active in the Plan. A lump sum of the remaining payments is paid if the member should die while receiving payments. Lump sums are calculated based on a 7% discount rate using post-termination healthy mortality for retirement benefits and disability mortality for disability benefits.

Imputed Data

Data changes from the prior valuation which are deemed to have an immaterial impact on liabilities and contributions are assumed to be correct in the current year's client data. Active and terminated members with a date of termination after the last date of hire are assumed to be terminated with status based on their amount of vesting service.

Changes in Assumptions Since the Prior Valuation

Effective for the June 30, 2018 valuation, the Board adopted changes to the demographic and economic assumption recommended by the actuary, based on the results of an experience analysis performed on the population experience from July 1, 2013 to June 30, 2017. The changes in assumptions were adopted by the Board during the January 2019 Board meeting.

Glossary of Terms

Actuarial Accrued Liability	Total accumulated cost to fund pension benefits arising from service in all prior years.
Actuarial Cost Method	Technique used to assign or allocate, in a systematic and consistent manner, the expected cost of a pension plan for a group of plan members to the years of service that give rise to that cost.
Actuarial Present Value of Projected Benefits	Amount which, together with future interest, is expected to be sufficient to pay all future benefits.
Actuarial Valuation	Study of probable amounts of future pension benefits and the necessary amount of contributions to fund those benefits.
Actuary	Person who performs mathematical calculations pertaining to pension and insurance benefits based on specific procedures and assumptions.
Annual Required Contribution	Disclosure measure of annual pension cost.
GASB 25 and 27	Governmental Accounting Standards Board Statement Number 25 which specifies how the Annual Required Contribution (ARC) is to be calculated, and Number 27 which specifies Employer reporting of Pension Cost.
GASB 67 and 68	Governmental Accounting Standards Board Statement Number 67 amends Number 25 effective for the fiscal year beginning after June 15, 2013 and defines new financial reporting requirements for public pension plans. Governmental Accounting Standards Board Statement Number 68 amends Number 27 effective for fiscal years beginning after June 15, 2014 and defines new accounting and financial reporting requirements for employers sponsoring public pension plans.
Normal Cost	That portion of the actuarial present value of benefits assigned to a particular year in respect to an individual member or the plan as a whole.
Unfunded Actuarial Accrued Liability (UAAL)	The portion of the actuarial accrued liability not offset by plan assets.
Vested Benefits	Benefits which are unconditionally guaranteed regardless of employment status.