



# State of Alaska

## National Guard and Naval Militia Retirement System

Actuarial Valuation Report  
As of June 30, 2020

May 2021



May 20, 2021

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 actuarial valuation results of the State of Alaska National Guard and Naval Militia Retirement System (NGNMRS) as of June 30, 2020 performed by Buck Global, LLC (Buck). This report is an update to the draft report dated February 26, 2021, reflecting minor wording changes.

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, 2020. 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, 2020.

The contribution requirements reflect the cost of benefits accruing in the upcoming year, administrative expenses expected to be paid from the trust, and a level dollar amortization 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 4.2 and 4.3. We certify that the assumptions and methods described in Sections 4.2 and 4.3 of this report meet the requirements of all applicable Actuarial Standards of Practice.

Governmental Accounting Standards Board (GASB) Statement No. 67 (GASB 67) was effective for NGNMRS beginning with fiscal year ending June 30, 2014. A separate GASB 67 report as of June 30, 2020 has been prepared. We have also prepared the member data tables shown in Section 3 of this report for the Statistical Section of the CAFR, as well as the summary of actuarial assumptions and analysis of financial experience for the Actuarial Section of the CAFR. Please see our separate GASB 67 report for other information needed for the CAFR.

### **Assessment of Risks**

Actuarial Standard of Practice No. 51 (ASOP 51) applies to actuaries performing funding calculations related to a pension plan. See Section 5 of this report for further details regarding ASOP 51.

### **Use of Models**

Actuarial Standard of Practice No. 56 (ASOP 56) provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. Buck uses third-party software in the performance of annual actuarial valuations and projections. The model is intended to calculate the liabilities associated with the provisions of the plan using data and assumptions as of the measurement date under the funding methods specified in this report. The output from the third-party vendor software is used as input to internally developed models that apply applicable funding methods and policies to the derived liabilities and other inputs, such as plan assets and contributions, to generate many of the exhibits found in this report. Buck has an extensive review process in which the results of the liability calculations are checked using detailed sample life output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other funding outputs and the internal models are similarly reviewed in detail and at a higher level for accuracy, reasonability, and consistency with prior results. Buck also reviews the third-party model when significant changes are made to the software. This review is performed by experts within Buck who are familiar with applicable funding methods, as well as the manner in which the model generates its output. If significant changes are made to the internal models, extra checking and review are completed. Significant changes to the internal models that are applicable to multiple clients are generally developed, checked, and reviewed by multiple experts within Buck who are familiar with the details of the required changes.

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 placed over a light gray rectangular background.

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

# Contents

- Executive Summary .....1**
- Section 1: Actuarial Funding Results .....4**
  - Section 1.1: Actuarial Liabilities and Normal Cost .....4
  - Section 1.2: Actuarial Contributions as of June 30, 2020 (for FY23).....5
  - Section 1.3: Actuarial Gain/(Loss) for FY20.....6
  - Section 1.4: Development of Change in Unfunded Liability during FY20 .....7
  - Section 1.5: History of Unfunded Liability and Funded Ratio .....8
- Section 2: Plan Assets.....9**
  - Section 2.1: Summary of Fair Value of Assets .....9
  - Section 2.2: Changes in Fair Value of Assets.....10
  - Section 2.3: Development of Actuarial Value of Assets.....11
  - Section 2.4: Historical Asset Rates of Return .....12
- Section 3: Member Data .....13**
  - Section 3.1: Summary of Members Included .....13
  - Section 3.2(a): Age and Service Distributions of Active Members – All Actives.....14
  - Section 3.2(b): Age and Service Distributions of Active Members – Air Actives .....15
  - Section 3.2(c): Age and Service Distributions of Active Members – Army Actives .....16
  - Section 3.2(d): Age and Service Distributions of Active Members – Navy Actives .....17
  - Section 3.3: Member Data Reconciliation.....18
- Section 4: Basis of the Actuarial Valuation.....19**
  - Section 4.1: Summary of Plan Provisions.....19
  - Section 4.2: Description of Actuarial Methods and Valuation Procedures.....21
  - Section 4.3: Summary of Actuarial Assumptions .....22
- Section 5: Actuarial Standards of Practice No. 51 .....24**
- Glossary of Terms.....27**

# 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, 2020.

## 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 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.

<b>Funded Status as of June 30</b>	<b>2018</b>	<b>2020</b>
a. Actuarial Accrued Liability	\$ 21,934,014	\$ 22,417,247
b. Valuation Assets	<u>41,031,353</u>	<u>43,020,393</u>
c. Unfunded Actuarial Accrued Liability, (a) – (b)	\$ (19,097,339)	\$ (20,603,146)
d. Funded Ratio based on Valuation Assets, (b) ÷ (a)	187.1%	191.9%
e. Fair Value of Assets	\$ 39,418,117	\$ 42,095,708
f. Funding Ratio based on Fair Value of Assets, (e) ÷ (a)	179.7%	187.8%

<b>Actuarially Determined Contribution Amounts</b>	<b>FY21</b>	<b>FY23</b>
a. Normal Cost	\$ 483,551	\$ 503,140
b. Past Service Cost	(2,988,961)	(3,224,638)
c. Expense Load	<u>242,000</u>	<u>256,000</u>
d. Total Annual Contribution, (a) + (b) + (c), not less than 0	\$ 0	\$ 0

The Actuarially Determined Contribution amount for FY22 based on a roll-forward valuation as of June 30, 2019 was \$0.

The key reasons for the change in funded status are described below:

**1. Investment Experience**

The approximate investment returns based on fair value of assets were 5.9% for FY19 and 5.3% for FY20, compared to the expected investment return of 7.00% (net of investment expenses). This resulted in market asset losses of approximately \$0.4 million for FY19 and \$0.7 million for FY20. Due to the recognition of investment gains and losses over a 5-year period, the investment returns based on actuarial value of assets were approximately 4.1% for FY19 and 5.1% for FY20.

**2. Demographic Experience**

Section 3 provides statistics on active and inactive participants. The number of active participants increased from 3,777 at June 30, 2018 to 3,934 at June 30, 2020. The average age of active participants increased from 33.92 to 34.20, and average credited service increased from 6.69 years to 6.87 years.

The number of retirees and QDROs decreased from 752 to 708, and their average age decreased from 59.18 to 58.83.

The number of vested terminated participants increased from 588 to 649, and their average age increased from 56.10 to 57.00.

The overall effect of the demographic experience was a liability gain of approximately \$49,000 (approximately 0.2% of the expected liability).

**3. Changes in Methods Since the Prior Valuation**

There were no changes in actuarial methods since the prior valuation.

**4. Changes in Assumptions Since the Prior Valuation**

The amount included in the Normal Cost for administrative expenses was changed from \$242,000 at June 30, 2018 to \$256,000 at June 30, 2020.

**5. Changes in Benefit Provisions Since the Prior Valuation**

There were 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, 2020	Present Value of Projected Benefits	Actuarial Accrued Liability
<b>Active Members</b>		
Retirement Benefits	\$ 12,348,831	\$ 9,756,772
Termination Benefits	0	0
Death Benefits	270,264	194,224
Disability Benefits	<u>120,136</u>	<u>95,473</u>
Subtotal	\$ 12,739,231	\$ 10,046,469
<b>Inactive Members</b>		
Vested Terminated	\$ 6,562,774	\$ 6,562,774
Retirees (including QDROs)	<u>5,808,004</u>	<u>5,808,004</u>
Subtotal	\$ 12,370,778	\$ 12,370,778
<b>Total</b>	<b>\$ 25,110,009</b>	<b>\$ 22,417,247</b>

As of June 30, 2020	Normal Cost
<b>Active Members</b>	
Retirement Benefits	\$ 484,418
Termination Benefits	0
Death Benefits	14,108
Disability Benefits	<u>4,614</u>
Subtotal	\$ 503,140
<b>Expense Load</b>	
Administrative Expense	\$ 256,000
<b>Total</b>	<b>\$ 759,140</b>

## Section 1.2: Actuarial Contributions as of June 30, 2020 (for FY23)

		
1. Actuarial Accrued Liability	\$	22,417,247
2. Valuation Assets		<u>43,020,393</u>
3. Total Unfunded Actuarial Accrued Liability, (1) – (2)	\$	(20,603,146)
4. Past Service Cost Amortization Payment <sup>1</sup>		(3,224,638)
5. Normal Cost, including Expense Load		<u>759,140</u>
6. <b>Total Contribution, (4) + (5), not less than 0</b>	<b>\$</b>	<b>0</b>

---

<sup>1</sup> Calculated on a level dollar basis over an 8-year period as of June 30, 2020.

## Section 1.3: Actuarial Gain/(Loss) for FY20

<b>1. Expected Actuarial Accrued Liability</b>		
a. Actuarial Accrued Liability, June 30, 2019	\$	22,592,882
b. Normal Cost for FY20		483,551
c. Interest on (a) and (b) at 7.00%		1,615,350
d. Benefit Payments for FY20		(1,641,475)
e. Interest on (d) at 7.00%, adjusted for timing		(61,273)
f. Change in Actuarial Assumptions		<u>0</u>
g. Expected Actuarial Accrued Liability as of June 30, 2020, (a) + (b) + (c) + (d) + (e) + (f)	\$	22,989,035
<b>2. Actual Actuarial Accrued Liability, June 30, 2020</b>		<u>22,417,247</u>
<b>3. Liability Gain/(Loss), (1)(g) – (2)</b>	<b>\$</b>	<b>571,788<sup>1</sup></b>
<b>4. Expected Actuarial Asset Value</b>		
a. Actuarial Asset Value, June 30, 2019	\$	41,939,204
b. Interest on (a) at 7.00%		2,935,744
c. Employer Contributions for FY20		860,686
d. Interest on (c) at 7.00%, adjusted for timing		29,615
e. Benefit Payments for FY20		(1,641,475)
f. Interest on (e) at 7.00%, adjusted for timing		(61,273)
g. Administrative Expenses for FY20		(230,609)
h. Interest on (g) at 7.00%, adjusted for timing		<u>(7,935)</u>
i. Expected Actuarial Asset Value as of June 30, 2020, (a) + (b) + (c) + (d) + (e) + (f) + (g) + (h)	\$	43,823,957
<b>5. Actuarial Asset Value, June 30, 2020</b>		<u>43,020,393</u>
<b>6. Actuarial Asset Gain/(Loss), (5) – (4)(i)</b>	<b>\$</b>	<b>(803,564)</b>
<b>7. Actuarial Gain/(Loss), (3) + (6)</b>	<b>\$</b>	<b>(231,776)<sup>2</sup></b>

<sup>1</sup> Includes a liability reduction of \$522,826 due to programming enhancements for determining lump sum actuarial equivalence. The FY20 liability experience gain excluding the \$522,826 programming effect is \$48,962.

<sup>2</sup> The FY20 actuarial loss excluding the \$522,826 programming effect is \$754,602.

## Section 1.4: Development of Change in Unfunded Liability during FY20

1. June 30, 2019 Unfunded Liability	\$ (19,346,322)
a. Normal Cost	483,551
b. Interest on (1) and (1)(a)	(1,320,394)
c. Employer Contributions	(860,686)
d. Interest on (c)	(29,615)
e. Administrative Expenses	230,609
f. Interest on (e)	7,935
g. Change in Actuarial Assumptions	<u>0</u>
h. Expected Change in Unfunded Liability during FY20	\$ (1,488,600)
2. Expected June 30, 2020 Unfunded Liability, (1) + (1)(h)	\$ (20,834,922)
a. Liability gain/(loss)	571,788 <sup>1</sup>
b. Asset gain/(loss)	<u>(803,564)</u>
c. Actuarial gain/(loss) during FY20, (2)(a) + (2)(b)	\$ (231,776) <sup>2</sup>
3. Actual June 30, 2020 Unfunded Liability, (2) - (2)(c)	\$ (20,603,146)

<sup>1</sup> \$48,962 liability gain excluding the \$522,826 programming effect.

<sup>2</sup> \$754,602 actuarial loss excluding the \$522,826 programming effect.

## Section 1.5: History of Unfunded Liability and Funded Ratio

Valuation Date	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 <sup>1</sup>	\$ 21,934,014	\$ 41,031,353	187.1%	\$ (19,097,339)
June 30, 2019	\$ 22,592,882	\$ 41,939,204	185.6%	\$ (19,346,322)
June 30, 2020	\$ 22,417,247	\$ 43,020,393	191.9%	\$ (20,603,146)

<sup>1</sup> Approximately \$10.7 million of the decrease in Actuarial Accrued Liability reflected in the June 30, 2018 valuation was due to the elimination of 798 active and vested terminated participants who had cashed out prior to June 30, 2016.

## Section 2: Plan Assets

### Section 2.1 Summary of Fair Value of Assets

Fair Value of Assets as of June 30	2019	2020
<b>Assets</b>		
1. Cash and Cash Equivalents	\$ 349,952	\$ 73,584
2. Receivables	2,001	309
3. Domestic Equity Pool	11,113,397	11,986,239
4. International Equity Pool	6,171,370	7,671,073
5. Tactical Fixed Income Pool	188,888	0
6. Domestic Fixed Income Pool	18,110,335	17,711,943
7. Emerging Market Equity Pool	1,214,537	1,604,112
8. Taxable Municipal Bonds	1,143,669	0
9. Tactical Allocation Strategies Pool	676,858	1,999,801
10. Alternative Equity	2,089,894	416,501
11. Alternative Beta	<u>0</u>	<u>729,363</u>
<b>12. Total Assets</b>	<b>\$ 41,060,901</b>	<b>\$ 42,192,925</b>
<b>Liabilities</b>		
13. Accrued expenses	\$ 18,765	\$ 22,473
14. Due to State of Alaska General Fund	12,442	12,097
15. Securities Lending Collateral Payable	<u>64,697</u>	<u>62,647</u>
<b>16. Total Liabilities</b>	<b>\$ 95,904</b>	<b>\$ 97,217</b>
<b>Fair Value of Assets, (13) – (16)</b>	<b>\$ 40,964,997</b>	<b>\$ 42,095,708</b>

## Section 2.2: Changes in Fair Value of Assets

Fair Value of Assets as of June 30	2019	2020
1. Fair Value of Assets at beginning of year	39,418,117	40,964,997
2. Additions		
a. Employer Contributions	\$ 851,686	\$ 860,686
b. Investment Income	2,387,714	2,199,040
c. Other	0	0
d. Total Additions	\$ 3,239,400	\$ 3,059,726
3. Disbursements		
a. Retirement Benefits	\$ 1,343,753	\$ 1,641,475
b. Administrative Expenses	282,338	230,609
c. Investment Expenses	66,429	56,931
d. Total Deductions	\$ 1,692,520	\$ 1,929,015
4. Fair Value of Assets at end of year, (1) + (2)(d) - (3)(d)	\$ 40,964,997	\$ 42,095,708
Approximate Fair Value Investment Return Rate Net of Investment Expenses	5.9%	5.3%

## 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 FY20			
a.	Market Value, June 30, 2019	\$	40,964,997
b.	Contributions for FY20		860,686
c.	Benefit Payments for FY20		1,641,475
d.	Administrative Expenses for FY20		230,609
e.	Actual Investment Return (net of investment expenses)		2,142,109
f.	Expected Return Rate (net of investment expenses)		7.00%
g.	Expected Return - Weighted for Timing		2,827,956
h.	Investment Gain/(Loss) for the Year, (e) – (g)		(685,847)
2. Actuarial Value, June 30, 2020			
a.	Market Value, June 30, 2020	\$	42,095,708
b.	Deferred Investment Gain/(Loss)		<u>(924,685)</u>
c.	Preliminary Actuarial Value, June 30, 2020, (a) – (b)	\$	43,020,393
d.	Upper Limit: 120% of Market Value, June 30, 2020	\$	50,514,850
e.	Lower Limit: 80% of Market Value, June 30, 2020	\$	33,676,566
f.	Actuarial Value, June 30, 2020, [(c) limited by (d) and (e)]	\$	43,020,393
g.	Ratio of Actuarial Value of Assets to Market Value of Assets		102.2%
h.	Approximate Actuarial Value Investment Return Rate During FY20 (net of investment expenses)		5.1%

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

Fiscal Year Ending	Asset Gain/(Loss)	Gain/(Loss) Recognized in Prior Years	Gain/(Loss) Recognized This Year	Gain/(Loss) Deferred to Future Years
June 30, 2016	\$ (2,606,836)	\$ (2,085,468)	\$ (521,368)	\$ 0
June 30, 2017	704,309	422,586	140,862	140,861
June 30, 2018	(681,054)	(272,422)	(136,211)	(272,421)
June 30, 2019	(407,413)	(81,483)	(81,483)	(244,447)
June 30, 2020	<u>(685,847)</u>	<u>0</u>	<u>(137,169)</u>	<u>(548,678)</u>
<b>Total</b>	<b>\$ (3,676,841)</b>	<b>\$ (2,016,787)</b>	<b>\$ (735,369)</b>	<b>\$ (924,685)</b>



## 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%
June 30, 2019	4.1 %	5.2%	5.9%	5.1%
June 30, 2020	5.1 %	5.2%	5.3%	5.1%

\*Cumulative since FYE June 30, 2005.

## Section 3: Member Data

### Section 3.1: Summary of Members Included

Census Information as of June 30	2018	2020
<b>Active Air Guard Members</b>		
1. Number	2,139	2,242
2. Number Vested	364	405
3. Average Age	34.98	35.20
4. Average Alaska Guard Service	7.24	7.26
5. Average Total Military Service	12.68	12.82
<b>Active Army Guard Members</b>		
1. Number	1,575	1,639
2. Number Vested	193	218
3. Average Age	32.45	32.85
4. Average Alaska Guard Service	6.00	6.41
5. Average Total Military Service	10.34	10.82
<b>Active Naval Militia Members</b>		
1. Number	63	53
2. Number Vested	8	6
3. Average Age	34.48	33.85
4. Average Alaska Guard Service	5.44	4.34
5. Average Total Military Service	11.86	10.28
<b>Total Active Members</b>		
1. Number	3,777	3,934
2. Number Vested	565	629
3. Average Age	33.92	34.20
4. Average Alaska Guard Service	6.69	6.87
5. Average Total Military Service	11.69	11.95
<b>Vested Terminated Members</b>		
1. Number	588	649
2. Average Age	56.10	57.00
3. Average Alaska Guard Service	13.84	13.84
4. Average Total Military Service	24.42	24.58
<b>Retirees (including QDROs)</b>		
1. Number	752	708
2. Average Age	59.18	58.83
3. Average Years Remaining	11.53	12.13

Section 3.2(a): Age and Service Distributions of Active Members – All Actives

<b>Total Alaska Guard Service</b>										
<b>Age Group</b>	<b>0-4</b>	<b>5-9</b>	<b>10-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30-34</b>	<b>35-39</b>	<b>40+</b>	<b>Total</b>
0-19	121	0	0	0	0	0	0	0	0	121
20-24	491	77	0	0	0	0	0	0	0	568
25-29	456	272	48	0	0	0	0	0	0	776
30-34	351	209	157	14	0	0	0	0	0	731
35-39	261	211	156	92	6	0	0	0	0	726
40-44	108	118	138	83	27	4	0	0	0	478
45-49	54	57	66	56	36	21	2	0	0	292
50-54	20	27	31	27	28	21	6	2	0	162
55-59	9	9	12	9	13	10	8	2	0	72
60-64	0	0	2	3	2	0	0	1	0	8
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
<b>Total</b>	<b>1,871</b>	<b>980</b>	<b>610</b>	<b>284</b>	<b>112</b>	<b>56</b>	<b>16</b>	<b>5</b>	<b>0</b>	<b>3,934</b>

Section 3.2(b): Age and Service Distributions of Active Members – Air Actives

<b>Total Alaska Guard Service</b>										
<b>Age Group</b>	<b>0-4</b>	<b>5-9</b>	<b>10-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30-34</b>	<b>35-39</b>	<b>40+</b>	<b>Total</b>
0-19	42	0	0	0	0	0	0	0	0	42
20-24	216	25	0	0	0	0	0	0	0	241
25-29	266	151	26	0	0	0	0	0	0	443
30-34	192	121	88	8	0	0	0	0	0	409
35-39	162	131	112	63	5	0	0	0	0	473
40-44	75	73	95	51	20	2	0	0	0	316
45-49	28	30	37	35	23	17	1	0	0	171
50-54	15	9	21	12	15	16	4	2	0	94
55-59	7	7	5	6	8	8	6	2	0	49
60-64	0	0	0	2	1	0	0	1	0	4
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
<b>Total</b>	<b>1,003</b>	<b>547</b>	<b>384</b>	<b>177</b>	<b>72</b>	<b>43</b>	<b>11</b>	<b>5</b>	<b>0</b>	<b>2,242</b>

Section 3.2(c): Age and Service Distributions of Active Members – Army Actives

<b>Total Alaska Guard Service</b>										
<b>Age Group</b>	<b>0-4</b>	<b>5-9</b>	<b>10-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30-34</b>	<b>35-39</b>	<b>40+</b>	<b>Total</b>
0-19	79	0	0	0	0	0	0	0	0	79
20-24	264	51	0	0	0	0	0	0	0	315
25-29	184	120	22	0	0	0	0	0	0	326
30-34	148	86	67	6	0	0	0	0	0	307
35-39	97	80	44	29	1	0	0	0	0	251
40-44	31	39	42	31	7	2	0	0	0	152
45-49	25	26	27	21	13	4	1	0	0	117
50-54	4	18	10	14	12	5	2	0	0	65
55-59	2	2	7	3	5	2	2	0	0	23
60-64	0	0	2	1	1	0	0	0	0	4
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
<b>Total</b>	<b>834</b>	<b>422</b>	<b>221</b>	<b>105</b>	<b>39</b>	<b>13</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1,639</b>

Section 3.2(d): Age and Service Distributions of Active Members – Navy Actives

<b>Total Alaska Guard Service</b>										
<b>Age Group</b>	<b>0-4</b>	<b>5-9</b>	<b>10-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30-34</b>	<b>35-39</b>	<b>40+</b>	<b>Total</b>
0-19	0	0	0	0	0	0	0	0	0	0
20-24	11	1	0	0	0	0	0	0	0	12
25-29	6	1	0	0	0	0	0	0	0	7
30-34	11	2	2	0	0	0	0	0	0	15
35-39	2	0	0	0	0	0	0	0	0	2
40-44	2	6	1	1	0	0	0	0	0	10
45-49	1	1	2	0	0	0	0	0	0	4
50-54	1	0	0	1	1	0	0	0	0	3
55-59	0	0	0	0	0	0	0	0	0	0
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
<b>Total</b>	<b>34</b>	<b>11</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>53</b>

### Section 3.3: Member Data Reconciliation

	Active Members	Vested Members	Benefit Recipients	Total
Total at June 30, 2018	3,777	588	752	5,117
New Entrants	902	0	0	902
Rehires	30	0	0	30
Non-vested Terminations	(549)	0	0	(549)
Vested Terminations	(108)	108	0	0
Retirements	(49)	(27)	76	0
New Survivors	0	0	0	0
New QDROs	0	0	1	1
Deaths	0	0	(8)	(8)
Data Changes/Expiration of Benefits	(69) <sup>1</sup>	(20) <sup>2</sup>	(113) <sup>3</sup>	(202)
Total at June 30, 2020	3,934	649	708	5,291

<sup>1</sup> Includes 69 participants who cashed out on or after June 30, 2018.

<sup>2</sup> Includes 22 participants who cashed out on or after June 30, 2018 and 2 participants who were rehired from terminated non-vested status and then terminated as vested between June 30, 2018 and June 30, 2020.

<sup>3</sup> Includes 122 participants with an expiration of benefits, 5 additions (data corrections), and 4 participants who were rehired from terminated non-vested status and then retired between June 30, 2018 and June 30, 2020.

# Section 4: Basis of the Actuarial Valuation

## Section 4.1: Summary of Plan Provisions

### **Effective Date**

January 1, 1973

### **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.

### **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.

### **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.

### **Retirement**

#### **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.

#### **Benefit**

Eligible members may elect to receive:

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

### **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.



**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 retirement benefit.
- b. Retired or Terminated Vested Members: The designated beneficiary will receive a lump benefit equal to the remaining benefits payable.

**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.

**Changes Since the Prior Valuation**

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

## Section 4.2: Description of Actuarial Methods and Valuation Procedures

### **Actuarial Method**

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 was phased in over five years. Assets are initialized at market value as of June 30, 2006. All assets are valued at fair 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.

### **Changes in Methods Since the Prior Valuation**

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

## Section 4.3: Summary of Actuarial Assumptions

### Investment Return

7.00% per year, net of investment expenses.

### Mortality (Pre-Commencement)

RP-2014 employee table, benefit-weighted, rolled back to 2006, and projected with MP-2017 generational improvement.

### Mortality (Post-Commencement)

91% of male and 96% of female rates of RP-2014 healthy annuitant table, benefit-weighted, rolled back to 2006, and projected with MP-2017 generational improvement.

### Disability Mortality

RP-2014 disabled table, benefit-weighted, rolled back to 2006, and projected 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
2019	\$ 282,338
2020	<u>230,609</u>
Total	\$ 512,947
	<u>÷ 2</u>
Expense Load (Rounded)	\$ 256,000

### Turnover

Ultimate rates of turnover based upon the 2013-2017 actual experience. Sample rates are shown below.

Year of Employment	Select Rates of Turnover During the First 5 Years of Employment		Ultimate Rates of Turnover After the First 5 Years 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 the later of current age or age 50 when electing an annuity, and at current age when electing a lump sum.

## 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 annuity certain factor.

## 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

The amount included in the Normal Cost for administrative expenses was changed from \$242,000 at June 30, 2018 to \$256,000 at June 30, 2020.

## Section 5: Actuarial Standards of Practice No. 51

Funding future retirement benefits prior to when those benefits become due involves assumptions regarding future economic and demographic experience. These assumptions are applied to calculate actuarial liabilities, current contribution requirements, and the funded status of the plans. However, to the extent future experience deviates from the assumptions used, variations will occur in these calculated values. These variations create risk to the plans. Understanding the risks to the funding of the plans is important.

Actuarial Standard of Practice No. 51 (“ASOP 51”) requires certain disclosures of potential risks to the plan and provides useful information for intended users of actuarial reports that determine plan contributions or evaluate the adequacy of specified contribution levels to support benefit provisions.

Under ASOP 51, risk is defined as the potential of actual future measurements deviating from expected future measurements resulting from actual future experience deviating from actuarially assumed experience.

It is important to note that not all risk is negative, but all risk should be understood and accepted based on knowledge, judgement and educated decisions. Future measurements may deviate in ways that produce positive or negative financial impacts to the plan.

In the actuary’s professional judgment, the following risks may reasonably be anticipated to significantly affect the pension plan’s future financial condition and contribution requirements.

- Investment Risk – potential that the investment return will be different than the 7.00% expected in the actuarial valuation
- Contribution Risk – potential that the contribution actually made will be different than the actuarially determined contribution in the actuarial valuation
- Long-Term Return on Investment Risk – potential that changes in long-term capital market assumptions or the plan’s asset allocation will create the need to update the long-term return on investment assumption
- Longevity Risk – potential that participants live longer than expected compared to the valuation mortality assumptions
- Other Demographic Risk – potential that other demographic experience will be different than expected

The following information is provided to comply with ASOP 51 and furnish beneficial information on potential risks to the plan. **This list is not all-inclusive**; it is an attempt to identify the more significant risks and how those risks might affect the results shown in this report.

Note that ASOP 51 does not require the actuary to evaluate the ability or willingness of the plan sponsor to make contributions to the plan when due, or to assess the likelihood or consequences of potential future changes in law. In addition, this valuation report is not intended to provide investment advice or to provide guidance on the management or reduction of risk.

## Assessment of Risks

### Investment Risk

Plan costs are very sensitive to the market return.

- Any return on assets lower than assumed will increase costs.
- The plan uses an actuarial value of assets that smooths gains and losses on market returns over a five-year period to help control some of the volatility in costs due to investment risk.
- Historical experience of actual returns is shown in Section 2.4 of this report. This historical experience illustrates how returns can vary over time.

### Contribution Risk

There is a risk to the plan when the actual contribution amount and the actuarially determined amount differ.

- If the actual contribution is lower than the actuarially determined contribution, the plan may not be sustainable in the long term.
- Any underpayment of the contribution will increase future contribution amounts to help pay off the additional Unfunded Actuarial Accrued Liability associated with the underpayment(s).

### Long-Term Return on Investment Risk

Inherent in the long-term return on investment assumption is the expectation that the current rate will be used until the last benefit payment of the plan is made. There is a risk that sustained changes in economic conditions, changes in long-term future capital market assumptions, or changes to the plan's asset allocations will necessitate an update to the long-term return on investment assumption used.

- Under a lower long-term return on investment assumption, less investment return is available to pay plan benefits. This may lead to a need for increased employer contributions.
- The liabilities will be higher at a lower assumed rate of return because future benefits will have a lower discount rate applied when calculating the present value.
- Historical experience of actual returns is shown in Section 2.4 of this report. The cumulative historical experience illustrates that although market returns have been above and below the assumed rate, the overall return during the time period was well below the 7% assumed and therefore the assumed rate, asset allocation, and future market expectations may need to be re-evaluated. A 1% decrease in the long-term return on investment assumption will increase the actuarial accrued liability by approximately 9%.

### Longevity Risk

Plan costs will be increased as participants are expected to live longer.

- Benefits are paid over a longer lifetime when life expectancy is expected to increase. The longer duration of payments leads to higher liabilities.
- Health care has been improving, which affects the life expectancy of participants. As health care improves, leading to longer life expectancies, costs to the plans could increase.
- The mortality assumption for the plan mitigates this risk by assuming future improvements in mortality. However, any improvement in future mortality greater than that expected by the current mortality assumption would lead to increased costs for the plan.

## Other Demographic Risk

The plan is subject to risks associated with other demographic assumptions (e.g., retirement and termination assumptions). Differences between actual and expected experience for these assumptions tend to have less impact on the overall costs of the plan. The demographic assumptions used in the valuation are re-evaluated regularly as part of the 4-year experience studies to ensure the assumptions are consistent with long-term expectations.

## Historical Information

Monitoring certain information over time may help understand risks faced by the plan. Historical information is included throughout this report. Some examples are:

- Section 1.5 shows how the plan's funded status (comparison of actuarial accrued liabilities to actuarial value of assets) has changed over time.
- Section 2.4 shows the volatility of asset returns over time.

## Plan Maturity Measures

There are certain measures that may aid in understanding the significant risks to the plan.

<b>Ratio of Retired Liability to Total Liability</b>	<b>June 30, 2018</b>	<b>June 30, 2020</b>
1. Retiree and Beneficiary Accrued Liability	\$ 6,094,900	\$ 5,808,004
2. Total Accrued Liability	\$ 21,934,014	\$ 22,417,247
3. Ratio, (1) ÷ (2)	27.8%	25.9%

A high percentage of liability concentrated on participants in pay status indicates a mature plan (often a ratio above 60% - 65%). An increasing percentage may indicate a need for a less risky asset allocation, which may lead to a lower long-term return on asset assumption and increased costs. Higher percentages may also indicate greater investment risk as benefit payments may be greater than contributions creating an increased reliance on investment returns. This ratio should be monitored each year in the future.

<b>Ratio of Cash Flow to Assets</b>	<b>FYE June 30, 2018</b>	<b>FYE June 30, 2020</b>
1. Contributions	\$ 907,231	\$ 860,686
2. Benefit Payments	<u>1,359,467</u>	<u>1,641,475</u>
3. Cash Flow, (1) - (2)	\$ (452,236)	\$ (780,789)
4. Fair Value of Assets	\$ 39,418,117	\$ 42,095,708
5. Ratio, (3) ÷ (4)	(1.1%)	(1.9%)

When this cash flow ratio is negative, more cash is being paid out than deposited in the trust. Negative cash flow indicates the trust needs to rely on investment returns to cover benefit payments and / or may need to invest in more liquid assets to cover the benefit payments. More liquid assets may not generate the same returns as less liquid assets, which can increase the investment risk. Currently, the low magnitude of the ratio implies there may already be enough liquid assets to cover the benefit payments, less investment return is needed to cover the shortfall, or only a small portion of assets will need to be converted to cash. Therefore, the investment risk is likely not amplified at this time. This maturity measure should be monitored in the future.

# 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 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.