State of Alaska

Judicial 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 Judicial Retirement System (JRS) as of June 30, 2020 performed by Buck Global, LLC (Buck). This report is an update to the draft report dated February 23, 2021, reflecting a change in the salary and pensioner benefit increase assumptions.

The actuarial valuation is based on financial information provided in the financial statements audited by KPMG LLP, member data provided by the Division of Retirement and Benefits, and medical enrollment data provided by the healthcare claims administrator (Aetna), 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 JRS 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 JRS as of June 30, 2020.

JRS is funded by Employer, State, and Member Contributions in accordance with the funding policy adopted by the Alaska Retirement Management Board (Board) and as required by Alaska state statutes. The funding objective for JRS is to pay required contributions that remain level as a percent of total JRS compensation. The Board has also established a funding policy objective that the required contributions be sufficient to pay the Normal Costs of active plan members, plan expenses, and amortize the annual changes in Unfunded Actuarial Accrued Liability as a level percentage of payroll over closed 25-year periods. The compensation used to determine required contributions is the total compensation of all active members in JRS. 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 level as a percent of pay and the overall funded status (on a combined pension/healthcare basis) is expected to increase to 100% after 25 years.

The Board and staff of the State of Alaska may use this report for the review of the operations of JRS. 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, changes expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. In particular, retiree group benefits models necessarily rely on the use of approximations and estimates and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements. An analysis of the potential range of such future differences is beyond the scope of this valuation.

In our opinion, the actuarial assumptions used are reasonable, taking into account the experience of the plan and reasonable long-term expectations, and represent our 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. Based on our annual analysis of recent claims experience, changes were made to the per capita claim cost rates effective June 30, 2020 to better reflect expected future healthcare experience. At the request of State of Alaska staff, the salary and pensioner benefit increase assumptions were modified to be 0% per year for FY21 through FY24, and 3.62% per year thereafter to better reflect expected short-term 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 JRS beginning with fiscal year ending June 30, 2014, and Statement No. 74 (GASB 74) was effective for JRS beginning with fiscal year ending June 30, 2017. Separate GASB 67 and GASB 74 reports as of June 30, 2020 have 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 and GASB 74 reports 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. ASOP 51 does not apply to actuaries performing services in connection with other post-employment benefits, such as medical benefits. Accordingly, ASOP 51 does not apply to the healthcare portion of JRS. 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.

Additional models used in valuing health benefits are described later in the report.

COVID-19

The potential impact of the ongoing COVID-19 pandemic on costs and liabilities was considered and an adjustment was made in setting the medical per capita claims cost assumption. FY20 medical claims were adjusted for a COVID-19 related decline in claims during the last four months (March – June) of FY20. A more detailed explanation on these adjustments is shown in Section 4.2.

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,

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

The undersigned actuary is responsible for all assumptions related to the average annual per capita health claims cost and the health care cost trend rates, and hereby affirms his qualification to render opinions in such matters in accordance with the Qualification Standards of the American Academy of Actuaries.

Scott Young

Scott Young, FSA, EA, MAAA, FCA
Director
Buck

Contents

Executive Summary

Overview

The State of Alaska Judicial Retirement System (JRS) provides pension and postemployment healthcare benefits to judicial and other eligible participants. 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 JRS 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/State 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 JRS based on the plan provisions, membership data, assets, and actuarial methods and assumptions as of the valuation date.

Retiree group benefits models necessarily rely on the use of approximations and estimates, and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements.

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 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		2018	2020
Pension			
a.	Actuarial Accrued Liability	$ 226,559,580	$ 211,742,043
b.	Valuation Assets	178,489,284	194,788,043
c.	Unfunded Actuarial Accrued Liability, (a) - (b)	$ 48,070,296	$ 16,954,000
d.	Funded Ratio based on Valuation Assets, (b) ÷ (a)	78.8%	92.0%
e.	Fair Value of Assets	$ 176,794,969	$ 189,844,025
f.	Funded Ratio based on Fair Value of Assets, (e) ÷ (a)	78.0%	89.7%
Healthcare			
a.	Actuarial Accrued Liability	$ 16,846,959	$ 16,763,770
b.	Valuation Assets	31,868,079	34,805,639
c.	Unfunded Actuarial Accrued Liability, (a) - (b)	$ (15,021,120)	$ (18,041,869)
d.	Funded Ratio based on Valuation Assets, (b) ÷ (a)	189.2%	207.6%
e.	Fair Value of Assets	$ 31,497,603	$ 34,036,503
f.	Funded Ratio based on Fair Value of Assets, (e) ÷ (a)	187.0%	203.0%
Total			
a.	Actuarial Accrued Liability	$ 243,406,539	$ 228,505,813
b.	Valuation Assets	210,357,363	229,593,682
c.	Unfunded Actuarial Accrued Liability, (a) - (b)	$ 33,049,176	$ (1,087,869)
d.	Funded Ratio based on Valuation Assets, (b) ÷ (a)	86.4%	100.5%
e.	Fair Value of Assets	$ 208,292,572	$ 223,880,528
f.	Funded Ratio based on Fair Value of Assets, (e) ÷ (a)	85.6%	98.0%

The key reasons for the change in the funded status are explained below. The funded status for healthcare benefits is not necessarily an appropriate measure to confirm that assets are sufficient to settle health plan obligations as there are no available financial instruments for purchase. Future experience is likely to vary from assumptions, so there is potential for actuarial gains or losses.

1. Investment Experience

The approximate investment returns based on fair value of assets were 6.0% for FY19 and 4.1% for FY20, compared to the expected investment return of 7.38% (net of investment expenses). This resulted in market asset losses of approximately $3.1 million for FY19 and $7.2 million for FY20. Due to the recognition of investment gains and losses over a 5-year period, the investment return based on actuarial value of assets were approximately 5.7% for FY19 and 5.9% for FY20.

2. **Salary Increases**

Salaries for active judges remained constant between June 30, 2018 and June 30, 2020 (excluding those who are pro tem), which resulted in a small liability loss of approximately $0.4 million due to several judges moving to higher courts. The following table shows the annual base salaries for each of the court appointments:

	June 30, 2018	June 30, 2020
District Court	$ 160,848	$ 160,848
Superior Court	189,720	189,720
Appellate Court	193,836	193,836
Supreme Court	205,176	205,176
Administrative Director	189,720	189,720
Chief Justice	205,776	205,776
Pro Tem	160,857	N/A

3. **Demographic Experience**

Section 3 provides statistics on active and inactive participants. The number of active participants increased from 71 as of June 30, 2018 to 72 as of June 30, 2020. There were 22 new entrants and 18 retirements during this 2-year period. The average age of active participants decreased from 57.53 to 55.03, their average service decreased from 9.49 to 6.83, and their average entry age increased from 48.04 to 48.20.

The number of benefit recipients increased from 125 to 144, and their average age increased from 73.71 to 73.98. The number of vested terminated participants decreased from 3 to 2, and their average age decreased from 59.05 to 55.87.

The overall effect of the demographic experience was a liability gain of approximately $0.4 million (pension) and a liability gain of approximately $0.8[1] million (healthcare).

4. **Retiree Medical Claims Experience**

As described in Section 4.2, recent medical claims experience and changes in healthcare enrollment data provided to us for the June 30, 2020 valuation generated a liability gain of approximately $2.3 million.

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

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

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

Healthcare claim costs are updated annually as described in Section 4.2. The Further Consolidated Appropriations Act, 2020 that was signed in December 2019 made several changes, including the repeal of the Cadillac Tax. The repeal of the Cadillac Tax reduced the plan’s liabilities as of June 30, 2020 by approximately $0.2 million. The salary increase and pensioner benefit increase assumptions were modified to be 0% per year for FY21 through FY24, and 3.62% per year thereafter. The amounts included in Normal Cost for administrative expenses were updated based on the last two years of actual administrative expenses paid from plan assets. There were no other changes in actuarial assumptions since the prior valuation.

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

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

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[1] Includes the effect of changes in Medicare Part B only experience.

Comparative Summary of Contribution Rates

Pension		FY 2021	FY 2023
a.	Normal Cost Rate Net of Member Contributions	42.04%	38.85%
b.	Past Service Cost Rate	35.78%	24.74%
c.	Total Employer/State Contribution Rate, (a) + (b), not less than (a)	77.82%	63.59%

Healthcare		FY 2021	FY 2023
a.	Normal Cost Rate	6.12%	6.49%
b.	Past Service Cost Rate	(6.45)%	(8.24)%
c.	Total Employer/State Contribution Rate, (a) + (b), not less than (a)	6.12%	6.49%

Total		FY 2021	FY 2023
a.	Normal Cost Rate Net of Member Contributions	48.16%	45.34%
b.	Past Service Cost Rate	35.78%	24.74%
c.	Total Employer/State Contribution Rate, (a) + (b), not less than (a)	83.94%	70.08%

The contribution rates for FY22 based on a roll-forward valuation as of June 30, 2019 were 70.97% (pension), 6.28% (healthcare), and 77.25% (total). These FY22 contribution rates reflect the change in the salary and pensioner benefit increase assumptions to 0% for FY19 and FY20 that were implemented for the June 30, 2019 roll-forward valuation.

Summary of Actuarial Accrued Liability Gain/(Loss) and Other Changes

The following table summarizes the sources of change in the total Employer/State contribution rates as of June 30, 2018, June 30, 2019, and June 30, 2020:

	Pension	Healthcare	Total
1. Total Employer/State Contribution Rate as of June 30, 2018	77.82%	6.12%	83.94%
2. Change during FY19[1]	(6.85)%	0.16%	(6.69)%
3. Total Employer/State Contribution Rate as of June 30, 2019 from Roll-Forward Valuation	70.97%	6.28%	77.25%
4. Change due to:			
a. Investment Experience	1.38%	0.24%	1.62%
b. Demographic Experience, Health Claims Experience, and New Entrants[2]	6.22%	(0.20)%	6.02%
c. State Appropriation	(2.46)%	0.00%	(2.46)%
d. Actual vs Expected Contributions	(0.74)%	(0.40)%	(1.14)%
e. Assumption Changes	(11.78)%	0.57%	(11.21)%
f. Total Change, (a) + (b) + (c) + (d) + (e)	(7.38)%	0.21%	(7.17)%
5. Total Employer/State Contribution Rate as of June 30, 2020, (3) + (4)(f)	63.59%	6.49%	70.08%

[1] Net effect of FY19 experience and assumption changes implemented effective June 30, 2019.
[2] Includes changes in future healthcare claims costs.

The following table shows the 2-year gain/(loss) on actuarial accrued liability as of June 30, 2020:

	Pension	Healthcare	Total
Retirement Experience	$ (1,596,016)	$ 341,768	$ (1,254,248)
Termination Experience	534,735	(4,270)	530,465
Disability Experience	8,191	10,251	18,442
Active Mortality Experience	863,360	199,434	1,062,794
Inactive Mortality Experience	604,407	222,268	826,675
Salary Increases	(391,763)	N/A	(391,763)
New Entrants	(2,856,871)	(271,210)	(3,128,081)
Inactive Benefit Increases	(360,853)	N/A	(360,853)
Per Capita Claims Cost[1]	N/A	2,287,097	2,287,097
Cadillac Tax Repeal	N/A	234,431	234,431
Medicare Part B Only Experience	N/A	8,972	8,972
Programming Changes[2]	(297,054)	N/A	(297,054)
Miscellaneous[3]	(583,293)	(488,418)	(1,071,711)
Total	$ (4,075,157)	$ 2,540,323	$ (1,534,834)

Other items that increased/(decreased) the actuarial accrued liability as of June 30, 2020 are shown below:

	Pension	Healthcare	Total
Salary Increase Assumption Change	$ (5,817,208)	$ 200,955	$ (5,616,253)
Pensioner Benefit Increase Assumption Change	(15,787,045)	N/A	(15,787,045)
Total	$(21,604,253)	$ 200,955	$(21,403,298)

[1] Includes the estimated impact of COVID-19 on claims experience during FY20.
[2] Adjustments to required member contributions for service over 15 years.
[3] Includes the effects of various data changes that are typical when new census data is received for the valuation, the effects of the differences between expected and actual benefit payments, and other items that do not fit neatly into any of the other categories.

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 (Past Service) Liability
Active Members		
Retirement Benefits	$ 79,273,487	$ 44,430,929
Disability Benefits	139,271	5,214
Death Benefits	1,133,173	449,575
Termination Benefits[1]	2,667,758	124,428
Medical and Prescription Drug Benefits	12,431,669	5,970,520
Medicare Part D Subsidy	(1,581,787)	(814,234)
Subtotal	$ 94,063,571	$ 50,166,432
Benefit Recipients		
Retiree Benefits	$ 147,826,070	$ 147,826,070
Survivor Benefits	16,628,123	16,628,123
Disability Benefits	0	0
Medical and Prescription Drug Benefits	13,027,288	13,027,288
Medicare Part D Subsidy	(1,984,248)	(1,984,248)
Subtotal	$ 175,497,233	$ 175,497,233
Vested Terminations		
Deferred Retirement Benefits	$ 2,210,876	$ 2,210,876
Medical and Prescription Drug Benefits	628,029	628,029
Medicare Part D Subsidy	(63,585)	(63,585)
Subtotal	$ 2,775,320	$ 2,775,320
Non-Vested Terminations	$ 66,828	$ 66,828
Total	**$ 272,402,952**	**$ 228,505,813**
Total Pension	**$ 249,945,586**	**$ 211,742,043**
Total Medical, Net of Part D Subsidy	**$ 22,457,366**	**$ 16,763,770**
Total Medical, Gross of Part D Subsidy	**$ 26,086,986**	**$ 19,625,837**

[1] Includes return of contributions.

As of June 30, 2020		Normal Cost
Active Members		
Retirement Benefits	$	5,420,771
Disability Benefits		17,019
Death Benefits		116,491
Termination Benefits[1]		296,645
Medical and Prescription Drug Benefits		944,871
Medicare Part D Subsidy		(114,944)
Administrative Expenses (Pension)		83,000
Administrative Expenses (Medical)		24,000
Total	**$**	**6,787,853**
Total Pension	**$**	**5,933,926**
Total Medical, Net of Part D Subsidy	**$**	**853,927**
Total Medical, Gross of Part D Subsidy	**$**	**968,871**

[1] Includes return of contributions.

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

Normal Cost Rate	Pension	Healthcare	Total
1. Total Normal Cost	$ 5,933,926	$ 853,927	$ 6,787,853
2. Base Salaries for Upcoming Fiscal Year	13,157,172	13,157,172	13,157,172
3. Normal Cost Rate, (1) ÷ (2)	45.10%	6.49%	51.59%
4. Average Member Contribution Rate	6.25%	0.00%	6.25%
5. Employer Normal Cost Rate, (3) - (4)	38.85%	6.49%	45.34%

Past Service Rate	Pension	Healthcare	Total
1. Actuarial Accrued Liability	$ 211,742,043	$ 16,763,770	$ 228,505,813
2. Valuation Assets	194,788,043	34,805,639	229,593,682
3. Unfunded Actuarial Accrued Liability, (1) - (2)	$ 16,954,000	$ (18,041,869)	$ (1,087,869)
4. Funded Ratio, (2) ÷ (1)	92.0%	207.6%	100.5%
5. Past Service Cost Amortization Payment	3,255,457	(1,084,030)	2,171,427
6. Base Salaries for Upcoming Fiscal Year	13,157,172	13,157,172	13,157,172
7. Past Service Rate, (5) ÷ (6)	24.74%	(8.24%)	16.50%
Total Employer Contribution Rate, not less than Normal Cost Rate	**63.59%**	**6.49%**	**70.08%**

Schedule of Past Service Cost Amortizations - Pension

Layer	Amortization Period		Balances		
	Date Created	Years Remaining	Initial	Outstanding	Beginning-of-Year Payment
Initial Unfunded Liability[1]	6/30/2002	7	$ 5,864,449	$ 4,384,187	$ 712,082
FY03/04 Loss[1]	6/30/2004	9	855,068	730,589	96,203
Revaluation of Liabilities[1]	6/30/2005	10	9,115,451	8,160,665	987,161
FY05/06 Loss[1]	6/30/2006	11	18,186,558	16,891,313	1,895,695
FY07 Loss	6/30/2007	12	1,364,721	1,305,006	136,992
FY08 Gain	6/30/2008	13	(29,014,739)	(28,400,811)	(2,807,678)
FY09 Loss	6/30/2009	14	21,273,454	21,192,254	1,984,432
Change in Assumptions	6/30/2010	15	13,976,981	14,100,026	1,256,823
FY10 Loss	6/30/2010	15	6,474,780	6,531,779	582,218
FY11 Loss	6/30/2011	16	7,397,917	7,541,369	642,636
FY12 Loss	6/30/2012	17	11,916,371	12,228,693	999,970
FY13 Loss	6/30/2013	18	7,033,497	6,997,991	550,946
Change in Assumptions	6/30/2014	19	4,219,851	4,346,623	330,439
FY14 Gain	6/30/2014	19	(14,458,986)	(14,893,369)	(1,132,223)
FY15 Gain	6/30/2015	20	(3,325,706)	(3,417,930)	(251,560)
FY16 Gain	6/30/2016	21	(9,932,623)	(10,161,088)	(725,736)
FY17 Gain	6/30/2017	22	(1,137,538)	(1,155,882)	(80,284)
Change in Assumptions	6/30/2018	23	10,343,783	10,419,795	705,155
FY18 Gain	6/30/2018	23	(12,096,419)	(12,185,312)	(824,636)
Change in Assumptions	6/30/2019	24	(14,775,890)	(14,841,835)	(980,341)
FY19 Loss	6/30/2019	24	3,344,559	3,359,485	221,902
Change in Assumptions	6/30/2020	25	(21,604,253)	(21,604,253)	(1,395,021)
FY20 Loss	6/30/2020	25	5,424,705	5,424,705	350,282
Total				**$ 16,954,000**	**$ 3,255,457**

[1] The pension and healthcare split was done based on the ratio of unfunded actuarial accrued liability as of June 30, 2006.

Schedule of Past Service Cost Amortizations - Healthcare

Layer	Amortization Period: Date Created	Amortization Period: Years Remaining	Balances: Initial	Balances: Outstanding	Beginning-of-Year Payment
Initial Unfunded Liability[1]	6/30/2002	7	$ 2,295,257	$ 1,715,906	$ 278,698
FY03/04 Loss[1]	6/30/2004	9	334,660	285,940	37,652
Revaluation of Liabilities[1]	6/30/2005	10	3,567,649	3,193,959	386,360
FY05/06 Loss[1]	6/30/2006	11	7,117,943	6,611,004	741,946
FY07 Gain	6/30/2007	12	(810,073)	(774,628)	(81,316)
Change in Assumptions	6/30/2008	13	789,072	772,377	76,356
FY08 Gain	6/30/2008	13	(14,011,596)	(13,715,124)	(1,355,865)
FY09 Loss	6/30/2009	14	901,355	897,917	84,081
Change in Assumptions	6/30/2010	15	2,006,196	2,023,857	180,399
FY10 Gain	6/30/2010	15	(1,930,656)	(1,947,650)	(173,606)
FY11 Loss	6/30/2011	16	550,376	561,048	47,810
Change in Assumptions	6/30/2012	17	353,605	362,871	29,673
FY12 Gain	6/30/2012	17	(5,516,210)	(5,660,789)	(462,896)
FY13 Loss	6/30/2013	18	226,259	232,968	18,341
Change in Assumptions	6/30/2014	19	772,305	795,506	60,476
FY14 Gain	6/30/2014	19	(3,342,464)	(3,442,880)	(261,734)
FY15 Gain	6/30/2015	20	(1,416,996)	(1,456,290)	(107,183)
Change in Method	6/30/2016	21	(3,567,789)	(3,649,854)	(260,684)
FY16 Gain	6/30/2016	21	(425,711)	(435,503)	(31,105)
FY17 Gain	6/30/2017	22	(586,113)	(595,565)	(41,366)
Change in Assumptions/Methods/EGWP	6/30/2018	23	1,009,960	1,017,381	68,851
FY18 Gain	6/30/2018	23	(2,148,478)	(2,164,265)	(146,466)
Change in Assumptions	6/30/2019	24	126,754	127,319	8,410
FY19 Gain	6/30/2019	24	(155,028)	(155,719)	(10,286)
Change in Assumptions	6/30/2020	25	200,955	200,955	12,976
FY20 Gain	6/30/2020	25	(2,842,610)	(2,842,610)	(183,552)
Total				**$(18,041,869)**	**$ (1,084,030)**

[1] The pension and healthcare split was done based on the ratio of unfunded actuarial accrued liability as of June 30, 2006.

Schedule of Past Service Cost Amortizations - Total

Layer	Amortization Period: Date Created	Amortization Period: Years Remaining	Balances: Initial	Balances: Outstanding	Beginning-of-Year Payment
Initial Unfunded Liability	6/30/2002	7	$ 8,159,706	$ 6,100,093	$ 990,780
FY03/04 Loss	6/30/2004	9	1,189,728	1,016,529	133,855
Revaluation of Liabilities	6/30/2005	10	12,683,100	11,354,624	1,373,521
FY05/06 Loss	6/30/2006	11	25,304,501	23,502,317	2,637,641
FY07 Loss	6/30/2007	12	554,648	530,378	55,676
Change in Assumptions	6/30/2008	13	789,072	772,377	76,356
FY08 Gain	6/30/2008	13	(43,026,335)	(42,115,935)	(4,163,543)
FY09 Loss	6/30/2009	14	22,174,809	22,090,171	2,068,513
Change in Assumptions	6/30/2010	15	15,983,177	16,123,883	1,437,222
FY10 Loss	6/30/2010	15	4,544,124	4,584,129	408,612
FY11 Loss	6/30/2011	16	7,948,293	8,102,417	690,446
Change in Assumptions	6/30/2012	17	353,605	362,871	29,673
FY12 Loss	6/30/2012	17	6,400,161	6,567,904	537,074
FY13 Loss	6/30/2013	18	7,259,756	7,230,959	569,287
Change in Assumptions	6/30/2014	19	4,992,156	5,142,129	390,915
FY14 Gain	6/30/2014	19	(17,801,450)	(18,336,249)	(1,393,957)
FY15 Gain	6/30/2015	20	(4,742,702)	(4,874,220)	(358,743)
Change in Method	6/30/2016	21	(3,567,789)	(3,649,854)	(260,684)
FY16 Gain	6/30/2016	21	(10,358,334)	(10,596,591)	(756,841)
FY17 Gain	6/30/2017	22	(1,723,651)	(1,751,447)	(121,650)
Change in Assumptions/Methods/EGWP	6/30/2018	23	11,353,743	11,437,176	774,006
FY18 Gain	6/30/2018	23	(14,244,897)	(14,349,577)	(971,102)
Change in Assumptions	6/30/2019	24	(14,649,136)	(14,714,516)	(971,931)
FY19 Loss	6/30/2019	24	3,189,531	3,203,766	211,616
Change in Assumptions	6/30/2020	25	(21,403,298)	(21,403,298)	(1,382,045)
FY20 Loss	6/30/2020	25	2,582,095	2,582,095	166,730
Total				**$ (1,087,869)**	**$ 2,171,427**

Section 1.3: Actuarial Gain/(Loss) for FY20

	Pension	Healthcare	Total
1. Expected Actuarial Accrued Liability			
a. Actuarial Accrued Liability as of June 30, 2019	$ 221,159,289	$ 18,089,100	$ 239,248,389
b. Normal Cost	6,077,783	819,372	6,897,155
c. Interest on (a) and (b) at 7.38%	16,770,096	1,395,445	18,165,541
d. Employer Group Waiver Plan	0	108,886	108,886
e. Benefit Payments	(14,178,500)	(1,267,667)	(15,446,167)
f. Refund of Contributions	0	0	0
g. Interest on (d) thru (f) at 7.38%, adjusted for timing	(557,529)	(41,998)	(599,527)
h. Assumptions/Methods Changes	(21,604,253)	200,955	(21,403,298)
i. Expected Actuarial Accrued Liability as of June 30, 2020 (a) + (b) + (c) + (d) + (e) + (f) + (g) + (h)	$ 207,666,886	$ 19,304,093	$ 226,970,979
2. Actual Actuarial Accrued Liability as of June 30, 2020	211,742,043	16,763,770	228,505,813
3. Liability Gain/(Loss), (1)(i) - (2)	**$ (4,075,157)**	**$ 2,540,323**	**$ (1,534,834)**
4. Expected Actuarial Asset Value			
a. Actuarial Value of Assets as of June 30, 2019	$ 186,117,830	$ 33,319,896	$ 219,437,726
b. Interest on (a) at 7.38%	13,735,496	2,459,008	16,194,504
c. Employee Contributions	838,676	0	838,676
d. Employer Contributions	6,117,144	730,363	6,847,507
e. State Appropriation	5,010,000	0	5,010,000
f. Employer Group Waiver Plan	0	108,886	108,886
g. Interest on (c) thru (f) at 7.38%, adjusted for timing	621,839	30,417	652,256
h. Benefit Payments	(14,178,500)	(1,267,667)	(15,446,167)
i. Refund of Contributions	0	0	0
j. Administrative Expenses	(106,618)	(29,092)	(135,710)
k. Interest on (h) thru (j) at 7.38%, adjusted for timing	(561,393)	(46,999)	(608,392)
l. Expected Actuarial Asset Value as of June 30, 2020 (a) + (b) + (c) + (d) + (e) + (f) + (g) + (h) + (i) + (j) + (k)	$ 197,594,474	$ 35,304,812	$ 232,899,286
5. Actual Actuarial Asset Value as of June 30, 2020	194,788,043	34,805,639	229,593,682
6. Actuarial Asset Value Gain/(Loss), (5) - (4)(l)	**$ (2,806,431)**	**$ (499,173)**	**$ (3,305,604)**
7. Total Actuarial Gain/(Loss), (3) + (6)	**$ (6,881,588)**	**$ 2,041,150**	**$ (4,840,438)**
8. Contribution Gain/(Loss)	**$ 1,501,863**	**$ 808,412**	**$ 2,310,275**
9. Administrative Expense Gain/(Loss)	**$ (44,980)**	**$ (6,952)**	**$ (51,932)**
10. FY20 Gain/(Loss), (7) + (8) + (9)	**$ (5,424,705)**	**$ 2,842,610**	**$ (2,582,095)**

Section 1.4: Development of Change in Unfunded Liability During FY20

	Pension	Healthcare	Total
1. 2019 Unfunded Liability	$ 35,041,459	$ (15,230,796)	$ 19,810,663
a. Interest on Unfunded Liability at 7.38%	$ 2,586,060	$ (1,124,032)	$ 1,462,028
b. Normal Cost	6,077,783	819,372	6,897,155
c. Employee Contributions	(838,676)	0	(838,676)
d. Employer Contributions	(6,117,144)	(730,363)	(6,847,507)
e. State Appropriation	(5,010,000)	0	(5,010,000)
f. Administrative Expenses	106,618	29,092	135,710
g. Interest on (b) thru (f) at 7.38%, adjusted for timing	(169,435)	35,053	(134,382)
h. Assumptions/Methods Changes	(21,604,253)	200,955	(21,403,298)
i. Expected Change in Unfunded Liability During FY20 (a) + (b) + (c) + (d) + (e) + (f) + (g) + (h)	$ (24,969,047)	$ (769,923)	$ (25,738,970)
2. Expected 2020 Unfunded Liability, (1) + (1)(i)	$ 10,072,412	$ (16,000,719)	$ (5,928,307)
a. Liability (Gain)/Loss During FY20	$ 4,075,157	$ (2,540,323)	$ 1,534,834
b. Actuarial Assets (Gain)/Loss During FY20	2,806,431	499,173	3,305,604
c. Total Actuarial (Gain)/Loss During FY20	$ 6,881,588	$ (2,041,150)	$ 4,840,438
3. Actual 2020 Unfunded Liability, (2) + (2)(c)	$ 16,954,000	$ (18,041,869)	$ (1,087,869)

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	$ 73,483,475	$ 72,660,197	98.9%	$ 823,278
June 30, 2002	71,843,615	63,683,909	88.6%	8,159,706
June 30, 2004	80,052,559	70,455,634	88.0%	9,596,925
June 30, 2006	127,725,758	79,710,103	62.4%	48,015,655
June 30, 2007	133,988,906	84,773,226	63.3%	49,215,680
June 30, 2008	148,737,880	141,235,655	95.0%	7,502,225
June 30, 2009	156,679,506	127,173,616	81.2%	29,505,890
June 30, 2010	184,828,106	134,694,195	72.9%	50,133,911
June 30, 2011	194,831,317	136,546,204	70.1%	58,285,113
June 30, 2012	198,922,147	133,706,032	67.2%	65,216,115
June 30, 2013	209,088,146	136,738,696	65.4%	72,349,450
June 30, 2014	211,638,218	152,078,765	71.9%	59,559,453
June 30, 2015	223,465,344	168,991,184	75.6%	54,474,160
June 30, 2016	221,279,249	181,343,343	82.0%	39,935,906
June 30, 2017	233,547,391	196,344,239	84.1%	37,203,152
June 30, 2018	243,406,539	210,357,363	86.4%	33,049,176
June 30, 2019	239,248,389	219,437,726	91.7%	19,810,663
June 30, 2020	228,505,813	229,593,682	100.5%	(1,087,869)

Section 2: Plan Assets

Section 2.1: Summary of Fair Value of Assets

As of June 30, 2020	Pension	Healthcare	Total	Allocation Percent
Cash and Short-Term Investments				
- Cash and Cash Equivalents	$ 2,148,409	$ 359,625	$ 2,508,034	1.1%
- Subtotal	$ 2,148,409	$ 359,625	$ 2,508,034	1.1%
Fixed Income Investments				
- Domestic Fixed Income Pool	$ 40,901,403	$ 7,376,882	$ 48,278,285	21.6%
- International Fixed Income Pool	0	0	0	0.0%
- Tactical Fixed Income Pool	0	0	0	0.0%
- High Yield Pool	0	0	0	0.0%
- Treasury Inflation Protection Pool	0	0	0	0.0%
- Emerging Debt Pool	0	0	0	0.0%
- Subtotal	$ 40,901,403	$ 7,376,882	$ 48,278,285	21.6%
Equity Investments				
- Domestic Equity Pool	$ 51,520,155	$ 9,292,639	$ 60,812,794	27.2%
- International Equity Pool	29,397,287	5,302,359	34,699,646	15.5%
- Private Equity Pool	23,312,273	4,204,811	27,517,084	12.3%
- Emerging Markets Equity Pool	6,147,320	1,108,786	7,256,106	3.2%
- Alternative Equity Strategies	10,254,995	1,849,683	12,104,678	5.4%
- Subtotal	$ 120,632,030	$ 21,758,278	$ 142,390,308	63.8%
Other Investments				
- Real Estate Pool	$ 11,604,002	$ 2,097,294	$ 13,701,296	6.1%
- Other Investments Pool	13,892,173	2,505,717	16,397,890	7.3%
- Absolute Return Pool	0	0	0	0.0%
- Other Assets	0	3,076	3,076	0.0%
- Subtotal	$ 25,496,175	$ 4,606,087	$ 30,102,262	13.5%
Total Cash and Investments	$ 189,178,017	$ 34,100,872	$ 223,278,889	100.0%
Net Accrued Receivables	666,008	(64,369)	601,639	
Net Assets	$ 189,844,025	$ 34,036,503	$ 223,880,528	

Section 2.2: Changes in Fair Value of Assets During FY19

Fiscal Year 2019	Pension	Healthcare	Total
1. Fair Value of Assets as of June 30, 2018	$ 176,794,969	$ 31,497,603	$ 208,292,572
2. Additions:			
a. Employee Contributions	$ 813,374	$ 0	$ 813,374
b. Employer Contributions	5,347,675	591,397	5,939,072
c. State Appropriation	4,909,000	0	4,909,000
d. Interest and Dividend Income	3,305,189	589,436	3,894,625
e. Net Appreciation / Depreciation in Fair Value of Investments	7,216,458	1,324,956	8,541,414
f. Employer Group Waiver Plan	0	96,542	96,542
g. Other	0	2,291	2,291
h. Total Additions	$ 21,591,696	$ 2,604,622	$ 24,196,318
3. Deductions:			
a. Medical Benefits	$ 0	$ 978,813	$ 978,813
b. Retirement Benefits	13,627,946	0	13,627,946
c. Refund of Contributions	0	0	0
d. Investment Expenses	73,807	13,136	86,943
e. Administrative Expenses	59,094	17,950	77,044
f. Total Deductions	$ 13,760,847	$ 1,009,899	$ 14,770,746
4. Fair Value of Assets as of June 30, 2019	$ 184,625,818	$ 33,092,326	$ 217,718,144
5. Approximate Fair Value Investment Return Rate during FY19 Net of Investment Expenses	6.0%	6.1%	6.0%

Section 2.3: Changes in Fair Value of Assets During FY20

Fiscal Year 2020	Pension	Healthcare	Total
1. Fair Value of Assets as of June 30, 2019	$ 184,625,818	$ 33,092,326	$ 217,718,144
2. Additions:			
a. Employee Contributions	$ 838,676	$ 0	$ 838,676
b. Employer Contributions	6,117,144	730,363	6,847,507
c. State Appropriation	5,010,000	0	5,010,000
d. Interest and Dividend Income	2,862,234	510,170	3,372,404
e. Net Appreciation / Depreciation in Fair Value of Investments	5,220,577	962,611	6,183,188
f. Employer Group Waiver Plan	0	108,886	108,886
g. Other	0	23,956	23,956
h. Total Additions	$ 20,048,631	$ 2,335,986	$ 22,384,617
3. Deductions:			
a. Medical Benefits	$ 0	$ 1,267,667	$ 1,267,667
b. Retirement Benefits	14,178,500	0	14,178,500
c. Refund of Contributions	0	0	0
d. Investment Expenses	545,306	95,050	640,356
e. Administrative Expenses	106,618	29,092	135,710
f. Total Deductions	$ 14,830,424	$ 1,391,809	$ 16,222,233
4. Fair Value of Assets as of June 30, 2020	$ 189,844,025	$ 34,036,503	$ 223,880,528
5. Approximate Fair Value Investment Return Rate during FY20 Net of Investment Expenses	4.1%	4.3%	4.1%

Section 2.4: Development of Actuarial Value of Assets

Investment gains and losses are recognized 20% per year over 5 years. In no event may valuation assets be less than 80% or more than 120% of fair value as of the current valuation date.

	Pension	Healthcare	Total
1. Deferral of Investment Gain / (Loss) for FY20			
a. Fair Value of Assets as of June 30, 2019	$ 184,625,818	$ 33,092,326	$ 217,718,144
b. Contributions	11,965,820	730,363	12,696,183
c. Employer Group Waiver Plan	0	108,886	108,886
d. Benefit Payments	14,178,500	1,267,667	15,446,167
e. Administrative Expenses	106,618	29,092	135,710
f. Actual Investment Return (net of investment expenses)	7,537,505	1,401,687	8,939,192
g. Expected Return Rate (net of investment expenses)	7.38%	7.38%	7.38%
h. Expected Return, Weighted for Timing	13,685,832	2,425,632	16,111,464
i. Investment Gain / (Loss) for the Year, (f) - (h)	(6,148,327)	(1,023,945)	(7,172,272)
2. Actuarial Value as of June 30, 2020			
a. Fair Value as of June 30, 2020	$ 189,844,025	$ 34,036,503	$ 223,880,528
b. Deferred Investment Gain / (Loss)	(4,944,018)	(769,136)	(5,713,154)
c. Preliminary Actuarial Value as of June 30, 2020, (a) - (b)	194,788,043	34,805,639	229,593,682
d. Upper Limit: 120% of Fair Value as of June 30, 2020	227,812,830	40,843,804	268,656,634
e. Lower Limit: 80% of Fair Value as of June 30, 2020	151,875,220	27,229,202	179,104,422
f. Actuarial Value at June 30, 2020, (c) limited by (d) and (e)	194,788,043	34,805,639	229,593,682
3. Ratio of Actuarial Value of Assets to Fair Value of Assets	102.6%	102.3%	102.6%
4. Approximate Actuarial Value Investment Return Rate during FY20 Net of Investment Expenses	5.9%	5.9%	5.9%

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

Pension				
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	$ (12,208,288)	$ (9,766,632)	$ (2,441,656)	$ 0
June 30, 2017	7,229,597	4,337,757	1,445,920	1,445,920
June 30, 2018	292,590	117,036	58,518	117,036
June 30, 2019	(2,647,188)	(529,438)	(529,438)	(1,588,312)
June 30, 2020	(6,148,327)	0	(1,229,665)	(4,918,662)
Total	**$ (13,481,616)**	**$ (5,841,277)**	**$ (2,696,321)**	**$ (4,944,018)**

Healthcare				
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	$ (2,359,113)	$ (1,887,292)	$ (471,821)	$ 0
June 30, 2017	1,282,441	769,464	256,488	256,489
June 30, 2018	98,500	39,400	19,700	39,400
June 30, 2019	(409,783)	(81,957)	(81,957)	(245,869)
June 30, 2020	(1,023,945)	0	(204,789)	(819,156)
Total	**$ (2,411,900)**	**$ (1,160,385)**	**$ (482,379)**	**$ (769,136)**

Total				
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	$ (14,567,401)	$ (11,653,924)	$ (2,913,477)	$ 0
June 30, 2017	8,512,038	5,107,221	1,702,408	1,702,409
June 30, 2018	391,090	156,436	78,218	156,436
June 30, 2019	(3,056,971)	(611,395)	(611,395)	(1,834,181)
June 30, 2020	(7,172,272)	0	(1,434,454)	(5,737,818)
Total	**$ (15,893,516)**	**$ (7,001,662)**	**$ (3,178,700)**	**$ (5,713,154)**

Section 2.5: Historical Asset Rates of Return

	Actuarial Value		Fair Value	
Year Ending	Annual	Cumulative*	Annual	Cumulative*
June 30, 2005	8.0%	8.0%	8.0%	8.0%
June 30, 2006	11.0%	9.5%	11.0%	9.5%
June 30, 2007	10.2%	9.7%	18.1%	12.3%
June 30, 2008	7.4%	9.1%	(4.8%)	7.7%
June 30, 2009	(9.7%)	5.1%	(20.6%)	1.4%
June 30, 2010	8.7%	5.7%	10.6%	2.8%
June 30, 2011	5.0%	5.6%	20.8%	5.2%
June 30, 2012	0.7%	5.0%	0.1%	4.6%
June 30, 2013	3.6%	4.8%	12.3%	5.4%
June 30, 2014	12.2%	5.5%	18.3%	6.6%
June 30, 2015	10.8%	6.0%	3.0%	6.3%
June 30, 2016	6.6%	6.0%	(0.5%)	5.7%
June 30, 2017	8.3%	6.2%	13.0%	6.3%
June 30, 2018	8.1%	6.3%	8.3%	6.4%
June 30, 2019	5.7%	6.3%	6.0%	6.4%
June 30, 2020	5.9%	6.3%	4.1%	6.2%

* Cumulative since fiscal year ending June 30, 2005

Section 3: Member Data

Section 3.1: Summary of Members Included

As of June 30	2012	2014	2016	2018	2020
Active Members					
1. Number	69	76	76	71	72
2. Average Age	57.83	57.65	58.80	57.53	55.03
3. Average Service	9.04	8.70	9.39	9.49	6.83
4. Average Entry Age	48.79	48.95	49.41	48.04	48.20
5. Average Annual Earnings	$ 171,060	$ 175,964	$ 178,903	$ 182,045	$ 182,739
6. Number Vested	43	48	54	51	36
7. Percent Who Are Vested	62.3%	63.2%	71.1%	71.8%	50.0%
Retirees, Disabilitants, and Beneficiaries					
1. Number	108	108	109	125	144
2. Average Age	70.95	72.09	73.34	73.71	73.98
3. Average Monthly Pension Benefit	$ 7,774	$ 8,141	$ 8,529	$ 8,291	$ 8,305
Vested Terminations (vested at termination, not refunded contributions, or commenced benefit)					
1. Number	5	4	3	3	2
2. Average Age	52.28	53.53	57.35	59.05	55.87
3. Average Monthly Pension Benefit	$ 5,937	$ 5,704	$ 7,017	$ 7,623	$ 6,305
Non-Vested Terminations (not vested at termination, not refunded contributions)					
1. Number	0	0	0	0	1
2. Average Account Balance	$ 0	$ 0	$ 0	$ 0	$ 66,828
Total Number of Members	**182**	**188**	**188**	**199**	**219**

As of June 30, 2020	Retirees
Summary of Retiree Medical Data Received	
1. Retiree records on pension data	144
2. Remove duplicates on pension data	(5)
3. Valued in a different retiree healthcare plan	(49)
4. Records without medical coverage	(1)
5. Total	89

Section 3.2: Age and Service Distribution of Active Members

Annual Earnings by Age

Age	Number	Total Annual Earnings	Average Annual Earnings
0 - 19	0	$ 0	$ 0
20 - 24	0	0	0
25 - 29	0	0	0
30 - 34	0	0	0
35 - 39	2	350,568	175,284
40 - 44	9	1,653,852	183,761
45 - 49	10	1,814,700	181,470
50 - 54	17	3,084,996	181,470
55 - 59	12	2,147,736	178,978
60 - 64	11	2,029,176	184,471
65 - 69	11	2,076,144	188,740
70 - 74	0	0	0
75+	0	0	0
Total	**72**	**$ 13,157,172**	**$ 182,739**

Annual Earnings by Service

Years of Service	Number	Total Annual Earnings	Average Annual Earnings
0	8	$ 1,460,016	$ 182,502
1	14	2,598,336	185,595
2	6	1,051,704	175,284
3	5	923,844	184,769
4	3	584,616	194,872
0 - 4	**36**	**$ 6,618,516**	**$ 183,848**
5 - 9	16	2,914,848	182,178
10 - 14	12	2,205,480	183,790
15 - 19	6	1,051,704	175,284
20 - 24	2	366,624	183,312
25 - 29	0	0	0
30 - 34	0	0	0
35 - 39	0	0	0
40+	0	0	0
Total	**72**	**$ 13,157,172**	**$ 182,739**

Years of Service by Age

	Years of Service									
Age	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
20 - 24	0	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0	0
30 - 34	0	0	0	0	0	0	0	0	0	0
35 - 39	2	0	0	0	0	0	0	0	0	2
40 - 44	6	3	0	0	0	0	0	0	0	9
45 - 49	8	2	0	0	0	0	0	0	0	10
50 - 54	10	4	0	3	0	0	0	0	0	17
55 - 59	5	2	4	0	1	0	0	0	0	12
60 - 64	4	3	3	1	0	0	0	0	0	11
65 - 69	1	2	5	2	1	0	0	0	0	11
70 - 74	0	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	0	0
Total	**36**	**16**	**12**	**6**	**2**	**0**	**0**	**0**	**0**	**72**

Section 3.3: Member Data Reconciliation

Pension

		Inactive Members			
	Active Members	Due a Refund	Deferred Benefits	Benefit Recipients	Total
As of June 30, 2018	**71**	**0**	**3**	**125**	**199**
New Entrants	22	0	0	0	22
Rehires	0	0	0	0	0
Vested Terminations	(1)	0	1	0	0
Non-Vested Terminations	(1)	1	0	0	0
Refund of Contributions	0	0	0	0	0
Retirements	(18)	0	(2)	20	0
Deceased	(1)	0	0	(8)	(9)
New Beneficiaries	0	0	0	6	6
New QDROs	0	0	0	2	2
Transfers In/Out	0	0	0	0	0
Data Corrections	0	0	0	(1)	(1)
Net Change	**1**	**1**	**(1)**	**19**	**20**
As of June 30, 2020	**72**	**1**	**2**	**144**	**219**

Healthcare

		Inactive Members				
	Active Members	Retirees	Covered Spouses	Covered Children / Dependents	Deferred	Total Inactive Members
As of June 30, 2018	**56**	**78**	**40**	**5**	**3**	**126**
New Entrants	13	0	0	0	0	0
Rehires	0	0	0	0	0	0
Vested Terminations	(1)	0	0	0	1	1
Non-Vested Terminations	(1)	0	0	0	0	0
Refund of Contributions	0	0	0	0	0	0
Disability Retirements	0	0	0	0	0	0
Age Retirements	(10)	10	4	0	0	14
Deferred Retirements	0	2	0	0	(2)	0
Deceased	(1)	(5)	0	0	0	(5)
New Beneficiaries	0	3	(3)	0	0	0
Added Retiree Medical Coverage	0	0	0	0	0	0
Added Dependent Coverage	0	0	0	0	0	0
Dropped Retiree Medical Coverage	0	0	0	0	0	0
Dropped Dependent Coverage	0	0	(2)	(1)	0	(3)
Transfers In/Out	0	1	0	0	0	1
Net Change	**0**	**11**	**(1)**	**(1)**	**(1)**	**8**
As of June 30, 2020	**56**	**89**	**39**	**4**	**2**	**134**

Section 4: Basis of the Actuarial Valuation

Section 4.1: Summary of Plan Provisions

Effective Date

May 4, 1963, with amendments through June 30, 2020.

Administration of Plan

The Commissioner of Administration is responsible for administering the Judicial Retirement System (JRS). The Alaska Retirement Management Board is responsible for managing and investing the fund.

Membership

Membership in JRS is mandatory for all Supreme Court justices and Superior, District, and Appellate Court judges. The administrative director of the Court System may elect to participate in either JRS or Public Employees' Retirement System (PERS).

Credited Service

Members receive credit for each day of JRS employment. Earlier service as a magistrate or deputy magistrate before July 1, 1967 is covered under JRS. JRS members become vested in the plan after completing five years of credited service.

Member Contributions

Mandatory Contributions: Members hired after July 1, 1978, are required to contribute 7% of their base salaries. Contributions are required for a maximum of 15 years. Members hired before July 1, 1978 are not required to contribute.

Interest: Members' contributions earn 4.5% interest, compounded semiannually on June 30 and December 31.

Refund of Contributions: Non-vested members may receive a refund of their contributions and interest earned if they terminate employment. Refunded contributions, plus 7% indebtedness interest, must be repaid before appointment to retirement.

JRS contributions for terminated members may be attached to satisfy claims under Alaska Statute 09.38.065 or federal tax levies. Contributions that are attached to satisfy claims or tax levies may be reinstated at any time. The member is not required to return to JRS employment.

Retirement Benefits

Normal Retirement: Members are eligible for normal retirement at age 60 if they have at least five years of JRS service. Terminated, vested members may defer retirement and begin receiving normal retirement benefits when they reach age 60. Vesting is completion of at least five years of JRS service.

Early Retirement: Members are eligible for early retirement at any age if they have at least 20 years of service. Terminated, vested members may defer retirement and begin receiving early retirement benefits when they reach age 55. Under early retirement, members receive reduced benefits equal to the actuarial equivalent of their normal retirement benefits. Early benefits are based on the member's service and early retirement date.

Benefit Type: Lifetime monthly benefits are paid to the member. Upon the member's death, a survivor's benefit (see below) may be payable if the member has an eligible spouse or dependent children.

Benefit Calculations for Normal Retirement: 5% of authorized monthly base salary for each year of JRS service up to a maximum of 15 years. JRS retirement benefit payments are recalculated when the salary for the office held by the member at the time of retirement changes. The maximum JRS benefit payable to a member is 75% of the authorized salary.

Disability Benefits

Members are eligible to receive monthly disability benefits at any age if they become incapacitated and they have at least two years of JRS service. Disability benefits are calculated the same as normal retirement benefits.

Survivor's Benefits

Survivor's benefits are payable to the spouse of a member if they have been married for at least one year immediately preceding the member's death and the member has at least two years of JRS service. The monthly survivor's benefit is equal to the greater of:

a. 50% of the monthly benefit that the member would have received if retired at the time of death; or

b. 30% of the authorized monthly base salary if the member was not eligible to retire, or was entitled to less than 60% of the authorized monthly base salary.

If there is no eligible surviving spouse, the member's dependent children receive, in equal shares, 50% of the benefit under (a) or (b) until age 19, or age 23 and attending an accredited educational or technical institution on a full-time basis.

When there is both an eligible surviving spouse and dependent children residing in separate households, the spouse and children share equally the benefit under (a) or (b) while the children are under age 19, or age 23 and attending an accredited educational or technical institution on a full-time basis.

When there is no surviving spouse or dependent children, the member's contribution account balance, including interest earned, will be paid to the designated beneficiary.

Postemployment Healthcare Benefits

Medical benefits are provided at no cost to JRS members, their spouses, and dependents while monthly retirement, disability, and survivor benefits are being paid.

Participants in the defined benefit plan are covered under the following benefit design:

Plan Feature	Amounts
Deductible (single/family)	\$150 / \$450
Coinsurance (most services)	20%
Outpatient surgery/testing	0%
Maximum Out-of-Pocket (single/family, excluding deductible)	\$800 / \$2,400
Rx Copays (generic/brand/mail-order), does not apply to OOP max	\$4 / \$8 / \$0
Lifetime Maximum	\$2,000,000

The plan coordinates with Medicare on a traditional Coordination of Benefits Method. Starting in 2019, the prescription drug coverage is through a Medicare Part D EGWP arrangement.

Changes in Benefit Provisions Valued Since the Prior Valuation

There were no changes in benefit provisions since the prior valuation.

Section 4.2: Description of Actuarial Methods and Valuation Procedures

The funding method used in this valuation was adopted by the Board in October 2006. Changes in methods were adopted by the Board in January 2019 based on the experience study for the period July 1, 2013 to June 30, 2017. The asset smoothing method used to determine valuation assets was changed effective June 30, 2014.

Benefits valued are those delineated in Alaska State statutes as of the valuation date. Changes in State statutes effective after the valuation date are not taken into consideration in setting the assumptions and methods.

Actuarial Cost Method

Liabilities and contributions shown in the report are computed using the Entry Age Normal Actuarial Cost Method, level percent of pay.

Each year's difference between actual and expected unfunded actuarial accrued liability is amortized over 25 years as a level percent of expected payroll.

Projected pension and postemployment healthcare benefits were determined for all active members. Cost factors designed to produce annual costs as a constant percentage of each member's expected compensation in each year from the assumed entry age to the last age with a future benefit were applied to the projected benefits to determine the normal cost (the portion of the total cost of the plan allocated to the current year under the method). The normal cost is determined by summing intermediate results for active members and determining an average normal cost rate which is then related to the total payroll of active members. The actuarial accrued liability for active members (the portion of the total cost of the plan allocated to prior years under the method) was determined as the excess of the actuarial present value of projected benefits over the actuarial present value of future normal costs.

The actuarial accrued liability for retired members and their beneficiaries currently receiving benefits, terminated vested members and disabled members not yet receiving benefits was determined as the actuarial present value of the benefits expected to be paid. No future normal costs are payable for these 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 plan assets measured on the valuation date.

Under this method, experience gains or losses, i.e., decreases or increases in accrued liabilities attributable to deviations in experience from the actuarial assumptions, adjust the unfunded actuarial accrued liability.

Valuation of Assets

The actuarial asset value was initialized to equal Fair Value of Assets as of June 30, 2006. Beginning in FY07, the asset valuation method recognizes 20% of the gain or loss each year, for a period of five years. All assets are valued at fair 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 fair value of assets.

Changes in Methods Since the Prior Valuation

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

Valuation of Retiree Medical and Prescription Drug Benefits

This section outlines the detailed methodology used in the internal model developed by Buck to calculate the initial per capita claims cost rates for the JRS postemployment healthcare plan. Note that the methodology reflects the results of our annual experience rate update for the period from July 1, 2019 to June 30, 2020.

Base claims cost rates are incurred healthcare costs expressed as a rate per member per year. Ideally, claims cost rates should be derived for each significant component of cost that can be expected to require differing projection assumptions or methods (i.e., medical claims, prescription drug claims, administrative costs, etc). Separate analysis is limited by the availability and historical credibility of cost and enrollment data for each component of cost. This valuation reflects non-prescription claims separated by Medicare status, including eligibility for free Part A coverage. Prescription costs are analyzed separately as in prior valuations. Administrative costs are assumed in the final per capita claims cost rates used for valuation purposes, as described below. Analysis to date on Medicare Part A coverage is limited since Part A claim data is not available by individual, nor is this status incorporated into historical claim data.

<u>Benefits</u>

Medical, prescription drug, dental, vision and audio coverage is provided through the AlaskaCare Retiree Health Plan and is available to employees of the State and subdivisions who meet retirement criteria based on the retirement plan tier in effect at their date of hire. Health plan provisions do not vary by retirement tier or age, except for Medicare coordination for those Medicare-eligible. Dental, vision and audio claims (DVA) are excluded from data analyzed for this valuation because those are retiree-pay all benefits where rates are assumed to be self-supporting. Buck relies upon rates set by a third-party for the DVA benefits. Buck reviewed historical rate-setting information and views contribution rate adjustments made are not unreasonable.

<u>Administration and Data Sources</u>

The plan was administered by Wells Fargo Insurance Services (acquired by HealthSmart, in January 2012) from July 1, 2009 through December 31, 2013 and by Aetna effective January 1, 2014.

Claims incurred for the period from July 2018 through June 2020 (FY19 through FY20) were provided by the State of Alaska from reports extracted from their data warehouse, which separated claims by Medicare status. Monthly enrollment data for the same period was provided by Aetna.

Aetna also provided census information identifying Medicare Part B only participants. These participants are identified when hospital claims are denied by Medicare; Aetna then flags that participant as a Part B only participant. Buck added newly identified participants to our list of Medicare Part B only participants. Buck assumes that once identified as Part B only, that participant remains in that status until we are notified otherwise.

Aetna provided a snapshot file as of July 1, 2020 of retirees and dependents that included a coverage level indicator. The monthly enrollment data includes double coverage participants. These are participants whereby both the retiree and spouse are retirees from the State and both are reflected with Couple coverage in the enrollment. In this case, such a couple would show up as four members in the monthly enrollment (each would be both a retiree and a spouse). As a result, the snapshot census file was used to adjust the total member counts in the monthly enrollment reports to estimate the number of unique participants enrolled in coverage. Based on the snapshot files from the last two valuations, the total member count in the monthly enrollment reports needs to be reduced by approximately 13% to account for the number of participants with double coverage.

Aetna does not provide separate experience by Medicare status in standard reporting so the special reports mentioned above from the data warehouse were used this year to obtain that information and incorporate it into the per capita rate development for each year of experience (with corresponding weights applied in the final per capita cost).

Methodology

Buck projected historical claim data to FY21 for retirees using the following summarized steps:

1. Develop historical annual incurred claim cost rates – an analysis of medical costs was completed based on claims information and enrollment data provided by the State of Alaska and Aetna for each year in the experience period of FY19 through FY20.
   - Costs for medical services and prescriptions were analyzed separately, and separate trend rates were developed to project expected future medical and prescription costs for the valuation year (e.g. from the experience period up through FY21).
   - Because the reports provided reflected incurred claims, no additional adjustment was needed to determine incurred claims to be used in the valuation.
   - An offset for costs expected to be reimbursed by Medicare was incorporated beginning at age 65. Alaska retirees who do not have 40 quarters of Medicare-covered compensation do not qualify for Medicare Part A coverage free of charge. This is a relatively small and closed group. Medicare was applied to State employment for all employees hired after March 31, 1986. For the "no-Part A" individuals who are required to enroll in Medicare Part B, the State is the primary payer for hospital bills and other Part A services. Claim experience is not available separately for participants with both Medicare Parts A and B and those with Part B only. For Medicare Part B only participants, a lower average claims cost was applied to retirees covered by both Medicare Part A and B vs. retirees covered only by Medicare Part B based upon manual rate models that estimate the Medicare covered proportion of medical costs. To the extent that no-Part A claims can be isolated and applied strictly to the appropriate closed group, actuarial accrued liability will be more accurate.
   - Based on census data received from Aetna, less than 1% of the current retiree population was identified as having coverage only under Medicare Part B. We assume that 5% of actives hired before April 1, 1986 and current retirees who are not yet Medicare eligible will not be eligible for Medicare Part A.
   - Based upon a reconciliation of valuation census data to the snapshot eligibility files provided by Aetna as of July 1, 2019, and July 1, 2020, Buck adjusted member counts used for duplicate records where participants have double coverage; i.e. primary coverage as a retiree and secondary coverage as the covered spouse of another retiree. This is to reflect the total cost per distinct individual/member which is then applied to distinct members in the valuation census.
   - Buck understands that pharmacy claims reported do not reflect rebates. Based on actual pharmacy rebate information provided by Aetna for years through 2018 and Optum for January 2019 through June 2020, rebates were assumed to be 17% of prescription drug claims for FY19 and 19.5% of prescription drug claims for FY20.
2. Develop estimated EGWP reimbursements – Segal provided estimated 2021 EGWP subsidies, developed with the assistance of OptumRx. These amounts are applicable only to Medicare-eligible participants.
3. Adjust for claim fluctuation, anomalous experience, etc. – explicit adjustments are often made for anticipated large claims or other anomalous experience. FY19 and FY20 experience were compared to assess the impact of COVID-19 and whether an adjustment to FY20 claims was indicated for use in the June 30, 2020 valuation. A material decrease in medical claims during March 2020 to June 2020 was experienced due to COVID-19. Therefore, an adjustment was made for those months to adjust for the decrease that is not expected to continue in future years. There was an observed spike in prescription drug claims in March 2020; however, the FY20 prescription drug experience appears reasonable to use without adjustment for COVID-19. To adjust for the decrease in medical claims due to COVID-19 during the last 4 months of FY20, the per capita cost during the first 8 months was used as the basis for estimating claims that would have occurred in the absence of COVID-19. Due to group size and demographics, we did not make any additional large claim adjustments. We do blend

both Alaska plan-specific and national trend factors as described below. Buck compared data utilized to lag reports and quarterly plan experience presentations provided by the State and Aetna to assess accuracy and reasonableness of data.

4. Trend all data points to the projection period – project prior years' experience forward to FY21 for retiree benefits on an incurred claim basis. Trend factors derived from historical Alaska-specific experience and national trend factors are shown in the table in item 5 below.

5. Apply credibility to prior experience – adjust prior year's data by assigning weight to recent periods, as shown at the right of the table below. The Board approved a change in the weighting of experience periods beginning with the June 30, 2017 valuation as outlined below. Note also that we averaged projected plan costs using Alaska-specific trend factors and national trend factors, assigning 75% weight to Alaska-specific trends and 25% to national trends:

Alaska-Specific and National Average Weighted Trend from Experience Period to Valuation Year			
Experience Period	**Medical**	**Prescription**	**Weighting Factors**
FY19 to FY20	7.3% Pre-Medicare / 4.6% Medicare	1.2%	50%
FY20 to FY21	6.3% Pre-Medicare / 5.2% Medicare	7.6%	50%

Trend assumptions used for rate development are assessed annually and as additional/improved reporting becomes available, we will incorporate into rate development as appropriate.

6. Develop separate administration costs – no adjustments were made for internal administrative costs. Third party retiree plan administration fees for FY21 are based upon total fees projected to 2021 by Segal based on actual FY20 fees. The annual per participant per year administrative cost rate for medical and prescription benefits is $449.

Healthcare Reform

Healthcare Reform legislation passed on March 23, 2010 included several provisions with potential implications for the State of Alaska Retiree Health Plan liability. Buck evaluated the impact due to these provisions.

Because the State plan is retiree-only, and was in effect at the time the legislation was enacted, not all provisions of the health reform legislation apply to the State plan. Unlimited lifetime benefits and dependent coverage to age 26 are two of these provisions. We reviewed the impact of including these provisions, but there was no decision made to adopt them, and no requirement to do so.

Because Transitional Reinsurance fees are only in effect until 2016, we excluded these for valuation purposes.

The Further Consolidated Appropriations Act, 2020 passed in December 2019 repealed several healthcare-related taxes, including the Cadillac Tax. The valuation results included in the report reflect the repeal of this tax. The removal of the Cadillac Tax created an actuarial gain of approximately $0.2 million.

The Tax Cuts and Jobs Act passed in December 2017 included the elimination of the individual mandate penalty and changed the inflation measure for purposes of determining the limits for the High Cost Excise Tax to use chained CPI. It is our understanding the law does not directly impact other provisions of the ACA. While the nullification of the ACA's individual mandate penalty does not directly impact employer group health plans, it could contribute to the destabilization of the individual market and increase the number of uninsured. Such destabilization could translate to increased costs for employers. We have considered this when setting our healthcare cost trend assumptions and will continue to monitor this issue.

We have not identified any other specific provisions of healthcare reform or its potential repeal that would be expected to have a significant impact on the measured obligation. We will continue to monitor legislative activity.

Data

In accordance with actuarial standards, we note the following specific data sources and steps taken to value retiree medical benefits:

The Division of Retirement and Benefits provided pension valuation census data, which for people currently in receipt of healthcare benefits was supplemented by coverage data from the healthcare claims administrator (Aetna).

Certain adjustments and assumptions were made to prepare the data for valuation:

- Some records provided on the Aetna data were associated with a participant social security number not listed on the RIN-to-SSN translation file. We reconciled those participants with the pension valuation data as either a surviving spouse or a retiree in the appropriate plan based on account structure information in the Aetna data.
- All records provided with retiree medical coverage on the Aetna data were included in this valuation and we relied on the Aetna data as the source of medical coverage for current retirees and their dependents.
- Some records in the Aetna data were duplicates due to the double coverage (i.e. coverage as a retiree and as a spouse of another retiree) allowed under the plan. Records were adjusted for these members so that each member was only valued once. Any additional value of the double coverage (due to coordination of benefits) is small and reflected in the per capita costs.
- Covered children included in the Aetna data were valued until age 23, unless disabled. We assumed that those dependents over 23 were only eligible and valued due to being disabled.
- For individuals included in the pension data expecting a future pension, we valued health benefits starting at the same point that the pension benefit is assumed to start.

We are not aware of any other data issues that would be expected to have a material impact on the results and there are no unresolved matters related to the data.

The chart below shows the basis of setting the per capita claims cost assumption, which includes PERS, TRS, and JRS.

	Medical		Prescription Drugs (Rx)	
	Pre-Medicare	Medicare	Pre-Medicare	Medicare
A. Fiscal 2019				
1. Incurred Claims	$ 230,731,518	$ 80,855,220	$ 63,846,605	$ 183,281,273
2. Adjustments for Rx Rebates	0	0	(10,853,923)	(31,157,816)
3. Net incurred claims	$ 230,731,518	$ 80,855,220	$ 52,992,682	$ 152,123,456
4. Average Enrollment	20,625	42,843	20,625	42,843
5. Claim Cost Rate (3) / (4)	11,187	1,887	2,569	3,551
6. Trend to Fiscal 2021	1.141	1.101	1.089	1.089
7. Fiscal 2021 Incurred Cost Rate (5) x (6)	$ 12,762	$ 2,077	$ 2,798	$ 3,867
B. Fiscal 2020				
1. Incurred Claims	$ 229,531,664	$ 89,497,345	$ 64,442,660	$ 188,022,328
2. Adjustments for Rx Rebates	0	0	(12,566,319)	(36,664,354)
3. Net incurred claims	$ 229,531,664	$ 89,497,345	$ 51,876,341	$ 151,357,974
4. Average Enrollment	19,354	44,965	19,354	44,965
5. Claim Cost Rate (3) / (4)	11,860	1,990	2,680	3,366
6. Trend to Fiscal 2021	1.063	1.052	1.076	1.076
7. Fiscal 2021 Incurred Cost Rate (5) x (6)	$ 12,609	$ 2,094	$ 2,885	$ 3,623

	Medical		Prescription Drugs (Rx)	
	Pre-Medicare	Medicare	Pre-Medicare	Medicare
C. Incurred Cost Rate by Fiscal Year				
1. Fiscal 2019 A.(7)	12,762	2,077	2,798	3,867
2. Fiscal 2020 B.(7)	12,609	2,094	2,885	3,623
D. Weighting by Fiscal Year				
1. Fiscal 2019	50%	50%	50%	50%
2. Fiscal 2020	50%	50%	50%	50%
E. Fiscal 2021 Incurred Cost Rate				
1. Rate at Average Age C x D	$ 12,685	$ 2,086	$ 2,842	$ 3,745
2. Average Aging Factor	0.826	1.263	0.838	1.121
3. Rate at Age 65 (1) / (2)	$ 15,360	$ 1,651	$ 3,393	$ 3,340
F. Development of Part A&B and Part B Only Cost from Pooled Rate Above				
1. Part A&B Average Enrollment		44,568		
2. Part B Only Average Enrollment		398		
3. Total Medicare Average Enrollment B(4)		44,965		
4. Cost ratio for those with Part B only to those with Parts A&B		3.300		
5. Factor to determine cost for those with Parts A&B (2) / (3) x (4) + (1) / (3) x 1.00		1.020		
6. Medicare per capita cost for all participants: E(3)		$ 1,651		
7. Cost for those eligible for Parts A&B: (6) / (5)		$ 1,618		
8. Cost for those eligible for Part B only: (7) x (4)		$ 5,340		

Following the development of total projected costs, a distribution of per capita claims cost was developed. This was accomplished by allocating total projected costs to the population census used in the valuation. The allocation was done separately for each of prescription drugs and medical costs for the Medicare eligible and pre-Medicare populations. The allocation weights were developed using participant counts by age and assumed morbidity and aging factors. Results were tested for reasonableness based on historical trend and external benchmarks for costs paid by Medicare.

Below are the results of this analysis:

Distribution of Per Capita Claims Cost by Age
for the Period July 1, 2020 through June 30, 2021

Age	Medical and Medicare Parts A & B	Medical and Medicare Part B Only	Prescription Drug	Medicare EGWP Subsidy
45	$ 9,374	$ 9,374	$ 2,072	$ 0
50	10,605	10,605	2,461	0
55	11,999	11,999	2,923	0
60	13,576	13,576	3,149	0
65	1,618	5,340	3,340	1,003
70	1,876	6,191	3,688	1,107
75	2,174	7,177	4,071	1,223
80	2,401	7,923	3,971	1,192

Section 4.3: Summary of Actuarial Assumptions

The demographic and economic assumptions used in the June 30, 2020 valuation are described below. Unless noted otherwise, these assumptions were adopted by the Board in January 2019 based on the experience study for the period July 1, 2013 to June 30, 2017.

Investment Return

7.38% per year, net of investment expenses.

Salary Scale

0% per year for FY21 through FY24, and 3.62% per year thereafter.

Payroll Growth

2.75% per year (inflation + productivity).

Total Inflation

Total inflation as measured by the Consumer Price Index for urban and clerical workers for Anchorage is assumed to increase 2.50% annually.

Compensation and Benefit Limit Increases

Compensation is limited to the IRC 401(a)(17) amount, which was $285,000 for 2020. This limit is assumed to increase 2.50% each year thereafter.

Benefits are limited to the IRC 415 amount, which was $230,000 for 2020. This limit is assumed to increase 2.50% each year thereafter.

Benefit Payment Increases

Benefits for retired members are assumed to increase 0% per year for FY21 through FY24, and 3.62% per year thereafter.

Mortality (Pre-Commencement)

Mortality rates based upon the 2013-2017 actual experience.

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

Mortality (Post-Commencement)

Mortality rates based upon the 2013-2017 actual experience.

93% of male and 90% of female rates of RP-2014 white-collar healthy annuitant table, benefit-weighted, rolled back to 2006, and projected with MP-2017 generational improvement.

Turnover

Select rate of 3% for service less than 10 years, with an ultimate rate of 1% thereafter. Turnover rates cease once a member is eligible for retirement.

Disability

Incidence rates as shown in Table 1.

Post-disability mortality in accordance with the RP-2014 disabled table, benefit-weighted, rolled back to 2006, and projected with MP-2017 generational improvement.

Retirement

Retirement rates as shown in Table 2.

Deferred vested members are assumed to retire at age 60.

Form of Payment

Married members are assumed to elect the 50% Joint and Survivor benefit option. Single members are assumed to elect the Modified Cash Refund Annuity.

Spouse Age Difference

Males are assumed to be four years older than their wives. Females are assumed to be four years younger than husbands.

Percent Married for Pension

90% of male members and 70% of female members are assumed to be married at termination from active service.

Dependent Spouse Medical Coverage Election

Applies to members who do not have double medical coverage. 90% of male members and 70% of female members are assumed to be married and cover a dependent spouse.

Dependent Children

- Pension: None.
- Healthcare: Benefits for dependent children have been valued only for members currently covering their dependent children. These benefits are only valued through the dependent children’s age 23 (unless the child is disabled).

Contribution Refunds

0% of terminating members with vested benefits are assumed to have their contributions refunded. 100% of those with non-vested benefits are assumed to have their contributions refunded.

Imputed Data

Data changes from the prior year which are deemed to have an immaterial impact on liabilities and contribution rates are assumed to be correct in the current year’s client data. Non-vested terminations with appropriate refund dates are assumed to have received a full refund of contributions. Active members with missing salary and service are assumed to be terminated with status based on their vesting percentage.

Expenses

The investment return assumption is net of investment expenses. The Normal Cost as of June 30, 2020 was increased by the following amounts for administrative expenses:

- Pension: $83,000
- Healthcare: $24,000

Per Capita Claims Cost

Sample claims cost rates adjusted to age 65 for FY21 medical and prescription drugs are shown below:

	Medical	Prescription Drugs
Pre-Medicare	$ 15,360	$ 3,393
Medicare Parts A & B	$ 1,618	$ 3,340
Medicare Part B Only	$ 5,340	$ 3,340
Medicare Part D – EGWP	N/A	$ 1,003

Members are assumed to attain Medicare eligibility at age 65. All costs are for the 2021 fiscal year (July 1, 2020 – June 30, 2021).

The EGWP subsidy is assumed to increase in future years by the trend rates shown on the following pages. No future legislative changes or other events are anticipated to impact the EGWP subsidy. If any legislative or other changes occur in the future that impact the EGWP subsidy (which could either increase or decrease the plan's Actuarial Accrued Liability), those changes will be evaluated and quantified when they occur.

Third Party Administrator Fees

$449 per person per year; assumed to increase at 4.5% per year.

Medicare Part B Only

We assume that 5% of actives hired before April 1, 1986 and current retirees who are not yet Medicare eligible will not be eligible for Medicare Part A.

Healthcare Cost Trend

The table below shows the rate used to project the cost from the shown fiscal year to the next fiscal year. For example, 6.5% is applied to the FY21 pre-Medicare medical claims costs to get the FY22 medical claims costs.

	Medical Pre-65	Medical Post-65	Prescription Drugs / EGWP
FY21	6.5%	5.4%	7.5%
FY22	6.3%	5.4%	7.1%
FY23	6.1%	5.4%	6.8%
FY24	5.9%	5.4%	6.4%
FY25	5.8%	5.4%	6.1%
FY26	5.6%	5.4%	5.7%
FY27-FY40	5.4%	5.4%	5.4%
FY41	5.3%	5.3%	5.3%
FY42	5.2%	5.2%	5.2%
FY43	5.1%	5.1%	5.1%
FY44	5.1%	5.1%	5.1%
FY45	5.0%	5.0%	5.0%
FY46	4.9%	4.9%	4.9%
FY47	4.8%	4.8%	4.8%
FY48	4.7%	4.7%	4.7%
FY49	4.6%	4.6%	4.6%
FY50+	4.5%	4.5%	4.5%

For the June 30, 2014 valuation and later, the updated Society of Actuaries' Healthcare Cost Trend Model is used to project medical and prescription drug costs. This model estimates trend amounts that are projected out for 80 years. The model has been populated with assumptions that are specific to the State of Alaska.

Aging Factors

Age	Medical	Prescription Drugs
0 – 44	2.0%	4.5%
45 – 54	2.5%	3.5%
55 – 64	2.5%	1.5%
65 – 74	3.0%	2.0%
75 – 84	2.0%	-0.5%
85 – 94	0.3%	-2.5%
95+	0.0%	0.0%

Healthcare Participation

100% of system paid members and their spouses are assumed to elect healthcare benefits as soon as they are eligible.

Changes in Assumptions Since the Prior Valuation

Healthcare claim costs are updated annually as described in Section 4.2. The Further Consolidated Appropriations Act, 2020 that was signed in December 2019 made several changes, including the repeal of the Cadillac Tax. The repeal of the Cadillac Tax reduced the plan's liabilities as of June 30, 2020 by approximately $0.2 million. The salary and pensioner benefit increase assumptions were modified to be 0% per year for FY21 through FY24, and 3.62% per year thereafter. The amounts included in the Normal Cost for administrative expenses were changed from $71,050 to $83,000 for pension and from $19,250 to $24,000 for healthcare (based on the most recent two years of actual administrative expenses paid from plan assets).

Table 1: Disability Rates

Age	Rate	Age	Rate
20	0.017%	40	0.029%
21	0.017	41	0.030
22	0.018	42	0.032
23	0.018	43	0.034
24	0.018	44	0.037
25	0.019	45	0.041
26	0.019	46	0.044
27	0.019	47	0.048
28	0.020	48	0.052
29	0.020	49	0.056
30	0.021	50	0.060
31	0.021	51	0.065
32	0.022	52	0.072
33	0.022	53	0.080
34	0.023	54	0.089
35	0.024	55	0.100
36	0.025	56	0.115
37	0.026	57	0.134
38	0.027	58	0.153
39	0.028	59	0.180
		60+	0.000

Table 2: Retirement Rates

Age	Rate
< 59	3%
59	10
60	20
61	20
62	10
63	10
64	10
65	20
66	20
67	10
68	10
69	10
70+	100

Section 5: Actuarial Standard 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 plan. However, to the extent future experience deviates from the assumptions used, variations will occur in these calculated values. These variations create risk to the plan. Understanding the risks to the funding of the plan is important.

Actuarial Standard of Practice No. 51 (ASOP 51)[1] 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 7.38% expected in the actuarial valuation
- Contribution Risk – potential that the contribution actually made will be different than the actuarially determined contribution
- 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
- Salary Increase Risk – potential that future salaries will be different than expected in the actuarial valuation
- Inflation Risk – potential that the consumer price index (CPI) for urban wage earners and clerical workers for Anchorage is different than the 2.5% assumed in the valuation
- 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.

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[1] ASOP 51 does not apply to the healthcare portion of the plan. Accordingly, all figures in this section relate to the pension portion.

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 2.5 of this report. This historical experience illustrates how returns can vary over time.

Contribution Risk

There is a risk to the plan when the employer's and/or State's actual contribution amount and the actuarially determined contribution 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).
- As long as the Board consistently adopts the actuarially determined contributions, this risk is mitigated due to Alaska statutes requiring the State to contribute additional funds necessary to pay the total contributions adopted by the Board.

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 allocation 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.
- A 1% decrease in the long-term return on investment assumption will increase actuarial accrued liability by approximately 11%.

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 plan could increase.
- The mortality assumption for the plan mitigates this risk by assuming future improvement 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.
- The plan provides cost-of-living adjustments on retirement benefits (based on salary changes of sitting judges) that increase longevity risk, because members who live longer than expected will incur more benefit payment increases than expected and therefore increase costs.

Salary Increase Risk

Plan costs will be increased if actual salary increases are larger than expected.

- Higher-than-expected salary increases will produce higher benefits.
- The higher benefits may be partially offset by increased employee contributions due to higher salaries.
- If future payroll grows at a rate different than assumed, contributions as a percentage of payroll will be affected.

Inflation Risk

Inflation risk may be associated with the interaction of inflation with other assumptions, but this is not significant as a standalone assumption, and therefore is considered as part of the associated assumption risk instead of being discussed here.

Other Demographic Risk

The plan is subject to risks associated with other demographic assumptions (e.g., retirement and termination rates). 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 four-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 2.5 shows the volatility of asset returns over time.
- Section 3 includes various historical information showing how member census data has changed over time.

Plan Maturity Measures

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

Ratio of Retired Liability to Total Liability	June 30, 2018	June 30, 2020
1. Retiree and Beneficiary Accrued Liability	$ 156,622,684	$ 164,454,193
2. Total Accrued Liability	$ 226,559,580	$ 211,742,043
3. Ratio, (1) ÷ (2)	69.1%	77.7%

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.

Ratio of Cash Flow to Assets	FYE June 30, 2018	FYE June 30, 2020
1. Contributions	$ 11,360,677	$ 11,965,820
2. Benefit Payments	12,125,563	14,178,500
3. Cash Flow, (1) - (2)	$ (764,886)	$ (2,212,680)
4. Fair Value of Assets	$ 176,794,969	$ 189,844,025
5. Ratio, (3) ÷ (4)	(0.4%)	(1.2%)

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.

Contribution Volatility	June 30, 2018	June 30, 2020
1. Fair Value of Assets	$ 176,794,969	$ 189,844,025
2. Payroll	$ 13,392,864	$ 13,157,172
3. Asset to Payroll Ratio, (1) ÷ (2)	1,320.1%	1,442.9%
4. Accrued Liability	$ 226,559,580	$ 211,742,043
5. Liability to Payroll Ratio, (4) ÷ (2)	1,691.6%	1,609.3%

Plans that have higher asset-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 10% may experience twice the contribution volatility due to investment return volatility than a plan with an asset-to-payroll ratio of 5%. Plans that have higher liability-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to changes in liability. For example, if an assumption change increases the liability of two plans by the same percent, the plan with a liability-to-payroll ratio of 10% may experience twice the contribution volatility than a plan with a liability-to-payroll ratio of 5%.

Glossary of Terms

Actuarial Accrued Liability

Total accumulated cost to fund pension or postemployment 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 or postemployment 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 or postemployment 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.

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.

GASB 74 and 75

Governmental Accounting Standards Board Statement Number 74 amends Number 43 effective for the fiscal year beginning after June 15, 2016 and defines new financial reporting requirements for public postemployment benefit plans.

Governmental Accounting Standards Board Statement Number 75 amends Number 45 effective for fiscal years beginning after June 15, 2017 and defines new accounting and financial reporting requirements for employers sponsoring public postemployment benefit plans.

Normal Cost

That portion of the actuarial present value of benefits assigned to a particular year in respect to an individual participant 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.