ACTUARIAL SECTION

ALASKA DIVISION OF
Retirement
and Benefits

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 annual actuarial valuation results of the State of Alaska Teachers' Retirement System (TRS) as of June 30, 2020 performed by Buck Global, LLC (Buck). This report is an update to the draft report dated January 22, 2021, reflecting minor wording changes.

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 TRS 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 TRS as of June 30, 2020.

TRS 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 TRS is to pay required contributions that remain level as a percent of total TRS 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 Unfunded Actuarial Accrued Liability (UAAL) as a level percentage of total TRS compensation over a closed 25-year period as required by Alaska state statutes. The closed 25-year period was originally established effective June 30, 2014. Effective June 30, 2018, the Board adopted a 25-year layered UAAL amortization method as described in Section 5.2. The UAAL amortization continues to be on a level percent of pay basis. The compensation used to determine required contributions is the total compensation of all active members in TRS, including those hired after July 1, 2006 who are members of the Defined Contribution Retirement (DCR) Plan. 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% in FY35.

The Board and staff of the State of Alaska may use this report for the review of the operations of TRS. 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. A summary of the actuarial assumptions and methods used in this actuarial valuation is shown in Sections 5.2 and 5.3. We certify that the assumptions and methods described in Sections 5.2 and 5.3 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 TRS beginning with fiscal year ending June 30, 2014, and Statement No. 74 (GASB 74) was effective for TRS 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 4 of this report for the Statistical Section of the ACFR, as well as the summary of actuarial assumptions and analysis of financial experience for the Actuarial Section of the ACFR. Please see our separate GASB 67 and GASB 74 reports for other information needed for the ACFR.

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 TRS. See Section 6 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 5.2.

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 herby affirms his qualification to render opinions in such matters in accordance with the Qualification Standards of the American Academy of Actuaries.

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

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
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.

A. Actuarial Method – Entry Age Normal Cost

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

Effective June 30, 2018, the Board adopted a layered UAAL amortization method: Layer #1 equals the sum of (i) the UAAL at June 30, 2018 based on the 2017 valuation, plus (ii) the FY18 experience gain/loss. Layer #1 is amortized over the remainder of the 25-year closed period that was originally established in 2014[1]. Layer #2 equals the change in UAAL at June 30, 2018 due to the experience study and EGWP implementation. Layer #2 is amortized over a separate closed 25-year period starting in 2018. Future layers will be created each year based on the difference between actual and expected UAAL occurring that year, and will be amortized over separate closed 25-year periods. The UAAL amortization continues to be on a level percent of pay basis. State statutes allow the contribution rate to be determined on payroll for all members, defined benefit and defined contribution member payroll combined.

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 assumed retirement age 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.

[1] Layer #1 is referred to as "initial amount" in Section 1.2 and 1.3 of the Actuarial Valuation

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Description of Actuarial Methods and Valuation Procedures

B. Valuation of Assets

The actuarial asset value was reinitialized to equal Fair Value of Assets as of June 30, 2014. Beginning in FY15, 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.

C. 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 TRS 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.

Benefits

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.

Administration and Data Sources

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.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Description of Actuarial Methods and Valuation Procedures

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 this year 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

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Description of Actuarial Methods and Valuation Procedures

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.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Description of Actuarial Methods and Valuation Procedures

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.

D. 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 of the following 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 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 provision of health care 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.

E. 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.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Description of Actuarial Methods and Valuation Procedures

- 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.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Description of Actuarial Methods and Valuation Procedures

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

	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	-	-	(10,853,923)	(31,157,816)
3. Net incurred claims	$ 230,731,518	$ 80,855,220	$ 52,992,682	$ 152,123,457
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	-	-	(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)		44,966		
4. Cost ratio for those with Part B only to those with Part 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		

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Description of Actuarial Methods and Valuation Procedures

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	$ —
50	10,605	10,605	2,461	—
55	11,999	11,999	2,923	—
60	13,576	13,576	3,149	—
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

Changes in Methods Since the Prior Valuation

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

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Actuarial Assumptions and Changes in 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.

1.	Investment Return	7.38% per year, net of investment expenses.
2.	Salary Scale	Salary scale rates based upon the 2013-2017 actual experience (See Table 1). Inflation – 2.50% per year. Productivity – 0.25% per year.
3.	Payroll Growth	2.75% per year. (inflation + productivity).
4.	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.
5.	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. Deaths are assumed to result from occupations causes 15% of the time.
6.	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.
7.	Turnover	Select and ultimate rates based upon the 2013-2017 actual experience (see Table 2).
8.	Disability	Incidence rates based upon the 2013-2017 actual experience (see Table 3). Post-disability mortality in accordance with the RP-2014 disabled table, benefit-weighted, rolled back to 2006, and projected with MP-2017 generational improvement.
9.	Retirement	Retirement rates based upon the 2013-2017 actual experience (see Table 4). Deferred vested members are assumed to retire at their earliest unreduced retirement date. The modified cash refund annuity is valued as a three-year certain and life annuity.
10.	Spouse Age Difference	Males are assumed to be three years older than their wives. Females are assumed to be two years younger than husbands.
11.	Percent Married for Pension	85% of male members and 75% of female members are assumed to be married at termination from active service.
12.	Dependent Spouse Medical Coverage Election	Applies to members who do not have dual medical coverage. 65% of male members and 60% female members are assumed to be married and cover a dependent spouse.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

13. Dependent Children	Pension: For the participants who are assumed to be married, those between 25 and 45 are assumed to have two dependent children. 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).
14. 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.
15. 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.
16. Active Rehire Assumption	The Normal Cost used for determining contribution rates and in the projections includes a rehire assumption to account for anticipated rehires. The Normal Cost shown in the report includes the following assumptions (which were developed based on the 5 years of rehire loss experience through June 30, 2017). For projections, these assumptions were assumed to grade to zero uniformly over a 20-year period. – Pension: 15.57% – Healthcare: 12.03%
17. Re-Employment Option	All re-employed retirees are assumed to return to work under the Standard Option.
18. Active Data Adjustment	No adjustment was made to reflect participants who terminate employment before the valuation date and are subsequently rehired after the valuation date.
19. Alaska Cost-of-Living Adjustments (COLA)	Of those benefit recipients who are eligible for the COLA, 60% are assumed to remain in Alaska and receive the COLA.
20. Post-Retirement Pension Adjustment (PRPA)	50% and 75% of assumed inflation, or 1.25% and 1.875% respectively, is valued for the annual automatic PRPA as specified in the statute.
21. 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 (for projections, the percentage increase was assumed to remain constant in future years): – Pension: $3,003,000 – Healthcare: $1,362,000
22. Part-Time Status	Part-time employees are assumed to earn 0.75 years of credited service per year.
23. Sick Leave	4.5 days of unused sick leave for each year of service are assumed to be available to be credited once the member is retired, terminates or dies.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

24. Service — Total credited service is provided by the State. This service is assumed to be the only service that should be used to calculate benefits. Additionally, the State provides claimed service (including Bureau of Indian Affairs Service). Claimed service is used for vesting and eligibility purposes as described in Section 5.1.

25. Final Average Earnings — Final Average Earnings is provided on the data for active members. This amount is used as a minimum in the calculation of the average earnings in the future.

26. 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.

27. Third Party Administrator Fees — $449 per person per year; assumed to increase at 4.5% per year.

28. 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.

29. Health 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.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

Fiscal year	Medical pre-65	Medical post-65	Prescription Drugs / EGWP
2021	6.5%	5.4%	7.5%
2022	6.3	5.4	7.1
2023	6.1	5.4	6.8
2024	5.9	5.4	6.4
2025	5.8	5.4	6.1
2026	5.6	5.4	5.7
2027-2040	5.4	5.4	5.4
2041	5.3	5.3	5.3
2042	5.2	5.2	5.2
2043	5.1	5.1	5.1
2044	5.1	5.1	5.1
2045	5.0	5.0	5.0
2046	4.9	4.9	4.9
2047	4.8	4.8	4.8
2048	4.7	4.7	4.7
2049	4.6	4.6	4.6
2050+	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.

30. 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 +	—	—

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

31. Retired Member Contributions for Medical Benefits

Currently contributions are required for TRS members who are under age 60 and have less than 25 years of service. Eligible Tier 1 members are exempt from contribution requirements. Annual FY21 contributions based on monthly rates shown below for calendar 2021 are assumed based on the coverage category for current retirees. The composite rate shown is used for current active and inactive members in Tier 2 who are assumed to retire prior to age 60 with less than 25 years of service and who are not disabled. For dependent children, we value 1/3 of the annual retiree contribution to estimate the per child rate based upon the assumed number of children in rates where children are covered.

	Calendar 2021		Calendar 2020
Coverage category	Annual contribution	Monthly contribution	Monthly contribution
Retiree only	$ 8,448	704	741
Retiree and spouse	16,896	1,408	1,482
Retiree and child(ren)	11,940	995	1,047
Retiree and family	20,388	1,699	1,788
Composite	12,552	1,046	1,101

32. Trend Rate for Retired Member Medical Contribution

The table below shows the rate used to project the retired member medical contributions from the shown fiscal year to the next fiscal year. For example, 0.0% is applied to the FY21 retired member medical contributions to get the FY22 retired member medical contributions.

Trend Assumptions

Fiscal year:	
2021	—%
2022	—
2023 +	4.0

Graded trend rates for retired member medical contributions are consistent with the rates used for the June 30, 2019 valuation. Actual FY21 retired member medical contributions are reflected in the valuation.

33. Healthcare Participation

100% of system paid members and their spouses are assumed to elect healthcare benefits as soon as they are eligible. 20% of non-system paid members and their spouses are assumed to elect healthcare benefits as soon as they are eligible.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

34. Changes in Assumptions Since the Prior Valuation

Healthcare claim costs are updated annually as described in Section 5.2. Retired member contributions were updated to reflect the 5% decrease from CY20 to CY21. The amounts included in the Normal Cost for administrative expenses were changed from $3,034,000 to $3,003,000 for pension and from $1,439,000 to $1,362,000 for healthcare (based on the most recent two years of actual administrative expenses paid from plan assets).

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

Table 1
Alaska TRS
Salary Scale

Years of Service	Percent Increase
0	6.75%
1	6.25
2	5.75
3	5.25
4	4.75
5	4.25
6	3.75
7	3.65
8	3.55
9	3.45
10	3.35
11	3.25
12	3.15
13	3.05
14	2.95
15	2.85
16 +	2.75

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

Table 2
Alaska TRS
Turnover Rates

Select Rates of Turnover During the First 8 Years of Employment

Years of Service	Male	Female
0	20.40%	17.00%
1	20.40	17.00
2	16.80	14.00
3	14.40	12.00
4	12.00	10.00
5	10.80	9.00
6	9.00	7.50
7	7.20	6.00

Ultimate Rates of Turnover
After the First 8 Years of Employment

Age	Male	Female	Age	Male	Female
22	2.62%	3.79%	39	2.57%	3.74%
23	2.62	3.79	40	2.26	2.75
24	2.61	3.79	41	2.26	2.75
25	2.61	3.79	42	2.25	2.74
26	2.61	3.79	43	2.24	2.73
27	2.60	3.79	44	2.23	2.73
28	2.60	4.27	45	2.22	2.72
29	2.60	4.76	46	2.21	2.71
30	2.60	5.24	47	2.20	2.70
31	2.60	5.73	48	2.18	2.69
32	2.59	6.22	49	2.16	2.68
33	2.59	5.72	50	3.43	4.42
34	2.59	5.23	51	3.39	4.39
35	2.59	4.74	52	3.35	4.36
36	2.58	4.25	53	3.30	4.32
37	2.58	3.75	54	3.00	7.56
38	2.58	3.75	55+	2.00	5.00

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

Table 3
Alaska TRS Disability Table

Age	Male	Female
< 31	0.0337%	0.0612%
31	0.0337	0.0613
32	0.0337	0.0613
33	0.0342	0.0622
34	0.0347	0.0631
35	0.0353	0.0641
36	0.0357	0.0650
37	0.0362	0.0659
38	0.0371	0.0674
39	0.0379	0.0689
40	0.0387	0.0703
41	0.0395	0.0718
42	0.0403	0.0733
43	0.0423	0.0770
44	0.0443	0.0806
45	0.0464	0.0843
46	0.0483	0.0879
47	0.0504	0.0916
48	0.0536	0.0975
49	0.0569	0.1034
50	0.0601	0.1093
51	0.0634	0.1152
52	0.0666	0.1211
53	0.0746	0.1356
54	0.0826	0.1501

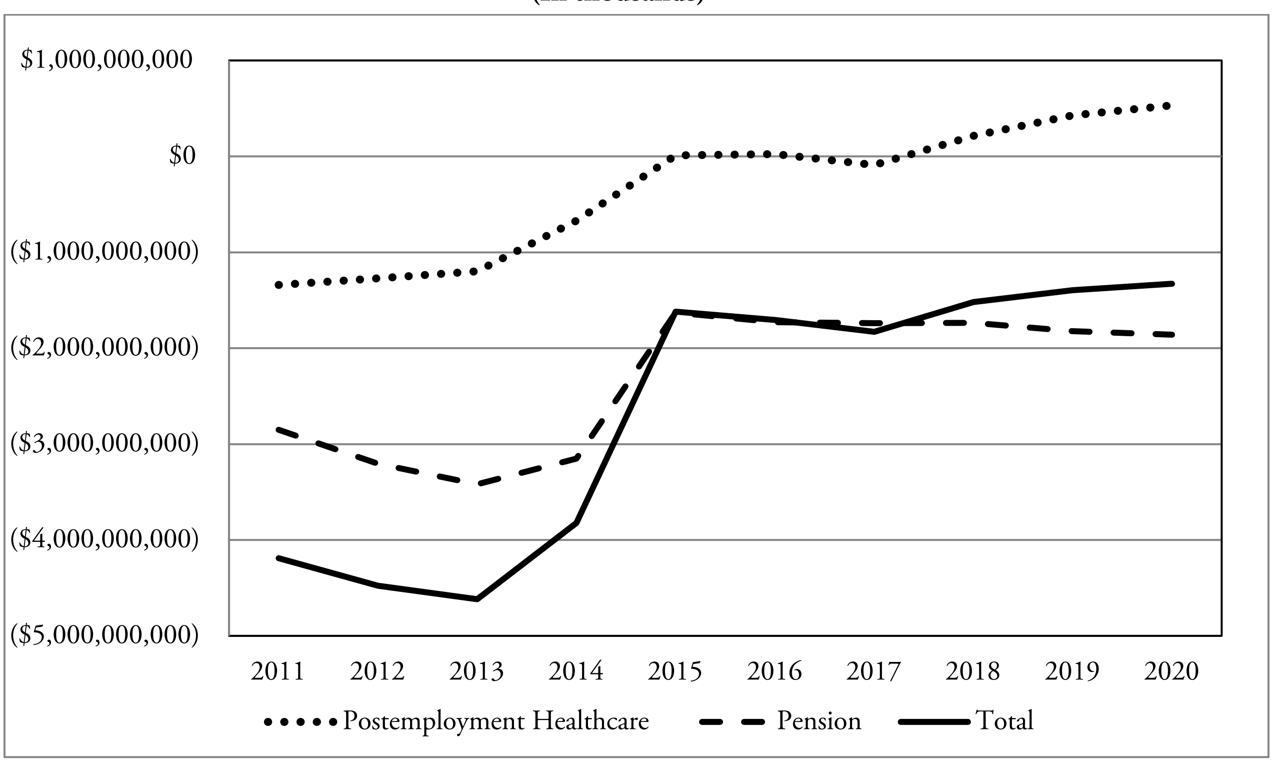
State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

Table 4
Alaska TRS Retirement Table

Age at Retirement	Retirement Rates: Reduced Male	Reduced Female	Unreduced Male	Unreduced Female
< 45	N/A	N/A	3.0%	3.0%
45	N/A	N/A	5.0	5.0
46	N/A	N/A	5.0	8.0
47	N/A	N/A	5.0	8.0
48	N/A	N/A	5.0	8.0
49	N/A	N/A	5.0	8.0
50	10.0%	10.0%	5.0	14.0
51	10.0	10.0	8.0	13.0
52	10.0	10.0	15.0	13.0
53	10.0	12.0	15.0	14.0
54	10.0	12.0	15.0	15.0
55	15.0	8.0	20.0	17.0
56	10.0	8.0	17.0	17.0
57	10.0	8.0	15.0	17.0
58	10.0	8.0	20.0	17.0
59	10.0	8.0	20.0	23.0
60	N/A	N/A	25.0	23.0
61	N/A	N/A	18.0	23.0
62	N/A	N/A	18.0	21.0
63	N/A	N/A	18.0	21.0
64	N/A	N/A	18.0	26.0
65	N/A	N/A	30.0	21.0
66	N/A	N/A	25.0	21.0
67	N/A	N/A	25.0	21.0
68	N/A	N/A	25.0	26.0
69	N/A	N/A	35.0	26.0
70	N/A	N/A	30.0	26.0
71	N/A	N/A	30.0	37.0
72	N/A	N/A	30.0	37.0
73	N/A	N/A	30.0	37.0
74	N/A	N/A	30.0	37.0
75-79	N/A	N/A	50.0	50.0
80+	N/A	N/A	100.0	100.0

Teachers' Retirement System Defined Benefit Retirement Plan Funding Excess/(Unfunded Liability) (In thousands)				
Actuarial Valuation Year Ended June 30	**Postemployment Healthcare**	**Pension**	**Total Funding Excess/ (Unfunded Liability)**	**Funded Ratio**
2011	$ (1,340,703)	$ (2,850,155)	$ (4,190,858)	54.1%
2012	(1,272,507)	(3,204,783)	(4,477,290)	52.1
2013	(1,198,791)	(3,419,240)	(4,618,031)	51.9
2014	(671,535)	(3,150,223)	(3,821,758)	61.2
2015	8,879	(1,629,073)	(1,620,194)	83.3
2016	23,868	(1,731,101)	(1,707,233)	82.8
2017	(90,291)	(1,740,690)	(1,830.981)	82.0
2018	214,559	(1,734,690)	(1,520,131)	84.7
2019	428,918	(1,824,089)	(1,395,171)	85.9
2020	531,608	(1,859,972)	(1,328,364)	86.6

10-YEAR TREND OF UNFUNDED LIABLITY
(In thousands)



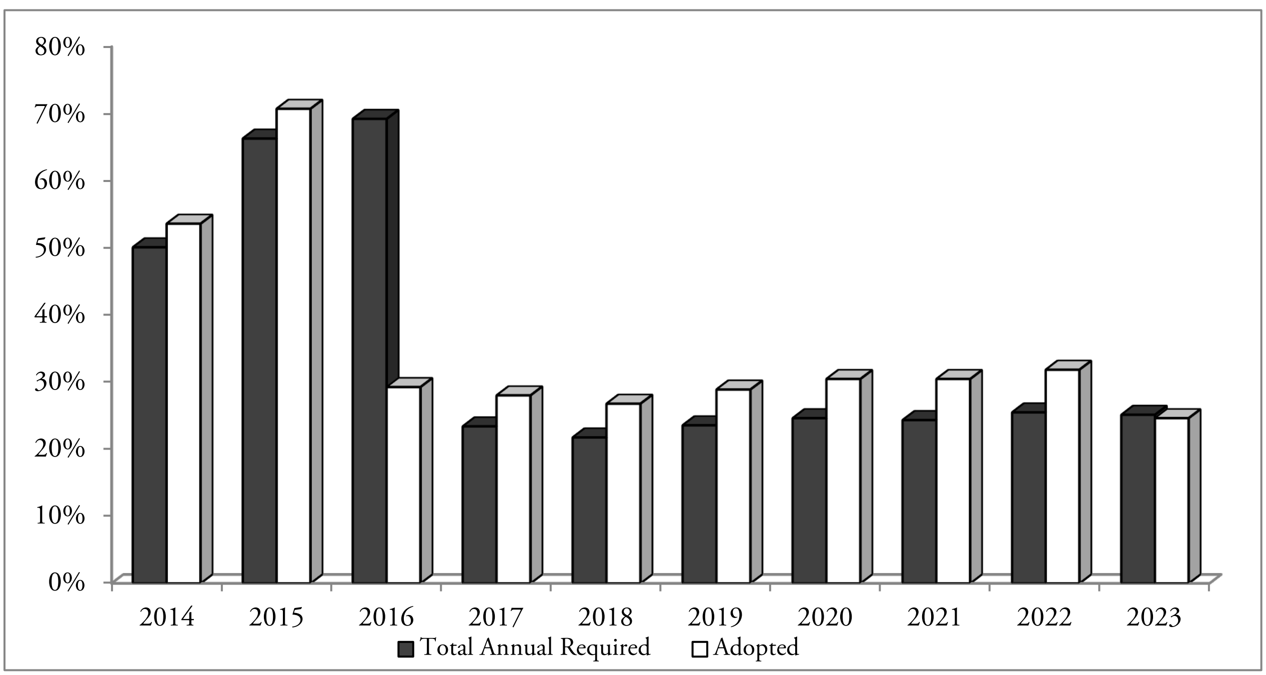
Teachers' Retirement System Defined Benefit Retirement Plan Employer Contribution Rates					
	Actuarially Determined				
Year Ended June 30	Actuarial Valuation Year Ended June 30	Normal Cost[1]	Past Service	Total Annual Required	Adopted
2014	2011	6.59%	43.51%	50.10%	53.62%
2015	2012	6.40	59.91	66.31	70.75
2016	2013	5.70	63.54	69.24	29.27
2017	2014	4.63	18.77	23.40	28.02
2018	2015	3.99	17.76	21.75	26.78
2019	2016	5.29	18.27	23.56	28.90
2020	2017	5.14	19.48	24.62	30.47
2021	2018	5.93	18.41	24.34	30.47
2022	2019	5.38	19.08	24.46	31.85
2023	2020	4.96	20.17	25.13	24.62

[1] Also referred to as the consolidated rate.

Beginning with the June 30, 2014 valuation, contribution rates for FY17 and beyond are determined using new methodology in accordance with 2014 legislation under HB 385 and SB 119, 2014 Alaska Laws, which changed the amortization methodology to a closed 25-year period as a level percentage of pay, and eliminated the time lag on the contribution rate calculation by using a 2-year year "roll-forward" approach and assuming 0% population growth. Investment gains and losses are recognized over a 5-year period beginning in FY15. Beginning with the June 30, 2018 valuation, the UAAL amortization was changed as described in Section 6.2.

Valuations are used to set contribution rates in future years.

10-YEAR COMPARISON OF AVERAGE EMPLOYER CONTRIBUTION RATES



Teachers' Retirement System Defined Benefit Retirement Plan Schedule of Active Member Valuation Data					
Valuation Date	Number	Annual Earnings (In thousands)	Annual Average Earnings	Percent Increase in Average Earnings	Number of Participating Employers
June 30, 2020	3,789	$343,146	$90,564	1.9 %	56
June 30, 2019	4,044	359,426	88,879	1.7	56
June 30, 2018	4,418	386,016	87,374	1.2	56
June 30, 2017	4,772	411,951	86,327	1.6	57
June 30, 2016	5,123	435,222	84,954	2.4	57
June 30, 2015	5,502	456,636	82,995	2.4	58
June 30, 2014	5,861	474,873	81,023	2.1	58
June 30, 2013	6,352	504,260	79,386	2.6	58
June 30, 2012	6,845	529,468	77,351	3.6	58
June 30, 2011	7,303	545,155	74,648	3.5	58

Teachers' Retirement System Defined Benefit Retirement Plan Schedule of Pension Benefit Recipients Added to and Removed from Rolls								
	Added to Rolls		Removed from Rolls		Rolls – End of Year			
Year Ended	No.*	Annual Pension Allowances*	No.*	Annual Pension Allowances*	No.	Annual Pension Allowances	Percent Increase/ (Decrease) in Annual Pension Allowances	Average Annual Pension Allowances
June 30, 2020	460	$17,641,920	262	$5,527,983	13,689	$499,745,440	2.5%	$36,507
June 30, 2019	468	18,004,896	254	871,684	13,491	487,631,503	3.64	36,145
June 30, 2018	555	21,924,986	261	6,926,129	13,277	470,498,291	3.29	35,437
June 30, 2017	487	17,151,684	230	7,736,025	12,983	455,499,434	2.11	35,084
June 30, 2016	530	18,364,581	222	6,144,109	12,726	446,083,775	2.82	35,053
June 30, 2015	888	34,120,658	220	3,531,501	12,418	433,863,303	7.59	34.938
June 30, 2014	226	5,964,256	181	(1,150,187)	11,750	403,274,146	1.80	34,321
June 30, 2013	576	19,387,542	172	1,652,575	11,705	396,159,703	4.69	33,845
June 30, 2012	473	17,104,564	188	(617,561)	11,301	378,424,736	4.91	33,486
June 30, 2011	564	19,546,369	146	1,464,766	11,016	360,702,611	5.28	32,744

*Numbers are estimated and include other internal transfers.

Teachers' Retirement System
Defined Benefit Retirement Plan
Analysis of Financial Experience

Change in Employer/State Contribution Rate Due to (Gains) and Losses in Actuarial Accrued Liabilities During the Last Five Fiscal Years Resulting from Differences Between Assumed Experience and Actual Experience

Type of (Gain) or Loss	Change in Employer/State Contribution Rate During Fiscal Year				
	2020	**2019**	**2018**	**2017**	**2016**
Health Claims (1)	(0.95)%	(2.51)%	(1.58)%	(2.32)%	0.00%
Salary Experience	(0.06)	(0.06)	(0.39)	(0.34)	(0.29)
Investment Experience	1.21	1.38	1.36	1.68	1.96
Demographic Experience and Miscellaneous	0.21	2.35	1.86	(1.18)	0.02
Contribution Shortfall	(0.36)	(0.17)	0.02	(0.18)	(0.46)
(Gain) or Loss During Year from Experience	0.05	0.99	1.27	(2.34)	1.23
Assumption/Method Changes and EGWP	—	—	(0.08)	3.41	1.66
System Benefit Changes	—	—	—	—	—
Composite (Gain) or Loss During Year	0.05	0.99	1.19	1.07	2.89
Beginning Total Employer/State Contribution Rate	24.98	23.99	22.80	21.73	18.84
Ending Valuation Year Total Employer/State Contribution Rate	25.03%	24.98%	23.99%	22.80%	21.73%
Fiscal Year Employer/State Contribution Rates	25.13%*	25.49%*	24.34%*	24.62%*	23.56%
Fiscal Year for Which Rate Applies	FY23	FY22	FY21	FY20	FY19

* Expected. Actual Rate to be determined.

(1) Prior to 2017, the health claims percentages include the effects of healthcare demographic experience gains/losses.

NOTE: In the second session of the 28th Alaska legislature, the legislature changed the actuarial methodology from level dollar amortization to level percent of pay. The June 30, 2013 PERS actuarial valuation report was not updated for this change, but specific revisions for the amortization change were presented to reflect the change in amortization. The change in the amortization resulted in an adjusted FY16 employer/state contribution rate of 24.48%.

Teachers' Retirement System
Defined Benefit Retirement Plan
Analysis of Financial Experience

Change in Employer/State Contribution Rate Due to (Gains) and Losses in Actuarial Accrued Liabilities During the Last Three Fiscal Years Resulting from Differences Between Assumed Experience and Actual Experience

Type of (Gain) or Loss	Change in Employer/State Contribution Rate During Fiscal Year					
	Pension			Healthcare		
	2020	2019	2018	2020	2019	2018
Health Claims [1]	N/A	N/A	N/A	(0.95)%	(2.51)%	(1.58)%
Salary Experience	(0.06)%	(0.06)%	(0.39)%	N/A	N/A	N/A
Investment Experience	0.83	0.93	0.91	0.38	0.45	0.45
Demographic Experience and Miscellaneous	(0.28)	0.75	0.37	0.49	1.60	1.49
Contribution Shortfall	(0.17)	(0.15)	(0.03)	(0.19)	(0.02)	0.05
(Gain) or Loss During Year From Experience	0.32	1.47	0.86	(0.27)	(0.48)	0.41
Assumption and Method Changes	—	—	(0.32)	—	—	0.24
System Benefit Changes	—	—	—	—	—	—
Composite (Gain) or Loss During Year	0.32	1.47	0.54	(0.27)	(0.48)	0.65
Beginning Total Employer/State Contribution Rate	21.41	19.94	19.40	3.57	4.05	3.40
Ending Valuation Year Total Employer/State Contribution Rate	21.73%	21.41%	19.94%	3.30%	3.57%	4.05%
Fiscal Year Employer/State Contribution Rates	22.41%*	22.51%*	20.94%*	2.72%*	2.98%*	3.40%*
Fiscal Year for Which Rate Applies	FY23	FY22	FY21	FY23	FY22	FY21

*Expected. Actual Rate to be determined.

[1] Prior to 2017, the health claims percentages include the effects of healthcare demographic experience gains/losses.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

1. Effective Date

July 1, 1955, with amendments through June 30, 2020. Chapter 97, 1990 Session Laws of Alaska, created a two-tier retirement system. Members who were first hired under TRS before July 1, 1990 (Tier 1) are eligible for different benefits than members hired after June 30, 1990 (Tier 2). Chapter 9, 2005 Session Laws of Alaska, closed the plan to new members hired after June 30, 2006.

2. Administration of Plan

The Commissioner of Administration or the Commissioner's designee is the administrator of the system. The Attorney General of the state is the legal counsel for the system and shall advise the administrator and represent the system in legal proceedings.

Prior to June 30, 2005, the Teachers' Retirement Board prescribed policies and adopted regulations and performed other activities necessary to carry out the provisions of the system. The Alaska State Pension Investment Board, Department of Revenue, Treasury Division was responsible for investing TRS funds.

On July 27, 2005, Senate Bill 141, enacted as Chapter 9, 2005 Session laws of Alaska, replaced the Teachers' Retirement Board and the Alaska State Pension Investment Board with the Alaska Retirement Management Board.

3. Employers Included

Currently, there are 56 employers participating in TRS, including the State of Alaska, 52 school districts, and three other eligible organizations.

4. Membership

Membership in TRS is mandatory for the following employees hired before July 1, 2006:

- certificated full-time and part-time elementary and secondary teachers, certificated school nurses, and certificated employees in positions requiring teaching certificates;
- positions requiring a teaching certificate as a condition of employment in the Department of Education and Early Development and the Department of Labor and Workforce Development;
- University of Alaska full-time and part-time teachers, and full-time administrative employees in positions requiring academic standing if approved by the TRS administrator;
- certain full-time or part-time teachers of Alaska Native language or culture who have elected to be covered under TRS;
- members on approved sabbatical leave under AS 14.20.310;
- certain State legislators who have elected to be covered under TRS; and

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

- a teacher who has filed for worker's compensation benefits due to an on-the-job assault and who, as a result of the physical injury, is placed on leave without pay.

Employees participating in the University of Alaska's Optional Retirement Plan or other retirement plans funded by the State are not covered by TRS.

Employees who work half-time in TRS and Public Employees' Retirement System (PERS) simultaneously are eligible for half-time TRS and PERS credit.

Senate Bill 141, signed into law on July 27, 2005, closes the plan effective July 1, 2006 to new members first hired on or after July 1, 2006.

5. Credited Service

TRS members receive a year of membership credit if they work a minimum of 172 days during the school year (July 1 through June 30 of the following year). Fractional credit is determined based on the number of days worked. Part-time members who work at least 50% of full-time receive membership credit for each day in proportion to full-time service. Credit is granted for all Alaskan public school service.

Members may claim other types of service, including:

- Outside teaching service in out-of-state schools or Alaska private schools (not more than ten years may be claimed);
- Military service (not more than five years of military service or ten years of combined outside and military service may be claimed);
- Alaska Bureau of Indian Affairs (BIA) service;
- Retroactive Alaskan service that was not creditable at the time it occurred, but later became creditable because of legislative change;
- Unused sick leave credit after members retire; and
- Leave of absence without pay.

Except for retroactive Alaska service that occurred before July 1, 1955, and unused sick leave, contributions are required for all claimed service.

Members receiving TRS disability benefits continue to earn TRS credit while disabled.

Survivors who are receiving occupational death benefits continue to earn TRS service credit while occupational survivor benefits are being paid.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

6. **Employer Contributions**

TRS employers contribute the amounts required, in addition to employees' contributions, to fund the benefits of the system.

The normal cost rate is a uniform rate for all participating employers (less the value of members' contributions).

The past service rate is a uniform rate for all participating employers to amortize the unfunded past service liability with payments that are a level percentage of payroll amount over a closed 25-year period starting June 30, 2014. Effective June 30, 2018, each future year's unfunded service liability is separately amortized on a level percent of pay basis over 25 years.

Employer rates cannot be less than the normal cost rate.

Pursuant to AS14.25.070 effective July 1, 2008, each TRS employer will pay a simple uniform contribution rate of 12.56% of member payroll.

7. **Additional State Contributions**

Pursuant to AS14.25.085 effective July 1, 2008, the State shall contribute an amount (in addition to the State contribution as an employer) that, when combined with the employer contribution (12.56%) will be sufficient to pay the total contribution rate adopted by The State of Alaska Retirement Management Board.

8. **Member Contributions**

Mandatory Contributions: Members are required to contribute 8.65% of their base salaries. Members' contributions are deducted from gross salaries before federal income taxes are withheld.

Contributions for Claimed Service: Member contributions are also required for most of the claimed service described above.

1% Supplemental Contributions: Members who joined the system before July 1, 1982 and elected to participate in the supplemental contributions provision are required to contribute an additional 1% of their salaries. Supplemental contributions are deducted from gross salaries after federal income taxes are withheld. Under the supplemental provision, an eligible spouse or dependent child will receive a survivor's allowance or spouse's pension if the member dies (see below). Supplemental contributions are only refundable upon death (see below).

Interest: Members' contributions earn 4.5% interest, compounded annually on June 30.

Refund of Contributions: Terminated members may receive refunds of their member contribution accounts which includes their mandatory contributions, indebtedness payments, and interest earned. Terminated members' accounts may be attached to satisfy claims under Alaska Statute 09.38.065, federal income tax levies, and valid Qualified Domestic Relations Orders.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

Reinstatement of Contributions: Refunded accounts and the corresponding TRS service may be reinstated upon reemployment in TRS prior to July 1, 2010. Interest accrues on refunds until paid in full or members retire.

9. Retirement Benefits

Eligibility:

a. Members, including deferred vested members, are eligible for normal retirement at age 55 or early retirement at age 50 if they were hired before July 1, 1990 (Tier 1) and age 60 or early retirement at age 55 if they were hired on or after July 1, 1990 (Tier 2). Additionally, they must have at least:

   i. eight years of paid-up membership service;

   ii. 15 years of paid-up creditable service, the last five years of which are membership service, and they were first hired under the TRS before July 1, 1975;

   iii. five years of paid-up membership service and three years of paid-up Alaska Bureau of Indian Affairs service;

   iv. 12 years of combined part-time and full-time paid-up membership service

   v. two years of paid-up membership service if they are vested in the Public Employees' Retirement System (PERS); or

   vi. one year of paid-up membership service if they are retired from the PERS.

b. Members may retire at any age when they have:

   i. 25 years of paid-up creditable service, the last five years of which are membership service;

   ii. 20 years of paid-up membership service;

   iii. 20 years of combined paid-up membership and Alaska Bureau of Indian Affairs service, the last five years of which are membership service; or

   iv. 20 years of combined paid-up part-time and full-time membership service.

10. Benefit Type

Lifetime benefits are paid to members. Eligible members may receive normal, unreduced benefits when they (1) reach normal retirement age and complete the service required; or (2) satisfy the minimum service requirements to retire at any age under (b) above. Members may receive early, actuarially reduced benefits when they reach early retirement age and complete the service required.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

Members may select joint and survivor options and a last survivor option. Under those options and early retirement, benefits are actuarially adjusted so that members receive the actuarial equivalents of their normal benefit amounts.

11. Benefit Calculation

Retirement benefits are calculated by multiplying the average base salary (ABS) times the total TRS service times the percentage multiplier. The ABS is determined by averaging the salaries earned during the three highest school years. Members must earn at least 115 days of credit in a school year to include it in the ABS calculation. TRS pays a minimum benefit of $25.00 per month for each year of service when the calculated benefit is less.

The percentage multipliers are 2% for the first 20 years and 2.5% for all remaining service. Service before July 1, 1990 is calculated at 2%.

12. Indebtedness

Members who terminate and refund their TRS contributions are not eligible to retire unless they return to TRS employment and pay back their refunds plus interest or accrue additional service which qualifies them for retirement. TRS refunds must be paid in full if the corresponding service is to count toward the minimum service requirements for retirement. Refunded TRS service is included in total service for the purpose of calculating retirement benefits. However, when refunds are not completely paid before retirement, benefits are actuarially reduced for life. Indebtedness balances may also be created when a member purchases qualified claimed service.

13. Reemployment of Retired Members

Retirees who return to work in a permanent full-time or part-time TRS position after a Normal Retirement are eligible to return under the Standard Option.

Under the Standard Option, retirement and retiree healthcare benefits are suspended while retired members are reemployed under TRS. During reemployment, members earn additional TRS service and contributions are withheld from their wages.

Members retired under the Retirement Incentive Program (RIPs) who return to employment will:

a. forfeit the three years of incentive credits that they received;

b. owe TRS 110% of the benefits that they received under the RIP, which may include costs for health insurance, excluding amounts that they paid to participate; and

c. be charged 7% interest from the date that they are reemployed until their indebtedness is paid in full or they retire again. If the indebtedness is not completely paid, future benefits will be actuarially reduced for life.

State of Alaska

Teachers' Retirement System

Defined Benefit Retirement Plan

Summary of Plan Provisions and Changes in Plan Provisions

Employers make contributions to the unfunded liability of the plan on behalf of rehired retired members at the rate the employer is making contributions to the unfunded liability of the plan for other members.

14. Postemployment Healthcare Benefits

When pension benefits begin, major medical benefits are provided by TRS to (1) all employees first hired before July 1, 1990 (Tier 1) and their surviving spouses and (2) members and their surviving spouses who have twenty-five years of membership service, are disabled or age sixty or older, regardless of their initial hire dates. Employees first hired after June 30, 1990 (Tier 2) and their surviving spouses may receive major medical benefits prior to age sixty by paying premiums.

Medical, prescription drug, dental, vision and audio coverage is provided through the AlaskaCare Retiree Health Plan. Health plan provisions do not vary by retirement tier or age, except for Medicare coordination. Participants in dental, vision, and audio coverage pay a full self-supporting rate and those benefits are not included in this valuation.

Surviving spouses continue coverage only if a pension payment form that provided survivor benefits was elected. Alternate payees (i.e. individuals who are the subject of a domestic relations order or DRO) are allowed to participate in the plan, but must pay the full cost.

Where premiums are required prior to age 60 (Tier 2), the valuation bases this payment upon the age of the retiree.

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

Plan Feature	Amount
Deductible (single/family)	\$150 / \$450
Coinsurance - most services	20%
Outpatient surgery/testing	0%
Maximum Out-of-Pocket (single/family, excl. 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 will be through a Medicare Part D EGWP arrangement.

15. Disability Benefits

Monthly disability benefits are paid to permanently disabled members until they die, recover, or become eligible for normal retirement. To be eligible, members must have at least five years of paid-up membership service.

Disability benefits are equal to 50% of the member's base salary at the time of disability. The benefit is increased by 10% of the base salary for each minor child, up to a maximum of 40%. Members continue to earn TRS service until eligible for normal retirement.

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

Members are appointed to normal retirement on the first of the month after they become eligible.

16. Death Benefits

Monthly death benefits may be paid to a spouse or dependent children upon the death of a member. If monthly benefits are not payable under the supplemental contributions provision or occupational and non-occupational death provisions, the designated beneficiary receives the lump sum benefit described below.

Occupational Death: When an active member dies from occupational causes, a monthly survivor's pension may be paid to the spouse, unless benefits are payable under the supplemental contributions provision (below). The pension equals 40% of the member's base salary on the date of death or disability, if earlier. If there is no spouse, the pension may be paid to the member's dependent children. On the member's normal retirement date, the benefit converts to a normal retirement benefit. The normal benefit is based on the member's average base salary on the date of death and service, including service accumulated from the date of the member's death to the normal retirement date.

Nonoccupational Death: When a vested member dies from non-occupational causes, the surviving spouse may elect to receive a monthly 50% joint and survivor benefit or a lump sum benefit, unless benefits are payable under the supplemental contributions provision (below). The monthly benefit is calculated on the member's average base salary and TRS service accrued at the time of death.

Lump Sum Benefit: Upon the death of an active member who has less than one year of service or an inactive member who is not vested, the designated beneficiary receives the member's contribution account, which includes mandatory contributions, indebtedness payments, and interest earned. Any supplemental contributions will also be refunded. If the member has more than one year of TRS service or is vested, the beneficiary also receives $1,000 and $100 for each year of TRS service, up to a maximum of $3,000. An additional $500 may be payable if the member is survived by dependent children.

Supplemental Contributions Provision: Members are eligible for supplemental coverage if they joined TRS before July 1, 1982, elected to participate in the supplemental provision, and made the required contributions. A survivor's allowance or spouse's pension (below) may be payable if the member made supplemental contributions for at least one year and dies while in membership service or while disabled under TRS. In addition, the allowance and pension may be payable if the member dies while retired or in deferred vested status if supplemental contributions were made for at least five years.

a. **Survivor's Allowance:** If the member is survived by dependent children, the surviving spouse and dependent children are entitled to a survivor's allowance. The allowance for the spouse is equal to 35% of the member's base salary at the time of death or disability, plus 10% for each dependent child up to a maximum of 40%. The allowance terminates and a spouse's pension becomes payable when there is no longer an eligible dependent child.

b. **Spouse's Pension:** The spouse's pension is equal to 50% of the retirement benefit that the deceased member was receiving or the unreduced retirement benefit that the deceased member would have received

State of Alaska
Teachers' Retirement System
Defined Benefit Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

if retired at the time of death. The spouse's pension begins on the first of the month after the member's death or termination of the survivor's allowance.

c. **Death After Retirement:** If a joint and survivor option was selected at retirement, the eligible spouse receives continuing, lifetime monthly benefits after the member dies. A survivor's allowance or spouse's pension may be payable if the member participated in the supplemental contributions provision. If a joint and survivor option was not selected and benefits are not payable under the supplemental contributions provision, the designated beneficiary receives the member's contribution account, less any benefits already paid and the member's last benefit check.

17. Postretirement Pension Adjustments

Postretirement pension adjustments (PRPAs) are granted annually to eligible benefit recipients when the consumer price index (CPI) for urban wage earners and clerical workers for Anchorage increases during the preceding calendar year. PRPAs are calculated by multiplying the recipient's base benefit, including past PRPAs, excluding the Alaska COLA, times:

a. 75% of the CPI increase in the preceding calendar year or 9%, whichever is less, if the recipient is at least age 65 or on TRS disability; or

b. 50% of the CPI increase in the preceding calendar year or 6%, whichever is less, if the recipient is at least age 60, or under age 60 if the recipient has been receiving benefits for at least eight years.

Ad hoc PRPAs, up to a maximum of 4%, may be granted to eligible recipients who were first hired before July 1, 1990 (Tier 1) if the CPI increases and the funded ratio is at least 105%.

In a year where an ad hoc PRPA is granted, eligible recipients will receive the higher of the two calculations.

18. Alaska Cost of Living Allowance

Eligible benefit recipients who reside in Alaska receive an Alaska COLA equal to 10% of their base benefits. The following benefit recipients are eligible:

a. members who were first hired under the TRS before July 1, 1990 (Tier 1) and their survivors;

b. members who were first hired under the TRS after June 30, 1990 (Tier 2) and their survivors if they are at least age 65; and

c. all disabled members.

19. Changes in Benefit Provisions Valued Since the Prior Valuation

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

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 annual actuarial valuation results of the State of Alaska Teachers' Retirement System Defined Contribution Retirement (TRS DCR) Plan as of June 30, 2020 performed by Buck Global, LLC (Buck). This report is an update to the draft report dated January 7, 2021, reflecting minor wording changes.

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 TRS DCR 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 TRS DCR as of June 30, 2020.

TRS DCR is funded by Employer Contributions in accordance with the funding policy adopted by the Alaska Retirement Management Board (Board). The funding objective for TRS DCR is to pay required contributions that remain level as a percent of TRS DCR 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 Unfunded Actuarial Accrued Liability as a level percent of TRS DCR compensation over closed layered 25-year periods. This objective is currently being met and is projected to continue to be met as required by the Alaska State statutes. Absent future gains/losses actuarially determined contributions are expected to remain level as a percent of pay and the overall funded status is expected to remain at or above 100%.

The Board and staff of the State of Alaska may use this report for the review of the operations of TRS DCR. 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 claims cost rates effective June 30, 2020 to better reflect expected future healthcare 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. 74 (GASB 74) was effective for TRS DCR beginning with fiscal year ending June 30, 2017, and GASB 75 was effective beginning with fiscal year ending June 30, 2018. Separate GASB 74 and GASB 75 reports have been prepared.

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 retiree medical portion of TRS DCR. We also believe ASOP 51 does not apply to the occupational death and disability portion of TRS DCR. Therefore, information related to ASOP 51 is not included in this report. However, it may be beneficial to review the ASOP 51 information provided in the TRS valuation report for information on risks that may also relate to the occupational death and disability benefits provided by this plan.

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 an internally developed model that applies 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 model 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 model, extra checking and review are completed. Significant changes to the internal model 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.

Buck used manual rate models to determine relative plan values for the defined benefit (DB) retiree medical plan and the DCR retiree medical plan, and to reflect the different Medicare coordination methods between the two plans. The manual rate models are intended to provide benchmark data and pricing capabilities, calculate per capita costs, and calculate actuarial values of different commercial health plans. Buck relied on the models, which were developed using industry data by actuaries and consultants at OptumInsight.

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 Sections 4.2 and 4.3 and in the valuation report for the DB plan.

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 herby affirms his qualification to render opinions in such matters in accordance with the Qualification Standards of the American Academy of Actuaries.

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

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Description of Actuarial Methods and Valuation Procedures

The funding method used in this valuation was adopted by the Board in October 2006, and was modified as part of the experience study for the period July 1, 2013 to June 30, 2017. The asset smoothing method used to determine valuation assets was implemented effective June 30, 2006.

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.

Valuation of Liabilities

A. Actuarial Method – Entry Age Normal Cost

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 percentage of expected payroll.

Cost factors designed to produce annual costs as a constant percentage of each member's expected compensation in each year for death and disability benefits and retiree medical benefits, 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 DCR Plan 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 beneficiaries and disabled members currently receiving benefits (if any) 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.

B. Valuation of Assets

Effective June 30, 2006, the asset valuation method recognizes 20% of the investment gain or loss in each of the current and preceding four years. This method was phased in over five years. Fair Value of Assets was $0 as of June 30, 2006. 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.

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Description of Actuarial Methods and Valuation Procedures

C. Valuation of Retiree Medical and Prescription Drug Benefits

The methodology used for the valuation of the retiree medical benefits is described in Section 5.2 of the State of Alaska Teachers' Retirement System Defined Benefit Plan Actuarial Valuation Report as of June 30, 2020.

Due to the lack of experience for the DCR retiree medical plan only, base claims costs are based on those described in the actuarial valuation as of June 30, 2020 for the Defined Benefit (DB) retiree medical plan covering TRS and PERS. The DB rates were used with some adjustments. The claims costs were adjusted to reflect the differences between the DCR medical plan and the DB medical plan. These differences include network steerage, different coverage levels, different Medicare coordination for medical benefits, and an indexing of the retiree out-of-pocket dollar amounts. To account for higher initial copays, deductibles and out-of-pocket limits, projected FY21 claims costs were reduced 3.1% for medical claims, and 8.9% for prescription drugs. In addition, to account for the difference in Medicare coordination, projected FY21 medical claims costs for Medicare eligible retirees were further reduced 29.5%.

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.

No implicit subsidies are assumed. Employees projected to retire with 30 years of service prior to Medicare are valued with commencement deferred to Medicare eligibility, because those members will be required to pay the full plan premium prior to Medicare. Explicit subsidies for disabled and normal retirement are determined using the plan-defined percentages of age-related total projected plan costs, again with no implicit subsidy assumed.

The State transitioned to an Employer Group Waiver Program (EGWP) for DCR participants effective January 1, 2019. The estimated 2021 reimbursements under EGWP were provided by Segal Consulting (who worked with the EGWP administrator, Optum, to develop those estimates).

D. 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, not all provisions are required. Unlimited lifetime benefits and dependent coverage to age 26 are two of these provisions. The adopted DCR plan does not place lifetime limits on benefits, but does restrict dependent child coverage.

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Description of Actuarial Methods and Valuation Procedures

The Further Consolidated Appropriations Act, 2020 passed in December 2019 repealed several healthcare-related taxes, including the Cadillac Tax.

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.

E. Changes in Methods Since the Prior Valuation

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

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Actuarial Assumptions and Changes in 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.

1.	Investment Return	7.38% per year, net of investment expenses.
2.	Salary Scale	Salary scale rates based upon the 2013-2017 actual experience (see Table 1). Inflation – 2.50% per year. Productivity – 0.25% per year.
3.	Payroll Growth	2.75% per year. (inflation + productivity).
4.	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.
5.	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. Deaths are assumed to result from the occupational causes 15% of the time.
6.	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.
7.	Turnover	Select and ultimate rates based upon the 2013-2017 actual experience (see Table 2).
8.	Disability	Incidence rates based upon the 2013-2017 actual experience (see Table 3). Disabilities are assumed to be occupational 15% of the time. Post-disability mortality in accordance with the RP-2014 disabled table, benefit-weighted, rolled back to 2006, and projected with MP-2017 generational improvement.
9.	Retirement	Retirement rates based upon the 2013-2017 actual experience (see Table 4).
10.	Spouse Age Difference	Males are assumed to be three years older than their wives. Females are assumed to be two years younger than husbands.
11.	Percent Married for Occupational Death & Disability	85% of male members and 75% female members are assumed to be married at termination from active service.

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

12. Dependent Spouse Medical Coverage Election — Applies to members who do not have dual medical coverage. 65% of male members and 60% female members are assumed to be married and cover a dependent spouse.

13. Part-Time Status — Part-time employees are assumed to earn 0.75 years of service per year.

14. Per Capita Claims Cost — Sample claims cost rates (before base claims cost adjustments described below) 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 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.

15. Third Party Administrator Fees — $449 per person per year; assumed trend rate of 4.5% per year.

16. Base Claims Cost Adjustments — Due to higher initial copays, deductibles, out-of-pocket limits and member cost sharing compared to the DB medical plan, the following cost adjustments are applied to the per capita claims cost rates above:

- 0.969 for the pre-Medicare plan.
- 0.674 for both the Medicare medical plan and Medicare coordination method (3.1% reduction for the medical plan and 29.5% reduction for the coordination method).
- 0.911 for the prescription drug plan.

17. Administrative Expenses — Beginning with the June 30, 2018 valuation, the Normal Cost is increased for administrative expenses expected to be paid from plan assets during the year. The amounts included in the June 30, 2020 Normal Cost, which are based on the average of actual administrative expenses during the last two fiscal years, are $0 for occupational death & disability and $8,000 for retiree medical.

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

18. Health Cost Trend

The table below shows the rates 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 cost to get the FY22 medical claims cost.

Fiscal year	Medical pre-65	Medical post-65	Prescription Drugs / EGWP
2021	6.5%	5.4%	7.5%
2022	6.3	5.4	7.1
2023	6.1	5.4	6.8
2024	5.9	5.4	6.4
2025	5.8	5.4	6.1
2026	5.6	5.4	5.7
2027-2040	5.4	5.4	5.4
2041	5.3	5.3	5.3
2042	5.2	5.2	5.2
2043	5.1	5.1	5.1
2044	5.1	5.1	5.1
2045	5.0	5.0	5.0
2046	4.9	4.9	4.9
2047	4.8	4.8	4.8
2048	4.7	4.7	4.7
2049	4.6	4.6	4.6
2050+	4.5	4.5	4.5

For the June 30, 2014 valuations 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 projected out for 80 years. The model has been populated with assumptions that are specific to the State of Alaska.

19. 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 +	—	—

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

20. Retiree Medical Participation

Decrement Due to Disability		Decrement Due to Retirement	
Age	Percent Participation	Age	Percent Participation *
< 56	75.0%	55	50.0%
56	77.5	56	55.0
57	80.0	57	60.0
58	82.5	58	65.0
59	85.0	59	70.0
60	87.5	60	75.0
61	90.0	61	80.0
62	92.5	62	85.0
63	95.0	63	90.0
64	97.5	64	95.0
65+	100.0	65+	

Years of Service	
< 15	75.0%
15-19	80.0
20-24	85.0
25-29	90.0
30+	95.0

* Participation assumption is a combination of (i) the service-based rates for retirement from employment at age 65+ and (ii) the age-based rates for retirement from employment before age 65. These rates reflect the expected plan election rate that varies by reason for decrement, duration that a member may pay full cost prior to Medicare eligibility, and availability of alternative and/or lower cost options, particularly in the Medicare market. This assumption is based on observed trends in participation from a range of other plans.

21. Imputed Data

Data changes from the prior year which are deemed to have 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.

22. Changes in Assumptions Since the Prior Valuation

The amount included in the Normal Cost for administrative expenses was changed from $4,700 to $8,000 for retiree medical, while occupational death & disability remained at $0 (based on the most recent two years of actual administrative expenses paid from plan assets). The per capita claims cost assumption is updated annually. The medical and prescription drug relative value factors were updated and the 0.2% annual trend rate adjustment factor between the DB and DCR plans was removed.

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

Table 1
Alaska TRS DCR Plan
Salary Scale

Years of Service	Percent Increase
0	6.75%
1	6.25
2	5.75
3	5.25
4	4.75
5	4.25
6	3.75
7	3.65
8	3.55
9	3.45
10	3.35
11	3.25
12	3.15
13	3.05
14	2.95
15	2.85
16 +	2.75

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

Table 2
Alaska TRS DCR Plan
Turnover Rates

Select Rates during the First 6 Years of Employment

Years of Service	Male	Female
0	20.70%	21.80%
1	19.55	18.70
2	16.10	15.40
3	13.80	13.20
4	11.50	11.00
5	7.32	8.05

Ultimate Rates of Turnover
After the First 6 Years of Employment

Age	Male	Female	Age	Male	Female
< 26	9.41%	8.31%	45	9.05%	8.09%
26	9.41	8.32	46	8.99	8.07
27	9.40	8.33	47	8.94	8.04
28	9.39	8.32	48	8.86	8.00
29	9.39	8.32	49	8.78	7.95
30	9.38	8.31	50	8.70	7.91
31	9.37	8.31	51	8.62	7.86
32	9.36	8.30	52	8.54	7.82
33	9.35	8.29	53	8.37	7.73
34	9.35	8.28	54	8.20	7.64
35	9.34	8.27	55	8.03	7.55
36	9.34	8.26	56	7.86	7.46
37	9.33	8.25	57	7.69	7.36
38	9.31	8.24	58	7.76	7.50
39	9.29	8.22	59	7.82	7.64
40	9.26	8.21	60	7.89	7.78
41	9.24	8.19	61	7.95	7.92
42	9.22	8.17	62	8.02	8.05
43	9.16	8.15	63	8.59	8.29
44	9.11	8.12	64	9.17	8.52
			65 +	9.75	8.75

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

Table 3
Alaska TRS DCR Plan
Disability Table

Age	Male	Female
< 31	0.0337%	0.0612%
31	0.0337	0.0613
32	0.0337	0.0613
33	0.0342	0.0622
34	0.0347	0.0631
35	0.0353	0.0641
36	0.0357	0.0650
37	0.0362	0.0659
38	0.0371	0.0674
39	0.0379	0.0689
40	0.0387	0.0703
41	0.0395	0.0718
42	0.0403	0.0733
43	0.0423	0.0770
44	0.0443	0.0806
45	0.0464	0.0843
46	0.0483	0.0879
47	0.0504	0.0916
48	0.0536	0.0975
49	0.0569	0.1034
50	0.0601	0.1093
51	0.0634	0.1152
52	0.0666	0.1211
53	0.0746	0.1356
54	0.0826	0.1501

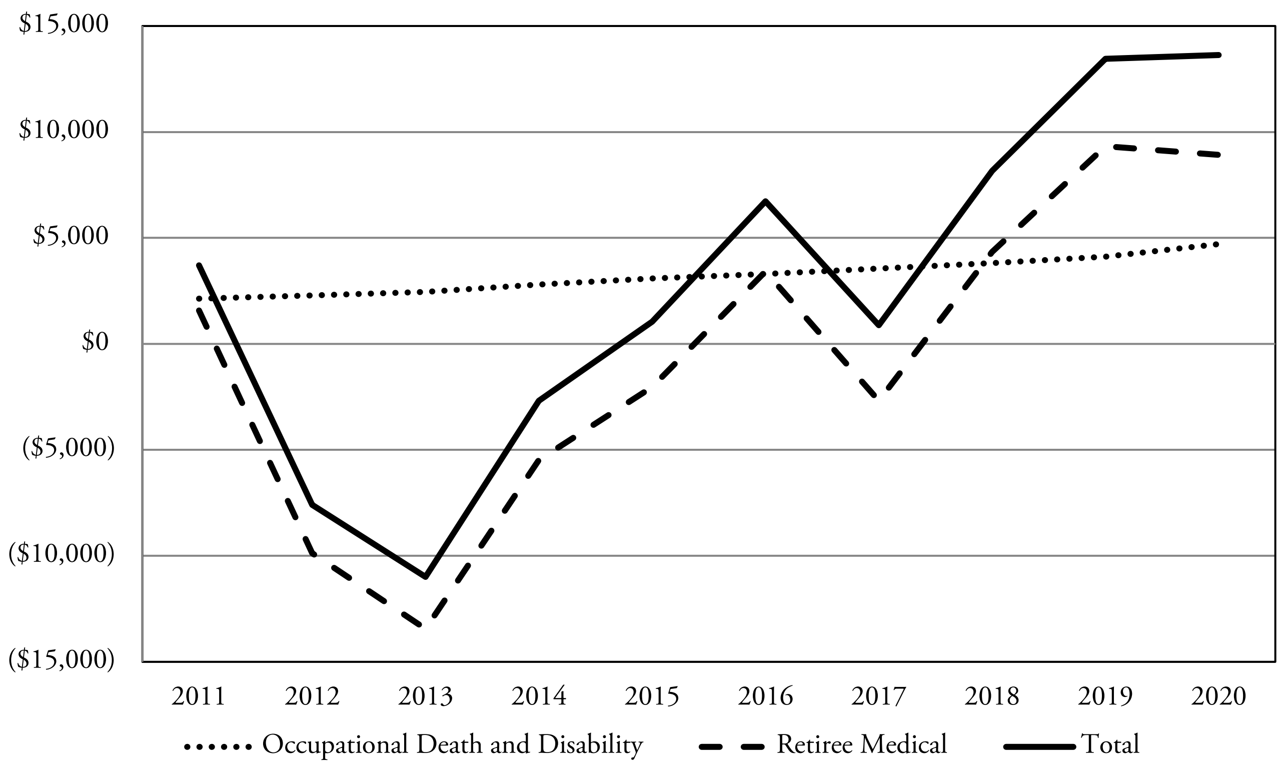
State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Actuarial Assumptions and Changes in Assumptions

Table 4
Alaska TRS DCR Plan
Retirement Rates

Age	Rate
< 55	2.0%
55	3.0
56	3.0
57	3.0
58	3.0
59	3.0
60	5.0
61	5.0
62	10.0
63	5.0
64	5.0
65	25.0
66	25.0
67	25.0
68	20.0
69	20.0
70 +	100.0

Teachers' Retirement System Defined Contribution Retirement Plan Occupational Death and Disability and Retiree Medical Benefits Funding Excess/(Unfunded Liability) (In thousands)				
Actuarial Valuation Year Ended June 30	**Occupational Death and Disability**	**Retiree Medical**	**Total Funding Excess/ (Unfunded Liability)**	**Funded Ratio**
2011	$ 2,136	$ 1,572	$ 3,708	196.1%
2012	2,285	(9,874)	(7,589)	55.0
2013	2,452	(13,444)	(10,992)	50.3
2014	2,797	(5,482)	(2,685)	83.5
2015	3,085	(2,035)	1,050	105.3
2016	3,304	3,422	6,726	130.6
2017	3,562	(2,683)	879	102.6
2018	3,815	4,347	8,162	125.1
2019	4,119	9,326	13,445	140.5
2020	4,710	8,920	13,630	133.4

10-YEAR TREND OF FUNDING EXCESS/(UNFUNDED) LIABILITY
(In thousands)



Teachers' Retirement System Defined Contribution Retirement Plan Occupational Death and Disability and Retiree Medical Benefits Employer Contribution Rates					
Fiscal Year	**Actuarial Valuation Year Ended June 30**	**Occupational Death and Disability**	**Retiree Medical**	**Total Annual Required**	**Adopted**
2014	2011	— %	0.47%	0.47%	0.47%
2015	2012	—	2.04	2.04	2.04
2016	2013	—	2.04	2.04	2.04
2017	2014	—	1.05	1.05	1.05
2018	2015	—	0.91	0.91	0.91
2019	2016	0.08	0.79	0.87	0.87
2020	2017	0.08	1.09	1.17	1.17
2021	2018	0.08	0.93	1.01	1.01
2022	2019	0.08	0.83	0.91	0.91
2023	2020	0.08	0.87	0.95	0.95

Valuations are used to set contribution rates in future years.

Teachers' Retirement System Defined Contribution Retirement Plan Occupational Death and Disability and Retiree Medical Benefits Schedule of Active Member Valuation Data					
Valuation Date	Number	Annual Earnings (In thousands)	Annual Average Earnings	Percent Increase/ (Decrease) in Average Earnings	Number of Participating Employers
June 30, 2020	5,332	$379,201	$71,118	2.2%	57
June 30, 2019	4,998	347,957	69,619	2.2	57
June 30, 2018	4,915	334,803	68,119	2.4	57
June 30, 2017	4,694	312,347	66,542	2.0	57
June 30, 2016	4,383	285,854	65,219	2.5	58
June 30, 2015	4,095	260,584	63,635	2.7	58
June 30, 2014	3,547	219,701	61,940	2.4	58
June 30, 2013	3,272	197,944	60,496	3.5	58
June 30, 2012	3,057	178,761	58,476	4.7	58
June 30, 2011	2,708	151,269	55,860	5.6	58

Total and average annual earnings ("valuation pay") are the annualized earnings for the fiscal year ending on the valuation date.

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

1. **Effective Date**

   July 1, 2006, with amendments through June 30, 2020.

2. **Administration of Plan**

   The Commissioner of Administration or the Commissioner's designee is the administrator of the Plan. The Attorney General of the state is the legal counsel for the Plan and shall advise the administrator and represent the Plan in legal proceedings.

   The Alaska Retirement Management Board prescribes policies, adopts regulations, invests the funds, and performs other activities necessary to carry out the provisions of the Plan.

3. **Employers Included**

   Currently there are 57 employers participating in TRS DCR, including the State of Alaska, 53 school districts, and three other eligible organizations.

4. **Membership**

   An employee of a participating employer who first enters service on or after July 1, 2006, or a member of the defined benefit plan who works for an employer who began participation on or after July 1, 2006, and meets the following criteria is a member in the Plan:

   - Permanent full-time or part-time elementary or secondary teachers, school nurses, or a person in a position requiring a teaching certificate as a condition of hire in a public school of the State of Alaska, the Department of Education and Early Development or in the Department of Labor and Workforce Development.

   - Full-time or part-time teachers at the University of Alaska or persons occupying full-time administrative positions requiring academic standing who are not in the University's Optional Retirement Plan.

   Members can convert to TRS DCR if they are an eligible non-vested member of the TRS defined benefit plan whose employer consents to transfers to the defined contribution plan and they elect to transfer his or her account balance to TRS DCR.

5. **Member Contributions**

   Other than the member-paid premiums discussed later in this section, there are no member contributions for the occupational death & disability and retiree medical benefits.

6. **Retiree Medical Benefits**

   - Member must retire directly from the plan to be eligible for retiree medical coverage. Normal retirement eligibility is the earlier of a) 30 years of service or b) Medicare eligible and 10 years of service.

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

- No subsidized retiree medical benefits are provided until normal retirement eligibility. The member's and any covered dependent premium is 100% until the member is Medicare eligible. Upon the member's Medicare-eligibility, the required contribution will follow the service based schedule shown below.

- Coverage cannot be denied except for failure to pay premium.

- Members who are receiving disability benefits or survivors who are receiving monthly survivor benefits are not eligible until the member meets, or would have met if he/she had lived, the normal retirement eligibility requirements.

- The following is a summary of the medical benefit design adopted in July 2016. The plan description below is used for valuation purposes and indicates participant cost-sharing. Please refer to the benefit handbook for more details.

Plan Design Feature	In-Network (1)	Out-of-Network (1)(2)
Deductible (single/family)	$300 / $600	$300 / $600
Medical services (participant share)	20%	40%
Emergency Room Copay (non-emergent use)	$100	$100
Medical Out-of-Pocket Maximum (single/famly, after deductible)	$1,500 / $3,000	$3,000 / $6,000
Medicare Coordination	Exclusion	Exclusion
Pharmacy	No Deductible	No Deductible
Retail Generic (per 30-day fill)	20% $10 min / $50 max	40%
Retail Non-Formulary Brand (per 30-day fill)	25% $25 min / $75 max	
Retail Formulary Brand (per 30-day fill)	35% $80 min / $150 max	
Mail-Order Generic	$20 copay	40%
Mail-Order Non-Formulary Brand	$50 copay	
Mail-Order Formulary Brand	$100 copay	
Pharmacy Out-of-Pocket Max (single/family)	$1,000 / $2,000	$1,000 / $2,000
Medicare Pharmacy Arrangement	Retiree Drug Subsidy / Employer Group Waiver Plan Effective 1/1/2019	
Wellness/Preventative	100% covered, not subject to deductible	20%, after deductible

(1) Section 1.1 of the AlaskaCare Defined Contribution Retiree Benefit Plan states that this health plan shall be updated from time to time to reflect changes in benefits, including annual adjustments to the premium, deductible, coinsurance, medical out-of-pocket limit, and prescription drug out-of-pocket limit.

(2) OON applies only to non-Medicare eligible participants.

- Buck used manual rate models to determine relative plan values for the defined benefit (DB) retiree medical plan and the DCR retiree medical plan outlined above. We applied the ratio of the DCR retiree medical plan value to the DB retiree medical plan value to the per capita costs determined for each of pre/post-Medicare

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

medical and pharmacy benefits to estimate corresponding values for the DCR retiree medical plan design. These factors are noted in Section 4.3. We further adjusted the Medicare medical manual rate to reflect the Medicare coordination method adopted. The estimated 2021 reimbursements under EGWP were provided by Segal Consulting (who worked with the EGWP administrator, Optum, to develop those estimates). We reflect estimated discounts and pharmacy rebates in the defined benefit medical cost so no further adjustment was needed for the DCR retiree medical plan. The medical network differential is reflected in the relative plan value adjustments.

- The retiree medical plan's coverage is supplemental to Medicare. Medicare coordination is described in the 2020 DCR Plan Handbook, referred to in the industry as exclusion coordination: Medicare payment is deducted from the Medicare allowable expense and plan parameters are applied to the remaining amount. Starting in 2019, the prescription drug coverage is through a Medicare Part D EGWP arrangement.
- The premium for Medicare-eligible retirees will be based on the member's years of service. The percentage of premium paid by the member is as follows:

Years of Service	Percent of Premium Paid by Member
< 15	30.00%
15 – 19	25.00
20 – 24	20.00
25 – 29	15.00
30+	10.00

- The premium for dependents who are not eligible for Medicare aligns with the member's subsidy. While a member is not Medicare-eligible, premiums are 100% of the estimated cost.
- Members have a separate defined contribution Health Reimbursement Arrangement account, which is not reflected in this valuation, that can be used to pay for premiums or other medical expenses.
- For valuation purposes, retiree premiums were assumed to equal the percentages outlined in the table above times the age-related plan costs. Future premiums calculated and charged to DCR participants will need to be determined reflecting any appropriate adjustments to the defined benefit (DB) plan data because current DB premiums were determined using information based upon enrollment with dual coverage members.
- Coverage will continue for surviving spouses of covered retired members.

7. **Occupational Disability Benefits**

- Benefit is 40% of salary at date of disability.

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

- Disability Benefit Adjustment: The disability benefit is increased by 75% of the cost of living increase in the preceding calendar year or 9%, whichever is less.
- Member earns service while on occupational disability.
- Benefits cease when the member becomes eligible for normal retirement at Medicare-eligible age and 10 years of service, or at any age with 30 years of service.
- No subsidized retiree medical benefits are provided until normal retirement eligibility. The member's premium is 100% of the estimated cost until they are Medicare eligible. Medicare-eligible premiums follow the service-based schedule above.

8. Occupational Death Benefits

- Benefit is 40% of salary.
- Survivor's Pension Adjustment: A survivor's pension is increased by 50% of the cost of living increase in the preceding calendar year or 6%, whichever is less, if the recipient is at least age 60 on July 1, or under age 60 if the recipient has been receiving TRS benefits for at least 8 years as of July 1.
- Benefits cease when the member would have become eligible for normal retirement.
- The period during which the survivor is receiving benefits is counted as service credit toward retiree medical benefits.
- No subsidized retiree medical benefits are provided until the member would have been eligible for normal retirement. The surviving spouse's premium is 100% of the estimated cost until the member would have been Medicare eligible. Medicare-eligible premiums follow the service-based schedule above.

9. Changes Since the Prior Valuation

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

State of Alaska
Teachers' Retirement System
Defined Contribution Retirement Plan
Summary of Plan Provisions and Changes in Plan Provisions

- Disability Benefit Adjustment: The disability benefit is increased by 75% of the cost of living increase in the preceding calendar year or 9%, whichever is less.

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