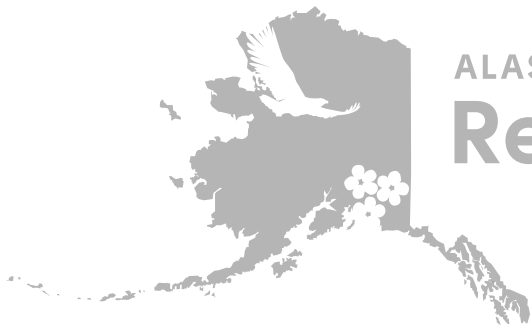




ACTUARIAL SECTION



ALASKA DIVISION OF
**Retirement
and Benefits**



August 9, 2019

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

Certification of Actuarial Valuation

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

This report summarizes the annual actuarial valuation results of the State of Alaska Public Employees' Retirement System (PERS) as of June 30, 2018 performed by Buck Global, LLC (Buck).

The actuarial valuation is based on financial information provided in the financial statements audited by KPMG LLP, 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, 2018. The actuary did not verify the data submitted, but did perform tests for consistency and reasonableness.

All costs, liabilities and other factors under PERS 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 PERS as of June 30, 2018.

PERS 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 PERS is to pay required contributions that remain level as a percent of total PERS 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 PERS 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 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 established in 2014¹. 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 change in 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. The compensation used to determine required contributions is the total compensation of all active members in PERS, 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 is expected to increase to 100% after 25 years.

Actuarial Section

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

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. 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, 2018 to better reflect expected future healthcare experience. Based on recent experience, the healthcare cost trend assumptions were also updated. A summary of the actuarial assumptions and methods used in this actuarial valuation is shown in Sections 6.2 and 6.3.

Governmental Accounting Standards Board (GASB) Statement No. 67 (GASB 67) was effective for PERS beginning with fiscal year ending June 30, 2014, and Statement No. 74 (GASB 74) was effective for PERS beginning with fiscal year ending June 30, 2017. Separate GASB 67 and GASB 74 reports as of June 30, 2018 have been prepared. Section 3 of this report contains accounting information previously disclosed under GASB 25 for fiscal years 2007 through 2013 and accounting information previously disclosed under GASB 43 for fiscal years 2007 through 2016. We have also prepared the member data tables shown in Section 5 of this report for the Statistical Section of the CAFR, and the summary of actuarial assumptions, solvency test, and analysis of financial experience for the Actuarial Section of the CAFR. Please see our separate GASB 67 and GASB 74 reports for other information needed for the CAFR.

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

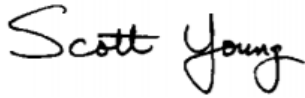
I am available to discuss this report with you at your convenience. I can be reached at 602-803-6174.

Respectfully submitted,



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

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



Scott Young, FSA, EA, MAAA
Director
Buck

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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.

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 2014¹. 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 change in 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.

(i) Layer #1 is referred to as "initial amount" in Section 1.2 of Valuation

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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 value method recognizes 20% of the gain or loss each year, for a period of 5 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 to develop the initial per capita claims cost rates for the PERS postemployment healthcare plan. Note that the methodology reflects the results of our annual experience rate update for the period from July 1, 2017 to June 30, 2018. Healthcare cost trend and retiree contribution increase assumptions for the period after June 30, 2018 were updated since the prior valuation.

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 2016 through June 2018 (FY17 through FY18) were provided by the State of Alaska from reports extracted from their data warehouse, which separated claims by Medicare status. In reviewing the claims reports generated for this year's valuation, it was discovered that audio and vision claims were incorrectly included in the reports that were provided for the prior year valuation. These audio and vision claims accounted for approximately \$9.9M in claims during fiscal 2017 (which was less than 2% of the total gross claims for that fiscal year). The claims for fiscal 2017 used in this year's claims cost development exclude the audio and vision claims that were incorrectly included in last year's development. Monthly enrollment data for the same period was provided by Aetna.

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

Aetna provided a snapshot file as of July 1, 2018 of retirees and dependents that included a coverage level indicator. The monthly enrollment data includes dual 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 that 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 dual 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 FY19 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 FY17 through FY18.
 - 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 FY19).
 - 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.

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- 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 4/1/1986 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, 2017, and July 1, 2018, Buck adjusted member counts used for duplicate records where participants have dual 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 upon reported rebates in proportion to incurred claims for State of Alaska retiree plans, Buck reduced reported pharmacy incurred claims by 12% to estimate the rebates for the retiree population. These estimates were based upon reported rebates for retirees from Aetna.
2. Develop estimated Retiree Drug Subsidy reimbursement - actual subsidy payments to the State were received for claims incurred during the 2009 through 2017 calendar years. Buck obtained this information based upon recorded and available information in the RDS Subsidy website and as provided by the State. The projected subsidy for FY19 was determined based on the historical ratio of subsidy received to claims incurred (adjusted for rebates), and then applied to the appropriate projection period. 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. Due to group size and demographics, we did not make any 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 FY19 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 prior 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:

Experience Period	Alaska-Specific and National Average Weighted Trend from Experience Period to Valuation Year		Weighting Factors
	Medical	Prescription	
FY17 to FY18	7.0% Pre-Medicare / 4.5% Medicare	6.2%	50%
FY18 to FY19	6.2% Pre-Medicare / 4.0% Medicare	8.0%	50%

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Trend assumptions used for rate development are assessed annually and as additional/improved reporting becomes available, we will incorporate into rate development as appropriate. Based upon recent experience trending up, particularly for prescription drugs, the Board has approved our recommendation to update to the valuation healthcare cost trend assumption.

6. Develop separate administration costs – no adjustments were made for internal administrative costs. Third party retiree plan administration fees for FY19 are based upon total fees projected to 2019 by Segal based on actual FY 2018 fees. The annual per participant per year administrative cost rate for medical and prescription benefits is \$300.

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 Plan will be subject to the high cost plan excise tax (Cadillac tax). Based upon guidance available at the valuation date, Buck estimated the tax based upon a blended test of pre and post-Medicare projected costs and enrollment projections.

- A blended test compares a weighted average per capita cost (based upon proportions of pre/post Medicare eligible enrollments) to the tax cost thresholds in each projection year. Projected enrollment was based upon the current enrollment data provided by Aetna, and valuation headcount projections for future years.
- We included administrative fees and applied Retiree Drug Subsidy / EGWP reimbursements to the Medicare rates.

We assumed claim costs would increase according to valuation trend assumptions from the June 30, 2018 valuation, and that the tax cost thresholds would increase at 2.25% (the CPI assumption of 2.50% less 0.25% to estimate the impact of using the chained CPI as required by the Tax Cut and Jobs Act passed in December 2017). The first year increased at 3.25% to reflect the additional 1.0% over inflation assumption.

We determined the impact to be approximately \$83.9 million of the projected June 30, 2018 healthcare actuarial accrued liability for the defined benefit plan.

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

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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. Healthcare Reform

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

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

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

- Some records provided on the Aetna data were associated with a participant social security number not listed on the RIN-to-SSN translation file. We reconciled those participants with the pension valuation data as either a surviving spouse or a retiree in the appropriate plan based on account structure information in the Aetna data.
- All records provided with retiree medical coverage on the Aetna data were included in this valuation and we relied on the Aetna data as the source of medical coverage for current retirees and their dependents.
- Some records in the Aetna data were duplicates due to the dual 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 dual 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.

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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 2017				
1. Incurred Claims	\$ 230,671,216	\$ 66,265,130	\$ 64,442,324	\$ 160,756,912
2. Adjustments for Rx Rebates	-	-	(7,733,079)	(19,290,829)
3. Net incurred claims	\$ 230,671,216	\$ 66,265,130	\$ 56,709,245	\$ 141,466,082
4. Average Enrollment	23,342	38,502	23,342	38,502
5. Claim Cost Rate (3) / (4)	9,882	1,721	2,430	3,674
6. Trend to Fiscal 2019	1.136	1.087	1.147	1.147
7. Fiscal 2019 Incurred Cost Rate (5) x (6)	\$ 11,230	\$ 1,870	\$ 2,787	\$ 4,214
B. Fiscal 2018				
1. Incurred Claims	\$ 228,572,782	\$ 72,875,570	\$ 65,406,973	\$ 178,763,430
2. Adjustments for Rx Rebates	-	-	(7,848,837)	(21,451,612)
3. Net incurred claims	\$ 228,572,782	\$ 72,875,570	\$ 57,558,136	\$ 157,311,819
4. Average Enrollment	21,920	40,560	21,920	40,560
5. Claim Cost Rate (3) / (4)	10,428	1,797	2,626	3,878
6. Trend to Fiscal 2019	1.062	1.040	1.080	1.080
7. Fiscal 2019 Incurred Cost Rate (5) x (6)	\$ 11,074	\$ 1,869	\$ 2,836	\$ 4,189
C. Incurred Cost Rate by Fiscal Year				
1. Fiscal 2017 A. (7)	11,230	1,870	2,787	4,214
2. Fiscal 2018 B. (7)	11,074	1,869	2,836	4,189
D. Weighting by Fiscal Year				
1. Fiscal 2017	50%	50%	50%	50%
2. Fiscal 2018	50%	50%	50%	50%
E. Fiscal 2019 Incurred Cost Rate				
1. Rate at Average Age C x D	\$ 11,152	\$ 1,870	\$ 2,811	\$ 4,201
2. Average Aging Factor	0.824	1.251	0.837	1.116
3. Rate at Age 65 (1) / (2)	\$ 13,535	\$ 1,494	\$ 3,360	\$ 3,764
F. Development of Part A&B and Part B Only Cost from Pooled Rate Above				
1. Part A&B Average Enrollment		40,223		
2. Part B Only Average Enrollment		338		
3. Total Medicare Average Enrollment B(4)		40,560		
4. Cost ratio for those with Part B only to those with Part A&B		3.180		
5. Factor to determine cost for those with Parts A&B (2) / (3) x (4) + (1) / (3) x 1.00		1.018		
6. Medicare per capita cost for all participants: E(3)		\$ 1,494		
7. Cost for those eligible for Parts A&B: (6) / (5)		\$ 1,468		
8. Cost for those eligible for Part B only: (7) x (4)		\$ 4,667		

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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, 2018 through June 30, 2019**

Age	Medical and Medicare Parts A & B	Medical and Medicare Part B Only	Prescription Drug	Medicare Retiree Drug Subsidy	Medicare EGWP Subsidy
45	\$ 8,260	\$ 8,260	\$ 2,053	\$ —	\$ —
50	9,346	9,346	2,438	—	—
55	10,574	10,574	2,896	—	—
60	11,963	11,963	3,119	—	—
65	1,468	4,667	3,764	527	1,039
70	1,701	5,410	4,155	582	1,147
75	1,972	6,272	4,588	642	1,266
80	2,178	6,925	4,474	626	1,235

Changes in Methods Since the Prior Valuation

Prior to the June 30, 2018 valuation: (i) the total UAAL was amortized over the remainder of the 25-year closed period that was established in 2014; and (ii) the actuarial cost method for the retiree healthcare plan was on a level dollar basis (it is now on a level percent of pay method). There were no other changes in the asset or valuation methods since the prior valuation.

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

The demographic and economic assumptions used in the June 30, 2018 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 on 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-termination) Mortality rates based upon the 2013-2017 actual experience.
100% (male and female) of RP-2014 healthy annuitant table with MP-2017 generational improvement.
6. Mortality (Post-termination) Mortality rates based upon the 2013-2017 actual experience.
91% of male and 96% of female rates of RP-2014 healthy annuitant table with MP-2017 generational improvement.
7. Turnover Based upon the 2013-2017 actual experience. (See Tables 2 and 3).
8. Disability Incidence rates based on 2013-2017 actual experience (See Table 4).
Post-disability mortality in accordance with the RP-2014 disabled table with MP-2017 generational improvement. Disabilities are assumed to be occupational 75% of the time for Peace Officer/Firefighters, 40% of the time for Others.
9. Retirement Retirement rates based upon the 2013-2017 actual experience (See Tables 5 and 6).
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 For Others, 75% of male members and 70% female members are assumed to be married. For Peace Officer/Firefighters, 85% of male members and 60% of female members are assumed to be married

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- | | |
|--|---|
| 12. Dependent Spouse Medical Coverage Election | Applies to members who do not have dual medical coverage. For Others, 65% of male members and 60% female members are assumed to be married and cover a dependent spouse. For Peace Officer/Firefighters, 75% of male members and 50% of female members are assumed to be married and cover a dependent spouse. |
| 13. Dependent Children | 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 | For Others, 5% of terminating members with vested benefits are assumed to have their contributions refunded.

For Peace Officers/Firefighters, 10% 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 18.77% – Healthcare 17.09%. |
| 17. Active Data Adjustment | To reflect participants who terminate employment before the valuation date and are subsequently rehired after the valuation date, participants who are listed as terminated in the June 30 census data file but active in the October 1 census data file are updated to active status as of June 30. |
| 18. COLA | Alaska Cost-of-Living Adjustment. Of those benefit recipients who are eligible for the COLA, 70% of Others and 65% Peace Officers/Firefighters are assumed to remain in Alaska and receive the COLA. |
| 19. Post-Retirement Pension Adjustment | 50% and 75% of assumed inflation, or 1.25% and 1.875% respectively, is valued for the annual automatic Post-Retirement Pension Adjustment (PRPA) as specified in the statute. |

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Public Employees’ Retirement System
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- 20. Expenses The investment return assumption is net of investment expenses. The Normal Cost as of June 30, 2018 was increased by the following amounts for administrative expenses (for projections, the % increase was assumed to remain constant in future years): – Pension: \$6,888,000 – Healthcare: \$4,365,000

- 21. Part-Time Status Part-time employees are assumed to earn 1.00 years of credited service per year for Peace Officer/Firefighter and 0.75 years for credited service per year for Other members.

- 22. 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.

- 23. Per Capita Claims Cost Sample claims cost rates adjusted to age 65 for FY19 medical and prescription are shown below:

	Medical		Prescription Drugs
Pre-Medicare	\$ 13,535		\$ 3,360
Medicare Parts A & B	1,468		3,764
Medicare Part B Only	4,667		3,764
Medicare Part D - RDS	N/A		527
Medicare Part D - EGWP	N/A		1,039

Members are assumed to attain Medicare eligibility at age 65. The EGWP cost shown above is for calendar year 2019. All other costs are for the 2019 fiscal year (July 1, 2018 – June 30, 2019).

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.

- 24. Third Party Administrator Fees \$300 per person per year; assumed trend rate of 4.5% per year.

- 25. Medicare Part B Only We assume that 5% of actives hired before 4/1/1986 and current retirees who are not yet Medicare eligible will not be eligible for Medicare Part A.

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26. 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, 7.5% is applied to the FY19 pre-Medicare medical claims costs to get the FY20 medical claims costs.

Fiscal year	Medical pre-65	Medical post-65	Prescription Drugs / EGWP	RDS
2019	7.5%	5.5%	8.5%	4.7%
2020	7.0	5.4	8.0	4.7
2021	6.5	5.4	7.5	4.6
2022	6.3	5.4	7.1	4.6
2023	6.1	5.4	6.8	4.6
2024	5.9	5.4	6.4	4.6
2025	5.8	5.4	6.1	4.6
2026	5.6	5.4	5.7	4.6
2027-2040	5.4	5.4	5.4	4.5
2041	5.3	5.3	5.3	4.5
2042	5.2	5.2	5.2	4.5
2043	5.1	5.1	5.1	4.5
2044	5.1	5.1	5.1	4.5
2045	5.0	5.0	5.0	4.5
2046	4.9	4.9	4.9	4.5
2047	4.8	4.8	4.8	4.5
2048	4.7	4.7	4.7	4.5
2049	4.6	4.6	4.6	4.5
2050+	4.5	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. The model was updated this year to use the newest version and incorporate recent trend survey information, which generated the updated trend rates shown above.

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The table below shows the amount each trend rate shown on the previous page was increased by the amount for the Cadillac Tax:

Fiscal year	Pre-65	Post-65	Fiscal year	Pre-65	Post-65
2018-2030	—%	—%	2070	0.21%	0.46%
2031	—	0.15	2071	0.21	0.45
2032	—	0.34	2072	0.20	0.44
2033	—	0.30	2073	0.20	0.43
2034	—	0.28	2074	0.20	0.42
2035	—	0.26	2075	0.19	0.41
2036	—	0.26	2076	0.19	0.40
2037	—	0.21	2077	0.18	0.39
2038	0.10	0.22	2078	0.18	0.38
2039	0.09	0.20	2079	0.17	0.37
2040	0.08	0.16	2080	0.17	0.36
2041	0.07	0.14	2081	0.17	0.35
2042	0.06	0.12	2082	0.16	0.34
2043	0.04	0.06	2083	0.16	0.33
2044	0.04	0.07	2084	0.15	0.32
2045	0.04	0.06	2085	0.15	0.31
2046	0.03	0.05	2086	0.15	0.31
2047	0.04	0.10	2087	0.14	0.30
2048	0.04	0.43	2088	0.14	0.29
2049	0.05	0.57	2089	0.14	0.29
2050	0.05	0.52	2090	0.13	0.28
2051	0.06	0.60	2091	0.13	0.27
2052	0.06	0.63	2092	0.13	0.27
2053	0.07	0.69	2093	0.13	0.26
2054	0.10	0.69	2094	0.12	0.25
2055	0.30	0.68	2095	0.12	0.25
2056	0.30	0.67	2096	0.12	0.24
2057	0.29	0.66	2097	0.11	0.24
2058	0.29	0.64	2098	0.11	0.23
2059	0.28	0.62	2099	0.11	0.22
2060	0.27	0.60	2100	0.11	0.22
2061	0.27	0.58	2101	0.10	0.21
2062	0.26	0.57	2102	0.10	0.21
2063	0.25	0.56	2103	0.10	0.20
2064	0.25	0.54	2104	0.10	0.20
2065	0.24	0.53	2105	0.10	0.19
2066	0.24	0.51	2106	0.09	0.19
2067	0.23	0.50	2107	0.09	0.19
2068	0.23	0.49	2108	0.09	0.18

27. 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)
85-95	0.3	(2.5)
95 +	—	—

State of Alaska
Public Employees' Retirement System
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Summary of Actuarial Assumptions and Changes in Assumptions

28. Retired Member
 Contributions for
 Medical Benefits

Currently contributions are required for PERS members who are under age 60 and have less than 30 years of service (25 for Peace Officer/Firefighter). Eligible Tier 1 members are exempt from contribution requirements. Annual FY19 contributions based on monthly rates shown below for calendar 2018 and 2019 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 or 3 who are assumed to retire prior to age 60 with less than 30 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.

<u>Coverage category</u>	<u>Calendar 2019</u>		<u>Calendar 2018</u>
	<u>Annual contribution</u>	<u>Monthly contribution</u>	<u>Monthly contribution</u>
Retiree only	\$ 9,876	823	823
Retiree and spouse	19,764	1,647	1,647
Retiree and child(ren)	13,956	1,163	1,163
Retiree and family	23,844	1,987	1,987
Composite	14,676	1,223	1,223

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29. Trend Rate for Retired Member Medical Contributions
- 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, 7.6% is applied to the FY19 retired member medical contributions to get the FY20 retired member medical contributions.

Trend Assumptions	
Fiscal year:	
2019	7.6%
2020	7.2
2021	6.8
2022	6.5
2023	6.3
2024	6.0
2025	5.9
2050	4.5
2100	4.5

- Graded trend rates for retired member medical contributions were updated to the rates shown above for the June 30, 2018 valuation to reflect the updated ultimate trend assumption of 4.5% used for gross cost components. Actual FY19 retired member medical contributions are reflected in the valuation.
30. Healthcare Participation
- 100% system paid of members and their spouses are assumed to elect the 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.
31. Changes in Assumptions Since the Prior Valuation
- Effective for the June 30, 2018 valuation, the Board adopted changes to the demographic and economic assumptions recommended by the actuary, based on the results of an experience analysis performed on the population experience from July 1, 2013 to June 30, 2017. The changes in assumptions were adopted by the Board during the January 2019 Board meeting.

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Summary of Actuarial Assumptions and Changes in Assumptions

Table 1
Alaska PERS
Salary Scale

Peace Officer/Firefighter:

Years of Service	Percent Increase	Years of Service	Percent Increase
0	7.75%	11	3.45%
1	7.25	12	3.35
2	6.75	13	3.25
3	6.25	14	3.15
4	5.75	15	3.05
5	5.25	16	2.95
6	4.75	17	2.85
7	4.25	18	2.75
8	3.75	19	2.75
9	3.65	20+	2.75
10	3.55		

Others:

Years of Service	Percent Increase	Years of Service	Percent Increase
0	6.75%	11	3.25%
1	6.25	12	3.15
2	5.75	13	3.05
3	5.25	14	2.95
4	4.75	15	2.85
5	4.25	16	2.75
6	3.75	17	2.75
7	3.65	18	2.75
8	3.55	19	2.75
9	3.45	20+	2.75
10	3.35		

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State of Alaska
Public Employees' Retirement System
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Summary of Actuarial Assumptions and Changes in Assumptions

Table 2
Alaska PERS
Turnover Assumptions

Peace Officer/Firefighter:		
Years of Service	Male (rounded)	Female (rounded)
0	0.15	0.15
1	0.12	0.08
2	0.07	0.06
3	0.06	0.06
4	0.06	0.07

Members with 5 or more years of service

Age	Male	Female	Age	Male	Female
20	0.047000	0.068000	40	0.016800	0.033900
21	0.047000	0.068000	41	0.016700	0.033700
22	0.047000	0.068000	42	0.016700	0.033600
23	0.044600	0.068000	43	0.017100	0.033300
24	0.042200	0.068000	44	0.017600	0.033100
25	0.039800	0.068000	45	0.018100	0.032800
26	0.037400	0.068000	46	0.018500	0.032500
27	0.035000	0.068000	47	0.019000	0.032300
28	0.033200	0.066300	48	0.022200	0.031900
29	0.031400	0.064600	49	0.025300	0.031500
30	0.029600	0.062900	50	0.031800	0.064200
31	0.027900	0.061200	51	0.042400	0.063200
32	0.026100	0.059500	52	0.042400	0.061900
33	0.025000	0.053600	53	0.042400	0.060400
34	0.023900	0.047700	54	0.042400	0.030000
35	0.022800	0.041800	55+	0.030000	0.020000
36	0.021700	0.036000			
37	0.020600	0.030100			
38	0.020500	0.029900			
39	0.020400	0.029800			

State of Alaska
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Table 3
Alaska PERS
Turnover Assumptions

Others:

Years of Service	Hire Age < 35		Hire Age > 35	
	Male (rounded)	Female (rounded)	Male	Female
0	0.29	0.29	0.20	0.20
1	0.16	0.20	0.12	0.15
2	0.13	0.16	0.10	0.13
3	0.10	0.13	0.09	0.10
4	0.08	0.10	0.09	0.09

Members with 5 or more years of service

Age	Male	Female	Age	Male	Female
20	0.114000	0.129900	40	0.048600	0.056500
21	0.114000	0.129900	41	0.047100	0.055100
22	0.114000	0.129900	42	0.045600	0.053800
23	0.108300	0.122100	43	0.045000	0.051900
24	0.102600	0.114300	44	0.044400	0.049900
25	0.096900	0.106500	45	0.043900	0.048000
26	0.091200	0.098700	46	0.043300	0.046000
27	0.085500	0.090900	47	0.042700	0.044100
28	0.083000	0.087200	48	0.042600	0.044000
29	0.080500	0.083400	49	0.042400	0.043900
30	0.078000	0.079700	50	0.036300	0.044500
31	0.075400	0.076000	51	0.036000	0.044300
32	0.072900	0.072300	52	0.035600	0.044000
33	0.069900	0.068800	53	0.035200	0.043700
34	0.066900	0.065300	54	0.041700	0.062000
35	0.063900	0.061700	55+	0.030000	0.050000
36	0.061000	0.058200			
37	0.058000	0.054700			
38	0.056300	0.053500			
39	0.054700	0.052300			

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Summary of Actuarial Assumptions and Changes in Assumptions

Table 4
Alaska PERS
Disability Table

Age	Peace Officer / Firefighter Rate		Other Member Rate	
	Male	Female	Male	Female
20	0.000179	0.000112	0.000327	0.000376
21	0.000179	0.000112	0.000327	0.000376
22	0.000179	0.000112	0.000327	0.000376
23	0.000244	0.000153	0.000360	0.000400
24	0.000310	0.000194	0.000392	0.000424
25	0.000374	0.000234	0.000425	0.000448
26	0.000440	0.000275	0.000456	0.000472
27	0.000505	0.000316	0.000489	0.000496
28	0.000526	0.000329	0.000501	0.000510
29	0.000548	0.000343	0.000513	0.000524
30	0.000570	0.000356	0.000524	0.000538
31	0.000591	0.000370	0.000536	0.000554
32	0.000612	0.000383	0.000548	0.000568
33	0.000634	0.000397	0.000566	0.000586
34	0.000657	0.000411	0.000584	0.000606
35	0.000679	0.000425	0.000602	0.000624
36	0.000702	0.000439	0.000620	0.000644
37	0.000724	0.000453	0.000638	0.000662
38	0.000757	0.000473	0.000669	0.000696
39	0.000789	0.000493	0.000701	0.000728
40	0.000822	0.000514	0.000734	0.000762
41	0.000854	0.000534	0.000765	0.000794
42	0.000887	0.000554	0.000797	0.000826
43	0.000977	0.000611	0.000879	0.000908
44	0.001066	0.000667	0.000962	0.000990
45	0.001157	0.000723	0.001043	0.001072
46	0.001247	0.000780	0.001125	0.001154
47	0.001337	0.000836	0.001208	0.001236
48	0.001462	0.000914	0.001329	0.001360
49	0.001588	0.000993	0.001451	0.001484
50	0.001714	0.001071	0.001572	0.001608
51	0.001839	0.001150	0.001694	0.001734
52	0.001965	0.001228	0.001815	0.001858
53	0.002294	0.001434	0.002132	0.002168
54	0.002624	0.001640	0.002450	0.002478

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Table 5
Alaska PERS Peace Officer / Firefighter
Retirement Table

Age at Retirement	Retirement Rate			
	Reduced Rates		Unreduced Rates	
	Male	Female	Male	Female
<47	N/A	N/A	0.088000	0.060000
47	N/A	N/A	0.088000	0.150000
48	N/A	N/A	0.143000	0.150000
49	N/A	N/A	0.143000	0.150000
50	0.050000	0.050000	0.165000	0.150000
51	0.050000	0.070000	0.165000	0.150000
52	0.070000	0.070000	0.203500	0.150000
53	0.070000	0.070000	0.203500	0.150000
54	0.070000	0.350000	0.203500	0.250000
55	0.070000	0.080000	0.275000	0.200000
56	0.070000	0.080000	0.275000	0.150000
57	0.070000	0.080000	0.275000	0.150000
58	0.070000	0.080000	0.275000	0.150000
59	0.200000	0.200000	0.275000	0.150000
60	N/A	N/A	0.330000	0.250000
61	N/A	N/A	0.275000	0.200000
62	N/A	N/A	0.275000	0.300000
63	N/A	N/A	0.275000	0.500000
64	N/A	N/A	0.220000	0.500000
65	N/A	N/A	0.220000	0.500000
66	N/A	N/A	0.275000	0.500000
67	N/A	N/A	0.550000	0.500000
68	N/A	N/A	0.550000	0.500000
69	N/A	N/A	0.550000	0.500000
70	N/A	N/A	1.000000	1.000000
71	N/A	N/A	1.000000	1.000000
72	N/A	N/A	1.000000	1.000000
73	N/A	N/A	1.000000	1.000000
74	N/A	N/A	1.000000	1.000000
75	N/A	N/A	1.000000	1.000000

Actuarial Section

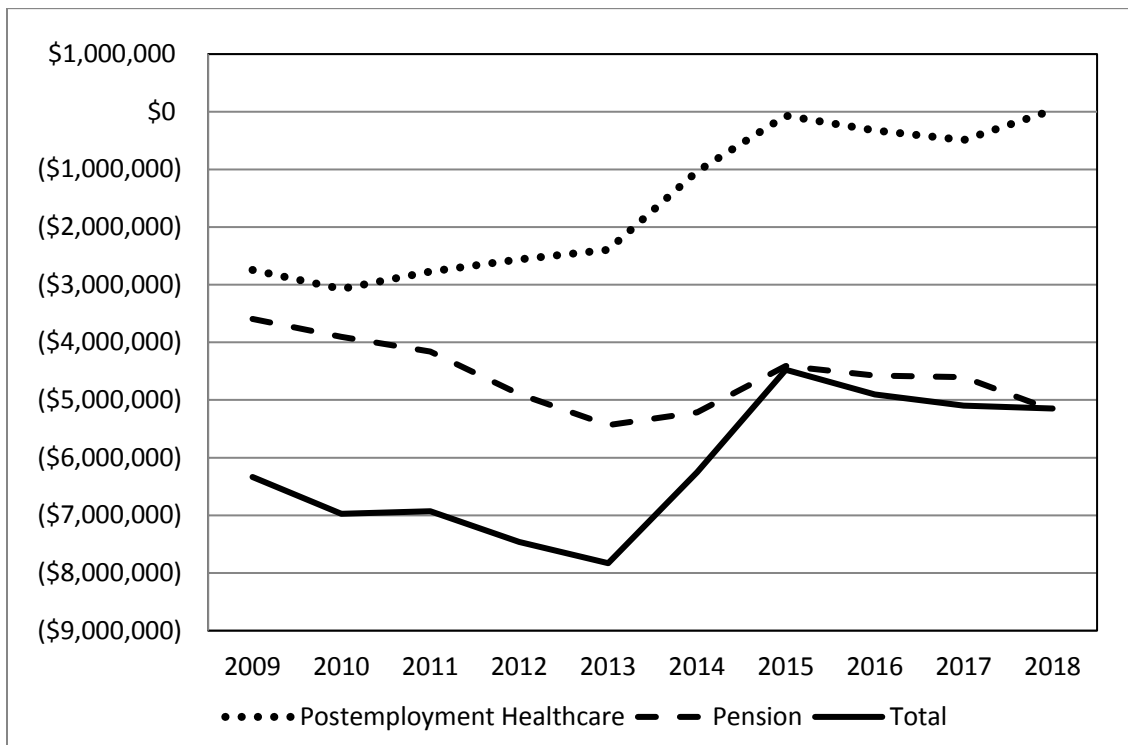
State of Alaska
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Summary of Actuarial Assumptions and Changes in Assumptions

Table 6
Alaska PERS Other
Retirement Table

Age at Retirement	Retirement Rates			
	Reduced		Unreduced	
	Male	Female	Male	Female
<50	N/A	N/A	0.1100	0.1100
50	0.0600	0.0800	0.3300	0.3850
51	0.0600	0.0800	0.3575	0.3850
52	0.0900	0.0800	0.3575	0.3850
53	0.0900	0.0800	0.3575	0.3850
54	0.2000	0.1500	0.3850	0.3850
55	0.0600	0.0600	0.3300	0.3300
56	0.0600	0.0600	0.2200	0.2200
57	0.0600	0.0600	0.2200	0.1980
58	0.0600	0.0600	0.2200	0.1980
59	0.1500	0.2000	0.2200	0.1980
60	N/A	N/A	0.2200	0.2310
61	N/A	N/A	0.2200	0.2200
62	N/A	N/A	0.2200	0.2200
63	N/A	N/A	0.2200	0.2200
64	N/A	N/A	0.2200	0.2200
65	N/A	N/A	0.2475	0.2860
66	N/A	N/A	0.2750	0.2860
67	N/A	N/A	0.2200	0.2420
68	N/A	N/A	0.2475	0.2420
69	N/A	N/A	0.2750	0.2420
70	N/A	N/A	0.2750	0.2420
71	N/A	N/A	0.2750	0.2420
72	N/A	N/A	0.2750	0.2750
73	N/A	N/A	0.2750	0.2750
74	N/A	N/A	0.2750	0.3850
75-79	N/A	N/A	0.5500	0.5500
80+	N/A	N/A	1.0000	1.0000

Public Employees' 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
2009	\$ (2,742,835)	\$ (3,593,558)	\$ (6,336,393)	61.8%
2010	(3,073,188)	(3,901,840)	(6,975,028)	61.5
2011	(2,769,878)	(4,156,898)	(6,926,776)	63.0
2012	(2,561,808)	(4,898,523)	(7,460,331)	61.3
2013	(2,395,001)	(5,435,132)	(7,830,133)	60.8
2014	(1,036,453)	(5,216,321)	(6,252,774)	70.1
2015	(68,435)	(4,406,769)	(4,475,204)	75.4
2016	(325,127)	(4,576,371)	(4,901,498)	70.0
2017	(492,197)	(4,602,427)	(5,094,624)	74.4
2018	28,405	(5,175,841)	(5,147,436)	76.0

10-YEAR TREND OF UNFUNDED LIABILITY
(In thousands)



Actuarial Section

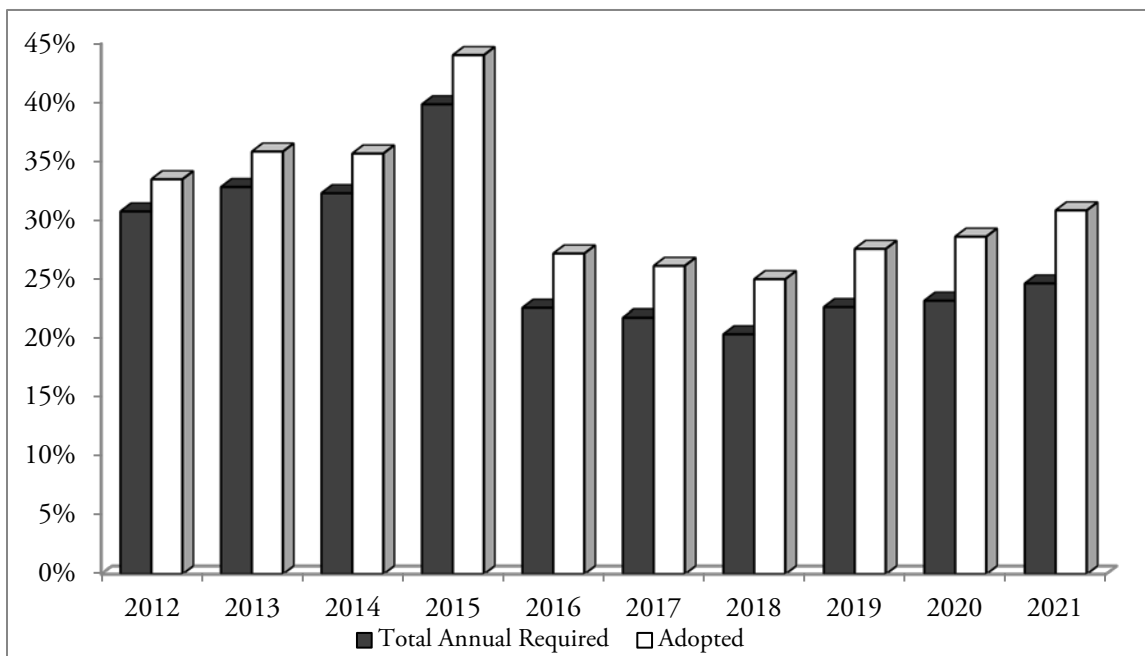
Public Employees' Retirement System Defined Benefit Retirement Plan Employer Contribution Rates					
Year Ended June 30	Actuarially Determined				Adopted
	Actuarial Valuation Year Ended June 30	Normal Cost ¹	Past Service	Total Annual Required	
2012	2009	8.28%	22.48%	30.76%	33.49%
2013	2010	8.67	24.16	32.83	35.84
2014	2011	8.12	24.19	32.31	35.68
2015	2012	6.82	33.03	39.85	44.03
2016	2013	6.05	16.53	22.58	27.19
2017	2014	5.76	16.02	21.78	26.14
2018	2015	5.10	15.28	20.38	25.01
2019	2016	6.11	16.53	22.64	27.58
2020	2017	5.74	17.44	23.18	28.62
2021	2018	6.70	17.94	24.64	30.85

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



Public Employees' 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
All Others					
June 30, 2018	11,927	\$ 881,716	\$ 73,926	1.0%	155
June 30, 2017	13,113	960,106	73,218	1.4	155
June 30, 2016	14,401	1,039,960	72,214	3.2	155
June 30, 2015	15,833	1,108,218	69,994	2.1	159
June 30, 2014	17,339	1,188,918	68,569	3.4	159
June 30, 2013	18,890	1,252,786	66,320	4.5	159
June 30, 2012	20,566	1,305,337	63,471	4.6	160
June 30, 2011	22,118	1,342,122	60,680	4.7	160
June 30, 2010	24,054	1,393,803	57,945	4.5	160
June 30, 2009	25,089	1,390,971	55,441	5.1	159
Peace Officer / Firefighter					
June 30, 2018	1,507	\$ 163,630	\$ 108,580	1.5%	155
June 30, 2017	1,606	171,821	106,987	1.6	155
June 30, 2016	1,704	179,461	105,317	3.8	155
June 30, 2015	1,827	185,350	101,450	2.5	159
June 30, 2014	1,958	193,737	98,946	3.4	159
June 30, 2013	2,065	197,534	95,658	4.8	159
June 30, 2012	2,164	197,544	91,286	4.1	160
June 30, 2011	2,275	199,537	87,709	8.6	160
June 30, 2010	2,388	192,895	80,777	2.8	160
June 30, 2009	2,476	194,519	78,562	5.0	159
Total and average earnings ("valuation pay") are the annualized earnings for the fiscal year ending on the valuation date.					

Actuarial Section

Public Employees' Retirement System Defined Benefit Retirement Plan Schedule of Benefit Recipients Added to and Removed from Rolls								
Year Ended	Added to Rolls		Removed from Rolls		Rolls - End of Year		Percent Increase in Annual Pension Benefits	Average Annual Pension Benefits
	No. ¹	Annual Pension Benefits ¹	No. ¹	Annual Pension Benefits ¹	No.	Annual Pension Benefits		
All Others								
June 30, 2018	1,708	\$ 46,316,673	673	\$ 10,533,376	32,067	\$ 699,761,583	5.4%	\$ 21,822
June 30, 2017	1,699	44,619,382	816	14,610,212	31,032	663,978,286	4.7	21,398
June 30, 2016	1,780	44,409,702	660	12,099,362	30,149	633,969,116	5.4	21,028
June 30, 2015	1,583	39,939,292	627	7,232,812	29,029	601,658,756	5.7	20,726
June 30, 2014	1,778	44,823,611	603	3,011,383	28,073	568,952,296	7.9	20,267
June 30, 2013	1,808	43,247,667	554	4,861,626	26,898	527,140,068	7.9	19,598
June 30, 2012	1,679	37,855,250	636	5,344,239	25,644	488,754,027	7.1	19,059
June 30, 2011	1,595	37,100,217	554	6,897,899	24,601	456,243,016	7.1	18,546
June 30, 2010	1,667	35,089,579	517	8,712,630	23,560	426,040,698	6.6	18,083
June 30, 2009	1,340	25,402,811	476	28,773	22,410	399,663,749	6.8	17,834
Peace Officer / Firefighter								
June 30, 2018	153	\$ 7,002,504	81	\$ 2,573,694	3,387	\$ 122,539,883	3.7%	\$ 36,179
June 30, 2017	166	6,971,580	54	2,132,027	3,315	118,111,073	4.3	35,629
June 30, 2016	137	6,618,744	49	1,594,392	3,204	113,271,520	4.6	35,353
June 30, 2015	136	5,617,344	46	633,046	3,116	108,247,168	4.8	34,739
June 30, 2014	109	4,270,620	50	(145,769)	3,026	103,262,870	4.5	34,125
June 30, 2013	113	4,162,920	42	240,775	2,967	98,846,479	4.1	33,315
June 30, 2012	179	5,246,271	41	(177,568)	2,896	94,924,334	6.1	32,778
June 30, 2011	114	3,772,720	33	116,090	2,758	89,500,495	4.3	32,451
June 30, 2010	118	3,593,724	46	1,413,071	2,677	85,843,865	2.6	32,067
June 30, 2009	108	2,759,299	39	(518,134)	2,605	83,663,212	4.1	32,116
¹ Numbers are estimated, and include other internal transfers.								

Public Employees' Retirement System Defined Benefit Retirement Plan Pension Solvency Test (In thousands)							
Valuation Date	Pension Actuarial Accrued Liability For:			Pension Valuation Assets	Portion of Actuarial Accrued Liabilities Covered by Assets:		
	(1) Active Member Contributions	(2) Inactive Members	(3) Active Members (Employer-Financed Portion)		(1)	(2)	(3)
June 30, 2016	1,458,830	9,147,818	3,026,385	9,056,662	100.0	83.1	—
June 30, 2015	1,475,852	8,762,863	3,099,214	8,931,160	100.0	85.1	—
June 30, 2014 ^{1 2}	1,486,335	8,264,683	3,196,741	7,731,438	100.0	75.6	—
June 30, 2013	1,479,538	7,514,255	2,952,088	6,510,749	100.0	67.0	—
June 30, 2012	1,459,943	7,057,967	2,911,034	6,530,421	100.0	71.8	—
June 30, 2011	1,421,967	6,657,517	2,839,563	6,762,149	100.0	80.2	—
June 30, 2010 ¹	1,388,029	6,268,461	2,715,182	6,469,832	100.0	81.1	—
June 30, 2009	1,315,924	5,914,959	2,471,203	6,108,528	100.0	81.0	—
June 30, 2008	1,242,288	5,606,402	2,305,592	7,210,772	100.0	100.0	15.7
June 30, 2007	1,203,007	5,282,132	2,177,185	6,739,004	100.0	100.0	11.7

¹ Change in Assumptions
² Change in Methods
³ The pension and postemployment healthcare valuation assets were allocated using a ratio of fair value of assets as of June 30, 2005

Actuarial Section

Public Employees' Retirement System Defined Benefit Retirement Plan Postemployment Healthcare Solvency Test (In thousands)							
Valuation Date	Postemployment Healthcare Actuarial Accrued Liability For:			Post-Employment Healthcare Valuation Assets	Portion of Actuarial Accrued Liabilities Covered by Assets:		
	(1) Active Member Contributions	(2) Inactive Members	(3) Active Members (Employer-Financed Portion)		(1)	(2)	(3)
June 30, 2016	—	5,393,537	2,342,920	7,411,330	100.0	100.0	86.1
June 30, 2015	—	5,159,283	2,151,451	7,242,299	100.0	100.0	96.8
June 30, 2014 ¹	—	5,455,114	2,494,499	6,913,160	100.0	100.0	58.5
June 30, 2013 ¹	—	5,298,380	2,748,498	5,651,877	100.0	100.0	12.9
June 30, 2012 ¹	—	5,026,080	2,837,337	5,301,609	100.0	100.0	9.7
June 30, 2011	—	4,812,845	3,008,658	5,051,625	100.0	100.0	7.9
June 30, 2010 ¹	—	4,581,806	3,179,014	4,687,632	100.0	100.0	3.3
June 30, 2009	—	4,232,394	2,644,891	4,134,450	100.0	97.7	—
June 30, 2008 ¹	—	4,166,270	2,567,589	3,829,334	100.0	91.9	—
June 30, 2007	—	3,684,906	2,223,703	3,161,956	100.0	85.8	—

Healthcare liabilities are calculated using the funding assumptions (i.e., funding investment return and net of Medicare Part D subsidy).

¹ Change in Assumptions
² Change in Methods
³ The pension and postemployment healthcare valuation assets were allocated using a ratio of fair value of assets as of June 30, 2005

Public Employees' 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 Total				
	2018	2017	2016	2015	2014
Health Claims	(1.75)%	(2.90)%	1.02%	(3.65)%	(0.85)%
Salary Experience	(0.37)	(0.42)	(0.35)	(0.32)	(0.19)
Investment Experience	1.12	1.36	1.40	0.45	(4.63)
Demographic Experience and Miscellaneous	(1.88)	(1.97)	0.13	0.34	(0.04)
Contribution Shortfall	0.25	0.04	—	—	0.67
(Gain) or Loss During Year From Experience	(2.63)	(3.89)	2.20	(3.18)	(5.04)
Assumption / Method Changes and EGWP	4.10	3.41	2.85	—	(13.46)
System Benefit Changes	—	—	—	—	—
Composite (Gain) or Loss During Year	1.47	(0.48)	5.05	(3.18)	(18.50)
Beginning Employer/State Contribution Rate	23.17	23.65	18.60	21.78	40.28
Ending Valuation Year Employer/State Contribution Rate	<u>24.64%</u>	<u>23.17%</u>	<u>23.65%</u>	<u>18.60%</u>	<u>21.78%</u>
Fiscal Year Employer/State Contribution Rate	24.93%	23.18%	22.64%	20.38%	21.78%
Fiscal Year for Which Rate Applies	FY21	FY20	FY19	FY18	FY17

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 22.58%.

Actuarial Section

Public Employees' 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		
	2018	2017	2016	2018	2017	2016
Health Claims	N/A	N/A	N/A	(1.75)%	(2.90)%	1.02%
Salary Experience	(0.37)%	(0.42)%	(0.35)%	N/A	N/A	N/A
Investment Experience	0.63	0.75	0.77	0.49	0.61	0.63
Demographic Experience and Miscellaneous	(0.24)	(1.01)	0.13	(1.64)	(0.96)	N/A
Contribution Shortfall	0.17	0.18	—	(0.08)	(0.14)	—
(Gain) or Loss During Year From Experience	0.19	(0.50)	0.55	(2.82)	(3.39)	1.65
Assumption and Method Changes	1.98	—	1.92	2.12	3.41	0.93
System Benefit Changes	—	—	—	—	—	—
Composite (Gain) or Loss During Year	2.17	(0.50)	2.47	0.70	0.02	2.58
Beginning Employer/State Contribution Rate	18.21	18.71	16.24	4.96	4.94	2.36
Ending Valuation year Employer/State Contribution Rate	<u>20.38%</u>	<u>18.21%</u>	<u>18.71%</u>	<u>4.26%</u>	<u>4.96%</u>	<u>4.94%</u>
Fiscal Year Employer/State Contribution Rate	20.66%	18.29%	18.27%	4.27%	4.89%	4.37%
Fiscal Year for Which Rate Applies	FY21	FY20	FY19	FY21	FY20	FY19

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Summary of Plan Provisions and Changes in Plan Provisions

1. Effective Date

January 1, 1961, with amendments through June 30, 2017. Chapter 82, 1986 Session Laws of Alaska, created a two tier retirement system. Members who were first hired under PERS before July 1, 1986 (Tier 1) are eligible for different benefits than members hired after June 30, 1986 (Tier 2). Chapter 4, 1996 Session Laws of Alaska created a third tier for members who were first hired after June 30, 1996 (Tier 3). 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 Public Employees' 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 PERS funds.

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

3. Employers Included

Currently there are 155 employers participating in PERS, including the State of Alaska and 154 political subdivisions and public organizations. Two additional political subdivisions participate in PERS for healthcare benefits only.

4. Membership

PERS membership is mandatory for all permanent full-time and part-time employees of the State of Alaska and participating political subdivisions and public organizations, unless they are specifically excluded by Alaska Statute or employer participation agreements. Employees participating in the University of Alaska's Optional Retirement Plan or other retirement plans funded by the State are not covered by PERS. Elected officials may waive PERS membership.

Certain members of the Alaska Teachers' Retirement System (TRS) are eligible for PERS retirement benefits for their concurrent elected public official service with municipalities. In addition, employees who work half-time in PERS and TRS simultaneously are eligible for half-time PERS and TRS 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.

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5. Credited Service

Permanent employees who work at least 30 hours a week earn full-time credit; part-time employees working between 15 and 30 hours a week earn partial credit based upon the number of hours worked. Members receiving PERS occupational disability benefits continue to earn PERS credit while disabled. Survivors who are receiving occupational death benefits continue to earn PERS service credit while occupational survivor benefits are being paid.

Members may claim other types of service, including:

- part-time State of Alaska service rendered after December 31, 1960, and before January 1, 1976;
- service with the State, former Territory of Alaska, or U.S. Government in Alaska before January 1, 1961;
- past Peace Officer, correctional officer, fire fighter, and special officer service after January 1, 1961;
- military service (not more than five years may be claimed);
- temporary service after December 31, 1960;
- elected official service before January 1, 1981;
- Alaska Bureau of Indian Affairs service;
- past service rendered by employees who worked half-time in the PERS and TRS simultaneously;
- leave without pay service after June 13, 1987, while receiving Workers' Compensation;
- Village Public Safety Officer service; and
- service as a temporary employee of the legislature before July 1, 1979, but this service must have been claimed no later than July 1, 2003, or by the date of retirement, if sooner (not more than 10 years may be claimed).

Except for service before January 1, 1961, with the State, former Territory of Alaska, or U.S. Government in Alaska, contributions are required for all past service.

Past employment with participating political subdivisions that occurred before the employers joined PERS is creditable if the employers agree to pay the required contributions.

At the election of certain PERS members, certain service may be credited in the same fashion as members in TRS.

Members employed as dispatchers or within a state correctional facility may, at retirement, elect to convert their dispatcher or correctional facility service from "all other" service to Peace Officer/Firefighter service and retire under the 20 year retirement option. Members pay the full actuarial cost of conversion.

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6. Employer Contributions

PERS 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 AS 39.35.255 effective July 1, 2008, each PERS employer will pay a simple uniform contribution rate of 22% of member payroll.

7. Additional State Contributions

Pursuant to AS 39.35.280 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 (22%) will be sufficient to pay the total contribution rate adopted by The Alaska Retirement Management Board.

8. Member Contributions

Mandatory Contributions: Peace Officer/Firefighter members are required to contribute 7.5% of their compensation; all Others contribute 6.75%. Those all Others who have elected to have their service calculated under TRS rules contribute 9.76% of their compensation. Members' contributions are deducted from gross wages before federal income taxes are withheld.

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

Voluntary Contributions: Members may voluntarily contribute up to 5% of their salary on an after-tax basis. Voluntary contributions are recorded in a separate account and are payable to the:

- a. member in lump sum payment upon termination of employment;
- b. member's beneficiary if the member dies; or
- c. member in a lump sum, life annuity, or payments over a designated period of time when the member retires.

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

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Refund of Contributions: Terminated members may receive refunds of their member contribution accounts which includes their mandatory and voluntary 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.

Reinstatement of Contributions: Refunded accounts and the corresponding PERS service may be reinstated upon reemployment in PERS 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, 1986 (Tier 1), and 60 or early retirement at age 55 if they were hired after July 1, 1986 (Tiers 2 & 3). Additionally, they must have at least:
 - i. five years of paid-up PERS service;
 - ii. 60 days of paid-up PERS service as employees of the legislature during each of the five legislative sessions and they were first hired by the legislature before May 30, 1987;
 - iii. 80 days of paid-up PERS service as employees of the legislature during each of the five legislative sessions and they were first hired by the legislature after May 29, 1987;
 - iv. two years of paid-up PERS service and they are vested in the Teachers' Retirement System (TRS); or
 - v. two years of paid-up PERS service and a minimum three years of TRS service to qualify for a public service benefit.
- b. Members may retire at any age when they have:
 - i. 20 paid-up years of PERS Peace Officer/Firefighter service; or
 - ii. 30 paid-up years of PERS "all other" or "elected official" service.

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 under the "20 and out" or "30 and out" provisions. Members may receive early, actuarially reduced benefits when they reach early retirement age and complete the service required.

Members may elect an early retirement or a joint and survivor option. Members who entered PERS prior to July 1, 1996 may also select a 66-2/3 last survivor option and a level income option. Under these options and early retirement, benefits are actuarially adjusted so that members receive the actuarial equivalents of their normal benefit amounts.

Benefit Calculations: Retirement benefits are calculated by multiplying the average monthly compensation (AMC) times credited PERS service times the percentage multiplier. The AMC is determined by averaging the salaries earned during the five highest (three highest for Peace Officer/Firefighter members or members hired prior to July 1, 1996) consecutive payroll years. Members must earn at least 115 days of credit in the last year worked to include it in the

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AMC calculation. PERS pays a minimum benefit of \$25.00 per month for each year of service when the calculated benefit is less.

The percentage multipliers for Peace Officer/Firefighter members are 2% for the first ten years of service and 2.5% for all service over 10 years.

The percentage multipliers for all Others are 2% for the first ten years, 2.25% for the next ten years, and 2.5% for all remaining service earned on or after July 1, 1986. All service before that date is calculated at 2%.

Indebtedness: Members who terminate and refund their PERS contributions are not eligible to retire, unless they return to PERS employment and pay back their refunds plus interest or accrue additional service which qualifies them for retirement. PERS refunds must be paid in full if the corresponding service is to count toward the minimum service requirements for retirement. Refunded PERS service is included in total service for the purpose of calculating retirement benefits. However, if a member is otherwise eligible to retire, 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.

10. Reemployment of Retired Members

Retirement and retiree healthcare benefits are suspended while retired members are reemployed under e PERS. During reemployment, members earn additional PERS service and contributions are withheld from their wages. A member who retired with a normal retirement benefit can elect to waive payment of PERS contributions. The waiver allows the member to continue receiving the retirement benefit during the period of reemployment. Members who elect the waiver option do not earn additional PERS service. The Waiver Option first became effective July 1, 2005 and applies to reemployment periods after that date. The Waiver Option is not available to members who retired early or under the Retirement Incentive Programs (RIPs). The Waiver Option is no longer available after June 30, 2009.

Members retired under the Retirement Incentive Programs (RIPs) who return to employment under PERS, TRS, or the University of Alaska's Optional Retirement Plan will:

- a) forfeit the three years of incentive credits that they received;
- b) owe PERS 150% of the benefits that they received for state and political subdivision members, and 110% for school district employees, under the 1996-2000 RIP, which may include costs for health insurance, excluding amounts that they paid to participate for the 1986 and 1989 RIPs. Under prior RIPs, the penalty is 110% of the benefits received; 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.

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.

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11. Postemployment Healthcare Benefits

Major medical benefits are provided to retirees and their surviving spouses by PERS for all employees hired before July 1, 1986 (Tier 1) and disabled retirees. Employees hired after June 30, 1986 (Tier 2) and their surviving spouses with five years of credited service (or ten years of credited service for those first hired after June 30, 1996 (Tier 3)) must pay the full monthly premium if they are under age sixty and will receive benefits paid by PERS if they are over age sixty. Tier 3 Members with between five and ten years of credited service must pay the full monthly premium regardless of their age. Tier 2 and Tier 3 Members with less than five years of credited service are not eligible for postemployment healthcare benefits. Tier 2 Members who are receiving a conditional benefit and are age eligible are eligible for postemployment healthcare benefits. In addition, Peace Officers and their surviving spouses with twenty-five years of Peace Officer membership service, Other employees and their surviving spouses with thirty years of membership service, and any disabled member receive benefits paid by PERS, regardless of their age or date of hire.

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.

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, 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.

12. Disability Benefits

Monthly disability benefits are paid to permanently disabled members until they die, recover or become eligible for normal retirement. Members are appointed to normal retirement on the first of the month after they become eligible.

Occupational Disability: Members are not required to satisfy age or service requirements to be eligible for occupational disability. Monthly benefits are equal to 40% of their gross monthly compensation on the date of their disability. Members on occupational disability continue to earn PERS service until they become eligible for normal

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retirement. Peace Officer/Firefighter members may elect to retain the disability benefit formula for the calculation of their normal retirement benefits.

Nonoccupational Disability: Members must be vested (five paid up years of PERS service) to be eligible for non-occupational disability benefits. Monthly benefits are calculated based on the member's average monthly compensation and PERS service on the date of termination from employment because of disability. Members do not earn PERS service while on non-occupational disability.

13. 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 occupational and non-occupational death provisions, the designated beneficiary receives the lump sum benefit described below.

Occupational Death: When an active member (vested or non-vested) dies from occupational causes, a monthly survivor's pension may be paid to the spouse. The pension equals 40% of the member's gross monthly compensation 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 salary on the date of death and service, including service accumulated from the date of the member's death to the normal retirement date. Survivors of Peace Officer/Firefighter members receive the greater of 50% of the member's gross monthly compensation on the date of death or disability, or 75% of the member's monthly normal retirement benefit (including service projected to Normal Retirement). If the member is unmarried with no children, a refund of contributions is payable to the estate.

Death after Occupational Disability: When a member dies while occupationally disabled, benefits are paid as described above in Occupational Death.

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. The monthly benefit is calculated on the member's average monthly compensation and PERS service at the time of termination or death.

Lump Sum Nonoccupational Death Benefit: Upon the death of a member who has less than one year of service, the designated beneficiary receives the member's contribution account, which includes mandatory and voluntary contributions, indebtedness payments, and interest earned. If the member has more than one year of PERS service or is vested, the beneficiary also receives \$1,000 and \$100 for each year of PERS service.

Death After Retirement: When a retired member dies, the designated beneficiary receives the member's contribution account, less any benefits already paid and the member's last benefit check. If the member selected a survivor option at retirement, the eligible spouse receives continuing, lifetime monthly benefits.

14. 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

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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 PERS 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 has been receiving benefits for at least five years.

Ad-hoc PRPAs, up to a maximum of 4%, may be granted to eligible recipients who first entered PERS before July 1, 1986 (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.

15. Alaska Cost of Living Allowance

Eligible benefit recipients who reside in Alaska receive an Alaska cost of living allowance (COLA) equal to 10% of their base benefits or \$50, whichever is more. The following benefit recipients are eligible:

- a. members who first entered PERS before July 1, 1986 (Tier 1) and their survivors;
- b. members who first entered PERS after June 30, 1986 (Tiers 2 & 3) and their survivors if they are at least age 65; and
- c. all disabled members.

16. Changes in Benefit Provisions Valued Since the Prior Valuation

The PERS medical benefit provisions were changed since the prior valuation to reflect the implementation of EGWP as of January 1, 2019.



August 9, 2019

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

Certification of Actuarial Valuation

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

This report summarizes the annual actuarial valuation results of the State of Alaska Public Employees' Retirement System Defined Contribution Retirement (PERS DCR) Plan as of June 30, 2018 performed by Buck Global, LLC (Buck).

The actuarial valuation is based on financial information provided in the financial statements audited by KPMG LLP, 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, 2018. The actuary did not verify the data submitted, but did perform tests for consistency and reasonableness.

All costs, liabilities and other factors under PERS 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 PERS DCR as of June 30, 2018.

PERS DCR is funded by Employer Contributions in accordance with the funding policy adopted by the Alaska Retirement Management Board (Board). The funding objective for PERS DCR is to pay required contributions that remain level as a percent of PERS 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 PERS DCR compensation over a closed layered 25-year period. 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 PERS 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.

Actuarial Section

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. 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, 2018 to better reflect expected future healthcare experience. Based on recent experience, the health care cost trend assumptions were also updated. A summary of the actuarial assumptions and methods used in this actuarial valuation is shown in Sections 5.2 and 5.3.

Governmental Accounting Standards Board (GASB) Statement No. 74 (GASB 74) was effective for PERS 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. Section 3 of this report contains accounting information previously disclosed under GASB 25 for fiscal years 2007 through 2013 and accounting information previously disclosed under GASB 43 for fiscal years 2007 through 2016.

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

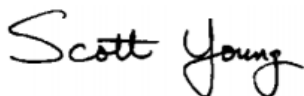
I am available to discuss this report with you at your convenience. I can be reached at 602-803-6174.

Respectfully submitted,



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

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



Scott Young, FSA, EA, MAAA
Director
Buck

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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. Any funding surplus or unfunded actuarial accrued liability is amortized over 25 years as a level percentage of expected payroll. However, in keeping with GASB requirements in effect when the plan was adopted, the net amortization period will not exceed 30 years. Under the new accounting standards (GASB 74 and 75), the GASB requirements will not directly control amortization periods used for funding of the plan.

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

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financial statements audited by KPMG LLP. Valuation assets are constrained to a range of 80% to 120% of the fair value of assets.

C. Valuation of Retiree Medical and Prescription Drug Benefits

The methodology used for the valuation of the retiree medical benefits is described in Section 6.2 of the State of Alaska Public Employees' Retirement System Defined Benefit Plan Actuarial Valuation Report as of June 30, 2018.

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, 2018 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 FY19 claims costs were reduced 2.1% for medical claims, and 10.4% for prescription drugs. In addition, to account for the difference in Medicare coordination, projected FY19 medical claims costs for Medicare eligible retirees were further reduced 29.3%. The medical and prescription drug percentages mentioned above were reduced 0.2% in each future year for the DCR medical benefits to reflect the fact that the medical benefit to be offered to DCR members will have annual indexing of member cost sharing features such as deductibles and out-of-pocket amounts.

No implicit subsidies are assumed. Employees projected to retire with 30 years of service (25 years of service for Peace/Fire) 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. In the prior valuation, the impact of transitioning to the EGWP was valued by increasing the RDS subsidy offset in 2019 by 60% to reflect estimated Medicare reimbursements under the EGWP arrangement. For this year's valuation, the estimated 2019 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.

The Plan will be subject to the high cost plan excise tax (Cadillac tax) and the value of the Health Reimbursement Account must be included along with projected plan costs. Based upon guidance available at the valuation date, Buck estimated the tax based upon a blend of pre and post-Medicare projected costs and enrollment projections.

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- A blended test compares a weighted average per capita cost (based upon proportions of pre/post Medicare eligible enrollments) to the tax cost thresholds in each projection year. Projected enrollment was based upon the current enrollment data provided by Aetna, and valuation headcount projections for future years.
- We included administrative fees and applied Retiree Drug Subsidy / EGWP reimbursements to the Medicare rates.

We assumed claim costs would increase according to valuation trend assumptions from the June 30, 2018 valuation, and that the tax cost thresholds would increase at 2.25% (the CPI assumption of 2.50% less 0.25% to estimate the impact of using the chained CPI as required by the Tax Cut and Jobs Act passed in December 2017). The first year increased at 3.25% to reflect the additional 1.0% over inflation assumption.

We determined the impact to be approximately \$1.6M of the projected June 30, 2018 healthcare actuarial accrued liability for the DCR plan.

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

The actuarial cost method for the retiree healthcare plan was changed from the Entry Age Level Dollar method to the Entry Age Level Percent of Pay method. There were no other changes in the asset or valuation methods since the prior valuation.

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The demographic and economic assumptions used in the June 30, 2018 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-termination) Mortality rates based upon the 2013-2017 actual experience.
100% (male and female) of RP-2014 employee table with MP-2017 generational improvement.
6. Mortality (Post-termination) Mortality rates based upon the 2013-2017 actual experience.
91% of male and 96% of female rates of RP-2014 healthy annuitant table 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 with MP-2017 generational improvement.
Disabilities are assumed to be occupational 75% of the time for Peace Officer/Firefighters, 40% of the time for Others.
For Peace Officer/Firefighters, members are assumed to take the monthly annuity 100% of the time.
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 For Others, 75% of male members and 70% female members are assumed to be married. For Peace Officer/Firefighters, 85% of male members and 60% of female members are assumed to be married.

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12. Dependent Spouse Medical Coverage Election
 Applies to members who do not have dual medical coverage. For Others, 65% of male members and 60% female members are assumed to be married and cover a dependent spouse. For Peace Officer/Firefighters, 75% of male members and 50% of female members are assumed to be married and cover a dependent spouse.
13. Part-Time Status
 Part-time employees are assumed to earn 1.00 years of credited service per year for Peace Officer/Firefighter and 0.75 years of credited service per year for Other members.
14. Peace Officer/Firefighter Occupational Disability Retirement Benefit Commencement
 The occupational disability retirement benefit is assumed to be first payable from the member's DC account and the retirement benefit payable from the occupational death and disability trust will commence five years later.
15. Per Capita Claims Cost
 Sample claims cost rates (before base claims cost adjustments described below) adjusted to age 65 for FY19 medical and prescription drugs are shown below:

	Medical		Prescription Drugs
Pre-Medicare	\$ 13,535	\$	3,360
Medicare Parts A & B	1,468		3,764
Medicare Part D - RDS	N/A		527
Medicare Part D - EGWP	N/A		1,039

Members are assumed to attain Medicare eligibility at age 65. The EGWP cost shown above is for calendar year 2019. All other costs are for the 2019 fiscal year (July 1, 2018 – June 30, 2019).

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.

16. Third Party Administrator Fees
 \$300 per person per year; assumed trend rate of 4.5% per year.
17. 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:
- 0.979 for the pre-Medicare plan.
 - 0.686 for both the Medicare medical plan and Medicare coordination method (2.1% reduction for the medical plan and 29.3% reduction for the coordination method).
 - 0.896 for the prescription drug plan.

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18. Active Data Adjustment To reflect participants who terminate employment before the valuation date and are subsequently rehired after the valuation date, participants who are listed as terminated in the June 30 client data but active in the October 1 client records are updated to active status.
19. 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, 2018 Normal Cost, which are based on the average of actual administrative expenses during the last two fiscal years, are \$9,300 for occupational death & disability and \$7,600 for retiree medical.
20. 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, 7.5% is applied to the FY19 pre-Medicare medical claims cost to get the FY20 medical claims cost.

<u>Fiscal year</u>	<u>Medical pre-65</u>	<u>Medical post-65</u>	<u>Prescription Drugs/EGWP</u>	<u>RDS</u>
2019	7.5%	5.5%	8.5%	4.7%
2020	7.0	5.4	8.0	4.7
2021	6.5	5.4	7.5	4.6
2022	6.3	5.4	7.1	4.6
2023	6.1	5.4	6.8	4.6
2024	5.9	5.4	6.4	4.6
2025	5.8	5.4	6.1	4.6
2026	5.6	5.4	5.7	4.6
2027-2040	5.4	5.4	5.4	4.5
2041	5.3	5.3	5.3	4.5
2042	5.2	5.2	5.2	4.5
2043	5.1	5.1	5.1	4.5
2044	5.1	5.1	5.1	4.5
2045	5.0	5.0	5.0	4.5
2046	4.9	4.9	4.9	4.5
2047	4.8	4.8	4.8	4.5
2048	4.7	4.7	4.7	4.5
2049	4.6	4.6	4.6	4.5
2050+	4.5	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. The model was updated this year to use the newest version and incorporate recent trend survey information, which generated the updated trend rates shown above.

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The table below shows the amount each trend rate shown on the previous page was increased by the amount for the Cadillac Tax:

Fiscal year	Pre-65	Post-65	Fiscal year	Pre-65	Post-65
2019-2044	—%	—%	2077	0.20%	0.50%
2045	—	0.12	2078	0.20	0.49
2046	—	0.29	2079	0.19	0.48
2047	—	0.27	2080	0.19	0.46
2048	—	0.25	2081	0.18	0.45
2049	—	0.25	2082	0.18	0.44
2050	—	0.20	2083	0.18	0.43
2051	—	0.20	2084	0.17	0.42
2052	0.06	0.16	2085	0.17	0.41
2053	0.06	0.16	2086	0.16	0.40
2054	0.06	0.15	2087	0.16	0.39
2055	0.06	0.15	2088	0.16	0.38
2056	0.05	0.14	2089	0.15	0.37
2057	0.06	0.14	2090	0.15	0.37
2058	0.05	0.13	2091	0.15	0.36
2059	0.05	0.12	2092	0.15	0.35
2060	0.05	0.15	2093	0.14	0.34
2061	0.05	0.61	2094	0.14	0.33
2062	0.05	0.59	2095	0.14	0.33
2063	0.05	0.61	2096	0.13	0.32
2064	0.05	0.64	2097	0.13	0.31
2065	0.05	0.65	2098	0.13	0.30
2066	0.05	0.64	2099	0.13	0.30
2067	0.14	0.64	2100	0.12	0.29
2068	0.24	0.63	2101	0.12	0.28
2069	0.24	0.61	2102	0.12	0.28
2070	0.23	0.60	2103	0.12	0.27
2071	0.23	0.58	2104	0.11	0.27
2072	0.22	0.57	2105	0.11	0.26
2073	0.22	0.55	2106	0.11	0.25
2074	0.21	0.54	2107	0.11	0.25
2075	0.21	0.53	2108	0.10	0.24
2076	0.20	0.51	2109	0.10	0.24

21. 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 +	—	—

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22. 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
			15-19
			20-24
			25-29
			30+

* 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.

23. 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.

24. Changes in Assumptions Since the Prior Valuation

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

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Table 1
Alaska PERS DCR Plan
Salary Scale

Peace Officer/Firefighter:		Others:	
Years of Service	Percent Increase	Years of Service	Percent Increase
0	7.75%	0	6.75%
1	7.25	1	6.25
2	6.75	2	5.75
3	6.25	3	5.25
4	5.75	4	4.75
5	5.25	5	4.25
6	4.75	6	3.75
7	4.25	7	3.65
8	3.75	8	3.55
9	3.65	9	3.45
10	3.55	10	3.35
11	3.45	11	3.25
12	3.35	12	3.15
13	3.25	13	3.05
14	3.15	14	2.95
15	3.05	15	2.85
16	2.95	16	2.75
17	2.85	17	2.75
18	2.75	18	2.75
19	2.75	19	2.75
20 +	2.75	20 +	2.75

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Table 2
Alaska PERS DCR Plan
Turnover Assumptions

Peace Officer/Firefighter:

Select Rates of Turnover During the First 5 Years of Employment

Years of Service	Male	Female
0	18.9%	20.6%
1	14.2	16.5
2	10.5	13.8
3	9.5	12.4
4	8.4	11.3

Ultimate Rates of Turnover After the First 5 Years of Employment

Age	Male	Female	Age	Male	Female
20	5.5200%	11.9700%	45	5.7100%	11.0300%
21	5.5200	11.9700	46	5.6400	10.9800
22	5.5200	11.9700	47	5.5700	10.9200
23	5.6500	11.9700	48	6.0100	10.8400
24	5.7800	11.9700	49	6.4500	10.7500
25	5.9100	11.9700	50	6.8900	10.6700
26	6.0400	11.9700	51	7.3200	10.5800
27	6.1600	11.9700	52	7.7600	10.5000
28	6.1600	11.9400	53	7.9700	10.6600
29	6.1500	11.9100	54	8.1800	10.8200
30	6.1400	11.8800	55	8.3800	10.9800
31	6.1300	11.8400	56	8.5900	11.1500
32	6.1200	11.8100	57	8.8000	11.3100
33	6.1100	11.7900	58	9.0300	11.4700
34	6.0900	11.7700	59	9.2500	11.6300
35	6.0800	11.7500	60	9.4800	11.7900
36	6.0700	11.7200	61	9.7100	11.9500
37	6.0500	11.7000	62	9.9400	12.1200
38	6.0300	11.6000	63	12.3700	12.2800
39	6.0000	11.5000	64	14.1000	12.4400
40	5.9800	11.4000	65+	17.2500	12.6000
41	5.9500	11.3000			
42	5.9030	11.2000			
43	5.8500	11.1400			
44	5.7800	11.0900			

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

Table 2
Alaska PERS DCR Plan
Turnover Assumptions

Other:

Select Rates of Turnover During the First 5 Years of Employment

Years of Service	Male	Female
0	24.4%	28.0%
1	21.0	22.3
2	16.8	17.9
3	13.4	14.3
4	9.5	12.3

Ultimate Rates of Turnover After the First 5 Years of Employment

Age	Male	Female	Age	Male	Female
20	13.7100%	16.5000%	45	7.7200%	7.9000%
21	13.7100	16.5000	46	7.6000	7.5800
22	13.7100	16.5000	47	7.4800	7.2600
23	13.7100	16.5100	48	7.6800	7.2300
24	13.7100	16.5100	49	7.8700	7.2000
25	13.7100	16.5200	50	8.0700	7.1700
26	13.7100	16.5300	51	8.2600	7.1400
27	13.7100	16.5400	52	8.4600	7.1100
28	13.4100	15.9400	53	8.4600	7.2600
29	13.1200	15.3400	54	8.4700	7.4200
30	12.8200	14.7500	55	8.4800	7.5700
31	12.5200	14.1500	56	8.4800	7.7200
32	12.2200	13.5500	57	8.4900	7.8800
33	11.6500	12.9000	58	8.7700	8.1500
34	11.0900	12.2400	59	9.0500	8.4200
35	10.5200	11.5800	60	9.3200	8.6900
36	9.9500	10.9200	61	9.6000	8.9600
37	9.3900	10.2600	62	9.8800	9.2400
38	9.1200	9.9800	63	10.2800	10.5100
39	8.8600	9.7000	64	10.6800	11.7800
40	8.6000	9.4200	65+	11.0800	13.0500
41	8.3200	9.1400			
42	8.0700	8.8600			
43	7.9500	8.5400			
44	7.8300	8.2200			

Actuarial Section

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

Table 3
Alaska PERS DCR Plan
Disability Table

Age	Peace Officer/ Firefighter Rate		Other Member Rate	
	Male	Female	Male	Female
20	0.1790%	0.0112%	0.0327%	0.0376%
21	0.0179	0.0122	0.0327	0.0376
22	0.0179	0.0112	0.0327	0.0376
23	0.0244	0.0153	0.0360	0.0400
24	0.0310	0.0194	0.0392	0.0424
25	0.0374	0.0234	0.0425	0.0448
26	0.0440	0.0275	0.0456	0.0472
27	0.0505	0.0316	0.0489	0.0496
28	0.0526	0.0329	0.0501	0.0510
29	0.0548	0.0343	0.0513	0.0524
30	0.0570	0.0356	0.0524	0.0538
31	0.0591	0.0370	0.0536	0.0554
32	0.0612	0.0383	0.0548	0.0568
33	0.0634	0.0397	0.0566	0.0586
34	0.0657	0.0411	0.0584	0.0606
35	0.0679	0.0425	0.0602	0.0624
36	0.0702	0.0439	0.0620	0.0644
37	0.0724	0.0453	0.0638	0.0662
38	0.0757	0.0473	0.0669	0.0696
39	0.0789	0.0493	0.0701	0.0728
40	0.0822	0.0514	0.0734	0.0762
41	0.0854	0.0534	0.0765	0.0794
42	0.0886	0.0554	0.0797	0.0826
43	0.0977	0.0611	0.0879	0.0908
44	0.1066	0.0667	0.0962	0.0990
45	0.1157	0.0723	0.1043	0.1072
46	0.1247	0.0780	0.1125	0.1154
47	0.1337	0.0836	0.1208	0.1236
48	0.1462	0.0914	0.1329	0.1360
49	0.1588	0.0993	0.1451	0.1484
50	0.1714	0.1071	0.1572	0.1608
51	0.1839	0.1150	0.1694	0.1734
52	0.1965	0.1228	0.1815	0.1858
53	0.2294	0.1434	0.2132	0.2168
54	0.2624	0.1640	0.2450	0.2478

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

Table 4
Alaska PERS DCR Plan
Retirement Table

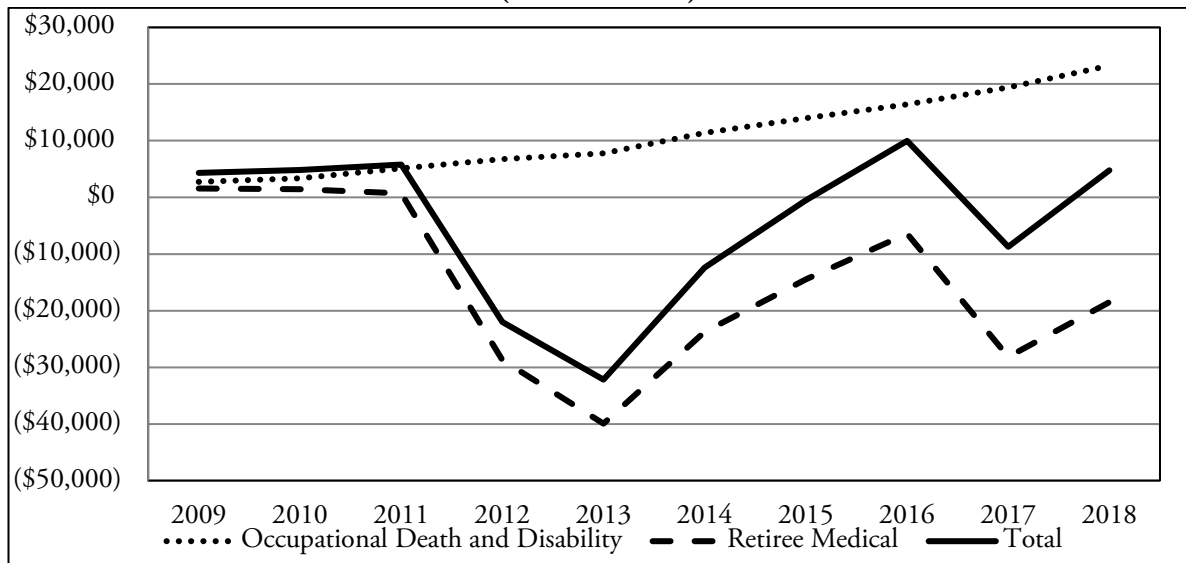
Age	Unisex Rate
≤ 50	2.00%
51	2.00
52	2.00
53	2.00
54	2.00
55	3.00
56	3.00
57	3.00
58	3.00
59	3.00
60	5.00
61	5.00
62	10.00
63	5.00
64	5.00
65	25.00
66	25.00
67	25.00
68	20.00
69	20.00
70	100.00

Actuarial Section

**Public Employees' 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
2009	\$ 2,735	\$ 1,562	\$ 4,297	199.6%
2010	3,386	1,460	4,846	171.1
2011	5,100	707	5,807	143.8
2012	6,730	(28,736)	(22,006)	53.1
2013	7,770	(39,946)	(32,176)	49.6
2014	11,368	(23,751)	(12,383)	77.0
2015	13,965	(14,495)	(530)	99.2
2016	16,413	(6,438)	9,975	112.9
2017	19,404	(28,144)	(8,740)	92.5
2018	23,248	(18,501)	4,747	103.8

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



Public Employees' 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	Actuarially Determined				Adopted
		Occupational Death and Disability		Retiree Medical	Total Required	
		Peace Officer/Firefighter	All Others			
2012	2009	0.97%	0.11%	0.51%	1.59%	1.59%
2013	2010	0.99	0.14	0.48	1.61	1.61
2014	2011	1.14	0.20	0.48	1.74	1.74
2015	2012	1.06	0.22	1.66	2.94	2.94
2016	2013	1.05	0.22	1.68	2.95	2.95
2017	2014	0.49	0.17	1.18	1.84	1.84
2018	2015	0.43	0.16	1.03	1.62	1.62
2019	2016	0.76	0.26	0.94	1.96	1.96
2020	2017	0.72	0.26	1.32	2.30	2.30
2021	2108	0.70	0.31	1.27	2.28	2.28

Valuations are used to set contribution rates in future years.

Actuarial Section

Public Employees' 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, 2018	20,378	\$ 1,209,152	\$ 59,336	2.3%	155
June 30, 2017	19,171	1,112,398	58,025	1.5	157
June 30, 2016	18,215	1,041,437	57,175	3.4	157
June 30, 2015	17,098	945,496	55,299	1.9	159
June 30, 2014	15,800	857,150	54,250	3.7	159
June 30, 2013	14,316	748,658	52,295	4.7	159
June 30, 2012	12,597	629,128	49,943	4.5	160
June 30, 2011	10,965	524,088	47,796	4.8	160
June 30, 2010	9,232	421,187	45,622	5.4	160
June 30, 2009	7,256	314,118	43,291	7.2	160
Total and average annual earnings ("valuation pay") are the annualized earnings for the fiscal year ending on the valuation date.					

Public Employees' Retirement System Defined Contribution Retirement Plan Occupational Death and Disability Solvency Test (In thousands)							
Valuation Date	Occupational Death and Disability Actuarial Accrued Liability For:			Occupational Death and Disability Valuation Assets	Portion of Actuarial Accrued Liability Covered by Assets:		
	(1) Active Member Contributions	(2) Inactive Members	(3) Active Members (Employer-Financed Portion)		(1)	(2)	(3)
June 30, 2016	\$ —	\$ —	\$ 6,763	\$ 23,176	100.0%	100.0%	100.0%
June 30, 2015	—	—	5,049	19,014	100.0	100.0	100.0
June 30, 2014 ¹	—	—	3,627	14,995	100.0	100.0	100.0
June 30, 2013	—	—	3,603	11,373	100.0	100.0	100.0
June 30, 2012	—	—	2,412	9,142	100.0	100.0	100.0
June 30, 2011	—	—	1,949	7,049	100.0	100.0	100.0
June 30, 2010 ¹	—	—	853	4,801	100.0	100.0	100.0
June 30, 2009 ¹	—	—	403	3,138	100.0	100.0	100.0
June 30, 2008	—	—	242	1,288	100.0	100.0	100.0
June 30, 2007	—	—	48	188	100.0	100.0	100.0

¹ Change in Assumptions

Actuarial Section

Public Employees' Retirement System Defined Contribution Retirement Plan Retiree Medical Solvency Test (In thousands)							
Valuation Date	Retiree Medical Actuarial Accrued Liability For:			Retiree Medical Valuation Assets	Portion of Actuarial Accrued Liability Covered by Assets:		
	(1) Active Member Contributions	(2) Inactive Members	(3) Active Members (Employer-Financed Portion)		(1)	(2)	(3)
June 30, 2016	\$ —	\$ —	\$ 70,289	\$ 63,851	100.0%	100.0%	90.8%
June 30, 2015	—	—	58,683	44,188	100.0	100.0	75.3
June 30, 2014 ¹	—	—	50,217	26,466	100.0	100.0	52.7
June 30, 2013	—	—	60,282	20,336	100.0	100.0	33.7
June 30, 2012 ¹	—	—	44,509	15,773	100.0	100.0	35.4
June 30, 2011	—	—	11,302	12,009	100.0	100.0	100.0
June 30, 2010 ¹	—	—	7,185	8,767	100.0	100.0	100.0
June 30, 2009 ¹	—	—	3,913	5,475	100.0	100.0	100.0
June 30, 2008 ¹	—	—	1,776	2,719	100.0	100.0	100.0
June 30, 2007	—	—	711	1,067	100.0	100.0	100.0

Retiree medical liabilities are calculated using the funding assumptions (i.e., funding investment return and net of Medicare Part D subsidy).

¹ Change in Assumptions

State of Alaska
Public Employees' 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, 2018.

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 155 employers participating in PERS DCR, including the State of Alaska, and 154 political subdivisions and public 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 employees of the State of Alaska, participating political subdivisions or public organizations. An employee must be regularly scheduled to work 30 or more hours per week to be considered full-time by the PERS. An employee must be regularly scheduled to work 15 or more hours per week but less than 30 hours to be considered a part-time employee for PERS purposes.
- Elected state officials.
- Elected municipal officials who are compensated and receive at least \$2,001.00 per month.

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

Actuarial Section

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

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) 25 years of service as a peace officer or firefighter and 30 years of service for any other employee or b) Medicare eligible and 10 years of service.
- 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/family, after deductible)	\$1,200 / \$2,400	\$2,400 / \$4,800
Medicare Coordination	Exclusion	Exclusion
Pharmacy	No Deductible	No Deductible
Retail Generic (per 30-day fill)	20% \$10 min / \$50 max	
Retail Non-Formulary Brand (per 30-day fill)	25% \$25 min / \$75 max	40%
Retail Formulary Brand (per 30-day fill)	35% \$80 min / \$150 max	
Mail-Order Generic	\$20 copay	
Mail-Order Non-Formulary Brand	\$50 copay	40%
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%, Not subject to deductible	

⁽¹⁾ Assumed to increase annually to mitigate impact of healthcare cost trend

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

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

- Buck used its manual rate models to determine relative plan values for the defined benefit (DB) retiree medical plan and the adopted 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 medical and pharmacy benefits to estimate corresponding values for the adopted DCR retiree medical plan design. These factors are noted in Section 5.3. We further adjusted the Medicare medical manual rate to reflect the Medicare coordination method adopted. In the prior valuation, the RDS subsidy offset in 2019 was increased by 60% to reflect estimated Medicare reimbursements under the Employer Group Waiver Plan (EGWP) arrangement. For this year's valuation, the estimated 2019 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 2018 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 will be 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:

<u>Years of Service</u>	<u>Percent of Premium Paid by Member</u>
Less than 15 years	30%
15 – 19	25
20 – 24	20
25 – 29	15
30 years or more	10

- 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.

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

7. Occupational Disability Benefits

- Benefit is 40% of salary at date of disability.
- For Peace Officer and Firefighters there is a Disability Benefit Adjustment such that:
 - The disability benefit is increased by 75% of the cost of living increase in the preceding calendar year or 9%, whichever is less.
 - At the time the disabled member retires, the retirement benefit will be increased by a percentage equal to the total cumulative percentage that has been applied to the disability benefit. Monthly annuity payments are made from the member's contribution balance until the fund is exhausted, at which the plan pays all remaining payments.
- For Others, there is no increase in the occupational disability benefit after commencement.
- 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 for Others members or 25 years of service for Peace Officer/Firefighter members.
- Peace Officer/Firefighter members may select the defined contribution account or the monthly benefit payable as if they were retiring under Tier 3 (service continues during disability, final average salary is as of date of disability).
- 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.

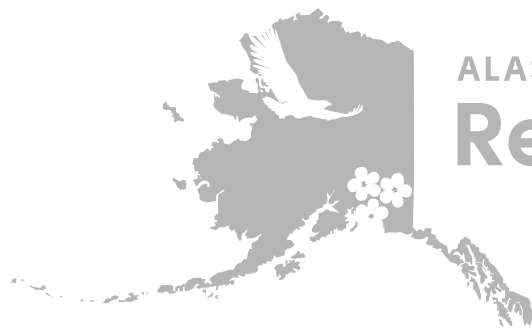
8. Occupational Death Benefits

- Benefit is 40% of salary for Others members and 50% of salary for Peace Officer/Firefighter members.
- 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 PERS benefits for at least 5 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.

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

9. Changes Since the Prior Valuation

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



ALASKA DIVISION OF
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