



State of Alaska

Public Employees' Retirement System

Actuarial Valuation Report
As of June 30, 2020

January 2021

DRAFT



January 22, 2021

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

Certification of Actuarial Valuation

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

This report summarizes the annual actuarial valuation results of the State of Alaska Public Employees' Retirement System (PERS) as of June 30, 2020 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, 2020. 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, 2020.

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 25-year layered UAAL amortization method as described in Section 5.2. The UAAL amortization continues to be on a level percent of pay basis. The compensation used to determine required contributions is the total compensation of all active members in 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 (on a combined pension/healthcare basis) is expected to increase to 100% in FY38.

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

In our opinion, the actuarial assumptions used are reasonable, taking into account the experience of the plan and reasonable long-term expectations, and represent our best estimate of the anticipated long-term experience under the plan. The actuary performs an analysis of plan experience periodically and recommends changes if, in the opinion of the actuary, assumption changes are needed to more accurately reflect expected future experience. The last full experience analysis was performed for the period July 1, 2013 to June 30, 2017. Based on that experience study, the Board adopted new assumptions effective beginning with the June 30, 2018 valuation to better reflect expected future experience. Based on our annual analysis of recent claims experience, changes were made to the per capita claim cost rates effective June 30, 2020 to better reflect expected future healthcare experience. A summary of the actuarial assumptions and methods used in this actuarial valuation is shown in Sections 5.2 and 5.3.

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, 2020 have been prepared. We have also prepared the member data tables shown in Section 4 of this report for the Statistical Section of the CAFR, as well as the summary of actuarial assumptions and analysis of financial experience for the Actuarial Section of the CAFR. Please see our separate GASB 67 and GASB 74 reports for other information needed for the CAFR.

Assessment of Risks

Actuarial Standard of Practice No. 51 (ASOP 51) applies to actuaries performing funding calculations related to a pension plan. ASOP 51 does not apply to actuaries performing services in connection with other post-employment benefits, such as medical benefits. Accordingly, ASOP 51 does not apply to the healthcare portion of PERS. See Section 6 of this report for further details regarding ASOP 51.

Use of Models

Actuarial Standard of Practice No. 56 (ASOP 56) provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. Buck uses third-party software in the performance of annual actuarial valuations and projections. The model is intended to calculate the liabilities associated with the provisions of the plan using data and assumptions as of the measurement date under the funding methods specified in this report. The output from the third-party vendor software is used as input to internally developed models that apply applicable funding methods and policies

to the derived liabilities and other inputs, such as plan assets and contributions, to generate many of the exhibits found in this report. Buck has an extensive review process in which the results of the liability calculations are checked using detailed sample life output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other funding outputs and the internal models are similarly reviewed in detail and at a higher level for accuracy, reasonability, and consistency with prior results. Buck also reviews the third-party model when significant changes are made to the software. This review is performed by experts within Buck who are familiar with applicable funding methods, as well as the manner in which the model generates its output. If significant changes are made to the internal models, extra checking and review are completed. Significant changes to the internal models that are applicable to multiple clients are generally developed, checked, and reviewed by multiple experts within Buck who are familiar with the details of the required changes.

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

COVID-19

The potential impact of the ongoing COVID-19 pandemic on costs and liabilities was considered and an adjustment was made in setting the medical per capita claims cost assumption. FY20 medical claims were adjusted for a COVID-19 related decline in claims during the last four months (March – June) of FY20. A more detailed explanation on these adjustments is shown in Section 5.2.

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

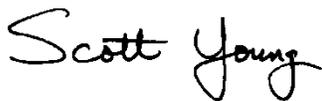
I am available to discuss this report with you at your convenience. I can be reached at 602-803-6174.

Respectfully submitted,



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

The undersigned actuary is responsible for all assumptions related to the average annual per capita health claims cost and the health care cost trend rates, and 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, FCA
Director
Buck

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Executive Summary

Overview

The State of Alaska Public Employees' Retirement System (PERS) provides pension and postemployment healthcare benefits to eligible participants. The Commissioner of the Department of Administration is responsible for administering the plan. The Alaska Retirement Management Board has fiduciary responsibility over the assets of the plan. This report presents the results of the actuarial valuation of PERS as of the valuation date of June 30, 2020.

Purpose

An actuarial valuation is performed on the plan annually as of the end of the fiscal year. The main purposes of the actuarial valuation detailed in this report are:

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

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

Actuarial projections are also performed to provide a long-term view of the expected future funded status and contribution patterns (see Section 3). The future funded status and contribution patterns would be different than those shown in Section 3 if future experience does not match the actuarial assumptions used in the projections.

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

Funded Status

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

Funded Status as of June 30 (\$'s in 000's)
2019
2020
Pension

a. Actuarial Accrued Liability	\$ 15,039,180	\$ 15,279,525
b. Valuation Assets	<u>9,576,693</u>	<u>9,713,710</u>
c. Unfunded Actuarial Accrued Liability, (a) - (b)	\$ 5,462,487	\$ 5,565,815
d. Funded Ratio based on Valuation Assets, (b) ÷ (a)	63.7%	63.6%
e. Fair Value of Assets	\$ 9,489,405	\$ 9,469,161
f. Funded Ratio based on Fair Value of Assets, (e) ÷ (a)	63.1%	62.0%

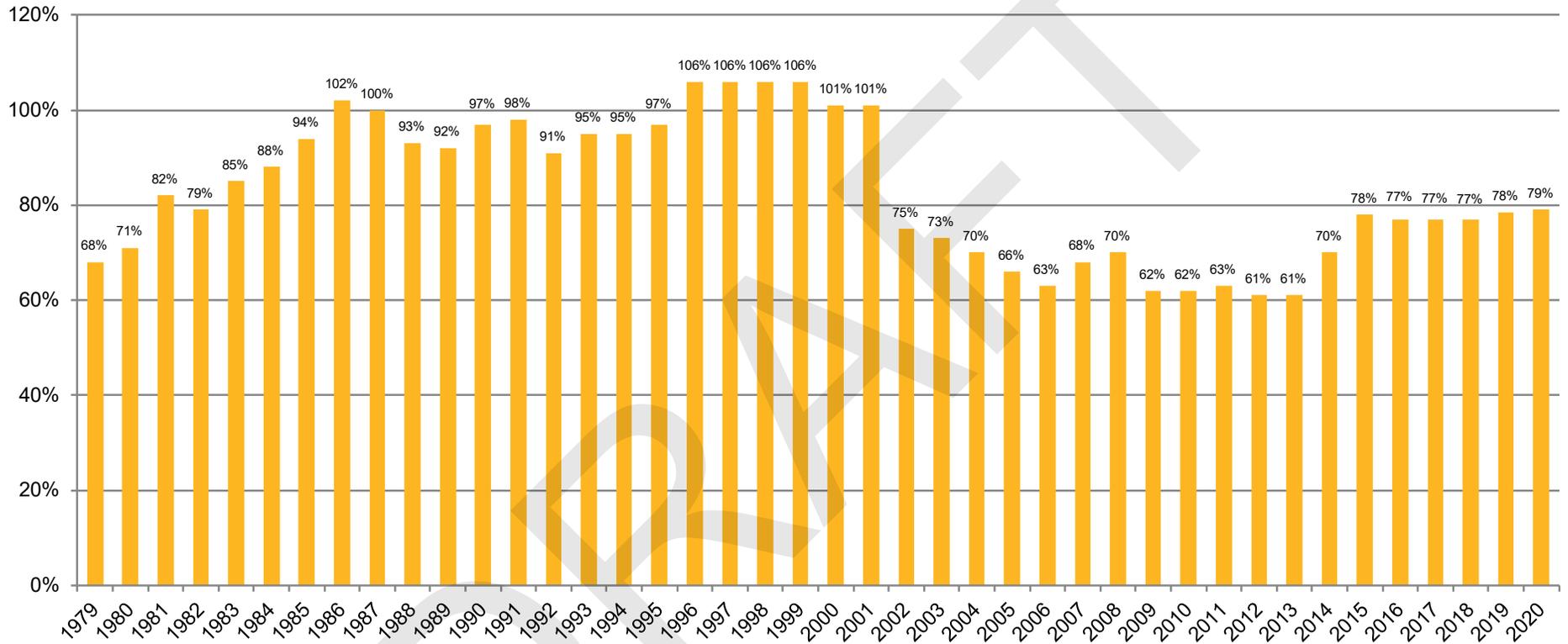
Healthcare

a. Actuarial Accrued Liability	\$ 7,151,694	\$ 7,036,550
b. Valuation Assets	<u>7,810,491</u>	<u>7,989,358</u>
c. Unfunded Actuarial Accrued Liability, (a) - (b)	\$ (658,797)	\$ (952,808)
d. Funded Ratio based on Valuation Assets, (b) ÷ (a)	109.2%	113.5%
e. Fair Value of Assets	\$ 7,767,692	\$ 7,813,511
f. Funded Ratio based on Fair Value of Assets, (e) ÷ (a)	108.6%	111.0%

Total

a. Actuarial Accrued Liability	\$ 22,190,874	\$ 22,316,075
b. Valuation Assets	<u>17,387,184</u>	<u>17,703,068</u>
c. Unfunded Actuarial Accrued Liability, (a) - (b)	\$ 4,803,690	\$ 4,613,007
d. Funded Ratio based on Valuation Assets, (b) ÷ (a)	78.4%	79.3%
e. Fair Value of Assets	\$ 17,257,097	\$ 17,282,672
f. Funded Ratio based on Fair Value of Assets, (e) ÷ (a)	77.8%	77.4%

Funded Ratio History (Based on Valuation Assets)



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

1. Investment Experience

The actuarial asset value was reinitialized to equal fair value of assets as of June 30, 2014. Beginning in FY15, the asset valuation method recognizes 20% of the investment gain or loss each year, for a period of five years. The FY20 investment return based on fair value of assets was approximately 4.1% compared to the expected investment return of 7.38% (net of investment expenses of approximately 0.29%). This resulted in a market asset loss of approximately \$556 million. Due to the recognition of investment gains and losses over a 5-year period, the FY20 investment return based on actuarial value of assets was approximately 5.8%, which resulted in an actuarial asset loss of approximately \$275 million.

2. Salary Increases

Salary increases for continuing active members during FY20 were less than expected based on the valuation assumptions, resulting in a liability gain of approximately \$11 million.

3. Demographic Experience

Section 4 provides statistics on active and inactive participants. The number of active participants decreased 9.2% from 12,152 at June 30, 2019 to 11,033 at June 30, 2020 due to active members exiting the plan during the year (due to retirement, termination, death, and disability) and the closure of the plan to new entrants as of July 1, 2006. The average age of active participants increased from 52.84 to 53.21 and average credited service increased from 17.80 to 18.38 years.

The number of benefit recipients increased 2.2% from 36,310 to 37,106 and their average age increased from 70.29 to 70.77. The number of vested terminated participants decreased 3.1% from 5,499 to 5,327. Their average age increased from 53.06 to 53.52.

The overall effect of the demographic experience during FY20 was a liability loss of approximately \$13.5 million (pension) and a liability gain of approximately \$27.6¹ million (healthcare).

4. COLA / PRPA Experience

The cost-of-living increases (COLA) for benefit recipients during FY20 were less than expected based on the valuation assumptions, resulting in a liability gain of approximately \$5 million. The postretirement pension adjustments (PRPA) were also less than expected, resulting in a liability gain of approximately \$74 million.

5. Retiree Medical Claims Experience

As described in Section 5.2, recent medical claims experience and changes in healthcare enrollment data provided to us for the June 30, 2020 valuation generated a liability gain of approximately \$280 million. The decrease in retired member contributions from CY20 to CY21 generated a liability loss of approximately \$1 million. Reduced claims during FY20, largely attributable to COVID-19, generated a liability gain of approximately \$26 million.

6. Changes in Methods Since the Prior Valuation

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

¹ Includes the effects of changes in dependent coverage elections and Medicare Part B only experience.

7. Changes in Assumptions Since the Prior Valuation

Healthcare claim costs are updated annually as described in Section 5.2. Retired member contributions were updated to reflect the 5% decrease from CY20 to CY21. The amounts included in the Normal Cost for administrative expenses were updated based on the last two years of actual administrative expenses paid from plan assets. There were no other changes in actuarial assumptions since the prior valuation.

8. Changes in Benefit Provisions Since the Prior Valuation

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

Comparative Summary of Contribution Rates

Pension	Actual FY 2022	Estimated FY 2023
a. Normal Cost Rate Net of Member Contributions	2.58%	2.37%
b. Past Service Cost Rate	<u>18.31%</u>	<u>18.53%</u>
c. Total Employer/State Contribution Rate, (a) + (b), not less than (a) ¹	20.89%	20.90%

Healthcare	Actual FY 2022	Estimated FY 2023
a. Normal Cost Rate	3.12%	2.84%
b. Past Service Cost Rate	<u>(1.80%)</u>	<u>(2.95%)</u>
c. Total Employer/State Contribution Rate, (a) + (b), not less than (a) ¹	3.12%	2.84%

Total	Actual FY 2022	Estimated FY 2023
a. Normal Cost Rate Net of Member Contributions	5.70%	5.21%
b. Past Service Cost Rate	<u>18.31%</u>	<u>18.53%</u>
c. Total Employer/State Contribution Rate, (a) + (b) ¹	24.01%	23.74%
d. Board Adopted Total Employer/State Contribution Rate	24.01%	TBD
e. Defined Contribution Retirement (DCR) Rate Paid by Employers	<u>6.10%</u>	<u>6.41%</u>
f. Board Adopted Total Rate, Including DCR Rate Paid by Employers, (d) + (e)	30.11%	TBD

Contribution rates are based on total (DB and DCR) payroll. The contribution rates shown above for FY23 are estimated assuming no actuarial gains/losses during FY21 and FY22. Actual FY23 contribution rates will be adopted by the Board in September 2021 reflecting FY21 asset experience.

Contribution rates include Employer contribution rates as limited by Alaska state statutes and the Additional State Contribution required under SB 125.

¹ 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 "roll-forward" approach 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 5.2.

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

The following table summarizes the sources of change in the total Employer/State contribution rate as of June 30, 2019 and June 30, 2020 based on DB and DCR payroll combined:

	Pension	Healthcare	Total
1. Total Employer/State Contribution Rate as of June 30, 2019	20.17%	3.91%	24.08%
2. Change due to:			
a. Health Claims Experience	N/A	(0.87)%	(0.87)%
b. Salary Increases	(0.03)%	N/A	(0.03)%
c. Investment Experience	0.44%	0.31%	0.75%
d. Demographic Experience and Miscellaneous ¹	(0.19)%	0.38%	0.19%
e. Contribution Lag	0.15%	(0.16)%	(0.01)%
f. Assumption Changes	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>
g. Total Change, (a) + (b) + (c) + (d) + (e) + (f)	0.37%	(0.34)%	0.03%
3. Total Employer/State Contribution Rate as of June 30, 2020, (1) + (2)(g)	20.54%	3.57%	24.11%

The following table shows the FY20 gain/(loss) on actuarial accrued liability as of June 30, 2020 (\$'s in 000's):

	Pension	Healthcare	Total
Retirement Experience	\$ (1,285)	\$ 4,857	\$ 3,572
Termination Experience	(4,857)	(8,049)	(12,906)
Disability Experience	(901)	867	(34)
Active Mortality Experience	4,182	(1,942)	2,240
Inactive Mortality Experience	(10,603)	2,098	(8,505)
Salary Increases	11,228	N/A	11,228
Rehires (Net of Rehire Load)	8,418	15,996	24,414
COLA Increases	4,618	N/A	4,618
PRPA Increases	74,177	N/A	74,177
Per Capita Claims Cost	N/A	278,796	278,796
COVID-19 Experience	N/A	25,856	25,856
Medicare Part B Only Experience	N/A	6,345	6,345
Changes in Dependent Coverage Elections	N/A	23,400	23,400
Programming Changes ²	1,406	N/A	1,406
Miscellaneous ³	<u>4,429</u>	<u>1,735</u>	<u>6,164</u>
Total	\$ 90,812	\$ 349,959	\$ 440,771

¹ Includes the effects of census data changes between the two valuations.

² Includes adjustments to (a) the 75% PRPA for occupational disabilities to commence immediately, and (b) the mortality applied during the COLA deferral period for Tier 2 and Tier 3 members.

³ Includes the effects of various data changes that are typical when new census data is received for the annual valuation, the effects of the differences between expected and actual benefit payments, and other items that do not fit neatly into any of the other categories.

The rehire gain/(loss) amount shown on the previous page is the difference between (i) the increase in Actuarial Accrued Liability at June 30, 2020 due to rehires during the most recent plan year, and (ii) the load that was added to the June 30, 2019 Normal Cost based on the rehire load assumption used in the June 30, 2019 valuation. The development of the FY20 rehire gain/(loss) amount is shown in the table below (\$'s in 000's):

	Pension	Healthcare	Total
1. Increase/(Decrease) in Actuarial Accrued Liability at June 30, 2020 due to Rehires	\$ 15,604	\$ (2,208)	\$ 13,396
2. June 30, 2019 Normal Cost Rehire Load, with interest to June 30, 2020	\$ 24,022	\$ 13,788	\$ 37,810
3. Rehire Gain/(Loss), (2) - (1)	\$ 8,418	\$ 15,996	\$ 24,414

Section 1: Actuarial Funding Results

Section 1.1: Actuarial Liabilities and Normal Cost (\$'s in 000's)

Peace Officer / Firefighter

As of June 30, 2020	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
Active Members		
Retirement Benefits	\$ 910,930	\$ 804,294
Termination Benefits	11,914	3,012
Disability Benefits	1,623	(1,092)
Death Benefits	9,747	6,259
Return of Contributions	1,488	(4,535)
Medical and Prescription Drug Benefits	381,738	322,960
Medicare Part D Subsidy	(29,887)	(25,342)
Indebtedness	<u>(4,523)</u>	<u>(4,523)</u>
Subtotal	\$ 1,283,030	\$ 1,101,033
Inactive Members		
Not Vested	\$ 2,182	\$ 2,182
Vested Terminations		
- Retirement Benefits	36,707	36,707
- Medical and Prescription Drug Benefits	94,212	94,212
- Medicare Part D Subsidy	(8,751)	(8,751)
- Indebtedness	(456)	(456)
Retirees & Beneficiaries		
- Retirement Benefits	1,649,532	1,649,532
- Medical and Prescription Drug Benefits	565,479	565,479
- Medicare Part D Subsidy	<u>(70,192)</u>	<u>(70,192)</u>
Subtotal	\$ 2,268,713	\$ 2,268,713
Total	\$ 3,551,743	\$ 3,369,746
Total Pension	\$ 2,619,144	\$ 2,491,380
Total Medical, Net of Part D Subsidy	\$ 932,599	\$ 878,366
Total Medical, Gross of Part D Subsidy	\$ 1,041,429	\$ 982,651

Peace Officer / Firefighter

As of June 30, 2020	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
By Tier		
Tier 1		
- Pension	\$ 1,024,529	\$ 1,023,595
- Medical, Net of Part D Subsidy	289,357	288,756
Tier 2		
- Pension	681,171	666,070
- Medical, Net of Part D Subsidy	265,578	259,844
Tier 3		
- Pension	913,444	801,715
- Medical, Net of Part D Subsidy	377,664	329,766
Total	\$ 3,551,743	\$ 3,369,746

As of June 30, 2020	Normal Cost
Active Members	
Retirement Benefits	\$ 19,111
Termination Benefits	1,657
Disability Benefits	504
Death Benefits	667
Return of Contributions	1,101
Medical and Prescription Drug Benefits	10,290
Medicare Part D Subsidy	(817)
Rehire Assumption (Pension)	4,325
Rehire Assumption (Medical)	1,619
Administrative Expenses (Pension)	1,514
Administrative Expenses (Medical)	685
Total	\$ 40,656
Total Pension	\$ 28,879
Total Medical, Net of Part D Subsidy	\$ 11,777
Total Medical, Gross of Part D Subsidy	\$ 12,594

By Tier	
Tier 1	
- Pension	\$ 403
- Medical, Net of Part D Subsidy	268
Tier 2	
- Pension	4,680
- Medical, Net of Part D Subsidy	1,722
Tier 3	
- Pension	23,796
- Medical, Net of Part D Subsidy	9,787
Total	\$ 40,656

Section 1.1: Actuarial Liabilities and Normal Cost (\$'s in 000's)

Others

As of June 30, 2020	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
Active Members		
Retirement Benefits	\$ 3,493,134	\$ 3,166,630
Termination Benefits	229,771	129,112
Disability Benefits	18,314	5,330
Death Benefits	48,513	37,843
Return of Contributions	15,235	(31,403)
Medical and Prescription Drug Benefits	2,008,284	1,628,239
Medicare Part D Subsidy	(234,813)	(195,996)
Indebtedness	<u>(42,238)</u>	<u>(42,238)</u>
Subtotal	\$ 5,536,200	\$ 4,697,517
Inactive Members		
Not Vested	\$ 72,950	\$ 72,950
Vested Terminations		
- Retirement Benefits	639,590	639,590
- Medical and Prescription Drug Benefits	943,124	943,124
- Medicare Part D Subsidy	(95,182)	(95,182)
- Indebtedness	(12,603)	(12,603)
Retirees & Beneficiaries		
- Retirement Benefits	8,822,934	8,822,934
- Medical and Prescription Drug Benefits	4,541,099	4,541,099
- Medicare Part D Subsidy	<u>(663,100)</u>	<u>(663,100)</u>
Subtotal	\$ 14,248,812	\$ 14,248,812
Total	\$ 19,785,012	\$ 18,946,329
Total Pension	\$ 13,285,600	\$ 12,788,145
Total Medical, Net of Part D Subsidy	\$ 6,499,412	\$ 6,158,184
Total Medical, Gross of Part D Subsidy	\$ 7,492,507	\$ 7,112,462

Others

As of June 30, 2020	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
By Tier		
Tier 1		
- Pension	\$ 6,221,260	\$ 6,190,548
- Medical, Net of Part D Subsidy	2,523,052	2,493,840
Tier 2		
- Pension	3,753,099	3,647,096
- Medical, Net of Part D Subsidy	1,929,059	1,854,613
Tier 3		
- Pension	3,311,241	2,950,501
- Medical, Net of Part D Subsidy	2,047,301	1,809,731
Total	\$ 19,785,012	\$ 18,946,329

As of June 30, 2020	Normal Cost
Active Members	
Retirement Benefits	\$ 59,753
Termination Benefits	15,548
Disability Benefits	2,123
Death Benefits	1,912
Return of Contributions	7,577
Medical and Prescription Drug Benefits	65,545
Medicare Part D Subsidy	(6,788)
Rehire Assumption (Pension)	16,314
Rehire Assumption (Medical)	10,042
Administrative Expenses (Pension)	5,709
Administrative Expenses (Medical)	4,249
Total	\$ 181,984
Total Pension	\$ 108,936
Total Medical, Net of Part D Subsidy	\$ 73,048
Total Medical, Gross of Part D Subsidy	\$ 79,836

By Tier	
Tier 1	
- Pension	\$ 10,986
- Medical, Net of Part D Subsidy	10,177
Tier 2	
- Pension	27,012
- Medical, Net of Part D Subsidy	18,171
Tier 3	
- Pension	70,938
- Medical, Net of Part D Subsidy	44,700
Total	\$ 181,984

Section 1.1: Actuarial Liabilities and Normal Cost (\$'s in 000's)

All Members

As of June 30, 2020	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
Active Members		
Retirement Benefits	\$ 4,404,064	\$ 3,970,924
Termination Benefits	241,685	132,124
Disability Benefits	19,937	4,238
Death Benefits	58,260	44,102
Return of Contributions	16,723	(35,938)
Medical and Prescription Drug Benefits	2,390,022	1,951,199
Medicare Part D Subsidy	(264,700)	(221,338)
Indebtedness	<u>(46,761)</u>	<u>(46,761)</u>
Subtotal	\$ 6,819,230	\$ 5,798,550
Inactive Members		
Not Vested	\$ 75,132	\$ 75,132
Vested Terminations		
- Retirement Benefits	676,297	676,297
- Medical and Prescription Drug Benefits	1,037,336	1,037,336
- Medicare Part D Subsidy	(103,933)	(103,933)
- Indebtedness	(13,059)	(13,059)
Retirees & Beneficiaries		
- Retirement Benefits	10,472,466	10,472,466
- Medical and Prescription Drug Benefits	5,106,578	5,106,578
- Medicare Part D Subsidy	<u>(733,292)</u>	<u>(733,292)</u>
Subtotal	\$ 16,517,525	\$ 16,517,525
Total	\$ 23,336,755	\$ 22,316,075
Total Pension	\$ 15,904,744	\$ 15,279,525
Total Medical, Net of Part D Subsidy	\$ 7,432,011	\$ 7,036,550
Total Medical, Gross of Part D Subsidy	\$ 8,533,936	\$ 8,095,113

All Members

As of June 30, 2020	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
By Tier		
Tier 1		
- Pension	\$ 7,245,789	\$ 7,214,143
- Medical, Net of Part D Subsidy	2,812,409	2,782,596
Tier 2		
- Pension	4,434,270	4,313,166
- Medical, Net of Part D Subsidy	2,194,637	2,114,457
Tier 3		
- Pension	4,224,685	3,752,216
- Medical, Net of Part D Subsidy	2,424,965	2,139,497
Total	\$ 23,336,755	\$ 22,316,075

As of June 30, 2020	Normal Cost
Active Members	
Retirement Benefits	\$ 78,864
Termination Benefits	17,205
Disability Benefits	2,627
Death Benefits	2,579
Return of Contributions	8,678
Medical and Prescription Drug Benefits	75,835
Medicare Part D Subsidy	(7,605)
Rehire Assumption (Pension)	20,639
Rehire Assumption (Medical)	11,661
Administrative Expenses (Pension)	7,223
Administrative Expenses (Medical)	4,934
Total	\$ 222,640
Total Pension	\$ 137,815
Total Medical, Net of Part D Subsidy	\$ 84,825
Total Medical, Gross of Part D Subsidy	\$ 92,430

By Tier	
Tier 1	
- Pension	\$ 11,389
- Medical, Net of Part D Subsidy	10,445
Tier 2	
- Pension	31,692
- Medical, Net of Part D Subsidy	19,893
Tier 3	
- Pension	94,734
- Medical, Net of Part D Subsidy	54,487
Total	\$ 222,640

Section 1.2: Actuarial Contributions as of June 30, 2020 (\$'s in 000's)

Peace Officer / Firefighter

Normal Cost Rate	Pension	Healthcare	Total
1. Total Normal Cost	\$ 28,879	\$ 11,777	\$ 40,656
2. DB Rate Payroll Projected for FY21	159,555	159,555	159,555
3. DCR Rate Payroll Projected for FY21	203,314	203,314	203,314
4. Total Rate Payroll Projected for FY21	362,869	362,869	362,869
5. Normal Cost Rate			
a. Based on DB Rate Payroll, (1) ÷ (2)	18.10%	7.38%	25.48%
b. Based on Total Rate Payroll, (1) ÷ (4)	7.96%	3.25%	11.20%
6. Average Member Contribution Rate	3.30%	0.00%	3.30%
7. Employer Normal Cost, (5)(b) - (6)	4.66%	3.25%	7.90%

Past Service Rate	Pension	Healthcare	Total
1. Actuarial Accrued Liability	\$ 2,491,380	\$ 878,366	\$ 3,369,746
2. Valuation Assets ¹	1,583,854	997,304	2,581,158
3. Unfunded Actuarial Accrued Liability, (1) - (2)	\$ 907,526	\$ (118,938)	\$ 788,588
4. Funded Ratio, (2) ÷ (1)	63.6%	113.5%	76.6%
5. Past Service Cost Amortization Payment	67,273	(8,061)	59,212
6. Total Rate Payroll Projected for FY21	362,869	362,869	362,869
7. Past Service Rate, (5) ÷ (6)	18.54%	(2.22%)	18.54%
Total Employer / State Contribution Rate, not less than Normal Cost Rate	23.20%	3.25%	26.45%

Normal Cost Rate by Tier (Total Employer and Member)²

Tier 1	20.26%	13.47%	33.73%
Tier 2	17.69%	6.51%	24.20%
Tier 3	18.15%	7.46%	25.61%

¹ Allocated between Peace Officer / Firefighter and Others in proportion to Actuarial Accrued Liability

² Rates determined considering the payroll for members in each tier. DCR payroll is excluded from these calculations.

Peace Officer / Firefighter

Schedule of Past Service Cost Amortizations - Pension (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment
	Date Created	Years Remaining	Initial	Outstanding	
Initial Amount	6/30/2018	19	\$ 731,232	\$ 725,301	\$ 55,139
Experience Study	6/30/2018	23	88,162	88,810	6,010
FY19 Loss	6/30/2019	24	61,980	62,257	4,112
FY20 Loss	6/30/2020	25	31,158	31,158	2,012
Total				\$ 907,526	\$ 67,273

Schedule of Past Service Cost Amortizations - Healthcare (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment
	Date Created	Years Remaining	Initial	Outstanding	
Initial Amount	6/30/2018	19	\$ (30,991)	\$ (30,740)	\$ (2,337)
Experience Study and EGWP	6/30/2018	23	27,556	27,759	1,879
FY19 Gain	6/30/2019	24	(77,575)	(77,921)	(5,147)
FY20 Gain	6/30/2020	25	(38,036)	(38,036)	(2,456)
Total				\$ (118,938)	\$ (8,061)

Schedule of Past Service Cost Amortizations - Total (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment
	Date Created	Years Remaining	Initial	Outstanding	
Initial Amount	6/30/2018	19	\$ 700,241	\$ 694,561	\$ 52,802
Experience Study and EGWP	6/30/2018	23	115,718	116,569	7,889
FY19 Gain	6/30/2019	24	(15,595)	(15,664)	(1,035)
FY20 Gain	6/30/2020	25	(6,878)	(6,878)	(444)
Total				\$ 788,588	\$ 59,212

Section 1.2: Actuarial Contributions as of June 30, 2020 (\$'s in 000's)

Others

Normal Cost Rate	Pension	Healthcare	Total
1. Total Normal Cost	\$ 108,936	\$ 73,048	\$ 181,984
2. DB Rate Payroll Projected for FY21	770,506	770,506	770,506
3. DCR Rate Payroll Projected for FY21	1,239,703	1,239,703	1,239,703
4. Total Rate Payroll Projected for FY21	2,010,209	2,010,209	2,010,209
5. Normal Cost Rate			
a. Based on DB Rate Payroll, (1) ÷ (2)	14.14%	9.48%	23.62%
b. Based on Total Rate Payroll, (1) ÷ (4)	5.42%	3.63%	9.05%
6. Average Member Contribution Rate	2.62%	0.00%	2.62%
7. Employer Normal Cost, (5)(b) - (6)	2.80%	3.63%	6.43%

Past Service Rate	Pension	Healthcare	Total
1. Actuarial Accrued Liability	\$ 12,788,145	\$ 6,158,184	\$ 18,946,329
2. Valuation Assets ¹	8,129,856	6,992,054	15,121,910
3. Unfunded Actuarial Accrued Liability, (1) - (2)	\$ 4,658,289	\$ (833,870)	\$ 3,824,419
4. Funded Ratio, (2) ÷ (1)	63.6%	113.5%	79.8%
5. Past Service Cost Amortization Payment	346,776	(55,136)	291,640
6. Total Rate Payroll Projected for FY21	2,010,209	2,010,209	2,010,209
7. Past Service Rate, (5) ÷ (6)	17.25%	(2.74%)	17.25%
Total Employer / State Contribution Rate, not less than Normal Cost Rate	20.05%	3.63%	23.68%

Normal Cost Rate by Tier (Total Employer and Member)²

Tier 1	17.82%	16.51%	34.33%
Tier 2	13.22%	8.89%	22.11%
Tier 3	14.06%	8.86%	22.92%

¹ Allocated between Peace Officer / Firefighter and Others in proportion to Actuarial Accrued Liability

² Rates determined considering the payroll for members in each tier. DCR payroll is excluded from these calculations.

Others

Schedule of Past Service Cost Amortizations - Pension (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment
	Date Created	Years Remaining	Initial	Outstanding	
Initial Amount	6/30/2018	19	\$ 3,889,167	\$ 3,857,623	\$ 293,264
Experience Study	6/30/2018	23	467,280	470,714	31,856
FY19 Loss	6/30/2019	24	235,559	236,609	15,629
FY20 Loss	6/30/2020	25	93,343	93,343	6,027
Total				\$ 4,658,289	\$ 346,776

Schedule of Past Service Cost Amortizations - Healthcare (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment
	Date Created	Years Remaining	Initial	Outstanding	
Initial Amount	6/30/2018	19	\$ (47,263)	\$ (46,880)	\$ (3,564)
Experience Study and EGWP	6/30/2018	23	22,293	22,456	1,519
FY19 Gain	6/30/2019	24	(553,265)	(555,735)	(36,708)
FY20 Gain	6/30/2020	25	(253,711)	(253,711)	(16,383)
Total				\$ (833,870)	\$ (55,136)

Schedule of Past Service Cost Amortizations - Total (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment
	Date Created	Years Remaining	Initial	Outstanding	
Initial Amount	6/30/2018	19	\$ 3,841,904	\$ 3,810,743	\$ 289,700
Experience Study and EGWP	6/30/2018	23	489,573	493,170	33,375
FY19 Gain	6/30/2019	24	(317,706)	(319,126)	(21,079)
FY20 Gain	6/30/2020	25	(160,368)	(160,368)	(10,356)
Total				\$ 3,824,419	\$ 291,640

Section 1.2: Actuarial Contributions as of June 30, 2020 (\$'s in 000's)

All Members

Normal Cost Rate	Pension	Healthcare	Total
1. Total Normal Cost	\$ 137,815	\$ 84,825	\$ 222,640
2. DB Rate Payroll Projected for FY21	930,061	930,061	930,061
3. DCR Rate Payroll Projected for FY21	1,443,017	1,443,017	1,443,017
4. Total Rate Payroll Projected for FY21	2,373,078	2,373,078	2,373,078
5. Normal Cost Rate			
a. Based on DB Rate Payroll, (1) ÷ (2)	14.82%	9.12%	23.94%
b. Based on Total Rate Payroll, (1) ÷ (4)	5.81%	3.57%	9.38%
6. Average Member Contribution Rate ¹	2.72%	0.00%	2.72%
7. Employer Normal Cost, (5)(b) - (6)	3.09%	3.57%	6.66%

Past Service Rate	Pension	Healthcare	Total
1. Actuarial Accrued Liability	\$ 15,279,525	\$ 7,036,550	\$ 22,316,075
2. Valuation Assets	9,713,710	7,989,358	17,703,068
3. Unfunded Actuarial Accrued Liability, (1) - (2)	\$ 5,565,815	\$ (952,808)	\$ 4,613,007
4. Funded Ratio, (2) ÷ (1)	63.6%	113.5%	79.3%
5. Past Service Cost Amortization Payment	414,049	(63,197)	350,852
6. Total Rate Payroll Projected for FY21	2,373,078	2,373,078	2,373,078
7. Past Service Rate, (5) ÷ (6)	17.45%	(2.66%)	17.45%
Total Employer / State Contribution Rate, not less than Normal Cost Rate	20.54%	3.57%	24.11%

Normal Cost Rate by Tier (Total Employer and Member)²

Tier 1	17.90%	16.41%	34.31%
Tier 2	13.73%	8.62%	22.35%
Tier 3	14.91%	8.57%	23.48%

¹ 7.5% for Peace Officer / Firefighter and 6.82% weighted average for Others

² Rates determined considering the payroll for members in each tier. DCR payroll is excluded from these calculations.

All Members

Schedule of Past Service Cost Amortizations - Pension (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment
	Date Created	Years Remaining	Initial	Outstanding	
Initial Amount	6/30/2018	19	\$ 4,620,399	\$ 4,582,924	\$ 348,403
Experience Study	6/30/2018	23	555,442	559,524	37,866
FY19 Loss	6/30/2019	24	297,539	298,866	19,741
FY20 Loss	6/30/2020	25	124,501	124,501	8,039
Total				\$ 5,565,815	\$ 414,049

Schedule of Past Service Cost Amortizations - Healthcare (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment
	Date Created	Years Remaining	Initial	Outstanding	
Initial Amount	6/30/2018	19	\$ (78,254)	\$ (77,620)	\$ (5,901)
Experience Study and EGWP	6/30/2018	23	49,849	50,215	3,398
FY19 Gain	6/30/2019	24	(630,840)	(633,656)	(41,855)
FY20 Gain	6/30/2020	25	(291,747)	(291,747)	(18,839)
Total				\$ (952,808)	\$ (63,197)

Schedule of Past Service Cost Amortizations - Total (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment
	Date Created	Years Remaining	Initial	Outstanding	
Initial Amount	6/30/2018	19	\$ 4,542,145	\$ 4,505,304	\$ 342,502
Experience Study and EGWP	6/30/2018	23	605,291	609,739	41,264
FY19 Gain	6/30/2019	24	(333,301)	(334,790)	(22,114)
FY20 Gain	6/30/2020	25	(167,246)	(167,246)	(10,800)
Total				\$ 4,613,007	\$ 350,852

Section 1.3: Roll-Forward Contribution Rate Calculation for FY23 (\$'s in 000's)

	Pension	Healthcare	Total
1. Liability Roll Forward			
a. Actuarial Accrued Liability as of June 30, 2020	\$ 15,279,525	\$ 7,036,550	\$ 22,316,075
b. Normal Cost	130,592	79,891	210,483
c. Interest on (a) and (b) at 7.38%	1,137,267	525,193	1,662,460
d. Estimated Benefit Payments	(944,242)	(408,057)	(1,352,299)
e. Interest on (d) at 7.38%, adjusted for timing	<u>(37,130)</u>	<u>(14,789)</u>	<u>(51,919)</u>
f. Expected Actuarial Accrued Liability as of June 30, 2021	\$ 15,566,012	\$ 7,218,788	\$ 22,784,800
g. Projected Normal Cost	117,140	71,782	188,922
h. Interest on (f) and (g) at 7.38%	1,157,417	538,044	1,695,461
i. Estimated Benefit Payments	(992,490)	(428,722)	(1,421,212)
j. Interest on (i) at 7.38%, adjusted for timing	<u>(39,027)</u>	<u>(15,538)</u>	<u>(54,565)</u>
k. Expected Actuarial Accrued Liability as of June 30, 2022	\$ 15,809,052	\$ 7,384,354	\$ 23,193,406
2. Asset Roll Forward			
a. Actuarial Value of Assets as of June 30, 2020	\$ 9,713,710	\$ 7,989,358	\$ 17,703,068
b. Interest on (a) at 7.38%	716,872	589,615	1,306,487
c. Employee Contributions	70,747	0	70,747
d. Employer Contributions	285,481	96,110	381,591
e. State Assistance Contributions	203,585	0	203,585
f. Interest on (c) thru (e) at 7.38%, adjusted for timing*	27,935	3,483	31,418
g. Estimated Benefit Payments	(944,242)	(408,057)	(1,352,299)
h. Administrative Expenses	(7,223)	(4,934)	(12,157)
i. Interest on (g) and (h) at 7.38%, adjusted for timing	(37,391)	(14,968)	(52,359)
j. AVA Adjustments	<u>(25,173)</u>	<u>(7,721)</u>	<u>(32,894)</u>
k. Expected Actuarial Value of Assets as of June 30, 2021	\$ 10,004,301	\$ 8,242,886	\$ 18,247,187
l. Interest on (k) at 7.38%	738,317	608,325	1,346,642
m. Employee Contributions	65,590	0	65,590
n. Employer Contributions	305,011	74,463	379,474
o. State Assistance Contributions**	193,494	0	193,494
p. Interest on (m) thru (o) at 7.38%, adjusted for timing*	27,712	2,699	30,411
q. Estimated Benefit Payments	(992,490)	(428,722)	(1,421,212)
r. Administrative Expenses	(6,531)	(4,466)	(10,997)
s. Interest on (q) and (r) at 7.38%, adjusted for timing	(39,264)	(15,700)	(54,964)
t. AVA Adjustments	<u>(103,367)</u>	<u>(76,343)</u>	<u>(179,710)</u>
u. Expected Actuarial Value of Assets as of June 30, 2022	\$ 10,192,773	\$ 8,403,142	\$ 18,595,915
3. Expected Unfunded Actuarial Accrued Liability as of June 30, 2022, 1(k) - 2(u)			
	\$ 5,616,279	\$ (1,018,788)	\$ 4,597,491

* Employee and Employer Contributions are paid throughout the year. State Assistance Contributions are assumed to be paid on July 1, 2020 for FY21, and July 1, 2021 for FY22.

** The FY22 State Assistance Contribution is expected to be contributed 100% to pension.

	Pension	Healthcare	Total
4. Expected Annual Rate Payroll for FY23			
a. Defined Benefit Members			\$ 774,572
b. Defined Contribution Retirement Members			1,630,504
c. Total Rate Payroll			\$ 2,405,076
5. Expected FY23 Contribution Rate Calculation			
a. Projected Normal Cost for FY23	\$ 110,560	\$ 68,351	\$ 178,911
b. Projected Normal Cost Rate for FY23	4.60%	2.84%	7.44%
c. Expected Member Contribution Rate for FY23	(2.23%)	0.00%	(2.23%)
d. Expected Employer Normal Cost Rate for FY23	2.37%	2.84%	5.21%
e. Expected Unfunded Liability as of June 30, 2022	\$ 5,616,279	\$ (1,018,788)	\$ 4,597,491
f. FY23 Layered Amortization of Expected Unfunded Liability	445,759	(70,873)	374,886
g. Expected Past Service Cost Contribution Rate for FY23	18.53%	(2.95%)	18.53%
h. Expected Total Contribution Rate for FY23, not less than Normal Cost Rate	20.90%	2.84%	23.74%

The components of the expected FY23 amortization amounts are shown below (totals may not add due to rounding):

Expected FY23 Schedule of Past Service Cost Amortizations - Pension (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment for FY23
	Date Created	Years Remaining as of June 30, 2022	Initial	Outstanding as of June 30, 2022	
Initial Amount	6/30/2018	17	\$ 4,620,399	\$ 4,498,197	\$ 367,828
Experience Study	6/30/2018	21	555,442	559,718	39,977
FY19 Loss	6/30/2019	22	297,539	300,063	20,841
FY20 Loss	6/30/2020	23	124,501	125,417	8,488
Expected FY21 Loss	6/30/2021	24	29,744	29,876	1,973
Expected FY22 Loss	6/30/2022	25	103,008	103,008	6,652
Total				\$ 5,616,279	\$ 445,759

Expected FY23 Schedule of Past Service Cost Amortizations - Healthcare (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment for FY23
	Date Created	Years Remaining as of June 30, 2022	Initial	Outstanding as of June 30, 2022	
Initial Amount	6/30/2018	17	\$ (78,254)	\$ (76,185)	\$ (6,230)
Experience Study and EGWP	6/30/2018	21	49,849	50,232	3,588
FY19 Gain	6/30/2019	22	(630,840)	(636,194)	(44,188)
FY20 Gain	6/30/2020	23	(291,747)	(293,891)	(19,889)
Expected FY21 Gain	6/30/2021	24	(68,832)	(69,140)	(4,567)
Expected FY22 Loss	6/30/2022	25	6,390	6,390	413
Total				\$ (1,018,788)	\$ (70,873)

Expected FY23 Schedule of Past Service Cost Amortizations - Total (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment for FY23
	Date Created	Years Remaining as of June 30, 2022	Initial	Outstanding as of June 30, 2022	
Initial Amount	6/30/2018	17	\$ 4,542,145	\$ 4,422,012	\$ 361,598
Experience Study and EGWP	6/30/2018	21	605,291	609,950	43,565
FY19 Gain	6/30/2019	22	(333,301)	(336,131)	(23,347)
FY20 Gain	6/30/2020	23	(167,246)	(168,474)	(11,401)
Expected FY21 Gain	6/30/2021	24	(39,088)	(39,264)	(2,594)
Expected FY22 Loss	6/30/2022	25	109,398	109,398	7,065
Total				\$ 4,597,491	\$ 374,886

Section 1.4: Actuarial Gain/(Loss) for FY20 (\$'s in 000's)

	Pension	Healthcare	Total
1. Expected Actuarial Accrued Liability			
a. Actuarial Accrued Liability as of June 30, 2019	\$ 15,039,180	\$ 7,151,694	\$ 22,190,874
b. Normal Cost	141,556	87,971	229,527
c. Interest on (a) and (b) at 7.38%	1,120,338	534,287	1,654,625
d. Employer Group Waiver Plan	0	33,177	33,177
e. Benefit Payments	(885,252)	(407,069)	(1,292,321)
f. Refund of Contributions	(10,271)	0	(10,271)
g. Interest on (d) thru (f) at 7.38%, adjusted for timing	(35,214)	(13,551)	(48,765)
h. Assumptions/Methods Changes	0	0	0
i. Expected Actuarial Accrued Liability as of June 30, 2020 (a) + (b) + (c) + (d) + (e) + (f) + (g) + (h)	\$ 15,370,337	\$ 7,386,509	\$ 22,756,846
2. Actual Actuarial Accrued Liability as of June 30, 2020	15,279,525	7,036,550	22,316,075
3. Liability Gain/(Loss), (1)(i) - (2)	\$ 90,812	\$ 349,959	\$ 440,771
4. Expected Actuarial Asset Value			
a. Actuarial Value of Assets as of June 30, 2019	\$ 9,576,693	\$ 7,810,491	\$ 17,387,184
b. Interest on (a) at 7.38%	706,760	576,414	1,283,174
c. Employee Contributions	74,514	0	74,514
d. Employer Contributions	270,460	107,298	377,758
e. State Assistance Contributions	159,055	0	159,055
f. Employer Group Waiver Plan	0	33,177	33,177
g. Interest on (c) thru (f) at 7.38%, adjusted for timing	24,241	5,091	29,332
h. Benefit Payments	(885,252)	(407,069)	(1,292,321)
i. Refund of Contributions	(10,271)	0	(10,271)
j. Administrative Expenses	(7,017)	(6,203)	(13,220)
k. Interest on (h) thru (j) at 7.38%, adjusted for timing	(35,468)	(14,978)	(50,446)
l. Expected Actuarial Asset Value as of June 30, 2020 (a) + (b) + (c) + (d) + (e) + (f) + (g) + (h) + (i) + (j) + (k)	\$ 9,873,715	\$ 8,104,221	\$ 17,977,936
5. Actual Actuarial Asset Value as of June 30, 2020	9,713,710	7,989,358	17,703,068
6. Actuarial Asset Value Gain/(Loss), (5) - (4)(l)	\$ (160,005)	\$ (114,863)	\$ (274,868)
7. Total Actuarial Gain/(Loss), (3) + (6)	\$ (69,193)	\$ 235,096	\$ 165,903
8. Contribution Gain/(Loss)	\$ (55,380)	\$ 59,059	\$ 3,679
9. Administrative Expense Gain/(Loss)	\$ 72	\$ (2,408)	\$ (2,336)
10. FY20 Gain/(Loss), (7) + (8) + (9)	\$ (124,501)	\$ 291,747	\$ 167,246

Section 1.5: Development of Change in Unfunded Liability During FY20 (\$'s in 000's)

	Pension	Healthcare	Total
1. 2019 Unfunded Liability	\$ 5,462,487	\$ (658,797)	\$ 4,803,690
a. Interest on Unfunded Liability at 7.38%	\$ 403,132	\$ (48,619)	\$ 354,513
b. Normal Cost	141,556	87,971	229,527
c. Employee Contributions	(74,514)	0	(74,514)
d. Employer Contributions	(270,460)	(107,298)	(377,758)
e. State Assistance Contributions	(159,055)	0	(159,055)
f. Administrative Expenses	7,017	6,203	13,220
g. Interest on (b) thru (f) at 7.38%, adjusted for timing	(13,541)	2,828	(10,713)
h. Assumptions/Methods Changes	0	0	0
i. Expected Change in Unfunded Liability During FY20 (a) + (b) + (c) + (d) + (e) + (f) + (g) + (h)	\$ 34,135	\$ (58,915)	\$ (24,780)
2. Expected 2020 Unfunded Liability, (1) + (1)(i)	\$ 5,496,622	\$ (717,712)	\$ 4,778,910
a. Liability (Gain)/Loss During FY20	\$ (90,812)	\$ (349,959)	\$ (440,771)
b. Actuarial Assets (Gain)/Loss During FY20	160,005	114,863	274,868
c. Total Actuarial (Gain)/Loss During FY20	\$ 69,193	\$ (235,096)	\$ (165,903)
3. Actual 2020 Unfunded Liability, (2) + (2)(c)	\$ 5,565,815	\$ (952,808)	\$ 4,613,007

Section 1.6: Analysis of Financial Experience

Pension

**Change in Employer / State Contribution Rate as of Valuation Date
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				
	Pension				
	2016	2017	2018	2019	2020
1. Health Claims	N/A	N/A	N/A	N/A	N/A
2. Salary Experience	(0.20%)	(0.36%)	(0.30%)	0.16%	(0.03%)
3. Investment Experience	0.73%	0.64%	0.52%	0.50%	0.44%
4. Demographic Experience and Miscellaneous	(0.33%)	(0.19%)	0.26%	(0.45%)	(0.19%)
5. Contribution Lag	<u>0.16%</u>	<u>0.15%</u>	<u>0.14%</u>	<u>0.11%</u>	<u>0.15%</u>
6. (Gain) or Loss During Year From Experience, (1) + (2) + (3) + (4) + (5)	0.36%	0.24%	0.62%	0.32%	0.37%
7. Assumptions / Method Changes	1.00%	0.00%	1.65%	0.00%	0.00%
8. System Benefit Changes	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>
9. Composite (Gain) or Loss During Year, (6) + (7) + (8)	1.36%	0.24%	2.27%	0.32%	0.37%
10. Beginning Total Employer / State Contribution Rate	<u>15.98%</u>	<u>17.34%</u>	<u>17.58%</u>	<u>19.85%</u>	<u>20.17%</u>
11. Ending Valuation Year Employer / State Contribution Rate, (9) + (10)	17.34%	17.58%	19.85%	20.17%	20.54%
12. Fiscal Year Rates Adopted by ARMB					
a. Fiscal Year Employer / State Contribution Rate	18.27%	18.29%	20.66%	20.89%	20.90% *
b. Fiscal Year for which Rate Applies	FY19	FY20	FY21	FY22	FY23

* Expected rate. Actual rate to be determined

Healthcare

**Change in Employer / State Contribution Rate as of Valuation Date
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				
	Healthcare				
	2016	2017	2018	2019	2020
1. Health Claims ¹	0.59%	(2.46%)	(1.51%)	(2.39%)	(0.87%)
2. Salary Experience	N/A	N/A	N/A	N/A	N/A
3. Investment Experience	0.60%	0.51%	0.40%	0.38%	0.31%
4. Demographic Experience and Miscellaneous	0.00%	(0.48%)	(1.08%)	1.16%	0.38%
5. Contribution Lag	<u>(0.41%)</u>	<u>(0.12%)</u>	<u>0.06%</u>	<u>0.02%</u>	<u>(0.16%)</u>
6. (Gain) or Loss During Year From Experience, (1) + (2) + (3) + (4) + (5)	0.78%	(2.55%)	(2.13%)	(0.83%)	(0.34%)
7. Assumptions / Method Changes	0.50%	2.89%	2.20%	0.00%	0.00%
8. System Benefit Changes	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>
9. Composite (Gain) or Loss During Year, (6) + (7) + (8)	1.28%	0.34%	0.07%	(0.83%)	(0.34%)
10. Beginning Total Employer / State Contribution Rate	<u>3.05%</u>	<u>4.33%</u>	<u>4.67%</u>	<u>4.74%</u>	<u>3.91%</u>
11. Ending Valuation Year Employer / State Contribution Rate, (9) + (10)	4.33%	4.67%	4.74%	3.91%	3.57%
12. Fiscal Year Rates Adopted by ARMB					
a. Fiscal Year Employer / State Contribution Rate	4.37%	4.89%	4.27%	3.12%	2.84% *
b. Fiscal Year for which Rate Applies	FY19	FY20	FY21	FY22	FY23

* Expected rate. Actual rate to be determined

¹ The 2016 health claims percentage includes the effect of healthcare demographic experience gain/loss

Total
Change in Employer / State Contribution Rate as of Valuation Date
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				
	2016	2017	2018	2019	2020
1. Health Claims ¹	0.59%	(2.46%)	(1.51%)	(2.39%)	(0.87%)
2. Salary Experience	(0.20%)	(0.36%)	(0.30%)	0.16%	(0.03%)
3. Investment Experience	1.33%	1.15%	0.92%	0.88%	0.75%
4. Demographic Experience and Miscellaneous	(0.33%)	(0.67%)	(0.82%)	0.71%	0.19%
5. Contribution Lag	<u>(0.25%)</u>	<u>0.03%</u>	<u>0.20%</u>	<u>0.13%</u>	<u>(0.01%)</u>
6. (Gain) or Loss During Year From Experience, (1) + (2) + (3) + (4) + (5)	1.14%	(2.31%)	(1.51%)	(0.51%)	0.03%
7. Assumptions / Method Changes	1.50%	2.89%	3.85%	0.00%	0.00%
8. System Benefit Changes	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>
9. Composite (Gain) or Loss During Year, (6) + (7) + (8)	2.64%	0.58%	2.34%	(0.51%)	0.03%
10. Beginning Total Employer / State Contribution Rate	<u>19.03%</u>	<u>21.67%</u>	<u>22.25%</u>	<u>24.59%</u>	<u>24.08%</u>
11. Ending Valuation Year Employer / State Contribution Rate, (9) + (10)	21.67%	22.25%	24.59%	24.08%	24.11%
12. Fiscal Year Rates Adopted by ARMB					
a. Fiscal Year Employer / State Contribution Rate	22.64%	23.18%	24.93%	24.01%	23.74% *
b. Fiscal Year for which Rate Applies	FY19	FY20	FY21	FY22	FY23

* Expected rate. Actual rate to be determined

¹ The 2016 health claims percentage includes the effect of healthcare demographic experience gain/loss

Section 1.7: History of Unfunded Liability and Funded Ratio (\$'s in 000's)

Valuation Date	Total Actuarial Accrued Liability	Valuation Assets	Assets as a Percent of Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (UAAL)
June 30, 2003	\$ 10,561,653	\$ 7,687,281	72.8%	\$ 2,874,372
June 30, 2004	11,443,916	8,030,414	70.2%	3,413,502
June 30, 2005	12,844,841	8,442,919	65.7%	4,401,922
June 30, 2006	14,388,413	9,040,908	62.8%	5,347,505
June 30, 2007	14,570,933	9,900,960	68.0%	4,669,973
June 30, 2008	15,888,141	11,040,106	69.5%	4,848,035
June 30, 2009	16,579,371	10,242,978	61.8%	6,336,393
June 30, 2010	18,132,492	11,157,464	61.5%	6,975,028
June 30, 2011	18,740,550	11,813,774	63.0%	6,926,776
June 30, 2012	19,292,361	11,832,030	61.3%	7,460,331
June 30, 2013	19,992,759	12,162,626	60.8%	7,830,133
June 30, 2014	20,897,372	14,644,598	70.1%	6,252,774
June 30, 2015	20,648,663	16,173,459	78.3%	4,475,204
June 30, 2016	21,369,490	16,467,992	77.1%	4,901,498
June 30, 2017	21,881,395	16,786,771	76.7%	5,094,624
June 30, 2018	22,264,137	17,116,701	76.9%	5,147,436
June 30, 2019	22,190,874	17,387,184	78.4%	4,803,690
June 30, 2020	22,316,075	17,703,068	79.3%	4,613,007

Section 2: Plan Assets

Section 2.1: Summary of Fair Value of Assets (\$'s in 000's)

As of June 30, 2020	Pension	Healthcare	Total	Allocation Percent
Cash and Short-Term Investments				
- Cash and Cash Equivalents	\$ 104,417	\$ 77,183	\$ 181,600	1.1%
- Subtotal	\$ 104,417	\$ 77,183	\$ 181,600	1.1%
Fixed Income Investments				
- Domestic Fixed Income Pool	\$ 2,047,425	\$ 1,701,267	\$ 3,748,692	21.6%
- International Fixed Income Pool	0	0	0	0.0%
- Tactical Fixed Income Pool	0	0	0	0.0%
- High Yield Pool	0	0	0	0.0%
- Treasury Inflation Protection Pool	0	0	0	0.0%
- Emerging Debt Pool	0	0	0	0.0%
- Subtotal	\$ 2,047,425	\$ 1,701,267	\$ 3,748,692	21.6%
Equity Investments				
- Domestic Equity Pool	\$ 2,578,937	\$ 2,142,999	\$ 4,721,936	27.3%
- International Equity Pool	1,471,536	1,222,791	2,694,327	15.6%
- Private Equity Pool	1,166,939	969,682	2,136,621	12.3%
- Emerging Markets Equity Pool	307,716	255,700	563,416	3.3%
- Alternative Equity Strategies	513,333	426,560	939,893	5.4%
- Subtotal	\$ 6,038,461	\$ 5,017,732	\$ 11,056,193	63.9%
Other Investments				
- Real Estate Pool	\$ 580,860	\$ 483,662	\$ 1,064,522	6.1%
- Other Investments Pool	695,398	577,850	1,273,248	7.3%
- Absolute Return Pool	0	0	0	0.0%
- Other Assets	15	967	982	0.0%
- Subtotal	\$ 1,276,273	\$ 1,062,479	\$ 2,338,752	13.4%
Total Cash and Investments	\$ 9,466,576	\$ 7,858,661	\$ 17,325,237	100.0%
Net Accrued Receivables	2,585	(45,150)	(42,565)	
Net Assets	\$ 9,469,161	\$ 7,813,511	\$ 17,282,672	

Section 2.2: Changes in Fair Value of Assets During FY20 (\$'s in 000's)

Fiscal Year 2020	Pension	Healthcare	Total
1. Fair Value of Assets as of June 30, 2019	\$ 9,489,405	\$ 7,767,692	\$ 17,257,097
2. Additions:			
a. Employee Contributions	\$ 74,514	\$ 0	\$ 74,514
b. Employer Contributions	270,460	107,298	377,758
c. State Assistance Contributions	159,055	0	159,055
d. Interest and Dividend Income	144,330	118,959	263,289
e. Net Appreciation / Depreciation in Fair Value of Investments	261,863	221,506	483,369
f. Employer Group Waiver Plan	0	33,177	33,177
g. Other	148	458	606
h. Total Additions	\$ 910,370	\$ 481,398	\$ 1,391,768
3. Deductions:			
a. Medical Benefits	\$ 0	\$ 407,069	\$ 407,069
b. Retirement Benefits	885,252	0	885,252
c. Refund of Contributions	10,271	0	10,271
d. Investment Expenses	28,074	22,307	50,381
e. Administrative Expenses	7,017	6,203	13,220
f. Total Deductions	\$ 930,614	\$ 435,579	\$ 1,366,193
4. Fair Value of Assets as of June 30, 2020	\$ 9,469,161	\$ 7,813,511	\$ 17,282,672
5. Approximate Fair Value Investment Return Rate during FY20 Net of Investment Expenses	4.1%	4.2%	4.1%

Section 2.3: Development of Actuarial Value of Assets (\$'s in 000's)

The actuarial value of asset was set equal to the fair value as of June 30, 2014 and the 20% corridor was eliminated. Investment gains and losses after June 30, 2014 are recognized 20% per year over 5 years.

	Pension	Healthcare	Total
1. Deferral of Investment Gain / (Loss) for FY20			
a. Fair Value of Assets as of June 30, 2019	\$ 9,489,405	\$ 7,767,692	\$ 17,257,097
b. Contributions	504,029	107,298	611,327
c. Employer Group Waiver Plan	0	33,177	33,177
d. Benefit Payments	895,523	407,069	1,302,592
e. Administrative Expenses	7,017	6,203	13,220
f. Actual Investment Return (net of investment expenses)	378,267	318,616	696,883
g. Expected Return Rate (net of investment expenses)	7.38%	7.38%	7.38%
h. Expected Return, Weighted for Timing	689,091	563,369	1,252,460
i. Investment Gain / (Loss) for the Year, (f) - (h)	(310,824)	(244,753)	(555,577)
2. Actuarial Value as of June 30, 2020			
a. Fair Value as of June 30, 2020	\$ 9,469,161	\$ 7,813,511	\$ 17,282,672
b. Deferred Investment Gain / (Loss)	(244,549)	(175,847)	(420,396)
c. Actuarial Value as of June 30, 2020, (a) - (b)	9,713,710	7,989,358	17,703,068
3. Ratio of Actuarial Value of Assets to Fair Value of Assets			
	102.6%	102.3%	102.4%
4. Approximate Actuarial Value Investment Return Rate during FY20 Net of Investment Expenses			
	5.7%	5.9%	5.8%

The tables below show the development of the gains/(losses) to be recognized in the current year (\$'s in 000's):

Pension				
Fiscal Year Ending	Asset Gain / (Loss)	Gain / (Loss) Recognized in Prior Years	Gain / (Loss) Recognized This Year	Gain / (Loss) Deferred to Future Years
June 30, 2016	\$ (732,190)	\$ (585,752)	\$ (146,438)	\$ 0
June 30, 2017	393,607	236,163	78,721	78,723
June 30, 2018	17,834	7,134	3,567	7,133
June 30, 2019	(136,242)	(27,248)	(27,248)	(81,746)
June 30, 2020	<u>(310,824)</u>	<u>0</u>	<u>(62,165)</u>	<u>(248,659)</u>
Total	\$ (767,815)	\$ (369,703)	\$ (153,563)	\$ (244,549)

Healthcare				
Fiscal Year Ending	Asset Gain / (Loss)	Gain / (Loss) Recognized in Prior Years	Gain / (Loss) Recognized This Year	Gain / (Loss) Deferred to Future Years
June 30, 2016	\$ (584,781)	\$ (467,824)	\$ (116,957)	\$ 0
June 30, 2017	341,151	204,690	68,230	68,231
June 30, 2018	30,997	12,398	6,199	12,400
June 30, 2019	(101,128)	(20,226)	(20,226)	(60,676)
June 30, 2020	<u>(244,753)</u>	<u>0</u>	<u>(48,951)</u>	<u>(195,802)</u>
Total	\$ (558,514)	\$ (270,962)	\$ (111,705)	\$ (175,847)

Total				
Fiscal Year Ending	Asset Gain / (Loss)	Gain / (Loss) Recognized in Prior Years	Gain / (Loss) Recognized This Year	Gain / (Loss) Deferred to Future Years
June 30, 2016	\$ (1,316,971)	\$ (1,053,576)	\$ (263,395)	\$ 0
June 30, 2017	734,758	440,853	146,951	146,954
June 30, 2018	48,831	19,532	9,766	19,533
June 30, 2019	(237,370)	(47,474)	(47,474)	(142,422)
June 30, 2020	<u>(555,577)</u>	<u>0</u>	<u>(111,116)</u>	<u>(444,461)</u>
Total	\$ (1,326,329)	\$ (640,665)	\$ (265,268)	\$ (420,396)

Section 2.4: Historical Asset Rates of Return

Year Ending	Actuarial Value		Fair Value	
	Annual	Cumulative*	Annual	Cumulative*
June 30, 2005	8.7%	8.7%	8.5%	8.5%
June 30, 2006	9.3%	9.0%	11.4%	9.9%
June 30, 2007	11.6%	9.9%	18.5%	12.7%
June 30, 2008	10.0%	9.9%	(3.1%)	8.5%
June 30, 2009	(7.3%)	6.2%	(20.5%)	2.0%
June 30, 2010	7.2%	6.4%	10.2%	3.3%
June 30, 2011	7.2%	6.5%	20.4%	5.6%
June 30, 2012	1.2%	5.8%	0.2%	4.9%
June 30, 2013	4.0%	5.6%	12.1%	5.7%
June 30, 2014	21.9%	7.1%	18.1%	6.9%
June 30, 2015	7.0%	7.1%	2.9%	6.5%
June 30, 2016	5.0%	6.9%	(0.7%)	5.9%
June 30, 2017	5.4%	6.8%	12.8%	6.4%
June 30, 2018	6.1%	6.8%	8.2%	6.5%
June 30, 2019	5.5%	6.7%	6.0%	6.5%
June 30, 2020	5.8%	6.6%	4.1%	6.3%

* Cumulative since fiscal year ending June 30, 2005

Section 3: Projections

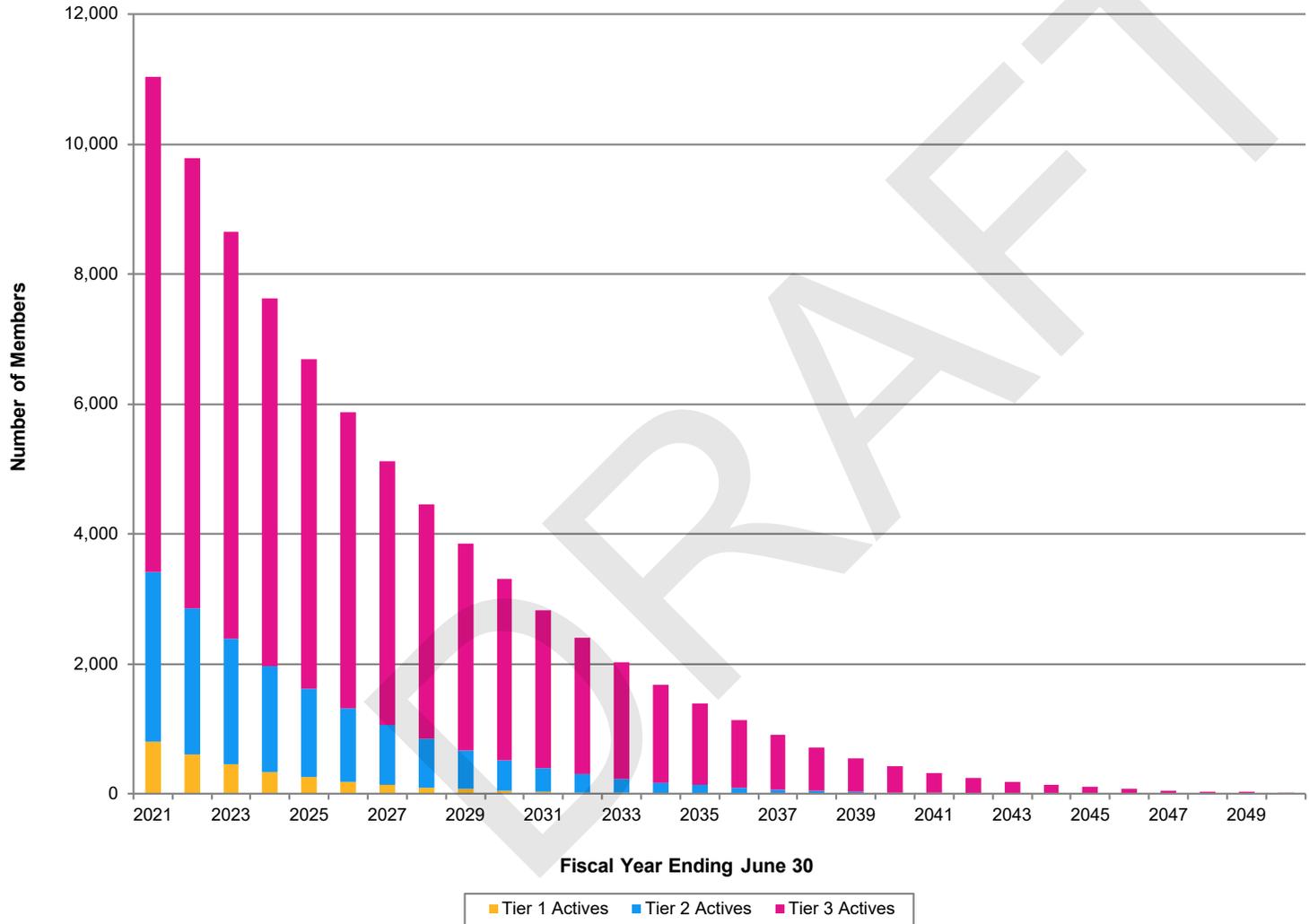
Section 3.1: Projection Assumptions and Methods

Key Assumptions

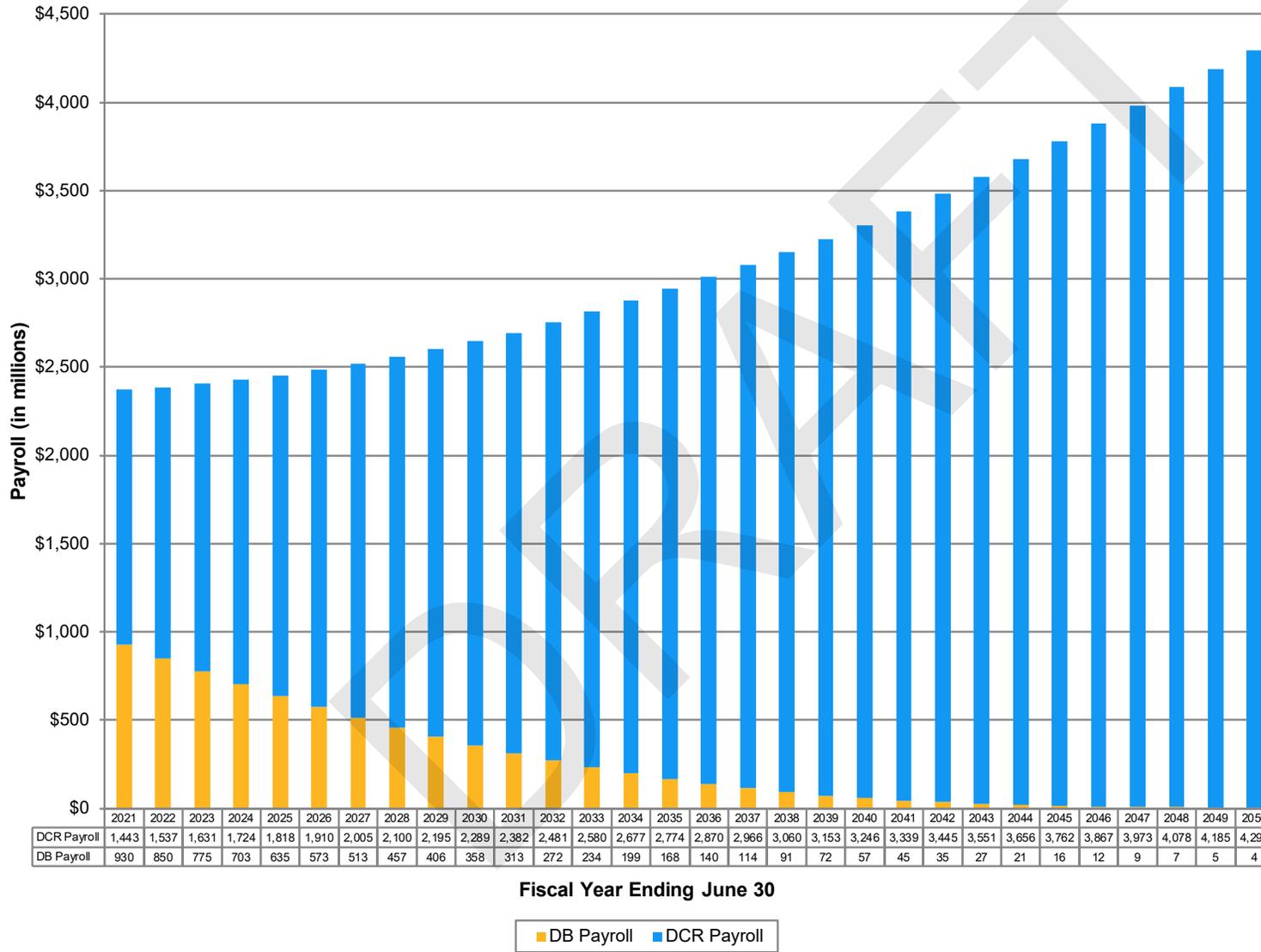
- 7.38% investment return (net of investment expenses) on the Fair Value of Assets in all future years.
- The Actuarial Value of Assets was re-initialized to Fair Value as of June 30, 2014. The Actuarial Value of Assets after June 30, 2014 reflects the deferred gains and losses generated by the smoothing method. The current deferred amount is recognized in the first four years of the projections.
- Actuarial assumptions and methods as described in Section 5. No actuarial gains/losses are assumed after June 30, 2020.
- The actuarially calculated contribution rate using a two-year roll-forward approach is adopted each year.
- Projections assume a 0% increase in the total active member population. All new members are expected to enter the DCR plan.
- Contribution rates are determined as a percent of total DB and DCR payroll.
- The DCR contribution rate determined as of June 30, 2020 is assumed to remain constant in all future years.
- The active rehire assumption shown in Section 5 is assumed to grade to zero on a uniform basis over 20 years.
- The Normal Cost is increased by the administrative expenses shown in Section 5. For future years, the percent increase is assumed to remain constant.

Section 3.2: Membership Projection

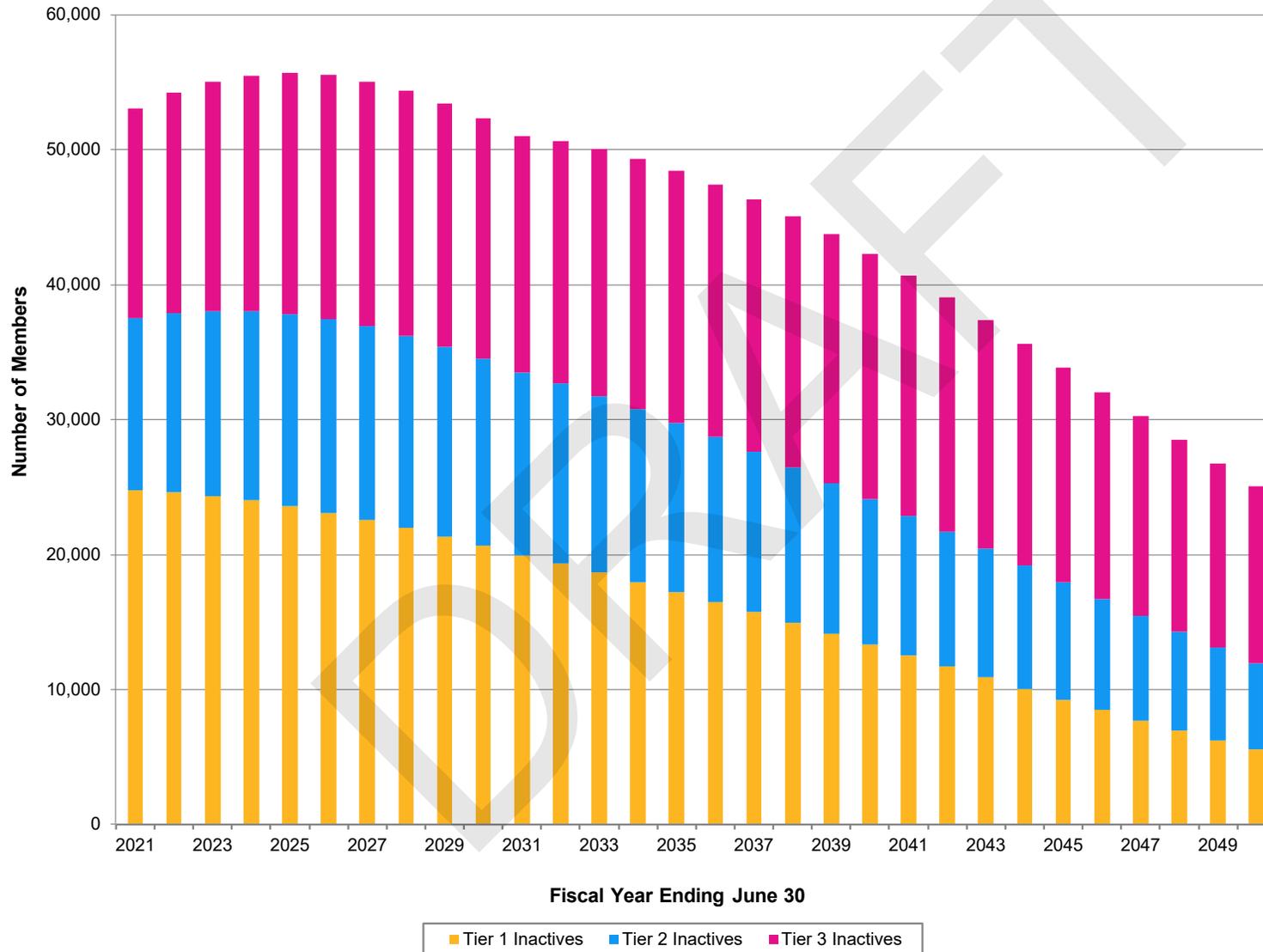
Projected Active Member Count



Projected DB and DCR Payroll

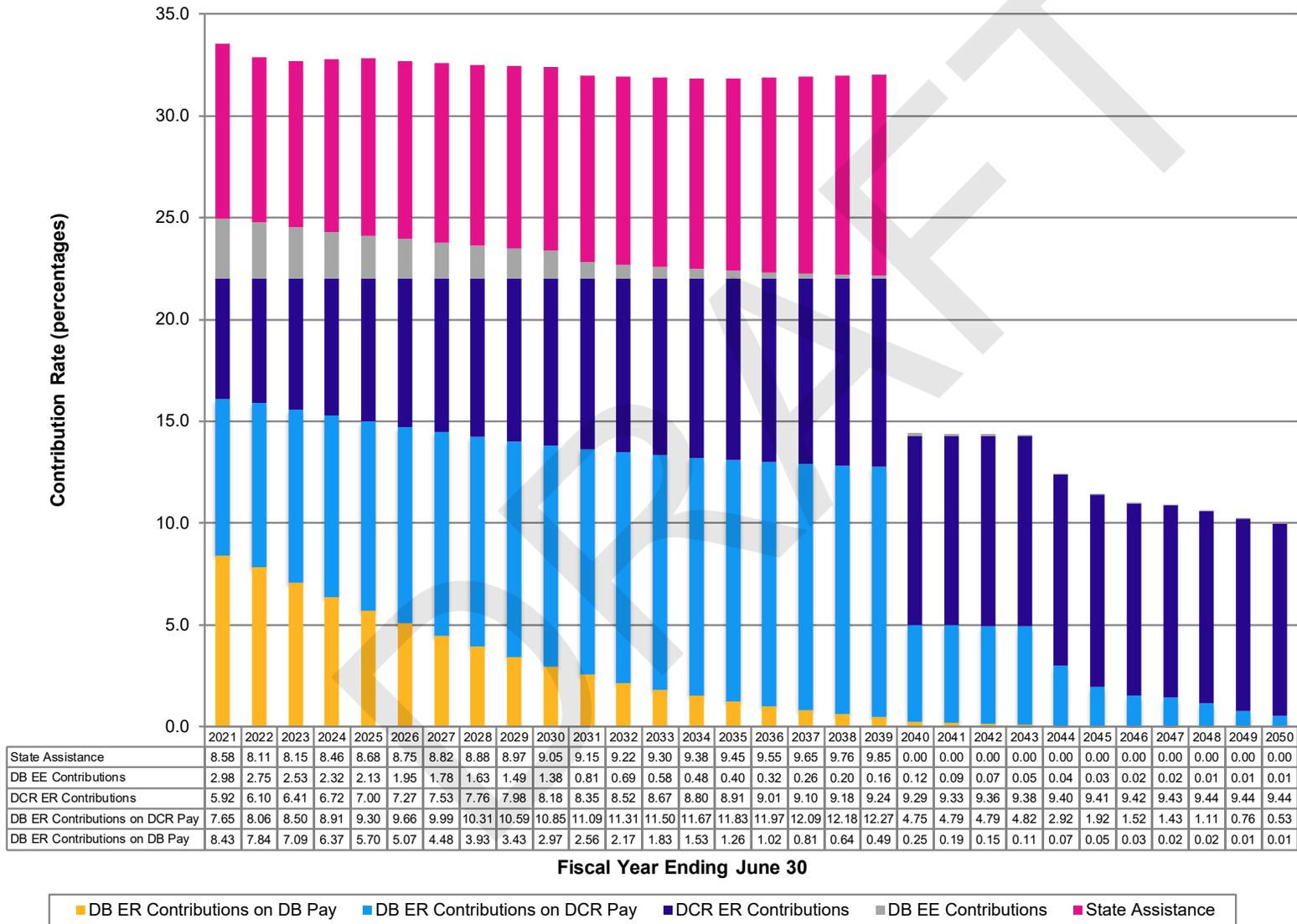


Projected Inactive Member Count

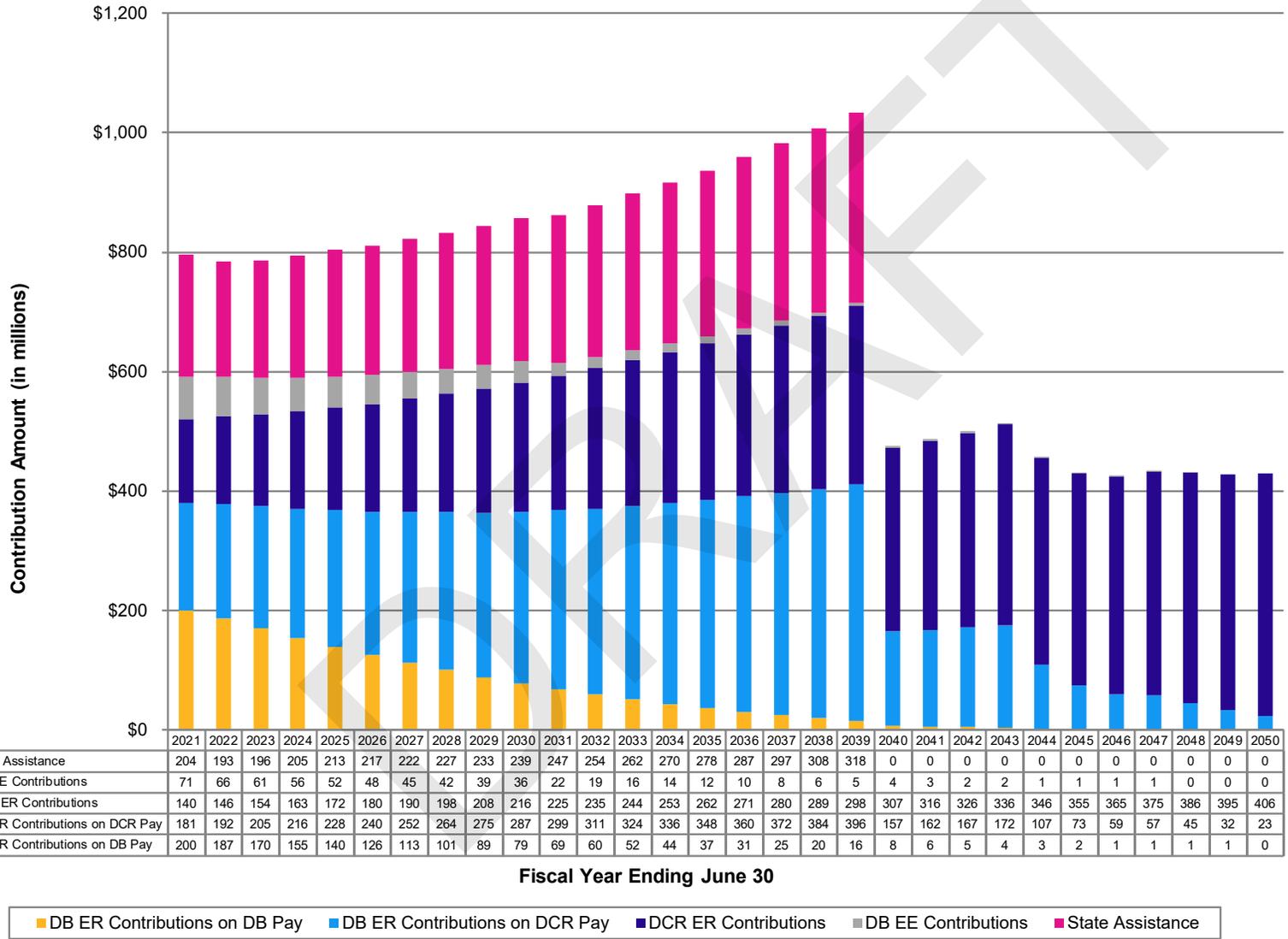


Section 3.3: Projected Employer/State Contribution Rates

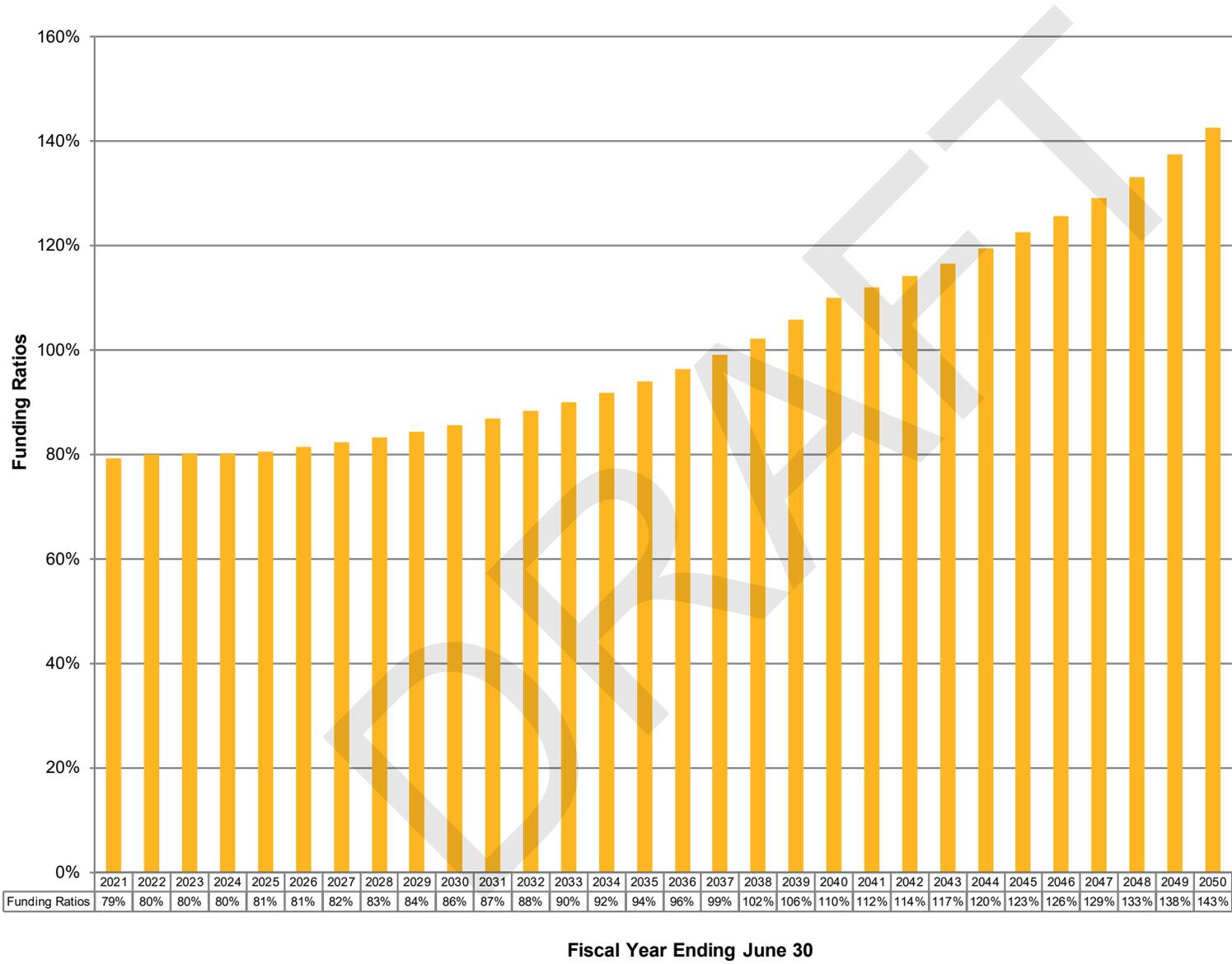
Based on Total DB and DCR Payroll



Section 3.4: Projected Employer/State Contribution Amounts



Section 3.5: Projection of Funded Ratios



Section 3.6: Table of Projected Actuarial Results (\$'s in 000's)

Fiscal Year End	Valuation Amounts on July 1 (Beginning of FY)				Cash Flow Amounts during Following 12 Months								Deferred Asset Gain / (Loss)	
	Actuarial Assets	Accrued Liability	Funding Ratio	Unfunded Liability / (Surplus)	Total Salaries	Contribution Rates			DB Contributions					Benefit Payments
						Employer / State	DCR	Total	Employer	State Assistance	Employee	Total		
2021	\$ 17,703,068	\$ 22,316,075	79.3%	\$ 4,613,007	\$ 2,373,078	24.66%	5.92%	30.58%	\$ 381,591	\$ 203,585	\$ 70,747	\$ 655,923	\$ 1,352,299	\$ (418,528)
2022	18,247,187	22,784,800	80.1%	4,537,613	2,386,626	24.01%	6.10%	30.11%	379,474	193,494	65,590	638,558	1,421,212	(269,705)
2023	18,595,915	23,193,406	80.2%	4,597,491	2,405,076	23.74%	6.41%	30.15%	374,951	196,014	60,746	631,711	1,489,985	(111,116)
2024	18,894,305	23,547,126	80.2%	4,652,821	2,427,345	23.74%	6.72%	30.46%	370,898	205,353	56,410	632,661	1,555,059	0
2025	19,208,705	23,835,914	80.6%	4,627,209	2,453,152	23.68%	7.00%	30.68%	367,973	212,934	52,320	633,227	1,616,352	0
2026	19,603,824	24,064,939	81.5%	4,461,115	2,482,633	23.48%	7.27%	30.75%	365,692	217,230	48,466	631,388	1,673,417	0
2027	19,968,002	24,236,014	82.4%	4,268,012	2,518,456	23.29%	7.53%	30.82%	364,421	222,128	44,877	631,426	1,725,814	0
2028	20,305,701	24,350,613	83.4%	4,044,912	2,557,461	23.12%	7.76%	30.88%	364,183	227,103	41,747	633,033	1,777,534	0
2029	20,617,244	24,407,417	84.5%	3,790,173	2,600,575	22.99%	7.98%	30.97%	364,600	233,272	38,835	636,707	1,825,840	0
2030	20,906,363	24,406,459	85.7%	3,500,096	2,646,356	22.87%	8.18%	31.05%	365,726	239,495	36,390	641,611	1,873,521	0
2031	21,173,270	24,345,754	87.0%	3,172,484	2,695,674	22.80%	8.35%	31.15%	367,960	246,654	21,835	636,449	1,907,575	0
2032	21,420,038	24,222,943	88.4%	2,802,905	2,753,450	22.70%	8.52%	31.22%	371,165	253,868	18,999	644,032	1,950,868	0
2033	21,648,740	24,037,418	90.1%	2,388,678	2,813,927	22.63%	8.67%	31.30%	375,096	261,695	16,321	653,112	1,991,642	0
2034	21,862,183	23,787,589	91.9%	1,925,406	2,876,779	22.58%	8.80%	31.38%	379,735	269,842	13,809	663,386	2,025,140	0
2035	22,067,995	23,477,147	94.0%	1,409,152	2,942,401	22.54%	8.91%	31.45%	385,160	278,057	11,770	674,987	2,054,265	0
2036	22,271,486	23,106,796	96.4%	835,310	3,010,276	22.54%	9.01%	31.55%	391,035	287,481	9,633	688,149	2,078,154	0
2037	22,479,542	22,678,036	99.1%	198,494	3,079,581	22.55%	9.10%	31.65%	397,266	297,180	8,007	702,453	2,097,506	0
2038	22,698,380	22,193,626	102.3%	(504,754)	3,150,757	22.58%	9.18%	31.76%	403,927	307,514	6,302	717,743	2,107,908	0
2039	22,939,090	21,658,492	105.9%	(1,280,598)	3,225,637	22.61%	9.24%	31.85%	411,592	317,725	5,161	734,478	2,112,689	0
2040	23,210,569	21,075,430	110.1%	(2,135,139)	3,303,529	5.00%	9.29%	14.29%	165,177	0	3,964	169,141	2,106,710	0
2041	22,910,733	20,452,598	112.0%	(2,458,135)	3,384,397	4.98%	9.33%	14.31%	168,543	0	3,046	171,589	2,093,286	0
2042	22,605,407	19,795,332	114.2%	(2,810,075)	3,480,660	4.94%	9.36%	14.30%	171,945	0	2,436	174,381	2,070,972	0
2043	22,303,744	19,113,840	116.7%	(3,189,904)	3,578,351	4.93%	9.38%	14.31%	176,413	0	1,789	178,202	2,041,737	0
2044	22,014,246	18,408,000	119.6%	(3,606,246)	3,677,480	2.99%	9.40%	12.39%	109,957	0	1,471	111,428	2,000,543	0
2045	21,677,042	17,691,616	122.5%	(3,985,426)	3,777,877	1.97%	9.41%	11.38%	74,424	0	1,133	75,557	1,953,832	0
2046	21,326,348	16,969,894	125.7%	(4,356,454)	3,879,356	1.55%	9.42%	10.97%	60,130	0	776	60,906	1,900,124	0
2047	20,990,408	16,249,910	129.2%	(4,740,498)	3,981,953	1.45%	9.43%	10.88%	57,738	0	796	58,534	1,839,620	0
2048	20,690,074	15,539,015	133.1%	(5,151,059)	4,084,877	1.13%	9.44%	10.57%	46,159	0	408	46,567	1,776,589	0
2049	20,420,650	14,840,648	137.6%	(5,580,002)	4,189,471	0.77%	9.44%	10.21%	32,259	0	419	32,678	1,710,031	0
2050	20,186,081	14,159,513	142.6%	(6,026,568)	4,295,833	0.54%	9.44%	9.98%	23,198	0	430	23,628	1,643,351	0
Total									\$ 8,268,388	\$ 4,670,624	\$ 644,633	\$ 13,583,645		

The FY21 and FY22 Employer/State contribution rates shown above differ from those shown in Section 1.6 because they are adjusted for total salaries.

Section 3.6: Table of Projected Actuarial Results (\$'s in 000's) (continued)

Fiscal Year End	Valuation Amounts on July 1 (Beginning of FY)					
	Funding Ratio			Unfunded Liability / (Surplus)		
	Pension	Healthcare	Total	Pension	Healthcare	Total
2021	63.6%	113.5%	79.3%	\$ 5,565,815	\$ (952,808)	\$ 4,613,007
2022	64.3%	114.2%	80.1%	5,561,711	(1,024,098)	4,537,613
2023	64.5%	113.8%	80.2%	5,616,279	(1,018,788)	4,597,491
2024	64.6%	113.5%	80.2%	5,670,820	(1,017,999)	4,652,821
2025	65.0%	113.6%	80.6%	5,667,074	(1,039,865)	4,627,209
2026	65.8%	114.4%	81.5%	5,577,327	(1,116,212)	4,461,115
2027	66.6%	115.2%	82.4%	5,466,222	(1,198,210)	4,268,012
2028	67.5%	116.2%	83.4%	5,331,838	(1,286,926)	4,044,912
2029	68.4%	117.2%	84.5%	5,172,138	(1,381,965)	3,790,173
2030	69.5%	118.4%	85.7%	4,984,787	(1,484,691)	3,500,096
2031	70.6%	119.6%	87.0%	4,767,513	(1,595,029)	3,172,484
2032	71.9%	121.1%	88.4%	4,516,939	(1,714,034)	2,802,905
2033	73.4%	122.6%	90.1%	4,230,042	(1,841,364)	2,388,678
2034	75.1%	124.4%	91.9%	3,903,416	(1,978,010)	1,925,406
2035	77.1%	126.3%	94.0%	3,533,951	(2,124,799)	1,409,152
2036	79.4%	128.5%	96.4%	3,117,863	(2,282,553)	835,310
2037	82.1%	131.0%	99.1%	2,651,097	(2,452,603)	198,494
2038	85.2%	133.8%	102.3%	2,129,291	(2,634,045)	(504,754)
2039	88.9%	136.9%	105.9%	1,548,008	(2,828,606)	(1,280,598)
2040	93.4%	140.5%	110.1%	902,171	(3,037,310)	(2,135,139)
2041	93.9%	144.5%	112.0%	803,243	(3,261,378)	(2,458,135)
2042	94.5%	149.1%	114.2%	691,969	(3,502,044)	(2,810,075)
2043	95.3%	154.2%	116.7%	567,737	(3,757,641)	(3,189,904)
2044	96.3%	160.1%	119.6%	428,715	(4,034,961)	(3,606,246)
2045	96.9%	166.7%	122.5%	347,123	(4,332,549)	(3,985,426)
2046	97.2%	174.1%	125.7%	295,695	(4,652,149)	(4,356,454)
2047	97.5%	182.5%	129.2%	254,785	(4,995,283)	(4,740,498)
2048	97.8%	192.0%	133.1%	212,951	(5,364,010)	(5,151,059)
2049	98.1%	202.6%	137.6%	179,738	(5,759,740)	(5,580,002)
2050	98.2%	214.4%	142.6%	158,264	(6,184,832)	(6,026,568)

Section 3.7: Projected Pension Benefit Recipients and Amounts (\$'s in 000's)

Fiscal Year End	Pension		Fiscal Year End	Pension	
	Recipient Counts	Benefit Amounts		Recipient Counts	Benefit Amounts
2021	37,106	\$ 944,242	2063	5,483	\$ 455,513
2022	38,793	992,490	2064	4,863	417,612
2023	40,216	1,040,553	2065	4,301	381,470
2024	41,390	1,085,744	2066	3,791	347,107
2025	42,305	1,128,793	2067	3,331	314,531
2026	42,941	1,168,682	2068	2,917	283,743
2027	43,341	1,207,416	2069	2,545	254,742
2028	43,552	1,244,432	2070	2,210	227,523
2029	43,570	1,278,265	2071	1,912	202,081
2030	43,434	1,310,048	2072	1,644	178,407
2031	43,151	1,326,467	2073	1,408	156,487
2032	42,720	1,351,117	2074	1,198	136,309
2033	42,174	1,372,363	2075	1,014	117,850
2034	41,490	1,389,157	2076	851	101,080
2035	40,692	1,402,114	2077	710	85,960
2036	39,762	1,411,600	2078	588	72,437
2037	38,757	1,416,691	2079	482	60,446
2038	37,645	1,416,338	2080	392	49,913
2039	36,410	1,411,150	2081	316	40,754
2040	35,077	1,399,710	2082	252	32,876
2041	33,649	1,384,091	2083	198	26,184
2042	32,165	1,363,346	2084	154	20,571
2043	30,643	1,337,810	2085	119	15,932
2044	29,064	1,308,254	2086	90	12,154
2045	27,478	1,274,056	2087	68	9,127
2046	25,874	1,236,540	2088	51	6,744
2047	24,279	1,195,888	2089	37	4,901
2048	22,692	1,152,688	2090	27	3,502
2049	21,137	1,107,277	2091	19	2,461
2050	19,623	1,060,091	2092	14	1,702
2051	18,155	1,011,662	2093	9	1,160
2052	16,737	962,432	2094	7	781
2053	15,376	912,768	2095	5	521
2054	14,075	863,028	2096	4	347
2055	12,840	813,551	2097	3	232
2056	11,672	764,642	2098	2	157
2057	10,575	716,562	2099	2	109
2058	9,551	669,535	2100	1	78
2059	8,599	623,742	2101	1	57
2060	7,718	579,336	2102	1	44
2061	6,907	536,436	2103	1	34
2062	6,162	495,138	2104	0	0

Counts include retirees, disabilitants, and beneficiaries.

Section 4: Member Data

Section 4.1: Summary of Members Included

As of June 30	2016	2017	2018	2019	2020
Active Members					
1. Number	16,105	14,719	13,434	12,152	11,033 ¹
2. Average Age	51.74	52.10	52.52	52.84	53.21
3. Average Credited Service	15.95	16.57	17.21	17.80	18.38
4. Average Entry Age	35.79	35.53	35.30	35.04	34.83
5. Average Annual Earnings	\$ 75,717	\$ 76,902	\$ 77,813	\$ 82,192	\$ 83,757
6. Number Vested	15,607	14,314	13,103	11,868	10,791
7. Percent Who Are Vested	96.9%	97.2%	97.5%	97.7%	97.8%
Retirees, Disabilitants, and Beneficiaries					
1. Number	33,353	34,347	35,454	36,310	37,106
2. Average Age	69.02	69.42	69.85	70.29	70.77
3. Average Years Since Retirement	11.48	11.71	11.87	12.14	12.45
4. Average Monthly Pension Benefit					
a. Base	\$ 1,529	\$ 1,574	\$ 1,616	\$ 1,660	\$ 1,704
b. COLA ²	93	93	94	92	93
c. PRPA ²	245	230	222	241	244
d. Adjustment	1	1	1	1	0
e. Total	\$ 1,868	\$ 1,898	\$ 1,933	\$ 1,994	\$ 2,041
Vested Terminations (vested at termination, not refunded contributions, or commenced benefit)					
1. Number	6,160	5,962	5,660	5,499	5,327
2. Average Age	52.08	52.45	52.56	53.06	53.52
3. Average Monthly Pension Benefit	\$ 1,042	\$ 1,080	\$ 1,087	\$ 1,123	\$ 1,158
Non-Vested Terminations (not vested at termination, not refunded contributions)					
1. Number	11,880	11,506	11,192	10,921	10,642
2. Average Account Balance	\$ 6,212	\$ 6,462	\$ 6,558	\$ 6,923	\$ 7,060
Total Number of Members	67,498	66,534	65,740	64,882	64,108

¹ Includes 5,143 male active members and 5,890 female active members.

² Calculated by taking the average of the data field, as provided by the State of Alaska, for all participants in the group.

Summary of Members Included

As of June 30, 2020	DB				DCR Tier 4	Grand Total
	Tier 1	Tier 2	Tier 3	Total		
Active Members						
1. Number	811	2,604	7,618	11,033	22,923	33,956
2. Average Age	62.60	56.29	51.16	53.21	41.21	45.11
3. Average Credited Service	23.14	22.92	16.32	18.38	4.66	9.12
4. Average Entry Age	39.46	33.37	34.84	34.83	36.55	35.99
5. Annual Earnings						
a. Total (000's)	\$ 63,777	\$ 229,189	\$ 631,121	\$ 924,087	\$ 1,428,140	\$ 2,352,227
b. Average	\$ 78,640	\$ 88,014	\$ 82,846	\$ 83,757	\$ 62,302	\$ 69,273

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

As of June 30, 2020	Tier 1	Tier 2	Tier 3	Total
Retirees, Disabilitants, and Beneficiaries				
1. Number	23,447	8,891	4,768	37,106
2. Average Age	72.24	68.79	67.18	70.77
3. Average Years Since Retirement	15.45	8.31	5.31	12.45
4. Average Monthly Pension Benefit				
a. Base	\$ 1,739	\$ 1,823	\$ 1,312	\$ 1,704
b. COLA	118	55	42	93
c. PRPA	336	107	48	244
d. Adjustment	0	1	2	0
e. Total	\$ 2,193	\$ 1,986	\$ 1,404	\$ 2,041

Summary of Members Included

As of June 30, 2020	Inactive Members					Total Inactive Members
	Active Members	Retirees	Covered Spouses	Covered Children / Dependents	Deferred	
Retiree Medical Participants						
1. Retiree Coverage Only	10,908	19,141	0	0	2,200	21,341
2. Retiree + Spouse	0	12,543	12,543	0	3,391	28,477
3. Retiree + Children / Dependents	0	393	0	402	0	795
4. Family	0	780	780	1,091	0	2,651
5. Total	10,908	32,857	13,323	1,493	5,591	53,264

As of June 30, 2020	Retirees	Covered Spouses	Covered Children / Dependents	Deferred	Total Inactive Members
Retiree Medical Participants					
1. Pre-Medicare	7,797	4,937	1,493	5,426	19,653
2. Medicare Part A & B	24,860	8,345	0	165	33,370
3. Medicare Part B Only	200	41	0	0	241
4. Total	32,857	13,323	1,493	5,591	53,264

As of June 30, 2020	Retirees
Summary of Retiree Medical Data Received	
1. Retiree records on pension data	37,106
2. Remove duplicates on pension data	(1,125)
3. Valued in a different retiree healthcare plan ¹	(1,150)
4. Records without medical coverage	(2,199)
5. Medical only retirees	225
6. Total	32,857

¹ Each member's retiree medical benefits are valued in the plan indicated in the data from Aetna

Summary of Members Included

Active Members – DB Only

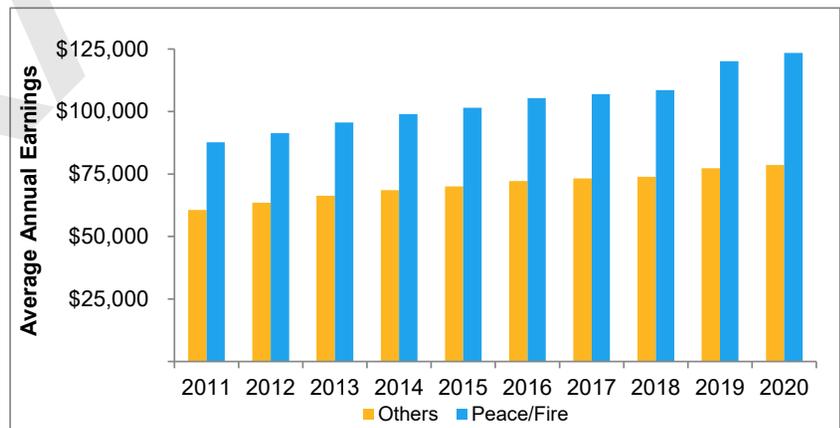
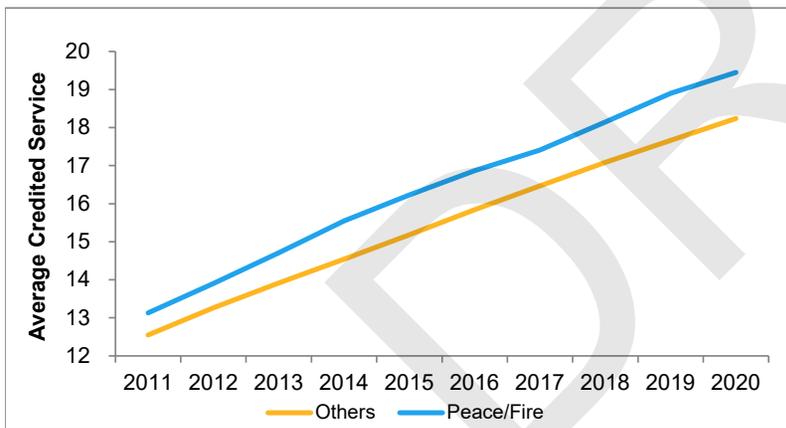
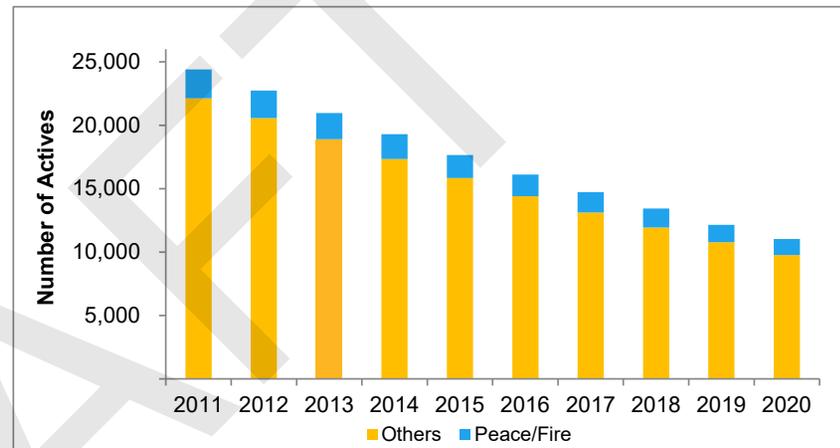
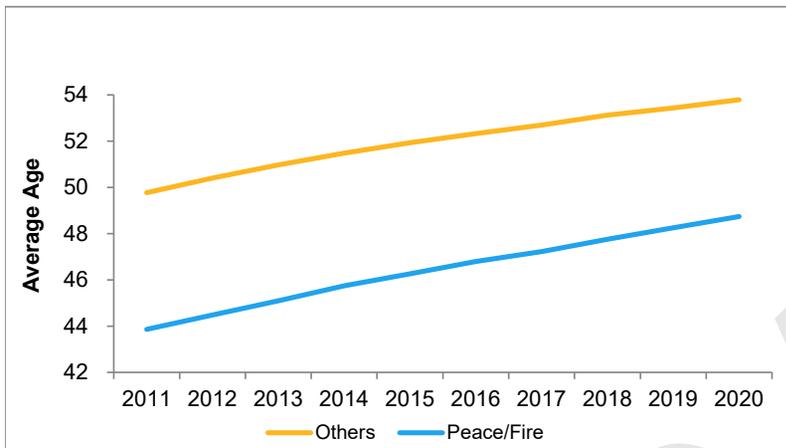
As of June 30	2016	2017	2018	2019	2020
Peace Officer / Firefighter					
1. Number	1,704	1,606	1,507	1,382	1,266 ¹
2. Average Age	46.80	47.22	47.75	48.25	48.74
3. Average Credited Service	16.87	17.41	18.15	18.90	19.45
4. Average Entry Age	29.93	29.81	29.60	29.35	29.29
5. Average Annual Earnings	\$ 105,317	\$ 106,987	\$ 108,580	\$ 120,089	\$ 123,436
6. Number Vested	1,695	1,599	1,500	1,374	1,260
7. Percent Who Are Vested	99.5%	99.6%	99.5%	99.4%	99.5%
Others					
1. Number	14,401	13,113	11,927	10,770	9,767 ²
2. Average Age	52.32	52.70	53.12	53.43	53.79
3. Average Credited Service	15.84	16.47	17.09	17.66	18.24
4. Average Entry Age	36.48	36.23	36.03	35.77	35.55
5. Average Annual Earnings	\$ 72,214	\$ 73,218	\$ 73,926	\$ 77,329	\$ 78,613
6. Number Vested	13,912	12,715	11,603	10,494	9,531
7. Percent Who Are Vested	96.6%	97.0%	97.3%	97.4%	97.6%
Total					
1. Number	16,105	14,719	13,434	12,152	11,033
2. Average Age	51.74	52.10	52.52	52.84	53.21
3. Average Credited Service	15.95	16.57	17.21	17.80	18.38
4. Average Entry Age	35.79	35.53	35.30	35.04	34.83
5. Average Annual Earnings	\$ 75,717	\$ 76,902	\$ 77,813	\$ 82,192	\$ 83,757
6. Number Vested	15,607	14,314	13,103	11,868	10,791
7. Percent Who Are Vested	96.9%	97.2%	97.5%	97.7%	97.8%

Average annual earnings (“valuation pay”) are the annualized earnings for the fiscal year ending on the valuation date.

¹ Includes 1,079 male active members and 187 female active members.

² Includes 4,064 male active members and 5,703 female active members.

Summary of Members Included - Active Members at June 30



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

Section 4.2: Age and Service Distribution of Active Members

Peace Officer / Firefighter

Annual Earnings by Age

Age	Number	Total Annual Earnings	Average Annual Earnings
0 - 19	0	\$ 0	\$ 0
20 - 24	0	0	0
25 - 29	0	0	0
30 - 34	4	408,811	102,203
35 - 39	114	13,859,704	121,576
40 - 44	262	33,452,322	127,681
45 - 49	370	46,256,845	125,019
50 - 54	304	38,084,025	125,276
55 - 59	156	18,254,063	117,013
60 - 64	39	4,287,148	109,927
65 - 69	14	1,372,890	98,064
70 - 74	3	294,708	98,236
75+	0	0	0
Total	1,266	\$156,270,516	\$ 123,436

Annual Earnings by Credited Service

Years of Service	Number	Total Annual Earnings	Average Annual Earnings
0	0	\$ 0	\$ 0
1	2	111,157	55,579
2	0	0	0
3	1	66,184	66,184
4	2	213,466	106,733
0 - 4	5	\$ 390,807	\$ 78,161
5 - 9	16	1,302,626	81,414
10 - 14	201	22,407,573	111,480
15 - 19	521	62,103,286	119,200
20 - 24	361	48,056,326	133,120
25 - 29	134	18,486,683	137,960
30 - 34	25	3,096,577	123,863
35 - 39	2	320,210	160,105
40+	1	106,428	106,428
Total	1,266	\$156,270,516	\$ 123,436

Years of Credited Service by Age

Age	Years of Service										Total
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+		
0 - 19	0	0	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0	0	0
30 - 34	0	1	2	1	0	0	0	0	0	0	4
35 - 39	0	3	58	53	0	0	0	0	0	0	114
40 - 44	2	3	51	146	59	1	0	0	0	0	262
45 - 49	1	2	36	139	152	40	0	0	0	0	370
50 - 54	1	2	28	88	108	68	9	0	0	0	304
55 - 59	1	3	20	74	31	18	8	1	0	0	156
60 - 64	0	0	4	17	8	3	6	1	0	0	39
65 - 69	0	2	2	2	3	4	1	0	0	0	14
70 - 74	0	0	0	1	0	0	1	0	1	1	3
75+	0	0	0	0	0	0	0	0	0	0	0
Total	5	16	201	521	361	134	25	2	1	1,266	

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

Age and Service Distribution of Active Members

Others

Annual Earnings by Age

Age	Number	Total Annual Earnings	Average Annual Earnings
0 - 19	0	\$ 0	\$ 0
20 - 24	0	0	0
25 - 29	0	0	0
30 - 34	46	3,247,979	70,608
35 - 39	516	40,040,027	77,597
40 - 44	1,062	84,407,079	79,479
45 - 49	1,506	125,306,747	83,205
50 - 54	1,959	157,426,011	80,360
55 - 59	2,481	192,669,217	77,658
60 - 64	1,446	109,088,955	75,442
65 - 69	562	41,899,213	74,554
70 - 74	153	11,351,675	74,194
75+	36	2,379,772	66,105

Total 9,767 \$767,816,675 \$ 78,613

Annual Earnings by Credited Service

Years of Service	Number	Total Annual Earnings	Average Annual Earnings
0	14	\$ 694,247	\$ 49,589
1	44	2,150,347	48,872
2	53	2,587,818	48,827
3	47	2,503,068	53,257
4	48	2,576,050	53,668
0 - 4	206	\$ 10,511,530	\$ 51,027
5 - 9	591	35,081,327	59,359
10 - 14	2,158	148,468,664	68,799
15 - 19	3,432	271,911,618	79,228
20 - 24	1,960	170,400,897	86,939
25 - 29	1,015	93,089,472	91,714
30 - 34	307	29,230,726	95,214
35 - 39	77	7,294,237	94,730
40+	21	1,828,204	87,057

Total 9,767 \$767,816,675 \$ 78,613

Years of Credited Service by Age

Age	Years of Service										Total
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+		
0 - 19	0	0	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0	0	0
30 - 34	2	21	22	1	0	0	0	0	0	0	46
35 - 39	39	60	259	153	5	0	0	0	0	0	516
40 - 44	33	94	314	525	96	0	0	0	0	0	1,062
45 - 49	32	101	331	618	365	59	0	0	0	0	1,506
50 - 54	40	110	392	644	473	252	47	1	0	0	1,959
55 - 59	32	95	450	794	561	418	119	12	0	0	2,481
60 - 64	17	71	257	487	311	184	86	31	2	2	1,446
65 - 69	10	24	106	159	118	84	38	16	7	7	562
70 - 74	1	13	23	38	24	17	13	15	9	9	153
75+	0	2	4	13	7	1	4	2	3	3	36
Total	206	591	2,158	3,432	1,960	1,015	307	77	21	21	9,767

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

Section 4.3: Member Data Reconciliation

Pension

	Inactive Members						Total
	Active Members	Due a Refund	Deferred Benefits	Retired Members	Disabled Members	Bene-ficiaries	
As of June 30, 2019	12,152	10,887	5,499	31,922 *	173	4,231	64,864
Vested Terminations	(427)	0	427	0	0	0	0
Non-Vested Terminations	(45)	45	0	0	0	0	0
Refund of Contributions	(12)	(203)	(44)	(1)	0	0	(260)
Disability Retirements	(7)	0	(5)	0	12	0	0
Age Retirements	(862)	(19)	(399)	1,309	(29)	0	0
Deaths With Beneficiary	(12)	(10)	(15)	(260)	(4)	301	0
Deaths Without Beneficiary	(6)	(16)	(5)	(419)	(2)	(118)	(566)
Expired Benefits	0	0	0	0	0	0	0
Data Corrections	(1)	(3)	1	2	0	(11)	(12)
Converted To DCR Plan	0	0	0	0	0	0	0
Transfers In/Out	6	(1)	(5)	0	0	0	0
Rehires	246	(86)	(139)	(19)	(1)	0	1
Pick Ups***	1	48	12	2	0	33	96
Net Change	(1,119)	(245)	(172)	614	(24)	205	(741)
As of June 30, 2020	11,033	10,642	5,327	32,536 **	149	4,436	64,123

* Includes 16 medical only retirees

** Includes 15 medical only retirees

*** Pickup beneficiaries are primarily new DROs.

Member Data Reconciliation

Healthcare

	Active Members	Inactive Members				Total Inactive Members
		Retirees	Covered Spouses	Covered Children / Dependents	Deferred	
As of June 30, 2019	12,019	32,290	13,131	1,565	5,781	52,767
Vested Terminations	(396)	0	0	0	396	396
Non-Vested Terminations	(45)	0	0	0	0	0
Refund of Contributions	(13)	(1)	0	0	(120)	(121)
Disability Retirements	(7)	7	4	1	0	12
Age Retirements	(800)	800	425	122	0	1,347
Deferred Retirements	0	286	141	28	(286)	169
Retired without Medical Coverage	(69)	0	0	0	23	23
Deceased	(18)	(742)	(49)	(11)	(39)	(841)
New Beneficiaries	0	144	(144)	0	0	0
Added Retiree Medical Coverage	0	113	40	7	0	160
Added Dependent Coverage	0	0	110	74	0	184
Dropped Retiree Medical Coverage	0	(33)	(10)	(7)	0	(50)
Dropped Dependent Coverage	0	0	(327)	(287)	0	(614)
Rehires	236	(14)	(7)	(4)	(137)	(162)
Transfers In/Out	1	7	9	5	(27)	(6)
Net Change	(1,111)	567	192	(72)	(190)	497
As of June 30, 2020	10,908	32,857	13,323	1,493	5,591	53,264

Section 4.4: Schedule of Active Member Data

Peace Officer / Firefighter

Valuation Date	Number	Annual Earnings (000's)	Annual Average Earnings	Percent Increase in Average Earnings	Number of Participating Employers
June 30, 2020	1,266	\$ 156,271	\$ 123,436	2.8%	153
June 30, 2019	1,382	165,963	120,089	10.6%	155
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	91,287	4.1%	160
June 30, 2011	2,275	199,537	87,709	8.6%	160

Others

Valuation Date	Number	Annual Earnings (000's)	Annual Average Earnings	Percent Increase in Average Earnings	Number of Participating Employers
June 30, 2020	9,767	\$ 767,817	\$ 78,613	1.7%	153
June 30, 2019	10,770	832,832	77,329	4.6%	155
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

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

Section 4.5: Active Member Payroll Reconciliation

Payroll Field	Payroll Data (000's)
a) DRB actual reported salaries FY20 in employer list	\$ 2,198,657
b) DRB actual reported salaries FY20 in valuation data	2,172,811
c) Annualized valuation data	2,352,227
d) Valuation payroll as of June 30, 2020	2,451,532
e) Rate payroll for FY21	2,373,078
f) Rate payroll for FY23	2,405,076

- a) Actual reported salaries from DRB employer listing showing all payroll paid during FY20, including those who were not active as of June 30, 2020
- b) Payroll from valuation data for people who are in active status as of June 30, 2020
- c) Payroll from (b) annualized for both new entrants and part-timers
- d) Payroll from (c) with one year of salary scale applied to estimate salaries payable for the upcoming year
- e) Payroll from (d) with the part-timer annualization removed
- f) Payroll from (e) with two years of assumed decrements and salary scale, and 0% population growth

Section 4.6: Summary of New Pension Benefit Recipients

Peace Officer / Firefighter

During the Year Ending June 30	2016	2017	2018	2019	2020
Service					
1. Number	108	119	105	109	118
2. Average Age at Commencement	55.91	56.65	55.70	55.61	55.52
3. Average Monthly Pension Benefit	\$ 4,614	\$ 4,166	\$ 4,519	\$ 4,412	\$ 5,199
Survivor (including surviving spouse and DROs)					
1. Number	27	42	44	36	43
2. Average Age at Commencement	61.48	62.88	63.76	68.19	67.92
3. Average Monthly Pension Benefit	\$ 1,745	\$ 1,797	\$ 2,187	\$ 1,842	\$ 1,785
Disability					
1. Number	2	4	4	4	3
2. Average Age at Commencement	42.07	49.33	46.56	50.44	51.72
3. Average Monthly Pension Benefit	\$ 3,096	\$ 2,427	\$ 3,230	\$ 3,071	\$ 5,276
Total					
1. Number	137	165	153	149	164
2. Average Age at Commencement	56.81	58.06	57.78	58.51	58.70
3. Average Monthly Pension Benefit	\$ 4,026	\$ 3,521	\$ 3,814	\$ 3,755	\$ 4,305

Summary of New Pension Benefit Recipients

Peace Officer / Firefighter

	Years of Credited Service						
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+
Period 7/1/2019 – 6/30/2020:							
Average Monthly Pension	\$ 0	\$ 694	\$ 2,212	\$ 3,626	\$ 5,531	\$ 6,829	\$ 8,636
Number of Recipients	0	6	11	23	40	32	9
Period 7/1/2018 – 6/30/2019:							
Average Monthly Pension	\$ 0	\$ 651	\$ 1,933	\$ 3,362	\$ 4,786	\$ 6,196	\$ 5,688
Number of Recipients	0	5	11	25	38	26	6
Period 7/1/2017 – 6/30/2018:							
Average Monthly Pension	\$ 0	\$ 1,063	\$ 2,133	\$ 3,747	\$ 4,847	\$ 6,024	\$ 7,717
Number of Recipients	0	4	18	19	35	30	3
Period 7/1/2016 – 6/30/2017:							
Average Monthly Pension	\$ 0	\$ 686	\$ 2,075	\$ 3,234	\$ 4,462	\$ 5,151	\$ 6,376
Number of Recipients	0	8	9	28	41	23	14
Period 7/1/2015 – 6/30/2016:							
Average Monthly Pension	\$ 0	\$ 958	\$ 1,742	\$ 3,347	\$ 4,622	\$ 5,778	\$ 7,221
Number of Recipients	0	6	11	19	30	28	16
Period 7/1/2014 – 6/30/2015:							
Average Monthly Pension	\$ 0	\$ 1,173	\$ 1,621	\$ 3,632	\$ 4,436	\$ 5,457	\$ 6,863
Number of Recipients	0	8	9	26	24	25	7
Period 7/1/2013 – 6/30/2014:							
Average Monthly Pension	\$ 290	\$ 1,423	\$ 2,002	\$ 2,902	\$ 4,014	\$ 5,464	\$ 6,299
Number of Recipients	1	9	10	14	22	16	7
Period 7/1/2012 – 6/30/2013:							
Average Monthly Pension	\$ 0	\$ 865	\$ 1,779	\$ 2,762	\$ 3,793	\$ 4,983	\$ 4,911
Number of Recipients	0	9	8	19	31	18	4
Period 7/1/2011 – 6/30/2012:							
Average Monthly Pension	\$ 0	\$ 1,159	\$ 1,161	\$ 3,142	\$ 3,504	\$ 4,673	\$ 5,079
Number of Recipients	0	13	13	12	20	17	7
Period 7/1/2010 – 6/30/2011:							
Average Monthly Pension	\$ 525	\$ 880	\$ 1,469	\$ 2,666	\$ 3,743	\$ 4,806	\$ 5,661
Number of Recipients	1	8	18	10	24	16	8

"Average Monthly Pension" includes postretirement pension adjustments and cost-of-living increases.

Beneficiaries are not included in the table above.

Summary of New Pension Benefit Recipients

Others

During the Year Ending June 30	2016	2017	2018	2019	2020
Service					
1. Number	1,472	1,393	1,419	1,288	1,166
2. Average Age at Commencement	61.28	61.40	62.19	61.38	61.70
3. Average Monthly Pension Benefit	\$ 2,269	\$ 2,404	\$ 2,477	\$ 2,540	\$ 2,701
Survivor (including surviving spouse and DROs)					
1. Number	286	292	261	238	297
2. Average Age at Commencement	66.30	67.12	70.38	69.25	72.09
3. Average Monthly Pension Benefit	\$ 1,093	\$ 1,150	\$ 1,120	\$ 1,249	\$ 1,204
Disability					
1. Number	22	14	28	17	9
2. Average Age at Commencement	53.04	52.43	53.80	52.95	54.21
3. Average Monthly Pension Benefit	\$ 2,209	\$ 2,405	\$ 1,896	\$ 2,313	\$ 2,422
Total					
1. Number	1,780	1,699	1,708	1,543	1,472
2. Average Age at Commencement	61.98	62.31	63.31	62.50	63.75
3. Average Monthly Pension Benefit	\$ 2,079	\$ 2,189	\$ 2,260	\$ 2,339	\$ 2,397

Summary of New Pension Benefit Recipients

Others

	Years of Credited Service						
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+
Period 7/1/2019 – 6/30/2020:							
Average Monthly Pension	\$ 492	\$ 601	\$ 1,311	\$ 2,065	\$ 3,040	\$ 4,686	\$ 6,213
Number of Recipients	32	165	218	258	183	197	122
Period 7/1/2018 – 6/30/2019:							
Average Monthly Pension	\$ 652	\$ 646	\$ 1,301	\$ 2,071	\$ 3,058	\$ 4,596	\$ 5,685
Number of Recipients	21	190	266	289	222	205	105
Period 7/1/2017 – 6/30/2018:							
Average Monthly Pension	\$ 414	\$ 607	\$ 1,299	\$ 1,982	\$ 3,034	\$ 4,475	\$ 6,085
Number of Recipients	26	221	351	280	223	214	127
Period 7/1/2016 – 6/30/2017:							
Average Monthly Pension	\$ 381	\$ 640	\$ 1,271	\$ 2,067	\$ 3,119	\$ 4,579	\$ 6,224
Number of Recipients	27	254	375	233	212	191	115
Period 7/1/2015 – 6/30/2016:							
Average Monthly Pension	\$ 434	\$ 660	\$ 1,240	\$ 2,017	\$ 3,059	\$ 4,158	\$ 6,583
Number of Recipients	30	323	387	266	192	161	135
Period 7/1/2014 – 6/30/2015:							
Average Monthly Pension	\$ 430	\$ 685	\$ 1,260	\$ 2,008	\$ 3,086	\$ 4,544	\$ 6,195
Number of Recipients	42	284	304	213	198	169	98
Period 7/1/2013 – 6/30/2014:							
Average Monthly Pension	\$ 503	\$ 700	\$ 1,189	\$ 2,065	\$ 3,021	\$ 4,439	\$ 5,490
Number of Recipients	48	347	319	241	214	224	121
Period 7/1/2012 – 6/30/2013:							
Average Monthly Pension	\$ 414	\$ 650	\$ 1,179	\$ 1,925	\$ 2,879	\$ 4,356	\$ 5,208
Number of Recipients	59	349	365	257	206	209	132
Period 7/1/2011 – 6/30/2012:							
Average Monthly Pension	\$ 407	\$ 610	\$ 1,147	\$ 1,931	\$ 2,805	\$ 4,214	\$ 5,076
Number of Recipients	67	351	314	204	208	188	106
Period 7/1/2010 – 6/30/2011:							
Average Monthly Pension	\$ 409	\$ 633	\$ 1,150	\$ 1,876	\$ 2,690	\$ 4,294	\$ 5,226
Number of Recipients	73	352	270	227	172	205	105

"Average Monthly Pension" includes postretirement pension adjustments and cost-of-living increases.

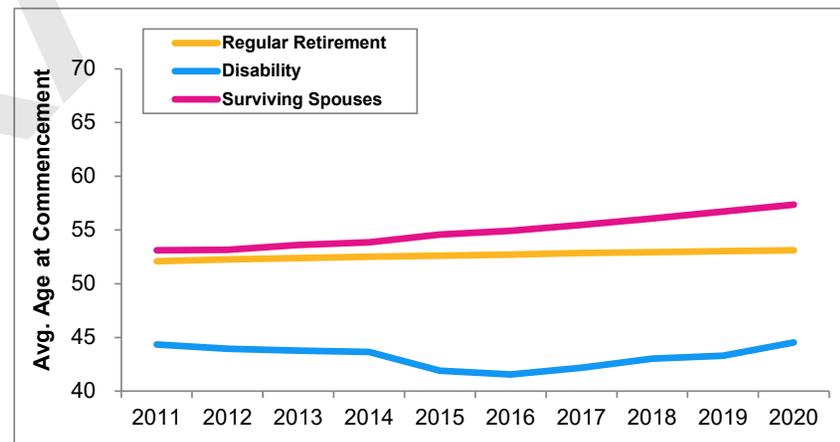
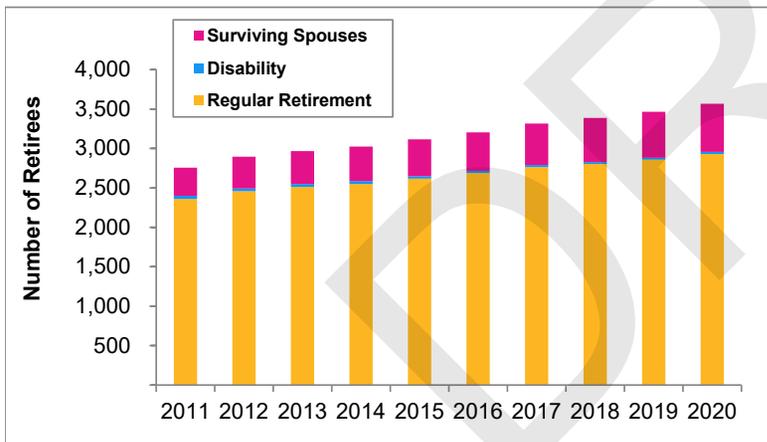
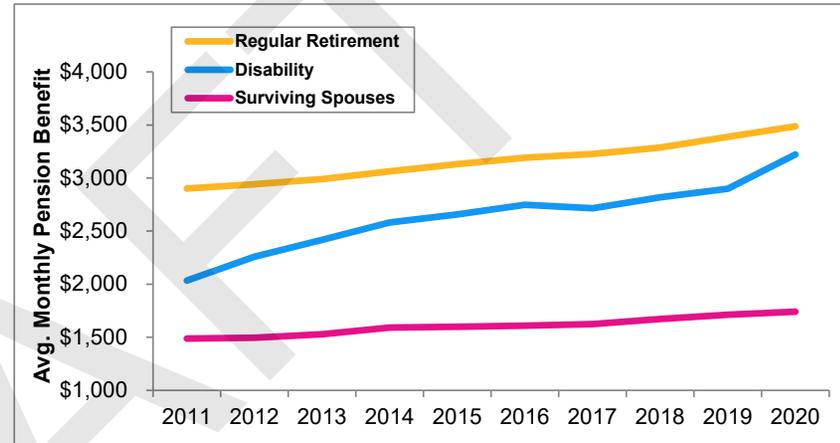
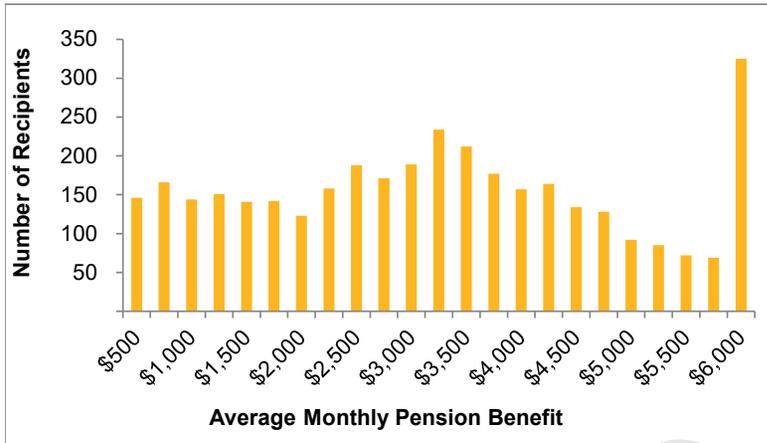
Beneficiaries are not included in the table above.

Section 4.7: Summary of All Pension Benefit Recipients

	Peace Officer / Firefighter	Others
Service		
1. Number as of June 30, 2019	2,857	29,049
2. Net Change During FY20	74	541
3. Number as of June 30, 2020	2,931	29,590
4. Average Age at Commencement	53.11	58.32
5. Average Current Age	68.27	70.81
6. Average Monthly Pension Benefit	\$ 3,487	\$ 2,025
Survivors (including surviving spouses and DROs)		
1. Number as of June 30, 2019	582	3,649
2. Net Change During FY20	29	176
3. Number as of June 30, 2020	611	3,825
4. Average Age at Commencement	57.36	63.08
5. Average Current Age	68.86	73.26
6. Average Monthly Pension Benefit	\$ 1,741	\$ 1,099
Disability		
1. Number as of June 30, 2019	26	147
2. Net Change During FY20	0	(24)
3. Number as of June 30, 2020	26	123
4. Average Age at Commencement	44.53	46.19
5. Average Current Age	49.79	55.00
6. Average Monthly Pension Benefit	\$ 3,222	\$ 1,903
Total		
1. Number as of June 30, 2019	3,465	32,845
2. Net Change During FY20	103	693
3. Number as of June 30, 2020	3,568	33,538
4. Average Age at Commencement	53.78	58.81
5. Average Current Age	68.24	71.04
6. Average Monthly Pension Benefit	\$ 3,186	\$ 1,919

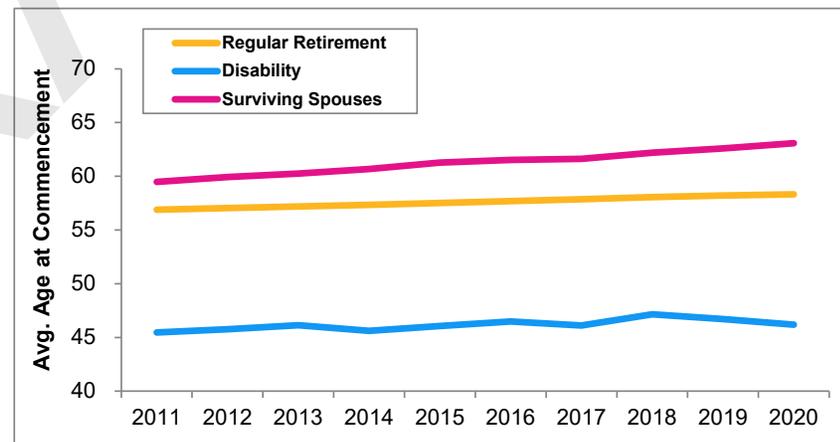
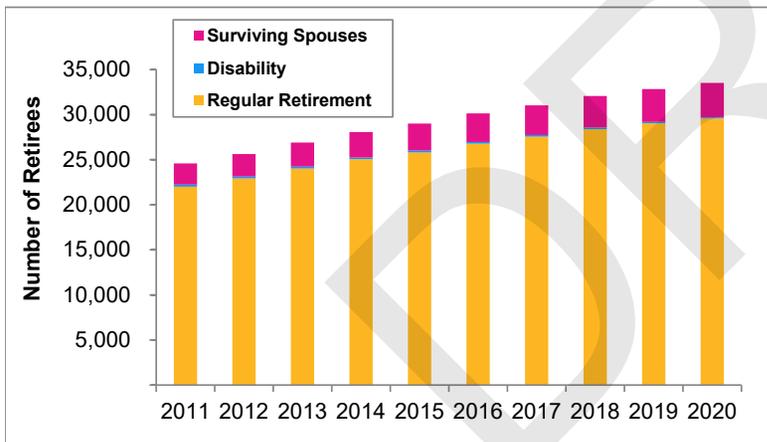
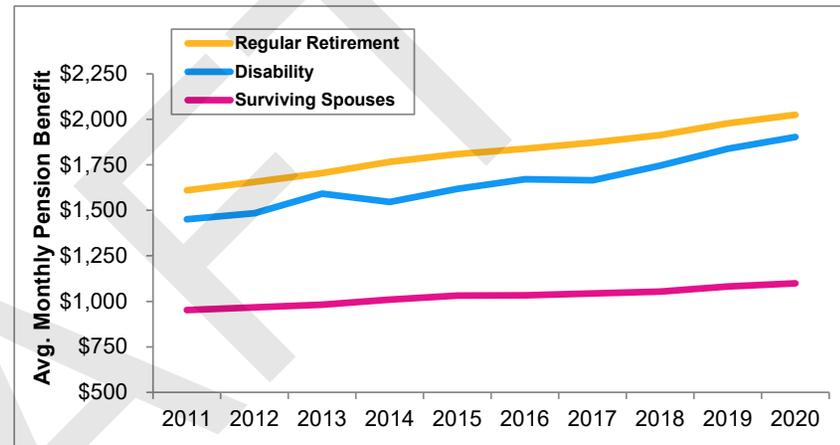
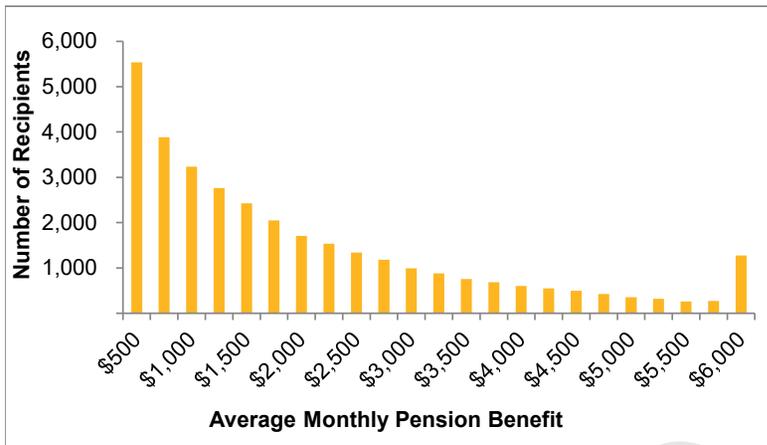
Summary of All Pension Benefit Recipients

Peace Officer / Firefighter



Summary of All Pension Benefit Recipients

Others



Summary of All Pension Benefit Recipients

Peace Officer / Firefighter

Annual Pension Benefit by Age

Age	Number	Total Annual Pension Benefit	Average Annual Pension Benefit
0 - 19	0	\$ 0	\$ 0
20 - 24	0	0	0
25 - 29	0	0	0
30 - 34	0	0	0
35 - 39	4	170,535	42,634
40 - 44	9	419,501	46,611
45 - 49	78	4,222,898	54,140
50 - 54	181	9,898,063	54,685
55 - 59	352	16,029,002	45,537
60 - 64	613	23,598,866	38,497
65 - 69	785	28,026,653	35,703
70 - 74	757	27,090,153	35,786
75+	789	26,958,125	34,167
Total	3,568	\$136,413,796	\$ 38,233

Annual Pension Benefit by Years Since Commenced

Years Since Comm.	Number	Total Annual Pension Benefit	Average Annual Pension Benefit
0	169	\$ 8,847,926	\$ 52,355
1	153	6,820,706	44,580
2	136	6,180,237	45,443
3	169	7,174,157	42,451
4	139	6,662,977	47,935
0 - 4	766	\$ 35,686,003	\$ 46,587
5 - 9	554	21,076,891	38,045
10 - 14	553	16,786,316	30,355
15 - 19	658	22,270,942	33,846
20 - 24	565	20,962,357	37,102
25 - 29	227	8,408,349	37,041
30 - 34	181	8,694,152	48,034
35 - 39	44	1,963,535	44,626
40+	20	565,251	28,263
Total	3,568	\$136,413,796	\$ 38,233

Years Since Commencement by Age

Age	Years Since Commencement									Total
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+	
0 - 19	0	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0	0
30 - 34	0	0	0	0	0	0	0	0	0	0
35 - 39	3	1	0	0	0	0	0	0	0	4
40 - 44	7	1	1	0	0	0	0	0	0	9
45 - 49	64	11	2	0	1	0	0	0	0	78
50 - 54	126	46	8	1	0	0	0	0	0	181
55 - 59	192	83	51	21	3	2	0	0	0	352
60 - 64	184	149	110	138	29	1	1	1	0	613
65 - 69	92	158	169	227	121	16	1	0	1	785
70 - 74	46	66	157	182	195	65	35	6	5	757
75+	52	39	55	89	216	143	144	37	14	789
Total	766	554	553	658	565	227	181	44	20	3,568

Summary of All Pension Benefit Recipients

Others

Annual Pension Benefit by Age

Age	Number	Total Annual Pension Benefit	Average Annual Pension Benefit
0 - 19	0	\$ 0	\$ 0
20 - 24	0	0	0
25 - 29	1	63,300	63,300
30 - 34	1	6,894	6,894
35 - 39	4	63,537	15,884
40 - 44	11	112,161	10,196
45 - 49	36	487,980	13,555
50 - 54	177	5,491,471	31,025
55 - 59	1,451	45,205,759	31,155
60 - 64	6,150	164,650,026	26,772
65 - 69	8,705	212,069,909	24,362
70 - 74	7,652	166,411,955	21,748
75+	9,350	177,832,889	19,020
Total	33,538	\$772,395,881	\$ 23,030

Annual Pension Benefit by Years Since Commenced

Years Since Comm.	Number	Total Annual Pension Benefit	Average Annual Pension Benefit
0	1,582	\$ 45,597,895	\$ 28,823
1	1,537	42,707,950	27,787
2	1,493	41,043,827	27,491
3	1,646	44,281,323	26,902
4	1,650	42,048,630	25,484
0 - 4	7,908	\$215,679,625	\$ 27,274
5 - 9	7,828	196,401,424	25,090
10 - 14	6,449	138,527,538	21,480
15 - 19	4,936	99,050,931	20,067
20 - 24	3,650	74,080,303	20,296
25 - 29	1,529	26,818,320	17,540
30 - 34	942	17,120,376	18,174
35 - 39	235	3,822,001	16,264
40+	61	895,363	14,678
Total	33,538	\$772,395,881	\$ 23,030

Years Since Commencement by Age

Age	Years Since Commencement									
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+	Total
0 - 19	0	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0	0
25 - 29	1	0	0	0	0	0	0	0	0	1
30 - 34	1	0	0	0	0	0	0	0	0	1
35 - 39	1	3	0	0	0	0	0	0	0	4
40 - 44	4	4	3	0	0	0	0	0	0	11
45 - 49	14	13	6	3	0	0	0	0	0	36
50 - 54	120	30	15	8	3	0	1	0	0	177
55 - 59	1,044	321	53	17	10	5	1	0	0	1,451
60 - 64	3,452	1,984	631	57	13	8	4	1	0	6,150
65 - 69	1,893	3,206	2,672	842	71	14	6	1	0	8,705
70 - 74	745	1,533	2,004	2,390	944	18	10	5	3	7,652
75+	633	734	1,065	1,619	2,609	1,484	920	228	58	9,350
Total	7,908	7,828	6,449	4,936	3,650	1,529	942	235	61	33,538

Section 4.8: Pension Benefit Recipients by Type of Benefit and Option Elected

Peace Officer / Firefighter

Amount of Monthly Pension Benefit	Number of Recipients	Type of Pension Benefit			Option Selected				
		1	2	3	1	2	3	4	5
\$ 1 – 300	52	18	34	0	37	6	0	2	7
301 – 600	175	109	66	0	93	40	23	7	12
601 – 900	176	99	76	1	103	41	10	12	10
901 – 1,200	168	93	75	0	108	30	16	7	7
1,201 – 1,500	178	113	64	1	103	39	20	7	9
1,501 – 1,800	167	122	45	0	91	43	22	7	4
1,801 – 2,100	154	104	48	2	71	41	32	5	5
2,101 – 2,400	225	170	54	1	102	68	32	13	10
2,401 – 2,700	197	168	25	4	75	67	37	12	6
2,701 – 3,000	228	203	23	2	72	99	35	14	8
3,001 – 3,300	282	248	30	4	95	110	55	11	11
3,301 – 3,600	238	209	26	3	84	95	34	15	10
3,601 – 3,900	191	173	15	3	66	84	27	10	4
3,901 – 4,200	202	193	7	2	58	91	36	13	4
4,200+	935	909	23	3	239	464	155	65	12
Total	3,568	2,931	611	26	1,397	1,318	534	200	119

Type of Pension Benefit

1. Regular Retirement
2. Survivor Payment
3. Disability

Option Selected

1. Whole Life Annuity
2. 75% Joint and Contingent Annuity
3. 50% Joint and Contingent Annuity
4. 66 2/3% Joint and Survivor Annuity
5. Level Income Option

Pension Benefit Recipients by Type of Benefit and Option Elected

Others

Amount of Monthly Pension Benefit	Number of Recipients	Type of Pension Benefit			Option Selected				
		1	2	3	1	2	3	4	5
\$ 1 – 300	2,100	1,543	556	1	1,022	384	279	63	352
301 – 600	5,092	4,272	812	8	2,680	1,186	807	262	157
601 – 900	4,248	3,529	707	12	2,241	1,030	674	180	123
901 – 1,200	3,476	3,007	464	5	1,708	850	662	168	88
1,201 – 1,500	2,939	2,571	351	17	1,429	770	551	116	73
1,501 – 1,800	2,388	2,115	257	16	1,110	683	447	89	59
1,801 – 2,100	2,018	1,810	191	17	923	549	390	96	60
2,101 – 2,400	1,726	1,574	141	11	749	500	347	82	48
2,401 – 2,700	1,461	1,349	96	16	629	420	299	62	51
2,701 – 3,000	1,216	1,131	80	5	504	394	245	38	35
3,001 – 3,300	1,035	984	45	6	412	332	222	42	27
3,301 – 3,600	891	857	32	2	338	293	194	48	18
3,601 – 3,900	760	731	26	3	297	265	147	36	15
3,901 – 4,200	687	659	28	0	267	226	145	32	17
4,200+	3,501	3,458	39	4	1,178	1,257	814	202	50
Total	33,538	29,590	3,825	123	15,487	9,139	6,223	1,516	1,173

Type of Pension Benefit

1. Regular Retirement
2. Survivor Payment
3. Disability

Option Selected

1. Whole Life Annuity
2. 75% Joint and Contingent Annuity
3. 50% Joint and Contingent Annuity
4. 66 2/3% Joint and Survivor Annuity
5. Level Income Option

Section 4.9: Pension Benefit Recipients Added to and Removed from Rolls

Peace Officer / Firefighter

Year Ended	Added to Rolls		Removed from Rolls		Rolls at End of Year		Percent Increase in Annual Pension Benefits	Average Annual Pension Benefit
	No. ¹	Annual Pension Benefits	No. ¹	Annual Pension Benefits	No. ¹	Annual Pension Benefits		
June 30, 2020	164	\$ 8,472,240	61	\$ 1,078,932	3,568	\$ 136,413,796	5.7%	\$ 38,233
June 30, 2019	149	6,713,940	71	233,335	3,465	129,020,488	5.3%	37,235
June 30, 2018	153	7,002,504	81	2,573,694	3,387	122,539,883	3.7%	36,179
June 30, 2017	165	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	633,048	3,116	108,247,168	4.8%	34,739
June 30, 2014	109	4,270,620	50	(145,771)	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

¹ Numbers are estimated, and include other internal transfers.

Pension Benefit Recipients Added to and Removed from Rolls

Others

Year Ended	Added to Rolls		Removed from Rolls		Rolls at End of Year		Percent Increase in Annual Pension Benefits	Average Annual Pension Benefit
	No. ¹	Annual Pension Benefits	No. ¹	Annual Pension Benefits	No. ¹	Annual Pension Benefits		
June 30, 2020	1,472	\$ 42,340,608	779	\$ 9,911,423	33,538	\$ 772,395,881	4.4%	\$ 23,030
June 30, 2019	1,543	43,301,707	765	3,096,594	32,845	739,966,696	5.7%	22,529
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	601,658,776	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

¹ Numbers are estimated, and include other internal transfers.

Section 5: Basis of the Actuarial Valuation

Section 5.1: Summary of Plan Provisions

Effective Date

January 1, 1961, with amendments through June 30, 2020. 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.

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.

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.

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.

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 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 ten 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.

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.

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 of 22%, will be sufficient to pay the total contribution rate adopted by the Board.

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.

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.

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 age 60 or early retirement at age 55 if they were hired on or 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 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 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 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 select a joint and survivor option. Members who entered PERS prior to July 1, 1996 may also select a 66-2/3 last survivor option or 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 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 ten 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, 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.

Reemployment of Retired Members

Retirement and retiree healthcare benefits are suspended while retired members are reemployed under 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 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.

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. Participants in dental, vision, and audio coverage pay a full self-supporting rate and those benefits are not included in this valuation.

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

Where premiums are required prior to age 60, 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	Amounts
Deductible (single/family)	\$150 / \$450
Coinsurance (most services)	20%
Outpatient surgery/testing	0%
Maximum Out-of-Pocket (single/family, excluding deductible)	\$800 / \$2,400
Rx Copays (generic/brand/mail-order), does not apply to OOP max	\$4 / \$8 / \$0
Lifetime Maximum	\$2,000,000

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

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

Non-occupational 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.

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.

Non-Occupational 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 Non-Occupational 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.

Postretirement Pension Adjustments

Postretirement pension adjustments (PRPAs) are granted annually to eligible benefit recipients when the consumer price index (CPI) for urban wage earners and clerical workers for Anchorage increases during the preceding calendar year. PRPAs are calculated by multiplying the recipient's base benefit including past PRPAs, but 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 under age 60 if the recipient 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 were first hired 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.

Alaska Cost-of-Living Allowance (COLA)

Eligible benefit recipients who reside in Alaska receive an Alaska 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.

Changes in Benefit Provisions Valued Since the Prior Valuation

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

Section 5.2: Description of Actuarial Methods and Valuation Procedures

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

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

Actuarial Cost Method

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

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 difference between actual and expected UAAL occurring that year, and will be amortized over separate closed 25-year periods. The UAAL amortization continues to be on a level percent of pay basis. State statutes allow the contribution rate to be determined on payroll for all members, defined benefit and defined contribution member payroll combined.

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

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

The actuarial accrued liability under this method at any point in time is the theoretical amount of the fund that would have been accumulated had annual contributions equal to the normal cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date). The unfunded actuarial accrued liability is the excess of the actuarial accrued liability over the actuarial value of plan assets measured on the valuation date.

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

¹ Layer #1 is referred to as "initial amount" in Sections 1.2 and 1.3.

Valuation of Assets

The actuarial asset value was reinitialized to equal Fair Value of Assets as of June 30, 2014. Beginning in FY15, the asset valuation method recognizes 20% of the gain or loss each year, for a period of five years. All assets are valued at fair value. Assets are accounted for on an accrued basis and are taken directly from financial statements audited by KPMG LLP.

Changes in Methods Since the Prior Valuation

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

Valuation of Retiree Medical and Prescription Drug Benefits

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

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

Benefits

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

Administration and Data Sources

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

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

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

Aetna provided a snapshot file as of July 1, 2020 of retirees and dependents that included a coverage level indicator. The monthly enrollment data includes double coverage participants. These are participants whereby both the retiree and spouse are retirees from the State and both are reflected with Couple coverage in the enrollment. In this case, such a couple would show up as four members in the

monthly enrollment (each would be both a retiree and a spouse). As a result, the snapshot census file was used to adjust the total member counts in the monthly enrollment reports to estimate the number of unique participants enrolled in coverage. Based on the snapshot files from the last two valuations, the total member count in the monthly enrollment reports needs to be reduced by approximately 13% to account for the number of participants with double coverage.

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

Methodology

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

1. Develop historical annual incurred claim cost rates – an analysis of medical costs was completed based on claims information and enrollment data provided by the State of Alaska and Aetna for each year in the experience period of FY19 through FY20.
 - Costs for medical services and prescriptions were analyzed separately, and separate trend rates were developed to project expected future medical and prescription costs for the valuation year (e.g. from the experience period up through FY21).
 - Because the reports provided reflected incurred claims, no additional adjustment was needed to determine incurred claims to be used in the valuation.
 - An offset for costs expected to be reimbursed by Medicare was incorporated beginning at age 65. Alaska retirees who do not have 40 quarters of Medicare-covered compensation do not qualify for Medicare Part A coverage free of charge. This is a relatively small and closed group. Medicare was applied to State employment for all employees hired after March 31, 1986. For the “no-Part A” individuals who are required to enroll in Medicare Part B, the State is the primary payer for hospital bills and other Part A services. Claim experience is not available separately for participants with both Medicare Parts A and B and those with Part B only. For Medicare Part B only participants, a lower average claims cost was applied to retirees covered by both Medicare Part A and B vs. retirees covered only by Medicare Part B based upon manual rate models that estimate the Medicare covered proportion of medical costs. To the extent that no-Part A claims can be isolated and applied strictly to the appropriate closed group, actuarial accrued liability will be more accurate.
 - Based on census data received from Aetna, less than 1% of the current retiree population was identified as having coverage only under Medicare Part B. We assume that 5% of actives hired before April 1, 1986 and current retirees who are not yet Medicare eligible will not be eligible for Medicare Part A.
 - Based upon a reconciliation of valuation census data to the snapshot eligibility files provided by Aetna as of July 1, 2019, and July 1, 2020, Buck adjusted member counts used for duplicate records where participants have double coverage; i.e. primary coverage as a retiree and secondary coverage as the covered spouse of another retiree. This is to reflect the total cost per distinct individual/member which is then applied to distinct members in the valuation census.
 - Buck understands that pharmacy claims reported do not reflect rebates. Based on actual pharmacy rebate information provided by Aetna for years through 2018 and Optum for January 2019 through June 2020, rebates were assumed to be 17% of prescription drug claims for FY19 and 19.5% of prescription drug claims for FY20.
2. Develop estimated EGWP reimbursements – Segal provided estimated 2021 EGWP subsidies, developed with the assistance of OptumRx. These amounts are applicable only to Medicare-eligible participants.

3. Adjust for claim fluctuation, anomalous experience, etc. – explicit adjustments are often made for anticipated large claims or other anomalous experience. FY19 and FY20 experience were compared to assess the impact of COVID-19 and whether an adjustment to FY20 claims was indicated for use in the June 30, 2020 valuation. A material decrease in medical claims during March 2020 to June 2020 was experienced due to COVID-19. Therefore, an adjustment was made for those months to adjust for the decrease that is not expected to continue in future years. There was an observed spike in prescription drug claims in March 2020; however, the FY20 prescription drug experience appears reasonable to use without adjustment for COVID-19. To adjust for the decrease in medical claims due to COVID-19 during the last 4 months of FY20, the per capita cost during the first 8 months was used as the basis for estimating claims that would have occurred in the absence of COVID-19. Due to group size and demographics, we did not make any additional large claim adjustments. We do blend both Alaska plan-specific and national trend factors as described below. Buck compared data utilized to lag reports and quarterly plan experience presentations provided by the State and Aetna to assess accuracy and reasonableness of data.
4. Trend all data points to the projection period – project prior years’ experience forward to FY21 for retiree benefits on an incurred claim basis. Trend factors derived from historical Alaska-specific experience and national trend factors are shown in the table in item 5 below.
5. Apply credibility to prior experience – adjust prior year’s data by assigning weight to recent periods, as shown at the right of the table below. The Board approved a change in the weighting of experience periods beginning with the June 30, 2017 valuation as outlined below. Note also that we averaged projected plan costs using Alaska-specific trend factors and national trend factors, assigning 75% weight to Alaska-specific trends and 25% to national trends:

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

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

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

Healthcare Reform

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

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

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

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

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

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

Data

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

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

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

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

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

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

	Medical		Prescription Drugs (Rx)	
	Pre-Medicare	Medicare	Pre-Medicare	Medicare
A. Fiscal 2019				
1. Incurred Claims	\$ 230,731,518	\$ 80,855,220	\$ 63,846,605	\$ 183,281,273
2. Adjustments for Rx Rebates	0	0	(10,853,923)	(31,157,816)
3. Net incurred claims	\$ 230,731,518	\$ 80,855,220	\$ 52,992,682	\$ 152,123,456
4. Average Enrollment	20,625	42,843	20,625	42,843
5. Claim Cost Rate (3) / (4)	11,187	1,887	2,569	3,551
6. Trend to Fiscal 2021	1.141	1.101	1.089	1.089
7. Fiscal 2021 Incurred Cost Rate (5) x (6)	\$ 12,762	\$ 2,077	\$ 2,798	\$ 3,867

B. Fiscal 2020				
1. Incurred Claims	\$ 229,531,664	\$ 89,497,345	\$ 64,442,660	\$ 188,022,328
2. Adjustments for Rx Rebates	0	0	(12,566,319)	(36,664,354)
3. Net incurred claims	\$ 229,531,664	\$ 89,497,345	\$ 51,876,341	\$ 151,357,974
4. Average Enrollment	19,354	44,965	19,354	44,965
5. Claim Cost Rate (3) / (4)	11,860	1,990	2,680	3,366
6. Trend to Fiscal 2021	1.063	1.052	1.076	1.076
7. Fiscal 2021 Incurred Cost Rate (5) x (6)	\$ 12,609	\$ 2,094	\$ 2,885	\$ 3,623

	Medical		Prescription Drugs (Rx)	
	Pre-Medicare	Medicare	Pre-Medicare	Medicare
C. Incurred Cost Rate by Fiscal Year				
1. Fiscal 2019 A.(7)	12,762	2,077	2,798	3,867
2. Fiscal 2020 B.(7)	12,609	2,094	2,885	3,623

D. Weighting by Fiscal Year				
1. Fiscal 2019	50%	50%	50%	50%
2. Fiscal 2020	50%	50%	50%	50%

E. Fiscal 2021 Incurred Cost Rate				
1. Rate at Average Age C x D	\$ 12,685	\$ 2,086	\$ 2,842	\$ 3,745
2. Average Aging Factor	0.826	1.263	0.838	1.121
3. Rate at Age 65 (1) / (2)	\$ 15,360	\$ 1,651	\$ 3,393	\$ 3,340

F. Development of Part A&B and Part B Only Cost from Pooled Rate Above	
1. Part A&B Average Enrollment	44,568
2. Part B Only Average Enrollment	398
3. Total Medicare Average Enrollment B(4)	44,965
4. Cost ratio for those with Part B only to those with Parts A&B	3.300
5. Factor to determine cost for those with Parts A&B (2) / (3) x (4) + (1) / (3) x 1.00	1.020
6. Medicare per capita cost for all participants: E(3)	\$ 1,651
7. Cost for those eligible for Parts A&B: (6) / (5)	\$ 1,618
8. Cost for those eligible for Part B only: (7) x (4)	\$ 5,340

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

Below are the results of this analysis:

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

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

Section 5.3: Summary of Actuarial Assumptions

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

Investment Return

7.38% per year, net of investment expenses.

Salary Scale

Salary scale rates based upon the 2013-2017 actual experience (see Table 1).

Inflation – 2.50% per year.

Productivity – 0.25% per year.

Payroll Growth

2.75% per year (inflation + productivity).

Total Inflation

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

Mortality (Pre-Commencement)

Mortality rates based upon the 2013-2017 actual experience.

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

Deaths are assumed to result from occupational causes 75% of the time for Peace Officer/Firefighters, and 40% of the time for Others.

Mortality (Post-Commencement)

Mortality rates based upon the 2013-2017 actual experience.

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

Turnover

Select and ultimate rates based upon the 2013-2017 actual experience (see Tables 2a and 2b).

Disability

Incidence rates based upon the 2013-2017 actual experience (see Table 3).

Post-disability mortality in accordance with the RP-2014 disabled table, benefit-weighted, rolled back to 2006, and projected with MP-2017 generational improvement. Disabilities are assumed to be occupational 75% of the time for Peace Officer/Firefighters, and 40% of the time for Others.

Retirement

Retirement rates based upon the 2013-2017 actual experience (see Tables 4a and 4b).

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.

Spouse Age Difference

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

Percent Married for Pension

For Others, 75% of male members and 70% of 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.

Dependent Spouse Medical Coverage Election

Applies to members who do not have double medical coverage. For Others, 65% of male members and 60% of 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.

Dependent Children

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

Contribution Refunds

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.

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.

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 five 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%

Re-Employment Option

All re-employed retirees are assumed to return to work under the Standard Option.

Active Data Adjustment

No adjustment was made to reflect participants who terminate employment before the valuation date and are subsequently rehired after the valuation date.

Alaska Cost-of-Living Adjustments (COLA)

Of those benefit recipients who are eligible for the Alaska COLA, 70% of Others and 65% of Peace Officers/Firefighters are assumed to remain in Alaska and receive the COLA.

Postretirement Pension Adjustment (PRPA)

50% and 75% of assumed inflation, or 1.25% and 1.875% respectively, is valued for the annual automatic PRPA as specified in the statute.

Expenses

The investment return assumption is net of investment expenses. The Normal Cost as of June 30, 2020 was increased by the following amounts for administrative expenses (for projections, the percent increase was assumed to remain constant in future years):

- Pension: \$7,223,000
- Healthcare: \$4,934,000

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.

Service

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

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.

Per Capita Claims Cost

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

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

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

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

Third Party Administrator Fees

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

Medicare Part B Only

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

Healthcare Cost Trend

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

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

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

Aging Factors

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

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 FY21 contributions based on monthly rates shown below for calendar 2021 are assumed based on the coverage category for current retirees. The composite rate shown is used for current active and inactive members in Tier 2 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.

Coverage Category	Calendar 2021 Annual Contribution	Calendar 2021 Monthly Contribution	Calendar 2020 Monthly Contribution
Retiree Only	\$ 8,448	\$ 704	\$ 741
Retiree and Spouse	\$ 16,896	\$ 1,408	\$ 1,482
Retiree and Child(ren)	\$ 11,940	\$ 995	\$ 1,047
Retiree and Family	\$ 20,388	\$ 1,699	\$ 1,788
Composite	\$ 12,552	\$ 1,046	\$ 1,101

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, 0.0% is applied to the FY21 retired member medical contributions to get the FY22 retired member medical contributions.

Trend Assumptions	
FY21	0.0%
FY22	0.0%
FY23+	4.0%

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

Healthcare Participation

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

Changes in Assumptions Since the Prior Valuation

Healthcare claim costs are updated annually as described in Section 5.2. Retired member contributions were updated to reflect the 5% decrease from CY20 to CY21. The amounts included in the Normal Cost for administrative expenses were changed from \$6,839,000 to \$7,223,000 for pension and from \$3,744,000 to \$4,934,000 for healthcare (based on the most recent two years of actual administrative expenses paid from plan assets).

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Table 1: Salary Scales

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%

Table 2a: Turnover Rates for Peace Officer / Firefighter

Select Rates during the First 5 Years of Employment

Years of Service	Male	Female
0	15.00%	15.00%
1	12.00%	8.00%
2	7.20%	6.40%
3	5.67%	5.60%
4	6.48%	7.20%

Ultimate Rates after the First 5 Years of Employment

Age	Male	Female	Age	Male	Female
< 23	4.70%	6.80%	39	2.04%	2.98%
23	4.46%	6.80%	40	1.68%	3.39%
24	4.22%	6.80%	41	1.67%	3.37%
25	3.98%	6.80%	42	1.67%	3.36%
26	3.74%	6.80%	43	1.71%	3.33%
27	3.50%	6.80%	44	1.76%	3.31%
28	3.32%	6.63%	45	1.81%	3.28%
29	3.14%	6.46%	46	1.85%	3.25%
30	2.96%	6.29%	47	1.90%	3.23%
31	2.79%	6.12%	48	2.22%	3.19%
32	2.61%	5.95%	49	2.53%	3.15%
33	2.50%	5.36%	50	3.18%	6.42%
34	2.39%	4.77%	51	4.24%	6.32%
35	2.28%	4.18%	52	4.24%	6.19%
36	2.17%	3.60%	53	4.24%	6.04%
37	2.06%	3.01%	54	4.24%	3.00%
38	2.05%	2.99%	55+	3.00%	2.00%

Table 2b: Turnover Rates for Others

Select Rates during the First 5 Years of Employment

Hire Age Under 35			Hire Age Over 35		
Years of Service	Male	Female	Years of Service	Male	Female
0	29.00%	29.00%	0	20.00%	20.00%
1	16.25%	20.00%	1	12.00%	15.00%
2	13.00%	16.00%	2	10.00%	12.50%
3	10.40%	12.80%	3	8.50%	10.00%
4	8.45%	10.40%	4	8.50%	9.00%

Ultimate Rates after the First 5 Years of Employment

Age	Male	Female	Age	Male	Female
< 23	11.40%	12.99%	39	5.47%	5.23%
23	10.83%	12.21%	40	4.86%	5.65%
24	10.26%	11.43%	41	4.71%	5.51%
25	9.69%	10.65%	42	4.56%	5.38%
26	9.12%	9.87%	43	4.50%	5.19%
27	8.55%	9.09%	44	4.44%	4.99%
28	8.30%	8.72%	45	4.39%	4.80%
29	8.05%	8.34%	46	4.33%	4.60%
30	7.80%	7.97%	47	4.27%	4.41%
31	7.54%	7.60%	48	4.26%	4.40%
32	7.29%	7.23%	49	4.24%	4.39%
33	6.99%	6.88%	50	3.63%	4.45%
34	6.69%	6.53%	51	3.60%	4.43%
35	6.39%	6.17%	52	3.56%	4.40%
36	6.10%	5.82%	53	3.52%	4.37%
37	5.80%	5.47%	54	4.17%	6.20%
38	5.63%	5.35%	55+	3.00%	5.00%

Table 3: Disability Rates

Age	Peace Officer / Firefighter		Others	
	Male	Female	Male	Female
< 23	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	0.0887%	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%

Table 4a: Retirement Rates for Peace Officer / Firefighter

Age	Reduced		Unreduced	
	Male	Female	Male	Female
< 47	N/A	N/A	88.00%	6.00%
47	N/A	N/A	88.00%	15.00%
48	N/A	N/A	14.30%	15.00%
49	N/A	N/A	14.30%	15.00%
50	5.00%	5.00%	16.50%	15.00%
51	5.00%	7.00%	16.50%	15.00%
52	7.00%	7.00%	20.35%	15.00%
53	7.00%	7.00%	20.35%	15.00%
54	7.00%	35.00%	20.35%	25.00%
55	7.00%	8.00%	27.50%	20.00%
56	7.00%	8.00%	27.50%	15.00%
57	7.00%	8.00%	27.50%	15.00%
58	7.00%	8.00%	27.50%	15.00%
59	20.00%	20.00%	27.50%	15.00%
60	N/A	N/A	33.00%	25.00%
61	N/A	N/A	27.50%	20.00%
62	N/A	N/A	27.50%	30.00%
63	N/A	N/A	27.50%	50.00%
64	N/A	N/A	22.00%	50.00%
65	N/A	N/A	22.00%	50.00%
66	N/A	N/A	27.50%	50.00%
67	N/A	N/A	55.00%	50.00%
68	N/A	N/A	55.00%	50.00%
69	N/A	N/A	55.00%	50.00%
70+	N/A	N/A	100.00%	100.00%

Table 4b: Retirement Rates for Others

Age	Reduced		Unreduced	
	Male	Female	Male	Female
< 50	N/A	N/A	11.00%	11.00%
50	6.00%	8.00%	33.00%	38.50%
51	6.00%	8.00%	35.75%	38.50%
52	9.00%	8.00%	35.75%	38.50%
53	6.00%	8.00%	35.75%	38.50%
54	20.00%	15.00%	38.50%	38.50%
55	6.00%	6.00%	33.00%	33.00%
56	6.00%	6.00%	22.00%	22.00%
57	6.00%	6.00%	22.00%	19.80%
58	6.00%	6.00%	22.00%	19.80%
59	15.00%	20.00%	22.00%	19.80%
60	N/A	N/A	22.00%	23.10%
61	N/A	N/A	22.00%	22.00%
62	N/A	N/A	22.00%	22.00%
63	N/A	N/A	22.00%	22.00%
64	N/A	N/A	22.00%	22.00%
65	N/A	N/A	24.75%	28.60%
66	N/A	N/A	27.50%	28.60%
67	N/A	N/A	22.00%	24.20%
68	N/A	N/A	24.75%	24.20%
69	N/A	N/A	27.50%	24.20%
70	N/A	N/A	27.50%	24.20%
71	N/A	N/A	27.50%	24.20%
72	N/A	N/A	27.50%	27.50%
73	N/A	N/A	27.50%	27.50%
74	N/A	N/A	27.50%	38.50%
75	N/A	N/A	55.00%	55.00%
76	N/A	N/A	55.00%	55.00%
77	N/A	N/A	55.00%	55.00%
78	N/A	N/A	55.00%	55.00%
79	N/A	N/A	55.00%	55.00%
80+	N/A	N/A	100.00%	100.00%

Section 6: Actuarial Standard of Practice No. 51

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

Actuarial Standard of Practice No. 51 (ASOP 51)¹ requires certain disclosures of potential risks to the plan and provides useful information for intended users of actuarial reports that determine plan contributions or evaluate the adequacy of specified contribution levels to support benefit provisions.

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

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

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

- Investment Risk – potential that the investment return will be different than the 7.38% expected in the actuarial valuation
- Contribution Risk – potential that the contribution actually made will be different than the actuarially determined contribution
- Long-Term Return on Investment Risk – potential that changes in long-term capital market assumptions or the plan's asset allocation will create the need to update the long-term return on investment assumption
- Longevity Risk – potential that participants live longer than expected compared to the valuation mortality assumptions
- Salary Increase Risk – potential that future salaries will be different than expected in the actuarial valuation
- Inflation Risk – potential that the consumer price index (CPI) for urban wage earners and clerical workers for Anchorage is different than the 2.5% assumed in the valuation
- Other Demographic Risk – potential that other demographic experience will be different than expected

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

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

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

Assessment of Risks

Investment Risk

Plan costs are very sensitive to the market return.

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

Contribution Risk

There is a risk to the plan when the employer's and/or State's actual contribution amount and the actuarially determined contribution differ.

- If the actual contribution is lower than the actuarially determined contribution, the plan may not be sustainable in the long term.
- Any underpayment of the contribution will increase future contribution amounts to help pay off the additional Unfunded Actuarial Accrued Liability associated with the underpayment(s).
- As long as the Board consistently adopts the actuarially determined contributions, this risk is mitigated due to Alaska statutes requiring the State to contribute additional funds necessary to pay the total contributions adopted by the Board.

Long-Term Return on Investment Risk

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

- Under a lower long-term return on investment assumption, less investment return is available to pay plan benefits. This may lead to a need for increased employer contributions.
- The liabilities will be higher at a lower assumed rate of return because future benefits will have a lower discount rate applied when calculating the present value.
- A 1% decrease in the long-term return on investment assumption will increase actuarial accrued liability by approximately 12%.
- This risk may be increased due to the plan being closed to new entrants. As the plan continues to mature, the magnitude of negative cash flow discussed in the Plan Maturity Measures later in this section will grow, thereby creating a need for more liquid assets that may not garner the same long-term return as currently assumed.

Longevity Risk

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

- Benefits are paid over a longer lifetime when life expectancy is expected to increase. The longer duration of payments leads to higher liabilities.
- Health care has been improving, which affects the life expectancy of participants. As health care improves, leading to longer life expectancies, costs to the plan could increase.

- The mortality assumption for the plan mitigates this risk by assuming future improvement in mortality. However, any improvement in future mortality greater than that expected by the current mortality assumption would lead to increased costs for the plan.
- The Postretirement Pension Adjustments and Alaska Cost-of-Living Allowance increase longevity risk because members who live longer than expected will incur more benefit payment increases than expected and therefore increase costs.

Salary Increase Risk

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

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

Inflation Risk

Plan costs will be increased if the actual CPI for Anchorage is greater than the 2.5% assumed in the valuation.

- Retirement benefits will be greater than expected if the CPI is greater than the assumed rate, which will increase costs.
- This risk is mitigated by the 75% and 50% of CPI provisions and the 9% and 6% maximums.
- This risk is also mitigated by the age and time in payment requirements to receive an increase.
- Inflation risk may be associated with the interaction of inflation with other assumptions, but this is not significant as a standalone assumption, and therefore is considered as part of the associated assumption risk instead of being discussed here.

Other Demographic Risk

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

Historical Information

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

- Funded Ratio History shown in the Executive Summary illustrates how the plan's funded status (comparison of actuarial accrued liabilities to actuarial value of assets) has changed over time.
- Section 1.6 shows historical analysis of financial experience including how contribution rates have changed over time.
- Section 2.4 shows the volatility of asset returns over time.
- Section 4 includes various historical information showing how member census data has changed over time.

Plan Maturity Measures

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

Ratio of Retired Liability to Total Liability (\$'s in \$000's)	June 30, 2019	June 30, 2020
1. Retiree and Beneficiary Accrued Liability	\$ 10,076,528	\$ 10,472,466
2. Total Accrued Liability	\$ 15,039,180	\$ 15,279,525
3. Ratio, (1) ÷ (2)	67.0%	68.5%

A high percentage of liability concentrated on participants in pay status indicates a mature plan (often a ratio above 60% - 65%). Because the plan was closed to new entrants in 2006, we expect the percentage in item #3 to continue to increase over time. An increasing percentage may indicate a need for a less risky asset allocation, which may lead to a lower long-term return on asset assumption and increased costs. Higher percentages may also indicate greater investment risk as benefit payments may be greater than contributions creating an increased reliance on investment returns. This ratio should be monitored each year in the future.

Ratio of Cash Flow to Assets (\$'s in \$000's)	FYE June 30, 2019	FYE June 30, 2020
1. Contributions	\$ 498,067	\$ 504,029
2. Benefit Payments	848,019	895,523
3. Cash Flow, (1) - (2)	\$ (349,952)	\$ (391,494)
4. Fair Value of Assets	\$ 9,489,405	\$ 9,469,161
5. Ratio, (3) ÷ (4)	(3.7%)	(4.1%)

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

Contribution Volatility (\$'s in \$000's)	June 30, 2019	June 30, 2020
1. Fair Value of Assets	\$ 9,489,405	\$ 9,469,161
2. DB/DCR Payroll	\$ 2,347,306	\$ 2,373,078
3. Asset to Payroll Ratio, (1) ÷ (2)	404.3%	399.0%
4. Accrued Liability	\$ 15,039,180	\$ 15,279,525
5. Liability to Payroll Ratio, (4) ÷ (2)	640.7%	643.9%

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

Glossary of Terms

Actuarial Accrued Liability

Total accumulated cost to fund pension or postemployment benefits arising from service in all prior years.

Actuarial Cost Method

Technique used to assign or allocate, in a systematic and consistent manner, the expected cost of a pension or postemployment plan for a group of plan members to the years of service that give rise to that cost.

Actuarial Present Value of Projected Benefits

Amount which, together with future interest, is expected to be sufficient to pay all future benefits.

Actuarial Valuation

Study of probable amounts of future pension or postemployment benefits and the necessary amount of contributions to fund those benefits.

Actuary

Person who performs mathematical calculations pertaining to pension and insurance benefits based on specific procedures and assumptions.

GASB 67 and 68

Governmental Accounting Standards Board Statement Number 67 amends Number 25 effective for the fiscal year beginning after June 15, 2013 and defines new financial reporting requirements for public pension plans.

Governmental Accounting Standards Board Statement Number 68 amends Number 27 effective for fiscal years beginning after June 15, 2014 and defines new accounting and financial reporting requirements for employers sponsoring public pension plans.

GASB 74 and 75

Governmental Accounting Standards Board Statement Number 74 amends Number 43 effective for the fiscal year beginning after June 15, 2016 and defines new financial reporting requirements for public postemployment benefit plans. Governmental Accounting Standards Board Statement Number 75 amends Number 45 effective for fiscal years beginning after June 15, 2017 and defines new accounting and financial reporting requirements for employers sponsoring public postemployment benefit plans.

Normal Cost

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

Rate Payroll

Members' earnings used to determine contribution rates.

Unfunded Actuarial Accrued Liability (UAAL)

The portion of the actuarial accrued liability not offset by plan assets.

Valuation Payroll

Members' earnings used to determine Normal Cost and Actuarial Accrued Liability.

Vested Benefits

Benefits which are unconditionally guaranteed regardless of employment.

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