



State of Alaska

Public Employees' Retirement System

Actuarial Valuation Report
As of June 30, 2021

May 2022



May 12, 2022

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, 2021 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, 2021. 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, 2021.

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 FY26 (the funded status of the pension trust is expected to increase to 100% in FY38).

SB 55 was effective July 1, 2021. Under SB 55:

- The State-as-an-Employer contributes the full actuarial contribution rate based on the DB/DCR payroll of its employees (which is approximately 50% of the total PERS DB/DCR payroll).
- Non-State employers continue to contribute 22% of their DB/DCR payroll.
- The Additional State Contributions are based on the excess of the DB actuarial contribution rate and the DB contributions made by non-State employers.

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 actuarial 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, 2021 to better reflect expected future healthcare experience. A summary of the actuarial assumptions and methods used in this actuarial valuation is shown in Sections 5.2 and 5.3. We certify that the assumptions and methods described in Sections 5.2 and 5.3 of this report meet the requirements of all applicable Actuarial Standards of Practice.

Governmental Accounting Standards Board (GASB) Statement No. 67 (GASB 67) was effective for 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, 2021 have been prepared. We have also prepared the member data tables shown in Section 4 of this report for the Statistical Section of the ACFR, as well as the summary of actuarial assumptions and analysis of financial experience for the Actuarial Section of the ACFR. Please see our separate GASB 67 and GASB 74 reports for other information needed for the ACFR.

Assessment of Risks

Actuarial Standard of Practice No. 51 (ASOP 51) applies to actuaries performing funding calculations related to a pension plan. ASOP 51 does not apply to actuaries performing services in connection with other post-employment benefits, such as medical benefits. Accordingly, ASOP 51 does not apply to the healthcare portion of 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. FY21 medical claims were adjusted for a COVID-19 related decline in those claims during the fiscal year. 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.

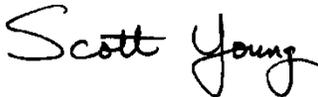
I am available to discuss this report with you at your convenience. I can be reached at 602-803-6174.

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, 2021.

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)**2020****2021****Pension**

a. Actuarial Accrued Liability	\$ 15,279,525	\$ 15,419,975
b. Valuation Assets	<u>9,713,710</u>	<u>10,466,709</u>
c. Unfunded Actuarial Accrued Liability, (a) - (b)	\$ 5,565,815	\$ 4,953,266
d. Funded Ratio based on Valuation Assets, (b) ÷ (a)	63.6%	67.9%
e. Fair Value of Assets	\$ 9,469,161	\$ 11,912,309
f. Funded Ratio based on Fair Value of Assets, (e) ÷ (a)	62.0%	77.3%

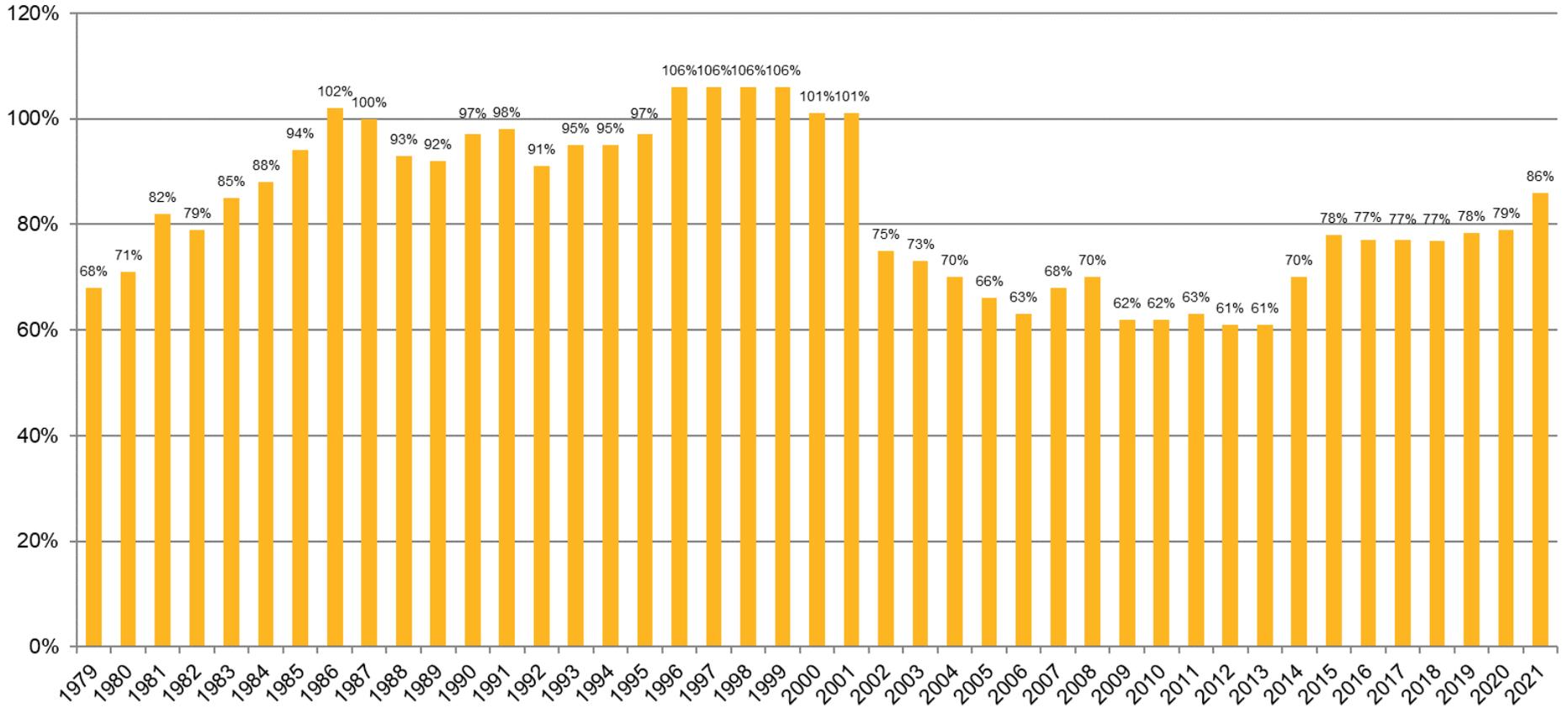
Healthcare

a. Actuarial Accrued Liability	\$ 7,036,550	\$ 6,856,170
b. Valuation Assets	<u>7,989,358</u>	<u>8,581,155</u>
c. Unfunded Actuarial Accrued Liability, (a) - (b)	\$ (952,808)	\$ (1,724,985)
d. Funded Ratio based on Valuation Assets, (b) ÷ (a)	113.5%	125.2%
e. Fair Value of Assets	\$ 7,813,511	\$ 9,784,141
f. Funded Ratio based on Fair Value of Assets, (e) ÷ (a)	111.0%	142.7%

Total

a. Actuarial Accrued Liability	\$ 22,316,075	\$ 22,276,145
b. Valuation Assets	<u>17,703,068</u>	<u>19,047,864</u>
c. Unfunded Actuarial Accrued Liability, (a) - (b)	\$ 4,613,007	\$ 3,228,281
d. Funded Ratio based on Valuation Assets, (b) ÷ (a)	79.3%	85.5%
e. Fair Value of Assets	\$ 17,282,672	\$ 21,696,450
f. Funded Ratio based on Fair Value of Assets, (e) ÷ (a)	77.4%	97.4%

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 FY21 investment return based on fair value of assets was approximately 30.0% compared to the expected investment return of 7.38% (net of investment expenses). This resulted in a market asset gain of approximately \$3,834 million. Due to the recognition of investment gains and losses over a 5-year period, the FY21 investment return based on actuarial value of assets was approximately 11.6%, which resulted in an actuarial asset gain of approximately \$734 million.

2. Salary Increases

Salary increases for continuing active members during FY21 were higher than expected based on the valuation assumptions, resulting in a liability loss of approximately \$17 million.

3. Demographic Experience

Section 4 provides statistics on active and inactive participants. The number of active participants decreased 10.4% from 11,033 at June 30, 2020 to 9,888 at June 30, 2021 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 53.21 to 53.51 and average credited service increased from 18.38 to 18.96 years.

The number of benefit recipients increased 1.6% from 37,106 to 37,717 and their average age increased from 70.77 to 71.17. The number of vested terminated participants decreased 3.6% from 5,327 to 5,135. Their average age increased from 53.52 to 53.92.

The overall effect of the demographic experience during FY21 was a liability gain of approximately \$4.3 million (pension) and a liability gain of approximately \$30.3¹ million (healthcare).

4. COLA / PRPA Experience

The cost-of-living increases (COLA) for benefit recipients during FY21 were less than expected based on the valuation assumptions, resulting in a liability gain of approximately \$6 million. The postretirement pension adjustments (PRPA) were also less than expected, resulting in a liability gain of approximately \$149 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, 2021 valuation generated a liability gain of approximately \$272 million. Reduced claims during FY21, largely attributable to medical claims impacted by COVID-19, generated a liability gain of approximately \$21 million.

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

6. Changes in Methods Since the Prior Valuation

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

7. Changes in Assumptions Since the Prior Valuation

Healthcare claim costs are updated annually as described in Section 5.2. 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

Starting in 2022, prior authorization will be required for certain specialty medications for all participants, and certain preventive benefits for pre-Medicare participants will now be covered by the plan. These changes created an actuarial gain of approximately \$62 million.

Under SB 55 that was effective July 1, 2021: (i) The State-as-an-Employer contributes the full actuarial contribution rate based on the DB/DCR payroll of its employees (which is approximately 50% of the total PERS DB/DCR payroll); (ii) Non-State employers continue to contribute 22% of their DB/DCR payroll; (iii) the Additional State Contributions are based on the excess of the DB actuarial contribution rate and the DB contributions made by non-State employers.

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

Projections

Absent future asset (and/or liability) losses, changes in plan provisions or actuarial assumptions, the \$3,834 million FY21 market asset gain has a significant impact on the projections shown in Section 3. For example, the pension trust is currently projected to reach a funded status of 100% in FY38. Based on the 2020 valuation projections, the funded status of the pension trust was projected to be only 85% in FY38.

Once the pension trust is projected to reach of funded status of 100%, it may be reasonable to assume that all remaining pension unfunded liability layered amortization amounts should be reduced to zero. Since the healthcare trust is currently more than 100% funded, the healthcare unfunded liability amortization amounts would also be reduced to zero if the Board decides to implement this change (this does not impact the projections shown in Section 3.6 since the healthcare Normal Cost is assumed to be contributed as a minimum in all years after FY23 per Alaska state statutes).

We have shown the table of projected figures in Section 3.6 two ways:

- a) Section 3.6A – No changes to the pension unfunded liability layered amortization amounts. In this case, Additional State Contributions totaling approximately \$59 million are projected for FY38-FY39, even though the pension trust is projected to be 100% funded in FY38.
- b) Section 3.6B – Eliminate the pension unfunded liability layered amortization amounts when the pension trust is projected to be 100% funded. In this case, the Additional State Contributions are projected to be zero after FY37.

The pros and cons of these two methods can be discussed further upon request.

In both cases, the pension Normal Cost is assumed to be contributed as a minimum based on Alaska state statutes. (The healthcare trust is currently over 100% funded, so the healthcare Normal Cost is also assumed to be contributed as a minimum based on Alaska state statutes.)

Sections 3.3 through 3.5 are based on the projections shown in Section 3.6A.

Comparative Summary of Contribution Rates

Pension	Actual FY 2023	Estimated FY 2024
a. Normal Cost Rate Net of Member Contributions	2.37%	2.14%
b. Past Service Cost Rate	<u>16.01%</u>	<u>14.38%</u>
c. Total Employer/State Contribution Rate, (a) + (b), not less than (a) ¹	18.38%	16.52%

Healthcare	Actual FY 2023	Estimated FY 2024
a. Normal Cost Rate	2.84%	2.50%
b. Past Service Cost Rate	<u>(4.94%)</u>	<u>(7.45%)</u>
c. Total Employer/State Contribution Rate, (a) + (b), not less than (a) ¹	2.84%	2.50%

Total	Actual FY 2023	Estimated FY 2024
a. Normal Cost Rate Net of Member Contributions	5.21%	4.64%
b. Past Service Cost Rate	<u>16.01%</u>	<u>14.38%</u>
c. Total Employer/State Contribution Rate, (a) + (b) ¹	21.22%	19.02%
d. Board Adopted Total Employer/State Contribution Rate	18.38% ²	TBD
e. Defined Contribution Retirement (DCR) Rate Paid by Employers	<u>6.41%</u>	<u>6.63%</u>
f. Board Adopted Total Rate, Including DCR Rate Paid by Employers, (d) + (e)	24.79%	TBD

Contribution rates are based on total (DB and DCR) payroll. The contribution rates shown above for FY24 are estimated assuming no actuarial gains/losses during FY22 and FY23. Actual FY24 contribution rates will be adopted by the Board in September 2022 reflecting FY22 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.

² The FY23 contribution rates adopted by the Board in October 2021 were 18.38% for Pension and 0.00% for Healthcare.

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, 2020 and June 30, 2021 based on DB and DCR payroll combined:

	Pension	Healthcare	Total
1. Total Employer/State Contribution Rate as of June 30, 2020	20.54%	3.57%	24.11%
2. Change due to:			
a. Health Claims Experience	N/A	(0.12)%	(0.12)%
b. Salary Increases	0.05%	N/A	0.05%
c. Investment Experience	(1.06)%	0.00%	(1.06)%
d. Demographic Experience and Miscellaneous ¹	(0.54)%	(0.26)%	(0.80)%
e. Actual vs Expected Contributions	(0.06)%	0.00%	(0.06)%
f. Assumption/Method Changes	0.00%	0.00%	0.00%
g. Plan Changes	<u>0.00%</u>	<u>(0.03)%</u>	<u>(0.03)%</u>
h. Total Change, (a) + (b) + (c) + (d) + (e) + (f) + (g)	(1.61)%	(0.41)%	(2.02)%
3. Total Employer/State Contribution Rate as of June 30, 2021, (1) + (2)(h)	18.93%	3.16%	22.09%

The following table shows the FY21 gain/(loss) on actuarial accrued liability as of June 30, 2021 (\$'s in 000's):

	Pension	Healthcare	Total
Retirement Experience	\$ (7,211)	\$ 7,125	\$ (86)
Termination Experience	(7,963)	(10,409)	(18,372)
Disability Experience	6,650	10,858	17,508
Active Mortality Experience	14,401	(745)	13,656
Inactive Mortality Experience	(1,576)	2,684	1,108
Salary Increases	(17,126)	N/A	(17,126)
Rehires (Net of Rehire Load)	15,067	14,045	29,112
Transfers between Peace/Fire and Others	(1,706)	(161)	(1,867)
COLA Increases	5,956	N/A	5,956
PRPA Increases	149,186	N/A	149,186
Benefit Payments Different than Expected	19,147	21,107	40,254
Per Capita Claims Cost	N/A	272,205	272,205
Medical and Prescription Drug Plan Changes	N/A	61,807	61,807
Medicare Part B Only Experience	N/A	5,743	5,743
Changes in Dependent Coverage Elections	N/A	15,017	15,017
Programming Changes ²	(512)	N/A	(512)
Miscellaneous ³	<u>(13,480)</u>	<u>(15,552)</u>	<u>(29,032)</u>
Total	\$ 160,833	\$ 383,724	\$ 544,557

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

² Includes adjustments to (a) the 10% COLA to apply immediately for all disabled members, and (b) the PRPA increases for Peace Officer/Firefighters who retire from occupational disability.

³ Includes the effects of various data changes that are typical when new census data is received for the annual valuation, as well as other items that do not fit neatly into any of the other categories. The pension amount includes a loss of \$10,900 for unexpected beneficiaries and QDRO's based on last year's data, and the healthcare amount includes a loss of \$10,592 for changes in spouses' dates of birth in the data.

The rehire gain/(loss) amount shown on the previous page is the difference between (i) the increase in Actuarial Accrued Liability at June 30, 2021 due to rehires during the most recent plan year, and (ii) the load that was added to the June 30, 2020 Normal Cost based on the rehire load assumption used in the June 30, 2020 valuation. The development of the FY21 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, 2021 due to Rehires	\$ 7,095	\$ (1,523)	\$ 5,572
2. June 30, 2020 Normal Cost Rehire Load, with interest to June 30, 2021	\$ 22,162	\$ 12,522	\$ 34,684
3. Rehire Gain/(Loss), (2) - (1)	\$ 15,067	\$ 14,045	\$ 29,112

Section 1: Actuarial Funding Results

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

Peace Officer / Firefighter

As of June 30, 2021	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
Active Members		
Retirement Benefits	\$ 877,332	\$ 783,315
Termination Benefits	9,109	1,315
Disability Benefits	1,259	(1,287)
Death Benefits	9,057	5,989
Return of Contributions	1,243	(4,141)
Medical and Prescription Drug Benefits	356,026	305,813
Medicare Part D Subsidy	(30,079)	(25,883)
Indebtedness	(4,797)	(4,797)
Subtotal	\$ 1,219,150	\$ 1,060,324
Inactive Members		
Not Vested	\$ 2,487	\$ 2,487
Vested Terminations		
- Retirement Benefits	35,573	35,573
- Medical and Prescription Drug Benefits	95,523	95,523
- Medicare Part D Subsidy	(9,689)	(9,689)
- Indebtedness	(475)	(475)
Retirees & Beneficiaries		
- Retirement Benefits	1,730,944	1,730,944
- Medical and Prescription Drug Benefits	590,605	590,605
- Medicare Part D Subsidy	(79,219)	(79,219)
Subtotal	\$ 2,365,749	\$ 2,365,749
Total	\$ 3,584,899	\$ 3,426,073
Total Pension	\$ 2,661,732	\$ 2,548,923
Total Medical, Net of Part D Subsidy	\$ 923,167	\$ 877,150
Total Medical, Gross of Part D Subsidy	\$ 1,042,154	\$ 991,941

Peace Officer / Firefighter

As of June 30, 2021	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
By Tier		
Tier 1		
- Pension	\$ 989,348	\$ 988,683
- Medical, Net of Part D Subsidy	272,846	272,432
Tier 2		
- Pension	694,313	683,185
- Medical, Net of Part D Subsidy	265,750	261,524
Tier 3		
- Pension	978,071	877,055
- Medical, Net of Part D Subsidy	384,571	343,194
Total	\$ 3,584,899	\$ 3,426,073

As of June 30, 2021	Normal Cost
Active Members	
Retirement Benefits	\$ 17,624
Termination Benefits	1,528
Disability Benefits	495
Death Benefits	612
Return of Contributions	1,029
Medical and Prescription Drug Benefits	9,196
Medicare Part D Subsidy	(788)
Rehire Assumption (Pension)	3,996
Rehire Assumption (Medical)	1,437
Administrative Expenses (Pension)	1,615
Administrative Expenses (Medical)	773
Total	\$ 37,517
Total Pension	\$ 26,899
Total Medical, Net of Part D Subsidy	\$ 10,618
Total Medical, Gross of Part D Subsidy	\$ 11,406

By Tier	
Tier 1	
- Pension	\$ 310
- Medical, Net of Part D Subsidy	204
Tier 2	
- Pension	3,601
- Medical, Net of Part D Subsidy	1,332
Tier 3	
- Pension	22,988
- Medical, Net of Part D Subsidy	9,082
Total	\$ 37,517

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

Others

As of June 30, 2021	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
Active Members		
Retirement Benefits	\$ 3,314,325	\$ 3,021,247
Termination Benefits	213,325	120,766
Disability Benefits	16,937	5,047
Death Benefits	45,609	36,004
Return of Contributions	14,215	(28,530)
Medical and Prescription Drug Benefits	1,848,190	1,513,162
Medicare Part D Subsidy	(234,865)	(197,726)
Indebtedness	<u>(39,283)</u>	<u>(39,283)</u>
Subtotal	\$ 5,178,453	\$ 4,430,687
Inactive Members		
Not Vested	\$ 73,923	\$ 73,923
Vested Terminations		
- Retirement Benefits	651,624	651,624
- Medical and Prescription Drug Benefits	930,456	930,456
- Medicare Part D Subsidy	(102,384)	(102,384)
- Indebtedness	(12,942)	(12,942)
Retirees & Beneficiaries		
- Retirement Benefits	9,043,196	9,043,196
- Medical and Prescription Drug Benefits	4,572,277	4,572,277
- Medicare Part D Subsidy	<u>(736,765)</u>	<u>(736,765)</u>
Subtotal	\$ 14,419,385	\$ 14,419,385
Total	\$ 19,597,838	\$ 18,850,072
Total Pension	\$ 13,320,929	\$ 12,871,052
Total Medical, Net of Part D Subsidy	\$ 6,276,909	\$ 5,979,020
Total Medical, Gross of Part D Subsidy	\$ 7,350,923	\$ 7,015,895

Others

As of June 30, 2021	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
By Tier		
Tier 1		
- Pension	\$ 6,024,842	\$ 6,001,018
- Medical, Net of Part D Subsidy	2,358,156	2,335,845
Tier 2		
- Pension	3,811,976	3,721,454
- Medical, Net of Part D Subsidy	1,873,154	1,810,864
Tier 3		
- Pension	3,484,111	3,148,580
- Medical, Net of Part D Subsidy	2,045,599	1,832,311
Total	\$ 19,597,838	\$ 18,850,072

As of June 30, 2021	Normal Cost
Active Members	
Retirement Benefits	\$ 53,983
Termination Benefits	14,497
Disability Benefits	1,969
Death Benefits	1,742
Return of Contributions	7,031
Medical and Prescription Drug Benefits	58,336
Medicare Part D Subsidy	(6,562)
Rehire Assumption (Pension)	14,870
Rehire Assumption (Medical)	8,848
Administrative Expenses (Pension)	6,010
Administrative Expenses (Medical)	4,758
Total	\$ 165,482
Total Pension	\$ 100,102
Total Medical, Net of Part D Subsidy	\$ 65,380
Total Medical, Gross of Part D Subsidy	\$ 71,942

By Tier	
Tier 1	
- Pension	\$ 8,729
- Medical, Net of Part D Subsidy	8,011
Tier 2	
- Pension	23,906
- Medical, Net of Part D Subsidy	15,939
Tier 3	
- Pension	67,467
- Medical, Net of Part D Subsidy	41,430
Total	\$ 165,482

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

All Members

As of June 30, 2021	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
Active Members		
Retirement Benefits	\$ 4,191,657	\$ 3,804,562
Termination Benefits	222,434	122,081
Disability Benefits	18,196	3,760
Death Benefits	54,666	41,993
Return of Contributions	15,458	(32,671)
Medical and Prescription Drug Benefits	2,204,216	1,818,975
Medicare Part D Subsidy	(264,944)	(223,609)
Indebtedness	<u>(44,080)</u>	<u>(44,080)</u>
Subtotal	\$ 6,397,603	\$ 5,491,011
Inactive Members		
Not Vested	\$ 76,410	\$ 76,410
Vested Terminations		
- Retirement Benefits	687,197	687,197
- Medical and Prescription Drug Benefits	1,025,979	1,025,979
- Medicare Part D Subsidy	(112,073)	(112,073)
- Indebtedness	(13,417)	(13,417)
Retirees & Beneficiaries		
- Retirement Benefits	10,774,140	10,774,140
- Medical and Prescription Drug Benefits	5,162,882	5,162,882
- Medicare Part D Subsidy	<u>(815,984)</u>	<u>(815,984)</u>
Subtotal	\$ 16,785,134	\$ 16,785,134
Total	\$ 23,182,737	\$ 22,276,145
Total Pension	\$ 15,982,661	\$ 15,419,975
Total Medical, Net of Part D Subsidy	\$ 7,200,076	\$ 6,856,170
Total Medical, Gross of Part D Subsidy	\$ 8,393,077	\$ 8,007,836

All Members

As of June 30, 2021	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
By Tier		
Tier 1		
- Pension	\$ 7,014,190	\$ 6,989,701
- Medical, Net of Part D Subsidy	2,631,002	2,608,277
Tier 2		
- Pension	4,506,289	4,404,639
- Medical, Net of Part D Subsidy	2,138,904	2,072,388
Tier 3		
- Pension	4,462,182	4,025,635
- Medical, Net of Part D Subsidy	2,430,170	2,175,505
Total	\$ 23,182,737	\$ 22,276,145

As of June 30, 2021	Normal Cost
Active Members	
Retirement Benefits	\$ 71,607
Termination Benefits	16,025
Disability Benefits	2,464
Death Benefits	2,354
Return of Contributions	8,060
Medical and Prescription Drug Benefits	67,532
Medicare Part D Subsidy	(7,350)
Rehire Assumption (Pension)	18,866
Rehire Assumption (Medical)	10,285
Administrative Expenses (Pension)	7,625
Administrative Expenses (Medical)	5,531
Total	\$ 202,999
Total Pension	\$ 127,001
Total Medical, Net of Part D Subsidy	\$ 75,998
Total Medical, Gross of Part D Subsidy	\$ 83,348

By Tier	
Tier 1	
- Pension	\$ 9,039
- Medical, Net of Part D Subsidy	8,215
Tier 2	
- Pension	27,507
- Medical, Net of Part D Subsidy	17,271
Tier 3	
- Pension	90,455
- Medical, Net of Part D Subsidy	50,512
Total	\$ 202,999

Section 1.2: Actuarial Contributions as of June 30, 2021 (\$'s in 000's)

Peace Officer / Firefighter

Normal Cost Rate	Pension	Healthcare	Total
1. Total Normal Cost	\$ 26,899	\$ 10,618	\$ 37,517
2. DB Rate Payroll Projected for FY22	147,739	147,739	147,739
3. DCR Rate Payroll Projected for FY22	220,974	220,974	220,974
4. Total Rate Payroll Projected for FY22	368,713	368,713	368,713
5. Normal Cost Rate			
a. Based on DB Rate Payroll, (1) ÷ (2)	18.21%	7.19%	25.39%
b. Based on Total Rate Payroll, (1) ÷ (4)	7.30%	2.88%	10.18%
6. Average Member Contribution Rate	3.01%	0.00%	3.01%
7. Employer Normal Cost, (5)(b) - (6)	4.29%	2.88%	7.17%

Past Service Rate	Pension	Healthcare	Total
1. Actuarial Accrued Liability	\$ 2,548,923	\$ 877,150	\$ 3,426,073
2. Valuation Assets ¹	1,730,148	1,097,837	2,827,985
3. Unfunded Actuarial Accrued Liability, (1) - (2)	\$ 818,775	\$ (220,687)	\$ 598,088
4. Funded Ratio, (2) ÷ (1)	67.9%	125.2%	82.5%
5. Past Service Cost Amortization Payment	63,731	(14,845)	48,886
6. Total Rate Payroll Projected for FY22	368,713	368,713	368,713
7. Past Service Rate, (5) ÷ (6)	17.28%	(4.03%)	17.28%
Total Employer / State Contribution Rate, not less than Normal Cost Rate	21.57%	2.88%	24.45%

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

Tier 1	20.67%	13.60%	34.27%
Tier 2	17.94%	6.64%	24.58%
Tier 3	18.22%	7.20%	25.42%

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	18	\$ 731,232	\$ 719,620	\$ 56,655
Change in Assumptions	6/30/2018	22	88,162	88,911	6,175
FY19 Loss	6/30/2019	23	61,980	62,436	4,225
FY20 Loss	6/30/2020	24	31,158	31,297	2,067
FY21 Gain	6/30/2021	25	(83,489)	(83,489)	(5,391)
Total				\$ 818,775	\$ 63,731

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	18	\$ (30,991)	\$ (30,499)	\$ (2,401)
Change in Assumptions/Methods/EGWP	6/30/2018	22	27,556	27,790	1,930
FY19 Gain	6/30/2019	23	(77,575)	(78,145)	(5,288)
FY20 Gain	6/30/2020	24	(38,036)	(38,206)	(2,524)
Medical and Prescription Drug Plan Chang	6/30/2021	25	(7,361)	(7,361)	(475)
FY21 Gain	6/30/2021	25	(94,266)	(94,266)	(6,087)
Total				\$ (220,687)	\$ (14,845)

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	18	\$ 700,241	\$ 689,121	\$ 54,254
Change in Assumptions/Methods/EGWP	6/30/2018	22	115,718	116,701	8,105
FY19 Gain	6/30/2019	23	(15,595)	(15,709)	(1,063)
FY20 Gain	6/30/2020	24	(6,878)	(6,909)	(457)
Medical and Prescription Drug Plan Chang	6/30/2021	25	(7,361)	(7,361)	(475)
FY21 Gain	6/30/2021	25	(177,755)	(177,755)	(11,478)
Total				\$ 598,088	\$ 48,886

Section 1.2: Actuarial Contributions as of June 30, 2021 (\$'s in 000's)

Others

Normal Cost Rate	Pension	Healthcare	Total
1. Total Normal Cost	\$ 100,102	\$ 65,380	\$ 165,482
2. DB Rate Payroll Projected for FY22	710,902	710,902	710,902
3. DCR Rate Payroll Projected for FY22	1,327,142	1,327,142	1,327,142
4. Total Rate Payroll Projected for FY22	2,038,044	2,038,044	2,038,044
5. Normal Cost Rate			
a. Based on DB Rate Payroll, (1) ÷ (2)	14.08%	9.20%	23.28%
b. Based on Total Rate Payroll, (1) ÷ (4)	4.91%	3.21%	8.12%
6. Average Member Contribution Rate	2.38%	0.00%	2.38%
7. Employer Normal Cost, (5)(b) - (6)	2.53%	3.21%	5.74%

Past Service Rate	Pension	Healthcare	Total
1. Actuarial Accrued Liability	\$ 12,871,052	\$ 5,979,020	\$ 18,850,072
2. Valuation Assets ¹	8,736,561	7,483,318	16,219,879
3. Unfunded Actuarial Accrued Liability, (1) - (2)	\$ 4,134,491	\$ (1,504,298)	\$ 2,630,193
4. Funded Ratio, (2) ÷ (1)	67.9%	125.2%	86.0%
5. Past Service Cost Amortization Payment	324,336	(99,791)	224,545
6. Total Rate Payroll Projected for FY22	2,038,044	2,038,044	2,038,044
7. Past Service Rate, (5) ÷ (6)	15.91%	(4.90%)	15.91%
Total Employer / State Contribution Rate, not less than Normal Cost Rate	18.44%	3.21%	21.65%

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

Tier 1	18.20%	16.71%	34.91%
Tier 2	13.31%	8.87%	22.18%
Tier 3	13.96%	8.57%	22.53%

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	18	\$ 3,889,167	\$ 3,827,409	\$ 301,329
Change in Assumptions	6/30/2018	22	467,280	471,245	32,732
FY19 Loss	6/30/2019	23	235,559	237,288	16,059
FY20 Loss	6/30/2020	24	93,343	93,760	6,193
FY21 Gain	6/30/2021	25	(495,211)	(495,211)	(31,977)
Total				\$ 4,134,491	\$ 324,336

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	18	\$ (47,263)	\$ (46,513)	\$ (3,662)
Change in Assumptions/Methods/EGWP	6/30/2018	22	22,293	22,482	1,562
FY19 Gain	6/30/2019	23	(553,265)	(557,331)	(37,718)
FY20 Gain	6/30/2020	24	(253,711)	(254,843)	(16,833)
Medical and Prescription Drug Plan Chang	6/30/2021	25	(54,446)	(54,446)	(3,516)
FY21 Gain	6/30/2021	25	(613,647)	(613,647)	(39,624)
Total				\$ (1,504,298)	\$ (99,791)

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	18	\$ 3,841,904	\$ 3,780,896	\$ 297,667
Change in Assumptions/Methods/EGWP	6/30/2018	22	489,573	493,727	34,294
FY19 Gain	6/30/2019	23	(317,706)	(320,043)	(21,659)
FY20 Gain	6/30/2020	24	(160,368)	(161,083)	(10,640)
Medical and Prescription Drug Plan Chang	6/30/2021	25	(54,446)	(54,446)	(3,516)
FY21 Gain	6/30/2021	25	(1,108,858)	(1,108,858)	(71,601)
Total				\$ 2,630,193	\$ 224,545

Section 1.2: Actuarial Contributions as of June 30, 2021 (\$'s in 000's)

All Members

Normal Cost Rate	Pension	Healthcare	Total
1. Total Normal Cost	\$ 127,001	\$ 75,998	\$ 202,999
2. DB Rate Payroll Projected for FY22	858,641	858,641	858,641
3. DCR Rate Payroll Projected for FY22	1,548,116	1,548,116	1,548,116
4. Total Rate Payroll Projected for FY22	2,406,757	2,406,757	2,406,757
5. Normal Cost Rate			
a. Based on DB Rate Payroll, (1) ÷ (2)	14.79%	8.85%	23.64%
b. Based on Total Rate Payroll, (1) ÷ (4)	5.28%	3.16%	8.44%
6. Average Member Contribution Rate ¹	2.47%	0.00%	2.47%
7. Employer Normal Cost, (5)(b) - (6)	2.81%	3.16%	5.97%

Past Service Rate	Pension	Healthcare	Total
1. Actuarial Accrued Liability	\$ 15,419,975	\$ 6,856,170	\$ 22,276,145
2. Valuation Assets	10,466,709	8,581,155	19,047,864
3. Unfunded Actuarial Accrued Liability, (1) - (2)	\$ 4,953,266	\$ (1,724,985)	\$ 3,228,281
4. Funded Ratio, (2) ÷ (1)	67.9%	125.2%	85.5%
5. Past Service Cost Amortization Payment	388,067	(114,636)	273,431
6. Total Rate Payroll Projected for FY22	2,406,757	2,406,757	2,406,757
7. Past Service Rate, (5) ÷ (6)	16.12%	(4.76%)	16.12%
Total Employer / State Contribution Rate, not less than Normal Cost Rate	18.93%	3.16%	22.09%

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

Tier 1	18.28%	16.61%	34.89%
Tier 2	13.78%	8.65%	22.43%
Tier 3	14.84%	8.29%	23.13%

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	18	\$ 4,620,399	\$ 4,547,029	\$ 357,984
Change in Assumptions	6/30/2018	22	555,442	560,156	38,907
FY19 Loss	6/30/2019	23	297,539	299,724	20,284
FY20 Loss	6/30/2020	24	124,501	125,057	8,260
FY21 Gain	6/30/2021	25	(578,700)	<u>(578,700)</u>	<u>(37,368)</u>
Total				\$ 4,953,266	\$ 388,067

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	18	\$ (78,254)	\$ (77,012)	\$ (6,063)
Change in Assumptions/Methods/EGWP	6/30/2018	22	49,849	50,272	3,492
FY19 Gain	6/30/2019	23	(630,840)	(635,476)	(43,006)
FY20 Gain	6/30/2020	24	(291,747)	(293,049)	(19,357)
Medical and Prescription Drug Plan Chang	6/30/2021	25	(61,807)	(61,807)	(3,991)
FY21 Gain	6/30/2021	25	(707,913)	<u>(707,913)</u>	<u>(45,711)</u>
Total				\$ (1,724,985)	\$ (114,636)

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	18	\$ 4,542,145	\$ 4,470,017	\$ 351,921
Change in Assumptions/Methods/EGWP	6/30/2018	22	605,291	610,428	42,399
FY19 Gain	6/30/2019	23	(333,301)	(335,752)	(22,722)
FY20 Gain	6/30/2020	24	(167,246)	(167,992)	(11,097)
Medical and Prescription Drug Plan Chang	6/30/2021	25	(61,807)	(61,807)	(3,991)
FY21 Gain	6/30/2021	25	(1,286,613)	<u>(1,286,613)</u>	<u>(83,079)</u>
Total				\$ 3,228,281	\$ 273,431

Section 1.3: Roll-Forward Contribution Rate Calculation for FY24 (\$'s in 000's)

	Pension	Healthcare	Total
1. Liability Roll Forward			
a. Actuarial Accrued Liability as of June 30, 2021	\$ 15,419,975	\$ 6,856,170	\$ 22,276,145
b. Normal Cost	119,376	70,467	189,843
c. Interest on (a) and (b) at 7.38%	1,146,804	511,186	1,657,990
d. Estimated Benefit Payments	(974,479)	(410,194)	(1,384,673)
e. Interest on (d) at 7.38%, adjusted for timing	<u>(38,319)</u>	<u>(14,867)</u>	<u>(53,186)</u>
f. Expected Actuarial Accrued Liability as of June 30, 2022	\$ 15,673,357	\$ 7,012,762	\$ 22,686,119
g. Projected Normal Cost	106,811	63,186	169,997
h. Interest on (f) and (g) at 7.38%	1,164,576	522,205	1,686,781
i. Estimated Benefit Payments	(1,023,259)	(429,353)	(1,452,612)
j. Interest on (i) at 7.38%, adjusted for timing	<u>(40,237)</u>	<u>(15,561)</u>	<u>(55,798)</u>
k. Expected Actuarial Accrued Liability as of June 30, 2023	\$ 15,881,248	\$ 7,153,239	\$ 23,034,487
2. Asset Roll Forward			
a. Actuarial Value of Assets as of June 30, 2021	\$ 10,466,709	\$ 8,581,155	\$ 19,047,864
b. Interest on (a) at 7.38%	772,443	633,289	1,405,732
c. Employee Contributions	65,405	0	65,405
d. Employer Contributions	404,768	75,091	479,859
e. State Assistance Contributions	97,700	0	97,700
f. Interest on (c) thru (e) at 7.38%, adjusted for timing*	24,251	2,722	26,973
g. Estimated Benefit Payments	(974,479)	(410,194)	(1,384,673)
h. Administrative Expenses	(7,625)	(5,531)	(13,156)
i. Interest on (g) and (h) at 7.38%, adjusted for timing	(38,595)	(15,067)	(53,662)
j. AVA Adjustments	<u>441,594</u>	<u>371,829</u>	<u>813,423</u>
k. Expected Actuarial Value of Assets as of June 30, 2022	\$ 11,252,171	\$ 9,233,294	\$ 20,485,465
l. Interest on (k) at 7.38%	830,410	681,417	1,511,827
m. Employee Contributions	60,574	0	60,574
n. Employer Contributions	410,773	0	410,773
o. State Assistance Contributions**	33,933	0	33,933
p. Interest on (m) thru (o) at 7.38%, adjusted for timing*	19,587	0	19,587
q. Estimated Benefit Payments	(1,023,259)	(429,353)	(1,452,612)
r. Administrative Expenses	(6,877)	(4,996)	(11,873)
s. Interest on (q) and (r) at 7.38%, adjusted for timing	(40,486)	(15,742)	(56,228)
t. AVA Adjustments	<u>413,313</u>	<u>344,736</u>	<u>758,049</u>
u. Expected Actuarial Value of Assets as of June 30, 2023	\$ 11,950,139	\$ 9,809,356	\$ 21,759,495
3. Expected Unfunded Actuarial Accrued Liability as of June 30, 2023, 1(k) - 2(u)			
	\$ 3,931,109	\$ (2,656,117)	\$ 1,274,992

* Employee and Employer Contributions are paid throughout the year. State Assistance Contributions are assumed to be paid on July 1, 2021 for FY22, and July 1, 2022 for FY23.

** The FY23 State Assistance Contribution is expected to be contributed 100% to pension.

	Pension	Healthcare	Total
4. Expected Annual Rate Payroll for FY24			
a. Defined Benefit Members			\$ 711,617
b. Defined Contribution Retirement Members			1,726,002
c. Total Rate Payroll			\$ 2,437,619
5. Expected FY24 Contribution Rate Calculation			
a. Projected Normal Cost for FY24	\$ 101,319	\$ 60,964	\$ 162,283
b. Projected Normal Cost Rate for FY24	4.16%	2.50%	6.66%
c. Expected Member Contribution Rate for FY24	(2.02%)	0.00%	(2.02%)
d. Expected Employer Normal Cost Rate for FY24	2.14%	2.50%	4.64%
e. Expected Unfunded Liability as of June 30, 2023	\$ 3,931,109	\$ (2,656,117)	\$ 1,274,992
f. FY24 Layered Amortization of Expected Unfunded Liability	350,577	(181,538)	169,039
g. Expected Past Service Cost Contribution Rate for FY24	14.38%	(7.45%)	14.38%
h. Expected Total Contribution Rate for FY24, not less than Normal Cost Rate	16.52%	2.50%	19.02%

The components of the expected FY24 amortization amounts are shown below (totals may not add due to rounding):

Expected FY24 Schedule of Past Service Cost Amortizations - Pension (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment for FY24
	Date Created	Years Remaining at 6/30/23	Initial	Outstanding at 6/30/23	
Initial Amount	6/30/2018	16	\$ 4,620,399	\$ 4,435,190	\$ 377,944
Change in Assumptions	6/30/2018	20	555,442	558,096	41,076
FY19 Loss	6/30/2019	21	297,539	299,829	21,415
FY20 Loss	6/30/2020	22	124,501	125,558	8,721
FY21 Gain	6/30/2021	23	(578,700)	(582,952)	(39,451)
Expected FY22 Gain	6/30/2022	24	(480,925)	(483,071)	(31,908)
Expected FY23 Gain	6/30/2023	25	(421,541)	(421,541)	(27,220)
Total				\$ 3,931,109	\$ 350,577

Expected FY24 Schedule of Past Service Cost Amortizations - Healthcare (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment for FY24
	Date Created	Years Remaining at 6/30/23	Initial	Outstanding at 6/30/23	
Initial Amount	6/30/2018	16	\$ (78,254)	\$ (75,118)	\$ (6,401)
Change in Assumptions/Methods/EGWP	6/30/2018	20	49,849	50,086	3,686
FY19 Gain	6/30/2019	21	(630,840)	(635,696)	(45,403)
FY20 Gain	6/30/2020	22	(291,747)	(294,222)	(20,436)
Medical and Prescription Drug Plan Chang	6/30/2021	23	(61,807)	(62,261)	(4,213)
FY21 Gain	6/30/2021	23	(707,913)	(713,116)	(48,260)
Expected FY22 Gain	6/30/2022	24	(491,339)	(493,531)	(32,599)
Expected FY23 Gain	6/30/2023	25	(432,259)	(432,259)	(27,912)
Total				\$ (2,656,117)	\$ (181,538)

The components of the expected FY24 amortization amounts are shown below (totals may not add due to rounding):

Expected FY24 Schedule of Past Service Cost Amortizations - Total (\$'s in 000's)

Layer	Amortization Period		Balances		Beginning-of-Year Payment for FY24
	Date Created	Years Remaining at 6/30/23	Initial	Outstanding at 6/30/23	
Initial Amount	6/30/2018	16	\$ 4,542,145	\$ 4,360,072	\$ 371,543
Change in Assumptions/Methods/EGWP	6/30/2018	20	605,291	608,182	44,762
FY19 Gain	6/30/2019	21	(333,301)	(335,867)	(23,988)
FY20 Gain	6/30/2020	22	(167,246)	(168,664)	(11,715)
Medical and Prescription Drug Plan Chang	6/30/2021	23	(61,807)	(62,261)	(4,213)
FY21 Gain	6/30/2021	23	(1,286,613)	(1,296,068)	(87,711)
Expected FY22 Gain	6/30/2022	24	(972,264)	(976,602)	(64,507)
Expected FY23 Gain	6/30/2023	25	(853,800)	(853,800)	(55,132)
Total				\$ 1,274,992	\$ 169,039

Section 1.4: Actuarial Gain/(Loss) for FY21 (\$'s in 000's)

	Pension	Healthcare	Total
1. Expected Actuarial Accrued Liability			
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. Employer Group Waiver Plan	0	52,545	52,545
e. Benefit Payments	(921,899)	(440,234)	(1,362,133)
f. Refund of Contributions	(8,107)	0	(8,107)
g. Interest on (d) thru (f) at 7.38%, adjusted for timing	(36,570)	(14,051)	(50,621)
h. Assumptions/Methods Changes	<u>0</u>	<u>0</u>	<u>0</u>
i. Expected Actuarial Accrued Liability as of June 30, 2021 (a) + (b) + (c) + (d) + (e) + (f) + (g) + (h)	\$ 15,580,808	\$ 7,239,894	\$ 22,820,702
2. Actual Actuarial Accrued Liability as of June 30, 2021	<u>15,419,975</u>	<u>6,856,170</u>	<u>22,276,145</u>
3. Liability Gain/(Loss), (1)(i) - (2)	\$ 160,833	\$ 383,724	\$ 544,557
4. Expected Actuarial Asset Value			
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	70,614	0	70,614
d. Employer Contributions	312,538	68,191	380,729
e. State Assistance Contributions	203,585	0	203,585
f. Employer Group Waiver Plan	0	52,545	52,545
g. Interest on (c) thru (f) at 7.38%, adjusted for timing	28,911	4,376	33,287
h. Benefit Payments	(921,899)	(440,234)	(1,362,133)
i. Refund of Contributions	(8,107)	0	(8,107)
j. Administrative Expenses	(8,232)	(4,859)	(13,091)
k. Interest on (h) thru (j) at 7.38%, adjusted for timing	<u>(36,868)</u>	<u>(16,132)</u>	<u>(53,000)</u>
l. Expected Actuarial Asset Value as of June 30, 2021 (a) + (b) + (c) + (d) + (e) + (f) + (g) + (h) + (i) + (j) + (k)	\$ 10,071,124	\$ 8,242,860	\$ 18,313,984
5. Actual Actuarial Asset Value as of June 30, 2021	<u>10,466,709</u>	<u>8,581,155</u>	<u>19,047,864</u>
6. Actuarial Asset Value Gain/(Loss), (5) - (4)(l)	\$ 395,585	\$ 338,295	\$ 733,880
7. Total Actuarial Gain/(Loss), (3) + (6)	\$ 556,418	\$ 722,019	\$ 1,278,437
8. Contribution Gain/(Loss)	\$ 23,056	\$ 47,438	\$ 70,494
9. Administrative Expense Gain/(Loss)	\$ (774)	\$ 263	\$ (511)
10. FY21 Gain/(Loss), (7) + (8) + (9)	\$ 578,700	\$ 769,720	\$ 1,348,420

Section 1.5: Development of Change in Unfunded Liability During FY21 (\$'s in 000's)

	Pension	Healthcare	Total
1. 2020 Unfunded Liability	\$ 5,565,815	\$ (952,808)	\$ 4,613,007
a. Interest on Unfunded Liability at 7.38%	\$ 410,757	\$ (70,317)	\$ 340,440
b. Normal Cost	130,592	79,891	210,483
c. Employee Contributions	(70,614)	0	(70,614)
d. Employer Contributions	(312,538)	(68,191)	(380,729)
e. State Assistance Contributions	(203,585)	0	(203,585)
f. Administrative Expenses	8,232	4,859	13,091
g. Interest on (b) thru (f) at 7.38%, adjusted for timing	(18,975)	3,600	(15,375)
h. Assumptions/Methods Changes	<u>0</u>	<u>0</u>	<u>0</u>
i. Expected Change in Unfunded Liability During FY21 (a) + (b) + (c) + (d) + (e) + (f) + (g) + (h)	\$ (56,131)	\$ (50,158)	\$ (106,289)
2. Expected 2021 Unfunded Liability, (1) + (1)(i)	\$ 5,509,684	\$ (1,002,966)	\$ 4,506,718
a. Liability (Gain)/Loss During FY21	\$ (160,833)	\$ (383,724)	\$ (544,557)
b. Actuarial Assets (Gain)/Loss During FY21	<u>(395,585)</u>	<u>(338,295)</u>	<u>(733,880)</u>
c. Total Actuarial (Gain)/Loss During FY21	\$ (556,418)	\$ (722,019)	\$ (1,278,437)
3. Actual 2021 Unfunded Liability, (2) + (2)(c)	\$ 4,953,266	\$ (1,724,985)	\$ 3,228,281

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				
	2017	2018	2019	2020	2021
1. Health Claims	N/A	N/A	N/A	N/A	N/A
2. Salary Experience	(0.36%)	(0.30%)	0.16%	(0.03%)	0.05%
3. Investment Experience	0.64%	0.52%	0.50%	0.44%	(1.06%)
4. Demographic Experience and Miscellaneous	(0.19%)	0.26%	(0.45%)	(0.19%)	(0.54%)
5. Actual vs Expected Contributions	<u>0.15%</u>	<u>0.14%</u>	<u>0.11%</u>	<u>0.15%</u>	<u>(0.06%)</u>
6. (Gain) or Loss During Year From Experience, (1) + (2) + (3) + (4) + (5)	0.24%	0.62%	0.32%	0.37%	(1.61%)
7. Assumptions / Method Changes	0.00%	1.65%	0.00%	0.00%	0.00%
8. Plan 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)	0.24%	2.27%	0.32%	0.37%	(1.61%)
10. Beginning Total Employer / State Contribution Rate	<u>17.34%</u>	<u>17.58%</u>	<u>19.85%</u>	<u>20.17%</u>	<u>20.54%</u>
11. Ending Valuation Year Employer / State Contribution Rate, (9) + (10)	17.58%	19.85%	20.17%	20.54%	18.93%
12. Fiscal Year Rates Adopted by ARMB					
a. Fiscal Year Employer / State Contribution Rate	18.29%	20.66%	20.89%	18.38%	16.52% *
b. Fiscal Year for which Rate Applies	FY20	FY21	FY22	FY23	FY24

* 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				
	2017	2018	2019	2020	2021
1. Health Claims	(2.46%)	(1.51%)	(2.39%)	(0.87%)	(0.12%)
2. Salary Experience	N/A	N/A	N/A	N/A	N/A
3. Investment Experience	0.51%	0.40%	0.38%	0.31%	0.00%
4. Demographic Experience and Miscellaneous	(0.48%)	(1.08%)	1.16%	0.38%	(0.26%)
5. Actual vs Expected Contributions	<u>(0.12%)</u>	<u>0.06%</u>	<u>0.02%</u>	<u>(0.16%)</u>	<u>0.00%</u>
6. (Gain) or Loss During Year From Experience, (1) + (2) + (3) + (4) + (5)	(2.55%)	(2.13%)	(0.83%)	(0.34%)	(0.38%)
7. Assumptions / Method Changes	2.89%	2.20%	0.00%	0.00%	0.00%
8. Plan Changes	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>(0.03%)</u>
9. Composite (Gain) or Loss During Year, (6) + (7) + (8)	0.34%	0.07%	(0.83%)	(0.34%)	(0.41%)
10. Beginning Total Employer / State Contribution Rate	<u>4.33%</u>	<u>4.67%</u>	<u>4.74%</u>	<u>3.91%</u>	<u>3.57%</u>
11. Ending Valuation Year Employer / State Contribution Rate, (9) + (10)	4.67%	4.74%	3.91%	3.57%	3.16%
12. Fiscal Year Rates Adopted by ARMB					
a. Fiscal Year Employer / State Contribution Rate	4.89%	4.27%	3.12%	0.00%	2.50% *
b. Fiscal Year for which Rate Applies	FY20	FY21	FY22	FY23	FY24

* Expected rate. Actual rate to be determined

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				
	2017	2018	Total 2019	2020	2021
1. Health Claims	(2.46%)	(1.51%)	(2.39%)	(0.87%)	(0.12%)
2. Salary Experience	(0.36%)	(0.30%)	0.16%	(0.03%)	0.05%
3. Investment Experience	1.15%	0.92%	0.88%	0.75%	(1.06%)
4. Demographic Experience and Miscellaneous	(0.67%)	(0.82%)	0.71%	0.19%	(0.80%)
5. Actual vs Expected Contributions	<u>0.03%</u>	<u>0.20%</u>	<u>0.13%</u>	<u>(0.01%)</u>	<u>(0.06%)</u>
6. (Gain) or Loss During Year From Experience, (1) + (2) + (3) + (4) + (5)	(2.31%)	(1.51%)	(0.51%)	0.03%	(1.99%)
7. Assumptions / Method Changes	2.89%	3.85%	0.00%	0.00%	0.00%
8. Plan Changes	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>(0.03%)</u>
9. Composite (Gain) or Loss During Year, (6) + (7) + (8)	0.58%	2.34%	(0.51%)	0.03%	(2.02%)
10. Beginning Total Employer / State Contribution Rate	<u>21.67%</u>	<u>22.25%</u>	<u>24.59%</u>	<u>24.08%</u>	<u>24.11%</u>
11. Ending Valuation Year Employer / State Contribution Rate, (9) + (10)	22.25%	24.59%	24.08%	24.11%	22.09%
12. Fiscal Year Rates Adopted by ARMB					
a. Fiscal Year Employer / State Contribution Rate	23.18%	24.93%	24.01%	18.38%	19.02% *
b. Fiscal Year for which Rate Applies	FY20	FY21	FY22	FY23	FY24

* Expected rate. Actual rate to be determined

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
June 30, 2021	22,276,145	19,047,864	85.5%	3,228,281

Section 2: Plan Assets

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

As of June 30, 2021	Pension	Healthcare	Total	Allocation Percent
Cash and Short-Term Investments				
- Cash and Cash Equivalents	\$ 136,182	\$ 99,250	\$ 235,432	1.2%
- Subtotal	\$ 136,182	\$ 99,250	\$ 235,432	1.2%
Fixed Income Investments				
- Domestic Fixed Income Pool	\$ 2,413,353	\$ 1,994,752	\$ 4,408,105	20.2%
- 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	\$ 2,413,353	\$ 1,994,752	\$ 4,408,105	20.2%
Equity Investments				
- Domestic Equity Pool	\$ 3,265,330	\$ 2,698,953	\$ 5,964,283	27.4%
- International Equity Pool	1,799,583	1,487,442	3,287,025	15.1%
- Private Equity Pool	1,770,792	1,463,644	3,234,436	14.9%
- Emerging Markets Equity Pool	382,294	315,985	698,279	3.2%
- Alternative Equity Strategies	695,474	574,842	1,270,316	5.8%
- Subtotal	\$ 7,913,473	\$ 6,540,866	\$ 14,454,339	66.4%
Other Investments				
- Real Estate Pool	\$ 732,171	\$ 606,137	\$ 1,338,308	6.1%
- Other Investments Pool	731,828	604,892	1,336,720	6.1%
- Absolute Return Pool	0	0	0	0.0%
- Other Assets	17	967	984	0.0%
- Subtotal	\$ 1,464,016	\$ 1,211,996	\$ 2,676,012	12.2%
Total Cash and Investments	\$ 11,927,024	\$ 9,846,864	\$ 21,773,888	100.0%
Net Accrued Receivables	(14,715)	(62,723)	(77,438)	
Net Assets	\$ 11,912,309	\$ 9,784,141	\$ 21,696,450	

Section 2.2: Changes in Fair Value of Assets During FY21 (\$'s in 000's)

Fiscal Year 2021	Pension	Healthcare	Total
1. Fair Value of Assets as of June 30, 2020	\$ 9,469,161	\$ 7,813,511	\$ 17,282,672
2. Additions:			
a. Employee Contributions	\$ 70,614	\$ 0	\$ 70,614
b. Employer Contributions	312,538	68,191	380,729
c. State Assistance Contributions	203,585	0	203,585
d. Interest and Dividend Income	132,757	109,764	242,521
e. Net Appreciation / Depreciation in Fair Value of Investments	2,688,309	2,206,395	4,894,704
f. Employer Group Waiver Plan	0	52,545	52,545
g. Other	<u>537</u>	<u>596</u>	<u>1,133</u>
h. Total Additions	\$ 3,408,340	\$ 2,437,491	\$ 5,845,831
3. Deductions:			
a. Medical Benefits	\$ 0	\$ 440,234	\$ 440,234
b. Retirement Benefits	921,899	0	921,899
c. Refund of Contributions	8,107	0	8,107
d. Investment Expenses	26,954	21,768	48,722
e. Administrative Expenses	<u>8,232</u>	<u>4,859</u>	<u>13,091</u>
f. Total Deductions	\$ 965,192	\$ 466,861	\$ 1,432,053
4. Fair Value of Assets as of June 30, 2021	\$ 11,912,309	\$ 9,784,141	\$ 21,696,450
5. Approximate Fair Value Investment Return Rate during FY21 Net of Investment Expenses	30.1%	30.0%	30.0%

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 FY21			
a. Fair Value of Assets as of June 30, 2020	\$ 9,469,161	\$ 7,813,511	\$ 17,282,672
b. Contributions	586,737	68,191	654,928
c. Employer Group Waiver Plan	0	52,545	52,545
d. Benefit Payments	930,006	440,234	1,370,240
e. Administrative Expenses	8,232	4,859	13,091
f. Actual Investment Return (net of investment expenses)	2,794,649	2,294,987	5,089,636
g. Expected Return Rate (net of investment expenses)	7.38%	7.38%	7.38%
h. Expected Return, Weighted for Timing	690,867	564,881	1,255,748
i. Investment Gain / (Loss) for the Year, (f) - (h)	2,103,782	1,730,106	3,833,888
2. Actuarial Value as of June 30, 2021			
a. Fair Value as of June 30, 2021	\$ 11,912,309	\$ 9,784,141	\$ 21,696,450
b. Deferred Investment Gain / (Loss)	1,445,600	1,202,986	2,648,586
c. Actuarial Value as of June 30, 2021, (a) - (b)	10,466,709	8,581,155	19,047,864
3. Ratio of Actuarial Value of Assets to Fair Value of Assets			
	87.9%	87.7%	87.8%
4. Approximate Actuarial Value Investment Return Rate during FY21 Net of Investment Expenses			
	11.6%	11.7%	11.6%

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, 2017	\$ 393,607	\$ 314,884	\$ 78,723	\$ 0
June 30, 2018	17,834	10,701	3,567	3,566
June 30, 2019	(136,242)	(54,496)	(27,248)	(54,498)
June 30, 2020	(310,824)	(62,165)	(62,165)	(186,494)
June 30, 2021	<u>2,103,782</u>	<u>0</u>	<u>420,756</u>	<u>1,683,026</u>
Total	\$ 2,068,157	\$ 208,924	\$ 413,633	\$ 1,445,600

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, 2017	\$ 341,151	\$ 272,920	\$ 68,231	\$ 0
June 30, 2018	30,997	18,597	6,199	6,201
June 30, 2019	(101,128)	(40,452)	(20,226)	(40,450)
June 30, 2020	(244,753)	(48,952)	(48,951)	(146,850)
June 30, 2021	<u>1,730,106</u>	<u>0</u>	<u>346,021</u>	<u>1,384,085</u>
Total	\$ 1,756,373	\$ 202,113	\$ 351,274	\$ 1,202,986

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, 2017	\$ 734,758	\$ 587,804	\$ 146,954	\$ 0
June 30, 2018	48,831	29,298	9,766	9,767
June 30, 2019	(237,370)	(94,948)	(47,474)	(94,948)
June 30, 2020	(555,577)	(111,117)	(111,116)	(333,344)
June 30, 2021	<u>3,833,888</u>	<u>0</u>	<u>766,777</u>	<u>3,067,111</u>
Total	\$ 3,824,530	\$ 411,037	\$ 764,907	\$ 2,648,586

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%
June 30, 2021	11.6%	6.9%	30.0%	7.6%

* Cumulative since fiscal year ending June 30, 2005

Section 3: Projections

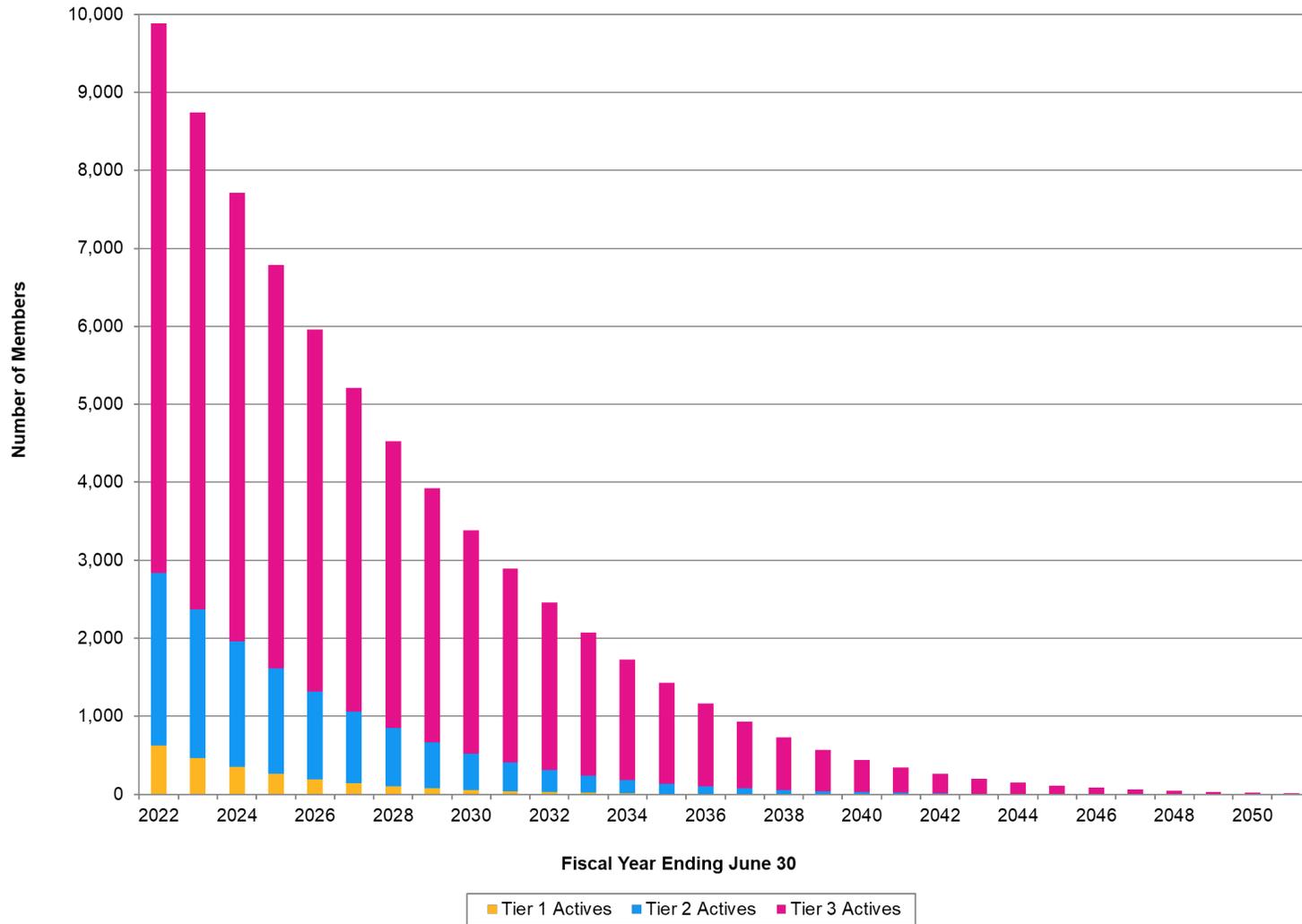
Section 3.1: Projection Assumptions and Methods

Key Assumptions

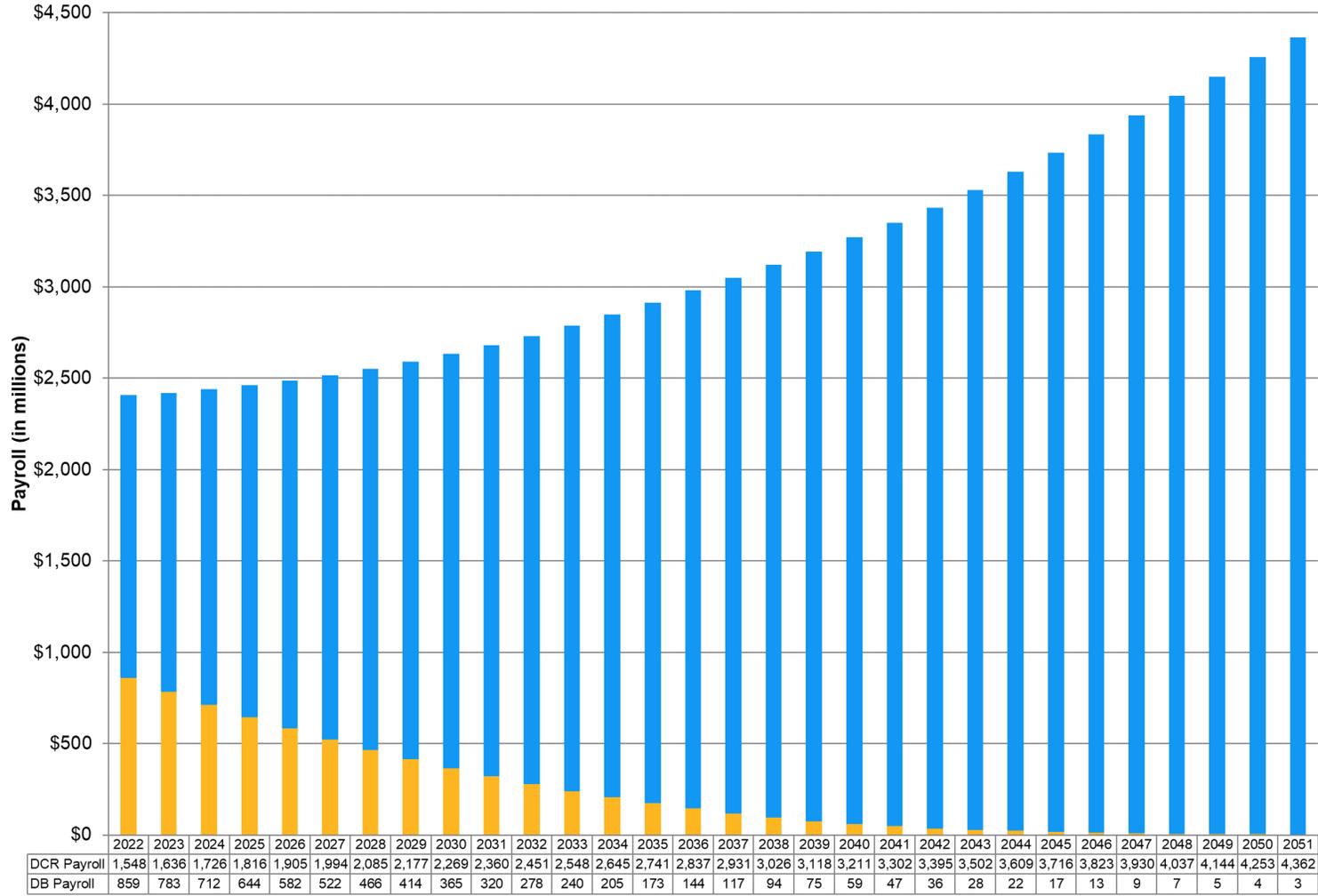
- 7.38% investment return (net of investment expenses) on the Fair Value of Assets in all future years.
- The Actuarial Value of Assets was re-initialized to Fair Value as of June 30, 2014. The Actuarial Value of Assets after June 30, 2014 reflects the deferred gains and losses generated by the smoothing 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, 2021.
- 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, 2021 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.
- The % of total DB/DCR payroll represented by the State's employees based on the June 30, 2021 data was assumed to remain constant in all future years.
- In Section 3.6B, we assumed all remaining pension unfunded liability layered amortization amounts would be zero after the pension trust is projected to reach a funded status of 100%.

Section 3.2: Membership Projection

Projected Active Member Count



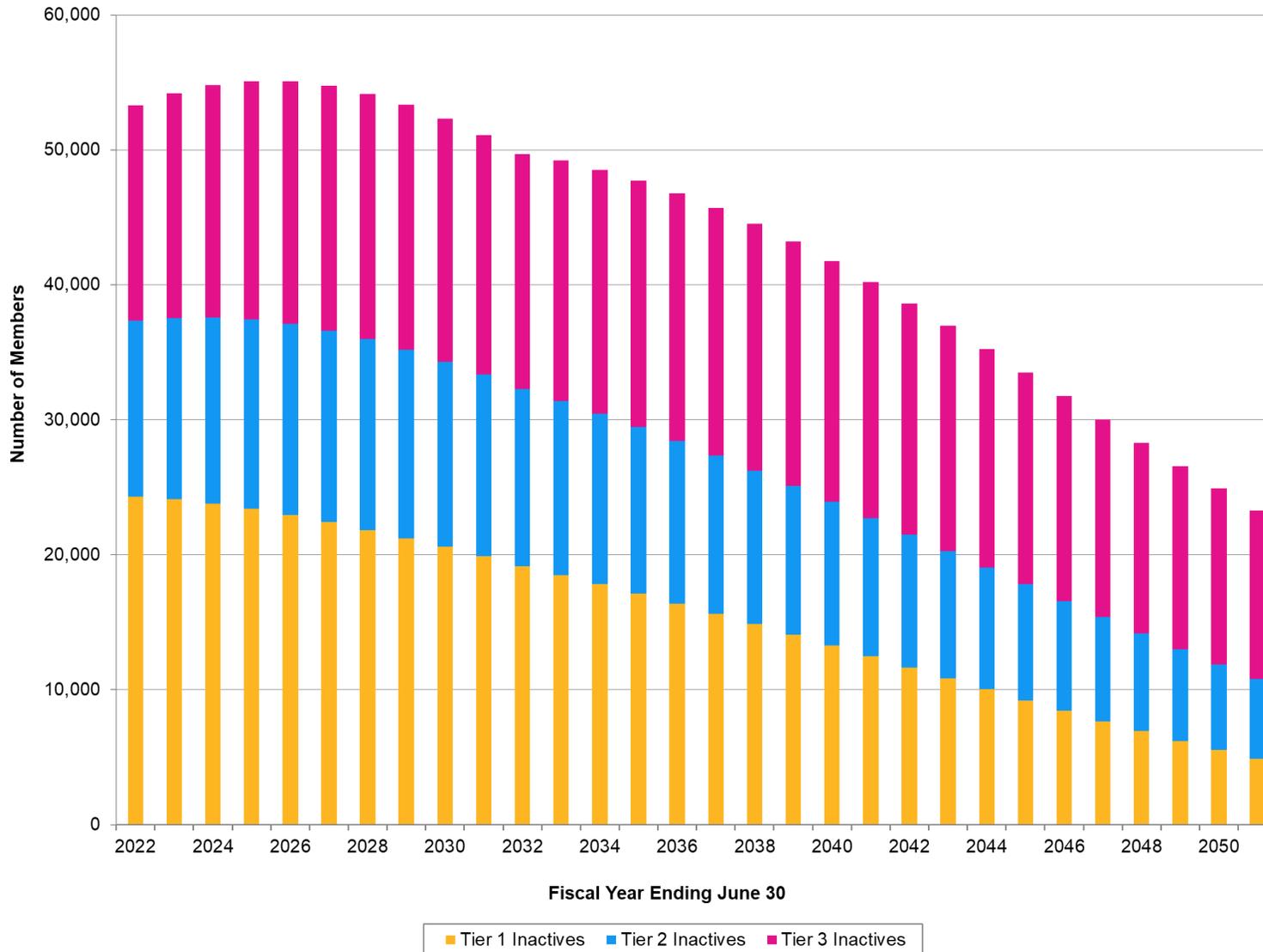
Projected DB and DCR Payroll



Fiscal Year Ending June 30

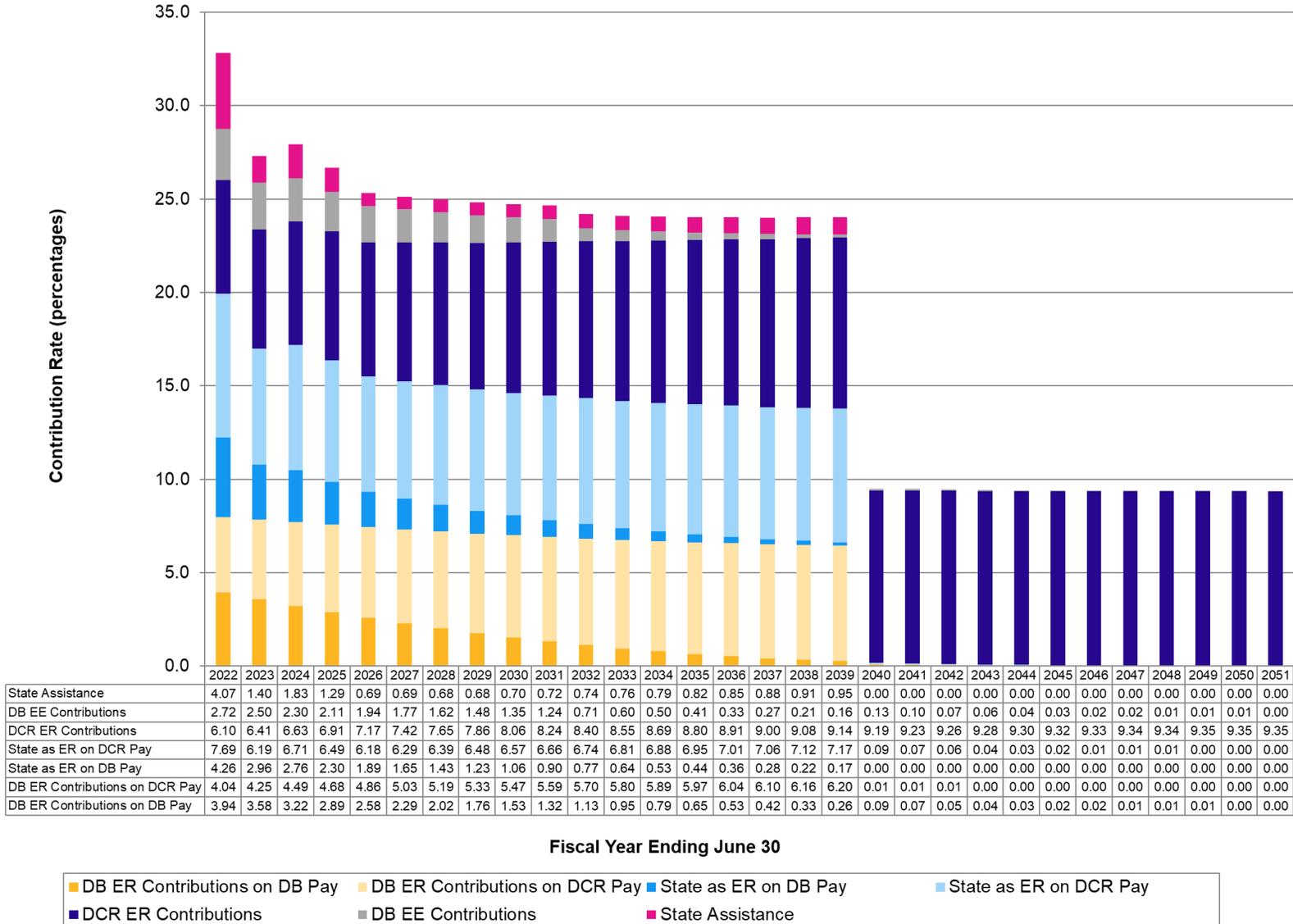


Projected Inactive Member Count

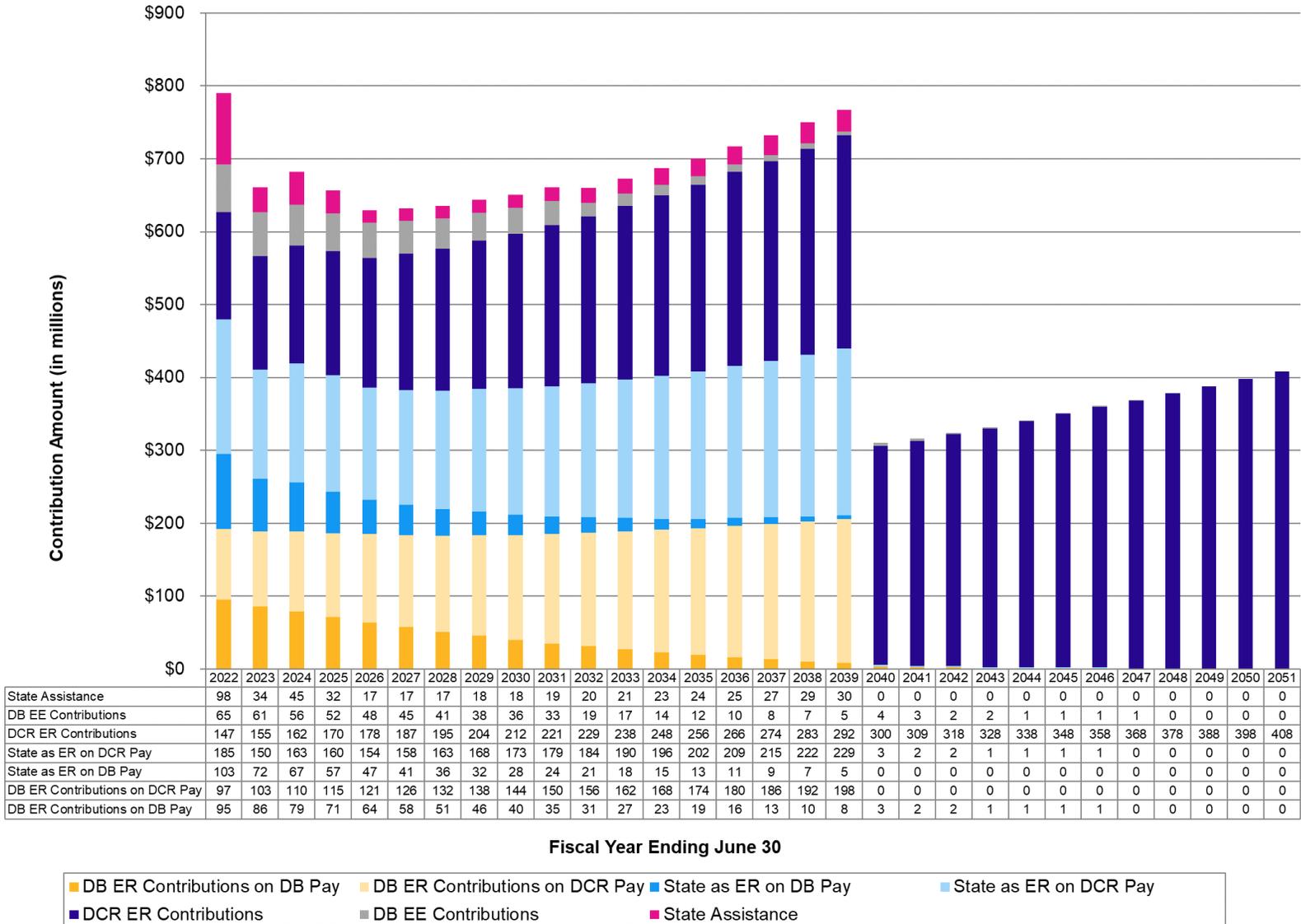


Section 3.3: Projected Employer/State Contribution Rates

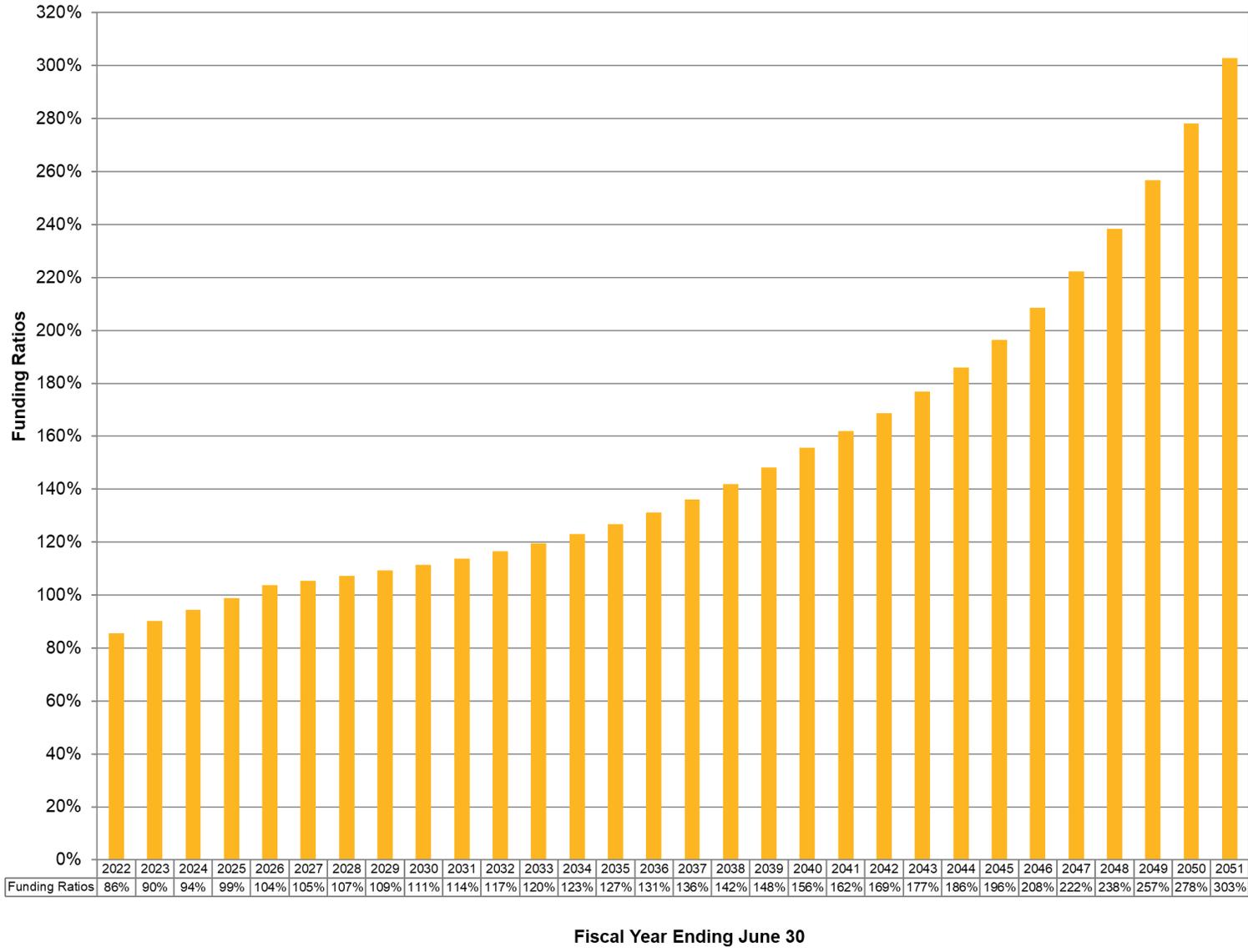
Based on Total DB and DCR Payroll



Section 3.4: Projected Employer/State Contribution Amounts



Section 3.5: Projection of Funded Ratios



Section 3.6A: 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	Actuarial Contrib. Rates			DB Contributions					Benefit Payments	
						DB	DCR	Total	Non-State Employers	State as an Employer	State Assistance	Employee	Total		
2022	\$ 19,047,864	\$ 22,276,145	85.5%	\$ 3,228,281	\$ 2,406,757	24.01%	6.10%	30.11%	\$ 192,141	\$ 287,718	\$ 97,700	\$ 65,405	\$ 642,964	\$ 1,384,673	\$ 2,030,628
2023	20,485,465	22,686,119	90.3%	2,200,654	2,419,276	18.38%	6.41%	24.79%	189,375	221,398	33,933	60,574	505,280	1,452,612	1,422,440
2024	21,759,495	23,034,487	94.5%	1,274,992	2,437,619	19.02%	6.63%	25.65%	188,118	230,844	44,673	56,077	519,712	1,519,487	766,777
2025	23,077,297	23,325,864	98.9%	248,567	2,459,924	17.66%	6.91%	24.57%	186,380	216,299	31,743	51,849	486,271	1,581,069	0
2026	24,457,146	23,553,712	103.8%	(903,434)	2,486,407	16.20%	7.17%	23.37%	185,141	200,553	17,103	48,126	450,923	1,639,102	0
2027	25,019,087	23,722,456	105.5%	(1,296,631)	2,515,962	15.95%	7.42%	23.37%	184,183	199,805	17,307	44,634	445,929	1,691,307	0
2028	25,564,111	23,834,711	107.3%	(1,729,400)	2,551,387	15.70%	7.65%	23.35%	183,830	199,443	17,294	41,406	441,973	1,743,410	0
2029	26,092,076	23,888,351	109.2%	(2,203,725)	2,591,246	15.49%	7.86%	23.35%	183,971	199,848	17,564	38,407	439,790	1,792,657	0
2030	26,606,454	23,882,931	111.4%	(2,723,523)	2,634,091	15.33%	8.06%	23.39%	184,367	201,056	18,384	35,618	439,425	1,841,559	0
2031	27,108,439	23,815,895	113.8%	(3,292,544)	2,680,313	15.20%	8.24%	23.44%	185,180	202,848	19,379	33,314	440,721	1,888,399	0
2032	27,600,920	23,686,165	116.5%	(3,914,755)	2,729,431	15.08%	8.40%	23.48%	186,380	204,935	20,283	19,379	430,977	1,921,262	0
2033	28,086,220	23,492,795	119.6%	(4,593,425)	2,788,219	14.97%	8.55%	23.52%	188,295	207,822	21,279	16,729	434,125	1,962,656	0
2034	28,568,243	23,233,706	123.0%	(5,334,537)	2,849,691	14.89%	8.69%	23.58%	190,443	211,269	22,607	14,248	438,567	1,997,145	0
2035	29,055,213	22,912,291	126.8%	(6,142,922)	2,913,742	14.83%	8.80%	23.63%	193,114	215,146	23,847	11,946	444,053	2,027,268	0
2036	29,553,053	22,529,016	131.2%	(7,024,037)	2,980,267	14.79%	8.91%	23.70%	195,878	219,465	25,439	9,835	450,617	2,052,266	0
2037	30,068,967	22,085,105	136.2%	(7,983,862)	3,048,570	14.75%	9.00%	23.75%	198,989	223,888	26,787	8,231	457,895	2,073,075	0
2038	30,609,336	21,582,882	141.8%	(9,026,454)	3,119,617	14.74%	9.08%	23.82%	202,374	228,950	28,508	6,551	466,383	2,084,652	0
2039	31,186,769	21,027,265	148.3%	(10,159,504)	3,192,990	14.75%	9.14%	23.89%	206,171	234,494	30,300	5,109	476,074	2,090,235	0
2040	31,811,419	20,421,271	155.8%	(11,390,148)	3,269,593	0.19%	9.19%	9.38%	3,119	3,093	0	4,250	10,462	2,085,624	0
2041	32,003,567	19,772,369	161.9%	(12,231,198)	3,349,104	0.15%	9.23%	9.38%	2,523	2,502	0	3,349	8,374	2,073,472	0
2042	32,220,543	19,085,708	168.8%	(13,134,835)	3,431,102	0.12%	9.26%	9.38%	2,067	2,050	0	2,402	6,519	2,052,889	0
2043	32,473,140	18,370,562	176.8%	(14,102,578)	3,530,182	0.08%	9.28%	9.36%	1,419	1,407	0	2,118	4,944	2,025,256	0
2044	32,771,570	17,627,087	185.9%	(15,144,483)	3,630,726	0.06%	9.30%	9.36%	1,094	1,085	0	1,452	3,631	1,985,697	0
2045	33,131,835	16,868,565	196.4%	(16,263,270)	3,732,491	0.05%	9.32%	9.37%	937	930	0	1,120	2,987	1,940,818	0
2046	33,564,699	16,099,675	208.5%	(17,465,024)	3,835,282	0.03%	9.33%	9.36%	578	573	0	767	1,918	1,889,001	0
2047	34,082,265	15,327,056	222.4%	(18,755,209)	3,939,244	0.02%	9.34%	9.36%	396	392	0	788	1,576	1,830,189	0
2048	34,698,782	14,557,874	238.4%	(20,140,908)	4,044,148	0.02%	9.34%	9.36%	406	402	0	404	1,212	1,769,122	0
2049	35,423,864	13,794,868	256.8%	(21,628,996)	4,149,573	0.01%	9.35%	9.36%	208	207	0	415	830	1,704,173	0
2050	36,269,528	13,042,643	278.1%	(23,226,885)	4,256,510	0.01%	9.35%	9.36%	214	212	0	426	852	1,639,176	0
2051	37,245,140	12,302,143	302.8%	(24,942,997)	4,365,118	0.01%	9.35%	9.36%	219	217	0	0	436	1,571,836	0
Total									\$ 3,437,510	\$ 3,918,851	\$ 514,130	\$ 584,929			

Pension unfunded liability layered amortization amounts are maintained after the pension trust is projected to be 100% funded.

Section 3.6A: 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
2022	67.9%	125.2%	85.5%	\$ 4,953,266	\$ (1,724,985)	\$ 3,228,281
2023	71.8%	131.7%	90.3%	4,421,186	(2,220,532)	2,200,654
2024	75.2%	137.1%	94.5%	3,931,109	(2,656,117)	1,274,992
2025	78.5%	144.0%	98.9%	3,447,316	(3,198,749)	248,567
2026	82.1%	151.6%	103.8%	2,902,436	(3,805,870)	(903,434)
2027	82.8%	154.7%	105.5%	2,789,764	(4,086,395)	(1,296,631)
2028	83.7%	158.2%	107.3%	2,658,891	(4,388,291)	(1,729,400)
2029	84.6%	161.9%	109.2%	2,508,543	(4,712,268)	(2,203,725)
2030	85.6%	166.1%	111.4%	2,337,173	(5,060,696)	(2,723,523)
2031	86.7%	170.7%	113.8%	2,142,666	(5,435,210)	(3,292,544)
2032	88.0%	175.8%	116.5%	1,922,957	(5,837,712)	(3,914,755)
2033	89.4%	181.5%	119.6%	1,675,797	(6,269,222)	(4,593,425)
2034	91.0%	187.9%	123.0%	1,398,102	(6,732,639)	(5,334,537)
2035	92.9%	195.1%	126.8%	1,087,337	(7,230,259)	(6,142,922)
2036	95.1%	203.1%	131.2%	741,041	(7,765,078)	(7,024,037)
2037	97.6%	212.2%	136.2%	355,919	(8,339,781)	(7,983,862)
2038	100.5%	222.5%	141.8%	(70,737)	(8,955,717)	(9,026,454)
2039	103.9%	234.2%	148.3%	(542,888)	(9,616,616)	(10,159,504)
2040	107.9%	247.4%	155.8%	(1,064,015)	(10,326,133)	(11,390,148)
2041	108.8%	262.5%	161.9%	(1,143,242)	(11,087,956)	(12,231,198)
2042	109.9%	279.6%	168.8%	(1,228,723)	(11,906,112)	(13,134,835)
2043	111.0%	299.1%	176.8%	(1,320,548)	(12,782,030)	(14,102,578)
2044	112.4%	321.5%	185.9%	(1,419,202)	(13,725,281)	(15,144,483)
2045	114.0%	347.0%	196.4%	(1,525,307)	(14,737,963)	(16,263,270)
2046	115.8%	376.0%	208.5%	(1,639,585)	(15,825,439)	(17,465,024)
2047	117.9%	409.0%	222.4%	(1,762,076)	(16,993,133)	(18,755,209)
2048	120.4%	446.5%	238.4%	(1,893,634)	(18,247,274)	(20,140,908)
2049	123.2%	489.1%	256.8%	(2,035,226)	(19,593,770)	(21,628,996)
2050	126.6%	537.5%	278.1%	(2,187,088)	(21,039,797)	(23,226,885)
2051	130.5%	592.8%	302.8%	(2,350,329)	(22,592,668)	(24,942,997)

Pension unfunded liability layered amortization amounts are maintained after the pension trust is projected to be 100% funded.

Section 3.6B: 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	Actuarial Contrib. Rates			DB Contributions					Benefit Payments	
						DB	DCR	Total	Non-State Employers	State as an Employer	State Assistance	Employee	Total		
2022	\$ 19,047,864	\$ 22,276,145	85.5%	\$ 3,228,281	\$ 2,406,757	24.01%	6.10%	30.11%	\$ 192,141	\$ 287,718	\$ 97,700	\$ 65,405	\$ 642,964	\$ 1,384,673	\$ 2,030,628
2023	20,485,465	22,686,119	90.3%	2,200,654	2,419,276	18.38%	6.41%	24.79%	189,375	221,398	33,933	60,574	505,280	1,452,612	1,422,440
2024	21,759,495	23,034,487	94.5%	1,274,992	2,437,619	19.02%	6.63%	25.65%	188,118	230,844	44,673	56,077	519,712	1,519,487	766,777
2025	23,077,297	23,325,864	98.9%	248,567	2,459,924	17.66%	6.91%	24.57%	186,380	216,299	31,743	51,849	486,271	1,581,069	0
2026	24,457,146	23,553,712	103.8%	(903,434)	2,486,407	16.20%	7.17%	23.37%	185,141	200,553	17,103	48,126	450,923	1,639,102	0
2027	25,019,087	23,722,456	105.5%	(1,296,631)	2,515,962	15.95%	7.42%	23.37%	184,183	199,805	17,307	44,634	445,929	1,691,307	0
2028	25,564,111	23,834,711	107.3%	(1,729,400)	2,551,387	15.70%	7.65%	23.35%	183,830	199,443	17,294	41,406	441,973	1,743,410	0
2029	26,092,076	23,888,351	109.2%	(2,203,725)	2,591,246	15.49%	7.86%	23.35%	183,971	199,848	17,564	38,407	439,790	1,792,657	0
2030	26,606,454	23,882,931	111.4%	(2,723,523)	2,634,091	15.33%	8.06%	23.39%	184,367	201,056	18,384	35,618	439,425	1,841,559	0
2031	27,108,439	23,815,895	113.8%	(3,292,544)	2,680,313	15.20%	8.24%	23.44%	185,180	202,848	19,379	33,314	440,721	1,888,399	0
2032	27,600,920	23,686,165	116.5%	(3,914,755)	2,729,431	15.08%	8.40%	23.48%	186,380	204,935	20,283	19,379	430,977	1,921,262	0
2033	28,086,220	23,492,795	119.6%	(4,593,425)	2,788,219	14.97%	8.55%	23.52%	188,295	207,822	21,279	16,729	434,125	1,962,656	0
2034	28,568,243	23,233,706	123.0%	(5,334,537)	2,849,691	14.89%	8.69%	23.58%	190,443	211,269	22,607	14,248	438,567	1,997,145	0
2035	29,055,213	22,912,291	126.8%	(6,142,922)	2,913,742	14.83%	8.80%	23.63%	193,114	215,146	23,847	11,946	444,053	2,027,268	0
2036	29,553,053	22,529,016	131.2%	(7,024,037)	2,980,267	14.79%	8.91%	23.70%	195,878	219,465	25,439	9,835	450,617	2,052,266	0
2037	30,068,967	22,085,105	136.2%	(7,983,862)	3,048,570	14.75%	9.00%	23.75%	198,989	223,888	26,787	8,231	457,895	2,073,075	0
2038	30,609,336	21,582,882	141.8%	(9,026,454)	3,119,617	0.34%	9.08%	9.42%	5,326	5,281	0	6,551	17,158	2,084,652	0
2039	30,720,192	21,027,265	146.1%	(9,692,927)	3,192,990	0.26%	9.14%	9.40%	4,168	4,134	0	5,109	13,411	2,090,235	0
2040	30,829,839	20,421,271	151.0%	(10,408,568)	3,269,593	0.19%	9.19%	9.38%	3,119	3,093	0	4,250	10,462	2,085,624	0
2041	30,949,547	19,772,369	156.5%	(11,177,178)	3,349,104	0.15%	9.23%	9.38%	2,523	2,502	0	3,349	8,374	2,073,472	0
2042	31,088,736	19,085,708	162.9%	(12,003,028)	3,431,102	0.12%	9.26%	9.38%	2,067	2,050	0	2,402	6,519	2,052,889	0
2043	31,257,806	18,370,562	170.2%	(12,887,244)	3,530,182	0.08%	9.28%	9.36%	1,419	1,407	0	2,118	4,944	2,025,256	0
2044	31,466,545	17,627,087	178.5%	(13,839,458)	3,630,726	0.06%	9.30%	9.36%	1,094	1,085	0	1,452	3,631	1,985,697	0
2045	31,730,499	16,868,565	188.1%	(14,861,934)	3,732,491	0.05%	9.32%	9.37%	937	930	0	1,120	2,987	1,940,818	0
2046	32,059,944	16,099,675	199.1%	(15,960,269)	3,835,282	0.03%	9.33%	9.36%	578	573	0	767	1,918	1,889,001	0
2047	32,466,459	15,327,056	211.8%	(17,139,403)	3,939,244	0.02%	9.34%	9.36%	396	392	0	788	1,576	1,830,189	0
2048	32,963,730	14,557,874	226.4%	(18,405,856)	4,044,148	0.02%	9.34%	9.36%	406	402	0	404	1,212	1,769,122	0
2049	33,560,765	13,794,868	243.3%	(19,765,897)	4,149,573	0.01%	9.35%	9.36%	208	207	0	415	830	1,704,173	0
2050	34,268,932	13,042,643	262.7%	(21,226,289)	4,256,510	0.01%	9.35%	9.36%	214	212	0	426	852	1,639,176	0
2051	35,096,900	12,302,143	285.3%	(22,794,757)	4,365,118	0.01%	9.35%	9.36%	219	217	0	0	436	1,571,836	0
Total									\$ 3,038,459	\$ 3,464,822	\$ 455,322	\$ 584,929			

Pension unfunded liability layered amortization amounts are reduced to zero when the pension trust is projected to be 100% funded. The healthcare unfunded liability amortization amounts would also be reduced to zero since the healthcare trust is currently more than 100% funded.

Section 3.6B: 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
2022	67.9%	125.2%	85.5%	\$ 4,953,266	\$ (1,724,985)	\$ 3,228,281
2023	71.8%	131.7%	90.3%	4,421,186	(2,220,532)	2,200,654
2024	75.2%	137.1%	94.5%	3,931,109	(2,656,117)	1,274,992
2025	78.5%	144.0%	98.9%	3,447,316	(3,198,749)	248,567
2026	82.1%	151.6%	103.8%	2,902,436	(3,805,870)	(903,434)
2027	82.8%	154.7%	105.5%	2,789,764	(4,086,395)	(1,296,631)
2028	83.7%	158.2%	107.3%	2,658,891	(4,388,291)	(1,729,400)
2029	84.6%	161.9%	109.2%	2,508,543	(4,712,268)	(2,203,725)
2030	85.6%	166.1%	111.4%	2,337,173	(5,060,696)	(2,723,523)
2031	86.7%	170.7%	113.8%	2,142,666	(5,435,210)	(3,292,544)
2032	88.0%	175.8%	116.5%	1,922,957	(5,837,712)	(3,914,755)
2033	89.4%	181.5%	119.6%	1,675,797	(6,269,222)	(4,593,425)
2034	91.0%	187.9%	123.0%	1,398,102	(6,732,639)	(5,334,537)
2035	92.9%	195.1%	126.8%	1,087,337	(7,230,259)	(6,142,922)
2036	95.1%	203.1%	131.2%	741,041	(7,765,078)	(7,024,037)
2037	97.6%	212.2%	136.2%	355,919	(8,339,781)	(7,983,862)
2038	100.5%	222.5%	141.8%	(70,737)	(8,955,717)	(9,026,454)
2039	100.6%	234.2%	146.1%	(76,311)	(9,616,616)	(9,692,927)
2040	100.6%	247.4%	151.0%	(82,435)	(10,326,133)	(10,408,568)
2041	100.7%	262.5%	156.5%	(89,222)	(11,087,956)	(11,177,178)
2042	100.8%	279.6%	162.9%	(96,916)	(11,906,112)	(12,003,028)
2043	100.9%	299.1%	170.2%	(105,214)	(12,782,030)	(12,887,244)
2044	101.0%	321.5%	178.5%	(114,177)	(13,725,281)	(13,839,458)
2045	101.1%	347.0%	188.1%	(123,971)	(14,737,963)	(14,861,934)
2046	101.3%	376.0%	199.1%	(134,830)	(15,825,439)	(15,960,269)
2047	101.5%	409.0%	211.8%	(146,270)	(16,993,133)	(17,139,403)
2048	101.7%	446.5%	226.4%	(158,582)	(18,247,274)	(18,405,856)
2049	102.0%	489.1%	243.3%	(172,127)	(19,593,770)	(19,765,897)
2050	102.3%	537.5%	262.7%	(186,492)	(21,039,797)	(21,226,289)
2051	102.6%	592.8%	285.3%	(202,089)	(22,592,668)	(22,794,757)

Pension unfunded liability layered amortization amounts are reduced to zero when the pension trust is projected to be 100% funded. The healthcare unfunded liability amortization amounts would also be reduced to zero since the healthcare trust is currently more than 100% funded.

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
2022	37,717	\$ 974,479	2064	4,967	\$ 433,043
2023	39,219	1,023,259	2065	4,396	395,909
2024	40,483	1,070,386	2066	3,878	360,533
2025	41,478	1,114,086	2067	3,411	326,935
2026	42,213	1,154,914	2068	2,989	295,126
2027	42,715	1,194,307	2069	2,609	265,117
2028	42,995	1,232,455	2070	2,268	236,912
2029	43,078	1,267,441	2071	1,962	210,515
2030	43,000	1,300,547	2072	1,690	185,925
2031	42,776	1,330,695	2073	1,447	163,136
2032	42,387	1,345,678	2074	1,232	142,139
2033	41,884	1,368,593	2075	1,042	122,918
2034	41,242	1,387,229	2076	876	105,446
2035	40,483	1,401,876	2077	731	89,683
2036	39,591	1,413,159	2078	604	75,579
2037	38,627	1,420,047	2079	496	63,070
2038	37,549	1,421,411	2080	403	52,079
2039	36,347	1,417,753	2081	325	42,522
2040	35,040	1,407,945	2082	259	34,303
2041	33,642	1,393,880	2083	204	27,322
2042	32,180	1,374,647	2084	159	21,469
2043	30,677	1,350,546	2085	122	16,633
2044	29,118	1,322,273	2086	93	12,693
2045	27,551	1,289,338	2087	70	9,539
2046	25,964	1,252,998	2088	52	7,052
2047	24,386	1,213,386	2089	38	5,130
2048	22,812	1,171,109	2090	28	3,669
2049	21,266	1,126,517	2091	20	2,583
2050	19,762	1,080,001	2092	14	1,789
2051	18,303	1,032,106	2093	11	1,222
2052	16,890	983,276	2094	7	826
2053	15,533	933,864	2095	5	553
2054	14,234	884,229	2096	4	370
2055	12,998	834,705	2097	3	249
2056	11,828	785,605	2098	2	170
2057	10,728	737,196	2099	2	118
2058	9,699	689,711	2100	1	85
2059	8,741	643,344	2101	1	62
2060	7,853	598,258	2102	1	48
2061	7,035	554,586	2103	1	38
2062	6,283	512,440	2104	0	0
2063	5,594	471,903	2105	0	0

Counts include retirees, disabilitants, and beneficiaries.

Section 4: Member Data

Section 4.1: Summary of Members Included

As of June 30	2017	2018	2019	2020	2021
Active Members					
1. Number	14,719	13,434	12,152	11,033	9,888 ¹
2. Average Age	52.10	52.52	52.84	53.21	53.51
3. Average Credited Service	16.57	17.21	17.80	18.38	18.96
4. Average Entry Age	35.53	35.30	35.04	34.83	34.55
5. Average Annual Earnings	\$ 76,902	\$ 77,813	\$ 82,192	\$ 83,757	\$ 86,316
6. Number Vested	14,314	13,103	11,868	10,791	9,675
7. Percent Who Are Vested	97.2%	97.5%	97.7%	97.8%	97.8%
Retirees, Disabilitants, and Beneficiaries					
1. Number	34,347	35,454	36,310	37,106	37,717
2. Average Age	69.42	69.85	70.29	70.77	71.17
3. Average Years Since Retirement	11.71	11.87	12.14	12.45	12.66
4. Average Monthly Pension Benefit					
a. Base	\$ 1,574	\$ 1,616	\$ 1,660	\$ 1,704	\$ 1,752
b. COLA ²	93	94	92	93	94
c. PRPA ²	230	222	241	244	230
d. Adjustment	1	1	1	0	0
e. Total	\$ 1,898	\$ 1,933	\$ 1,994	\$ 2,041	\$ 2,076
Vested Terminations (vested at termination, not refunded contributions, or commenced benefit)					
1. Number	5,962	5,660	5,499	5,327	5,135
2. Average Age	52.45	52.56	53.06	53.52	53.92
3. Average Monthly Pension Benefit	\$ 1,080	\$ 1,087	\$ 1,123	\$ 1,158	\$ 1,205
Non-Vested Terminations (not vested at termination, not refunded contributions)					
1. Number	11,506	11,192	10,921	10,642	10,432
2. Average Account Balance	\$ 6,462	\$ 6,558	\$ 6,923	\$ 7,060	\$ 7,325
Total Number of Members	66,534	65,740	64,882	64,108	63,172

¹ Includes 4,643 male active members and 5,245 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, 2021	DB				DCR Tier 4	Grand Total
	Tier 1	Tier 2	Tier 3	Total		
Active Members						
1. Number	622	2,219	7,047	9,888	23,933	33,821
2. Average Age	63.38	56.77	51.61	53.51	41.26	44.84
3. Average Credited Service	23.72	23.30	17.17	18.96	4.93	9.03
4. Average Entry Age	39.66	33.47	34.44	34.55	36.33	35.81
5. Annual Earnings						
a. Total (000's)	\$ 49,598	\$ 198,403	\$ 605,488	\$ 853,489	\$ 1,530,905	\$ 2,384,394
b. Average	\$ 79,740	\$ 89,411	\$ 85,921	\$ 86,316	\$ 63,966	\$ 70,500

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

As of June 30, 2021	Tier 1	Tier 2	Tier 3	Total
Retirees, Disabilitants, and Beneficiaries				
1. Number	23,077	9,340	5,300	37,717
2. Average Age	72.84	69.13	67.42	71.17
3. Average Years Since Retirement	15.90	8.64	5.59	12.66
4. Average Monthly Pension Benefit				
a. Base	\$ 1,766	\$ 1,913	\$ 1,405	\$ 1,752
b. COLA	119	59	46	94
c. PRPA	325	100	43	230
d. Adjustment	0	1	1	0
e. Total	\$ 2,210	\$ 2,073	\$ 1,495	\$ 2,076

Summary of Members Included

As of June 30, 2021	Inactive Members					Total Inactive Members
	Active Members	Retirees	Covered Spouses	Covered Children / Dependents	Deferred	
Retiree Medical Participants						
1. Retiree Coverage Only	9,817	19,421	0	0	2,153	21,574
2. Retiree + Spouse	0	12,647	12,647	0	3,281	28,575
3. Retiree + Children / Dependents	0	413	0	412	0	825
4. Family	0	773	773	1,112	0	2,658
5. Total	9,817	33,254	13,420	1,524	5,434	53,632

As of June 30, 2021	Retirees	Covered Spouses	Covered Children / Dependents	Deferred	Total Inactive Members
Retiree Medical Participants					
1. Pre-Medicare	7,134	4,641	1,524	5,260	18,559
2. Medicare Part A & B	25,889	8,730	0	174	34,793
3. Medicare Part B Only	231	49	0	0	280
4. Total	33,254	13,420	1,524	5,434	53,632

As of June 30, 2021	Retirees
Summary of Retiree Medical Data Received	
1. Retiree records on pension data	37,717
2. Remove duplicates on pension data	(1,163)
3. Valued in a different retiree healthcare plan ¹	(1,146)
4. Records without medical coverage	(2,305)
5. Medical only retirees	151
6. Total	33,254

¹ Each member's retiree medical benefits are valued in the plan indicated in the data from Aetna
State of Alaska Public Employees' Retirement System

Summary of Members Included

Active Members – DB Only

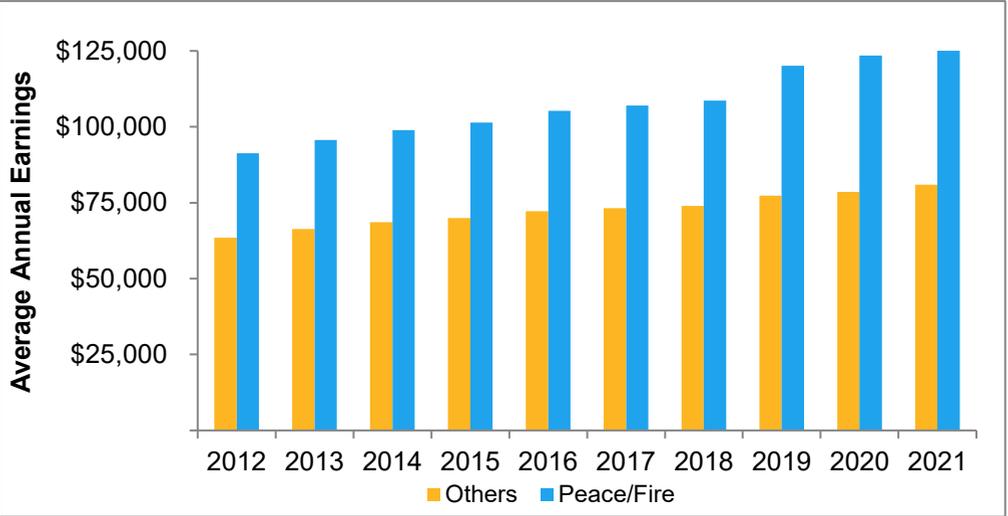
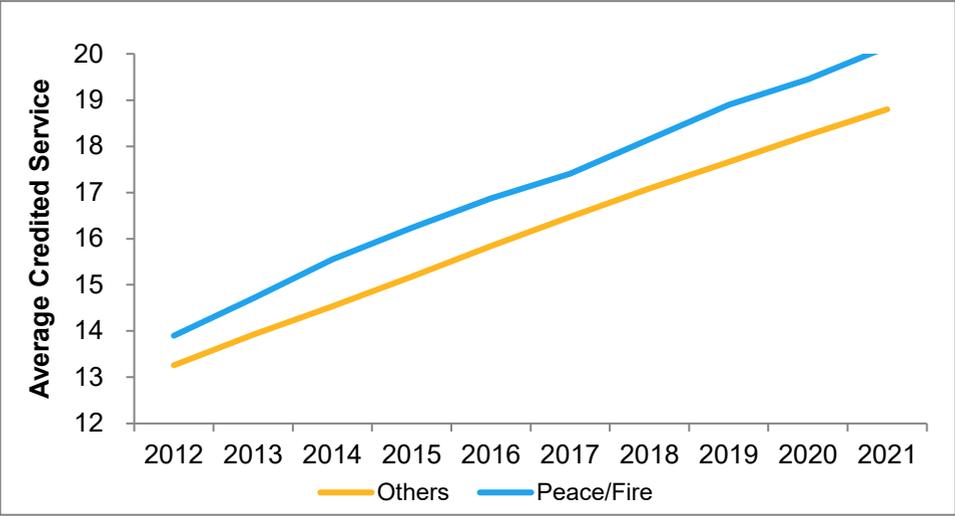
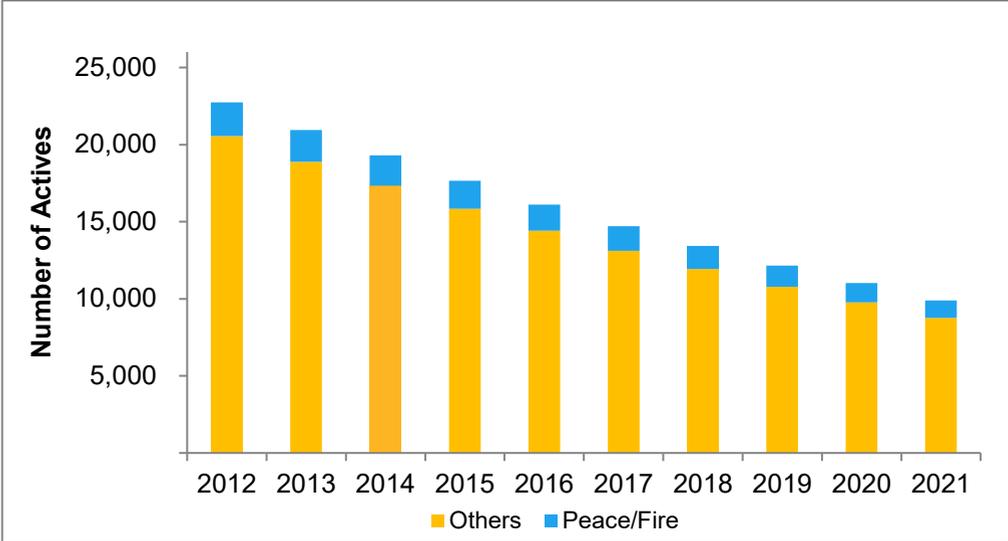
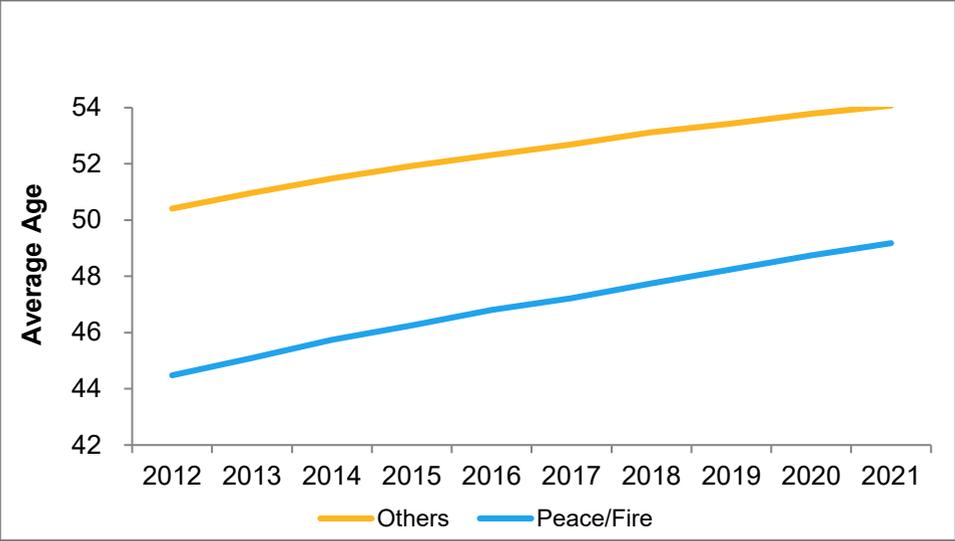
As of June 30	2017	2018	2019	2020	2021
Peace Officer / Firefighter					
1. Number	1,606	1,507	1,382	1,266	1,137 ¹
2. Average Age	47.22	47.75	48.25	48.74	49.18
3. Average Credited Service	17.41	18.15	18.90	19.45	20.15
4. Average Entry Age	29.81	29.60	29.35	29.29	29.03
5. Average Annual Earnings	\$ 106,987	\$ 108,580	\$ 120,089	\$ 123,436	\$ 127,327
6. Number Vested	1,599	1,500	1,374	1,260	1,134
7. Percent Who Are Vested	99.6%	99.5%	99.4%	99.5%	99.7%
Others					
1. Number	13,113	11,927	10,770	9,767	8,751 ²
2. Average Age	52.70	53.12	53.43	53.79	54.07
3. Average Credited Service	16.47	17.09	17.66	18.24	18.80
4. Average Entry Age	36.23	36.03	35.77	35.55	35.27
5. Average Annual Earnings	\$ 73,218	\$ 73,926	\$ 77,329	\$ 78,613	\$ 80,987
6. Number Vested	12,715	11,603	10,494	9,531	8,541
7. Percent Who Are Vested	97.0%	97.3%	97.4%	97.6%	97.6%
Total					
1. Number	14,719	13,434	12,152	11,033	9,888
2. Average Age	52.10	52.52	52.84	53.21	53.51
3. Average Credited Service	16.57	17.21	17.80	18.38	18.96
4. Average Entry Age	35.53	35.30	35.04	34.83	34.55
5. Average Annual Earnings	\$ 76,902	\$ 77,813	\$ 82,192	\$ 83,757	\$ 86,316
6. Number Vested	14,314	13,103	11,868	10,791	9,675
7. Percent Who Are Vested	97.2%	97.5%	97.7%	97.8%	97.8%

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

¹ Includes 975 male active members and 162 female active members.

² Includes 3,668 male active members and 5,083 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	1	149,735	149,735
35 - 39	82	10,000,382	121,956
40 - 44	211	27,523,104	130,441
45 - 49	342	44,289,542	129,502
50 - 54	298	38,709,607	129,898
55 - 59	154	18,406,191	119,521
60 - 64	39	4,580,412	117,446
65 - 69	9	1,003,897	111,544
70 - 74	0	0	0
75+	1	108,235	108,235
Total	1,137	\$ 144,771,105	\$ 127,327

Annual Earnings by Credited Service

Years of Service	Number	Total Annual Earnings	Average Annual Earnings
0	0	\$ 0	\$ 0
1	0	0	0
2	2	112,128	56,064
3	0	0	0
4	1	72,120	72,120
0 - 4	3	\$ 184,248	\$ 61,416
5 - 9	14	1,250,847	89,346
10 - 14	64	6,186,036	96,657
15 - 19	520	64,179,398	123,422
20 - 24	372	50,328,887	135,293
25 - 29	137	19,319,401	141,018
30 - 34	24	2,885,555	120,231
35 - 39	1	201,624	201,624
40+	2	235,109	117,555
Total	1,137	\$ 144,771,105	\$ 127,327

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
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	1	0	0	0	0	0	1
35 - 39	0	6	10	65	1	0	0	0	0	82
40 - 44	1	3	11	143	52	1	0	0	0	211
45 - 49	1	1	12	145	143	40	0	0	0	342
50 - 54	0	2	15	87	124	64	6	0	0	298
55 - 59	1	2	11	64	44	23	9	0	0	154
60 - 64	0	0	4	12	7	8	7	0	1	39
65 - 69	0	0	1	3	1	1	2	1	0	9
70 - 74	0	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	1	1
Total	3	14	64	520	372	137	24	1	2	1,137

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	21	1,707,881	81,328
35 - 39	381	29,552,174	77,565
40 - 44	946	78,062,108	82,518
45 - 49	1,375	116,242,301	84,540
50 - 54	1,770	149,031,703	84,199
55 - 59	2,222	178,695,225	80,421
60 - 64	1,345	103,071,893	76,633
65 - 69	513	39,229,659	76,471
70 - 74	143	10,647,337	74,457
75+	35	2,477,974	70,799
Total	8,751	\$ 708,718,255	\$ 80,987

Annual Earnings by Credited Service

Years of Service	Number	Total Annual Earnings	Average Annual Earnings
0	14	\$ 610,926	\$ 43,638
1	21	950,377	45,256
2	51	2,731,908	53,567
3	51	2,643,493	51,833
4	55	3,225,895	58,653
0 - 4	192	\$ 10,162,599	\$ 52,930
5 - 9	478	29,009,387	60,689
10 - 14	1,287	86,078,633	66,883
15 - 19	3,388	273,611,478	80,759
20 - 24	2,024	179,443,910	88,658
25 - 29	982	92,070,037	93,758
30 - 34	310	29,705,129	95,823
35 - 39	69	6,757,881	97,940
40+	21	1,879,201	89,486
Total	8,751	\$ 708,718,255	\$ 80,987

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
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	1	6	11	3	0	0	0	0	0	21
35 - 39	26	45	114	193	3	0	0	0	0	381
40 - 44	34	74	191	532	114	1	0	0	0	946
45 - 49	33	86	201	611	377	66	1	0	0	1,375
50 - 54	36	96	227	642	500	225	44	0	0	1,770
55 - 59	28	83	293	722	565	401	118	12	0	2,222
60 - 64	21	55	175	467	323	186	89	27	2	1,345
65 - 69	11	21	55	167	111	83	44	15	6	513
70 - 74	2	11	16	38	23	18	13	11	11	143
75+	0	1	4	13	8	2	1	4	2	35
Total	192	478	1,287	3,388	2,024	982	310	69	21	8,751

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

	Active Members	Inactive Members					Total
		Due a Refund	Deferred Benefits	Retired Members	Disabled Members	Bene-ficiaries	
As of June 30, 2020	11,033	10,642	5,327	32,536 *	149	4,436	64,123
Vested Terminations	(366)	(8)	376	0	(2)	0	0
Non-Vested Terminations	(37)	37	0	0	0	0	0
Refund of Contributions	(10)	(152)	(31)	0	0	(6)	(199)
Disability Retirements	(12)	0	(6)	0	18	0	0
Age Retirements	(873)	(17)	(406)	1,316	(20)	0	0
Deaths With Beneficiary	(15)	1	(10)	(357)	(3)	384	0
Deaths Without Beneficiary	(13)	(26)	(7)	(469)	(3)	(266)	(784)
Expired Benefits	(2)	0	0	0	0	(3)	(5)
Data Corrections	0	(7)	(5)	1	0	(18)	(29)
Converted To DCR Plan	0	0	0	0	0	0	0
Transfers In/Out	2	0	(2)	(3)	0	(1)	(4)
Rehires	177	(62)	(102)	(12)	0	0	1
Pick Ups***	4	24	1	3	0	52	84
Net Change	(1,145)	(210)	(192)	479	(10)	142	(936)
As of June 30, 2021	9,888	10,432	5,135	33,015 **	139	4,578	63,187

* Includes 15 medical only retirees

** Includes 15 medical only retirees

*** Pickup beneficiaries are primarily new DROs.

Member Data Reconciliation

Healthcare

	Inactive Members					Total Inactive Members
	Active Members	Retirees	Covered Spouses	Covered Children / Dependents	Deferred	
As of June 30, 2020	10,908	32,857	13,323	1,493	5,591	53,264
Vested Terminations	(340)	0	0	0	340	340
Non-Vested Terminations	(36)	0	0	0	0	0
Refund of Contributions	(10)	0	0	0	(27)	(27)
Disability Retirements	(12)	12	8	1	0	21
Age Retirements	(757)	757	386	118	0	1,261
Deferred Retirements	0	286	143	32	(286)	175
Retired without Medical Coverage	(86)	0	0	0	86	86
Deceased	(25)	(913)	(91)	(13)	(27)	(1,044)
New Beneficiaries	0	153	(153)	0	0	0
Added Retiree Medical Coverage	0	113	46	5	(113)	51
Added Dependent Coverage	0	0	110	83	0	193
Dropped Retiree Medical Coverage	0	(12)	(4)	(4)	12	(8)
Dropped Dependent Coverage	0	0	(345)	(190)	0	(535)
Rehires	177	(12)	(3)	(2)	(142)	(159)
Transfers In/Out	(2)	13	0	1	0	14
Net Change	(1,091)	397	97	31	(157)	368
As of June 30, 2021	9,817	33,254	13,420	1,524	5,434	53,632

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, 2021	1,137	\$ 144,771	\$ 127,327	3.2%	151
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

Others

Valuation Date	Number	Annual Earnings (000's)	Annual Average Earnings	Percent Increase in Average Earnings	Number of Participating Employers
June 30, 2021	8,751	\$ 708,718	\$ 80,987	3.0%	151
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

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 FY21 in employer list	\$ 2,242,794
b) DRB actual reported salaries FY21 in valuation data	2,186,265
c) Annualized valuation data	2,384,394
d) Valuation payroll as of June 30, 2021	2,480,990
e) Rate payroll for FY22	2,406,757
f) Rate payroll for FY24	2,437,619

-
- a) Actual reported salaries from DRB employer listing showing all payroll paid during FY21, including those who were not active as of June 30, 2021
 - b) Payroll from valuation data for people who are in active status as of June 30, 2021
 - 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	2017	2018	2019	2020	2021
Service					
1. Number	119	105	109	118	129
2. Average Age at Commencement	56.65	55.70	55.61	55.52	55.30
3. Average Monthly Pension Benefit	\$ 4,166	\$ 4,519	\$ 4,412	\$ 5,199	\$ 5,248
Survivor (including surviving spouse and DROs)					
1. Number	42	44	36	43	58
2. Average Age at Commencement	62.88	63.76	68.19	67.92	64.58
3. Average Monthly Pension Benefit	\$ 1,797	\$ 2,187	\$ 1,842	\$ 1,785	\$ 1,971
Disability					
1. Number	4	4	4	3	4
2. Average Age at Commencement	49.33	46.56	50.44	51.72	52.10
3. Average Monthly Pension Benefit	\$ 2,427	\$ 3,230	\$ 3,071	\$ 5,276	\$ 2,890
Total					
1. Number	165	153	149	164	191
2. Average Age at Commencement	58.06	57.78	58.51	58.70	58.05
3. Average Monthly Pension Benefit	\$ 3,521	\$ 3,814	\$ 3,755	\$ 4,305	\$ 4,204

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 7/1/2020 – 6/30/2021:							
Average Monthly Pension	\$ 2,612	\$ 767	\$ 1,619	\$ 3,711	\$ 5,196	\$ 6,960	\$ 7,970
Number of Recipients	2	5	9	26	42	40	9
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

“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	2017	2018	2019	2020	2021
Service					
1. Number	1,393	1,419	1,288	1,166	1,171
2. Average Age at Commencement	61.40	62.19	61.38	61.70	62.03
3. Average Monthly Pension Benefit	\$ 2,404	\$ 2,477	\$ 2,540	\$ 2,701	\$ 2,693
Survivor (including surviving spouse and DROs)					
1. Number	292	261	238	297	391
2. Average Age at Commencement	67.12	70.38	69.25	72.09	72.34
3. Average Monthly Pension Benefit	\$ 1,150	\$ 1,120	\$ 1,249	\$ 1,204	\$ 1,265
Disability					
1. Number	14	28	17	9	14
2. Average Age at Commencement	52.43	53.80	52.95	54.21	53.39
3. Average Monthly Pension Benefit	\$ 2,405	\$ 1,896	\$ 2,313	\$ 2,422	\$ 2,587
Total					
1. Number	1,699	1,708	1,543	1,472	1,576
2. Average Age at Commencement	62.31	63.31	62.50	63.75	64.51
3. Average Monthly Pension Benefit	\$ 2,189	\$ 2,260	\$ 2,339	\$ 2,397	\$ 2,338

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 7/1/2020 – 6/30/2021:							
Average Monthly Pension	\$ 553	\$ 628	\$ 1,317	\$ 2,213	\$ 3,091	\$ 4,607	\$ 6,054
Number of Recipients	17	163	228	281	194	188	114
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

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

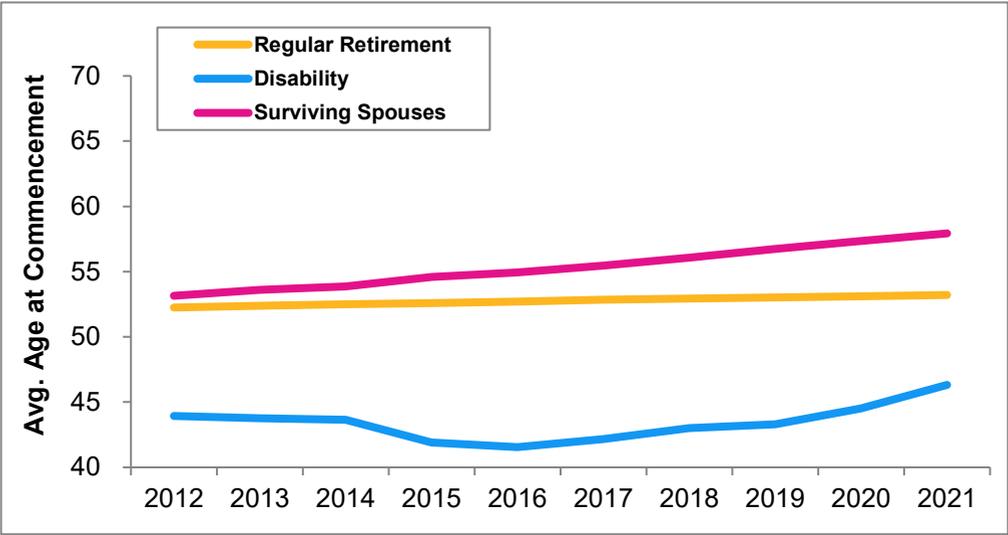
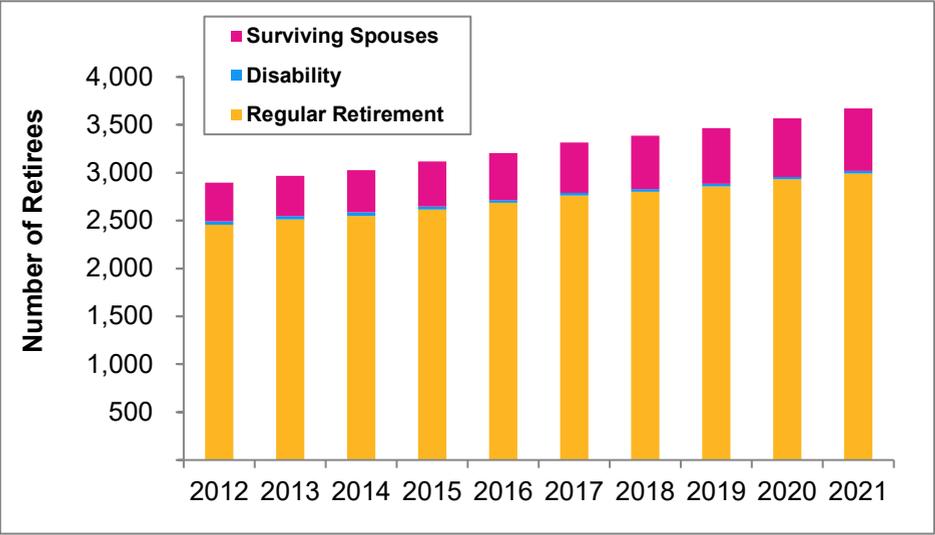
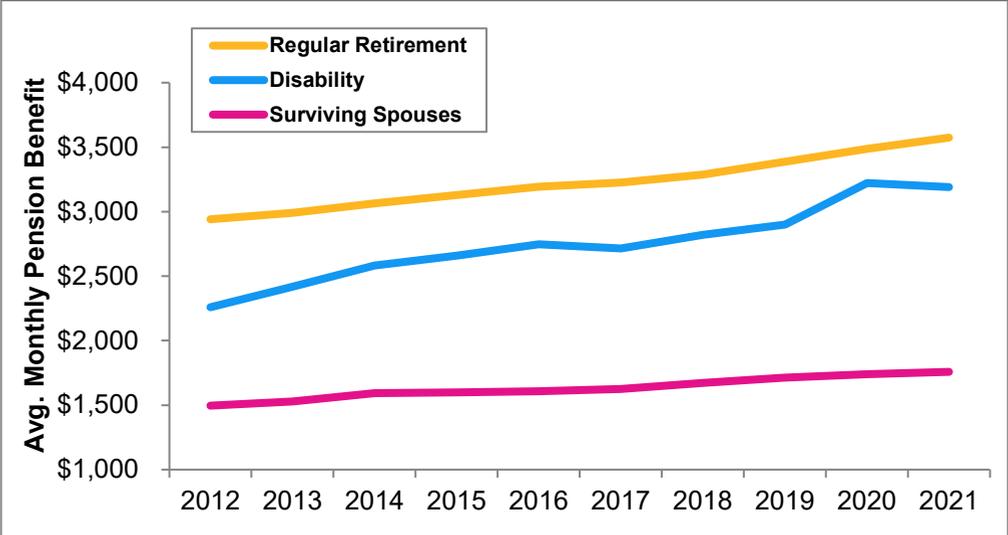
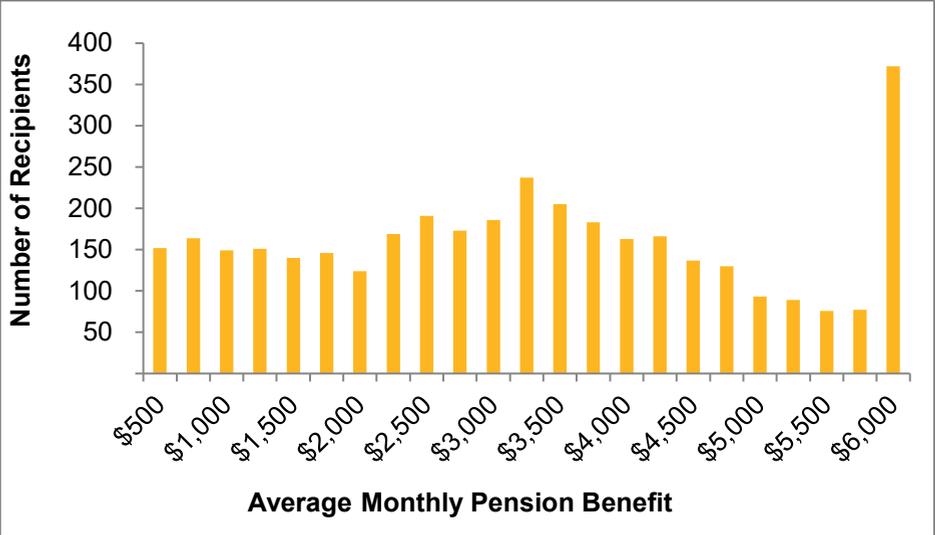
Beneficiaries are not included in the table above.

Section 4.7: Summary of All Pension Benefit Recipients

	Peace Officer / Firefighter	Others
Service		
1. Number as of June 30, 2020	2,931	29,590
2. Net Change During FY21	60	419
3. Number as of June 30, 2021	2,991	30,009
4. Average Age at Commencement	53.21	58.45
5. Average Current Age	68.46	71.24
6. Average Monthly Pension Benefit	\$ 3,574	\$ 2,057
Survivors (including surviving spouses and DROs)		
1. Number as of June 30, 2020	611	3,825
2. Net Change During FY21	45	97
3. Number as of June 30, 2021	656	3,922
4. Average Age at Commencement	57.93	63.52
5. Average Current Age	69.52	73.48
6. Average Monthly Pension Benefit	\$ 1,758	\$ 1,120
Disability		
1. Number as of June 30, 2020	26	123
2. Net Change During FY21	0	(10)
3. Number as of June 30, 2021	26	113
4. Average Age at Commencement	46.32	46.10
5. Average Current Age	51.35	55.06
6. Average Monthly Pension Benefit	\$ 3,189	\$ 1,970
Total		
1. Number as of June 30, 2020	3,568	33,538
2. Net Change During FY21	105	506
3. Number as of June 30, 2021	3,673	34,044
4. Average Age at Commencement	54.00	58.99
5. Average Current Age	68.53	71.44
6. Average Monthly Pension Benefit	\$ 3,247	\$ 1,949

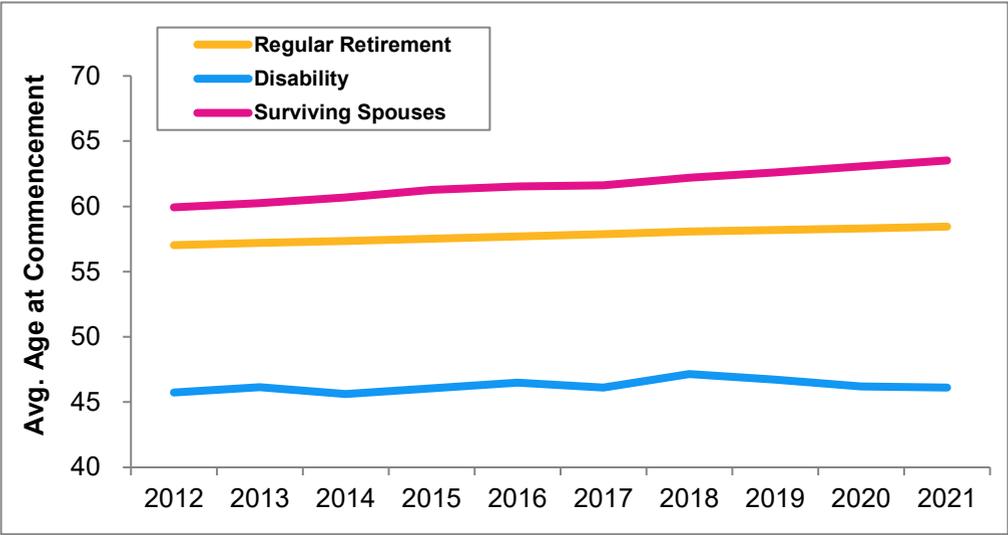
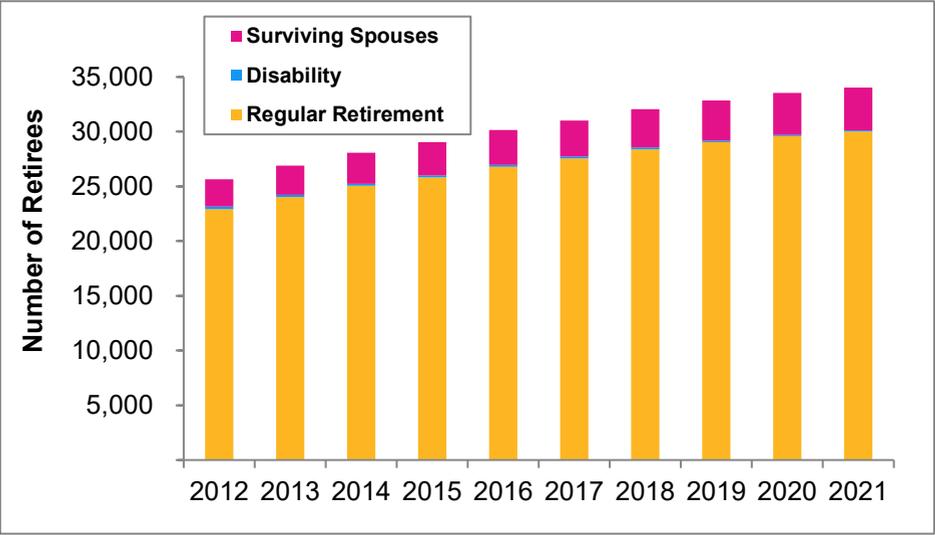
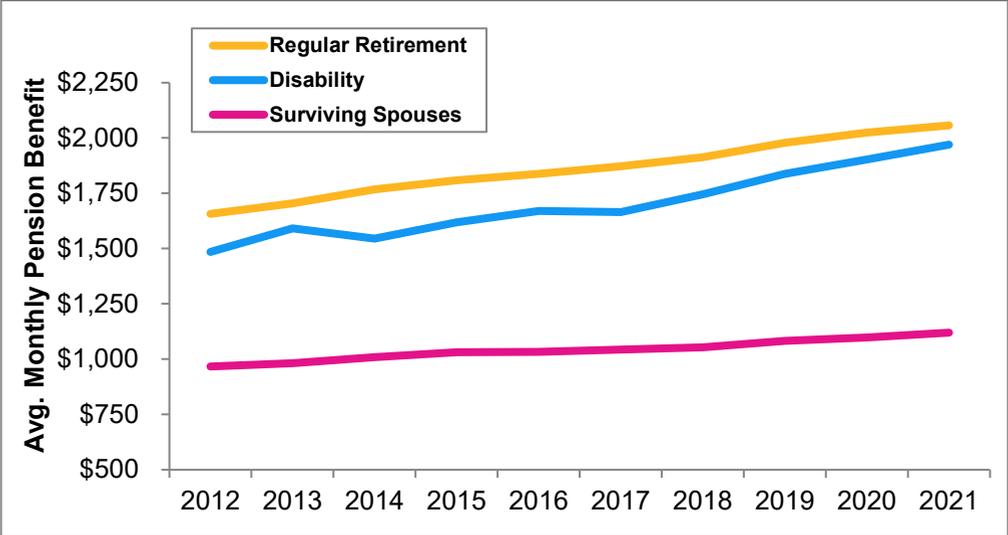
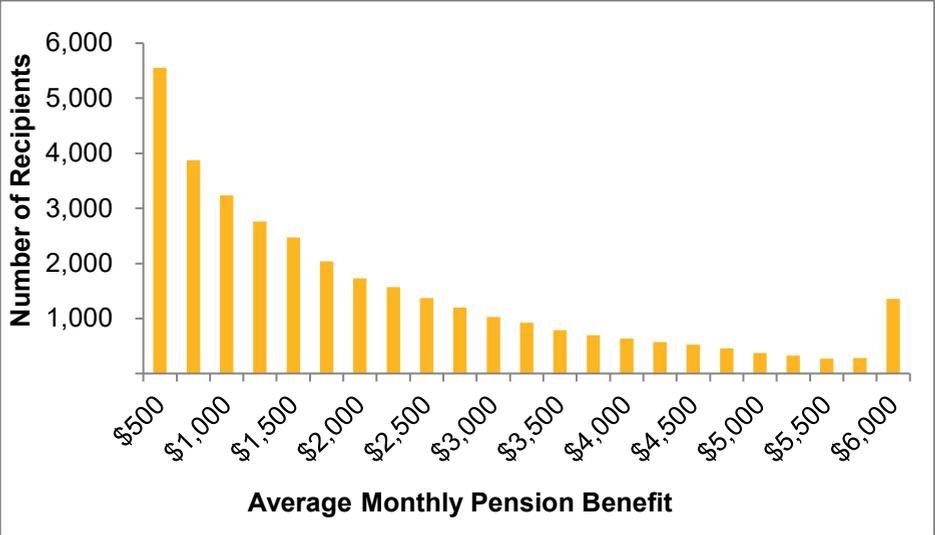
Summary of All Pension Benefit Recipients

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	1	57,465	57,465
40 - 44	13	583,451	44,881
45 - 49	78	4,380,328	56,158
50 - 54	215	12,336,820	57,381
55 - 59	324	16,323,478	50,381
60 - 64	607	23,982,868	39,510
65 - 69	777	27,706,706	35,659
70 - 74	803	28,357,790	35,315
75+	855	29,388,739	34,373
Total	3,673	\$ 143,117,645	\$ 38,965

Annual Pension Benefit by Years Since Commenced

Years Since Comm.	Number	Total Annual Pension Benefit	Average Annual Pension Benefit
0	200	\$ 10,277,339	\$ 51,387
1	155	8,093,071	52,213
2	152	6,797,168	44,718
3	133	6,097,594	45,847
4	169	7,165,651	42,400
0 - 4	809	\$ 38,430,823	\$ 47,504
5 - 9	581	23,847,931	41,046
10 - 14	545	16,936,288	31,076
15 - 19	630	20,887,127	33,154
20 - 24	621	22,321,128	35,944
25 - 29	203	7,853,908	38,689
30 - 34	212	9,808,110	46,265
35 - 39	45	2,108,485	46,855
40+	27	923,845	34,216
Total	3,673	\$ 143,117,645	\$ 38,965

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	1	0	0	0	0	0	0	0	0	1
40 - 44	10	1	2	0	0	0	0	0	0	13
45 - 49	63	14	1	0	0	0	0	0	0	78
50 - 54	153	49	11	0	2	0	0	0	0	215
55 - 59	180	87	39	14	2	2	0	0	0	324
60 - 64	195	148	112	122	30	0	0	0	0	607
65 - 69	92	168	162	200	135	15	2	2	1	777
70 - 74	52	66	162	193	215	74	31	5	5	803
75+	63	48	56	101	237	112	179	38	21	855
Total	809	581	545	630	621	203	212	45	27	3,673

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	0	0	0
30 - 34	2	70,193	35,097
35 - 39	5	75,774	15,155
40 - 44	9	130,847	14,539
45 - 49	34	450,340	13,245
50 - 54	158	4,979,060	31,513
55 - 59	1,196	38,955,221	32,571
60 - 64	5,770	162,252,318	28,120
65 - 69	8,778	215,609,089	24,562
70 - 74	8,228	183,341,302	22,283
75+	9,864	190,225,443	19,285
Total	34,044	\$ 796,089,587	\$ 23,384

Annual Pension Benefit by Years Since Commenced

Years Since Comm.	Number	Total Annual Pension Benefit	Average Annual Pension Benefit
0	1,681	\$ 47,044,071	\$ 27,986
1	1,416	41,473,469	29,289
2	1,516	42,241,297	27,864
3	1,469	40,628,509	27,657
4	1,617	43,823,763	27,102
0 - 4	7,699	\$ 215,211,109	\$ 27,953
5 - 9	7,894	200,110,996	25,350
10 - 14	6,483	144,288,042	22,256
15 - 19	5,276	109,883,248	20,827
20 - 24	3,850	76,656,753	19,911
25 - 29	1,381	24,178,292	17,508
30 - 34	1,155	21,111,290	18,278
35 - 39	249	3,779,040	15,177
40+	57	870,817	15,277
Total	34,044	\$ 796,089,587	\$ 23,384

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	1	1	0	0	0	0	0	0	0	2
35 - 39	1	4	0	0	0	0	0	0	0	5
40 - 44	4	3	2	0	0	0	0	0	0	9
45 - 49	17	10	5	2	0	0	0	0	0	34
50 - 54	108	25	15	7	2	1	1	0	0	159
55 - 59	869	248	47	13	14	3	1	0	0	1,195
60 - 64	3,342	1,780	569	51	11	12	4	0	1	5,770
65 - 69	1,924	3,385	2,545	849	55	12	6	2	0	8,778
70 - 74	759	1,671	2,176	2,580	1,005	17	13	5	2	8,228
75+	674	767	1,124	1,774	2,763	1,336	1,130	242	54	9,864
Total	7,699	7,894	6,483	5,276	3,850	1,381	1,155	249	57	34,044

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	55	16	39	0	42	4	0	2	7
301 – 600	175	110	65	0	97	37	22	7	12
601 – 900	182	100	81	1	109	43	11	12	7
901 – 1,200	167	89	78	0	108	30	16	6	7
1,201 – 1,500	178	111	66	1	105	39	19	6	9
1,501 – 1,800	172	124	48	0	93	45	22	8	4
1,801 – 2,100	156	106	49	1	70	41	33	7	5
2,101 – 2,400	240	177	60	3	113	70	32	12	13
2,401 – 2,700	193	163	26	4	74	63	38	13	5
2,701 – 3,000	228	199	27	2	78	97	34	11	8
3,001 – 3,300	283	249	31	3	98	107	57	12	9
3,301 – 3,600	231	199	29	3	84	92	32	13	10
3,601 – 3,900	206	184	19	3	75	87	30	10	4
3,901 – 4,200	202	191	9	2	64	87	35	12	4
4,200+	1,005	972	30	3	271	479	179	67	9
Total	3,673	2,990	657	26	1,481	1,321	560	198	113

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	2,112	1,553	558	1	1,038	386	282	62	344
301 – 600	5,102	4,260	836	6	2,709	1,170	814	256	153
601 – 900	4,240	3,530	700	10	2,238	1,030	675	181	116
901 – 1,200	3,491	3,004	480	7	1,738	843	669	160	81
1,201 – 1,500	2,972	2,587	368	17	1,480	750	563	109	70
1,501 – 1,800	2,378	2,113	254	11	1,103	672	462	84	57
1,801 – 2,100	2,049	1,836	197	16	951	550	396	93	59
2,101 – 2,400	1,759	1,599	149	11	781	504	348	81	45
2,401 – 2,700	1,475	1,357	101	17	648	415	307	57	48
2,701 – 3,000	1,270	1,181	86	3	552	392	254	41	31
3,001 – 3,300	1,084	1,026	56	2	429	352	233	42	28
3,301 – 3,600	918	877	38	3	365	288	202	45	18
3,601 – 3,900	791	762	27	2	313	273	156	34	15
3,901 – 4,200	717	690	27	0	284	229	158	30	16
4,200+	3,686	3,634	45	7	1,269	1,296	865	207	49
Total	34,044	30,009	3,922	113	15,898	9,150	6,384	1,482	1,130

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 ¹	No. ¹	Annual Pension Benefits ¹	No.	Annual Pension Benefits		
June 30, 2021	191	\$ 9,635,568	86	\$ 2,931,719	3,673	\$ 143,117,645	4.9%	\$ 38,965
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	1,594,394	3,204	113,271,520	4.6%	35,353
June 30, 2015	136	5,617,344	46	633,046	3,116	108,247,168	4.8%	34,739
June 30, 2014	109	4,270,620	50	(145,771)	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

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 ¹	No. ¹	Annual Pension Benefits ¹	No.	Annual Pension Benefits		
June 30, 2021	1,576	\$ 44,216,256	1,070	\$ 20,522,550	34,044	\$ 796,089,587	3.1%	\$ 23,384
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%	21,823
June 30, 2017	1,699	44,619,382	816	14,610,212	31,032	663,978,286	4.7%	21,397
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

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, 2021. 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 151 employers participating in PERS, including the State of Alaska and 150 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 and subsequently amended on July 1, 2021, each non-state PERS employer will pay a simple uniform contribution rate of 22% of non-state member payroll and

the State as an employer will pay the total contribution rate, adopted by the Board, of State 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 total employer contributions, 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, reduced benefits when they reach early retirement age and complete the service required. Benefits are reduced by 6% per year prior to a member's normal retirement date.

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%.

Salaries are subject to compensation limits under IRC 401(a)(17) for members first hired on or after July 1, 1996. Retirement benefit amounts are subject to IRC 415(b) limits regardless of hire date.

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.

Starting in 2022, prior authorization will be required for certain specialty medications for all participants. There is no change to the medications that are covered by the plan.

Starting in 2022, certain preventive benefits for pre-Medicare participants will now be covered by the plan.

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.

At the time a disabled Peace Officer/Firefighter member retires, the retirement benefit will be increased by a percentage equal to the total cumulative percentage that has been applied to the disability benefit.

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. The lesser of 75% of the CPI increase in the preceding calendar year or 9%, if the recipient is at least age 65 or on PERS disability; or
- b. The lesser of 50% of the CPI increase in the preceding calendar year or 6%, 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

Starting in 2022, prior authorization will be required for certain specialty medications for all participants, and certain preventive benefits for pre-Medicare participants will now be covered by the plan.

Under SB 55 that was effective July 1, 2021: (i) The State-as-an-Employer contributes the full actuarial contribution rate based on the DB/DCR payroll of its employees (which is approximately 50% of the total PERS DB/DCR payroll); (ii) Non-State employers continue to contribute 22% of their DB/DCR payroll; (iii) the Additional State Contributions are based on the excess of the DB actuarial contribution rate and the DB contributions made by non-State employers.

There were no other 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, 2020 to June 30, 2021.

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 2019 through June 2021 (FY20 through FY21) 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, 2021 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 FY22 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 FY20 through FY21.
 - 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 FY22).
 - 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, 2020, and July 1, 2021, 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 Optum, rebates were assumed to be 19.5% of prescription drug claims for FY20, 16.2% of pre-Medicare, and 14.3% of Medicare prescription drug claims for FY21.
2. Develop estimated EGWP reimbursements – Segal provided estimated 2022 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. FY21 experience was also thoroughly reviewed to assess the impact of COVID-19 and whether an adjustment to FY21 claims was appropriate for use in the June 30, 2021 valuation. FY21 medical per capita claims were noticeably lower than expected, so a 4% load was added to the FY21 medical claims used in the per capita claims cost development to better reflect future expected long-term costs of the plan. Total prescription drug claims experience for FY21 was reasonable and consistent with FY19 and FY20 experience. Therefore no adjustment was made to FY21 prescription drug claims. 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 FY22 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 for FY20 to FY21 medical and both years of prescription drugs 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. For FY21 to FY22 medical we applied 100% weight to national trends because the Alaska-specific trends were impacted by COVID-19:

Alaska-Specific and National Average Weighted Trend from Experience Period to Valuation Year			
Experience Period	Medical	Prescription	Weighting Factors
FY20 to FY21	6.3% Pre-Medicare / 5.2% Medicare	7.6%	50%
FY21 to FY22	8.1% Pre-Medicare / 4.8% Medicare	8.0%	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. Starting in 2022, prior authorization will be required for certain specialty medications. There is no change to the medications that are covered by the plan. Segal provided an estimate of the impact of this change to the DB retiree health plan cost for calendar year 2022. The DB base claims costs for pre-Medicare prescription drug, Medicare prescription drug, and EGWP were adjusted to reflect this change. Additionally, starting in 2022, certain preventive benefits for pre-Medicare participants will now be covered by the plan. Segal provided an estimate of the impact of this change to the DB retiree health plan cost for calendar year 2022. The DB base claims cost for pre-Medicare medical was adjusted to reflect this change.
7. Develop separate administration costs – no adjustments were made for internal administrative costs. Third party retiree plan administration fees for FY22 are based upon total fees projected to 2022 by Segal based on actual FY21 fees. The annual per participant per year administrative cost rate for medical and prescription benefits is \$493.

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:

- 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 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 2022	1.149	1.103	1.162	1.162
7. Fiscal 2022 Incurred Cost Rate (5) x (6)	\$ 13,630	\$ 2,195	\$ 3,116	\$ 3,912

B. Fiscal 2021				
1. Incurred Claims	\$ 196,566,470	\$ 86,512,435	\$ 60,691,609	\$ 207,822,858
2. Adjustments for Rx Rebates and COVID (Medical only)	7,862,659	3,460,497	(9,832,041)	(29,718,669)
3. Net incurred claims	\$ 204,429,129	\$ 89,972,933	\$ 50,859,568	\$ 178,104,189
4. Average Enrollment	18,106	47,025	18,106	47,025
5. Claim Cost Rate (3) / (4)	11,291	1,913	2,809	3,787
6. Trend to Fiscal 2022	1.081	1.048	1.080	1.080
7. Fiscal 2022 Incurred Cost Rate (5) x (6)	\$ 12,205	\$ 2,005	\$ 3,034	\$ 4,090

	Medical		Prescription Drugs (Rx)	
	Pre-Medicare	Medicare	Pre-Medicare	Medicare
C. Incurred Cost Rate by Fiscal Year				
1. Fiscal 2020 A.(7)	13,630	2,195	3,116	3,912
2. Fiscal 2021 B.(7)	12,205	2,005	3,034	4,090

D. Weighting by Fiscal Year				
1. Fiscal 2020	50%	50%	50%	50%
2. Fiscal 2021	50%	50%	50%	50%

E. Fiscal 2022 Incurred Cost Rate				
1. Rate at Average Age C x D	\$ 12,918	\$ 2,100	\$ 3,075	\$ 4,001
2. Average Aging Factor	0.822	1.271	0.832	1.124
3. Rate at Age 65 (1) / (2)	\$ 15,708	\$ 1,652	\$ 3,695	\$ 3,560

F. Development of Part A&B and Part B Only Cost from Pooled Rate Above	
1. Part A&B Average Enrollment	46,602
2. Part B Only Average Enrollment	423
3. Total Medicare Average Enrollment B(4)	47,025
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	1.021
6. Medicare per capita cost for all participants: E(3)	\$ 1,652
7. Cost for those eligible for Parts A&B: (6) / (5)	\$ 1,619
8. Cost for those eligible for Part B only: (7) x (4)	\$ 5,341

	Medical		Prescription Drugs (Rx)	
	Pre-Medicare	Medicare	Pre-Medicare	Medicare
1. Rate at Age 65	\$ 15,708	\$ 1,619	\$ 3,695	\$ 3,560
2. Adjustment factor for plan changes	1.39%	0.00%	-8.67%	-2.41%
3. Adjusted Rate at Age 65 (1) x [1 + (2)]	\$ 15,926	\$ 1,619	\$ 3,375	\$ 3,474

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, 2021 through June 30, 2022**

Age	Medical and Medicare Parts A & B	Medical and Medicare Part B Only	Prescription Drug	Medicare EGWP Subsidy
45	\$ 9,719	\$ 9,719	\$ 2,062	\$ 0
50	10,996	10,996	2,449	0
55	12,441	12,441	2,908	0
60	14,076	14,076	3,133	0
65	1,619	5,341	3,474	1,131
70	1,877	6,192	3,836	1,249
75	2,176	7,178	4,235	1,379
80	2,402	7,925	4,130	1,345

Section 5.3: Summary of Actuarial Assumptions

The demographic and economic assumptions used in the June 30, 2021 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 Tables 3a and 3b). Disability rates cease once a member is eligible for retirement.

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, 2021 was increased by the following amounts for administrative expenses (for projections, the percent increase was assumed to remain constant in future years):

- Pension: \$7,625,000
- Healthcare: \$5,531,000

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 FY22 medical and prescription drugs are shown below. The prescription drug costs reflect the plan change to require prior authorization for certain specialty medications. The pre-Medicare medical cost reflects the coverage of additional preventive benefits.

	Medical	Prescription Drugs
Pre-Medicare	\$ 15,926	\$ 3,375
Medicare Parts A & B	\$ 1,619	\$ 3,474
Medicare Part B Only	\$ 5,341	\$ 3,474
Medicare Part D – EGWP	N/A	\$ 1,131

Members are assumed to attain Medicare eligibility at age 65. All costs are for the 2022 fiscal year (July 1, 2021 – June 30, 2022).

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

\$493 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, 6.3% is applied to the FY22 pre-Medicare medical claims costs to get the FY23 medical claims costs.

	Medical Pre-65	Medical Post-65	Prescription Drugs / EGWP
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 FY22 contributions based on monthly rates shown below for calendar 2022 are assumed based on the coverage category for current retirees. The retiree only rate shown is used for current active and inactive members and spouses 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 2022 Annual Contribution	Calendar 2022 Monthly Contribution	Calendar 2021 Monthly Contribution
Retiree Only	\$ 8,448	\$ 704	\$ 704
Retiree and Spouse	\$ 16,896	\$ 1,408	\$ 1,408
Retiree and Child(ren)	\$ 11,940	\$ 995	\$ 995
Retiree and Family	\$ 20,388	\$ 1,699	\$ 1,699
Composite	\$ 12,552	\$ 1,046	\$ 1,046

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 FY22 retired member medical contributions to get the FY23 retired member medical contributions.

Trend Assumptions	
FY22	0.0%
FY23+	4.0%

Graded trend rates for retired member medical contributions are consistent with the rates used for the June 30, 2020 valuation. Actual FY22 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. The amounts included in the Normal Cost for administrative expenses were changed from \$7,223,000 to \$7,625,000 for pension, and from \$4,934,000 to \$5,531,000 for healthcare (based on the most recent two years of actual administrative expenses paid from plan assets).

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 3a: Disability Rates for Peace Officer / Firefighter

Age	Male	Female	Age	Male	Female
< 23	0.0179%	0.0112%	46	0.1247%	0.0780%
23	0.0244%	0.0153%	47	0.1337%	0.0836%
24	0.0310%	0.0194%	48	0.1462%	0.0914%
25	0.0374%	0.0234%	49	0.1588%	0.0993%
26	0.0440%	0.0275%	50	0.1714%	0.1071%
27	0.0505%	0.0316%	51	0.1839%	0.1150%
28	0.0526%	0.0329%	52	0.1965%	0.1228%
29	0.0548%	0.0343%	53	0.2294%	0.1434%
30	0.0570%	0.0356%	54	0.2624%	0.1640%
31	0.0591%	0.0370%	55	0.2954%	0.1846%
32	0.0612%	0.0383%	56	0.3283%	0.2052%
33	0.0634%	0.0397%	57	0.3613%	0.2258%
34	0.0657%	0.0411%	58	0.4112%	0.2570%
35	0.0679%	0.0425%	59	0.4611%	0.2882%
36	0.0702%	0.0439%	60	0.5110%	0.3194%
37	0.0724%	0.0453%	61	0.5610%	0.3506%
38	0.0757%	0.0473%	62	0.6109%	0.3818%
39	0.0789%	0.0493%	63	0.6109%	0.3818%
40	0.0822%	0.0514%	64	0.6109%	0.3818%
41	0.0854%	0.0534%	65	0.6109%	0.3818%
42	0.0886%	0.0554%	66	0.6109%	0.3818%
43	0.0977%	0.0611%	67	0.6109%	0.3818%
44	0.1066%	0.0667%	68	0.4073%	0.2546%
45	0.1157%	0.0723%	69	0.2036%	0.1273%
			70+	0.2036%	0.1273%

Table 3b: Disability Rates for Others

Age	Male	Female	Age	Male	Female
< 23	0.0327%	0.0376%	46	0.1125%	0.1154%
23	0.0360%	0.0400%	47	0.1208%	0.1236%
24	0.0392%	0.0424%	48	0.1329%	0.1360%
25	0.0425%	0.0448%	49	0.1451%	0.1484%
26	0.0456%	0.0472%	50	0.1572%	0.1608%
27	0.0489%	0.0496%	51	0.1694%	0.1734%
28	0.0501%	0.0510%	52	0.1815%	0.1858%
29	0.0513%	0.0524%	53	0.2132%	0.2168%
30	0.0524%	0.0538%	54	0.2450%	0.2478%
31	0.0536%	0.0554%	55	0.2766%	0.2788%
32	0.0548%	0.0568%	56	0.3084%	0.3098%
33	0.0566%	0.0586%	57	0.3401%	0.3408%
34	0.0584%	0.0606%	58	0.4068%	0.4096%
35	0.0602%	0.0624%	59	0.4736%	0.4784%
36	0.0620%	0.0644%	60	0.5405%	0.5470%
37	0.0638%	0.0662%	61	0.6072%	0.6158%
38	0.0669%	0.0696%	62	0.6740%	0.6844%
39	0.0701%	0.0728%	63	0.8526%	0.8450%
40	0.0734%	0.0762%	64	1.0314%	1.0054%
41	0.0765%	0.0794%	65	1.2101%	1.1660%
42	0.0797%	0.0826%	66	1.3889%	1.3264%
43	0.0879%	0.0908%	67	1.5675%	1.4870%
44	0.0962%	0.0990%	68	1.0451%	0.9914%
45	0.1043%	0.1072%	69	0.5225%	0.4956%
			70+	0.5225%	0.4956%

Table 4a: Retirement Rates for Peace Officer / Firefighter

Age	Reduced		Unreduced	
	Male	Female	Male	Female
< 47	N/A	N/A	8.80%	6.00%
47	N/A	N/A	8.80%	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 11%.
- 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, 2020	June 30, 2021
1. Retiree and Beneficiary Accrued Liability	\$ 10,472,466	\$ 10,774,140
2. Total Accrued Liability	\$ 15,279,525	\$ 15,419,975
3. Ratio, (1) ÷ (2)	68.5%	69.9%

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, 2020	FYE June 30, 2021
1. Contributions	\$ 504,029	\$ 586,737
2. Benefit Payments	<u>895,523</u>	<u>930,006</u>
3. Cash Flow, (1) - (2)	\$ (391,494)	\$ (343,269)
4. Fair Value of Assets	\$ 9,469,161	\$ 11,912,309
5. Ratio, (3) ÷ (4)	(4.1%)	(2.9%)

When this cash flow ratio is negative, more cash is being paid out than deposited in the trust. Negative cash flow indicates the trust needs to rely on investment returns to cover benefit payments and / or may need to invest in more liquid assets to cover the benefit payments. More liquid assets may not generate the same returns as less liquid assets, which can increase the investment risk. Currently, the low magnitude of the ratio implies there may already be enough liquid assets to cover the benefit payments, less investment return is needed to cover the shortfall, or only a small portion of assets will need to be converted to cash. Therefore, the investment risk is likely not amplified at this time. 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, 2020	June 30, 2021
1. Fair Value of Assets	\$ 9,469,161	\$ 11,912,309
2. DB/DCR Payroll	\$ 2,373,078	\$ 2,406,757
3. Asset to Payroll Ratio, (1) ÷ (2)	399.0%	495.0%
4. Accrued Liability	\$ 15,279,525	\$ 15,419,975
5. Liability to Payroll Ratio, (4) ÷ (2)	643.9%	640.7%

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.