

# State of Alaska Public Employees' Retirement System

Actuarial Valuation Report  
As of June 30, 2016

May 2017

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May 23, 2017

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, 2016 performed by Conduent HR Services, LLC (Conduent), formerly known as Buck Consultants, LLC.

The actuarial valuation is based on financial information provided in the 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), all as summarized in this report. The benefits considered are those delineated in Alaska statutes effective June 30, 2016. The actuary did not verify the data submitted, but did perform tests for consistency and reasonableness.

All costs, liabilities and other factors under the System 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. Conduent is solely responsible for the actuarial data and actuarial results presented in this report. This report fully and fairly discloses the actuarial position of the System as of June 30, 2016.

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, System expenses, and amortize the Unfunded Actuarial Accrued Liability as a level percentage of payroll over a closed 25-year period and as required by Alaska state statutes. The closed 25-year period was established effective June 30, 2014.

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.

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 Conduent to review any statement you wish to make on the results contained in this report. Conduent will not accept any liability for any such statement made without review by Conduent.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. In particular, retiree group benefits models necessarily rely on the use of approximations and estimates, and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements. An analysis of the potential range of such future differences is beyond the scope of this valuation (other than the sensitivity analyses shown in Sections 3.2 and 4.7).

In our opinion, the actuarial assumptions used are reasonable, taking into account the experience of the System and reasonable long-term expectations, and represent our best estimate of the anticipated long-term experience under the System. The actuary performs an analysis of System 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, 2009 to June 30, 2013. Based on that experience study, the Board adopted new assumptions effective for the June 30, 2014 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, 2016 to better reflect expected future healthcare experience. Based on recent experience, the healthcare cost trend assumptions are still reasonable and were not changed. A summary of the actuarial assumptions and methods used in this actuarial valuation are shown in Section 6.

The assumptions and methods used to determine the healthcare Actuarial Required Contribution (ARC) of the Employers to the PERS as outlined in this report and all supporting schedules meet the parameters and requirements for disclosure of Governmental Accounting Standards Board (GASB) Statements No. 43, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans. Based on member data and asset information provided by the Division of Retirement and Benefits, we have prepared the trend data schedule under GASB No. 43 that is included in the Financial Section of the CAFR. We have also prepared the member data tables shown in Section 5 of this report for the Statistical Section of the CAFR, and the summary of actuarial assumptions, solvency test, and analysis of financial experience for the Actuarial Section of the CAFR. Please see our separate GASB 67 report for pension-related information needed for the CAFR.

David Kershner is a Fellow of the Society of Actuaries and Larry Langer is an Associate of the Society of Actuaries. Both are Fellows of the Conference of Consulting Actuaries and Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice. We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate.

Respectfully submitted,



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



Larry Langer, ASA, EA, MAAA, FCA  
Principal

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 her qualification to render opinions in such matters, in accordance with the Qualification Standards of the American Academy of Actuaries.



Melissa A. Bissett, FSA, MAAA  
Senior Consultant, Health & Productivity

# Contents

Executive Summary .....	1
Comparative Summary of Key Actuarial Valuation Results .....	6
Section 1 Actuarial Funding Results .....	8
Section 1.1 Actuarial Liabilities and Normal Cost .....	8
Section 1.2 Actuarial Contributions as of June 30, 2016 .....	14
Section 1.3 Roll Forward Contribution Rate Calculation for FY19 .....	17
Section 1.4 Actuarial Gain/(Loss) for FY16 .....	19
Section 1.5 Development of Change in Unfunded Liability During FY16 .....	20
Section 1.6 Analysis of Financial Experience .....	21
Section 1.7 History of Unfunded Liability and Funded Ratio .....	24
Section 2 Plan Assets .....	25
Section 2.1 Summary of Fair Value of Assets .....	25
Section 2.2 Changes in Fair Value of Assets During FY16 .....	26
Section 2.3 Development of Actuarial Value of Assets .....	27
Section 2.4 Historical Asset Rates of Return .....	28
Section 3 Accounting Information .....	30
Section 3.1 Historical Exhibits .....	30
Section 3.2 Postemployment Healthcare .....	32
Section 3.3 Notes to Trend Data .....	34
Section 3.4 Solvency Test .....	36
Section 4 Projections .....	39
Section 4.1 Projection Assumptions and Methods .....	39
Section 4.2 Membership Projection .....	40
Section 4.3 Projected Employer/State Contribution Rates .....	43
Section 4.4 Projected Employer/State Contribution Amounts .....	44
Section 4.5 Projection of Funded Ratios .....	45
Section 4.6 Table of Projected Actuarial Results .....	46
Section 4.7 Sensitivity Analysis .....	47

<b>Section 5 Member Data .....</b>	<b>48</b>
Section 5.1 Summary of Members Included.....	48
Section 5.2 Age and Service Distribution of Active Members .....	53
Section 5.3 Member Data Reconciliation .....	55
Section 5.4 Schedule of Active Member Data .....	56
Section 5.5 Active Member Payroll Reconciliation .....	58
Section 5.6 Summary of New Pension Benefit Recipients.....	59
Section 5.7 Summary of All Pension Benefit Recipients.....	63
Section 5.8 Schedule of Pension Benefit Recipients by Type of Pension Benefit and Option Elected.....	68
Section 5.9 Pension Benefit Recipients Added to and Removed from Rolls.....	70
<b>Section 6 Basis of the Actuarial Valuation.....</b>	<b>72</b>
Section 6.1 Summary of Plan Provisions .....	72
Section 6.2 Description of Actuarial Methods and Valuation Procedures .....	79
Section 6.3 Summary of Actuarial Assumptions.....	88
<b>Glossary of Terms .....</b>	<b>101</b>

# 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 System. The Alaska Retirement Management Board has fiduciary responsibility over the assets of the System. This report presents the results of the actuarial valuation of the System as of the valuation date of June 30, 2016.

## Purpose

An actuarial valuation is performed on the retirement 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 System;
2. To disclose the funding assets and liability measures as of the valuation date;
3. To disclose the healthcare accounting measures for the System required by GASB No. 43 for the last fiscal year;
4. To review the current funded status of the System and assess the funded status as an appropriate measure for determining future actuarially determined contributions;
5. To compare actual and expected experience under the System during the last fiscal year; and
6. 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 funding status and contribution patterns (see Section 4). The sensitivity analysis shown in Section 4.7 is an example of differences which can occur in projected contribution amounts when actual investment returns are different than assumed, but does not include the impact of all possible future differences that can impact future measurements. 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

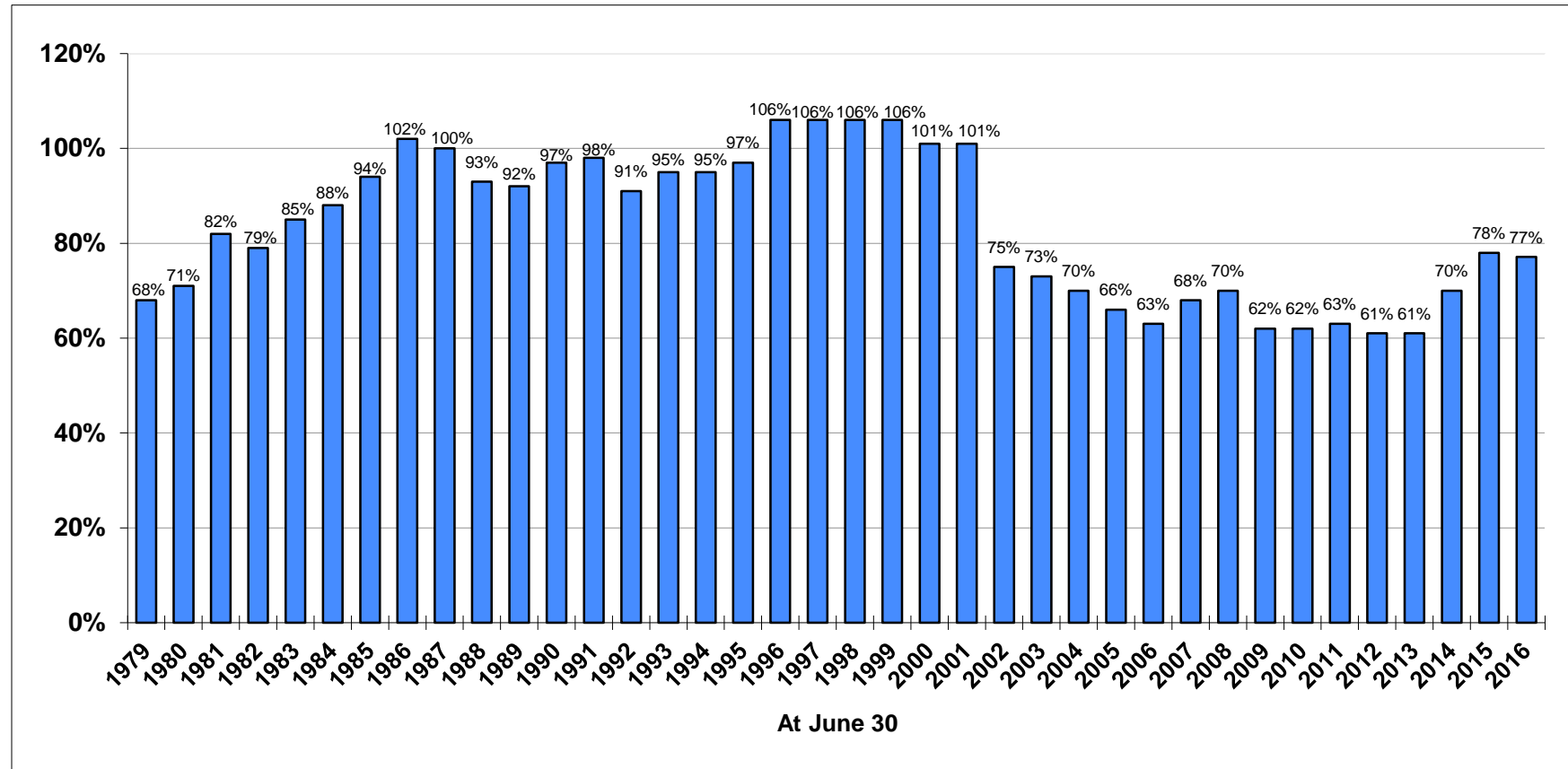
Where presented, references to “funded ratio” and “unfunded accrued liability” typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the 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)		2015	2016
<b>Pension</b>			
a.	Actuarial Accrued Liability	\$ 13,337,929	\$ 13,633,033
b.	Valuation Assets	<u>8,931,160</u>	<u>9,056,662</u>
c.	Unfunded Actuarial Accrued Liability, (a) – (b)	\$ 4,406,769	\$ 4,576,371
d.	Funded Ratio based on Valuation Assets, (b) ÷ (a)	67.0%	66.4%
e.	Fair Value of Assets	\$ 8,606,862	\$ 8,227,687
f.	Funded Ratio based on Fair Assets, (e) ÷ (a)	64.5%	60.4%
<b>Healthcare</b>			
a.	Actuarial Accrued Liability	\$ 7,310,734	\$ 7,736,457
b.	Valuation Assets	<u>7,242,299</u>	<u>7,411,330</u>
c.	Unfunded Actuarial Accrued Liability, (a) – (b)	\$ 68,435	\$ 325,127
d.	Funded Ratio based on Valuation Assets, (b) ÷ (a)	99.1%	95.8%
e.	Fair Value of Assets	\$ 6,961,963	\$ 6,733,253
f.	Funded Ratio based on Fair Assets, (e) ÷ (a)	95.2%	87.0%
<b>Total</b>			
a.	Actuarial Accrued Liability	\$ 20,648,663	\$ 21,369,490
b.	Valuation Assets	<u>16,173,459</u>	<u>16,467,992</u>
c.	Unfunded Actuarial Accrued Liability, (a) – (b)	\$ 4,475,204	\$ 4,901,498
d.	Funded Ratio based on Valuation Assets, (b) ÷ (a)	78.3%	77.1%
e.	Fair Value of Assets	\$ 15,568,825	\$ 14,960,940
f.	Funded Ratio based on Fair Assets, (e) ÷ (a)	75.4%	70.0%

The funded status of the plan decreased from June 30, 2015 to June 30, 2016. This decrease was primarily due to losses from lower than expected investment return and changes in the methods used to develop the per capita claims for the healthcare valuation (including use of the data warehouse to capture actual retiree medical coverage levels), additional data sources to identify dual coverage participants, and resultant changes in the aging factors. These losses were offset by gains on the claims experience.

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. While the System is still currently strongly funded for healthcare liabilities valuation purposes, it is not based upon fair value. Future experience is likely to vary from assumptions, thus there is a potential for actuarial losses.

# PERS Funded Ratio History (Based on Valuation Assets)



## **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 gain or loss each year, for a period of five years. The approximate FY16 investment return based on fair value was (0.7%) compared to the expected investment return of 8.00% (net of investment and administrative expenses of approximately 0.30%). This resulted in a loss of approximately \$1,317.0 million to the System. Due to the recognition of deferred investment gains and losses over a 5-year period, the approximate FY16 investment return based on actuarial value was 5.0%, compared to the expected investment return of 8.00% (net of investment and administrative expenses).

## **2. Salary Increases**

During the period June 30, 2015 to June 30, 2016, salary increases for continuing active members were less than anticipated in the valuation assumptions, which led to salary gains of approximately \$69.5 million.

## **3. Demographic Experience (Pension)**

Section 5 provides statistics on active participants. The number of active participants decreased 8.8%, from 17,660 at June 30, 2015 to 16,105 at June 30, 2016 due to members retiring and terminating during the year and the closure of the plan to new entrants as of July 1, 2006. The average age of active participants increased from 51.34 to 51.74 and average credited service increased from 15.29 to 15.95 years.

The number of benefit recipients increased 3.8%, from 32,145 to 33,353, and their average age increased from 68.60 to 69.02. There was a 2.3% decrease in the number of vested terminated participants from 6,304 to 6,160. Their average age increased from 51.80 to 52.08.

The overall effect of the demographic experience during FY16, combined with data and other miscellaneous changes, was an actuarial loss of approximately \$17.9 million to the System. As shown on page 7, there was a gain of approximately \$133 million due to COLA/PRPA increases during FY16.

## **4. Retiree Medical Experience**

As described in Section 6.2, recent claims experience and actual healthcare enrollment created an actuarial loss of approximately \$198.8 million (including health plan enrollment data and other miscellaneous changes). There was also an offsetting demographic experience gain of approximately \$10.1 million.

## **5. Effect of FY16 State Contribution**

The State contribution made in FY16 increased the funded ratio of the plan by approximately 0.6%.

## **6. Valuation Programming Refinements**

We refined our pension valuation programming for current disabled participants to adjust occupational and nonoccupational death benefits. The effect of the programming changes was an actuarial loss of \$15.9M for pension.

## **7. Actuarial Projections**

Several years ago, the Board approved the use of an enhanced actuarial projection system in the valuation report. The same actuarial cost method is used, but the enhanced system projects the associated liabilities 30 years into the future. By also projecting plan assets, this report in effect produces an actuarial valuation for each of the next 30 years. Section 4, Actuarial Funding Projections, contains the results of this analysis.

This type of information can be especially useful to multi-tiered systems, such as PERS. No new DB plan entrants are anticipated. The total active population is expected to grow at 0% per year and all future demographic assumptions are expected to be exactly realized. In Section 4.7, we illustrate the sensitivity of projected contributions due to potential changes in expected investment rates of return.

## **8. Changes in Methods Since the Prior Valuation**

There have been no changes in the asset or valuation methods since the prior valuation. Enhanced health plan enrollment data resulted in some offsetting cost increases and enrollment decreases. To reflect participants who terminate employment before the valuation date and are subsequently rehired after the valuation date, participants who are listed as terminated in the June 30 client data but active in the October 1 client records were updated to active status as of June 30, 2016.

## **9. Changes in Assumptions Since the Prior Valuation**

Starting with the June 30, 2016 valuation, the Normal Cost used for determining contribution rates and in the projections includes a rehire assumption to account for anticipated rehires. This assumption was developed based on 5 years of rehire loss experience through June 30, 2015. Healthcare claim costs are updated annually as described in Section 6.2.

## **10. Changes in Benefit Provisions Since the Prior Valuation**

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

## Comparative Summary of Key Actuarial Valuation Results

Employer/State Contribution Rates for Pension for Fiscal Year:	2018	2019
a. Normal Cost Rate Net of Member Contributions	2.94%	3.55%
Past Service Rate	<u>14.33%</u>	<u>15.16%</u>
Total Employer/State Contribution Rate, (a) + (b)*	17.27%	18.71%

Employer/State Contribution Rates for Postemployment Healthcare for Fiscal Year:	2018	2019
a. Normal Cost Rate	2.16%	2.56%
Past Service Rate	<u>0.95%</u>	<u>2.38%</u>
Total Employer/State Contribution Rate, (a) + (b)*	3.11%	4.94%

Total Employer/State Contribution Rates for Fiscal Year:	2018	2019
a. Normal Cost Rate Net of Member Contributions	5.10%	6.11%
Past Service Rate	<u>15.28%</u>	<u>17.54%</u>
Total Employer/State Contribution Rate (a) + (b)*	20.38%	23.65%
Board Adopted Total Employer/State Contribution Rate	20.38%	TBD
Defined Contribution Retirement (DCR) Rate Paid by Employers	<u>4.63%</u>	<u>4.88%</u>
Board Adopted Total Rate, Including DCR Rate Paid by Employers, (d) + (e)	25.01%	TBD

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

Contribution rates are based on salary for both DB plan members and DCR members, combined. The rates shown above are for funding purposes which may differ from the healthcare Annual Required Contribution for GASB No. 43 reporting purposes. Under GASB No. 43, postemployment healthcare liabilities are gross of the retiree drug subsidy and are calculated with a discount rate for a partially funded plan. Under GASB No. 43, PERS calculates the amortization of the unfunded liabilities as a level dollar amount.

Contribution rates include Employer contribution rates as limited by state statute, and include the additional State contribution required under SB 125.

## Summary of Actuarial 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, 2015 and June 30, 2016 based on DB and DCR payroll combined:

	Pension	Healthcare	Total
1. Total Employer/State contribution rate as of June 30, 2015	15.98%	3.05%	19.03%
2. Change due to:			
a. FY16 Contribution	0.16%	(0.41%)	(0.25%)
b. Salary increases	(0.20%)	N/A	(0.20%)
Investment experience	0.73%	0.60%	1.33%
Demographic and medical experience <sup>1&amp;2</sup>	(0.33%)	0.59%	0.26%
Addition of normal cost rehire assumption	1.00%	0.50%	1.50%
Total change, (a) + (b) + (c) + (d) + (e)	1.36%	1.28%	2.64%
3. Total Employer/State contribution rate as of June 30, 2016, (1) + (2e)	17.34%	4.33%	21.67%

The following table shows the gain/(loss) on total actuarial accrued liability as of June 30, 2016 (\$'s in 000's):

	Pension	Healthcare	Total
Retirement Experience	\$ (1,035)	\$ (7,873)	\$ (8,908)
Termination Experience	(8,713)	(13,620)	(22,333)
Active Mortality Experience	6,916	(1,540)	5,376
Inactive Mortality Experience	16,956	22,194	39,150
Disability Experience	(687)	(1,966)	(2,653)
Rehires	(31,814)	(8,617)	(40,431)
Other Demographic Experience <sup>2</sup>	520	21,567	22,087
Salary Increases	69,532	N/A	69,532
Alaska COLA	7,043	N/A	7,043
PRPA Other Than Expected	125,533	N/A	125,533
Medical Claims Costs <sup>1</sup>	N/A	(198,836)	(198,836)
Total	\$ 184,251	\$ (188,691)	\$ (4,440)

<sup>1</sup> The (\$198,836) loss is a combination of a (\$955,734) loss due to medical claims and a \$756,898 gain due to Aetna providing actual coverage codes for retirees.

<sup>2</sup> Includes effects of data and programming changes.

- The pension gain includes:

- o (\$15,351): Programming refinements for current disabled participants (COLA, occupational and nonoccupational death benefits)
- o \$15,871: Data and other miscellaneous changes

# Section 1 Actuarial Funding Results

## Section 1.1

### Actuarial Liabilities and Normal Cost – Peace Officer/Firefighter

(\$'s in 000's)

As of June 30, 2016	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
<b>Active Members</b>		
Retirement Benefits	\$ 932,088	\$ 755,833
Termination Benefits	17,995	7,092
Disability Benefits	3,770	(847)
Death Benefits	9,153	5,462
Return of Contributions	3,035	(7,295)
Medical and Prescription Drug Benefits	381,328	332,587
Medicare Part D Subsidy	(13,853)	(12,183)
Indebtedness	<u>(5,409)</u>	<u>(5,409)</u>
Subtotal	\$ 1,328,107	\$ 1,075,240
<b>Inactive Members</b>		
Not Vested	\$ 2,278	\$ 2,278
Vested Terminations		
- Retirement Benefits	33,922	33,922
- Medical and Prescription Drug Benefits	38,766	38,766
- Medicare Part D Subsidy	(1,579)	(1,579)
- Indebtedness	(739)	(739)
Retirees & Beneficiaries		
- Retirement Benefits	1,334,970	1,334,970
- Medical and Prescription Drug Benefits	524,594	524,594
- Medicare Part D Subsidy	<u>(30,551)</u>	<u>(30,551)</u>
Subtotal	\$ 1,901,661	\$ 1,901,661
<b>Total</b>	<b>\$ 3,229,768</b>	<b>\$ 2,976,901</b>
<b>Total Pension</b>	<b>\$ 2,331,063</b>	<b>\$ 2,125,267</b>
<b>Total Medical, Net of Part D Subsidy</b>	<b>\$ 898,705</b>	<b>\$ 851,634</b>
<b>Total Medical, Gross of Part D Subsidy</b>	<b>\$ 944,688</b>	<b>\$ 895,947</b>

As of June 30, 2016	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
<b>By Tier</b>		
Tier 1		
- Pension	\$1,069,996	\$1,066,586
- Medical, Net of Part D Subsidy	381,963	380,445
Tier 2		
- Pension	586,237	550,580
- Medical, Net of Part D Subsidy	234,416	227,978
Tier 3		
- Pension	674,830	508,101
- Medical, Net of Part D Subsidy	<u>282,326</u>	<u>243,211</u>
<b>Total</b>	<b>\$3,229,768</b>	<b>\$2,976,901</b>

As of June 30, 2016	Normal Cost
<b>Active Members</b>	
Retirement Benefits	\$ 24,279
Termination Benefits	1,567
Disability Benefits	665
Death Benefits	542
Return of Contributions	1,483
Medical and Prescription Drug Benefits	8,111
Medicare Part D Subsidy	(289)
Rehire Assumption (Pension)	4,061
Rehire Assumption (Medical)	<u>1,349</u>
Subtotal	\$ 41,768
<b>Total</b>	<b>\$ 41,768</b>
<b>Total Pension</b>	<b>\$ 32,597</b>
<b>Total Medical, Net of Part D Subsidy</b>	<b>\$ 9,171</b>
<b>Total Medical, Gross of Part D Subsidy</b>	<b>\$ 9,510</b>

<b>By Tier</b>	
Tier 1	
- Pension	\$ 1,096
- Medical, Net of Part D Subsidy	556
Tier 2	
- Pension	7,966
- Medical, Net of Part D Subsidy	1,654
Tier 3	
- Pension	23,535
- Medical, Net of Part D Subsidy	<u>6,961</u>
<b>Total</b>	<b>\$ 41,768</b>



## Actuarial Liabilities and Normal Cost – Others

(\$'s in 000's)

As of June 30, 2016	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
<b>Active Members</b>		
Retirement Benefits	\$ 4,331,870	\$ 3,665,831
Termination Benefits	263,800	126,726
Disability Benefits	13,737	1,306
Death Benefits	61,173	43,642
Return of Contributions	27,985	(54,875)
Medical and Prescription Drug Benefits	2,472,123	2,139,882
Medicare Part D Subsidy	(133,540)	(117,366)
Indebtedness	<u>(52,251)</u>	<u>(52,251)</u>
Subtotal	\$ 6,984,897	\$ 5,752,895
<b>Inactive Members</b>		
Not Vested	\$ 71,520	\$ 71,520
Vested Terminations		
- Retirement Benefits	600,744	600,744
- Medical and Prescription Drug Benefits	926,761	926,761
- Medicare Part D Subsidy	(42,147)	(42,147)
- Indebtedness	(14,462)	(14,462)
Retirees & Beneficiaries		
- Retirement Benefits	7,119,585	7,119,585
- Medical and Prescription Drug Benefits	4,271,959	4,271,959
- Medicare Part D Subsidy	<u>(294,266)</u>	<u>(294,266)</u>
Subtotal	\$ 12,639,694	\$ 12,639,694
<b>Total</b>	<b>\$ 19,624,591</b>	<b>\$ 18,392,589</b>
<b>Total Pension</b>	<b>\$ 12,423,701</b>	<b>\$ 11,507,766</b>
<b>Total Medical, Net of Part D Subsidy</b>	<b>\$ 7,200,890</b>	<b>\$ 6,884,823</b>
<b>Total Medical, Gross of Part D Subsidy</b>	<b>\$ 7,670,843</b>	<b>\$ 7,338,602</b>

As of June 30, 2016		Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
By Tier			
Tier 1			
- Pension		\$ 6,397,669	\$ 6,317,962
- Medical, Net of Part D Subsidy		3,627,081	3,571,649
Tier 2			
- Pension		3,257,594	3,019,079
- Medical, Net of Part D Subsidy		1,875,648	1,806,864
Tier 3			
- Pension		2,768,438	2,170,725
- Medical, Net of Part D Subsidy		<u>1,698,161</u>	<u>1,506,310</u>
Total		\$ 19,624,591	\$ 18,392,589

As of June 30, 2016		Normal Cost
Active Members		
Retirement Benefits		\$ 99,839
Termination Benefits		17,387
Disability Benefits		1,701
Death Benefits		2,564
Return of Contributions		11,411
Medical and Prescription Drug Benefits		62,079
Medicare Part D Subsidy		(3,034)
Rehire Assumption (Pension)		18,912
Rehire Assumption (Medical)		<u>10,179</u>
Subtotal		\$ 221,038
Total		\$ 221,038
Total Pension		\$ 151,814
Total Medical, Net of Part D Subsidy		\$ 69,224
Total Medical, Gross of Part D Subsidy		\$ 72,781
By Tier		
Tier 1		
- Pension		\$ 22,094
- Medical, Net of Part D Subsidy		\$ 17,548
Tier 2		
- Pension		\$ 43,801
- Medical, Net of Part D Subsidy		\$ 15,265
Tier 3		
- Pension		\$ 85,919
- Medical, Net of Part D Subsidy		\$ 36,411
Total		\$ 221,038

## Actuarial Liabilities and Normal Cost – All Members

(\$'s in 000's)

As of June 30, 2016	Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
<b>Active Members</b>		
Retirement Benefits	\$ 5,263,958	\$ 4,421,664
Termination Benefits	281,795	133,818
Disability Benefits	17,507	459
Death Benefits	70,326	49,104
Return of Contributions	31,020	(62,170)
Medical and Prescription Drug Benefits	2,853,451	2,472,469
Medicare Part D Subsidy	(147,393)	(129,549)
Indebtedness	<u>(57,660)</u>	<u>(57,660)</u>
Subtotal	\$ 8,313,004	\$ 6,828,135
<b>Inactive Members</b>		
Not Vested	\$ 73,798	\$ 73,798
Vested Terminations		
- Retirement Benefits	634,666	634,666
- Medical and Prescription Drug Benefits	965,527	965,527
- Medicare Part D Subsidy	(43,726)	(43,726)
- Indebtedness	(15,201)	(15,201)
Retirees & Beneficiaries		
- Retirement Benefits	8,454,555	8,454,555
- Medical and Prescription Drug Benefits	4,796,553	4,796,553
- Medicare Part D Subsidy	<u>(324,817)</u>	<u>(324,817)</u>
Subtotal	\$ 14,541,355	\$ 14,541,355
<b>Total</b>	<b>\$ 22,854,359</b>	<b>\$ 21,369,490</b>
<b>Total Pension</b>	<b>\$ 14,754,764</b>	<b>\$ 13,633,033</b>
<b>Total Medical, Net of Part D Subsidy</b>	<b>\$ 8,099,595</b>	<b>\$ 7,736,457</b>
<b>Total Medical, Gross of Part D Subsidy</b>	<b>\$ 8,615,531</b>	<b>\$ 8,234,549</b>

As of June 30, 2016		Present Value of Projected Benefits	Actuarial Accrued (Past Service) Liability
<b>By Tier</b>			
Tier 1			
- Pension	\$	7,467,665	\$ 7,384,548
- Medical, Net of Part D Subsidy		4,009,044	3,952,094
Tier 2			
- Pension		3,843,831	3,569,659
- Medical, Net of Part D Subsidy		2,110,064	2,034,842
Tier 3			
- Pension		3,443,268	2,678,826
- Medical, Net of Part D Subsidy		<u>1,980,487</u>	<u>1,749,521</u>
<b>Total</b>	<b>\$</b>	<b>22,854,359</b>	<b>\$ 21,369,490</b>
As of June 30, 2016			Normal Cost
<b>Active Members</b>			
Retirement Benefits			\$ 124,118
Termination Benefits			18,954
Disability Benefits			2,366
Death Benefits			3,106
Return of Contributions			12,894
Medical and Prescription Drug Benefits			70,190
Medicare Part D Subsidy			(3,323)
Rehire Assumption (Pension)			22,973
Rehire Assumption (Medical)			<u>11,528</u>
Subtotal			\$ 262,806
<b>Total</b>			<b>\$ 262,806</b>
<b>Total Pension</b>			<b>\$ 184,411</b>
<b>Total Medical, Net of Part D Subsidy</b>			<b>\$ 78,395</b>
<b>Total Medical, Gross of Part D Subsidy</b>			<b>\$ 82,291</b>
<b>By Tier</b>			
Tier 1			
- Pension			\$ 23,190
- Medical, Net of Part D Subsidy			18,104
Tier 2			
- Pension			51,767
- Medical, Net of Part D Subsidy			16,919
Tier 3			
- Pension			109,454
- Medical, Net of Part D Subsidy			<u>43,372</u>
<b>Total</b>			<b>\$ 262,806</b>

## Section 1.2

### Actuarial Contributions as of June 30, 2016 – Peace Officer/Firefighter (\$'s in 000's)

Normal Cost Rate	Pension	Healthcare	Total
1. Total Normal Cost	\$ 32,597	\$ 9,171	\$ 41,768
2. DB Rate Payroll Projected for FY17	187,257	187,257	187,257
3. DCR Rate Payroll Projected for FY17	129,811	129,811	129,811
4. Total Rate Payroll Projected for FY17	317,068	317,068	317,068
5. Normal Cost Rate for Peace Officer/Firefighter			
a. Based on DB Rate Payroll, (1) ÷ (2)	17.41%	4.90%	22.31%
b. Based on Total Rate Payroll, (1) ÷ (4)	10.28%	2.90%	13.18%
6. Average Member Contribution Rate (Peace Officer/Firefighter) <sup>1</sup>	4.43%	0.00%	4.43%
7. Employer Normal Cost Rate For Peace Officer/Firefighter, (5)(b) – (6)	5.85%	2.90%	8.75%
Past Service Rate			
1. Actuarial Accrued Liability	\$ 2,125,267	\$ 851,634	\$ 2,976,901
2. Valuation Assets <sup>2</sup>	<u>1,411,852</u>	<u>815,844</u>	<u>2,227,696</u>
3. Unfunded Actuarial Accrued Liability, (1) – (2)	\$ 713,415	\$ 35,790	\$ 749,205
4. Funded Ratio, (2) ÷ (1)	66.4%	95.8%	74.8%
5. Past Service Cost Amortization Payment <sup>3</sup>	47,113	2,364	49,477
6. Total Rate Payroll Projected for FY17	317,068	317,068	317,068
7. Past Service Rate, (5) ÷ (6)	14.86%	0.75%	15.61%
<b>Total Employer/State Contribution Rate</b>	<b>20.71%</b>	<b>3.65%</b>	<b>24.36%</b>
<b>Normal Cost Rate by Tier (Total Employer and Member)<sup>4</sup></b>			
Tier 1	18.93%	9.61%	28.54%
Tier 2	17.31%	3.60%	20.91%
Tier 3	17.38%	5.14%	22.52%
Maturity Ratio	64.5%	62.4%	63.9%

<sup>1</sup> Assumes no member contributions from members in the DCR plan and 7.50% from Tiers 1, 2 and 3 in Peace Officer/Firefighter.

<sup>2</sup> Allocated between Peace Officer/Firefighter and Others in proportion to actuarial accrued liability.

<sup>3</sup> Calculated on a level percent of pay over a 23-year period as of June 30, 2016.

<sup>4</sup> Rate determined considering the pay for members of the plan in each tier. DCR payroll is excluded from these calculations.

## Actuarial Contributions as of June 30, 2016 – Others (\$'s in 000's)

Normal Cost Rate	Pension	Healthcare	Total
1. Total Normal Cost	\$ 151,814	\$ 69,224	\$ 221,038
2. DB Rate Payroll Projected for FY17	1,060,627	1,060,627	1,060,627
3. DCR Rate Payroll Projected for FY17	929,980	929,980	929,980
4. Total Rate Payroll Projected for FY17	1,990,607	1,990,607	1,990,607
5. Normal Cost Rate for Others			
a. Based on DB Rate Payroll, (1) ÷ (2)	14.31%	6.53%	20.84%
Based on Total Rate Payroll, (1) ÷ (4)	7.63%	3.48%	11.11%
6. Average Member Contribution Rate (Others) <sup>1</sup>	3.64%	0.00%	3.64%
7. Employer/State Normal Cost Rate For Others, (5)(b) – (6)	3.99%	3.48%	7.47%
Past Service Rate			
1. Actuarial Accrued Liability	\$ 11,507,766	\$ 6,884,823	\$ 18,392,589
2. Valuation Assets <sup>2</sup>	<u>7,644,810</u>	<u>6,595,486</u>	<u>14,240,296</u>
3. Unfunded Actuarial Accrued Liability, (1) – (2)	\$ 3,862,956	\$ 289,337	\$ 4,152,293
4. Funded Ratio, (2) ÷ (1)	66.4%	95.8%	77.4%
5. Past Service Cost Amortization Payment <sup>3</sup>	255,105	19,107	274,212
6. Total Rate Payroll Projected for FY17	1,990,607	1,990,607	1,990,607
7. Past Service Rate, (5) ÷ (6)	12.82%	0.96%	13.78%
<b>Total Employer/State Contribution Rate</b>	<b>16.81%</b>	<b>4.44%</b>	<b>21.25%</b>
<b>Normal Cost Rate by Tier (Total Employer and Member)<sup>4</sup></b>			
Tier 1	16.77%	13.32%	30.09%
Tier 2	13.83%	4.82%	18.65%
Tier 3	14.04%	5.94%	19.98%
Maturity Ratio	67.6%	70.6%	68.7%

<sup>1</sup> Assumes no member contributions from members in the DCR plan and 6.75% from Tiers 1, 2 and 3 in Others members.

<sup>2</sup> Allocated between Peace Officer/Firefighter and Others in proportion to actuarial accrued liability.

<sup>3</sup> Calculated on a level percent of pay over a 23-year period as of June 30, 2016.

<sup>4</sup> Rate determined considering the pay for members of the plan in each tier. DCR payroll is excluded from these calculations.

## Actuarial Contributions as of June 30, 2016 – All Members (\$'s in 000's)

Normal Cost Rate	Pension	Healthcare	Total
1. Total Normal Cost	\$ 184,411	\$ 78,395	\$ 262,806
2. DB Rate Payroll Projected for FY17	1,247,884	1,247,884	1,247,884
3. DCR Rate Payroll Projected for FY17	1,059,791	1,059,791	1,059,791
4. Total Rate Payroll Projected for FY17	2,307,675	2,307,675	2,307,675
5. Normal Cost Rate for All Members			
a. Based on DB Rate Payroll, (1) ÷ (2)	14.78%	6.28%	21.06%
Based on Total Rate Payroll, (1) ÷ (4)	7.99%	3.40%	11.39%
6. Average Member Contribution Rate <sup>1</sup>	3.75%	0.00%	3.75%
7. Employer Normal Cost Rate For All Members, (5)(b) – (6)	4.24%	3.40%	7.64%
Past Service Rate			
1. Actuarial Accrued Liability	\$ 13,633,033	\$ 7,736,457	\$ 21,369,490
2. Valuation Assets <sup>2</sup>	<u>9,056,662</u>	<u>7,411,330</u>	<u>16,467,992</u>
3. Unfunded Actuarial Accrued Liability, (1) – (2)	\$ 4,576,371	\$ 325,127	\$ 4,901,498
4. Funded Ratio, (2) ÷ (1)	66.4%	95.8%	77.1%
5. Past Service Cost Amortization Payment <sup>3</sup>	302,218	21,471	323,689
6. Total Rate Payroll Projected for FY17	2,307,675	2,307,675	2,307,675
7. Past Service Rate, (5) ÷ (6)	13.10%	0.93%	14.03%
<b>Total Employer/State Contribution Rate</b>	<b>17.34%</b>	<b>4.33%</b>	<b>21.67%</b>
<b>Normal Cost Rate by Tier (Total Employer and Member)<sup>4</sup></b>			
Tier 1	16.86%	13.15%	30.01%
Tier 2	14.27%	4.67%	18.94%
Tier 3	14.64%	5.80%	20.44%
Maturity Ratio	67.1%	69.7%	68.0%

<sup>1</sup> Assumes no member contribution from members in the DCR plan, 7.5% for Peace Officer/Firefighter members and 6.75% for Others members.

<sup>2</sup> Allocated between Peace Officer/Firefighter and Others in proportion to actuarial accrued liability.

<sup>3</sup> Calculated on a level percent of pay over a 23-year period as of June 30, 2016.

<sup>4</sup> Rate determined considering the pay for members of the plan in each tier. DCR payroll is excluded from these calculations.

## Section 1.3

### Roll Forward Contribution Rate Calculation for FY19

(\$'s in 000's)

	Pension	Healthcare	Total
<b>1. Liability Roll Forward</b>			
a. Actuarial Accrued Liability as of June 30, 2016	\$ 13,633,033	\$ 7,736,456	\$ 21,369,489
b. Normal Cost	184,411	78,395	262,806
c. Interest on (a) and (b) at 8.00%	1,105,396	625,188	1,730,584
d. Estimated Benefit Payments	(786,329)	(414,101)	(1,200,430)
e. Interest on (d) at 8.00%, adjusted for timing	<u>(33,473)</u>	<u>(17,628)</u>	<u>(51,101)</u>
f. Expected Actuarial Accrued Liability as of June 30, 2017	\$ 14,103,038	\$ 8,008,310	\$ 22,111,348
g. Projected Normal Cost	174,300	69,836	244,136
h. Interest on (f) and (g) at 8.00%	1,142,187	646,252	1,788,439
i. Estimated Benefit Payments	(835,422)	(444,965)	(1,280,387)
j. Interest on (i) at 8.00%, adjusted for timing	<u>(35,563)</u>	<u>(18,941)</u>	<u>(54,504)</u>
k. Expected Actuarial Accrued Liability as of June 30, 2018	\$ 14,548,540	\$ 8,260,492	\$ 22,809,032
<b>2. Asset Roll Forward</b>			
a. Actuarial Value of Assets as of June 30, 2016	\$ 9,056,662	\$ 7,411,330	\$ 16,467,992
b. Interest on (a) at 8.00%	724,533	592,906	1,317,439
c. Employee Contributions	94,098	0	94,098
d. Employer Contributions	291,921	115,384	407,305
e. State Assistance	99,166	0	99,166
f. Interest on (c) – (e) at 8.00%, adjusted for timing*	21,036	4,527	25,563
g. Estimated Benefit payments	(786,329)	(414,101)	(1,200,430)
h. AVA Adjustments	(293,830)	(241,285)	(535,115)
i. Interest on (g) at 8.00%, adjusted for timing	<u>(33,473)</u>	<u>(17,628)</u>	<u>(51,101)</u>
j. Expected Actuarial Value of Assets as of June 30, 2017	\$ 9,173,784	\$ 7,451,133	\$ 16,624,917
k. Interest on (j) at 8.00%	733,903	596,091	1,329,994
l. Employee Contributions	90,263	0	90,263
m. Employer Contributions	341,473	69,003	410,476
n. State Assistance	67,990	4,581	72,571
o. Interest on (l) – (n) at 8.00%, adjusted for timing*	22,376	3,074	25,450
p. Estimated Benefit payments	(835,422)	(444,965)	(1,280,387)
q. AVA Adjustments	(275,629)	(226,324)	(501,953)
r. Interest on (p) at 8.00%, adjusted for timing	<u>(35,563)</u>	<u>(18,941)</u>	<u>(54,504)</u>
s. Expected Actuarial Value of Assets as of June 30, 2018	\$ 9,283,175	\$ 7,433,652	\$ 16,716,827



	Pension	Healthcare	Total
<b>3. Unfunded Liability Roll Forward</b>			
<b>a. Unfunded Actuarial Accrued Liability as of June 30, 2016</b>	<b>\$ 4,576,371</b>	<b>\$ 325,126</b>	<b>\$ 4,901,497</b>
b. Normal Cost	184,411	78,395	262,806
c. Interest on (a) and (b) at 8.00%	380,863	32,282	413,145
d. Employee Contributions	(94,098)	0	(94,098)
e. Employer Contributions	(291,921)	(115,384)	(407,305)
f. State Assistance	(99,166)	0	(99,166)
g. AVA Adjustment	293,830	241,285	535,115
h. Interest on (d) – (f) at 8.00%, adjusted for timing*	<u>(21,036)</u>	<u>(4,527)</u>	<u>(25,563)</u>
<b>i. Expected Unfunded Actuarial Accrued Liability as of June 30, 2017</b>	<b>\$ 4,929,254</b>	<b>\$ 557,177</b>	<b>\$ 5,486,431</b>
j. Projected Normal Cost	174,300	69,836	244,136
k. Interest on (i) and (j) at 8.00%	408,284	50,161	458,445
l. Employee Contributions	(90,263)	0	(90,263)
m. Employer Contributions	(341,473)	(69,003)	(410,476)
n. State Assistance	(67,990)	(4,581)	(72,571)
o. AVA Adjustment	275,629	226,324	501,953
p. Interest on (l) – (n) at 8.00%, adjusted for timing*	<u>(22,376)</u>	<u>(3,074)</u>	<u>(25,450)</u>
<b>q. Expected Unfunded Actuarial Accrued Liability as of June 30, 2018</b>	<b>\$ 5,265,365</b>	<b>\$ 826,840</b>	<b>\$ 6,092,205</b>
<b>4. Expected Annual Rate Payroll for FY19</b>			
a. Defined Benefit Members			\$ 1,127,865
b. Defined Contribution Retirement Members			<u>1,295,421</u>
<b>c. Total Rate Payroll</b>			<b>\$ 2,423,286</b>
<b>5. Expected FY19 Contribution Rate Calculation</b>			
a. Projected Normal Cost for FY19	\$ 164,224	\$ 62,135	\$ 226,359
b. Projected Normal Cost Rate for FY19	6.78%	2.56%	9.34%
c. Expected Member Contribution Rate for FY19	(3.23%)	0.00%	(3.23%)
<b>d. Expected Employer Normal Cost Rate for FY19</b>	<b>3.55%</b>	<b>2.56%</b>	<b>6.11%</b>
e. Expected Unfunded Liability as of June 30, 2018	\$ 5,265,365	\$ 826,840	\$ 6,092,205
f. 21 Year Amortization of Expected Unfunded Liability	367,662	57,735	425,397
<b>g. Expected Past Service Cost Contribution Rate for FY19</b>	<b>15.16%</b>	<b>2.38%</b>	<b>17.54%</b>
<b>h. Expected Total Contribution Rate for FY19</b>	<b>18.71%</b>	<b>4.94%</b>	<b>23.65%</b>

\* Employee and Employer Contributions are paid throughout the year. State Assistance was paid on October 1, 2016 for FY17 and is assumed to be paid the beginning of year each year thereafter.

## Section 1.4

### Actuarial Gain/(Loss) for FY16

(\$'s in 000's)

	Pension	Healthcare	Total
1. Expected Actuarial Accrued Liability			
a. Actuarial Accrued Liability, June 30, 2015	\$ 13,337,929	\$ 7,310,734	\$ 20,648,663
Normal Cost for FY16	172,304	65,266	237,570
Interest on (a) and (b) at 8.00%	1,080,819	590,080	1,670,899
Actual Benefit Payments for FY16	732,141	401,234	1,133,375
Refund of Contributions for FY16	10,034	0	10,034
Interest on (d) and (e) at 8.00%, adjusted for timing	31,593	17,080	48,673
Change in Healthcare Cost Trend Rates	<u>N/A</u>	<u>0</u>	<u>0</u>
Expected Actuarial Accrued Liability as of June 30, 2016, (a) + (b) + (c) – (d) – (e) – (f) + (g)	\$ 13,817,284	\$ 7,547,766	\$ 21,365,050
2. Actual Actuarial Accrued Liability, June 30, 2016	<u>13,633,033</u>	<u>7,736,457</u>	<u>21,369,490</u>
<b>3. Liability Gain/(Loss), (1)(h) – (2)</b>	<b>\$ 184,251</b>	<b>\$ (188,691)</b>	<b>\$ (4,440)</b>
4. Expected Actuarial Asset Value			
a. Actuarial Asset Value, June 30, 2015	\$ 8,931,160	\$ 7,242,299	\$ 16,173,459
b. Interest on (a) at 8.00%	714,493	579,384	1,293,877
c. Employee Contributions for FY16	96,024	621	96,645
d. Employer Contributions for FY16	235,360	155,630	390,990
e. State Assistance for FY16	88,586	37,934	126,520
f. Medicare Part D Subsidy	0	15,466	15,466
g. Interest on (c), (d), (e) and (f) at 8.00%, adjusted for timing	18,264	7,777	26,041
h. Benefit Payments for FY16	732,141	401,234	1,133,375
i. Refund of Contributions for FY16	10,034	0	10,034
j. Interest on (h) and (i) at 8.00%, adjusted for timing	<u>31,593</u>	<u>17,080</u>	<u>48,673</u>
k. Expected Actuarial Asset Value, June 30, 2016, (a) + (b) + (c) + (d) + (e) + (f) + (g) - (h) - (i) - (j)	\$ 9,310,119	\$ 7,620,797	\$ 16,930,916
5. Actuarial Asset Value, June 30, 2016	<u>9,056,662</u>	<u>7,411,330</u>	<u>16,467,992</u>
<b>6. Actuarial Asset Gain/(Loss), (5) – (4)(k)</b>	<b>\$ (253,457)</b>	<b>\$ (209,467)</b>	<b>\$ (462,924)</b>
<b>7. Actuarial Gain/(Loss), (3) + (6)</b>	<b>\$ (69,206)</b>	<b>\$ (398,158)</b>	<b>\$ (467,364)</b>
<b>8. Contribution Gain/(Loss)</b>	<b>\$ (54,343)</b>	<b>\$ 142,181</b>	<b>\$ 87,838</b>
<b>9. FY16 Gain/(Loss), (7) + (8)</b>	<b>\$ (123,549)</b>	<b>\$ (255,977)</b>	<b>\$ (379,526)</b>

## Section 1.5 Development of Change in Unfunded Liability During FY16

(\$'s in 000's)

	Pension	Healthcare	Total
1. 2015 Unfunded Liability	\$ 4,406,769	\$ 68,435	\$ 4,475,204
a. Interest on Unfunded Liability, at 8.00%	\$ 352,542	\$ 5,475	\$ 358,017
Normal Cost	172,304	65,266	237,570
Employee Contributions	(96,024)	(621)	(96,645)
Employer Contributions	(235,360)	(155,630)	(390,990)
State Assistance Contributions	(88,586)	(37,934)	(126,520)
Medicare Part D Subsidy	-	(15,466)	(15,466)
Interest on (b), (c), (d), (e), and (f) at 8.00%, adjusted for timing	(4,480)	(2,556)	(7,036)
Change in Healthcare Cost Trend Rates	<u>N/A</u>	<u>0</u>	<u>0</u>
Expected change in Unfunded Liability during FY16	\$ 100,396	\$ (141,466)	\$ (41,070)
2. Expected 2016 Unfunded Liability, (1) + (1)(i)	\$ 4,507,165	\$ (73,031)	\$ 4,434,134
a. Liability (gains)/losses during FY15	\$ (184,251)	\$ 188,691	\$ 4,440
Assets (gains)/losses during FY15	<u>253,457</u>	<u>209,467</u>	<u>462,924</u>
Total (gains)/losses FY16	\$ 69,206	\$ 398,158	\$ 467,364
3. Actual 2016 Unfunded Liability, (2) + (2)(c)	\$ 4,576,371	\$ 325,127	\$ 4,901,498

## Section 1.6 Analysis of Financial Experience

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

Type of (Gain) or Loss	Change in Employer/State Contribution Rate During Fiscal Year				
	Pension				
	2012	2013	2014	2015	2016
1. Health Claims and Demographic Experience	N/A	N/A	N/A	N/A	N/A
2. Salary Experience	0.23%	0.23%	(0.19)%	(0.32)%	(0.35)%
3. Investment Experience	2.40%	1.43%	(2.40)%	0.24%	0.77%
4. Demographic Experience	(1.00)%	(0.84)%	(0.04)%	0.34%	0.13%
5. Addition of Normal Cost Rehire Assumption	0.00%	0.00%	0.00%	0.00%	1.92%
6. Contribution Shortfall	<u>0.25%</u>	<u>0.78%</u>	<u>0.63%</u>	<u>0.00%</u>	<u>0.00%</u>
7. (Gain) or Loss During Year From Experience, (1) + (2) + (3) + (4) + (5) + (6)	1.88%	1.60%	(2.00)%	0.26%	2.47%
8. Assumption and Method Changes	4.89%	0.00%	(6.86)%	0.00%	0.00%
9. System Benefit Changes	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>
10. Composite (Gain) or Loss During Year, (7) + (8) + (9)	6.77%	1.60%	(8.86)%	0.26%	2.47%
11. Beginning Total Employer/State Contribution Rate	<u>16.47%</u>	<u>23.24%</u>	<u>24.84%</u>	<u>15.98%</u>	<u>16.24%</u>
12. Ending Valuation Year Employer/State Contribution Rate, (10) + (11)	23.24%	24.84%	15.98%	16.24%	18.71%
13. Fiscal Year Rates					
a. Fiscal Year Employer/State Contribution Rate	16.29%	14.43%	15.98%	17.27%	18.71%*
b. Fiscal Year for Which Rate Applies	FY15	FY16	FY17	FY18	FY19

\*Expected. Actual Rate to be determined.

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

Type of (Gain) or Loss	Change in Employer/State Contribution Rate During Fiscal Year				
	Healthcare				
	2012	2013	2014	2015	2016
1. Health Claims and Demographic Experience	(2.97)%	(1.51)%	(0.85)%	(3.65)%	1.02%
2. Salary Experience	N/A	N/A	N/A	N/A	N/A
3. Investment Experience	0.71%	0.33%	(2.23)%	0.21%	0.63%
4. Demographic Experience	N/A	N/A	N/A	N/A	N/A
5. Addition of Normal Cost Rehire Assumption	0.00%	0.00%	0.00%	0.00%	0.93%
6. Contribution Shortfall	<u>(0.04)%</u>	<u>0.01%</u>	<u>0.04%</u>	<u>0.00%</u>	<u>0.00%</u>
7. (Gain) or Loss During Year From Experience, (1) + (2) + (3) + (4) + (5) + (6)	(2.30)%	(1.17)%	(3.04)%	(3.44)%	2.58%
8. Assumption and Method Changes	3.07%	0.00%	(6.60)%	0.00%	0.00%
9. System Benefit Changes	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>
10. Composite (Gain) or Loss During Year, (7) + (8) + (9)	0.77%	(1.17)%	(9.64)%	(3.44)%	2.58%
11. Beginning Total Employer/State Contribution Rate	<u>15.84%</u>	<u>16.61%</u>	<u>15.44%</u>	<u>5.80%</u>	<u>2.36%</u>
12. Ending Valuation Year Employer/State Contribution Rate, (10) + (11)	16.61%	15.44%	5.80%	2.36%	4.94%
13. Fiscal Year Rates					
a. Fiscal Year Employer/State Contribution Rate	11.43%	8.15%	5.80%	3.11%	4.94%*
b. Fiscal Year for Which Rate Applies	FY15	FY16	FY17	FY18	FY19

\*Expected. Actual Rate to be determined.

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

Type of (Gain) or Loss	Change in Employer/State Contribution Rate During Fiscal Year				
	Total				
	2012	2013	2014	2015	2016
1. Health Claims and Demographic Experience	(2.97)%	(1.51)%	(0.85)%	(3.65)%	1.02%
2. Salary Experience	0.23%	0.23%	(0.19)%	(0.32)%	(0.35)%
3. Investment Experience	3.11%	1.76%	(4.63)%	0.45%	1.40%
4. Demographic Experience	(1.00)%	(0.84)%	(0.04)%	0.34%	0.13%
5. Addition of Normal Cost Rehire Assumption	0.00%	0.00%	0.00%	0.00%	2.85%
6. Contribution Shortfall	<u>0.21%</u>	<u>0.79%</u>	<u>0.67%</u>	<u>0.00%</u>	<u>0.00%</u>
7. (Gain) or Loss During Year From Experience, (1) + (2) + (3) + (4) + (5) + (6)	(0.42)%	0.43%	(5.04)%	(3.18)%	4.12%
8. Assumption and Method Changes	7.96%	0.00%	(13.46)%	0.00%	0.00%
9. System Benefit Changes	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>
10. Composite (Gain) or Loss During Year, (7) + (8) + (9)	7.54%	0.43%	(18.50)%	(3.18)%	5.05%
11. Beginning Total Employer/State Contribution Rate	<u>32.31%</u>	<u>39.85%</u>	<u>40.28%</u>	<u>21.78%</u>	<u>18.60%</u>
12. Ending Valuation Year Employer/State Contribution Rate, (10) + (11)	39.85%	40.28%	21.78%	18.60%	23.65%
13. Fiscal Year Rates					
a. Fiscal Year Employer/State Contribution Rate	27.72%	22.58%	21.78%	20.38%	23.65%*
b. Fiscal Year for Which Rate Applies	FY15	FY16	FY17	FY18	FY19

\*Expected. 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

## Section 2 Plan Assets

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

As of June 30, 2016	Pension	Healthcare	Total Fair Value	Allocation Percent
Cash and Short-Term Investments				
- Cash and Cash Equivalents	\$ 54,115	\$ 58,917	\$ 113,032	0.8%
- Subtotal	\$ 54,115	\$ 58,917	\$ 113,032	0.8%
Fixed Income Investments				
- Domestic Fixed Income Pool	\$ 471,614	\$ 387,912	\$ 859,526	5.8%
- International Fixed Income Pool	130,864	107,638	238,502	1.6%
- Tactical Fixed Income Pool	55,776	53,045	108,821	0.7%
- High Yield Pool	289,363	238,007	527,370	3.5%
- Treasury Inflation Protection Pool	19,834	16,314	36,148	0.2%
- Emerging Debt Pool	<u>56,071</u>	<u>46,120</u>	<u>102,191</u>	<u>0.7%</u>
- Subtotal	\$ 1,023,522	\$ 849,036	\$ 1,872,558	12.5%
Equity Investments				
- Domestic Equity Pool	\$ 2,143,941	\$ 1,763,433	\$ 3,907,374	26.1%
- International Equity Pool	1,747,452	1,437,313	3,184,765	21.2%
- Private Equity Pool	655,867	539,464	1,195,331	8.0%
- Emerging Markets Equity Pool	235,157	193,421	428,578	2.9%
- Alternative Equity Strategies	<u>349,937</u>	<u>287,829</u>	<u>637,766</u>	<u>4.2%</u>
- Subtotal	\$ 5,132,354	\$ 4,221,460	\$ 9,353,814	62.4%
Other Investments				
- Real Estate Pool	\$ 648,219	\$ 532,515	\$ 1,180,734	7.9%
- Other Investments Pool	810,239	666,437	1,476,676	9.8%
- Absolute Return Pool	541,239	445,180	986,419	6.6%
- Other Assets	<u>15</u>	<u>2,093</u>	<u>2,108</u>	<u>nil</u>
- Subtotal	\$ 1,999,712	\$ 1,646,225	\$ 3,645,937	24.3%
Total Cash and Investments	\$ 8,209,703	\$ 6,775,638	\$ 14,985,341	100.0%
Net Accrued Receivables	<u>17,984</u>	<u>(42,385)</u>	<u>(24,401)</u>	
Net Assets	\$ 8,227,687	\$ 6,733,253	\$ 14,960,940	



## Section 2.2 Changes in Fair Value of Assets During FY16

(\$'s in 000's)

Fiscal Year 2016	Pension	Healthcare	Total Fair Value
1. Net Assets, June 30, 2015 (fair value)	\$ 8,606,862	\$ 6,961,963	\$ 15,568,825
2. Additions:			
a. Employee Contributions	\$ 96,024	\$ 621	\$ 96,645
Employer Contributions	235,360	155,630	390,990
State Assistance Contributions	88,586	37,934	126,520
Interest and Dividend Income	152,212	124,752	276,964
Net Appreciation/(Depreciation) in Fair Value of Investments	(184,340)	(148,263)	(332,603)
Medicare Part D Subsidy	0	15,466	15,466
Other	<u>240</u>	<u>16,100</u>	<u>16,340</u>
Total Additions	\$ 388,082	\$ 202,240	\$ 590,322
3. Deductions:			
a. Medical Benefits	\$ 0	\$ 401,234	\$ 401,234
Retirement Benefits	732,141	0	732,141
Refunds of Contributions	10,034	0	10,034
Investment Expenses	17,839	14,931	32,770
Administrative Expenses	<u>7,243</u>	<u>14,785</u>	<u>22,028</u>
Total Deductions	\$ 767,257	\$ 430,950	\$ 1,198,207
4. Net Assets, June 30, 2016 (fair value)	\$ 8,227,687	\$ 6,733,253	\$ 14,960,940
Approximate Fair Value Investment Return Rate During FY16 Net of All Expense	(0.7)%	(0.8)%	(0.7)%
Liquidity Factor	11.3	17.1	13.4

## Section 2.3 Development of Actuarial Value of Assets

(\$'s in 000's)

The actuarial value of assets was set equal to the fair value at 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 FY16			
a. Fair Value, June 30, 2015	\$ 8,606,862	\$ 6,961,963	\$ 15,568,825
b. Contributions for FY16	419,970	194,185	614,155
c. Medicare Part D Subsidy	0	15,466	15,466
d. Benefit Payments	742,175	401,234	1,143,409
e. Actual Investment Return (net of expenses)	(56,970)	(37,127)	(94,097)
f. Expected Return Rate	8.00%	8.00%	8.00%
g. Expected Return - Weighted for Timing	675,220	547,654	1,222,874
h. Investment Gain/(Loss) for the Year, (g) – (i)	(732,190)	(584,781)	(1,316,971)
i. Deferred Investment Gain/(Loss)	(585,752)	(467,825)	(1,053,577)
2. Actuarial Value, June 30, 2016			
a. Fair Value, June 30, 2016	\$ 8,227,687	\$ 6,733,253	\$ 14,960,940
b. Deferred Investment Gain/(Loss)	(828,975)	(678,077)	(1,507,052)
c. Actuarial Value, June 30, 2016, (a) – (b)	\$ 9,056,662	\$ 7,411,330	\$ 16,467,992
3. Ratio of Actuarial Value of Assets to Fair Value of Assets	110.1%	110.1%	110.1%
4. Approximate Actuarial Value Investment Return Rate During FY16 Net of All Expenses	5.1%	4.8%	5.0%

The tables below show the development of gain/(loss) to be recognized in the current year (in thousands).

Pension				
Plan Year Ended	Asset Gain/(Loss)	Gain/(Loss) Recognized in Prior Years	Gain/(Loss) Recognized This Year	Gain/(Loss) Deferred to Future Years
6/30/2012	\$ 0	\$ 0	\$ 0	\$ 0
6/30/2013	0	0	0	0
6/30/2014	0	0	0	0
6/30/2015	(405,373)	(81,075)	(81,075)	(243,223)
6/30/2016	<u>(732,190)</u>	<u>0</u>	<u>(146,438)</u>	<u>(585,752)</u>
<b>Total</b>	<b>\$ (1,137,563)</b>	<b>\$ (81,075)</b>	<b>\$ (227,513)</b>	<b>\$ (828,975)</b>

Healthcare				
Plan Year Ended	Asset Gain/(Loss)	Gain/(Loss) Recognized in Prior Years	Gain/(Loss) Recognized This Year	Gain/(Loss) Deferred to Future Years
6/30/2012	\$ 0	\$ 0	\$ 0	\$ 0
6/30/2013	0	0	0	0
6/30/2014	0	0	0	0
6/30/2015	(350,420)	(70,084)	(70,084)	(210,252)
6/30/2016	<u>(584,781)</u>	<u>0</u>	<u>(116,956)</u>	<u>(467,825)</u>
<b>Total</b>	<b>\$ (935,201)</b>	<b>\$ (70,084)</b>	<b>\$ (187,040)</b>	<b>\$ (678,077)</b>

Total				
Plan Year Ended	Asset Gain/(Loss)	Gain/(Loss) Recognized in Prior Years	Gain/(Loss) Recognized This Year	Gain/(Loss) Deferred to Future Years
6/30/2012	\$ 0	\$ 0	\$ 0	\$ 0
6/30/2013	0	0	0	0
6/30/2014	0	0	0	0
6/30/2015	(755,793)	(151,159)	(151,159)	(453,475)
6/30/2016	<u>(1,316,971)</u>	<u>0</u>	<u>(263,394)</u>	<u>(1,053,577)</u>
<b>Total</b>	<b>\$ (2,072,764)</b>	<b>\$ (151,159)</b>	<b>\$ (414,553)</b>	<b>\$ (1,507,052)</b>

## 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%	18.2%	6.9%
June 30, 2015	7.0%	7.1%	2.9%	6.5%
June 30, 2016	5.0%	6.9%	-0.7%	5.9%

\*Cumulative since FYE June 30, 2005.

## Section 3 Accounting Information \*

### Section 3.1 Historical Exhibits (\$'s in 000's)

#### Schedule of Employer Contributions

This exhibit below shows pension disclosure under GASB No. 25 for fiscal years ending 2007 through 2013.

Fiscal Year Ended June 30	Total Annual Required Contribution	Percentage Contributed		
		By Employer	By State	Total
2013	\$ 382,889	47.0%	42.9%	89.9%
2012	351,674	52.0%	37.2%	89.2%
2011	220,419	63.1%	29.6%	92.7%
2010*	217,080	65.5%	20.5%	86.0%
2009	166,016	68.1%	48.0%	116.1%
2008	140,729	71.2%	36.2%	107.4%
2007	268,742	73.2%	4.1%	77.3%

\*Pension accounting figures for fiscal years after 2013 are contained in separate GASB 67 reports.

## Schedule of Funding Progress

(\$' in 000's)

The exhibit below shows pension disclosure under GASB No. 25, prior to 2006.

Valuation Date	Total Actuarial Accrued Liability	Valuation Assets	Assets as a Percent of Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (UAAL)	Annual Active Member Payroll	UAAL as a Percent of Annual Active Member Payroll
June 30, 2005	\$ 12,844,841	\$ 8,442,919	65.7%	\$ 4,401,922	\$ 1,513,117	290.9%
June 30, 2004 <sup>2 3</sup>	11,443,916	8,030,414	70.2%	3,413,502	1,472,987	231.7%
June 30, 2003	10,561,653	7,687,281	72.8%	2,874,372	1,460,783	196.8%
June 30, 2002 <sup>1 2 3</sup>	9,859,591	7,412,833	75.2%	2,446,758	1,402,687	174.4%
June 30, 2001	7,868,574	7,941,756	100.9%	N/A	1,360,401	N/A
June 30, 2000 <sup>2 3</sup>	7,376,912	7,454,758	101.1%	N/A	1,324,278	N/A
June 30, 1999	6,648,673	7,016,340	105.5%	N/A	1,279,359	N/A
June 30, 1998 <sup>1 2 3</sup>	6,203,991	6,571,562	105.9%	N/A	1,232,488	N/A
June 30, 1997	5,534,116	5,885,488	106.3%	N/A	1,227,795	N/A

<sup>1</sup> Change in Asset Valuation Method

<sup>2</sup> Change of Assumptions

<sup>3</sup> Change in Methods

## Section 3.2 Postemployment Healthcare (\$ in 000's)

The exhibit below shows postemployment healthcare disclosure without regard to the Medicare Part D subsidy under GASB No. 43

Valuation Date	Total Actuarial Accrued Liability	Valuation Assets	Assets as a Percent of Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (UAAL)	Annual Active Member Payroll <sup>1</sup>	UAAL as a Percent of Annual Active Member Payroll
June 30, 2016 – 4.30%	\$ 13,527,347	\$ 7,411,330	54.8%	\$ 6,116,017	\$ 1,346,541	454.2%
June 30, 2015 – 4.55%	12,283,190	7,242,299	59.0%	5,040,891	1,420,479	354.9%
June 30, 2014 <sup>2</sup> – 4.90%	12,758,985	6,913,160	54.2%	5,845,825	1,491,583	391.9%
June 30, 2013 – 5.41%	12,281,372	5,651,877	46.0%	6,629,495	1,534,665	432.0%
June 30, 2012 <sup>2</sup> – 6.88%	9,812,274	5,301,609	54.0%	4,510,665	1,522,399	296.3%
June 30, 2011 – 7.43%	9,091,034	5,051,625	55.6%	4,039,409	1,559,938	258.9%
June 30, 2010 <sup>2</sup> – 7.48%	9,304,504	4,687,632	50.4%	4,616,872	1,586,697	291.0%
June 30, 2009 – 4.70%	12,770,990	4,134,450	32.4%	8,636,540	1,585,490	544.7%
June 30, 2008 <sup>2</sup> – 4.50%	13,013,450	3,829,334	29.4%	9,184,116	1,577,846	582.1%
June 30, 2007 – 4.50%	11,108,553	3,161,956	28.5%	7,946,597	1,605,819	494.9%
June 30, 2006 <sup>2</sup> – 4.50%	11,455,015	2,709,843	23.7%	8,745,172	1,590,693	549.8%

For illustration, the exhibit below shows the postemployment healthcare disclosure without regard to the Medicare Part D subsidy discounted at 8.00% and at 4.25% per annum under GASB No. 43 for the current year. These values show the minimum and maximum accrued liability amounts depending on the portion of ARC actually contributed.

Valuation Date	Total Actuarial Accrued Liability	Valuation Assets	Assets as a Percent of Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (UAAL)	Annual Active Member Payroll <sup>1</sup>	UAAL as a Percent of Annual Active Member Payroll
June 30, 2016 – 8.00%	\$ 8,234,549	\$ 7,411,330	90.0%	\$ 823,219	\$ 1,346,541	61.1%
June 30, 2016 – 4.25%	13,631,658	7,411,330	54.4%	6,220,328	1,346,541	461.9%

<sup>1</sup> Actual active member payroll has been based on information provided by KPMG, LLP.

<sup>2</sup> Change in assumptions

## Schedule of Employer Contributions

(\$'s in 000's)

This exhibit below shows postemployment healthcare disclosure without regard to the Medicare Part D subsidy under GASB No. 43 for fiscal year ending 2007 and later.

Fiscal Year Ended June 30	Total Annual Required Contribution	Percentage Contributed		
		By Employer	By State	Total
2016	\$ 790,824	19.7%	8.8%	28.5 %
2015	782,258	21.9%	6.0%	27.9%
2014	783,827	26.1%	19.5%	45.6%
2013	612,792	37.5%	25.1%	62.6%
2012	498,433	44.8%	28.8%	73.6%
2011	525,075	49.8%	21.6%	71.4%
2010*	790,793	31.6%	54.8%	86.4%
2009	391,321	68.1%	41.4%	109.5%
2008	370,456	71.2%	36.2%	107.4%
2007	189,495	73.2%	4.1%	77.3%

\* The ARC and percentage contributed are based on Conduent's calculation and do not match the CAFR. The percentage contributed in includes the legal settlement in FY10, net of fees, as well as the Medicare Part D subsidy contributed by the State to the Healthcare Fund.

The exhibit below shows the healthcare annual required contribution (ARC) as a percentage of pay.

Valuation Date	Fiscal Year	ARC (% of Pay)	
		Healthcare	Healthcare Discount Rate
June 30, 2005	FY08	53.96%	4.50%
June 30, 2006	FY09	55.87%	4.50%
June 30, 2007	FY10	49.98%	4.70%
June 30, 2008	FY11	33.66%	7.48%
June 30, 2009	FY12	32.74%	7.43%
June 30, 2010*	FY13	39.93%	6.88%
June 30, 2011	FY14	52.55%	5.41%
June 30, 2012	FY15	55.07%	4.90%
June 30, 2013	FY16	58.73%	4.55%
June 30, 2014	FY17	N/A**	4.30%
June 30, 2015	FY18	N/A**	N/A**
June 30, 2016	FY19	N/A**	N/A**

\* Change in discount rate assumptions effective June 30, 2010

\*\*GASB 74 accounting will be in effect beginning in FY17 (replacing ARC) and will be provided in a separate report.

GASB 43 ARC is based on DB salary only and a level dollar basis to determine normal cost and amortization of the unfunded liability. These amounts are converted to percentage of pay. DB salary is the same salary used for determination of employer contribution rates.



## Section 3.3 Notes to Trend Data

### Actuarial Assumptions, Methods and Additional Information under GASB

Valuation Date	June 30, 2016
Actuarial Cost Method	Entry Age Normal Level Percentage of Pay Normal Cost Basis for Pension Level Dollar Normal Cost Basis for Healthcare
Amortization Method	Level Percentage of Pay, Closed for Pension Level Dollar, Closed for Healthcare
Amortization Period	25 years as of June 30, 2014
Asset Valuation Method	5-year smoothed market starting in FY15
Actuarial Assumptions:	
Investment rate of return*	8.00% for pension (net of expenses), 4.30% for healthcare.
Projected salary increases*	Peace Officer/Firefighter: Merit – 2.75% per year for the first 4 years of employment, grading down to 0.5% at 7 years and thereafter. Productivity – 0.5% per year. Others: Merit – 6.00% per year grading down to 2.00% after 5 years; for more than 6 years of service, 1.50% grading down to 0%. Productivity – 0.5% per year.
Cost-of-living adjustment	Postretirement Pension Adjustment as described in Section 6.1, item (14)

\*Includes inflation at 3.12%

GASB 43 requires that the discount rate used in the valuation be the estimated long-term yield on investments that are expected to finance postemployment benefits. Depending on the method by which a plan is financed, the relevant investments could be plan assets, employer assets or a combination of plan and employer assets. The investment return should reflect the nature and the mix of both current and expected investments and the basis used to determine the actuarial value of assets.

PERS retiree healthcare benefits are partially funded. GASB 43 outlines two reasonable methods of developing a blended discount rate when a plan is partially funded. These methods base the proportion of assumed plan and employer asset returns on 1) the funded ratio and 2) the percentage of the annual required contribution (ARC) actually being contributed to the plan. The State of Alaska has utilized the second methodology to develop a discount rate of 4.30% as of June 30, 2014, to be used for June 30, 2016 disclosure under GASB 43. FY17 information will be developed separately in compliance with GASB 74.

The development of the discount rate used for the June 30, 2016 healthcare liabilities valuation disclosure purposes is summarized below:

**Investment Returns**

Plan Assets (Long-Term Return)	=	8.00%
Employer Assets (Estimated Short-Term Return)	=	4.25%

**Based on Percentage of ARC Contributed During FY14\***

1. Contribution Allocated to Healthcare	=	22.20%
2. Annual Required Contribution, Funding Assumptions	=	52.55%
3. Pay-as-you-go Contribution	=	21.81%
4. Portion of ARC Contributed: $[(1-3) / (2-3)]$ , not less than 0%, not greater than 100%]]	=	1.28%
5. Multiplied by long-term investment return	=	0.10%
6. Portion of ARC not Contributed: $[100\% - (4)]$	=	98.72%
7. Multiplied by short-term investment return	=	4.20%
8. Total: (5) + (7)	=	4.30%

\*It is assumed that FY12 contributions allocated to healthcare ARC for funding purposes and pay-as-you-go contributions are used to derive the GASB 43 discount rate applied to the June 30, 2014 valuation (FY15) which in turn drives the June 30, 2016 GASB 43 discount rate.

## Section 3.4 Solvency Test

(\$'s in 000's)

The exhibit below shows the pension Solvency Test for valuation dates June 30, 2005 and later.

Valuation Date	Pension Actuarial Accrued Liability For:				Portion of Actuarial Accrued Liability Covered by Assets:		
	(1)	(2)	(3)		(1)	(2)	(3)
	Active Member Contributions	Inactive Members	Active Members (Employer-Financed Portion)	Pension Valuation Assets			
June 30, 2016	\$ 1,458,830	\$ 9,147,818	\$ 3,026,385	\$ 9,056,662	100.0%	83.1%	0.0%
June 30, 2015	1,475,852	8,762,863	3,099,214	8,931,160	100.0%	85.1%	0.0%
June 30, 2014 <sup>1 2</sup>	1,486,335	8,264,683	3,196,741	7,731,438	100.0%	75.6%	0.0%
June 30, 2013	1,479,538	7,514,255	2,952,088	6,510,749	100.0%	67.0%	0.0%
June 30, 2012	1,459,943	7,057,967	2,911,034	6,530,421	100.0%	71.8%	0.0%
June 30, 2011	1,421,967	6,657,517	2,839,563	6,762,149	100.0%	80.2%	0.0%
June 30, 2010 <sup>1</sup>	1,388,029	6,268,461	2,715,182	6,469,832	100.0%	81.1%	0.0%
June 30, 2009	1,315,924	5,914,959	2,471,203	6,108,528	100.0%	81.0%	0.0%
June 30, 2008	1,242,288	5,606,402	2,305,592	7,210,772	100.0%	100.0%	15.7%
June 30, 2007	1,203,007	5,282,132	2,177,185	6,739,004	100.0%	100.0%	11.7%
June 30, 2006 <sup>1 2</sup>	1,157,755	4,933,609	2,002,679	6,331,065	100.0%	100.0%	12.0%
June 30, 2005	1,104,821	4,627,467	1,354,903	6,016,713 <sup>3</sup>	100.0%	100.0%	21.0%

<sup>1</sup> Change in Assumptions

<sup>2</sup> Change in Methods

<sup>3</sup> The pension and postemployment healthcare valuation assets were allocated using a ratio of fair value of assets as of June 30, 2005.

The exhibit below shows the postemployment healthcare Solvency Test for valuation dates June 30, 2005 and later.

Valuation Date	Postemployment Healthcare Actuarial Accrued Liability For:				Portion of Actuarial Accrued Liability Covered by Assets:		
	(1)	(2)	(3)	Postemployment Healthcare Valuation Assets	(1)	(2)	(3)
	Active Member Contributions	Inactive Members	Active Members (Employer-Financed Portion)				
June 30, 2016	\$ 0	\$ 5,393,537	\$ 2,342,920	\$ 7,411,330	100.0%	100.0%	86.1%
June 30, 2015	0	5,159,283	2,151,451	7,242,299	100.0%	100.0%	96.8%
June 30, 2014 <sup>1</sup>	0	5,455,114	2,494,499	6,913,160	100.0%	100.0%	58.5%
June 30, 2013 <sup>1</sup>	0	5,298,380	2,748,498	5,651,877	100.0%	100.0%	12.9%
June 30, 2012 <sup>1</sup>	0	5,026,080	2,837,337	5,301,609	100.0%	100.0%	9.7%
June 30, 2011	0	4,812,845	3,008,658	5,051,625	100.0%	100.0%	7.9%
June 30, 2010 <sup>1</sup>	0	4,581,806	3,179,014	4,687,632	100.0%	100.0%	3.3%
June 30, 2009	0	4,232,394	2,644,891	4,134,450	100.0%	97.7%	0.0%
June 30, 2008 <sup>1</sup>	0	4,166,270	2,567,589	3,829,334	100.0%	91.9%	0.0%
June 30, 2007	0	3,684,906	2,223,703	3,161,956	100.0%	85.8%	0.0%
June 30, 2006 <sup>1,2</sup>	0	3,990,202	2,304,168	2,709,843	100.0%	67.9%	0.0%
June 30, 2005	0	4,039,591	1,718,059	2,426,206 <sup>3</sup>	100.0%	60.1%	0.0%

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

<sup>1</sup> Change in Assumptions

<sup>2</sup> Change in Methods

<sup>3</sup> The pension and postemployment healthcare valuation assets were allocated using a ratio of fair value of assets as of June 30, 2005.

The exhibit below shows the combined pension and postemployment healthcare Solvency Test for valuation dates June 30, 2010 and before.

Valuation Date	Actuarial Accrued Liability For:			Valuation Assets	Portion of Actuarial Accrued Liability Covered by Assets:		
	(1)	(2)	(3)		(1)	(2)	(3)
	Active Member Contributions	Inactive Members	Active Members (Employer-Financed Portion)				
June 30, 2010 <sup>1</sup>	\$ 1,388,029	\$ 10,850,267	\$ 5,894,196	\$ 11,157,464	100.0%	90.0%	0.0%
June 30, 2009	1,315,924	10,147,353	5,116,094	10,242,978	100.0%	88.0%	0.0%
June 30, 2008 <sup>1</sup>	1,242,288	9,772,672	4,873,181	11,040,106	100.0%	100.0%	0.5%
June 30, 2007	1,203,007	8,967,038	4,400,888	9,900,960	100.0%	97.0%	0.0%
June 30, 2006 <sup>1 2</sup>	1,157,755	8,923,811	4,306,847	9,040,908	100.0%	88.3%	0.0%
June 30, 2005	1,104,821	8,667,058	3,072,962	8,442,919	100.0%	84.7%	0.0%
June 30, 2004 <sup>1</sup>	1,070,268	7,650,156	2,723,492	8,030,414	100.0%	91.0%	0.0%
June 30, 2003	1,026,730	6,860,834	2,674,089	7,687,281	100.0%	97.1%	0.0%
June 30, 2002 <sup>1 2 3</sup>	967,045	6,301,095	2,591,451	7,412,833	100.0%	100.0%	5.6%
June 30, 2001	920,702	5,059,386	1,888,486	7,941,756	100.0%	100.0%	100.0%

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

<sup>1</sup> Change in Assumptions

<sup>2</sup> Change in Methods

<sup>3</sup> Change in Asset Valuation Method

## Section 4 Projections

### Section 4.1 Projection Assumptions and Methods

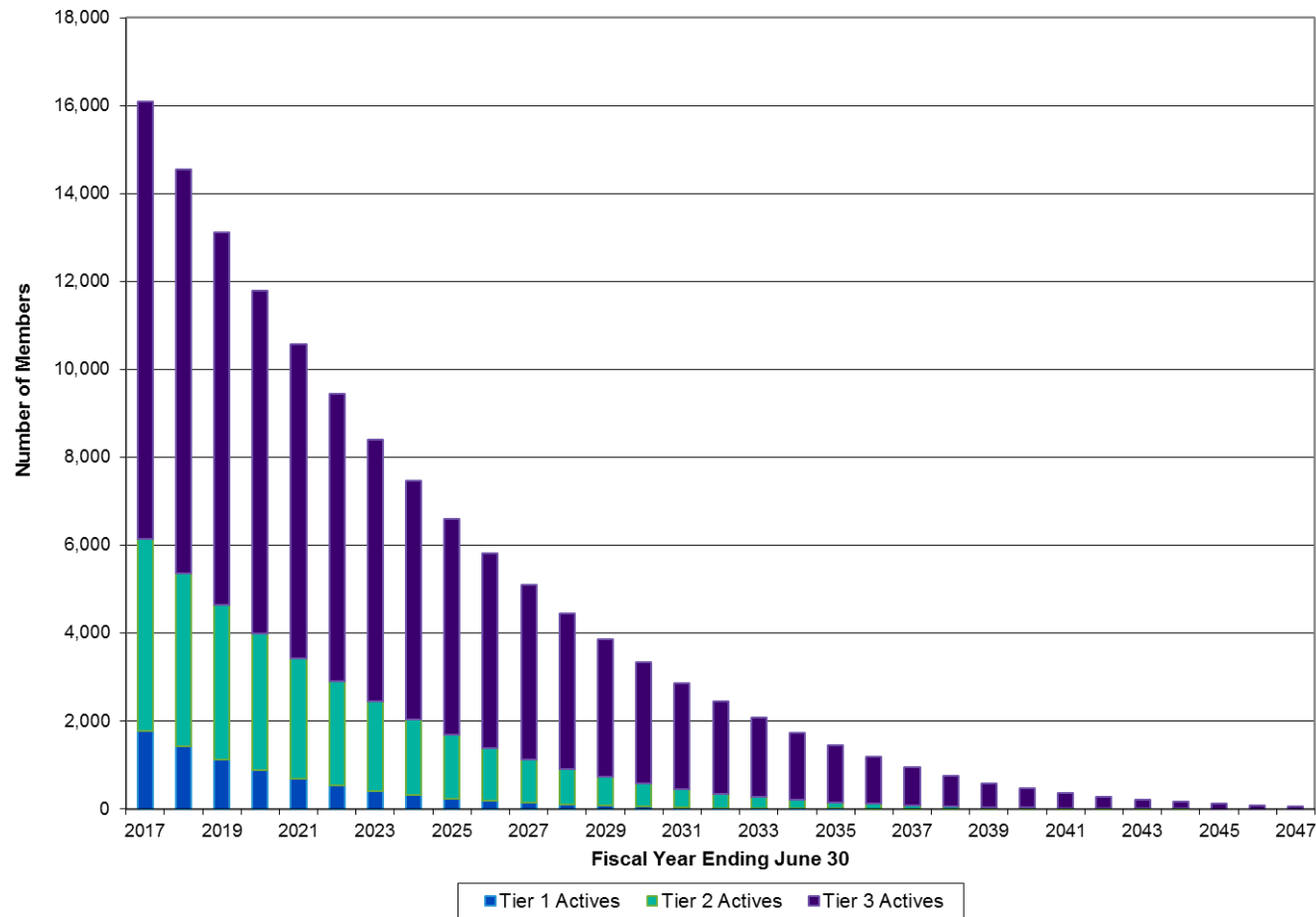
#### Key Assumptions

- 8.00% investment return on the Fair Value of Assets in all future years.
- The Actuarial Value of Assets is 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 6. All future demographic experience is assumed to be exactly realized.
- The actuarially calculated contribution rate using a two-year roll-forward approach is adopted each year.
- No new DB Plan members enter into Tiers 1, 2 or 3.
- Projections assume a 0% increase in the total active member population. All new members are expected to enter the DCR plan and contribution rates are determined as a percent of total DB and DCR payroll, combined.
- For the Sensitivity Analysis, all assumptions and methods are the same except investment returns on the Fair Value of Assets are assumed as follows:
  - Base Case: 8.00% for all future years
  - Optimistic: 8.75% for all future years
  - Pessimistic: 7.25% for all future years

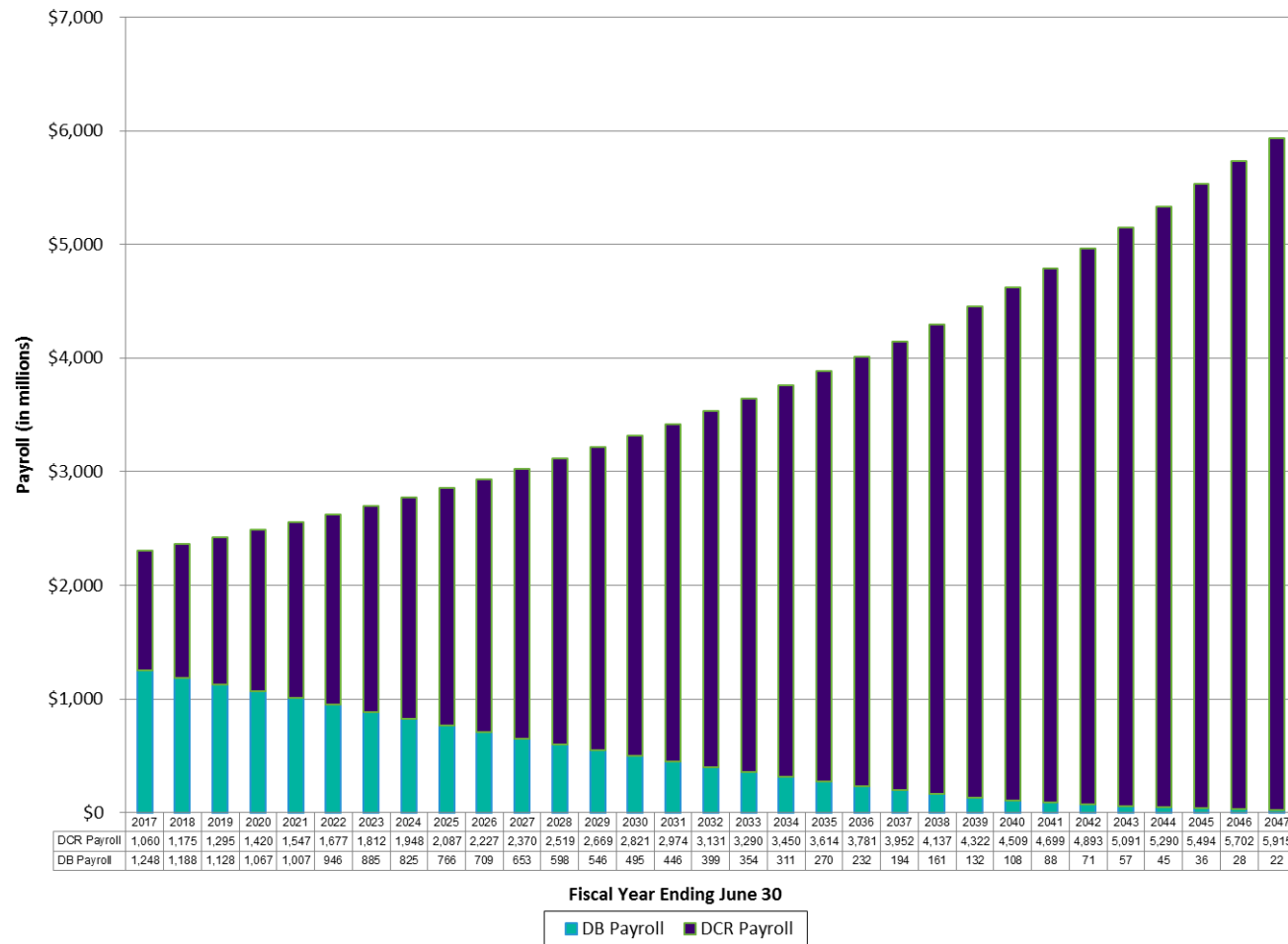
In each case, liabilities have been projected using 8.00% as the discount rate for future benefit payments. These scenarios are intended to illustrate the impact if investment rates of return are different than the 8.00% assumed investment return. They do not illustrate the effect of changing the assumed discount rate for determining liabilities.

## Section 4.2 Membership Projection

### Projected Active Member Count

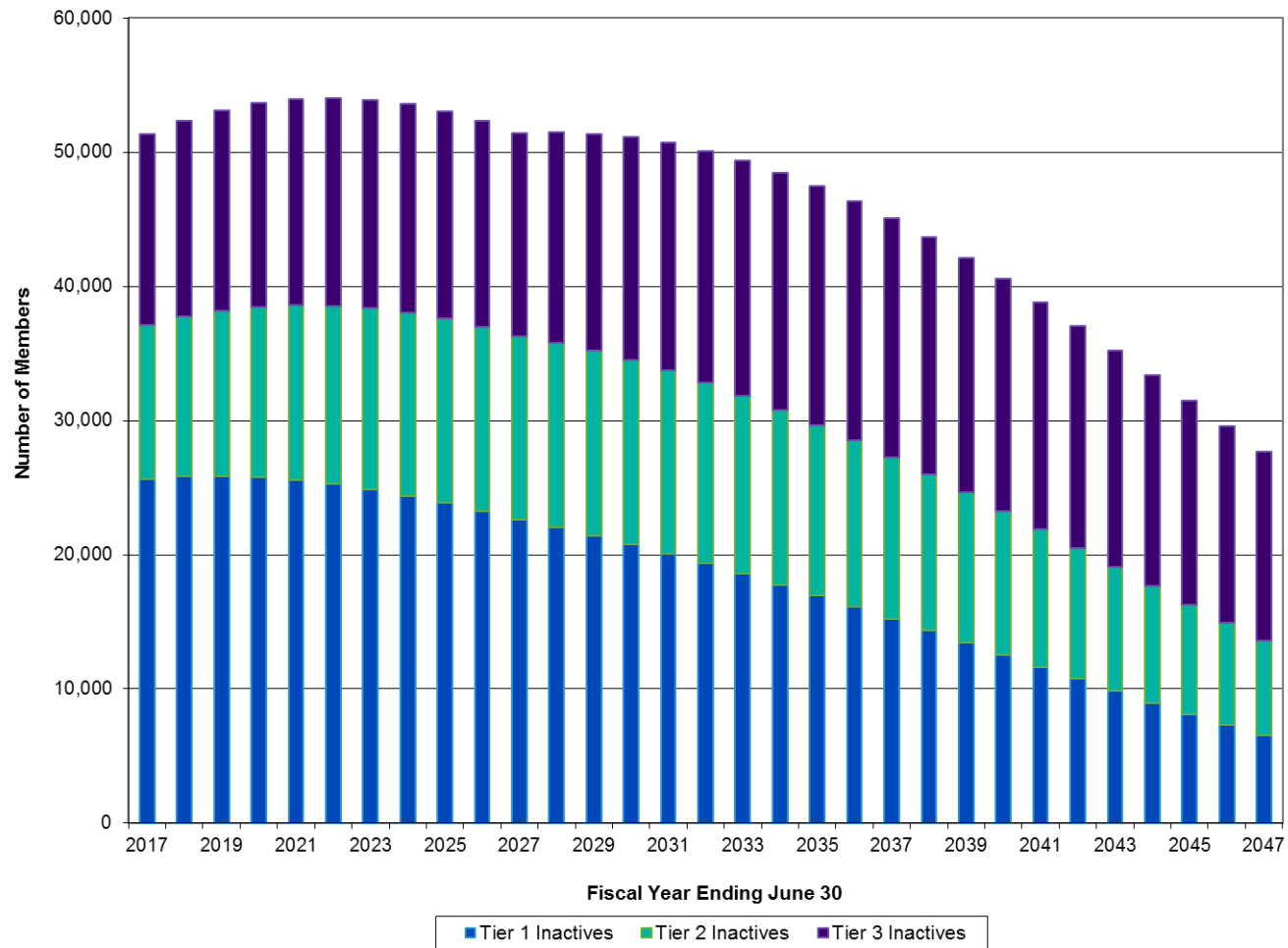


## Projected DB and DCR Payroll



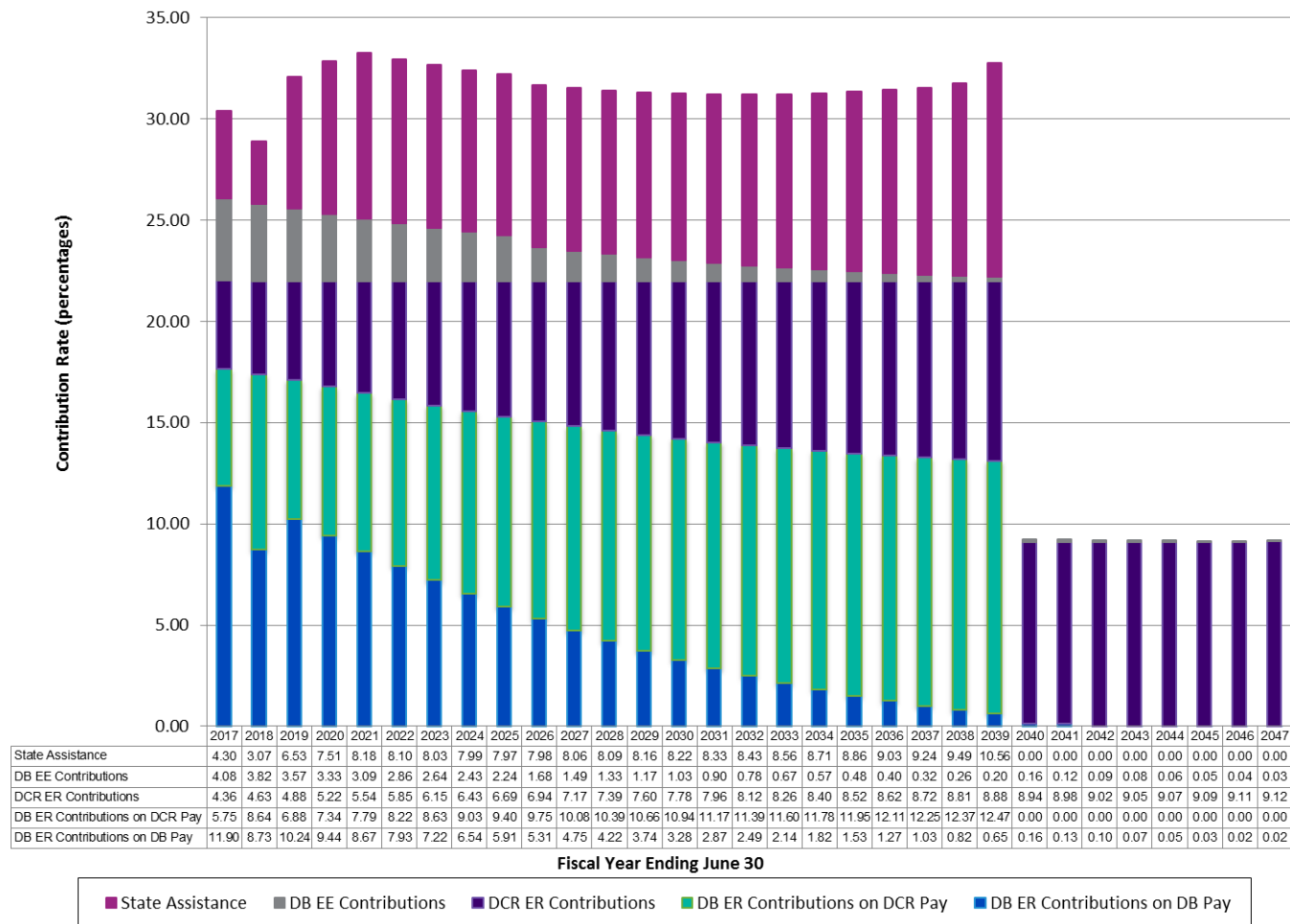


## Projected Inactive Member Count

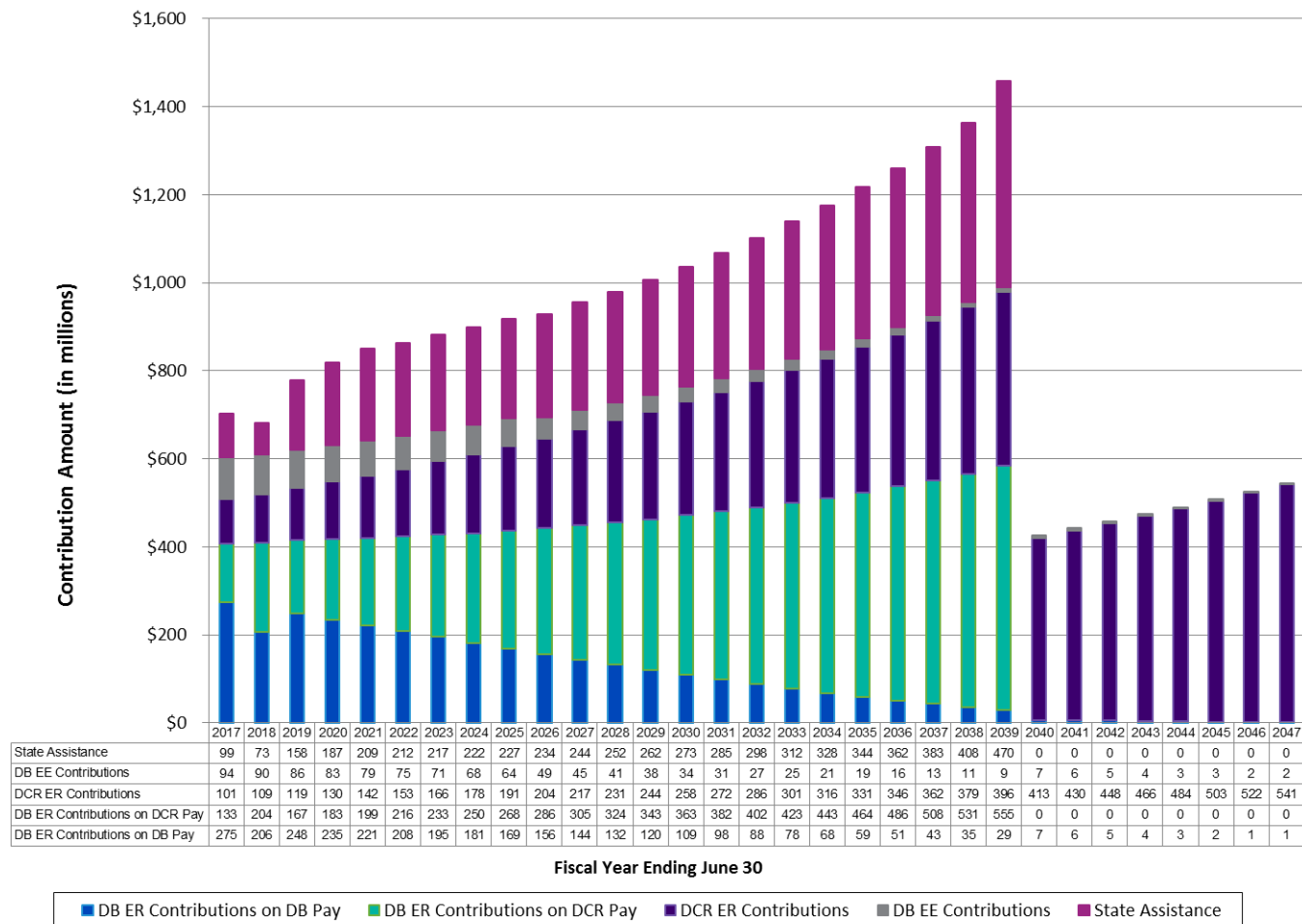


## Section 4.3 Projected Employer/State Contribution Rates

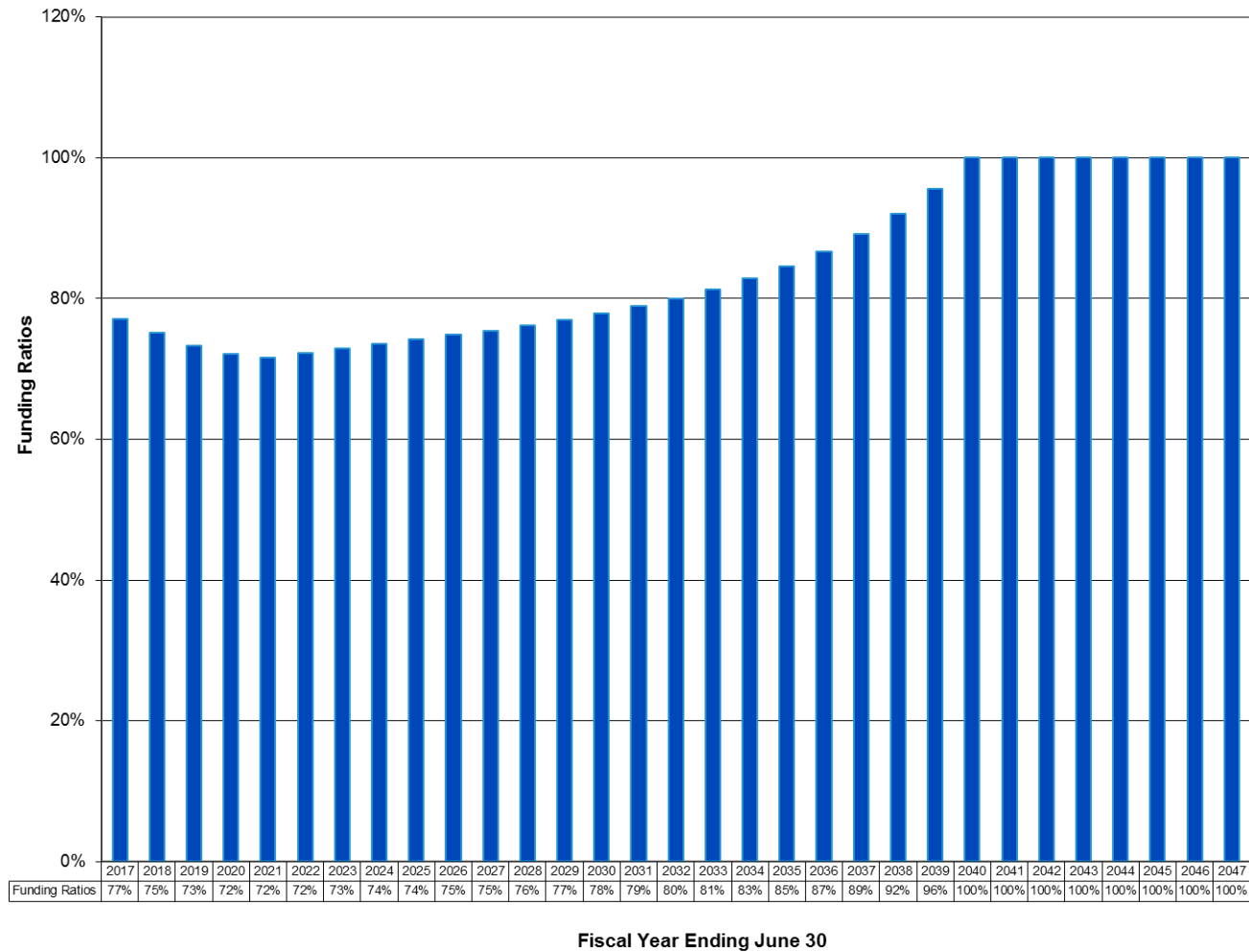
Based on Total DB and DCR Payroll



## Section 4.4 Projected Employer/State Contribution Amounts



## Section 4.5 Projection of Funded Ratios



## Section 4.6 Table of Projected Actuarial Results

### State of Alaska PERS Financial Projections (\$ in Thousands) Based on 2016 Actuarial Valuation Results, 0% Population Growth for Payroll Baseline

Fiscal Year End	FY 17 Investment Return Valuation Amounts on July 1 (Beginning of Fiscal Year)				Investment Return of 8.00% for FY 17 and beyond.												Deferred Asset Gain/(Loss)	Ending Actuarial Assets
	Actuarial Assets	Accrued Liability	Funding Ratio	Surplus (Deficit)	Total Salaries	Er/State Ctb Rate	DCR Ctb Rate	Total Ctb Rate	Flow Amounts During Following 12 Months				Benefit Payments	Net Contribs	Investment Earnings			
									Employer	State Assistance	Employee	Total						
2017	\$16,467,992	\$21,369,489	77.1%	(\$4,901,497)	\$2,307,675	21.95%	4.36%	26.31%	\$407,305	\$99,165	\$94,098	\$600,568	\$1,200,430	(\$599,862)	\$1,171,338	(\$1,092,500)	\$16,624,917	
2018	16,624,917	22,111,348	75.2%	(5,486,431)	2,363,133	20.44%	4.63%	25.07%	410,476	72,571	90,263	573,310	1,280,387	(707,077)	1,213,539	(677,947)	16,716,826	
2019	16,716,826	22,809,032	73.3%	(6,092,206)	2,423,286	23.65%	4.88%	28.53%	414,867	158,240	86,474	659,581	1,361,519	(701,938)	1,257,480	(263,394)	16,857,815	
2020	16,857,815	23,367,071	72.1%	(6,509,256)	2,487,276	24.29%	5.22%	29.51%	417,365	186,794	82,717	686,876	1,440,390	(753,514)	1,300,801	0	17,141,708	
2021	17,141,708	23,938,757	71.6%	(6,797,049)	2,554,050	24.64%	5.54%	30.18%	420,397	208,921	78,920	708,238	1,519,084	(810,846)	1,342,974	0	17,673,836	
2022	17,673,836	24,459,893	72.3%	(6,786,057)	2,623,263	24.25%	5.85%	30.10%	423,657	212,485	75,067	711,209	1,597,874	(886,665)	1,382,452	0	18,169,623	
2023	18,169,623	24,927,185	72.9%	(6,757,562)	2,696,987	23.88%	6.15%	30.03%	427,472	216,568	71,206	715,246	1,676,684	(961,438)	1,419,085	0	18,627,270	
2024	18,627,270	25,336,236	73.5%	(6,708,966)	2,773,309	23.56%	6.43%	29.99%	431,804	221,588	67,530	720,922	1,754,389	(1,033,467)	1,452,816	0	19,046,619	
2025	19,046,619	25,684,666	74.2%	(6,638,047)	2,853,105	23.28%	6.69%	29.97%	436,810	227,393	63,905	728,108	1,829,824	(1,101,716)	1,483,672	0	19,428,574	
2026	19,428,574	25,970,356	74.8%	(6,541,782)	2,936,115	23.04%	6.94%	29.98%	442,179	234,302	49,258	725,739	1,902,673	(1,176,934)	1,511,316	0	19,762,956	
2027	19,762,956	26,192,268	75.5%	(6,429,312)	3,023,552	22.89%	7.17%	30.06%	448,393	243,698	45,146	737,237	1,961,786	(1,224,549)	1,536,384	0	20,074,791	
2028	20,074,791	26,347,189	76.2%	(6,272,398)	3,117,584	22.70%	7.39%	30.09%	455,479	252,212	41,428	749,119	2,030,202	(1,281,083)	1,559,232	0	20,352,940	
2029	20,352,940	26,432,697	77.0%	(6,079,757)	3,215,108	22.56%	7.60%	30.16%	462,976	262,353	37,774	763,103	2,097,431	(1,334,328)	1,579,584	0	20,598,196	
2030	20,598,196	26,444,689	77.9%	(5,846,493)	3,315,792	22.44%	7.78%	30.22%	471,506	272,557	34,272	778,335	2,161,006	(1,382,671)	1,597,512	0	20,813,037	
2031	20,813,037	26,381,709	78.9%	(5,568,672)	3,420,848	22.37%	7.96%	30.33%	480,287	284,957	30,956	796,200	2,223,735	(1,427,535)	1,613,235	0	20,998,737	
2032	20,998,737	26,239,013	80.0%	(5,240,276)	3,529,984	22.31%	8.12%	30.43%	489,962	297,577	27,491	815,030	2,283,557	(1,468,527)	1,626,798	0	21,157,008	
2033	21,157,008	26,015,493	81.3%	(4,858,485)	3,643,985	22.30%	8.26%	30.56%	500,683	311,925	24,512	837,120	2,339,468	(1,502,348)	1,638,531	0	21,293,191	
2034	21,293,191	25,708,166	82.8%	(4,414,975)	3,760,877	22.31%	8.40%	30.71%	511,479	327,572	21,445	860,496	2,386,798	(1,526,302)	1,648,966	0	21,415,855	
2035	21,415,855	25,319,911	84.6%	(3,904,056)	3,884,213	22.34%	8.52%	30.86%	523,592	344,141	18,605	886,338	2,428,321	(1,541,983)	1,658,701	0	21,532,572	
2036	21,532,572	24,850,771	86.6%	(3,318,199)	4,012,767	22.41%	8.62%	31.03%	536,908	362,353	15,962	915,223	2,463,136	(1,547,913)	1,668,432	0	21,653,091	
2037	21,653,091	24,301,475	89.1%	(2,648,384)	4,146,899	22.52%	8.72%	31.24%	550,708	383,174	13,228	947,110	2,490,588	(1,543,478)	1,679,004	0	21,788,618	
2038	21,788,618	23,675,490	92.0%	(1,886,872)	4,297,537	22.68%	8.81%	31.49%	566,845	407,836	11,128	985,809	2,505,801	(1,519,992)	1,691,723	0	21,960,348	
2039	21,960,348	22,978,888	95.6%	(1,018,540)	4,454,073	23.68%	8.88%	32.56%	584,374	470,351	8,970	1,063,695	2,511,633	(1,447,938)	1,710,817	0	22,223,227	
2040	22,223,227	22,216,367	100.0%	6,860	4,616,844	0.16%	8.94%	9.10%	7,387	0	7,450	14,837	2,503,240	(2,488,403)	1,671,881	0	21,406,706	
2041	21,406,706	21,398,219	100.0%	8,487	4,786,716	0.13%	8.98%	9.11%	6,223	0	5,926	12,149	2,485,295	(2,473,146)	1,607,218	0	20,540,778	
2042	20,540,778	20,530,345	100.0%	10,433	4,963,584	0.10%	9.02%	9.12%	4,964	0	4,656	9,620	2,454,177	(2,444,557)	1,539,169	0	19,635,390	
2043	19,635,390	19,623,048	100.0%	12,342	5,147,504	0.07%	9.05%	9.12%	3,604	0	3,862	7,466	2,411,996	(2,404,530)	1,468,449	0	18,699,310	
2044	18,699,310	18,685,132	100.0%	14,178	5,335,152	0.05%	9.07%	9.12%	2,668	0	3,002	5,670	2,354,583	(2,348,913)	1,395,937	0	17,746,333	
2045	17,746,333	17,730,311	100.0%	16,022	5,529,946	0.03%	9.09%	9.12%	1,659	0	2,558	4,217	2,288,063	(2,283,846)	1,322,473	0	16,784,960	
2046	16,784,960	16,767,057	100.0%	17,903	5,729,936	0.02%	9.11%	9.13%	1,146	0	2,078	3,224	2,212,921	(2,209,697)	1,248,723	0	15,823,986	
Totals:									\$10,843,175	\$6,058,733	\$1,119,887	\$18,021,795						

The FY17 Employer/State contribution rates don't match the October 7, 2015 Allocation of Additional Contribution letter due to updated projected Total Salaries

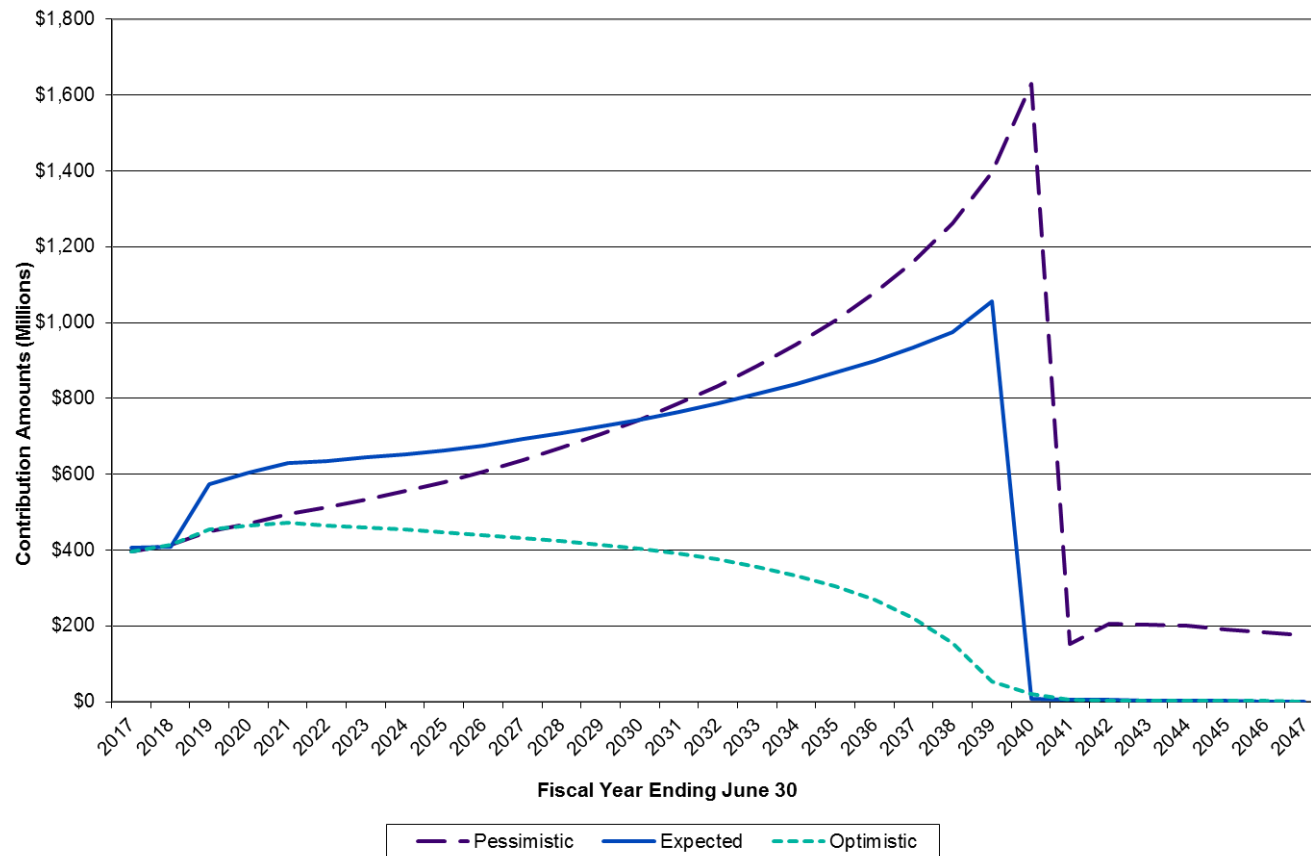
The FY17 State assistance contribution was allocated 100% to pension

Past service contribution rates set to be greater than or equal to 0% for both pension and medical

The employer contribution rate for Occupational Death & Disability and Retiree Medical is 1.37% for Police/Fire and 1.12% for Others, determined as of June 30, 2016

## Section 4.7 Sensitivity Analysis

Impact Various Investment Rates of Return Have on the Employer/State Contribution Amount



## Section 5 Member Data

### Section 5.1 Summary of Members Included

As of June 30	2012	2013	2014	2015	2016 <sup>1</sup>
<b>Active Members</b>					
1. Number	22,730	20,955	19,297	17,660	16,105
2. Average Age	49.85	50.39	50.90	51.34	51.74
3. Average Credited Service	13.32	14.00	14.64	15.29	15.95
4. Average Entry Age	36.53	36.39	36.26	36.05	35.79
5. Average Annual Earnings	\$ 66,119	\$ 69,211	\$ 71,651	\$ 73,248	\$ 75,717
6. Number Vested	20,842	19,670	18,381	16,996	15,607
7. Percent Who Are Vested	91.7%	93.9%	95.3%	96.2%	96.9%
<b>Retirees, Disabilitants and Beneficiaries</b>					
1. Number	28,540	29,865	31,099	32,145	33,353
2. Average Age	67.41	67.76	68.15	68.60	69.02
3. Average Years Since Retirement	N/A	N/A	N/A	11.27	11.48
4. Average Monthly Pension Benefit					
Base	\$ 1,375	\$ 1,415	\$ 1,454	\$ 1,490	\$ 1,529
COLA <sup>2</sup>	89	90	91	92	425
P.R.P.A. <sup>2</sup>	241	242	255	258	794
Adjustment	0	0	0	1	1
Total	\$ 1,705	\$ 1,747	\$ 1,800	\$ 1,841	
<b>Vested Terminations (vested at time of termination, not refunded contributions or commenced benefits)</b>					
1. Number	6,294	6,230	6,167	6,304	6,160
2. Average Age	50.55	50.84	51.15	51.80	52.08
3. Average Monthly Pension Benefit	\$ 844	\$ 863	\$ 897	\$ 991	\$ 1,042
<b>Non-Vested Terminations With Account Balances (not vested at termination, not refunded contributions)</b>					
1. Number	13,552	13,162	12,713	12,339	11,880
2. Average Account Balance	\$ 5,373	\$ 5,578	\$ 5,765	\$ 5,981	\$ 6,212
<b>Total Number of Members</b>	<b>71,116</b>	<b>70,212</b>	<b>69,276</b>	<b>68,448</b>	<b>67,498</b>

<sup>1</sup> 5 members who were terminated before the valuation date were subsequently rehired, per client data as of October 1, 2016. These members were valued as active as of the valuation date.

<sup>2</sup> Beginning with 2016, 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, 2016	DB				DCR	Grand Total
	Tier 1	Tier 2	Tier 3	Total	Tier 4	
Active Members						
1. Number	1,789	4,362	9,954	16,105	18,215	34,320
2. Average Age	59.51	54.38	49.18	51.74	40.39	45.71
3. Average Credited Service	21.38	20.58	12.94	15.95	3.56	9.37
4. Average Entry Age	38.13	33.80	36.24	35.79	36.83	36.34
5. Annual Earnings						
(a) Amount (000's)	\$ 135,394,205	\$ 354,287,649	\$ 729,738,460	\$1,219,420,314	\$1,041,436,500	\$2,260,856,814
(b) Average	\$ 75,682	\$ 81,221	\$ 73,311	\$ 75,717	\$ 57,175	\$ 65,876

As of June 30, 2016	Tier 1	Tier 2	Tier 3	Total
<b>Retirees, Disabilitants and Beneficiaries</b>				
1. Number	23,822	6,708	2,823	33,353
2. Average Age	69.81	67.62	65.75	69.02
3. Average Years Since Retirement	13.53	7.34	4.05	11.48
4. Average Monthly Pension Benefit				
Base	\$ 1,633	\$ 1,386	\$ 990	\$ 1,529
COLA	446	314	289	425
P.R.P.A.	952	263	125	794
Adjustment	0	1	2	1



## Summary of Members Included

As of June 30, 2016	Retiree	Covered Spouse	Covered Children / Dependent	Total
<b>Retiree Medical Participants</b>				
1. Retiree Coverage Only	16,429	-	-	16,429
2. Retiree + Spouse	11,887	11,887	-	23,774
3. Retiree + Children / Other Dependent	301	-	396	697
4. Family	<u>1,139</u>	<u>1,139</u>	<u>1,531</u>	<u>3,809</u>
5. Total	29,756	13,026	1,927	44,709

Retiree Medical Participants as of June 30, 2016		
	Retirees	All Members
Pre-Medicare	10,036	16,663
Medicare Part A & B	19,651	27,951
Medicare Part B Only	<u>69</u>	<u>95</u>
Total	29,756	44,709

As of June 30, 2016	Retiree
<b>Summary of Retiree Medical Data Received</b>	
1. Retiree records on pension data	68,806
2. Records closed / excluded for healthcare data*	15,716
3. Records closed as not eligible/participating in retiree plan	15,981
4. Records with coverage decreases (due to duplicate coverage)	5,923
5. Records not in Aetna data **	<u>1,430</u>
6. Records valued for retiree medical	29,756
7. Records in Aetna data but not on pension data **	585

\* Records closed for multiple pension benefits across all Alaska plans or ineligible pension status.

\*\* These represent a small portion of the population. Where records did not appear with a medical enrollment (1,430 PERS members), we deemed that member as not enrolled. Where enrolled members were not found on the census data (585 PERS and TRS members), we consider that a data issue that is likely due to timing or a mismatch on unique identifiers that will resolve for the next valuation. These were not deemed to significantly impact valuation results. Note that in the above table, item 5 consists of the total PERS and TRS population.

## Summary of Members Included

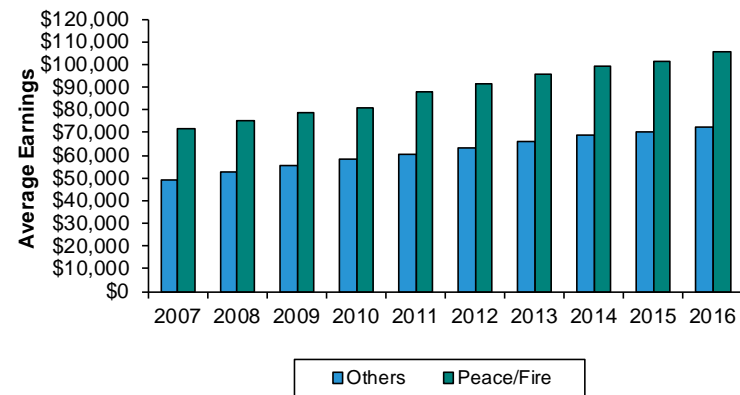
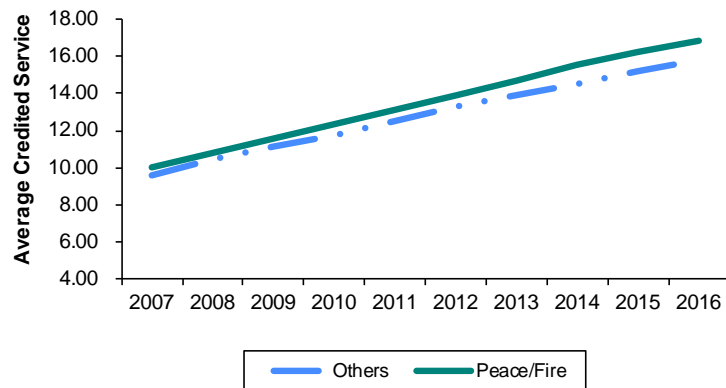
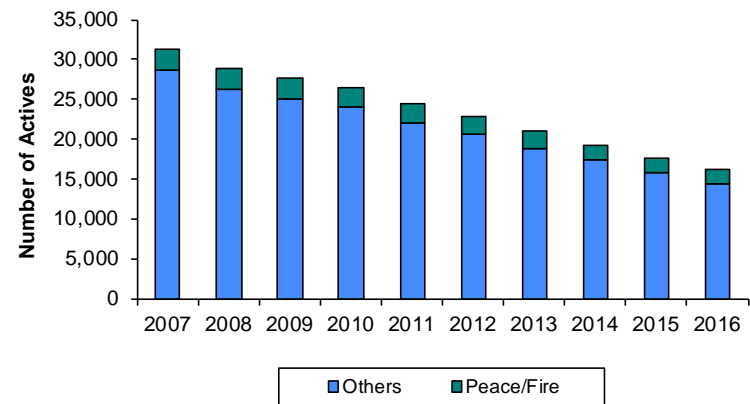
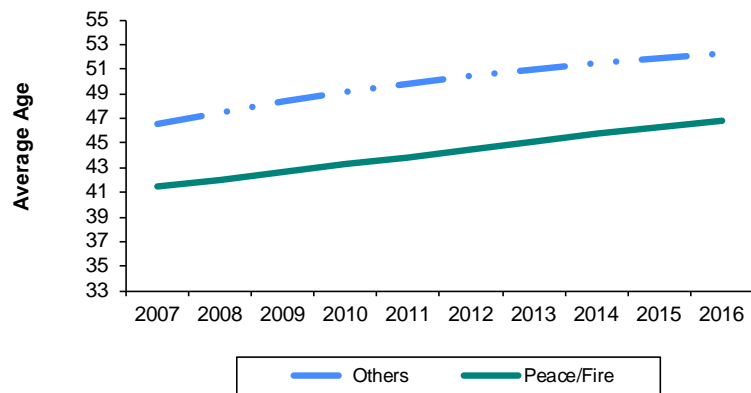
### Active Members – DB Only

As of June 30	2012	2013	2014	2015	2016 <sup>1</sup>
<b>Peace Officer/Firefighter</b>					
1. Number	2,164	2,065	1,958	1,827	1,704
2. Average Age	44.48	45.09	45.74	46.26	46.80
3. Average Credited Service	13.90	14.71	15.55	16.23	16.87
4. Average Entry Age	30.58	30.38	30.19	30.03	29.93
5. Average Annual Earnings	\$ 91,286	\$ 95,658	\$ 98,946	\$ 101,450	\$ 105,317
6. Number Vested	2,098	2,018	1,934	1,817	1,695
7. Percent Who Are Vested	97.0%	97.7%	98.8%	99.5%	99.5%
<b>Others</b>					
1. Number	20,566	18,890	17,339	15,833	14,401
2. Average Age	50.41	50.97	51.48	51.93	52.32
3. Average Credited Service	13.26	13.92	14.54	15.18	15.84
4. Average Entry Age	37.15	37.05	36.94	36.75	36.48
5. Average Annual Earnings	\$ 63,471	\$ 66,320	\$ 68,569	\$ 69,994	\$ 72,214
6. Number Vested	18,744	17,652	16,447	15,179	13,912
7. Percent Who Are Vested	91.1%	93.4%	94.9%	95.9%	96.6%
<b>Total</b>					
1. Number	22,730	20,955	19,297	17,660	16,105
2. Average Age	49.85	50.39	50.90	51.34	51.74
3. Average Credited Service	13.32	14.00	14.64	15.29	15.95
4. Average Entry Age	36.53	36.39	36.26	36.05	35.79
5. Average Annual Earnings	\$ 66,119	\$ 69,211	\$ 71,651	\$ 73,248	\$ 75,717
6. Number Vested	20,842	19,670	18,381	16,996	15,607
7. Percent Who Are Vested	91.7%	93.9%	95.3%	96.2%	96.9%

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

<sup>1</sup> 5 members who were terminated before the valuation date were subsequently rehired, per client data as of October 1, 2016. These members were valued as active as of the valuation date.

## Summary of Members Included – Active Members as of June 30



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

## Section 5.2 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	2	165,682	82,841
30 – 34	83	8,772,463	105,692
35 – 39	231	23,883,313	103,391
40 – 44	404	42,978,183	106,382
45 – 49	437	47,126,696	107,841
50 – 54	297	31,898,284	107,402
55 – 59	171	17,229,267	100,756
60 – 64	60	5,584,541	93,076
65 – 69	18	1,724,836	95,824
70 – 74	1	97,416	97,416
75+	0	0	0

Total 1,704 \$ 179,460,681 \$ 105,317

**Annual Earnings by Credited Service**

Years of Service	Number	Total Annual Earnings	Average Annual Earnings
0	0	\$ 0	\$ 0
1	0	0	0
2	1	62,640	62,640
3	2	122,531	61,266
4	3	206,292	68,764
0 – 4	6	391,463	65,244
5 – 9	58	4,912,704	84,702
10 – 14	652	65,830,531	100,967
15 – 19	528	56,217,550	106,473
20 – 24	324	36,959,526	114,073
25 – 29	115	12,713,688	110,554
30 – 34	14	1,573,398	112,386
35 – 39	6	705,147	117,525
40+	1	156,674	156,674

Total 1,704 \$ 179,460,681 \$ 105,317

**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	1	1	0	0	0	0	0	0	2
30 – 34	0	7	76	0	0	0	0	0	0	83
35 – 39	2	15	158	55	1	0	0	0	0	231
40 – 44	1	12	160	167	63	1	0	0	0	404
45 – 49	1	9	107	150	142	27	1	0	0	437
50 – 54	1	8	80	82	77	46	3	0	0	297
55 – 59	0	3	47	55	31	28	3	4	0	171
60 – 64	0	1	18	14	9	12	4	1	1	60
65 – 69	1	2	5	5	1	1	3	0	0	18
70 – 74	0	0	0	0	0	0	0	1	0	1
75+	0	0	0	0	0	0	0	0	0	0
Total	6	58	652	528	324	115	14	6	1	1,704

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				Annual Earnings by Credited Service			
Age	Number	Total Annual Earnings	Average Annual Earnings	Years of Service	Number	Total Annual Earnings	Average Annual Earnings
0 – 19	0	\$ 0	\$ 0	0	20	\$ 984,473	\$ 49,224
20 – 24	0	0	0	1	53	2,437,981	46,000
25 – 29	26	1,701,009	65,423	2	98	5,931,094	60,521
30 – 34	421	27,870,957	66,202	3	113	6,214,809	54,998
35 – 39	1,084	76,499,112	70,571	4	151	8,024,260	53,141
40 – 44	1,554	115,471,123	74,306	0 – 4	435	23,592,617	54,236
45 – 49	2,110	155,680,399	73,782	5 – 9	1,771	101,488,908	57,306
50 – 54	3,125	227,581,336	72,826	10 – 14	5,289	363,210,322	68,673
55 – 59	3,416	247,051,857	72,322	15 – 19	3,377	252,056,278	74,639
60 – 64	1,895	133,866,690	70,642	20 – 24	1,893	153,942,906	81,322
65 – 69	615	43,397,666	70,565	25 – 29	1,238	108,686,838	87,792
70 – 74	123	8,686,865	70,625	30 – 34	321	29,601,130	92,215
75+	32	2,152,619	67,269	35 – 39	59	5,697,475	96,567
				40+	18	1,683,159	93,509
Total	14,401	\$1,039,959,633	\$ 72,214	Total	14,401	\$ 1,039,959,633	\$ 72,214

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	8	15	3	0	0	0	0	0	0	26
30 – 34	46	142	229	4	0	0	0	0	0	421
35 – 39	71	227	658	127	1	0	0	0	0	1,084
40 – 44	58	250	728	444	71	3	0	0	0	1,554
45 – 49	66	269	834	586	257	95	3	0	0	2,110
50 – 54	70	332	994	765	517	394	51	2	0	3,125
55 – 59	61	277	1,050	827	587	468	134	12	0	3,416
60 – 64	36	186	559	459	350	202	76	26	1	1,895
65 – 69	14	60	188	129	91	64	42	15	12	615
70 – 74	1	10	36	29	18	11	12	4	2	123
75+	4	3	10	7	1	1	3	0	3	32
Total	435	1,771	5,289	3,377	1,893	1,238	321	59	18	14,401

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

## Section 5.3 Member Data Reconciliation

### Total PERS

	Active Members	Inactive Members					Total
		Due a Refund	With Deferred Benefits	Retired Members	Disabled Members	Beneficiaries	
<b>As of June 30, 2015</b>	<b>17,660</b>	<b>12,339</b>	<b>6,304</b>	<b>28,449*</b>	<b>224</b>	<b>3,485</b>	<b>68,461</b>
Vested Terminations	(752)	(8)	762	0	(2)	0	0
Non-vested Terminations	(90)	101	(11)	0	0	0	0
Cash-outs	(47)	(367)	(73)	0	0	0	(487)
Converted to DCR Plan	(1)	(2)	(2)	0	0	0	(5)
Disability Retirements	(14)	0	(9)	0	23	0	0
Age Retirements	(947)	(18)	(615)	1,610	(30)	N/A	0
Deaths With Beneficiary	(24)	0	(8)	(218)	(6)	256	0
Deaths Without Beneficiary	(19)	(20)	(14)	(331)	(2)	(120)	(506)
Expired Benefits	0	0	0	0	0	(8)	(8)
Data Corrections	0	0	0	(2)	0	0	(2)
Transfers Out	(14)	(5)	(7)	0	0	0	(26)
Rehires	328	(140)	(168)	(17)	(3)	0	0
Pick Ups***	25	0	1	0	0	57	83
<b>Net Change</b>	<b>(1,555)</b>	<b>(459)</b>	<b>(144)</b>	<b>1,042</b>	<b>(20)</b>	<b>185</b>	<b>(951)</b>
<b>As of June 30, 2016</b>	<b>16,105</b>	<b>11,880</b>	<b>6,160</b>	<b>29,491**</b>	<b>204</b>	<b>3,670</b>	<b>67,510</b>

\* Includes 13 medical only retirees

\*\* Includes 12 medical only retirees

\*\*\* Pickup beneficiaries are primarily new DROs

## Section 5.4

### Schedule of Active Member Data

#### Peace Officer/Firefighter

Valuation Date	Number	Annual Earnings (000's)	Annual Average Earnings	Percent Increase/ (Decrease) in Average Earnings	Number of Participating Employers
June 30, 2016	1,704	\$ 179,461	\$ 105,317	3.8%	155
June 30, 2015	1,827	185,350	101,450	2.5%	159
June 30, 2014	1,958	193,737	98,946	3.4%	159
June 30, 2013	2,065	197,534	95,658	4.8%	159
June 30, 2012	2,164	197,544	91,286	4.1%	160
June 30, 2011	2,275	199,537	87,709	8.6%	160
June 30, 2010	2,388	192,895	80,777	2.8%	160
June 30, 2009	2,476	194,519	78,562	5.0%	159
June 30, 2008	2,549	190,729	74,825	4.9%	160
June 30, 2007	2,687	191,674	71,334	9.3%	160

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

## Schedule of Active Member Data

### Others

Valuation Date	Number	Annual Earnings (000's) <sup>1</sup>	Annual Average Earnings	Percent Increase/ (Decrease) in Average Earnings	Number of Participating Employers
June 30, 2016	14,401	\$ 1,039,960	\$ 72,214	3.2%	155
June 30, 2015	15,833	1,108,218	69,994	2.1%	159
June 30, 2014	17,339	1,188,918	68,569	3.4%	159
June 30, 2013	18,890	1,252,786	66,320	4.5%	159
June 30, 2012	20,566	1,305,337	63,471	4.6%	160
June 30, 2011	22,118	1,342,122	60,680	4.7%	160
June 30, 2010	24,054	1,393,803	57,945	4.5%	160
June 30, 2009	25,089	1,390,971	55,441	5.1%	159
June 30, 2008	26,301	1,387,117	52,740	6.9%	160
June 30, 2007	28,675	1,414,145	49,316	9.5%	160

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



## Section 5.5

### Active Member Payroll Reconciliation

Payroll Field	Payroll Data (000s)
a) DRB actual reported salaries FY16 – employer list	\$ 2,214,728
b) DRB actual reported salaries FY16 – valuation data	2,068,870
c) Include October data adjustment for rehires	2,069,406
d) Annualized valuation data	2,260,857
e) Valuation payroll as of June 30, 2016	2,394,047
f) Rate payroll for FY17	2,307,675
g) Rate payroll for FY19	2,423,286

- a) Actual reported salaries from DRB employer listing showing all payroll paid during FY16, including those who were not active as of June 30, 2016
- b) Payroll from valuation data for people who are in active status as of June 30, 2016
- c) Payroll from (b) including additional people added who were listed as active as of October 1, 2016 and were run as active in the valuation
- d) Payroll from (c) annualized for both new entrants and part-timers
- e) Payroll from (d) with one year of salary scale applied to estimate salaries payable for the upcoming year
- f) Payroll from (e) with the part-timer annualization removed
- g) Payroll from (f) with two years of assumed decrements and salary scale, and 0% population growth

## Section 5.6

### Summary of New Pension Benefit Recipients

#### Peace Officer/Firefighter

During the Year Ending June 30	2012	2013	2014	2015	2016
<b>Service</b>					
1. Number	78	85	74	97	108
2. Average Age at Commencement	56.73	56.66	57.16	55.29	55.91
3. Average Monthly Pension Benefit	\$ 3,042	\$ 3,400	\$ 3,765	\$ 4,146	\$ 4,614
<b>Survivor (including surviving spouse and DROs)</b>					
1. Number	25	23	30	36	27
2. Average Age at Commencement	62.97	61.25	59.60	63.51	61.48
3. Average Monthly Pension Benefit	\$ 1,541	\$ 1,868	\$ 2,076	\$ 1,546	\$ 1,745
<b>Disability Retirements</b>					
1. Number	4	5	5	3	2
2. Average Age at Commencement	48.14	45.41	43.62	40.50	42.07
3. Average Monthly Pension Benefit	\$ 3,923	\$ 3,000	\$ 2,992	\$ 3,433	\$ 3,096
<b>Total</b>					
1. Number	107	113	109	136	137
2. Average Age at Commencement	57.87	57.10	57.21	57.14	56.81
3. Average Monthly Pension Benefit	\$ 2,724	\$ 3,070	\$ 3,265	\$ 3,442	\$ 4,026

## Summary of New Pension Benefit Recipients

### Average Pension Benefit Payments – Peace Officer/Firefighter

	Years of Credited Service						
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+
Period 7/1/15 - 6/30/16:							
Average Monthly Pension Benefit	\$ 0	\$ 958	\$ 1,742	\$ 3,347	\$ 4,622	\$ 5,778	\$ 7,221
Number of Recipients	0	6	11	19	30	28	16
Period 7/1/14 - 6/30/15:							
Average Monthly Pension Benefit	\$ 0	\$ 1,173	\$ 1,621	\$ 3,632	\$ 4,436	\$ 5,457	\$ 6,863
Number of Recipients	0	8	9	26	24	25	7
Period 7/1/13 - 6/30/14:							
Average Monthly Pension Benefit	\$ 290	\$ 1,423	\$ 2,002	\$ 2,902	\$ 4,014	\$ 5,464	\$ 6,299
Number of Recipients	1	9	10	14	22	16	7
Period 7/1/12 - 6/30/13:							
Average Monthly Pension Benefit	\$ 0	\$ 865	\$ 1,779	\$ 2,762	\$ 3,793	\$ 4,983	\$ 4,911
Number of Recipients	0	9	8	19	31	18	4
Period 7/1/11 - 6/30/12:							
Average Monthly Pension Benefit	\$ 0	\$ 1,159	\$ 1,161	\$ 3,142	\$ 3,504	\$ 4,673	\$ 5,079
Number of Recipients	0	13	13	12	20	17	7
Period 7/1/10 - 6/30/11:							
Average Monthly Pension Benefit	\$ 525	\$ 880	\$ 1,469	\$ 2,666	\$ 3,743	\$ 4,806	\$ 5,661
Number of Recipients	1	8	18	10	24	16	8
Period 7/1/09 - 6/30/10:							
Average Monthly Pension Benefit	\$ 1,902	\$ 1,242	\$ 1,459	\$ 2,284	\$ 3,179	\$ 4,527	\$ 4,695
Number of Recipients	4	7	16	14	28	14	7
Period 7/1/08 - 6/30/09:							
Average Monthly Pension Benefit	\$ 489	\$ 820	\$ 979	\$ 2,466	\$ 3,152	\$ 4,213	\$ 4,894
Number of Recipients	2	17	11	18	23	7	5
Period 7/1- - 6/30/08:							
Average Monthly Pension Benefit	\$ 1,522	\$ 950	\$ 1,171	\$ 2,378	\$ 3,179	\$ 3,837	\$ 6,014
Number of Recipients	6	13	13	20	32	18	3

“Average Monthly Pension Benefit” includes post-retirement pension adjustments and cost-of-living increases.

## Summary of New Pension Benefit Recipients – Others

During the Year Ending June 30		2012	2013	2014	2015	2016
<b>Service</b>						
1. Number		1,413	1,547	1,495	1,281	1,472
2. Average Age at Commencement		59.68	59.94	60.41	60.70	61.28
3. Average Monthly Pension Benefit	\$	2,031	\$ 2,141	\$ 2,290	\$ 2,310	\$ 2,269
<b>Survivor (including surviving spouse and DROs)</b>						
1. Number		238	231	263	275	286
2. Average Age at Commencement		65.26	66.07	67.55	69.00	66.30
3. Average Monthly Pension Benefit	\$	1,005	\$ 1,025	\$ 1,064	\$ 1,159	\$ 1,093
<b>Disability Retirements</b>						
1. Number		25	30	20	27	22
2. Average Age at Commencement		53.32	52.43	49.66	51.39	53.04
3. Average Monthly Pension Benefit	\$	1,553	\$ 1,809	\$ 1,391	\$ 1,858	\$ 2,209
<b>Total</b>						
1. Number		1,676	1,808	1,778	1,583	1,780
2. Average Age at Commencement		60.38	60.60	61.35	61.98	61.98
3. Average Monthly Pension Benefit	\$	1,878	\$ 1,993	\$ 2,101	\$ 2,103	\$ 2,079

## Summary of New Pension Benefit Recipients

### Average Pension Benefit Payments – Others

	Years of Credited Service						
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+
Period 7/1/15 - 6/30/16:							
Number of Recipients	\$ 434	\$ 660	\$ 1,240	\$ 2,017	\$ 3,059	\$ 4,158	\$ 6,583
Average Monthly Pension Benefit	30	323	387	266	192	161	135
Period 7/1/14 - 6/30/15:							
Average Monthly Pension Benefit	\$ 430	\$ 685	\$ 1,260	\$ 2,008	\$ 3,086	\$ 4,544	\$ 6,195
Number of Recipients	42	284	304	213	198	169	98
Period 7/1/13 - 6/30/14:							
Average Monthly Pension Benefit	\$ 503	\$ 700	\$ 1,189	\$ 2,065	\$ 3,021	\$ 4,439	\$ 5,490
Number of Recipients	48	347	319	241	214	224	121
Period 7/1/12 - 6/30/13:							
Average Monthly Pension Benefit	\$ 414	\$ 650	\$ 1,179	\$ 1,925	\$ 2,879	\$ 4,356	\$ 5,208
Number of Recipients	59	349	365	257	206	209	132
Period 7/1/11 - 6/30/12:							
Average Monthly Pension Benefit	\$ 407	\$ 610	\$ 1,147	\$ 1,931	\$ 2,805	\$ 4,214	\$ 5,076
Number of Recipients	67	351	314	204	208	188	106
Period 7/1/10 - 6/30/11:							
Average Monthly Pension Benefit	\$ 409	\$ 633	\$ 1,150	\$ 1,876	\$ 2,690	\$ 4,294	\$ 5,226
Number of Recipients	73	352	270	227	172	205	105
Period 7/1/09 - 6/30/10:							
Average Monthly Pension Benefit	\$ 485	\$ 579	\$ 1,116	\$ 1,763	\$ 2,674	\$ 4,008	\$ 5,039
Number of Recipients	93	367	273	217	218	200	74
Period 7/1/08 - 6/30/09:							
Average Monthly Pension Benefit	\$ 534	\$ 554	\$ 988	\$ 1,708	\$ 2,693	\$ 3,718	\$ 4,723
Number of Recipients	71	341	216	171	154	159	47
Period 7/1- - 6/30/08:							
Average Monthly Pension Benefit	\$ 586	\$ 548	\$ 1,044	\$ 1,655	\$ 2,668	\$ 3,642	\$ 4,561
Number of Recipients	69	315	249	222	172	170	56

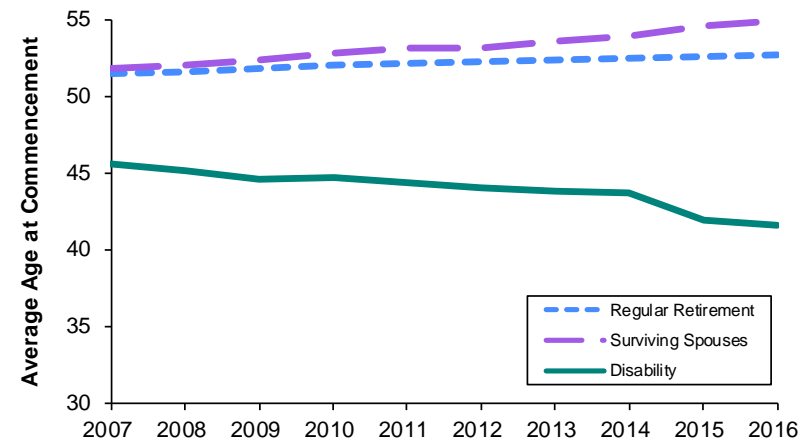
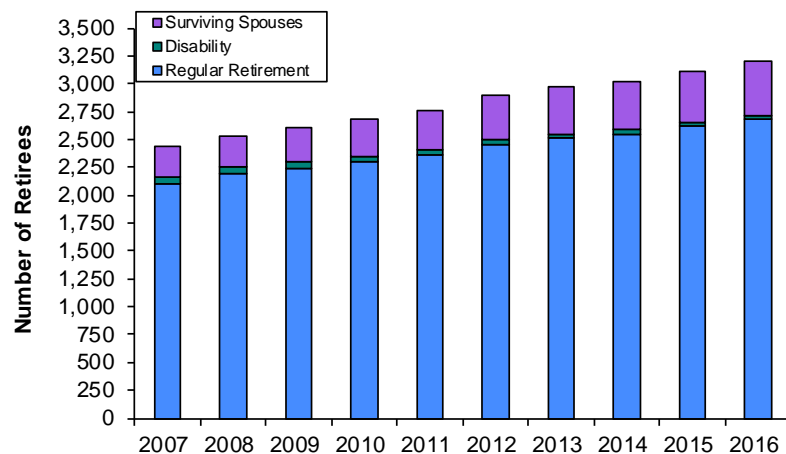
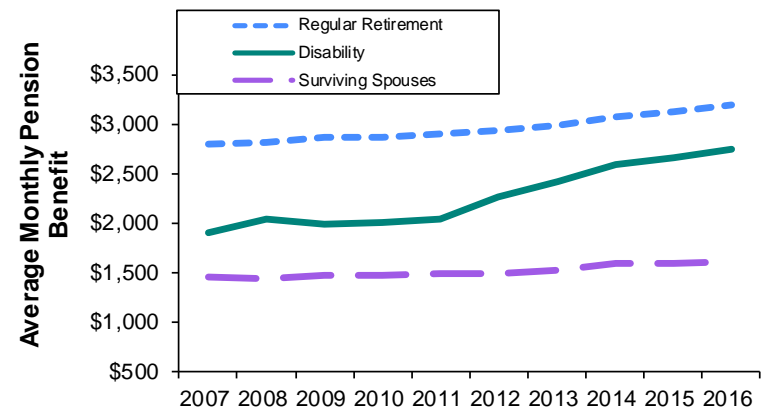
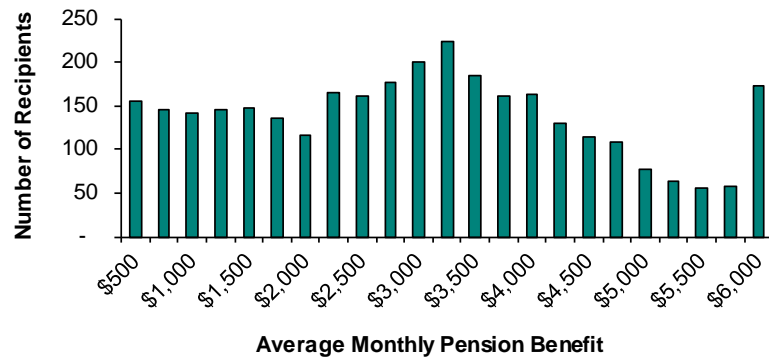
"Average Monthly Benefit" includes post-retirement pension adjustments and cost-of-living increases.

## Section 5.7 Summary of All Pension Benefit Recipients

	Peace Officer/ Firefighter	Others
<b>Service Retirements</b>		
1. Number, June 30, 2015	2,617	25,819
2. Net Change During FY16	71	972
3. Number, June 30, 2016	2,688	26,791
4. Average Age At Commencement	52.70	57.69
5. Average Current Age	66.77	69.17
6. Average Monthly Pension Benefit	\$ 3,192	\$ 1,838
<b>Survivors (including surviving spouses and DROs)</b>		
1. Number, June 30, 2015	468	3,017
2. Net Change During FY16	21	164
3. Number, June 30, 2016	489	3,181
4. Average Age At Commencement	54.93	61.53
5. Average Current Age	65.98	71.14
6. Average Monthly Pension Benefit	\$ 1,608	\$ 1,033
<b>Disability Retirements</b>		
1. Number, June 30, 2015	31	193
2. Net Change During FY16	(4)	(16)
3. Number, June 30, 2016	27	177
4. Average Age At Commencement	41.55	46.49
5. Average Current Age	48.24	53.99
6. Average Monthly Pension Benefit	\$ 2,748	\$ 1,671
<b>Total</b>		
1. Number, June 30, 2015	3,116	29,029
2. Net Change During FY16	88	1,120
3. Number, June 30, 2016	3,204	30,149
4. Average Age At Commencement	52.95	58.03
5. Average Current Age	66.49	69.29
6. Average Monthly Pension Benefit	\$ 2,946	\$ 1,752

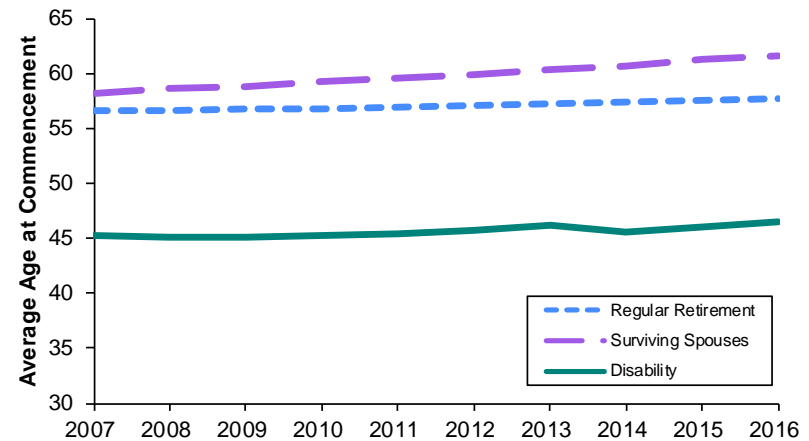
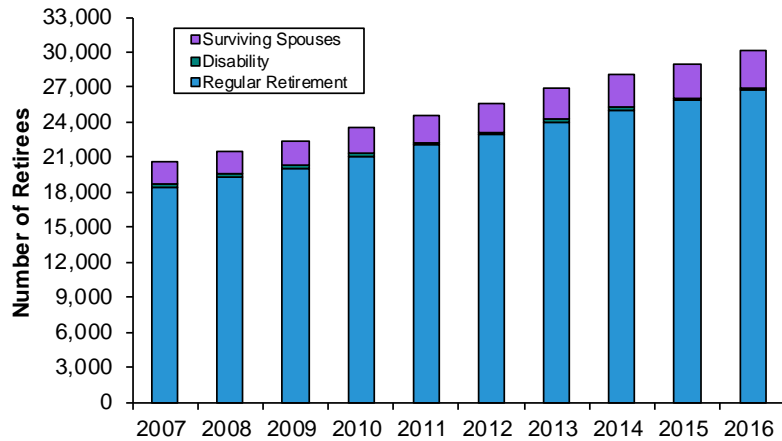
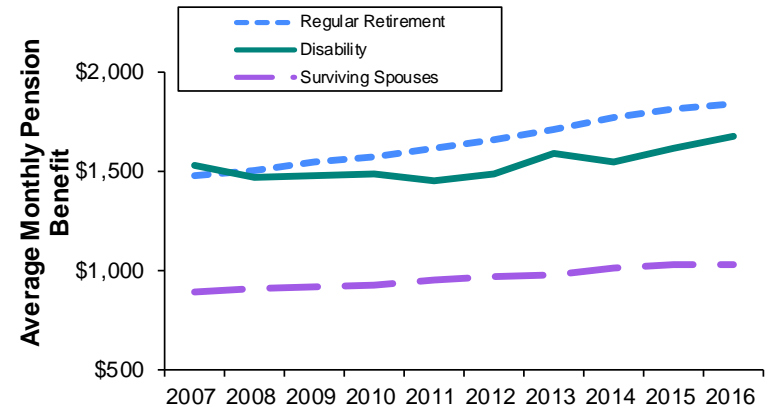
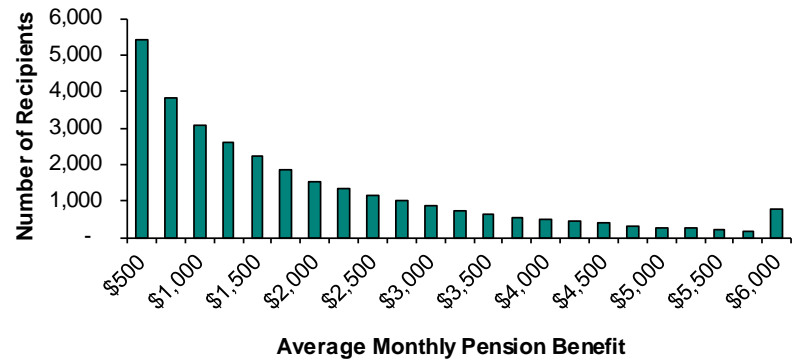
## Summary of All Pension Benefit Recipients

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 Benefit	Average Annual Benefit
0 – 19	0	\$ 0	\$ 0
20 – 24	0	0	0
25 – 29	0	0	0
30 – 34	0	0	0
35 – 39	3	85,161	28,387
40 – 44	22	769,794	34,991
45 – 49	65	2,653,563	40,824
50 – 54	156	6,639,198	42,559
55 – 59	426	16,419,275	38,543
60 – 64	711	24,644,539	34,662
65 – 69	821	28,373,400	34,560
70 – 74	533	17,470,072	32,777
75+	467	16,216,518	34,725

Total 3,204 \$ 113,271,520 \$ 35,353

**Annual Pension Benefit by Years Since Commencement**

Years Since Commencement	Number	Total Annual Benefit	Average Annual Benefit
0	124	\$ 5,696,678	\$ 45,941
1	153	6,587,878	43,058
2	102	4,014,771	39,361
3	112	4,117,959	36,767
4	109	3,457,579	31,721
0 – 4	600	23,874,865	39,791
5 – 9	582	17,667,660	30,357
10 – 14	688	22,111,606	32,139
15 – 19	697	24,618,993	35,321
20 – 24	253	9,151,786	36,173
25 – 29	265	11,018,031	41,577
30 – 34	77	3,424,610	44,475
35 – 39	34	1,202,015	35,353
40+	8	201,954	25,244

Total 3,204 \$ 113,271,520 \$ 35,353

**Years Since Benefit 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	2	0	0	0	0	0	0	0	3
40 – 44	19	2	1	0	0	0	0	0	0	22
45 – 49	48	14	1	2	0	0	0	0	0	65
50 – 54	91	44	16	2	3	0	0	0	0	156
55 – 59	155	112	125	33	1	0	0	0	0	426
60 – 64	168	168	209	144	17	2	2	0	1	711
65 – 69	66	170	217	233	86	39	5	4	1	821
70 – 74	29	45	90	205	75	76	9	2	2	533
75+	23	25	29	78	71	148	61	28	4	467
Total	600	582	688	697	253	265	77	34	8	3,204

## Summary of All Benefit Recipients – Others

### Annual Pension Benefit by Age

Age	Number	Total Annual Pension Benefit	Average Annual Pension Benefit
0 – 19	0	\$ 0	\$ 0
20 – 24	0	0	0
25 – 29	1	6,894	6,894
30 – 34	5	65,125	13,025
35 – 39	5	82,762	16,552
40 – 44	20	253,960	12,698
45 – 49	54	721,745	13,366
50 – 54	355	8,674,450	24,435
55 – 59	2,561	69,148,880	27,001
60 – 64	7,106	163,085,132	22,950
65 – 69	7,975	168,515,071	21,130
70 – 74	5,314	103,242,030	19,428
75+	6,753	120,173,067	17,796

Total 30,149 \$ 633,969,116 \$ 21,028

### Annual Pension Benefit by Years Since Commencement

Years Since Commencement	Number	Total Annual Pension Benefit	Average Annual Pension Benefit
0	1,571	\$ 38,019,581	\$ 24,201
1	1,673	42,651,339	25,494
2	1,717	42,488,536	24,746
3	1,717	40,992,868	23,875
4	1,595	36,749,287	23,040
0 – 4	8,273	200,901,611	24,284
5 – 9	6,971	150,176,704	21,543
10 – 14	5,865	117,462,622	20,028
15 – 19	4,559	88,269,194	19,362
20 – 24	1,902	32,463,106	17,068
25 – 29	1,846	32,878,800	17,811
30 – 34	534	8,848,212	16,570
35 – 39	173	2,578,020	14,902
40+	26	390,847	15,033

Total 30,149 \$ 633,969,116 \$ 21,028

### Years Since Benefit 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	1	0	0	0	0	0	0	0	0	1
30 – 34	5	0	0	0	0	0	0	0	0	5
35 – 39	3	2	0	0	0	0	0	0	0	5
40 – 44	13	5	2	0	0	0	0	0	0	20
45 – 49	23	18	7	3	2	1	0	0	0	54
50 – 54	263	55	16	16	4	1	0	0	0	355
55 – 59	1,831	621	69	22	13	4	0	1	0	2,561
60 – 64	3,438	2,666	924	56	14	6	2	0	0	7,106
65 – 69	1,730	2,302	2,769	1,129	22	15	4	4	0	7,975
70 – 74	522	866	1,373	1,926	493	121	7	5	1	5,314
75+	444	436	705	1,407	1,354	1,698	521	163	25	6,753
Total	8,273	6,971	5,865	4,559	1,902	1,846	534	173	26	30,149

## Section 5.8 Schedule of Pension Benefit Recipients by Type of Pension 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	57	25	32	0	37	8	0	2	10
301 – 600	167	103	64	0	84	36	25	9	13
601 – 900	165	98	67	0	92	45	7	13	8
901 – 1,200	170	106	64	0	97	36	18	10	9
1,201 – 1,500	175	126	48	1	97	36	21	7	14
1,501 – 1,800	149	115	32	2	71	43	22	11	2
1,801 – 2,100	168	129	38	1	66	47	40	9	6
2,101 – 2,400	199	149	44	6	82	69	27	14	7
2,401 – 2,700	200	175	20	5	71	75	30	17	7
2,701 – 3,000	242	220	20	2	69	109	38	15	11
3,001 – 3,300	256	235	18	3	73	109	40	16	18
3,301 – 3,600	219	198	18	3	71	97	31	14	6
3,601 – 3,900	198	186	9	3	61	93	26	13	5
3,901 – 4,200	166	164	2	0	42	86	21	14	3
Over \$4,200	673	659	13	1	152	358	88	59	16
Totals	3,204	2,688	489	27	1,165	1,247	434	223	135

#### 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

## Schedule of Pension Benefit Recipients by Type of Pension 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	2,072	1,589	481	2	919	395	288	70	400
301 – 600	4,991	4,267	709	15	2,498	1,221	830	260	182
601 – 900	4,091	3,479	592	20	2,077	991	661	212	150
901 – 1,200	3,240	2,817	405	18	1,525	826	606	164	119
1,201 – 1,500	2,769	2,437	305	27	1,305	765	473	131	95
1,501 – 1,800	2,134	1,905	202	27	929	623	404	102	76
1,801 – 2,100	1,779	1,613	147	19	763	507	337	102	70
2,101 – 2,400	1,517	1,404	97	16	629	459	287	91	51
2,401 – 2,700	1,271	1,190	66	15	510	411	238	59	53
2,701 – 3,000	1,060	995	61	4	416	345	212	52	35
3,001 – 3,300	868	832	34	2	319	324	168	31	26
3,301 – 3,600	754	724	27	3	256	277	148	51	22
3,601 – 3,900	595	576	18	1	225	211	106	38	15
3,901 – 4,200	535	519	13	3	171	188	131	32	13
Over \$4,200	2,473	2,447	23	3	778	966	532	141	56
Totals	30,149	26,794	3,180	175	13,320	8,509	5,421	1,536	1,363

#### Type of Pension Benefit

4. Regular retirement
5. Survivor payment
6. Disability

#### Option Selected

6. Whole Life Annuity
7. 75% Joint and Contingent Annuity
8. 50% Joint and Contingent Annuity
9. 66 2/3% Joint and Survivor Annuity
10. Level Income Option

## Section 5.9 Pension Benefit Recipients Added to and Removed from Rolls

### Peace Officer/Firefighter

Year Ended	Added to Rolls		Removed from Rolls		Rolls – End of Year		Percent Increase in Annual Pension Benefits	Average Annual Pension Benefit
	No. <sup>1</sup>	Annual Pension Benefits <sup>1</sup>	No. <sup>1</sup>	Annual Pension Benefits <sup>1</sup>	No.	Annual Pension Benefits		
June 30, 2016	137	\$ 6,618,744	49	\$ 1,594,392	3,204	\$113,271,520	4.6%	\$ 35,353
June 30, 2015	136	5,617,344	46	633,046	3,116	108,247,168	4.8%	34,739
June 30, 2014	109	4,270,620	50	(145,769)	3,026	103,262,870	4.5%	34,125
June 30, 2013	113	4,162,920	42	240,775	2,967	98,846,479	4.1%	33,315
June 30, 2012	179	5,246,271	41	(177,568)	2,896	94,924,334	6.1%	32,778
June 30, 2011	114	3,772,720	33	116,090	2,758	89,500,495	4.3%	32,451
June 30, 2010	118	3,593,724	46	1,413,071	2,677	85,843,865	2.6%	32,067
June 30, 2009	108	2,759,299	39	(518,134)	2,605	83,663,212	4.1%	32,116
June 30, 2008	125	3,556,519	28	191,073	2,536	80,385,779	4.4%	31,698
June 30, 2007	138	3,930,564	67	(2,546,491)	2,439	77,020,333	9.2%	31,579

<sup>1</sup> 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 – End of Year		Percent Increase in Annual Pension Benefits	Average Annual Pension Benefit
	No. <sup>1</sup>	Annual Pension Benefits <sup>1</sup>	No. <sup>1</sup>	Annual Pension Benefits <sup>1</sup>	No.	Annual Pension Benefits		
June 30, 2016	1,780	\$ 44,409,702	660	\$ 12,099,362	30,149	\$ 633,969,116	5.4%	\$ 21,028
June 30, 2015	1,583	39,939,292	627	7,232,812	29,029	601,658,776	5.7%	20,726
June 30, 2014	1,778	44,823,611	603	3,011,383	28,073	568,952,296	7.9%	20,267
June 30, 2013	1,808	43,247,667	554	4,861,626	26,898	527,140,068	7.9%	19,598
June 30, 2012	1,679	37,855,250	636	5,344,239	25,644	488,754,027	7.1%	19,059
June 30, 2011	1,595	37,100,217	554	6,897,899	24,601	456,243,016	7.1%	18,546
June 30, 2010	1,667	35,089,579	517	8,712,630	23,560	426,040,698	6.6%	18,083
June 30, 2009	1,340	25,402,811	476	28,773	22,410	399,663,749	6.8%	17,834
June 30, 2008	1,454	28,498,471	466	5,349,935	21,546	374,289,711	6.6%	17,372
June 30, 2007	1,479	28,985,748	454	(14,280,390)	20,558	351,141,175	14.1%	17,081

<sup>1</sup> Numbers are estimated, and include other internal transfers.

## Section 6 Basis of the Actuarial Valuation

### Section 6.1 Summary of Plan Provisions

#### 1. Effective Date

January 1, 1961, with amendments through June 30, 2008. Chapter 82, 1986 Session Laws of Alaska, created a two tier retirement system. Members who were first hired under the PERS before July 1, 1986 (Tier 1) are eligible for different benefits than members hired after June 30, 1986 (Tier 2). Chapter 4, 1996 Session Laws of Alaska created a third tier for members who were first hired after June 30, 1996 (Tier 3). Chapter 9, 2005 Session Laws of Alaska, closed the plan to new members hired after June 30, 2006.

#### 2. Administration of Plan

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

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

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

#### 3. Employers Included

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

#### 4. Membership

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

## **5. Credited Service**

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

Members may claim other types of service, including:

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

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

Past employment with participating political subdivisions that occurred before the employers joined the 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 the State of Alaska Teachers' Retirement System (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.

## **6. Employer Contributions**

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

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



The past service rate is a uniform rate for all participating employers to amortize the unfunded past service liability with payments that are a level percentage of payroll amount over a closed 25-year period starting June 30, 2014.

Employer rates cannot be less than the normal cost rate.

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

## **7. Additional State Contributions**

Pursuant to AS 39.35.280 effective July 1, 2008, the State shall contribute an amount (in addition to the State contribution as an employer) that when combined with the employer contribution (22%) will be sufficient to pay the total contribution rate adopted by The Alaska Retirement Management Board.

## **8. Member Contributions**

**Mandatory Contributions:** Peace Officer/Firefighter members are required to contribute 7.5% of their compensation; all Others contribute 6.75%. Those all Others who have elected to have their service calculated under the Teachers' Retirement System 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 in (5) 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;

member's beneficiary if the member dies; or

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 the PERS prior to July 1, 2010. Interest accrues on refunds until paid in full or members retire.

## 9. Retirement Benefits

### Eligibility:

- a. Members, including deferred vested members, are eligible for normal retirement at age 55 or early retirement at age 50 if they were hired before July 1, 1986 (Tier 1), and 60 or early retirement at age 55 if they were hired after July 1, 1986 (Tiers 2 & 3). Additionally, they must have at least:
  - (i) five years of paid up PERS service;
  - (ii) 60 days of paid up PERS service as employees of the legislature during each of five legislative sessions and they were first hired by the legislature before May 30, 1987;
  - (ii) 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;
  - (iii) two years of paid up PERS service and they are vested in the Teachers' Retirement System; or
  - (iv) two years of paid-up PERS service and a minimum three years of TRS service to qualify for a public service benefit.

Members may retire at any age when they have:

- (i) 20 paid up years of PERS Peace Officer/Firefighter service; or
- (ii) 30 paid up years of PERS "all other" or "elected official" service.

**Benefit Type:** Lifetime benefits are paid to members. Eligible members may receive normal, unreduced benefits when they (1) reach normal retirement age and complete the service required; or (2) satisfy the minimum service requirements under the "20 and out" or "30 and out" provisions. Members may receive early, actuarially reduced benefits when they reach early retirement age and complete the service required.

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

**Benefit Calculations:** Retirement benefits are calculated by multiplying the average monthly compensation (AMC) times credited PERS service times the percentage multiplier. The AMC is determined by averaging the salaries earned during the five highest (three highest for Peace Officer/Firefighter members or members hired prior to July 1, 1996) consecutive payroll years. Members must earn at least 115 days of credit in the last year worked to include it in the AMC calculation. The PERS pays a minimum benefit of \$25.00 per month for each year of service when the calculated benefit is less.

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

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

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

is included in total service for the purpose of calculating retirement benefits. However, if a member is otherwise eligible to retire, when refunds are not completely paid before retirement, benefits are actuarially reduced for life. Indebtedness balances may also be created when a member purchases qualified claimed service.

## **10. Reemployment of Retired Members**

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

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

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

## **11. Postemployment Healthcare Benefits**

Major medical benefits are provided to retirees and their surviving spouses by the 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 the 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 the PERS, regardless of their age or date of hire.

Medical, prescription drug, dental, vision and audio coverage is provided through the AlaskaCare Retiree Health Plan. Health plan provisions do not vary by retirement tier or age, except for Medicare coordination.

Surviving spouses continue coverage only if a pension payment form that provided survivor benefits was elected. Alternate payees (i.e. individuals who are the subject of a domestic relations order or

DRO) are allowed to participate in the plan, but must pay the full cost. 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.

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, excl. deductible)	\$800 / \$2,400
Rx Copays (generic/ brand/mail-order), does not apply to OOP max	\$4 / \$8 / \$0
Lifetime Maximum	\$2,000,000

The plan coordinates with Medicare on a traditional Coordination of Benefits Method.

## 12. Disability Benefits

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

**Occupational Disability:** Members are not required to satisfy age or service requirements to be eligible for occupational disability. Monthly benefits are equal to 40% of their gross monthly compensation on the date of their disability. Members on occupational disability continue to earn PERS service until they become eligible for normal retirement. Peace Officer/Firefighter members may elect to retain the disability benefit formula for the calculation of their normal retirement benefits.

**Nonoccupational Disability:** Members must be vested (five paid up years of PERS service) to be eligible for nonoccupational 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 nonoccupational disability.

## 13. Death Benefits

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

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

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

**Nonoccupational Death:** When a vested member dies from nonoccupational causes, the surviving spouse may elect to receive a monthly 50% joint and survivor benefit or a lump sum benefit. The monthly benefit is calculated on the member's average monthly compensation and PERS service at the time of termination or death.

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

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

#### **14. Postretirement Pension Adjustments**

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

- a. 75% of the CPI increase in the preceding calendar year or 9%, whichever is less, if the recipient is at least age 65 or on PERS disability; or
- b. 50% of the CPI increase in the preceding calendar year or 6%, whichever is less, if the recipient is at least age 60, or has been receiving benefits for at least five years.

Ad hoc PRPAs, up to a maximum of 4%, may be granted to eligible recipients who first entered the PERS before July 1, 1986 (Tier 1) if the CPI increases and the funded ratio is at least 105%.

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

#### **15. Alaska Cost of Living Allowance**

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

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

#### **16. Changes in Benefit Provisions Since the Prior Valuation**

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

## Section 6.2

### Description of Actuarial Methods and Valuation Procedures

The funding method used in this valuation was adopted by the Board in October 2006. Changes in the amortization of unfunded actuarial accrued liability were made in 2014. 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 Method** – Entry Age Normal Cost.

Liabilities and contributions shown in the report are computed using the Entry Age Normal Actuarial Cost Method. Any funding surpluses or unfunded accrued liability are amortized over a closed 25-year period (established June 30, 2014) as a level percentage of payroll amount. 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 for pension benefits (constant dollar amount for healthcare benefits) 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.

## Valuation of Assets

The actuarial asset value was reinitialized to equal Fair Value of Assets as of June 30, 2014. Beginning in 2015, the asset value method recognizes 20% of the gain or loss each year, for a period of 5 years. All assets are valued at fair value. Assets are accounted for on an accrued basis and are taken directly from financial statements audited by KPMG LLP.

## Valuation of Medical and Prescription Drug Benefits

This section outlines the detailed methodology used to develop the initial per capita claims cost rates for PERS postemployment healthcare plan. Note that methodology reflects the results of our annual experience rate update for the period July 1, 2016 to June 30, 2017. Healthcare cost trend and retiree contribution increase assumptions for the period after June 30, 2017 remain unchanged from the June 30, 2014 valuation.

Base claims cost rates are incurred healthcare costs expressed as a rate per member per year. Ideally, claims cost rates should be derived for each significant component of cost that can be expected to require differing projection assumptions or methods, i.e., medical claims, prescription drug claims, administrative costs, etc. Separate analysis is limited by the availability and historic 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 as those are retiree-pay all benefits where rates are assumed to be self-supporting. Conduent relies upon rates set by a third-party for the DVA benefits. Conduent reviewed historical rate-setting information and believes that 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 and enrollment data for July 2012 through June 2016 (FY13 through FY16), with claims paid through July 2016 were provided by HealthSmart and Aetna and are included in our analysis.
- Aetna 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. Conduent added newly identified participants to our list of Medicare Part B only participants. Conduent assumes that once identified as Part B only, that participant remains in that status until we are notified otherwise.

For the June 30, 2016 valuation, Aetna provided a snapshot file as of July 1, 2016 of retirees and dependents that included a coverage level indicator. After analysis of this file during the valuation census data preparation, Conduent learned that dual coverage participants are reflected in eligibility files multiple

times to administer coordination of benefits. This method carries over to enrollment reporting. This resulted in higher per capita costs to address the removal of the dual coverage membership and to cover the value of any additional coordinated benefits. This was offset by a reduction in the number of unique members valued.

Available historic management level reporting from HealthSmart does not show claims or enrollment separately for Medicare and non-Medicare plan participants, but does include overall statistics as to the percentage of claims and enrollment attributable to both groups. Historical claim level reporting and estimated impacts of Medicare coordination and plan design were used to augment more recent cost data by Medicare status. Aetna does provide separate experience by Medicare status and is incorporated into per capita rate development for each year of experience included in our claim base with corresponding weights applied in the final per capita cost.

### Methodology

Conduent developed per capita costs and projected historic claim data to fiscal 2017 for retirees using the following summarized steps:

1. Develop historic annual incurred claim cost rates – an analysis of medical costs was completed based on claims information and enrollment data provided by Aetna and HealthSmart for each year in the experience period of fiscal 2013 through fiscal 2016.
  - 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 upcoming year (e.g. from the experience period up through fiscal 2017).
  - Conduent applied an adjustment to the medical claims in fiscal year 2016 to estimate incurred but not reported claims based upon a review of claim lags through July 2016. Pharmacy claims are deemed fully incurred.
  - An offset for costs expected to be reimbursed by Medicare was incorporated beginning at age 65. Available management level reporting does indicate claims and enrollment separately for Medicare and pre-Medicare plan participants, but only since January 1, 2014. HealthSmart data does not, but we did have overall statistics as to the percentage of claims and enrollment attributable to both groups. 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, 0.39% of the current retiree population was identified as having coverage only under Medicare Part B. For future retirees, we assume their Part A eligible status based on a combination of date of hire and/or re-hire, date of birth, tier, etc.
  - Based upon a reconciliation of valuation census data to the Aetna July 1, 2016 snapshot eligibility file, Conduent adjusted member counts used for duplicate records where



participants have dual coverage; i.e. primary coverage as a retiree and secondary coverage as the covered spouse of another retiree. This is to reflect the total cost per distinct individual/member which is then applied to distinct members in the valuation census.

- Conduent understands that pharmacy claims reported do not reflect rebates. Based upon reported rebates in proportion to incurred claims for State of Alaska retiree plans, Conduent reduced reported pharmacy incurred claims by 9% to estimate the rebates for the retiree population beginning January 1, 2014. We reduced historic pharmacy incurred claims by 5.5% to reflect rebates on experience prior to January 1, 2014. These estimates were based upon reported rebates for retirees from Aetna and Envision Rx.
2. Develop estimated Retiree Drug Subsidy reimbursement - actual subsidy payments to the State were received for CY2009-CY2015, and the first six months of CY2016. Conduent obtained this information based upon recorded and available information in the RDS Subsidy website and as provided by the State. The projected subsidy for FY 2017 was determined based on the historic ratio of subsidy received to claims incurred (adjusted for rebates), and then applied to the appropriate projection period. These amounts are applicable only to Medicare eligible participants.
  3. Adjust for network change – based upon additional experience and updated reporting from Aetna (through March 31, 2016), we updated the adjustment to reflect the impact of the better network discounts realized. Conduent referenced administrator reports provided by Alaska to compare the proportion of network savings to covered charges under Aetna and the prior administrator. We found the discounts to be approximately 6% higher under Aetna as a proportion of covered charges as compared to the prior administrator.
  4. Adjust for claim fluctuation, anomalous experience, etc. – explicit adjustments are often made for anticipated large claims or other anomalous experience. Due to group size and demographics, we did not make any large claim adjustments. We do blend both Alaska plan-specific and national trend factors as described below. Conduent compared data utilized to lag reports and quarterly plan experience presentations provided by the State and Aetna to assess accuracy and reasonableness of data.
  5. Trend all data points to the projection period – project prior years' experience forward to fiscal 2017 for retiree benefits on an incurred claim basis. Trend factors derived from historic Alaska-specific experience and national trend factors are shown in the table in item 6 below.
  6. 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. Greater credibility is given to the past 24 months' experience. We have some run-out claims data, thus less estimation for complete claims in fiscal 2016 that is consistent with last year. We did not adjust the credibility weight further. Note also that we averaged projected plan costs using Alaska-specific trend factors and national trend factors, assigning 75% weight to Alaska-specific trends and 25% to national trends:

Alaska-Specific and National Average Weighted Trend from Experience Period to Valuation Year			
Experience Period	Medical	Prescription	Weighting Factors
FY2013 to FY2014	8.9%	7.1%	10%
FY2014 to FY2015	7.7%	6.5%	20%
FY2015 to FY2016	6.4%	7.1%	35%
FY2016 to FY2017	5.3%	8.5%	35%

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

upon recent experience trending up (mitigating historic gains), we are not proposing an update to the valuation healthcare cost trend assumption.

7. Develop separate administration costs – no adjustments were made for internal administrative costs. Third party retiree plan administration fees for fiscal 2017 are based upon rates in effect at the midpoint of the year, January 2017, based upon negotiations with Aetna as communicated by the State. Medical fees increased 1.4% and pharmacy admin was reduced to \$0. We included a small fee for estimated fees that occur on a per occurrence basis (i.e. prior authorization, retiree direct bill). We also include PCORI fees under the Affordable Care Act. We estimated the 2017 rates based upon the 2016 rate of \$2.26 per member per year increased by 4%. The annual per participant per year administrative cost rate for medical and prescription benefits (including PCORI) is \$206.88.
8. Healthcare Reform legislation passed on March 23, 2010 included several provisions with potential implications for the State of Alaska Retiree Health Plan liability. Conduent evaluated the impact of the following provisions; however, none of the impacts have been included in the valuation results.
  - 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.
  - As Transitional Reinsurance fees are only in effect until 2016, we excluded these for valuation purposes.
  - The Plan will be subject to the high cost plan excise tax (Cadillac tax); however, the impact is not expected to significantly impact the OPEB liability. Based upon guidance available at the valuation date, Conduent estimated the tax based upon a blended test of pre and post-Medicare projected costs and enrollment projections.
    - A blended test compares a weighted average per capita cost (based upon proportions of pre/post Medicare eligible enrollments) to the tax cost thresholds in each projection year. Projected enrollment was based upon the 2016 enrollment data provided by Aetna, and 2016 valuation headcount projections for future years.
    - We included administrative fees and applied Retiree Drug Subsidy reimbursements to the Medicare rates.
  - We assumed claim costs would increase according to valuation trend assumptions from the June 30, 2016 valuation, and that the tax cost thresholds would increase at 3.0%. The first year increased at 4% to reflect the additional 1% over inflation assumption.
  - Conduent determined the impact to be less than \$775,000 (0.01%) of the projected June 30, 2016 healthcare actuarial accrued liability for the defined benefit plans. In addition, any additional per capita costs due to the tax were not expected to significantly impact trend over the long term.

The Trump administration has clearly announced its intention to repeal Healthcare Reform. As one of his first acts in office, President Trump issued an executive order that states that federal agencies can grant waivers, exemptions, and delays of “Obamacare” provisions that would impose costs on states or individuals. On February 15, 2016, CMS issued proposed rules that are intended to minimize adverse selection, but which might disrupt the fragile balance of the healthcare exchanges. We can expect more information about what is being altered.

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. As additional guidance on the legislation is issued, we will continue to monitor any potential impacts.

The following table summarizes data sources and assumptions and the relative impact changes in each have on healthcare cost projections for 2016 as compared to 2015:

Healthcare Cost Rate Data Source or Assumption Change, 2016 vs. 2015	Gain / Loss Impact on 2015 Valuation Results
Claim lag specific to medical and prescription experience	Small
Individual claims level data	<ul style="list-style-type: none"> <li>– No impact on cost data used for 2016, though potentially a source of future modifications</li> <li>– No impact on morbidity assumptions used for 2016, though potentially a source of future modifications</li> </ul>
Explicit TPA fees	Negligible
Actual RDS payments received	Negligible
Aggregate claims data	Loss due to adjustment for removal of dual coverage/duplicate members in reported enrollment counts, offset by gain due to experience
Census Data	Small gain due to updated census

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

- The Division of Retirement and Benefits provided pension valuation census data, which for people currently in receipt of healthcare benefits was supplemented by coverage data from the healthcare claims administrator (Aetna)
- Certain adjustments and assumptions were made to prepare the data for valuation:
  - Some records provided on the Aetna data were associated with a participant social security number not listed on the RIN-to-SSN translation file. We did not add these records to the retiree medical valuation data as they were unable to tie with our pension valuation data (and therefore were unable to be associated with a specific plan or participant).
  - Some in pay participants and beneficiaries on the pension valuation data who were previously assumed to be receiving medical benefits were not listed on the provided Aetna data. We have updated these records to only be valued under the pension valuation.
  - Some records in the Aetna data were duplicates due to the dual coverage (i.e. coverage as a retiree and as a spouse of another retiree) allowed under the Plan. Records were changed for these members so that each member was only valued once. Any additional value of the dual coverage (due to coordination of benefits) is small and reflected in the per capita costs.
  - Covered children included in the Aetna data were valued until age 23, unless handicapped. We assumed that those dependents over 23 were only eligible and included due to being handicapped.
  - Conduent understands that retiree medical coverage/eligibility is in place while a pension benefit is payable. If a participant dies, dependent coverage is only assumed to continue if they have ongoing pension/survivor benefits.

- 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.
- Future retirees' level of coverage is estimated according to valuation assumptions regarding spousal coverage.
- Limitations on the use of the valuation results due to uncertainty about various aspects of the data: Excluded records due to file mismatches are noted above but not are expected to have a material impact on the results.

Unresolved matters: None.

## Description of Actuarial Methods and Valuation Procedures

### June 30, 2016 Valuation – FY 2017 Claims Cost Rates

	Medical			Prescription Drugs			Total
	Pre-Medicare	Medicare A&B	Medicare B Only	Pre-Medicare	Medicare A&B	Medicare B Only	
<b>Fiscal 2013 Incurred Claims</b>	<b>\$ 239,986,289</b>	<b>\$ 73,469,050</b>	<b>\$ 1,901,151</b>	<b>\$ 49,738,435</b>	<b>\$ 93,999,808</b>	<b>\$ 538,020</b>	<b>\$ 459,632,753</b>
Membership	23,522	32,984	217	23,522	32,984	217	56,723
Paid Claims Cost Rate	\$ 10,203	\$ 2,227	\$ 8,761	\$ 2,115	\$ 2,850	\$ 2,479	\$ 8,103
Trend to FY2017	1.313	1.313	1.313	1.325	1.325	1.325	
FY 2017 Paid Cost Rate	\$ 13,399	\$ 2,925	\$ 11,506	\$ 2,801	\$ 3,775	\$ 3,284	\$ 10,670
Manual Adjustment*	0.940	0.940	0.940	0.934	0.934	0.934	
<b>FY 2017 Incurred Cost Rate</b>	<b>\$ 12,595</b>	<b>\$ 2,750</b>	<b>\$ 10,815</b>	<b>\$ 2,616</b>	<b>\$ 3,526</b>	<b>\$ 3,067</b>	<b>\$ 10,010</b>
<b>Fiscal 2014 Incurred Claims</b>	<b>\$ 224,167,427</b>	<b>\$ 68,834,329</b>	<b>\$ 2,428,446</b>	<b>\$ 39,572,896</b>	<b>\$ 115,011,779</b>	<b>\$ 605,633</b>	<b>\$ 450,620,510</b>
Membership	21,322	36,843	223	21,322	36,843	223	58,388
Paid Claims Cost Rate	\$ 10,514	\$ 1,868	\$ 10,890	\$ 1,856	\$ 3,122	\$ 2,716	\$ 7,718
Trend to FY2017	1.205	1.205	1.205	1.237	1.237	1.237	
FY 2017 Paid Cost Rate	\$ 12,673	\$ 2,252	\$ 13,126	\$ 2,295	\$ 3,861	\$ 3,359	\$ 9,386
Manual Adjustment*	0.970	0.970	0.970	0.967	0.967	0.967	
<b>FY 2017 Incurred Cost Rate</b>	<b>\$ 12,293</b>	<b>\$ 2,184</b>	<b>\$ 12,733</b>	<b>\$ 2,220</b>	<b>\$ 3,733</b>	<b>\$ 3,248</b>	<b>\$ 9,095</b>
<b>Fiscal 2015 Incurred Claims</b>	<b>\$ 222,942,485</b>	<b>\$ 73,220,895</b>	<b>\$ 3,066,493</b>	<b>\$ 55,314,988</b>	<b>\$ 118,431,447</b>	<b>\$ 651,667</b>	<b>\$ 473,627,975</b>
Membership	20,920	38,263	242	20,920	38,263	242	59,425
Paid Claims Cost Rate	\$ 10,657	\$ 1,914	\$ 12,671	\$ 2,644	\$ 3,095	\$ 2,693	\$ 7,970
Trend to FY2017	1.120	1.120	1.120	1.162	1.162	1.162	
FY 2017 Paid Cost Rate	\$ 11,940	\$ 2,144	\$ 14,197	\$ 3,071	\$ 3,595	\$ 3,128	\$ 9,050
Manual Adjustment*	1.000	1.000	1.000	1.000	1.000	1.000	
<b>FY 2017 Incurred Cost Rate</b>	<b>\$ 11,940</b>	<b>\$ 2,144</b>	<b>\$ 14,197</b>	<b>\$ 3,071</b>	<b>\$ 3,595</b>	<b>\$ 3,128</b>	<b>\$ 9,050</b>
<b>Fiscal 2016 Incurred Claims</b>	<b>\$ 225,325,571</b>	<b>\$ 83,147,336</b>	<b>\$ 1,892,894</b>	<b>\$ 57,222,142</b>	<b>\$ 135,947,721</b>	<b>\$ 803,500</b>	<b>\$ 504,339,164</b>
Membership	20,049	40,480	275	20,049	40,480	275	60,804
Paid Claims Cost Rate	\$ 11,239	\$ 2,054	\$ 6,883	\$ 2,854	\$ 3,358	\$ 2,922	\$ 8,295
Trend to FY2017	1.053	1.053	1.053	1.085	1.085	1.085	
FY 2017 Paid Cost Rate	\$ 11,830	\$ 2,162	\$ 7,245	\$ 3,096	\$ 3,643	\$ 3,169	\$ 8,833
Manual Adjustment*	1.000	1.000	1.000	1.000	1.000	1.000	
<b>FY 2017 Incurred Cost Rate</b>	<b>\$ 11,830</b>	<b>\$ 2,162</b>	<b>\$ 7,245</b>	<b>\$ 3,096</b>	<b>\$ 3,643</b>	<b>\$ 3,169</b>	<b>\$ 8,833</b>
Weighted Average 7/1/2016-6/30/2017 Incurred Claims Cost Rates:							
At average age	\$ 12,037	\$ 2,219	\$ 11,133	\$ 2,864	\$ 3,632	\$ 3,160	\$ 9,079
At age 65	\$ 14,380	\$ 1,707	\$ 8,562	\$ 3,320	\$ 3,320	\$ 3,320	\$ 8,783

\* "Manual Adjustment" is the estimated savings due to the change in claims administrator effective January 1, 2014.

## Description of Actuarial Methods and Valuation Procedures

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

Below are the results of this analysis:

**Distribution of Per Capita Claims Cost by Age  
for the Period July 1, 2016 through June 30, 2017**

Age	Medical and Medicare Parts A & B	Medical and Medicare Part B Only	Prescription Drug	Medicare Retiree Drug Subsidy
45	\$ 7,964	\$ 7,964	\$ 1,751	\$ -
50	9,010	9,010	2,080	-
55	10,194	10,194	2,470	-
60	12,108	12,108	2,864	-
65	1,707	8,562	3,320	614
70	2,077	10,417	3,577	661
75	2,466	12,369	3,815	706
80	2,657	13,325	3,911	723

### Changes in Methods Since the Prior Valuation

There were no changes in valuation methods except for the changes described in the healthcare sections above.

## Section 6.3 Summary of Actuarial Assumptions

The demographic and economic assumptions used in the June 30, 2016 valuation are described below. Unless noted otherwise, these assumptions were adopted by the Board in December 2014. These assumptions were the result of an experience study performed as of June 30, 2013.

Investment Return / Discount Rate	8.00% per year (geometric), compounded annually, net of expenses.
Salary Scale	Inflation – 3.12% per year. Productivity – 0.50% per year. See Table 1 for salary scale rates
Payroll Growth	3.62% 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 3.12% annually.
Mortality (Pre-termination)*	Based upon 2010-2013 actual mortality experience (see Table 2) 60% of male rates and 65% of female rates of post-termination mortality rates. Deaths are assumed to be occupational 70% of the time for Peace Officer/Firefighters, 50% of the time for Others.
Mortality (Post-termination)*	96% of all rates of the RP-2000 table, 2000 Base Year projected to 2018 with Projection Scale BB.
Total Turnover	Based upon the 2010-2013 actual withdrawal experience. (See Tables 4 and 5.)
Disability	Incidence rates based on 2010-2013 actual experience, in accordance with Table 6. Post-disability mortality in accordance with the RP-2000 Disabled Retiree Mortality Table, 2000 Base Year projected to 2018 with Projection Scale BB. Disabilities are assumed to be occupational 70% of the time for Peace Officer/Firefighters, 50% of the time for Others.
Retirement	Retirement rates based upon the 2010-2013 actual experience in accordance with Tables 7 and 8. Deferred vested members are assumed to retire at their earliest unreduced retirement date for Others. For Peace Officer/Firefighter, Tier 1 deferred vested members are assumed to retire at age 55 and Tiers 2 and 3 deferred vested members are assumed to retire at age 60. The modified cash refund annuity is valued as a three-year certain and life annuity.
Marriage and Age Difference	Wives are assumed to be three years younger than husbands. For Others, 75% of male members and 70% female members are assumed to be married. For Peace Officer/Firefighters, 85% of male members and 60% female members are assumed to be married.

\*The mortality assumptions include an allowance for expected future mortality improvement. The mortality table used was set in 2014 with an Actual Deaths to Expected Deaths ratio of 109%.

Dependent Children	Benefits for dependent children have been valued only for members currently covering their dependent children. These benefits are only valued through the dependent children's age 23 (unless the child is disabled).															
Contribution Refunds	For others, 10% of terminating members with vested benefits are assumed to have their contributions refunded. For Peace Officers/Firefighters, 15% 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. Nonvested 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	Starting with the June 30, 2016 valuation, 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 prior 5 years of rehire loss experience): <ul style="list-style-type: none"><li>- Pension: 14.23%</li><li>- Healthcare: 17.24%</li></ul>															
Active Data Adjustment	To reflect participants who terminate employment before the valuation date and are subsequently rehired after the valuation date, participants who are listed as terminated in the June 30 client data but active in the October 1 client records are updated to active status as of June 30, 2016.															
COLA	Of those benefit recipients who are eligible for the COLA, 70% of Others and 65% of Peace Officers/Firefighters are assumed to remain in Alaska and receive the COLA.															
Post-Retirement Pension Adjustment	50% and 75% of assumed inflation, or 1.56% and 2.34% respectively, is valued for the annual automatic Post-Retirement Pension Adjustment (PRPA) as specified in the statute.															
Expenses	The investment return assumption is net of all expenses.															
Part-Time Status	Part-time employees are assumed to earn 1.00 years of credited service per year for Peace Officer/Firefighter and 0.65 years of credited service per year for Other members.															
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 FY17 medical and prescription are shown below: <table><tr><td></td><td><b>Medical</b></td><td><b>Prescription Drugs</b></td></tr><tr><td>Pre-Medicare</td><td>\$ 14,380</td><td>\$ 3,320</td></tr><tr><td>Medicare Parts A &amp; B</td><td>\$ 1,707</td><td>\$ 3,320</td></tr><tr><td>Medicare Part B Only</td><td>\$ 8,562</td><td>\$ 3,320</td></tr><tr><td>Medicare Part D</td><td>N/A</td><td>\$ 614</td></tr></table>		<b>Medical</b>	<b>Prescription Drugs</b>	Pre-Medicare	\$ 14,380	\$ 3,320	Medicare Parts A & B	\$ 1,707	\$ 3,320	Medicare Part B Only	\$ 8,562	\$ 3,320	Medicare Part D	N/A	\$ 614
	<b>Medical</b>	<b>Prescription Drugs</b>														
Pre-Medicare	\$ 14,380	\$ 3,320														
Medicare Parts A & B	\$ 1,707	\$ 3,320														
Medicare Part B Only	\$ 8,562	\$ 3,320														
Medicare Part D	N/A	\$ 614														
Third Party Administrator Fees	\$206.88 per person per year; assumed trend rate of 5% per year.															
Medicare Part B Only	For actives and retirees not yet Medicare-eligible, participation is set based on whether the employee/retiree will have 40 quarters of employment after March 31, 1986, depending upon date of hire and/or re-hire.															



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**Health Cost Trend**

The table below shows the rate used to project the cost from the shown fiscal year to the next fiscal year. For example, 8.8% is applied to the FY17 pre-Medicare medical claims cost to get the FY17 medical claims cost.

	<b>Medical Pre-65</b>	<b>Medical Post-65</b>	<b>Prescription Drugs</b>
FY17	8.8%	5.8%	5.40%
FY18	8.2%	5.7%	5.10%
FY19	7.6%	5.6%	4.80%
FY20	7.0%	5.6%	4.60%
FY21	6.5%	5.6%	4.40%
FY22	6.0%	5.6%	4.20%
FY23	5.6%	5.6%	4.00%
FY26	5.6%	5.6%	4.00%
FY51	4.4%	4.0%	4.00%
FY101	4.4%	4.0%	4.00%

For the June 30, 2014 valuations and later, the updated Society of Actuaries' Healthcare Cost Trend Model is used to project medical and prescription drug costs. This model effectively begins estimating trend amounts beginning in 2014, and projects out to 2090. This model has been adopted by the Society of Actuaries, and has been populated with assumptions that are specific to the State of Alaska.

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**Aging Factors\***

	<b>Prescription</b>	
<b>Age</b>	<b>Medical</b>	<b>Drugs</b>
0-44	2.0%	4.5%
45-54	2.5%	3.5%
55-64	3.5%	3.0%
65-74	4.0%	1.5%
75-84	1.5%	0.5%
85-95	0.5%	0.0%
96+	0.0%	0.0%

\* Note that pre-65 the factor represents the amount to increase from the ages noted to the next age. However post-65, the factor represents the adjustment to get to the ages noted up to age in the range. That is, 2.5% is used to age from 54 to 55, but 1.5% is use to age from 83 to 84.

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 FY17 contributions based on monthly rates shown below for calendar 2016 and 2017 are assumed based on the coverage category for current retirees. The composite rate shown is used for current active and inactive members in tier 2 or 3 who are assumed to retire prior to age 60 with less than 30 years of service and who are not disabled. For dependent children, we value 1/3 of the annual retiree contribution to estimate the per child rate based upon the assumed number of children in rates where children are covered.

Coverage Category	Calendar 2017 Annual Contribution	Calendar 2017 Monthly Contribution	Calendar 2016 Monthly Contribution
Retiree Only	\$ 9,324	\$ 777	\$ 777
Retiree and Spouse	\$ 18,648	\$ 1,554	\$ 1,554
Retiree and Child(ren)	\$ 13,164	\$ 1,097	\$ 1,097
Retiree and Family	\$ 22,500	\$ 1,875	\$ 1,875
Composite	\$ 13,848	\$ 1,154	\$ 1,154

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, 6.2% is applied to the FY17 retired member medical contributions to get the FY18 retired member medical contributions.

Trend Assumptions	
FY17	6.2%
FY18	5.8%
FY19	5.4%
FY20	5.0%
FY21	4.7%
FY22	4.4%
FY26	4.1%
FY51	4.0%
FY101	4.0%

Graded trend rates for retired member medical contributions were reinitialized for the June 30, 2014 valuation. Note that actual FY17 retired member medical contributions are reflected in the valuation.

Healthcare Participation

100% system paid of members and their spouses are assumed to elect the healthcare benefits as soon as they are eligible.  
10% of non-system paid members and their spouses are assumed to elect healthcare benefits as soon as they are eligible.

**Table 1**  
**Alaska PERS**  
**Salary Scale**

**Peace Officer/Firefighter:**

Years of Service	% Increase
0	9.66%
1	8.66%
2	7.16%
3	7.03%
4	6.91%
5	6.41%
6	5.66%
7	4.92%
8	4.92%
9	4.92%
10	4.92%
11	4.92%
12	4.92%
13	4.92%
14	4.92%
15	4.92%
16	4.92%
17	4.92%
18	4.92%
19	4.92%
20+	4.92%

**Others:**

Years of Service		% Increase	
0		8.55	
1		7.36	
2		6.35	
3		6.11	
4		5.71	
5+		Age based	
Age	% Increase	Age	% Increase
20	7.91%	45	5.44%
21	7.83%	46	5.40%
22	7.75%	47	5.36%
23	7.51%	48	5.31%
24	7.27%	49	5.27%
25	7.03%	50	5.22%
26	6.79%	51	5.18%
27	6.55%	52	5.13%
28	6.52%	53	5.09%
29	6.49%	54	5.05%
30	6.47%	55	5.01%
31	6.44%	56	4.97%
32	6.41%	57	4.93%
33	6.33%	58	4.85%
34	6.24%	59	4.77%
35	6.16%	60	4.69%
36	6.07%	61	4.60%
37	5.99%	62	4.52%
38	5.90%	63	4.46%
39	5.82%	64	4.40%
40	5.73%	65+	4.34%
41	5.64%		
42	5.55%		
43	5.52%		
44	5.48%		

**Table 2**  
**Alaska PERS**  
**Mortality Table (Pre-termination)**

Age	Male	Female	Age	Male	Female
20	0.000188	0.000113	55	0.001978	0.001549
21	0.000195	0.000114	56	0.002292	0.001730
22	0.000200	0.000115	57	0.002515	0.001912
23	0.000204	0.000116	58	0.002775	0.002118
24	0.000205	0.000119	59	0.003073	0.002355
25	0.000205	0.000122	60	0.003425	0.002632
26	0.000206	0.000127	61	0.003826	0.002973
27	0.000208	0.000132	62	0.004287	0.003343
28	0.000214	0.000139	63	0.004813	0.003840
29	0.000225	0.000147	64	0.005324	0.004328
30	0.000242	0.000156	65	0.005904	0.004874
31	0.000272	0.000181	66	0.006558	0.005500
32	0.000307	0.000207	67	0.007184	0.006107
33	0.000344	0.000233	68	0.007842	0.006751
34	0.000383	0.000257	69	0.008689	0.007462
35	0.000422	0.000281	70	0.009744	0.008407
36	0.000459	0.000304	71	0.010782	0.009329
37	0.000493	0.000327	72	0.011971	0.010376
38	0.000526	0.000354	73	0.013334	0.011534
39	0.000557	0.000383	74	0.014876	0.012783
40	0.000589	0.000417	75	0.016602	0.014113
41	0.000623	0.000458	76	0.018504	0.015549
42	0.000663	0.000504	77	0.020583	0.017125
43	0.000709	0.000554	78	0.022872	0.018877
44	0.000762	0.000608	79	0.025419	0.020841
45	0.000823	0.000664	80	0.028245	0.023037
46	0.000882	0.000723	81	0.031612	0.025498
47	0.000946	0.000784	82	0.035318	0.028266
48	0.001015	0.000848	83	0.039369	0.031386
49	0.001089	0.000916	84	0.043784	0.034906
50	0.001167	0.000991	85	0.048601	0.038887
51	0.001336	0.001095	86	0.053884	0.043371
52	0.001455	0.001193	87	0.060797	0.048373
53	0.001591	0.001305	88	0.068537	0.053879
54	0.001744	0.001407	89	0.077135	0.059830
			90	0.086571	0.067336

**Table 3**  
**Alaska PERS**  
**Mortality Table (Post-termination)**

Age	Male	Female	Age	Male	Female
50	0.001944	0.001524	85	0.081002	0.059827
51	0.002227	0.001684	86	0.089807	0.066725
52	0.002426	0.001835	87	0.101329	0.074420
53	0.002652	0.002007	88	0.114229	0.082891
54	0.002907	0.002165	89	0.128559	0.092046
55	0.003296	0.002383	90	0.144286	0.103593
56	0.003820	0.002662	91	0.160042	0.115847
57	0.004192	0.002942	92	0.176712	0.128589
58	0.004625	0.003259	93	0.194120	0.141591
59	0.005121	0.003623	94	0.212080	0.154643
60	0.005708	0.004050	95	0.230428	0.167558
61	0.006377	0.004574	96	0.249035	0.180154
62	0.007144	0.005143	97	0.267822	0.192248
63	0.008021	0.005908	98	0.281616	0.200025
64	0.008874	0.006658	99	0.300310	0.210437
65	0.009839	0.007498	100	0.313360	0.215967
66	0.010930	0.008462	101	0.332097	0.226721
67	0.011973	0.009396	102	0.344188	0.235671
68	0.013070	0.010386	103	0.361155	0.250844
69	0.014482	0.011479	104	0.369606	0.263111
70	0.016240	0.012933	105	0.381971	0.281391
71	0.017969	0.014352	106	0.384000	0.295499
72	0.019952	0.015964	107	0.384000	0.309816
73	0.022223	0.017744	108	0.384000	0.323943
74	0.024793	0.019666	109	0.384000	0.337482
75	0.027670	0.021712	110	0.384000	0.350032
76	0.030840	0.023921	111	0.384000	0.361196
77	0.034305	0.026346	112	0.384000	0.370574
78	0.038120	0.029042	113	0.384000	0.377767
79	0.042365	0.032063	114	0.384000	0.382376
80	0.047075	0.035441	115	0.384000	0.384000
81	0.052687	0.039227	116	0.384000	0.384000
82	0.058863	0.043487	117	0.384000	0.384000
83	0.065615	0.048286	118	0.384000	0.384000
84	0.072973	0.053702	119	1.000000	1.000000

**Table 4**  
**Alaska PERS**  
**Total Turnover Assumptions**

**Peace Officer/Firefighter:**

Years of Service	Male (rounded)	Female (rounded)
0	0.15	0.15
1	0.12	0.08
2	0.07	0.06
3	0.06	0.06
4	0.06	0.07

**Members with 5 or more years of service**

Age	Male	Female	Age	Male	Female
20	0.040894	0.080000	45	0.019012	0.033802
21	0.040894	0.080000	46	0.019506	0.033527
22	0.040894	0.080000	47	0.020000	0.033251
23	0.038801	0.080000	48	0.023333	0.032862
24	0.036708	0.080000	49	0.026667	0.032474
25	0.034616	0.080000	50	0.030000	0.032085
26	0.032523	0.080000	51	0.040000	0.031581
27	0.030430	0.080000	52	0.040000	0.030941
28	0.028877	0.078000	53	0.040000	0.030201
29	0.027324	0.076000	54+	0.040000	0.060402
30	0.025771	0.074000			
31	0.024218	0.072000			
32	0.022665	0.070000			
33	0.021722	0.063077			
34	0.020779	0.056154			
35	0.019836	0.049231			
36	0.018893	0.042308			
37	0.017950	0.035385			
38	0.017866	0.035234			
39	0.017782	0.035082			
40	0.017699	0.034930			
41	0.017615	0.034779			
42	0.017531	0.034627			
43	0.018025	0.034352			
44	0.018519	0.034077			

**Table 5**  
**Alaska PERS**  
**Total Turnover Assumptions**

**Others:**

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

**Members with 5 or more years of service**

Age	Male	Female	Age	Male	Female
20	0.095000	0.136735	45	0.039880	0.045685
21	0.095000	0.136735	46	0.039357	0.043828
22	0.095000	0.136735	47	0.038834	0.041972
23	0.090250	0.128522	48	0.038701	0.041891
24	0.085500	0.120309	49	0.038568	0.041809
25	0.080750	0.112096	50	0.038170	0.041566
26	0.076000	0.103883	51	0.037844	0.041365
27	0.071250	0.095670	52	0.037460	0.041121
28	0.069160	0.091756	53	0.037023	0.040844
29	0.067060	0.087842	54+	0.043859	0.057924
30	0.064960	0.083927			
31	0.062870	0.080013			
32	0.060770	0.076099			
33	0.058280	0.072399			
34	0.055780	0.068699			
35	0.053290	0.064999			
36	0.050790	0.061299			
37	0.048300	0.057599			
38	0.046930	0.056330			
39	0.045560	0.055061			
40	0.044190	0.053792			
41	0.042820	0.052523			
42	0.041450	0.051254			
43	0.040930	0.049398			
44	0.040400	0.047541			

**Table 6**  
**Alaska PERS**  
**Disability Table**

Age	Peace Officer/ Firefighter Rate	Other Member Rate	
		Male	Female
20	0.000224	0.000218	0.000188
21	0.000224	0.000218	0.000188
22	0.000224	0.000218	0.000188
23	0.000305	0.000240	0.000200
24	0.000387	0.000261	0.000212
25	0.000468	0.000283	0.000224
26	0.000550	0.000304	0.000236
27	0.000631	0.000326	0.000248
28	0.000658	0.000334	0.000255
29	0.000685	0.000342	0.000262
30	0.000712	0.000349	0.000269
31	0.000739	0.000357	0.000277
32	0.000765	0.000365	0.000284
33	0.000793	0.000377	0.000293
34	0.000821	0.000389	0.000303
35	0.000849	0.000401	0.000312
36	0.000877	0.000413	0.000322
37	0.000905	0.000425	0.000331
38	0.000946	0.000446	0.000348
39	0.000986	0.000467	0.000364
40	0.001027	0.000489	0.000381
41	0.001068	0.000510	0.000397
42	0.001108	0.000531	0.000413
43	0.001221	0.000586	0.000454
44	0.001333	0.000641	0.000495
45	0.001446	0.000695	0.000536
46	0.001559	0.000750	0.000577
47	0.001671	0.000805	0.000618
48	0.001828	0.000886	0.000680
49	0.001985	0.000967	0.000742
50	0.002142	0.001048	0.000804
51	0.002299	0.001129	0.000867
52	0.002456	0.001210	0.000929
53	0.002868	0.001421	0.001084
54	0.003280	0.001633	0.001239



**Table 7**  
**Alaska PERS Peace Officer/Firefighter**  
**Retirement Table**

Age at Retirement	Reduced	Unreduced	
	Unisex Rates	Male	Female
<47	N/A	0.080000	0.060000
47	N/A	0.080000	0.150000
48	N/A	0.130000	0.150000
49	N/A	0.130000	0.150000
50	0.087041	0.150000	0.150000
51	0.085580	0.150000	0.150000
52	0.072383	0.185000	0.150000
53	0.076688	0.185000	0.150000
54	0.075561	0.185000	0.250000
55	0.077429	0.250000	0.200000
56	0.077106	0.250000	0.150000
57	0.076730	0.250000	0.150000
58	0.076820	0.250000	0.150000
59	0.200000	0.250000	0.150000
60	N/A	0.300000	0.250000
61	N/A	0.250000	0.200000
62	N/A	0.250000	0.300000
63	N/A	0.250000	0.500000
64	N/A	0.200000	0.500000
65	N/A	0.200000	0.500000
66	N/A	0.250000	0.500000
67	N/A	0.500000	0.500000
68	N/A	0.500000	0.500000
69	N/A	0.500000	0.500000
70	N/A	1.000000	1.000000
71	N/A	1.000000	1.000000
72	N/A	1.000000	1.000000
73	N/A	1.000000	1.000000
74	N/A	1.000000	1.000000
75	N/A	1.000000	1.000000

**Table 8**  
**Alaska PERS Others**  
**Retirement Table**

Age at Retirement	Reduced		Unreduced	
	Male	Female	Male	Female
<50	N/A	N/A	0.10	0.10
50	0.04	0.06	0.30	0.35
51	0.04	0.06	0.33	0.35
52	0.06	0.08	0.33	0.35
53	0.06	0.08	0.33	0.35
54	0.14	0.14	0.35	0.35
55	0.05	0.06	0.30	0.30
56	0.05	0.06	0.20	0.20
57	0.05	0.06	0.20	0.18
58	0.05	0.06	0.20	0.18
59	0.14	0.16	0.20	0.18
60	N/A	N/A	0.20	0.21
61	N/A	N/A	0.20	0.20
62	N/A	N/A	0.20	0.20
63	N/A	N/A	0.20	0.20
64	N/A	N/A	0.20	0.20
65	N/A	N/A	0.23	0.26
66	N/A	N/A	0.25	0.26
67	N/A	N/A	0.20	0.22
68	N/A	N/A	0.23	0.22
69	N/A	N/A	0.25	0.22
70	N/A	N/A	0.25	0.22
71	N/A	N/A	0.25	0.22
72	N/A	N/A	0.25	0.25
73	N/A	N/A	0.25	0.25
74	N/A	N/A	0.25	0.35
75 – 89	N/A	N/A	0.50	0.50
90+	N/A	N/A	1.00	1.00

**Table 9**  
**Alaska PERS**  
**Disabled Mortality Rates**

Age	Male	Female	Age	Male	Female
≤45	0.0214	0.0071	80	0.0833	0.0582
46	0.0226	0.0078	81	0.0880	0.0621
47	0.0238	0.0085	82	0.0928	0.0662
48	0.0250	0.0093	83	0.0978	0.0707
49	0.0262	0.0101	84	0.1028	0.0755
50	0.0275	0.0109	85	0.1079	0.0806
51	0.0287	0.0118	86	0.1130	0.0862
52	0.0299	0.0127	87	0.1204	0.0921
53	0.0311	0.0137	88	0.1282	0.0985
54	0.0324	0.0144	89	0.1362	0.1054
55	0.0336	0.0151	90	0.1503	0.1148
56	0.0348	0.0158	91	0.1667	0.1249
57	0.0354	0.0164	92	0.1841	0.1359
58	0.0359	0.0171	93	0.2022	0.1475
59	0.0365	0.0176	94	0.2209	0.1611
60	0.0370	0.0182	95	0.2400	0.1745
61	0.0376	0.0188	96	0.2594	0.1877
62	0.0382	0.0194	97	0.2790	0.2003
63	0.0389	0.0204	98	0.2934	0.2084
64	0.0396	0.0214	99	0.3128	0.2192
65	0.0404	0.0226	100	0.3264	0.2250
66	0.0413	0.0238	101	0.3459	0.2362
67	0.0422	0.0252	102	0.3585	0.2455
68	0.0434	0.0267	103	0.3762	0.2613
69	0.0454	0.0284	104	0.3850	0.2741
70	0.0477	0.0303	105	0.3979	0.2931
71	0.0502	0.0323	106	0.4000	0.3078
72	0.0529	0.0345	107	0.4000	0.3227
73	0.0558	0.0368	108	0.4000	0.3374
74	0.0591	0.0393	109	0.4000	0.3515
75	0.0625	0.0420	110	0.4000	0.3646
76	0.0662	0.0449	111	0.4000	0.3762
77	0.0702	0.0479	112	0.4000	0.3860
78	0.0744	0.0511	113	0.4000	0.3935
79	0.0788	0.0546	114	0.4000	0.3983
			115+	0.4000	0.4000

# 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.
Annual Required Contribution (ARC)	Disclosure measure of annual postretirement benefit cost under GASB 43 and 45.
GASB 25 and 27	Governmental Accounting Standards Board Statement Number 25, which specifies how the Annual Required Contribution (ARC) is to be calculated, and Number 27, which specifies Employer reporting of Pension Cost.
GASB 43 and 45	Governmental Accounting Standards Board Statement Number 43, which specifies how the ARC is to be calculated, and Number 45, which specifies Employer reporting of Other Postemployment Benefit (OPEB) Cost.
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.
Liquidity Factor	Is calculated as the average annual Fair Value of Assets divided by the total annual benefit payments. This measures the approximate number of years that assets will cover benefit payments without contributions or investment return. Trend shows solvency risk.

Maturity Ratio	The ratio of the actuarial accrued liability for members who are no longer active to the total actuarial accrued liability. A ratio of over 50% indicates a mature plan. The higher the maturity ratio, the more volatile the contribution rate will be from year to year given actuarial gains and losses.
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