



State of Alaska Judicial Retirement System

Actuarial Valuation Report
As of June 30, 2016

July 2017

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July 11, 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 Judicial Retirement System (JRS) 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 financial statements audited by KPMG LLP, member data provided by the Division of Retirement and Benefits, and medical enrollment data provided by the healthcare claims administrator (Aetna), 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.

The State of Alaska Judicial Retirement System is funded by Employer, State, and Member Contributions in accordance with the funding policy adopted by the Alaska Retirement Management Board (Board). The funding objective for the State of Alaska Judicial Retirement System is to pay required contributions that remain level as a percent of total JRS 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 annual changes in Unfunded Actuarial Accrued Liability as a level percentage of payroll over a closed 25-year period. The compensation used to determine required contributions is the total compensation of all active members in JRS. 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 JRS. 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 the 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.

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 5.

The assumptions and methods used to determine the healthcare Actuarial Required Contributions (ARC) of the Employers to JRS as outlined in this report and all supporting schedules meet the parameters and requirements for disclosure of Governmental Accounting Standards Board (GASB) Statement 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 4 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, a Member of the American Academy of Actuaries and a Fellow of the Conference of Consulting Actuaries. He meets 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. I am 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

The undersigned actuary is responsible for all assumptions related to the average annual per capita health claims cost and the healthcare 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

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Executive Summary

Overview

The State of Alaska Judicial Retirement System (JRS) provides pension and postemployment healthcare benefits to judicial and other eligible members. 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 benefits as of the valuation date of June 30, 2016.

Purpose

An actuarial valuation is performed on the retirement plan bi-annually as of the end of the fiscal year, and roll-forward valuations are performed every other year. The main purposes of the actuarial valuation detailed in this report are:

1. To determine the Employer 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; 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 the JRS based on the plan provisions, membership, assets, and actuarial assumptions as of the valuation date. 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 | 2014 | 2016 |
|--|--------------------|--------------------|
| Pension | | |
| a. Actuarial Accrued Liability | \$ 194,430,266 | \$ 205,547,759 |
| b. Valuation Assets | <u>128,004,452</u> | <u>152,888,596</u> |
| c. Unfunded Accrued Liability, (a) – (b) | \$ 66,425,814 | \$ 52,659,163 |
| d. Funded Ratio based on Valuation Assets, (b) ÷ (a) | 65.8% | 74.4% |
| e. Fair Value of Assets | \$ 139,547,440 | \$ 144,818,899 |
| f. Funded Ratio based on Fair Value of Assets, (e) ÷ (a) | 71.8% | 70.5% |
| Healthcare | | |
| a. Actuarial Accrued Liability | \$ 17,207,952 | \$ 15,731,490 |
| b. Valuation Assets | <u>24,074,313</u> | <u>28,454,747</u> |
| c. Unfunded Accrued Liability, (a) – (b) | \$ (6,866,361) | \$ (12,723,257) |
| d. Funded Ratio based on Valuation Assets, (b) ÷ (a) | 139.9% | 180.9% |
| e. Fair Value of Assets | \$ 26,301,968 | \$ 26,847,885 |
| f. Funded Ratio based on Fair Value of Assets, (e) ÷ (a) | 152.8% | 170.7% |
| Total | | |
| a. Actuarial Accrued Liability | \$ 211,638,218 | \$ 221,279,249 |
| b. Valuation Assets | <u>152,078,765</u> | <u>181,343,343</u> |
| c. Unfunded Accrued Liability, (a) – (b) | \$ 59,559,453 | \$ 39,935,906 |
| d. Funded Ratio based on Valuation Assets, (b) ÷ (a) | 71.9% | 82.0% |
| e. Fair Value of Assets | \$ 165,849,408 | \$ 171,666,784 |
| f. Funded Ratio based on Fair Value of Assets, (e) ÷ (a) | 78.4% | 77.6% |

1. Investment Experience

The approximate investment returns based on fair value of assets were 3.0% for FY15 and (0.5)% for FY16, compared to the expected investment return of 8.00%. This resulted in losses of approximately \$8 million for FY15 and \$15 million for FY16 from investment experience. Due to the asset valuation method that recognizes investment gains and losses over a 5-year period, the approximate rates of return based on actuarial value of assets were 10.8% for FY15 and 6.6% for FY16.

2. Salary Increases

Salaries for active judges changed between June 30, 2014 and June 30, 2016. The following table presents the annual base salaries for the different court appointments:

| | June 30, 2014 | June 30, 2016 |
|-------------------------|---------------|---------------|
| District Court | \$ 156,924 | \$ 166,668 |
| Superior Court | 185,088 | 196,584 |
| Appellate Court | 189,108 | 200,856 |
| Supreme Court | 200,172 | 212,604 |
| Administrative Director | 185,088 | 196,584 |
| Chief Justice | 200,760 | 213,228 |
| Pro Tem | 0 | 67,975 |

3. Demographic Experience (Pension)

The number of active members remained at 76 for the two year period. There were 5 new entrants to the plan with an average entry age higher than the continuing members. The average age of active members increased by 1.15 years, the average past service increased by 0.69 years, and the average entry age increased by 0.46 years. The trending increase in average entry age generally leads to an increase in the normal cost rate. There were small changes in the inactive statistics as well. The membership statistics are found in Section 4 of this report. The overall demographic experience produced an actuarial gain.

4. Retiree Medical Experience and Assumptions

As described in Section 5.2, recent claims experience and actual healthcare enrollment created an actuarial loss of approximately \$233,708 (including health plan enrollment data and other miscellaneous changes). There was also an offsetting demographic experience gain of approximately \$659,419.

5. Changes in Methods Since the Prior Valuation

There have been no material changes in asset or valuation methods since the prior valuation. Enhanced health plan enrollment data resulted in some offsetting cost increases and enrollment decreases as part of the per capita cost development.

6. Changes in Assumptions Since the Prior Valuation

There have been no changes in the assumptions since the prior valuation. Healthcare claim costs are updated annually as described in Section 5.2.

7. 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

| Recommended Employer/State Contribution Rates for Pension for Fiscal Year: | | |
|--|----------------|----------------|
| | FY17 | FY19 |
| a. Employer Normal Cost Rate | 37.00% | 38.14% |
| b. Past Service Cost Rate | <u>37.32%</u> | <u>32.45%</u> |
| c. Total Employer/State Contribution Rate, (a) + (b) | 74.32% | 70.59% |
| Employer/State Contribution Rates for Postemployment Healthcare for Fiscal Year: | | |
| | FY17 | FY19 |
| a. Employer Normal Cost Rate | 4.48% | 4.47% |
| b. Past Service Cost Rate | <u>(2.31)%</u> | <u>(4.82)%</u> |
| c. Total Employer Contribution Rate, (a) + (b) | 2.17% | (0.35)% |
| Recommended Total Employer/State Contribution Rates for Fiscal Year: | | |
| | FY17 | FY19 |
| a. Employer Normal Cost Rate | 41.48% | 42.61% |
| b. Past Service Cost Rate | <u>35.01%</u> | <u>27.63%</u> |
| c. Total Employer Contribution Rate, (a) + (b) | 76.49% | 70.24% |

For the June 30, 2015 valuation, we performed a roll forward of liabilities and determined the FY18 contribution rates using actual assets as of June 30, 2015. The contribution rates that were calculated for FY18 were 72.83% for Pension, 1.38% for Healthcare, and 74.21% in Total.

The following table summarizes the sources of change in the total Employer contribution rate based on total member payroll.

| | Pension | Healthcare | Total |
|---|----------------|----------------|----------------|
| 1. Total Employer contribution rate from June 30, 2014 valuation | 74.32% | 2.17% | 76.49% |
| 2. Change during FY15 | <u>(1.49)%</u> | <u>(0.79)%</u> | <u>(2.28)%</u> |
| 3. Total Employer contribution rate from June 30, 2015 roll forward valuation | 72.83% | 1.38% | 74.21% |
| 4. Change due to: | | | |
| a. Effect of two-year delay in the contribution rate | (0.48)% | (0.19)% | (0.67)% |
| b. Change in methodology and assumptions | 0.00% | (1.58)% | (1.58)% |
| c. Investment experience | 0.90% | 0.17% | 1.07% |
| d. State of Alaska appropriation | (2.63)% | 0.00% | (2.63)% |
| e. Demographic experience, medical experience and new entrants ¹ | <u>(0.03)%</u> | <u>(0.13)%</u> | <u>(0.16)%</u> |
| f. Total change, (a) + (b) + (c) + (d) + (e) | (2.24)% | (1.73)% | (3.97)% |
| 5. Total Employer contribution rate as of June 30, 2016, (3) + (4)(f) | 70.59% | (0.35)% | 70.24% |

¹ Includes changes in future healthcare claims costs.

Section 1 Actuarial Funding Results

Section 1.1 Actuarial Liabilities and Normal Cost

| At June 30, 2016 | Normal Cost | Actuarial Accrued Liability | Present Value of Projected Benefits |
|--|---------------------|--------------------------------|--|
| Active Members | | | |
| Retirement Benefits | \$ 5,778,108 | \$ 63,717,264 | \$ 93,263,778 |
| Disability Benefits | 14,371 | (15,429) | 83,362 |
| Death Benefits | 106,452 | 475,668 | 987,079 |
| Termination Benefits ¹ | 327,686 | (672,130) | 1,492,462 |
| Medical and Prescription Drug Benefits | 674,029 | 6,234,014 | 9,866,023 |
| Medicare Part D Subsidy | <u>(43,601)</u> | <u>(457,532)</u> | <u>(680,342)</u> |
| Subtotal | \$ 6,857,045 | \$ 69,281,855 | \$ 105,012,362 |
| Benefit Recipients | | | |
| Retiree Benefits | | \$ 126,986,162 | \$ 126,986,162 |
| Survivor Benefits | | 11,235,367 | 11,235,367 |
| Disability Benefits | | 0 | 0 |
| Medical and Prescription Drug Benefits | | 9,913,713 | 9,913,713 |
| Medicare Part D Subsidy | | <u>(880,936)</u> | <u>(880,936)</u> |
| Subtotal | | \$ 147,254,306 | \$ 147,254,306 |
| Vested Terminations | | | |
| Deferred Retirement Benefits | | \$ 3,820,857 | \$ 3,820,857 |
| Medical and Prescription Drug Benefits | | 963,497 | 963,497 |
| Medicare Part D Subsidy | | <u>(41,266)</u> | <u>(41,266)</u> |
| Subtotal | | \$ 4,743,088 | \$ 4,743,088 |
| Non-Vested Terminations | | | |
| | | \$ 0 | \$ 0 |
| Total | \$ 6,857,045 | \$ 221,279,249 | \$ 257,009,756 |
| Total Pension | \$ 6,226,617 | \$ 205,547,759 | \$ 237,869,067 |
| Total Healthcare, Net of Part D Subsidy | \$ 630,428 | \$ 15,731,490 | \$ 19,140,689 |

¹ Includes return of contributions.

Section 1.2 Actuarial Contributions as of June 30, 2016

| Normal Cost Rate | Pension | Healthcare | Total |
|--|--------------------|-------------------|--------------------|
| 1. Total Normal Cost | \$ 6,226,617 | \$ 630,428 | \$ 6,857,045 |
| 2. Total Base Salaries for Upcoming Fiscal Year | \$ 14,088,638 | \$ 14,088,638 | \$ 14,088,638 |
| 3. Total Normal Cost Rate, (1) ÷ (2) | 44.20% | 4.47% | 48.67% |
| 4. Average Member Contribution Rate | <u>6.06%</u> | <u>0.00%</u> | <u>6.06%</u> |
| 5. Employer Normal Cost Rate, (3) – (4) | 38.14% | 4.47% | 42.61% |
| Past Service Rate | Pension | Healthcare | Total |
| 1. Actuarial Accrued Liability | \$ 205,547,759 | \$ 15,731,490 | \$ 221,279,249 |
| 2. Valuation Assets | <u>152,888,596</u> | <u>28,454,747</u> | <u>181,343,343</u> |
| 3. Total Unfunded Actuarial Accrued Liability, (1) – (2) | \$ 52,659,163 | \$ (12,723,257) | \$ 39,935,906 |
| 4. Funded Ratio, (2) ÷ (1) | 74.4% | 180.9% | 82.0% |
| 5. Past Service Cost Amortization Payment | \$ 4,571,194 | \$ (678,624) | \$ 3,892,570 |
| 6. Total Base Salaries for Upcoming Fiscal Year | \$ 14,088,638 | \$ 14,088,638 | \$ 14,088,638 |
| 7. Past Service Cost Rate, (5) ÷ (6) | 32.45% | (4.82)% | 27.63% |
| Total Employer Contribution Rate | 70.59% | (0.35)% | 70.24% |

| Pension | | | | | | |
|--|---------------------|------------|--------------|----------------------|---------------------------|--|
| Charge | Amortization Period | | Balances | | Beginning-of-Year Payment | |
| | Date Created | Years Left | Initial | Outstanding | | |
| Initial Unfunded Liability ¹ | 06/30/2002 | 11 | \$ 5,864,449 | \$ 5,610,102 | \$ 621,961 | |
| FY03/FY04 Loss ¹ | 06/30/2004 | 13 | 855,068 | 860,370 | 83,835 | |
| Loss due to revaluation of plan liabilities ¹ | 06/30/2005 | 14 | 9,115,451 | 9,320,233 | 859,288 | |
| FY05/FY06 Loss ¹ | 06/30/2006 | 15 | 18,186,558 | 18,801,657 | 1,648,317 | |
| FY07 Loss | 06/30/2007 | 16 | 1,364,721 | 1,421,170 | 118,986 | |
| FY08 Gain | 06/30/2008 | 17 | (29,014,739) | (30,352,221) | (2,436,054) | |
| FY09 Loss | 06/30/2009 | 18 | 21,273,454 | 22,281,007 | 1,719,973 | |
| Change in Assumptions | 06/30/2010 | 19 | 13,976,981 | 14,613,481 | 1,088,210 | |
| FY10 Loss | 06/30/2010 | 19 | 6,474,780 | 6,769,635 | 504,109 | |
| FY11 Loss | 06/30/2011 | 20 | 7,397,917 | 7,717,722 | 555,860 | |
| FY12 Loss | 06/30/2012 | 21 | 11,916,371 | 12,374,737 | 864,085 | |
| FY13 Loss | 06/30/2013 | 22 | 7,033,497 | 7,010,756 | 475,615 | |
| Change in Assumptions | 06/30/2014 | 23 | 4,219,851 | 4,315,415 | 284,985 | |
| FY14 Gain | 06/30/2014 | 23 | (14,458,986) | (14,786,431) | (976,479) | |
| FY15 Gain | 06/30/2015 | 24 | (3,325,706) | (3,365,847) | (216,753) | |
| FY16 Gain | 06/30/2016 | 25 | (9,932,623) | (9,932,623) | (624,744) | |
| Total | | | | \$ 52,659,163 | \$ 4,571,194 | |

¹ The pension and healthcare split was done using a ratio of unfunded accrued liability as of June 30, 2006.

| Healthcare | | | | | | |
|--|---------------------|------------|--------------|------------------------|---------------------------|--|
| Charge | Amortization Period | | Balances | | Beginning-of-Year Payment | |
| | Date Created | Years Left | Initial | Outstanding | | |
| Initial Unfunded Liability ¹ | 06/30/2002 | 11 | \$ 2,295,257 | \$ 2,195,710 | \$ 243,426 | |
| FY03/FY04 Loss ¹ | 06/30/2004 | 13 | 334,660 | 336,735 | 32,812 | |
| Loss due to revaluation of plan liabilities ¹ | 06/30/2005 | 14 | 3,567,649 | 3,647,797 | 336,312 | |
| FY05/FY06 Loss ¹ | 06/30/2006 | 15 | 7,117,943 | 7,358,683 | 645,126 | |
| FY07 Gain | 06/30/2007 | 16 | (810,073) | (843,580) | (70,628) | |
| FY08 Change in Assumptions | 06/30/2008 | 17 | 789,072 | 825,446 | 66,250 | |
| FY08 Gain | 06/30/2008 | 17 | (14,011,596) | (14,657,485) | (1,176,402) | |
| FY09 Loss | 06/30/2009 | 18 | 901,355 | 944,046 | 72,875 | |
| Change in Assumptions | 06/30/2010 | 19 | 2,006,196 | 2,097,557 | 156,197 | |
| FY10 Gain | 06/30/2010 | 19 | (1,930,656) | (2,018,575) | (150,316) | |
| FY11 Loss | 06/30/2011 | 20 | 550,376 | 574,169 | 41,354 | |
| Change in Assumptions | 06/30/2012 | 21 | 353,605 | 367,206 | 25,641 | |
| FY12 Gain | 06/30/2012 | 21 | (5,516,210) | (5,728,393) | (399,994) | |
| FY13 Loss | 06/30/2013 | 22 | 226,259 | 233,392 | 15,833 | |
| Change in Assumptions | 06/30/2014 | 23 | 772,305 | 789,794 | 52,157 | |
| FY14 Gain | 06/30/2014 | 23 | (3,342,464) | (3,418,159) | (225,731) | |
| FY15 Gain | 06/30/2015 | 24 | (1,416,996) | (1,434,100) | (92,353) | |
| Change In Method | 06/30/2016 | 25 | (3,567,789) | (3,567,789) | (224,407) | |
| FY16 Gain | 06/30/2016 | 25 | (425,711) | (425,711) | (26,776) | |
| Total | | | | \$ (12,723,257) | \$ (678,624) | |

¹ The pension and healthcare split was done using a ratio of unfunded accrued liability as of June 30, 2006.

| Charge | Total | | | | |
|---|---------------------|------------|--------------|----------------------|---------------------------|
| | Amortization Period | | Balances | | Beginning-of-Year Payment |
| | Date Created | Years Left | Initial | Outstanding | |
| Initial Unfunded Liability | 6/30/2002 | 11 | \$ 8,159,706 | \$ 7,805,812 | \$ 865,387 |
| FY03/FY04 Loss | 6/30/2004 | 13 | 1,189,728 | 1,197,105 | 116,647 |
| Loss due to revaluation of plan liabilities | 06/30/2005 | 14 | 12,683,100 | 12,968,030 | 1,195,600 |
| FY05/FY06 Loss | 06/30/2006 | 15 | 25,304,501 | 26,160,340 | 2,293,443 |
| FY07 Loss | 06/30/2007 | 16 | 554,648 | 577,590 | 48,358 |
| FY08 Change in Assumptions | 06/30/2008 | 17 | 789,072 | 825,446 | 66,250 |
| FY08 Gain | 06/30/2008 | 17 | (43,026,335) | (45,009,706) | (3,612,456) |
| FY09 Loss | 06/30/2009 | 18 | 22,174,809 | 23,225,053 | 1,792,848 |
| Change in Assumptions | 06/30/2010 | 19 | 15,983,177 | 16,711,038 | 1,244,407 |
| FY10 Loss | 06/30/2010 | 19 | 4,544,124 | 4,751,060 | 353,793 |
| FY11 Loss | 06/30/2011 | 20 | 7,948,293 | 8,291,891 | 597,214 |
| Change in Assumptions | 06/30/2012 | 21 | 353,605 | 367,206 | 25,641 |
| FY12 Loss | 06/30/2012 | 21 | 6,400,161 | 6,646,344 | 464,091 |
| FY13Loss | 06/30/2013 | 22 | 7,259,756 | 7,244,148 | 491,448 |
| Change in Assumptions | 06/30/2014 | 23 | 4,992,156 | 5,105,209 | 337,142 |
| FY14 Gain | 06/30/2014 | 23 | (17,801,450) | (18,204,590) | (1,202,210) |
| FY15 Gain | 06/30/2015 | 24 | (4,742,702) | (4,799,947) | (309,106) |
| Change In Method | 06/30/2016 | 25 | (3,567,789) | (3,567,789) | (224,407) |
| FY16 Gain | 06/30/2016 | 25 | (10,358,334) | (10,358,334) | (651,520) |
| Total | | | | \$ 39,935,906 | \$ 3,892,570 |

Section 1.3 Actuarial Gain / (Loss) for FY16

| | Pension | Healthcare | Total |
|---|-----------------------|---------------------|-----------------------|
| 1. Expected Actuarial Accrued Liability | | | |
| a. Actuarial Accrued Liability, June 30, 2015 | \$ 205,160,847 | \$ 18,304,497 | \$ 223,465,344 |
| b. Normal Cost for FY16 | 6,024,599 | 605,706 | 6,630,305 |
| c. Interest on (a) and (b) at 8.00% | 16,894,836 | 1,512,816 | 18,407,652 |
| d. Actual Benefit Payments for FY16 | 11,228,221 | 703,919 | 11,932,140 |
| e. Refund of Contributions for FY16 | 0 | 0 | 0 |
| f. Interest on (d) and (e) at 8.00%, adjusted for timing | 440,489 | 27,615 | 468,104 |
| g. Change in Actuarial Assumptions/Methods | <u>0</u> | <u>(3,567,789)</u> | <u>(3,567,789)</u> |
| h. Expected Actuarial Accrued Liability as of June 30, 2016, (a) + (b) + (c) – (d) – (e) – (f) + (g) | \$ 216,411,572 | \$ 16,123,696 | \$ 232,535,268 |
| 2. Actual Actuarial Accrued Liability, June 30, 2016 | <u>205,547,759</u> | <u>15,731,490</u> | <u>221,279,249</u> |
| 3. Liability Gain/(Loss), (1)(h) – (2) | \$ 10,863,813 | \$ 392,206 | \$ 11,256,019 |
| 4. Expected Actuarial Asset Value | | | |
| a. Actuarial Asset Value, June 30, 2015 | \$ 142,191,071 | \$ 26,800,113 | \$ 168,991,184 |
| b. Interest on (a) at 8.00% | 11,375,286 | 2,144,009 | 13,519,295 |
| c. Employee Contributions for FY16 | 801,924 | 0 ¹ | 801,924 |
| d. Employer Contributions for FY16 | 5,819,499 | 508,413 | 6,327,912 |
| e. State Assistance Contributions for FY16 | 5,890,788 | 0 | 5,890,788 |
| f. Medicare Part D Subsidy | 0 | 92,763 | 92,763 |
| g. Interest on (c), (d), (e) and (f) at 8.00%, adjusted for timing | 490,860 | 23,585 | 514,445 |
| h. Benefit Payments for FY16 | 11,228,221 | 703,919 | 11,932,140 |
| i. Refund of Contributions for FY16 | 0 | 0 | 0 |
| j. Interest on (h) and (i) at 8.00%, adjusted for timing | <u>440,489</u> | <u>27,615</u> | <u>468,104</u> |
| k. Expected Actuarial Asset Value as of June 30, 2016, (a) + (b) + (c) + (d) + (e) + (f) + (g) – (h) – (i) – (j) | \$ 154,900,718 | \$ 28,837,349 | \$ 183,738,067 |
| 5. Actuarial Asset Value, June 30, 2016 | <u>152,888,596</u> | <u>28,454,747</u> | <u>181,343,343</u> |
| 6. Actuarial Asset Gain/(Loss), (5) – (4)(k) | \$ (2,012,122) | \$ (382,602) | \$ (2,394,724) |
| 7. Actuarial Gain/(Loss), (3) + (6) | \$ 8,851,691 | \$ 9,604 | \$ 8,861,295 |
| 8. Contribution Gain/(Loss) | \$ 1,080,932 | \$ 416,107 | \$ 1,497,039 |
| 9. FY16 Gain/(Loss), (7) + (8) | \$ 9,932,623 | \$ 425,711 | \$ 10,358,334 |

¹ These contributions are premiums paid by retirees who are not eligible for system paid medical benefits.

Section 1.4 Development of Change in Unfunded Liability during FY16

| | Pension | Healthcare | Total |
|--|------------------|--------------------|--------------------|
| 1. 2015 Unfunded Liability | \$ 62,969,776 | \$ (8,495,616) | \$ 54,474,160 |
| a. Interest on Unfunded Liability | \$ 5,037,582 | \$ (679,649) | \$ 4,357,933 |
| b. Normal Cost | 6,024,599 | 605,706 | 6,630,305 |
| c. Employee Contributions | (801,924) | 0 | (801,924) |
| d. Employer Contributions | (5,819,499) | (508,413) | (6,327,912) |
| e. State Assistance Contributions | (5,890,788) | 0 | (5,890,788) |
| f. Medicare Part D Subsidy | 0 | (92,763) | (92,763) |
| g. Interest on (b), (c), (d), (e), and (f) | (8,892) | 24,871 | 15,979 |
| h. Change in Actuarial Assumptions | <u>0</u> | <u>(3,567,789)</u> | <u>(3,567,789)</u> |
| i. Expected Change in Unfunded Liability during FY16 | \$ (1,458,922) | \$ (4,218,037) | \$ (5,676,959) |
| 2. Expected 2016 Unfunded Liability | \$ 61,510,854 | \$ (12,713,653) | \$ 48,797,201 |
| a. Liability (Gain)/Loss | \$ (10,863,813) | \$ (392,206) | \$ (11,256,019) |
| b. Asset (Gain)/Loss | <u>2,012,122</u> | <u>382,602</u> | <u>2,394,724</u> |
| c. Total (Gain)/Loss during FY16 | \$ (8,851,691) | \$ (9,604) | \$ (8,861,295) |
| 3. Actual 2016 Unfunded Liability, (2) + (2)(c) | \$ 52,659,163 | \$ (12,723,257) | \$ 39,935,906 |

Section 1.5 History of Unfunded Liability and Funded Ratio

| Valuation Date | Total Actuarial Accrued Liability | Valuation Assets | Assets as a Percent of Actuarial Accrued Liability | Unfunded Actuarial Accrued Liability (UAAL) |
|----------------|-----------------------------------|------------------|--|---|
| June 30, 2000 | \$ 73,483,475 | \$ 72,660,197 | 98.9% | \$ 823,278 |
| June 30, 2002 | \$ 71,843,615 | \$ 63,683,909 | 88.6% | \$ 8,159,706 |
| June 30, 2004 | \$ 80,052,559 | \$ 70,455,634 | 88.0% | \$ 9,596,925 |
| June 30, 2006 | \$ 127,725,758 | \$ 79,710,103 | 62.4% | \$ 48,015,655 |
| June 30, 2007 | \$ 133,988,906 | \$ 84,773,226 | 63.3% | \$ 49,215,680 |
| June 30, 2008 | \$ 148,737,880 | \$ 141,235,655 | 95.0% | \$ 7,502,225 |
| June 30, 2009 | \$ 156,679,506 | \$ 127,173,616 | 81.2% | \$ 29,505,890 |
| June 30, 2010 | \$ 184,828,106 | \$ 134,694,195 | 72.9% | \$ 50,133,911 |
| June 30, 2011 | \$ 194,831,317 | \$ 136,546,204 | 70.1% | \$ 58,285,113 |
| June 30, 2012 | \$ 198,922,147 | \$ 133,706,032 | 67.2% | \$ 65,216,115 |
| June 30, 2013 | \$ 209,088,146 | \$ 136,738,696 | 65.4% | \$ 72,349,350 |
| June 30, 2014 | \$ 211,638,218 | \$ 152,078,765 | 71.9% | \$ 59,559,453 |
| June 30, 2015 | \$ 223,465,344 | \$ 168,991,184 | 75.6% | \$ 54,474,160 |
| June 30, 2016 | \$ 221,279,249 | \$ 181,343,343 | 82.0% | \$ 39,935,906 |

Section 2 Plan Assets

Section 2.1 Summary of Fair Value of Assets

| As of June 30, 2016 | Pension | Healthcare | Total Fair Value | Allocation Percent |
|--|----------------|---------------|------------------|--------------------|
| Cash and Short-Term Investments | | | | |
| - Cash and Cash Equivalents | \$ 1,241,765 | \$ 286,343 | \$ 1,528,108 | 0.9% |
| - Subtotal | \$ 1,241,765 | \$ 286,343 | \$ 1,528,108 | 0.9% |
| Fixed Income Investments | | | | |
| - Domestic Fixed Income Pool | \$ 6,611,783 | \$ 1,234,380 | \$ 7,846,163 | 4.6% |
| - Tactical Fixed Income Pool | 1,004,614 | 220,950 | 1,225,564 | 0.7% |
| - International Fixed Income Pool | 2,285,776 | 426,740 | 2,712,516 | 1.6% |
| - High Yield Pool | 5,054,239 | 943,596 | 5,997,835 | 3.5% |
| - Treasury Inflation Protection Pool | 346,445 | 64,678 | 411,123 | 0.3% |
| - Taxable Municipal Bond | 1,625,789 | 303,524 | 1,929,313 | 1.1% |
| - Infrastructure Public Pool | 1,290,741 | 240,973 | 1,531,714 | 0.9% |
| - Infrastructure Private Pool | 1,993,674 | 372,206 | 2,365,880 | 1.4% |
| - Emerging Debt Pool | 979,387 | 182,845 | 1,162,232 | 0.7% |
| - Subtotal | \$ 21,192,448 | \$ 3,989,892 | \$ 25,182,340 | 14.8% |
| Equity Investments | | | | |
| - Domestic Equity Pool | \$ 37,447,643 | \$ 6,991,253 | \$ 44,438,896 | 26.0% |
| - Alternative Equity Pool | 6,112,241 | 1,141,120 | 7,253,361 | 4.2% |
| - International Equity Pool | 30,522,282 | 5,698,329 | 36,220,611 | 21.2% |
| - Private Equity Pool | 11,455,859 | 2,138,742 | 13,594,601 | 8.0% |
| - Emerging Markets Equity Pool | 4,107,414 | 766,831 | 4,874,245 | 2.9% |
| - Subtotal | \$ 89,645,439 | \$ 16,736,275 | \$ 106,381,714 | 62.3% |
| Other Investments | | | | |
| - Real Estate Pool | \$ 11,322,264 | \$ 2,111,192 | \$ 13,433,456 | 7.9% |
| - Other Investments Pool | 10,867,837 | 2,028,957 | 12,896,794 | 7.5% |
| - Absolute Return Pool | 9,453,688 | 1,764,947 | 11,218,635 | 6.6% |
| - Other Assets | 0 | 6,374 | 6,374 | 0.0% |
| - Subtotal | \$ 31,643,789 | \$ 5,911,470 | \$ 37,555,259 | 22.0% |
| Total Cash and Investments | \$ 143,723,441 | \$ 26,923,980 | \$ 170,647,421 | 100.0% |
| Net Accrued Receivables | 1,095,458 | (76,095) | 1,019,363 | |
| Net Assets | \$ 144,818,899 | \$ 26,847,885 | \$ 171,666,784 | |

Section 2.2 Changes in Fair Value of Assets During FY15

| Fiscal Year 2015 | Pension | Healthcare | Total Fair Value |
|---|----------------|-------------------|------------------|
| 1. Fair Value of Assets, June 30, 2014 | \$ 139,547,440 | \$ 26,301,968 | \$ 165,849,408 |
| 2. Additions: | | | |
| a. Employee Contributions | \$ 810,819 | \$ 0 ¹ | \$ 810,819 |
| b. Employer Contributions | 4,980,772 | 520,480 | 5,501,252 |
| c. State Assistance Contributions | 5,241,619 | 0 | 5,241,619 |
| d. Interest and Dividend Income | 2,604,894 | 487,395 | 3,092,289 |
| e. Net Appreciation/(Depreciation) in Fair Value of Investments | 2,075,190 | 374,884 | 2,450,074 |
| f. Medicare Part D Subsidy | 0 | 148,445 | 148,445 |
| g. Other | <u>92</u> | <u>0</u> | <u>92</u> |
| h. Total Additions | \$ 15,713,386 | \$ 1,531,204 | \$ 17,244,590 |
| 3. Deductions: | | | |
| a. Medical Benefits | \$ 0 | \$ 561,406 | \$ 561,406 |
| b. Retirement Benefits | 10,641,191 | 0 | 10,641,191 |
| c. Investment Expenses | 330,597 | 63,241 | 393,838 |
| d. Administrative Expenses | 86,243 | 66,144 | 152,387 |
| e. Refunds of Contributions | <u>42,771</u> | <u>0</u> | <u>42,771</u> |
| f. Total Deductions | \$ 11,100,802 | \$ 690,791 | \$ 11,791,593 |
| 4. Fair Value of Assets, June 30, 2015 | \$ 144,160,024 | \$ 27,142,381 | \$ 171,302,405 |
| Approximate Fair Value Investment Return Rate During FY15 Net of All Expenses | 3.1% | 2.8% | 3.0% |

Allocation of assets between pension and postemployment healthcare was reported to us by the Division of Retirement and Benefits.

¹ These contributions are premiums paid by retirees who are not eligible for system-paid medical benefits.

Section 2.3 Changes in Fair Value of Assets During FY16

| Fiscal Year 2016 | Pension | Healthcare | Total Fair Value |
|---|----------------|-------------------|------------------|
| 1. Fair Value of Assets, June 30, 2015 | \$ 144,160,024 | \$ 27,142,381 | \$ 171,302,405 |
| 2. Additions: | | | |
| a. Employee Contributions | \$ 801,924 | \$ 0 ¹ | \$ 801,924 |
| b. Employer Contributions | 5,819,499 | 508,413 | 6,327,912 |
| c. State Assistance Contributions | 5,890,788 | 0 | 5,890,788 |
| d. Interest and Dividend Income | 2,627,584 | 489,250 | 3,116,834 |
| e. Net Appreciation/(Depreciation) in Fair Value of Investments | (2,896,380) | (569,836) | (3,466,216) |
| f. Medicare Part D Subsidy | 0 | 92,763 | 92,763 |
| g. Other | <u>2,364</u> | <u>0</u> | <u>2,364</u> |
| h. Total Additions | \$ 12,245,779 | \$ 520,590 | \$ 12,766,369 |
| 3. Deductions: | | | |
| a. Medical Benefits | \$ 0 | \$ 703,919 | \$ 703,919 |
| b. Retirement Benefits | 11,228,221 | 0 | 11,228,221 |
| c. Investment Expenses | 298,353 | 50,277 | 348,630 |
| d. Administrative Expenses | 60,330 | 60,890 | 121,220 |
| e. Refunds of Contributions | <u>0</u> | <u>0</u> | <u>0</u> |
| f. Total Deductions | \$ 11,586,904 | \$ 815,086 | \$ 12,401,990 |
| 4. Fair Value of Assets, June 30, 2016 | \$ 144,818,899 | \$ 26,847,885 | \$ 171,666,784 |
| Approximate Fair Value Investment Return Rate During FY16 Net of All Expenses | (0.4)% | (0.7)% | (0.5)% |

Allocation of assets between pension and postemployment healthcare was reported to us by the Division of Retirement and Benefits.

¹ These contributions are premiums paid by retirees who are not eligible for system-paid medical benefits.

Section 2.4 Development of Actuarial Value of Assets

The actuarial value of assets was set equal to the fair value at June 30, 2006. Future investment gains and losses will be recognized 20% per year over 5 years. In no event may valuation assets be less than 80% or more than 120% of fair value as of the valuation date.

| | Pension | Healthcare | Total |
|---|----------------|---------------|----------------|
| 1. Deferral of Investment Gain/(Loss) for FY16 | | | |
| a. Fair Value, June 30, 2015 | \$ 144,160,024 | \$ 27,142,381 | \$ 171,302,405 |
| b. Contributions for FY16 | 12,512,211 | 508,413 | 13,020,624 |
| c. Medicare Part D Subsidy | 0 | 92,763 | 92,763 |
| d. Benefit Payments for FY16 | 11,228,221 | 703,919 | 11,932,140 |
| e. Actual Investment Return (net of expenses) | (625,115) | (191,753) | (816,868) |
| f. Expected Return Rate (net of expenses) | 8.00% | 8.00% | 8.00% |
| g. Expected Return - Weighted for Timing | 11,583,173 | 2,167,360 | 13,750,533 |
| h. Investment Gain/(Loss) for the Year, (e) – (g) | (12,208,288) | (2,359,113) | (14,567,401) |
| i. Deferred Investment Gain/(Loss) | (9,766,630) | (1,887,290) | (11,653,920) |
| 2. Actuarial Value, June 30, 2016 | | | |
| a. Fair Value, June 30, 2016 | \$ 144,818,899 | \$ 26,847,885 | \$ 171,666,784 |
| b. Deferred Investment Gain/(Loss) | (8,069,697) | (1,606,862) | (9,676,559) |
| c. Preliminary Actuarial Value, June 30, 2016, (a) – (b) | 152,888,596 | 28,454,747 | 181,343,343 |
| d. Upper Limit: 120% of Fair Value, June 30, 2016 | 173,782,679 | 32,217,461 | N/A |
| e. Lower Limit: 80% of Fair Value, June 30, 2016 | 115,855,119 | 21,478,309 | N/A |
| f. Actuarial Value, June 30, 2016, [(c) limited by (d) and (e)] | \$ 152,888,596 | \$ 28,454,747 | \$ 181,343,343 |
| g. Ratio of Actuarial Value of Assets to Fair Value of Assets | 105.6% | 106.0% | 105.6% |
| h. Approximate Actuarial Value Investment Return Rate During FY16 Net of All Expenses | 6.6% | 6.6% | 6.6% |

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

| 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 | \$ (8,632,909) | \$ (6,906,328) | \$ (1,726,581) | \$ 0 |
| 6/30/2013 | 4,587,172 | 2,752,302 | 917,435 | 917,435 |
| 6/30/2014 | 12,319,988 | 4,927,996 | 2,463,998 | 4,927,994 |
| 6/30/2015 | (6,914,160) | (1,382,832) | (1,382,832) | (4,148,496) |
| 6/30/2016 | (12,208,288) | 0 | (2,441,658) | (9,766,630) |
| Total | \$ (10,848,197) | \$ (608,862) | \$ (2,169,638) | \$ (8,069,697) |

| 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 | \$ (1,531,533) | \$ (1,225,227) | \$ (306,306) | \$ 0 |
| 6/30/2013 | 903,824 | 542,295 | 180,765 | 180,764 |
| 6/30/2014 | 2,312,384 | 924,954 | 462,477 | 924,953 |
| 6/30/2015 | (1,375,481) | (275,096) | (275,096) | (825,289) |
| 6/30/2016 | (2,359,113) | 0 | (471,823) | (1,887,290) |
| Total | \$ (2,049,919) | \$ (33,074) | \$ (409,983) | \$ (1,606,862) |

| 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 | \$ (10,164,442) | \$ (8,131,555) | \$ (2,032,887) | \$ 0 |
| 6/30/2013 | 5,490,996 | 3,294,597 | 1,098,200 | 1,098,199 |
| 6/30/2014 | 14,632,372 | 5,852,950 | 2,926,475 | 5,852,947 |
| 6/30/2015 | (8,289,641) | (1,657,928) | (1,657,928) | (4,973,785) |
| 6/30/2016 | (14,567,401) | 0 | (2,913,481) | (11,653,920) |
| Total | \$ (12,898,116) | \$ (641,936) | \$ (2,579,621) | \$ (9,676,559) |

Section 2.5 Historical Asset Rates of Return

| Year Ending | Actuarial Value | | Fair Value | |
|---------------|-----------------|-------------|------------|-------------|
| | Annual | Cumulative* | Annual | Cumulative* |
| June 30, 2005 | 8.0% | 8.0% | 8.0% | 8.0% |
| June 30, 2006 | 11.0% | 9.5% | 11.0% | 9.5% |
| June 30, 2007 | 10.2% | 9.7% | 18.1% | 12.3% |
| June 30, 2008 | 7.4% | 9.1% | (4.8)% | 7.7% |
| June 30, 2009 | (9.7)% | 5.1% | (20.6)% | 1.4% |
| June 30, 2010 | 8.7% | 5.7% | 10.6% | 2.8% |
| June 30, 2011 | 5.0% | 5.6% | 20.8% | 5.2% |
| June 30, 2012 | 0.7% | 5.0% | 0.1% | 4.6% |
| June 30, 2013 | 3.6% | 4.8% | 12.3% | 5.4% |
| June 30, 2014 | 12.2% | 5.5% | 18.3% | 6.6% |
| June 30, 2015 | 10.8% | 6.0% | 3.0% | 6.3% |
| June 30, 2016 | 6.6% | 6.0% | (0.5)% | 5.7% |

*Cumulative since FYE June 30, 2005.

Section 3 Accounting Information*

Section 3.1 Historical Exhibits

Schedule of Employer Contributions

Prior to adoption of GASB Statement No. 25 and 26 in 1997, an ARC was not determined pursuant to the parameters of the statements. Therefore, history prior to 1997 has not been shown. The exhibit below shows the combined annual required contribution for fiscal years ending in 2004 and before.

| Fiscal Year Ending | Total Annual Required Contribution | Percentage Contributed |
|--------------------|------------------------------------|------------------------|
| June 30, 1998 | \$ 2,204,026 | 100.0% |
| June 30, 2000 | 1,510,516 | 100.0% |
| June 30, 2002 | 1,005,968 | 100.0% |
| June 30, 2004 | 1,786,835 | 100.0% |

The following shows pension disclosure under GASB No. 25 for fiscal year ending in 2006 through 2013.

| Fiscal Year Ending | Total Annual Required Contribution | Percentage Contributed |
|--------------------|------------------------------------|------------------------|
| June 30, 2006 | \$ 2,133,876 | 115.6% |
| June 30, 2007 | 3,168,943 | 100.0% |
| June 30, 2008 | 3,898,001 | 1,045.0% |
| June 30, 2009 | 4,937,406 | 100.0% |
| June 30, 2010 | 5,236,646 | 69.8% |
| June 30, 2011 | 3,895,881 | 98.5% |
| June 30, 2012 | 5,051,754 | 107.3% |
| June 30, 2013 | 8,366,815 | 96.7% |

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

Schedule of Funding Progress

Note: Prior to adoption of GASB Statements No. 25 and 26 in 1997, information which does not meet the parameters of GASB 25 was used to determine funding requirements. Therefore, the history prior to 1997 has not been shown.

| Actuarial 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 Percentage of Annual Active Member Payroll |
|--------------------------|-----------------------------------|------------------|--|---|------------------------------|--|
| June 30, 1998 | \$ 61,483,386 | \$ 64,689,972 | 105.2% | N/A | \$ 5,716,092 | N/A |
| June 30, 2000 | 73,483,475 | 72,660,197 | 98.9% | 823,278 | 5,701,980 | 14.4% |
| June 30, 2002 | 71,843,615 | 63,683,909 | 88.6% | 8,159,706 | 5,941,860 | 137.3% |
| June 30, 2004 | 80,052,559 | 70,455,634 | 88.0% | 9,596,925 | 6,529,608 | 147.0% |

The exhibit below shows the pension disclosure under GASB No. 25 through June 30, 2013.

| Actuarial 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 Percentage of Annual Active Member Payroll |
|--------------------------|-----------------------------------|------------------|--|---|------------------------------|--|
| June 30, 2006 | \$ 111,819,972 | \$ 77,310,716 | 69.1% | \$ 34,509,256 | \$ 7,130,592 | 484.0% |
| June 30, 2008 | 130,596,048 | 122,882,726 | 94.1% | 7,713,322 | 10,462,322 | 73.7% |
| June 30, 2010 | 164,523,775 | 115,000,226 | 69.9% | 49,523,594 | 11,845,548 | 418.1% |
| June 30, 2012 | 182,267,524 | 112,870,360 | 61.9% | 69,397,164 | 11,803,164 | 588.0% |

Section 3.2 Postemployment Healthcare

The following shows healthcare disclosure without regard to Medicare Part D subsidy under GASB No. 43 for fiscal year ending 2006 and later.

| Fiscal Year Ending | Annual Required Contribution | Percentage of ARC Contributed |
|--------------------|------------------------------|-------------------------------|
| June 30, 2006 | \$ 262,631 | 115.6% |
| June 30, 2007 | 486,800 | 100.0% |
| June 30, 2008 | 567,415 | 2,489.4% |
| June 30, 2009 | 1,411,259 | 100.0% |
| June 30, 2010 | 1,432,721 | 60.9% |
| June 30, 2011 | 722,960 | 80.1% |
| June 30, 2012 | 712,911 | 97.8% |
| June 30, 2013 | 1,076,417 | 80.5% |
| June 30, 2014 | 1,094,357 | 86.7% |
| June 30, 2015 | 507,863 | 131.7% |
| June 30, 2016* | 503,854 | 119.3% |

* Based on estimated FY16 covered payroll.

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

| Valuation Date | 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 Percentage of Annual Active Member Payroll |
|----------------|-----------------------------|------------------|--|---|------------------------------|--|
| June 30, 2006 | \$ 17,794,213 | \$ 2,399,387 | 13.5% | \$ 15,394,826 | \$ 7,130,592 | 215.9% |
| June 30, 2008 | 19,941,128 | 18,352,929 | 92.0% | 1,588,199 | 10,462,322 | 15.2% |
| June 30, 2010 | 22,346,395 | 19,693,696 | 88.1% | 2,652,462 | 11,845,548 | 22.4% |
| June 30, 2012 | 18,236,104 | 20,835,671 | 114.3% | (2,599,567) | 11,803,164 | (22.0)% |
| June 30, 2014 | 18,641,877 | 24,074,313 | 129.1% | (5,432,436) | 13,730,948 | (39.6)% |
| June 30, 2016 | 17,111,224 | 28,454,747 | 166.3% | (11,343,523) | 13,596,652 | (83.4)% |

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 Dollar for Healthcare |
| Amortization Method | Level dollar, closed |
| Equivalent Single Amortization Period | 13 years |
| Asset Valuation Method | 5-year smoothed market |
| Actuarial Assumptions: | |
| Investment rate of return* | 8.00% |
| Projected salary increases | 3.62% |
| *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.

The State of Alaska Judicial Retirement System's retiree health care benefits are currently fully funded. Therefore, the 8.00% discount rate also applied for GASB 43 reporting.

Based on GASB accounting rules, the retiree drug subsidy the State of Alaska receives under Medicare Part D has not been recognized for GASB 43 disclosure purposes.

Using the GASB 43 discount rate determined above and disregarding future Medicare Part D payments, the fiscal 2016 employer ARC for accounting purposes is 3.6% of pay for healthcare benefits. Fiscal year 2017 actuarially determined contribution rates will be developed separately for compliance with GASB 74.

Section 4 Member Data

Section 4.1 Summary of Members Included

| As of June 30 | 2008 | 2010 | 2012 | 2014 | 2016 |
|--------------------------------------|------------|------------|------------|------------|------------|
| Active Members | | | | | |
| 1. Number | 73 | 72 | 69 | 76 | 76 |
| 2. Average Age | 55.64 | 56.58 | 57.83 | 57.65 | 58.80 |
| 3. Average Service | 10.20 | 9.20 | 9.04 | 8.70 | 9.39 |
| 4. Average Entry Age | 45.44 | 47.38 | 48.79 | 48.95 | 49.41 |
| 5. Average Annual Base Pay | \$ 159,617 | \$ 167,813 | \$ 174,477 | \$ 177,723 | \$ 185,377 |
| 6. Number Vested | 46 | 45 | 43 | 48 | 54 |
| Vested Terminated Members | | | | | |
| 1. Number | 5 | 4 | 5 | 4 | 3 |
| 2. Average Age | 54.81 | 57.53 | 52.28 | 53.53 | 57.35 |
| 3. Average Service | 7.67 | 10.99 | 7.95 | 7.40 | 8.72 |
| 4. Average Monthly Benefit | \$ 4,743 | \$ 6,823 | \$ 5,937 | \$ 5,704 | \$ 7,107 |
| Non-Vested Terminated Members | | | | | |
| 1. Number | 0 | 1 | 0 | 0 | 0 |
| 2. Average Age | 0 | 56.95 | 0 | 0 | 0 |
| 3. Average Service | 0 | 1.5 | 0 | 0 | 0 |
| 4. Average Account Balance | \$ 0 | \$ 12,191 | \$ 0 | \$ 0 | \$ 0 |
| Benefit Recipients | | | | | |
| 1. Number | 90 | 99 | 108 | 108 | 109 |
| 2. Average Age | 70.92 | 71.42 | 70.95 | 72.09 | 73.34 |
| 3. Average Monthly Benefit | \$ 6,765 | \$ 7,484 | \$ 7,774 | \$ 8,141 | \$ 8,529 |

Section 4.2 Age and Service Distribution of Active Members

| Annual Earnings By Age | | | | Annual Earnings By Service | | | |
|------------------------|-----------|----------------------|-------------------|----------------------------|-----------|----------------------|-------------------|
| Age Groups | Number | Total Earnings | Average Earnings | Years of Service | Number | Total Earnings | Average Earnings |
| 0-19 | 0 | \$ 0 | \$ 0 | 0 | 3 | \$ 584,616 | \$ 194,872 |
| 20-24 | 0 | 0 | 0 | 1 | 2 | 379,440 | 189,720 |
| 25-29 | 0 | 0 | 0 | 2 | 3 | 515,532 | 171,844 |
| 30-34 | 0 | 0 | 0 | 3 | 9 | 1,669,308 | 185,479 |
| 35-39 | 0 | 0 | 0 | 4 | 5 | 890,856 | 178,171 |
| 40-44 | 5 | 837,228 | 167,446 | 0-4 | 22 | 4,039,752 | 183,625 |
| 45-49 | 8 | 1,406,388 | 175,799 | 5-9 | 26 | 4,586,424 | 176,401 |
| 50-54 | 7 | 1,241,424 | 177,346 | 10-14 | 18 | 3,140,320 | 174,462 |
| 55-59 | 19 | 3,227,536 | 169,870 | 15-19 | 5 | 935,184 | 187,037 |
| 60-64 | 19 | 3,580,488 | 188,447 | 20-24 | 2 | 321,696 | 160,848 |
| 65-69 | 18 | 3,303,588 | 183,533 | 25-29 | 2 | 383,556 | 191,778 |
| 70-74 | 0 | 0 | 0 | 30-34 | 1 | 189,720 | 189,720 |
| 75-79 | 0 | 0 | 0 | 35-39 | 0 | 0 | 0 |
| 80 + | 0 | 0 | 0 | 40 + | 0 | 0 | 0 |
| Total | 76 | \$ 13,596,652 | \$ 178,903 | Total | 76 | \$ 13,596,652 | \$ 178,903 |

| Age | Years of Service by Age | | | | | | | | | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40-44 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 45-49 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 50-54 | 1 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 7 |
| 55-59 | 5 | 7 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 19 |
| 60-64 | 3 | 8 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 19 |
| 65-69 | 3 | 7 | 3 | 1 | 1 | 2 | 1 | 0 | 0 | 18 |
| 70-74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75+ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 22 | 26 | 18 | 5 | 2 | 2 | 1 | 0 | 0 | 76 |

Total annual earnings are the annualized earnings for the fiscal year ending on the valuation date.

Section 4.3 Member Data Reconciliation

| | Active Members | Vested Members | Non-Vested Members | Benefit Recipients | Total |
|-------------------------|-------------------|-------------------|-----------------------|-----------------------|-------|
| Total at June 30, 2014 | 76 | 4 | 0 | 108 | 188 |
| New Entrants | 5 | 0 | 0 | 0 | 5 |
| Rehires | 0 | 0 | 0 | 0 | 0 |
| Non-Vested Terminations | 0 | 0 | 0 | 0 | 0 |
| Refund of Contributions | 0 | (1) | 0 | 0 | 0 |
| Vested Terminations | 0 | 0 | 0 | 0 | 0 |
| Retirements | (5) | 0 | 0 | 5 | 0 |
| New Survivors | 0 | 0 | 0 | 0 | 0 |
| New QDROs | 0 | 0 | 0 | 0 | 0 |
| Deaths | 0 | 0 | 0 | (4) | (4) |
| Total at June 30, 2016 | 76 | 3 | 0 | 109 | 188 |

Section 5 Basis of the Actuarial Valuation

Section 5.1 Summary of Plan Provisions

1. **Effective Date**

May 4, 1963, with amendments through June 30, 2016.

2. **Administration of Plan**

The Commissioner of Administration is responsible for administering the Judicial Retirement System (JRS). The Alaska Retirement Management Board is responsible for managing and investing the fund (Ch 5, SLA 2005).

3. **Members Included**

JRS membership is mandatory for all Supreme Court justices and Superior, District and Appellate Court judges. The administrative director of the Court System may elect to participate in either the JRS or the Public Employees' Retirement System (PERS).

4. **Credited Service**

Members receive credit for each day of JRS employment. Earlier service as a magistrate or deputy magistrate before July 1, 1967 is covered under the JRS. JRS members become vested in the plan after reaching 5 years of credited service.

5. **Member Contributions**

Members hired after July 1, 1978, are required to contribute 7% of their base annual salaries. Contributions are required for a maximum of 15 years. Members hired before July 1, 1978 are not required to contribute.

Interest Credited: 4.5% compounded semiannually on June 30 and December 31.

Refund of Contributions: Nonvested members may receive a refund of their contributions and interest earned if they terminate employment. Refunded contributions, plus 7% indebtedness interest, must be repaid before appointment to retirement.

JRS contributions for terminated members may be attached to satisfy claims under Alaska Statute 09.38.065 or federal tax levies. Contributions that are attached to satisfy claims or tax levies may be reinstated at any time. The member is not required to return to JRS employment.

6. **Retirement Eligibility and Benefits**

Normal Retirement: Members are eligible for normal retirement at age 60 if they have at least five years of JRS service. Terminated, vested members may defer retirement and begin receiving normal retirement benefits when they reach age 60. Vesting is completion of at least five years of JRS service.

Early Retirement: Members are eligible for early retirement at any age if they have at least 20 years of service. Terminated, vested members may defer retirement and begin receiving early retirement benefits when they reach age 55. Under early retirement, members receive reduced benefits equal to the actuarial equivalent of their normal retirement benefits. Early benefits are based on the member's service and early retirement date.

Type of Benefit: Lifetime monthly benefits are paid to the member. Upon the member's death, a survivor's benefit (below) may be payable if the member has an eligible spouse or dependent children.

Computation of Normal Retirement Benefit: 5% of authorized monthly base salary for each year of JRS service up to a maximum of 15 years. JRS retirement benefit payments are recalculated when the salary for the office held by the member at the time of retirement changes. The maximum JRS benefit payable to a member is 75% of the authorized salary.

7. Survivor's Benefits

Survivor's benefits are payable to the spouse of a member if they have been married for at least one year immediately preceding the member's death and the member has at least two years of JRS service. The monthly survivor's benefit is equal to the greater of:

- a. one-half of the monthly benefit that the member would have received if retired at the time of death; or
- b. 30% of the authorized monthly base salary if the member was not eligible to retire, or was entitled to less than 60% of the authorized monthly base salary.

If there is no eligible surviving spouse, the member's dependent children receive, in equal shares, 50% of the benefit under (a) or (b) until age 19 or 23 and attending an accredited educational or technical institution on a full-time basis.

When there is both an eligible surviving spouse and dependent children residing in separate households, the spouse and children share equally the benefit under (a) or (b) while the children are under 19 or 23 and attending an accredited educational or technical institution on a full-time basis.

When there is no surviving spouse or dependent children, the members' contribution account balance, including interest earned, will be paid to the designated beneficiary.

8. Disability Benefits

Members are eligible to receive monthly disability benefits at any age if they become incapacitated and they have at least two years of JRS service. Disability benefits are calculated the same as normal retirement benefits.

9. Medical Benefits

Medical benefits are provided at no cost to JRS members, their spouses and dependents while monthly retirement, disability and survivor benefits are being paid.

10. Changes Since the Prior Valuation

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

Section 5.2 Descriptions of Actuarial Methods and Valuation Procedures

Actuarial Method – Entry Age Actuarial Cost.

Liabilities and contributions shown in the report are computed using the Entry Age Normal Actuarial Cost Method. Any funding surplus or unfunded accrued liability is amortized over 25 years as a level percentage of expected payroll.

Projected pension and preretirement spouse's death 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

Effective June 30, 2006, the asset valuation method recognizes 20% of the investment gain or loss in each of the current and preceding four years. This method will be phased in over five years. Assets are initialized at market value as of June 30, 2006. All assets are valued at market value. Assets are accounted for on an accrued basis and are taken directly from financial statements audited by KPMG LLP. Valuation assets are constrained to a range of 80% to 120% of the market value of assets.

Valuation of Medical and Prescription Drug Benefits

This section outlines the detailed methodology used to develop the initial per capita claims cost rates for the State of Alaska Judicial Retirement System 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 historical credibility of cost and enrollment data for each component of cost. This valuation reflects non-prescription claims separated by Medicare status, including eligibility for free Part A coverage. Prescription costs are analyzed separately as in prior valuations. Administrative costs are assumed in the final per capita claims cost rates used for valuation purposes, as described below. Analysis to date on Medicare Part A coverage is limited since Part A claim data is not available by individual, nor is this status incorporated into historical claim data.

Benefits

Medical, prescription drug, dental, vision and audio coverage is provided through the AlaskaCare Retiree Health Plan and is available to employees of the State and subdivisions who meet retirement criteria based on the retirement plan tier in effect at their date of hire. Health plan provisions do not vary by retirement tier or age, except for Medicare coordination for those Medicare-eligible. Dental, vision and audio claims (DVA) are excluded from data analyzed for this valuation 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 historical 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 historical claim data to fiscal 2017 for retirees using the following summarized steps:

1. Develop historical annual incurred claim cost rates – an analysis of medical costs was completed based on claims information and enrollment data provided by 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 historical 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 historical ratio of subsidy received to claims incurred (adjusted for rebates), and then applied to the appropriate projection period. These amounts are applicable only to Medicare eligible participants.

3. Adjust for 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 historical 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 historical 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"> – No impact on cost data used for 2016, though potentially a source of future modifications – No impact on morbidity assumptions used for 2016, though potentially a source of future modifications |
| 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.
- 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.

June 30, 2016 Valuation – FY 2016 Claims Cost Rates

| | Medical | | | Prescription Drugs | | | Total |
|---|-----------------------|----------------------|---------------------|----------------------|-----------------------|-------------------|-----------------------|
| | Pre-Medicare | Medicare A&B | Medicare B Only | Pre-Medicare | Medicare A&B | Medicare B Only | |
| Fiscal 2013 Incurred Claims | \$ 239,986,289 | \$ 73,469,050 | \$ 1,901,151 | \$ 49,738,435 | \$ 93,999,808 | \$ 538,020 | \$ 459,632,753 |
| 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 | |
| FY 2017 Incurred Cost Rate | \$ 12,595 | \$ 2,750 | \$ 10,815 | \$ 2,616 | \$ 3,526 | \$ 3,067 | \$ 10,010 |
| Fiscal 2014 Incurred Claims | \$ 224,167,427 | \$ 68,834,329 | \$ 2,428,446 | \$ 39,572,896 | \$ 115,011,779 | \$ 605,633 | \$ 450,620,510 |
| 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 | |
| FY 2017 Incurred Cost Rate | \$ 12,293 | \$ 2,184 | \$ 12,733 | \$ 2,220 | \$ 3,733 | \$ 3,248 | \$ 9,095 |
| Fiscal 2015 Incurred Claims | \$ 222,942,485 | \$ 73,220,895 | \$ 3,066,493 | \$ 55,314,988 | \$ 118,431,447 | \$ 651,667 | \$ 473,627,975 |
| 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 | |
| FY 2017 Incurred Cost Rate | \$ 11,940 | \$ 2,144 | \$ 14,197 | \$ 3,071 | \$ 3,595 | \$ 3,128 | \$ 9,050 |
| Fiscal 2016 Incurred Claims | \$ 225,325,571 | \$ 83,147,336 | \$ 1,892,894 | \$ 57,222,142 | \$ 135,947,721 | \$ 803,500 | \$ 504,339,164 |
| 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 | |
| FY 2017 Incurred Cost Rate | \$ 11,830 | \$ 2,162 | \$ 7,245 | \$ 3,096 | \$ 3,643 | \$ 3,169 | \$ 8,833 |
| 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 |

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 5.3 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 results of an experience study performed as of June 30, 2013.

| Investment Return/Discount Rate | 8.00% per year, compounded annually, net of expenses. | | | | | | | | | | | | | | | |
|----------------------------------|--|--------------------|---------|--------------------|--------------|-----------|----------|----------------------|----------|----------|----------------------|----------|----------|-----------------|-----|--------|
| Pre-termination Mortality* | 68% of the male rates and 60% of the female rates of the Post-Termination Mortality Rates (See Table 1.) | | | | | | | | | | | | | | | |
| Post-termination Mortality* | 94% of the male rates and 97% of the female rates of RP-2000 Combined Mortality Table, 2000 Base Year, projected to 2018 with Projection Scale BB, with a 3-year setback for males and 4-year setback for females. (See Table 2.) Post-termination disabled mortality is in accordance with RP-2000 Disabled Retiree Table, 2000 Base Year projected to 2018 with Projection Scale BB. (See Table 3.) | | | | | | | | | | | | | | | |
| Salary Scale | 3.62% per year, compounded annually. | | | | | | | | | | | | | | | |
| Total Payroll Growth | 3.62% per year. | | | | | | | | | | | | | | | |
| 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. | | | | | | | | | | | | | | | |
| Benefit Payment Increases | Benefits for retired members are assumed to increase 3.62% per year. | | | | | | | | | | | | | | | |
| Compensation and Benefits Limits | Compensation is limited to the 401(a)(17) amounts – \$265,000 in 2016, and assumed to increase by 3.50% each year thereafter Benefits are limited to the Section 415 amounts - \$210,000 in 2016, and assumed to increase by 3.50% each year thereafter | | | | | | | | | | | | | | | |
| Per Capita Claims Cost | Sample claims cost rates adjusted to age 65 for FY17 medical and prescription are shown below: <table border="1" data-bbox="711 1129 1360 1346"> <thead> <tr> <th></th> <th>Medical</th> <th>Prescription Drugs</th> </tr> </thead> <tbody> <tr> <td>Pre-Medicare</td> <td>\$ 14,380</td> <td>\$ 3,320</td> </tr> <tr> <td>Medicare Parts A & 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> </tbody> </table> | | Medical | Prescription Drugs | 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 |
| | Medical | Prescription Drugs | | | | | | | | | | | | | | |
| 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. | | | | | | | | | | | | | | | |

*The mortality assumption includes an allowance for future mortality improvement. The mortality table used was set in 2014 with an Actual Deaths to Expected Deaths ratio of 115%.

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 FY18 medical claims cost.

| | Medical Pre-65 | Medical Post-65 | Prescription Drugs |
|-------|----------------|-----------------|--------------------|
| FY17 | 8.8% | 5.8% | 5.4% |
| FY18 | 8.2% | 5.7% | 5.1% |
| FY19 | 7.6% | 5.6% | 4.8% |
| FY20 | 7.0% | 5.6% | 4.6% |
| FY21 | 6.5% | 5.6% | 4.4% |
| FY22 | 6.0% | 5.6% | 4.2% |
| FY23 | 5.6% | 5.6% | 4.0% |
| FY26 | 5.6% | 5.6% | 4.0% |
| FY51 | 4.4% | 4.0% | 4.0% |
| FY101 | 4.4% | 4.0% | 4.0% |

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.

Aging Factors*

| Age | Medical | Prescription Drugs |
|-------|---------|--------------------|
| 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.

| | |
|-----------------------------|---|
| Medical Participation | Because medical benefits are provided at no cost to the retiree, we have assumed 100% participation in the medical plans. |
| Turnover | a. 3% if service is less than 10 years. b. 1% if service is greater than 10 years. |
| Retirement | Retirement rates based on 2010-2013 experience, in accordance with Table 5. Terminated vested members are expected to commence benefits at age 60. |
| Marriage and Age Difference | Wives are assumed to be four years younger than husbands. 90% of male members and 70% of female members are assumed to be married. |
| Disability | In accordance with Table 4. |
| Maximum Retirement Age | Age 70 |
| Form of Payment | Married members are assumed to choose the 50% Joint and Survivor benefit option. Single members are assumed to choose the Modified Cash Refund Annuity. |
| 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

0% of terminating members with vested benefits are assumed to have their contributions refunded.

100% of those with non-vested benefits are assumed to have their contributions refunded.

Table 1**Pre-Termination Mortality Rates**

| Age | Rate | |
|-----|----------|----------|
| | Male | Female |
| 20 | 0.000182 | 0.000098 |
| 21 | 0.000191 | 0.000101 |
| 22 | 0.000200 | 0.000104 |
| 23 | 0.000209 | 0.000105 |
| 24 | 0.000216 | 0.000105 |
| 25 | 0.000222 | 0.000106 |
| 26 | 0.000226 | 0.000107 |
| 27 | 0.000228 | 0.000109 |
| 28 | 0.000228 | 0.000111 |
| 29 | 0.000229 | 0.000114 |
| 30 | 0.000231 | 0.000118 |
| 31 | 0.000238 | 0.000123 |
| 32 | 0.000249 | 0.000130 |
| 33 | 0.000269 | 0.000137 |
| 34 | 0.000302 | 0.000146 |
| 35 | 0.000340 | 0.000169 |
| 36 | 0.000382 | 0.000193 |
| 37 | 0.000425 | 0.000217 |
| 38 | 0.000468 | 0.000240 |
| 39 | 0.000509 | 0.000262 |
| 40 | 0.000547 | 0.000283 |
| 41 | 0.000584 | 0.000305 |
| 42 | 0.000618 | 0.000330 |
| 43 | 0.000653 | 0.000357 |
| 44 | 0.000692 | 0.000389 |
| 45 | 0.000736 | 0.000427 |
| 46 | 0.000787 | 0.000470 |
| 47 | 0.000846 | 0.000517 |
| 48 | 0.000913 | 0.000567 |
| 49 | 0.000979 | 0.000620 |
| 50 | 0.001050 | 0.000674 |
| 51 | 0.001126 | 0.000731 |
| 52 | 0.001208 | 0.000791 |
| 53 | 0.001295 | 0.000855 |
| 54 | 0.001483 | 0.000908 |
| 55 | 0.001615 | 0.000985 |
| 56 | 0.001766 | 0.001054 |
| 57 | 0.001901 | 0.001132 |
| 58 | 0.002117 | 0.001221 |
| 59 | 0.002409 | 0.001344 |
| 60 | 0.002643 | 0.001501 |
| 61 | 0.002917 | 0.001659 |
| 62 | 0.003229 | 0.001837 |
| 63 | 0.003599 | 0.002080 |
| 64 | 0.004021 | 0.002367 |
| 65 | 0.004504 | 0.002723 |
| 66 | 0.005057 | 0.003118 |
| 67 | 0.005594 | 0.003582 |
| 68 | 0.006202 | 0.004036 |
| 69 | 0.007017 | 0.004546 |
| 70 | 0.007828 | 0.005130 |

Table 2
Post-Termination Mortality Rates

| Age | Rate | | Age | Rate | |
|-----|----------|----------|------|----------|----------|
| | Male | Female | | Male | Female |
| 50 | 0.001544 | 0.001124 | 86 | 0.064248 | 0.043940 |
| 51 | 0.001656 | 0.001219 | 87 | 0.072770 | 0.048789 |
| 52 | 0.001777 | 0.001318 | 88 | 0.082264 | 0.054261 |
| 53 | 0.001904 | 0.001424 | 89 | 0.092884 | 0.060450 |
| 54 | 0.002181 | 0.001513 | 90 | 0.104794 | 0.068659 |
| 55 | 0.002375 | 0.001641 | 91 | 0.118129 | 0.077983 |
| 56 | 0.002597 | 0.001756 | 92 | 0.132941 | 0.088452 |
| 57 | 0.002795 | 0.001887 | 93 | 0.149196 | 0.100021 |
| 58 | 0.003113 | 0.002035 | 94 | 0.165479 | 0.112560 |
| 59 | 0.003543 | 0.002240 | 95 | 0.182705 | 0.125866 |
| 60 | 0.003887 | 0.002501 | 96 | 0.200693 | 0.139699 |
| 61 | 0.004289 | 0.002765 | 97 | 0.219249 | 0.153813 |
| 62 | 0.004749 | 0.003062 | 98 | 0.233940 | 0.164973 |
| 63 | 0.005293 | 0.003466 | 99 | 0.252821 | 0.178741 |
| 64 | 0.005913 | 0.003946 | 100 | 0.267022 | 0.188730 |
| 65 | 0.006624 | 0.004538 | 101 | 0.285888 | 0.201393 |
| 66 | 0.007436 | 0.005196 | 102 | 0.299408 | 0.209540 |
| 67 | 0.008227 | 0.005970 | 103 | 0.318102 | 0.220440 |
| 68 | 0.009121 | 0.006727 | 104 | 0.331094 | 0.226232 |
| 69 | 0.010318 | 0.007576 | 105 | 0.349384 | 0.237489 |
| 70 | 0.011511 | 0.008550 | 106 | 0.360058 | 0.246863 |
| 71 | 0.012798 | 0.009494 | 107 | 0.368483 | 0.258063 |
| 72 | 0.014180 | 0.010494 | 108 | 0.374013 | 0.270683 |
| 73 | 0.015902 | 0.011599 | 109 | 0.376000 | 0.284323 |
| 74 | 0.017595 | 0.013068 | 110 | 0.376000 | 0.298577 |
| 75 | 0.019536 | 0.014502 | 111 | 0.376000 | 0.313043 |
| 76 | 0.021760 | 0.016130 | 112 | 0.376000 | 0.327318 |
| 77 | 0.024276 | 0.017929 | 113 | 0.376000 | 0.340998 |
| 78 | 0.027093 | 0.019871 | 114 | 0.376000 | 0.353678 |
| 79 | 0.030198 | 0.021938 | 115 | 0.376000 | 0.364959 |
| 80 | 0.033590 | 0.024170 | 116 | 0.376000 | 0.374435 |
| 81 | 0.037326 | 0.026620 | 117 | 0.376000 | 0.381702 |
| 82 | 0.041482 | 0.029345 | 118 | 0.376000 | 0.386359 |
| 83 | 0.046095 | 0.032397 | 119 | 0.376000 | 0.388000 |
| 84 | 0.051589 | 0.035811 | ≥120 | 1.000000 | 1.000000 |
| 85 | 0.057637 | 0.039636 | | | |

Table 3**Post-Termination Disabled Mortality Rates**

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

Table 4
Disability Rates

| Age | Rate |
|-----|----------|
| 20 | 0.000170 |
| 21 | 0.000170 |
| 22 | 0.000180 |
| 23 | 0.000180 |
| 24 | 0.000180 |
| 25 | 0.000190 |
| 26 | 0.000190 |
| 27 | 0.000190 |
| 28 | 0.000200 |
| 29 | 0.000200 |
| 30 | 0.000210 |
| 31 | 0.000210 |
| 32 | 0.000220 |
| 33 | 0.000220 |
| 34 | 0.000230 |
| 35 | 0.000240 |
| 36 | 0.000250 |
| 37 | 0.000260 |
| 38 | 0.000270 |
| 39 | 0.000280 |
| 40 | 0.000290 |
| 41 | 0.000300 |
| 42 | 0.000320 |
| 43 | 0.000340 |
| 44 | 0.000370 |
| 45 | 0.000410 |
| 46 | 0.000440 |
| 47 | 0.000480 |
| 48 | 0.000520 |
| 49 | 0.000560 |
| 50 | 0.000600 |
| 51 | 0.000650 |
| 52 | 0.000720 |
| 53 | 0.000800 |
| 54 | 0.000890 |
| 55 | 0.001000 |
| 56 | 0.001150 |
| 57 | 0.001340 |
| 58 | 0.001530 |
| 59 | 0.001800 |
| ≥60 | 0.000000 |

Table 5
Retirement Rates

| Age | Unisex |
|------------|---------------|
| ≤58 | 0.03 |
| 59 | 0.10 |
| 60 | 0.20 |
| 61 | 0.20 |
| 62 | 0.10 |
| 63 | 0.10 |
| 64 | 0.10 |
| 65 | 0.20 |
| 66 | 0.20 |
| 67 | 0.10 |
| 68 | 0.10 |
| 69 | 0.10 |
| ≥70 | 1.00 |

Glossary of Terms

| | |
|---|--|
| Actuarial Accrued Liability | Total accumulated cost to fund pension 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 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 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 | Disclosure measure of annual pension cost. |
| 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. These statements have been amended by GASB 67 and 68, respectively. |
| GASB 43 and 45 | Governmental Accounting Standards Board Statement Number 43 which specifies how the Annual Required Contribution (ARC) is to be calculated, and Number 45 which specifies Employer reporting of 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 pension 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 pension 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. |
| Unfunded Actuarial Accrued Liability (UAAL) | The portion of the actuarial accrued liability not offset by plan assets. |
| Vested Benefits | Benefits which are unconditionally guaranteed regardless of employment status. |