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October 6, 2015

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

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#### **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 Teachers' Retirement System (TRS) as of June 30, 2014 performed by Buck Consultants, LLC.

The actuarial valuation is based on financial information provided in the financial statements audited by KPMG LLP and member data provided by the Division of Retirement and Benefits and summarized in this report. The benefits considered are those delineated in Alaska statutes effective June 30, 2014. 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. Buck Consultants, LLC 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.

The State of Alaska Teachers' Retirement System is funded by Employer, State, and Member Contributions in accordance with the funding policy adopted by the Alaska Retirement Management Board (Board) and as required by Alaska state statues. The funding objective for the State of Alaska Teachers' Retirement System is to pay required contributions that remain level as a percent of total TRS Compensation. The Board has also established a funding policy objective that the required contributions be sufficient to pay the Normal Costs of active plan members, System expenses, and amortize the Unfunded Actuarial Accrued Liability as a level percentage of payroll over a closed 25-year period and as required by Alaska state statues.

# **Actuarial Section**

In accordance with Senate Bill 119, signed into law May 28, 2014, and HB 385, signed into law on June 23, 2014, the following changes are effective for this June 30, 2014 actuarial valuation:

- The amortization method used for funding changed from the level dollar amount to the level percentage of payroll method and the amortization period is re-initialized to a closed 25-year period from June 30, 2014.
- The additional state contribution for fiscal year ending June 30, 2015 is exactly \$2,000,000,000.
- The two-year rate setting time lag is intended to be eliminated. The two-year lag in the setting of contribution rates is replaced by a two-year roll forward of liabilities and projected normal costs and a one-year roll forward of June 30, 2015 assets.
- The Actuarial Value of Assets is reset to the Fair Value as of June 30, 2014. The five-year smoothing method with grow-in will be implemented over the next five years.
- The 20% corridor over/under the Fair Value of Assets is eliminated in the calculation of the Actuarial Value of Assets.

The compensation used to determine required contributions is the total compensation of all active members in TRS, including those hired after July 1, 2006 who are members of the Defined Contribution Retirement (DCR) Plan. This objective is currently being met and is projected to continue to be met.

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 in 2014. A review of the healthcare assumptions was performed for this actuarial valuation and changes were made to the healthcare cost trend rates and the per capita claim cost rates effective June 30, 2014 to better reflect expected future healthcare experience. A summary of the actuarial assumptions and methods used in this actuarial valuation are shown in Section 6.

The assumptions and methods used to determine the Actuarially Determined Contributions (ADC) of the Employers to the State of Alaska Teachers' Retirement System as outlined in this report and all supporting schedules meet the parameters and requirements for disclosure of Governmental Accounting Standards Board (GASB) Statements No. 67, Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans, and No. 43, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans. Based on member data and asset information provided by the Division of Retirement and Benefits, we have prepared the trend data schedule under GASB No. 43 that is included in the Financial Section of the CAFR. We have also prepared the member data tables shown in Section 5 of this report for the Statistical Section of the CAFR, and the summary of actuarial assumptions, solvency test, and analysis of financial experience for the Actuarial Section of the CAFR.

# **Actuarial Section**

Both of the undersigned are Associates of the Society of Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all Applicable Actuarial Standards of Practice. We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate.

Respectfully submitted,

David H. Slishinsky, ASA, MAAA, FCA

David H. Slashinsky

Principal, Consulting Actuary

Todd D. Kanaster, ASA, MAAA, FCA

Senior Consultant

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

Melissa A. Bissett, FSA, MAAA

Senior Consultant, Health & Productivity

# Teachers' Retirement System Defined Benefit Retirement Plan

# Description of Actuarial Methods and Valuation Procedures

The funding method used in this valuation was adopted by the Board in October 2006. The asset smoothing method used to determine valuation assets was changed effective June 30, 2002.

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

#### A. Actuarial Method – Entry Age Actuarial Cost

Liabilities and contributions shown in the report are computed using the Entry Age Actuarial Cost method of funding. Any funding surpluses or unfunded accrued liability is amortized over 25 years as a level percentage of payroll amount. State statutes allow the contribution rate to be determined on payroll for all members, defined benefit and defined contribution member payroll combined.

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

The actuarial accrued liability for retired members and their beneficiaries currently receiving benefits, terminated vested members and disabled members not yet receiving benefits was determined as the actuarial present value of the benefits expected to be paid. No future normal costs are payable for these members. The actuarial accrued liability under this method at any point in time is the theoretical amount of the fund that would have been accumulated had annual contributions equal to the normal cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date). The unfunded actuarial accrued liability is the excess of the actuarial accrued liability over the actuarial value of plan assets measured on the valuation date.

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

#### B. Valuation of Assets

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

# **Teachers' Retirement System**

# **Defined Benefit Retirement Plan**

#### **Description of Actuarial Methods and Valuation Procedures**

#### C. Changes in Methods Since the Prior Valuation

In accordance with Senate Bill 119, signed into law May 28, 2014, and HB 385, signed into law on June 23, 2014, the following changes are effective for this June 30, 2014 actuarial valuation:

- The amortization method used for funding changed from the level dollar amount to the level percentage
  of payroll method and the amortization period is re-initialized to a closed 25-year period from June 30,
  2014.
- The additional state contribution for fiscal year ending June 30, 2015 is exactly \$2,000,000,000.
- The two-year rate setting time lag is intended to be eliminated. The two-year lag in the setting of
  contribution rates is replaced by a two-year roll forward of liabilities and projected normal costs and a oneyear roll forward of June 30, 2015 assets.
- The Actuarial Value of Assets is reset to the Fair Value as of June 30, 2014. The five-year smoothing method with grow-in will be implemented over the next five years.
- The 20% corridor over/under the Fair Value of Assets is eliminated in the calculation of the Actuarial Value of Assets.

#### D. Valuation of Medical Benefits

This section outlines the detailed methodology used to develop the initial per capita claims cost rates for the State of Alaska Teachers' Retirement System postemployment healthcare plan. Note that methodology reflects the results of our annual experience rate update for the period July 1, 2014 to June 30, 2015.

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 credibility of cost and enrollment data for each component of cost. This valuation reflects nonprescription 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.

We analyzed HealthSmart management level reporting for fiscal 2011 through 2014 and derived recommended base claims cost rates as described in the following steps::

- 1. Based on analysis described in our Experience Study, dental, vision and audio claims (DVA) are excluded from data analyzed for this valuation.
- 2. Available historic management level reporting from HealthSmart does not show claims or enrollment separately for Medicare and non-Medicare plan participants, but does include overall statistics as to the

# **Teachers' Retirement System Defined Benefit Retirement Plan**

# **Description of Actuarial Methods and Valuation Procedures**

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 cost data by Medicare status. Aetna does provide separate experience by Medicare status and will be incorporated into per capita rate development as credible experience emerges.

3. 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 these "no-Part A" individuals, the State is the primary payer for hospital bills and other Part A services. Thus, claims costs are higher for the no-Part A group. To date, claim experience is not available separately for participants with both Medicare Parts A and B and those with Part B only. Therefore, higher no-Part A claims are spread across the entire retired population and have been applied to future claims of current active employees projected to retire in the future. 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 and will be lower. The smaller the no-Part A population, the more accrued liabilities will decrease.

Based on census data received from Aetna, 0.33% of the current retiree (including dependents) 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.

All claims cost rates developed from management level reporting have been compared to similar rates developed from claim level data.

4. The steps above result in separate incurred claims cost rates for medical and prescription benefits for non-Medicare, Medicare Part B only and Medicare Part A&B members for the past four fiscal years. Medical claims cost rates reflect differing average ages and levels of Medicare coordination for each group. Prescription claims cost rates reflect differing average ages. We deemed incurred claim data from HealthSmart management reports to be complete for fiscal 2011, 2012 and 2013. Fiscal 2014 medical claim data was completed using a factor of 0.81; fiscal 2014 prescription claim data was completed using a factor of 0.92 – these factors were derived from historic completion patterns for AlaskaCare retiree claims. Incurred claim cost rates are projected forward to the valuation year using a blend of Alaska plan-specific trend and national trend rates over the same period, with Alaska experience receiving 75% weight, national trend 25%. These weighted trend factors for this purpose for the current valuation are as follows:

Alaska-Specific and National Average Weighted Trend from Experience Period to Valuation Year

Experience Period	Medical	Prescription	Weighting Factors
FY 2010 to FY 2011	8.1%	4.5%	10.0%
FY 2011 to FY 2012	8.3%	5.1%	20.0%
FY 2012 to FY 2013	8.9%	7.1%	40.0%
FY 2013 to FY 2014	7.7%	6.5%	30.0%

# **Teachers' Retirement System**

### **Defined Benefit Retirement Plan**

### **Description of Actuarial Methods and Valuation Procedures**

- 5. For per capital claim cost development, medical claims were trended on a composite basis for pre-Medicare vs. Medicare due to limited reporting as noted in #2 above. Trend assumptions used for rate development are assessed annually and as additional/improved reporting becomes available, we will incorporate into rate development as appropriate.
- 6. Healthcare Reform legislation passed on March 23, 2010 included several provisions with potential implications for the State of Alaska Retiree Health Plan liability. Buck evaluated the impact of the following provisions; however, none of the impacts other than noted fees 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 are required. 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.

The Plan will be subject to the high cost plan excise tax (Cadillac tax). Based upon guidance available at the time of disclosure, Buck estimated the impact to be immaterial to the accrued liability based on a blend of pre-Medicare and Medicare retirees and the projected impact to future healthcare cost trends due to the estimated tax.

Patient-centered outcomes research fees are included in the admin fees.

We have not identified any other specific provisions of healthcare reform 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.

# Teachers' Retirement System

# Defined Benefit Retirement Plan

# Description of Actuarial Methods and Valuation Procedures

# June 30, 2014 Valuation - FY 2015 Claims Cost Rates

		Medical	
		Medicare	
	Pre-Medicare	A&B	Medicare B Only
Fiscal 2011 Incurred Claims	\$232,724,861	\$55,613,464	\$849,158
Membership	31,362	29,997	136
Paid Claims Cost Rate	\$7,421	\$1,854	\$6,153
Trend to FY2015	1.372	1.372	1.372
FY2015 Paid Cost Rate	\$10,182	\$2,544	\$8,443
Provider Contracting Factor	0.970	0.993	0.993
FY 2015 Incurred Cost Rate	\$9,876	\$2,526	\$8,384
Fiscal 2012 Incurred Claims	\$233,755,671	\$71,481,207	\$1,587,051
Membership	29,500	33,631	208
Paid Claims Cost Rate	\$7,924	\$2,125	\$7,630
Trend to FY2015	1.269	1.269	1.269
FY2015 Paid Cost Rate	\$10,058	\$2,698	\$9,685
Provider Contracting Factor	0.970	0.970	0.970
FY 2015 Incurred Cost Rate	<b>\$9,757</b>	\$2,617	\$9,395
Fiscal 2013 Incurred Claims	\$240,038,962	\$73,485,175	\$1,901,568
Membership	27,037	37,913	217
Paid Claims Cost Rate	\$8,878	\$1,938	\$8,763
Trend to FY2015	1.172	1.172	1.172
FY2015 Paid Cost Rate	\$10,407	\$2,272	\$10,272
Provider Contracting Factor	0.970	0.970	0.970
FY 2015 Incurred Cost Rate	\$10,094	\$2,204	\$9,963
Fiscal 2014 Incurred Claims	\$264,308,816	\$81,160,409	\$2,901,430
Membership	24,486	42,311	223
Paid Claims Cost Rate	\$10,794	\$1,918	\$13,011
Trend to FY2015	1.076	1.076	1.076
FY2015 Paid Cost Rate	\$11,613	\$2,064	\$13,998
Provider Contracting Factor	0.985	0.985	0.985
FY 2015 Incurred Cost Rate	\$11,439	\$2,033	\$13,788
Weighted Average 7/1/2014-6/30/2015	Incurred Claims Cost Ra	ites:	
At average age	\$10,408	\$2,267	\$10,839
At age 65	\$12,362	\$1,657	\$7,920

# Teachers' Retirement System

# Defined Benefit Retirement Plan

# **Description of Actuarial Methods and Valuation Procedures**

June 30, 2014 Valuation – FY 2015 Claims Cost Rates (cont.)

Prescription Drugs

Fiscal 2011 Incurred Claims         \$48,405,895         \$85,637,669         \$393,968         \$423,625,015           Membership         31,362         29,997         138         61,497           Paid Claims Cost Rate         \$1,543         \$2,855         \$2,855         \$6,889           Trend to FY2015         1.253         1.253         1.253           FY2015 Paid Cost Rate         \$1,934         \$3,576         \$3,576         \$9,191           Provider Contracting Factor         0.967         0.967         0.967         \$9,191           FY2015 Incurred Cost Rate         \$1,870         \$3,458         \$3,458         \$8,936           Fiscal 2012 Incurred Claims         \$50,508,869         \$95,412,095         \$590,097         \$453,334,990           Membership         29,500         33,631         208         63,339           Paid Claims Cost Rate         \$1,712         \$2,837         \$2,837         \$7,157           Trend to FY2015         1.1199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199         1.199		Pre-Medicare	Medicare A&B	Medicare B Only	Total
Membership         31,362         29,997         138         61,497           Paid Claims Cost Rate         \$1,543         \$2,855         \$2,855         \$6,889           Trend to FY2015         1.253         1.253         1.253         1.253           FY2015 Paid Cost Rate         \$1,934         \$3,576         \$3,576         \$9,191           Provider Contracting Factor         0.967         0.967         0.967         \$9,007         \$9,007           FY2015 Incurred Cost Rate         \$1,870         \$3,458         \$3,458         \$8,936           Fy2015 Incurred Claims         \$50,508,869         \$95,412,095         \$590,007         \$453,334,909           Membership         29,500         33,631         208         63,339           Paid Claims Cost Rate         \$1,712         \$2,837         \$2,837         \$7,157           Trend to FY2015         1.199         1.199         1.199         1.199         \$1,967         \$9,607	Fiscal 2011 Incurred Claims				
Paid Claims Cost Rate         \$1,543         \$2,855         \$2,855         \$6,888           Trend to FY2015         1.253         1.253         1.253         1.253           FY2015 Paid Cost Rate         \$1,934         \$3,576         \$3,576         \$9,191           FY2015 Incurred Cost Rate         \$1,870         \$0,967         0.967         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,008         \$50,009         \$50,009         \$453,334,909         \$63,339         \$63,339         \$71,757         \$71,702         \$2,837         \$2,837         \$71,757         \$71,702         \$2,837         \$2,837         \$71,757         \$71,702         \$1,902<	Membership			•	
Trend to FY2015 Paid Cost Rate         1.253         1.253         1.253         1.253         9.125           FY2015 Paid Cost Rate         \$1,934         \$3,576         \$3,576         \$9,191           Provider Contracting Factor         0.967         0.967         0.967           FY2015 Incurred Cost Rate         \$1,870         \$3,458         \$3,458         \$8,936           Fiscal 2012 Incurred Claims         \$50,508,869         \$95,412,095         \$590,007         \$453,334,900           Membership         29,500         33,631         208         63,339           Paid Claims Cost Rate         \$1,712         \$2,837         \$2,837         \$7,157           Trend to FY2015         1.199         1.966         1.966         1.966         1.966         1.966	-				
Provider Contracting Factor         0.967         0.967         0.967           FY2015 Incurred Cost Rate         \$1,870         \$3,458         \$3,458         \$8,968           Fiscal 2012 Incurred Claims         \$50,508,869         \$95,412,095         \$590,007         \$453,334,909           Membership         29,500         33,631         208         63,339           Paid Claims Cost Rate         \$1,712         \$2,837         \$2,837         \$7,157           Trend to FY2015         1.199         1.190         1.190         1.190 </td <td>Trend to FY2015</td> <td>1.253</td> <td></td> <td>1.253</td> <td></td>	Trend to FY2015	1.253		1.253	
FY2015 Incurred Cost Rate         \$1,870         \$3,458         \$3,458         \$8,906           Fiscal 2012 Incurred Claims         \$50,508,869         \$95,412,095         \$590,097         \$453,334,909           Membership         29,500         33,631         208         63,339           Paid Claims Cost Rate         \$1,712         \$2,837         \$2,837         \$7,157           Trend to FY2015         1.199         1.199         1.199         1.199           FY2015 Paid Cost Rate         \$2,053         \$3,401         \$3,401         \$8,922           Provider Contracting Factor         0.967         0.967         0.967         \$8,604           FY2015 Incurred Cost Rate         \$1,985         \$3,289         \$3,289         \$8,604           Fiscal 2013 Incurred Claims         \$52,633,265         \$99,470,696         \$569,334         \$468,099,000           Membership         27,037         37,913         217         65,167           Paid Claims Cost Rate         \$1,947         \$2,624         \$2,624         \$7,183           FY2015 Paid Cost Rate         \$2,220         \$2,992         \$8,345           Fy2015 Incurred Cost Rate         \$1,467         \$2,833         \$2,893         \$8,084           Fiscal 2014 Incurred	FY2015 Paid Cost Rate	\$1,934	\$3,576	\$3,576	\$9,191
Fiscal 2012 Incurred Claims         \$50,508,869         \$95,412,095         \$590,097         \$453,334,990           Membership         29,500         33,631         208         63,339           Paid Claims Cost Rate         \$1,712         \$2,837         \$2,837         \$7,157           Trend to FY2015         1.199         1.199         1.199         \$3,401         \$8,922           Provider Contracting Factor         0.967         0.967         0.967         \$3,401         \$8,922           Provider Contracting Factor         0.967         0.967         0.967         \$66.66           FY2015 Incurred Cost Rate         \$1,985         \$3,289         \$3,289         \$8,646           Fiscal 2013 Incurred Claims         \$52,633,265         \$99,470,696         \$569,334         \$468,099,000           Membership         27,037         37,913         217         65,167           Paid Claims Cost Rate         \$1,947         \$2,624         \$2,624         \$7,183           Trend to FY2015         1.140         1.140         1.140         1.140         1.140         1.140         1.140         1.140         1.140         1.140         1.140         1.140         1.140         1.140         1.140         1.140         1.140	Provider Contracting Factor	0.967	0.967	0.967	
Membership         29,500         33,631         208         63,339           Paid Claims Cost Rate         \$1,712         \$2,837         \$2,837         \$7,157           Trend to FY2015         1.199         1.199         1.199         1.199           FY2015 Paid Cost Rate         \$2,053         \$3,401         \$3,401         \$8,922           Provider Contracting Factor         0.967         0.967         0.967           FY2015 Incurred Cost Rate         \$1,985         \$3,289         \$3,289         \$8,646           Fiscal 2013 Incurred Claims         \$52,633,265         \$99,470,696         \$569,334         \$468,099,000           Membership         27,037         37,913         217         65,167           Paid Claims Cost Rate         \$1,947         \$2,624         \$2,624         \$7,183           Trend to FY2015         1.140	FY2015 Incurred Cost Rate	\$1,870	\$3,458	\$3,458	\$8,936
Paid Claims Cost Rate         \$1,712         \$2,837         \$2,837         \$7,157           Trend to FY2015         1.199         0.967         0.967         0.967         0.967         0.960         69.646         69.344         \$468,099,000         86,666         65,167         65,167         65,167         65,167         65,167         65,167         65,167         65,167         65,167         65,167         79.180         26,224         2,624         2,624         2,624         37,183         83,345         65,167         65,167         99.29         2,83,345         83,345         89.2992         2,83,34         88,847 </td <td>Fiscal 2012 Incurred Claims</td> <td>\$50,508,869</td> <td>\$95,412,095</td> <td>\$590,097</td> <td>\$453,334,990</td>	Fiscal 2012 Incurred Claims	\$50,508,869	\$95,412,095	\$590,097	\$453,334,990
Trend to FY2015         1.199         1.199         1.199           FY2015 Paid Cost Rate         \$2,053         \$3,401         \$3,401         \$8,922           Provider Contracting Factor         0.967         0.967         0.967         0.967           FY2015 Incurred Cost Rate         \$1,985         \$3,289         \$3,289         \$8,666           Fiscal 2013 Incurred Claims         \$52,633,265         \$99,470,696         \$569,334         \$468,099,000           Membership         27,037         37,913         217         65,167           Paid Claims Cost Rate         \$1,947         \$2,624         \$2,624         \$7,183           Trend to FY2015         1.140 <td>Membership</td> <td>29,500</td> <td>33,631</td> <td>208</td> <td>63,339</td>	Membership	29,500	33,631	208	63,339
FY2015 Paid Cost Rate         \$2,053         \$3,401         \$3,401         \$8,922           Provider Contracting Factor         0,967         0,967         0,967         0.967           FY2015 Incurred Cost Rate         \$1,985         \$3,289         \$3,289         \$8,646           Fiscal 2013 Incurred Claims         \$52,633,265         \$99,470,696         \$569,334         \$468,099,000           Membership         27,037         37,913         217         65,167           Paid Claims Cost Rate         \$1,947         \$2,624         \$2,624         \$7,183           Trend to FY2015         1.140	Paid Claims Cost Rate	\$1,712	\$2,837	\$2,837	\$7,157
Provider Contracting Factor         0.967         0.967         0.967           FY2015 Incurred Cost Rate         \$1,985         \$3,289         \$3,289         \$8,646           Fiscal 2013 Incurred Claims         \$52,633,265         \$99,470,696         \$569,334         \$468,099,000           Membership         27,037         37,913         217         65,167           Paid Claims Cost Rate         \$1,947         \$2,624         \$2,624         \$7,183           Trend to FY2015         1.140 <td>Trend to FY2015</td> <td>1.199</td> <td>1.199</td> <td>1.199</td> <td></td>	Trend to FY2015	1.199	1.199	1.199	
FY2015 Incurred Cost Rate         \$1,985         \$3,289         \$3,289         \$8,646           Fiscal 2013 Incurred Claims         \$52,633,265         \$99,470,696         \$569,334         \$468,099,000           Membership         27,037         37,913         217         65,167           Paid Claims Cost Rate         \$1,947         \$2,624         \$2,624         \$7,183           Trend to FY2015         1.140         1.140         1.140         \$2,624         \$8,345           FY2015 Paid Cost Rate         \$2,220         \$2,992         \$2,992         \$8,345           Provider Contracting Factor         0.967         0.967         0.967           FY2015 Incurred Cost Rate         \$2,147         \$2,893         \$2,893         \$8,087           Fiscal 2014 Incurred Claims         \$45,236,118         \$131,470,349         \$692,910         \$525,770,032           Membership         24,486         42,311         223         67,020           Paid Claims Cost Rate         \$1,847         \$3,107         \$3,107         \$7,845           Trend to FY2015         1.065         1.065         1.065         1.065           FY2015 Paid Cost Rate         \$1,967         \$3,308         \$3,308         \$8,411           Provider	FY2015 Paid Cost Rate	\$2,053	\$3,401	\$3,401	\$8,922
Fiscal 2013 Incurred Claims         \$52,633,265         \$99,470,696         \$569,334         \$468,099,000           Membership         27,037         37,913         217         65,167           Paid Claims Cost Rate         \$1,947         \$2,624         \$2,624         \$7,183           Trend to FY2015         1.140         1.140         1.140         1.140           FY2015 Paid Cost Rate         \$2,220         \$2,992         \$2,992         \$8,345           Provider Contracting Factor         0.967         0.967         0.967         0.967           FY2015 Incurred Cost Rate         \$2,147         \$2,893         \$2,893         \$8,087           Fiscal 2014 Incurred Claims         \$45,236,118         \$131,470,349         \$692,910         \$525,770,032           Membership         24,486         42,311         223         67,020           Paid Claims Cost Rate         \$1,847         \$3,107         \$3,107         \$7,845           Trend to FY2015         1.065         1.065         1.065           FY2015 Paid Cost Rate         \$1,967         \$3,308         \$3,308         \$8,411           Provider Contracting Factor         0.984         0.984         0.984         9.984         9.984         9.984         9.984 <td>Provider Contracting Factor</td> <td>0.967</td> <td>0.967</td> <td>0.967</td> <td></td>	Provider Contracting Factor	0.967	0.967	0.967	
Membership         27,037         37,913         217         65,167           Paid Claims Cost Rate         \$1,947         \$2,624         \$2,624         \$7,183           Trend to FY2015         1.140         1.140         1.140         1.140           FY2015 Paid Cost Rate         \$2,220         \$2,992         \$2,992         \$8,345           Provider Contracting Factor         0.967         0.967         0.967         0.967           FY2015 Incurred Cost Rate         \$2,147         \$2,893         \$2,893         \$8,087           Fiscal 2014 Incurred Claims         \$45,236,118         \$131,470,349         \$692,910         \$525,770,032           Membership         24,486         42,311         223         67,020           Paid Claims Cost Rate         \$1,847         \$3,107         \$3,3107         \$7,845           Trend to FY2015         1.065         1.065         1.065         1.065           FY2015 Paid Cost Rate         \$1,967         \$3,308         \$3,308         \$8,411           Provider Contracting Factor         0.984         0.984         0.984         0.984           FY2015 Incurred Cost Rate         \$1,935         \$3,254         \$3,254         \$8,280           Weighted Average 7/1/2014-6/30/	FY2015 Incurred Cost Rate	\$1,985	\$3,289	\$3,289	\$8,646
Paid Claims Cost Rate       \$1,947       \$2,624       \$2,624       \$7,183         Trend to FY2015       1.140       1.140       1.140       1.140         FY2015 Paid Cost Rate       \$2,220       \$2,992       \$2,992       \$8,345         Provider Contracting Factor       0.967       0.967       0.967         FY2015 Incurred Cost Rate       \$2,147       \$2,893       \$2,893       \$8,087         Fiscal 2014 Incurred Claims       \$45,236,118       \$131,470,349       \$692,910       \$525,770,032         Membership       24,486       42,311       223       67,020         Paid Claims Cost Rate       \$1,847       \$3,107       \$3,107       \$7,845         Trend to FY2015       1.065       1.065       1.065       1.065         FY2015 Paid Cost Rate       \$1,967       \$3,308       \$3,308       \$8,411         Provider Contracting Factor       0.984       0.984       0.984       0.984         FY2015 Incurred Cost Rate       \$1,935       \$3,254       \$3,254       \$8,280         Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:       At average age       \$2,023       \$3,137       \$3,137       \$8,342	Fiscal 2013 Incurred Claims	\$52,633,265	\$99,470,696	\$569,334	\$468,099,000
Trend to FY2015         1.140         1.140         1.140           FY2015 Paid Cost Rate         \$2,220         \$2,992         \$2,992         \$8,345           Provider Contracting Factor         0.967         0.967         0.967         0.967           FY2015 Incurred Cost Rate         \$2,147         \$2,893         \$2,893         \$8,087           Fiscal 2014 Incurred Claims         \$45,236,118         \$131,470,349         \$692,910         \$525,770,032           Membership         24,486         42,311         223         67,020           Paid Claims Cost Rate         \$1,847         \$3,107         \$3,107         \$7,845           Trend to FY2015         1.065         1.065         1.065         1.065           FY2015 Paid Cost Rate         \$1,967         \$3,308         \$3,308         \$8,411           Provider Contracting Factor         0.984         0.984         0.984         0.984           FY2015 Incurred Cost Rate         \$1,935         \$3,254         \$3,254         \$8,280           Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:         \$2,023         \$3,137         \$3,137         \$8,342	Membership	27,037	37,913	217	65,167
FY2015 Paid Cost Rate         \$2,220         \$2,992         \$2,992         \$8,345           Provider Contracting Factor         0.967         0.967         0.967           FY2015 Incurred Cost Rate         \$2,147         \$2,893         \$2,893         \$8,087           Fiscal 2014 Incurred Claims         \$45,236,118         \$131,470,349         \$692,910         \$525,770,032           Membership         24,486         42,311         223         67,020           Paid Claims Cost Rate         \$1,847         \$3,107         \$3,107         \$7,845           Trend to FY2015         1.065         1.065         1.065           FY2015 Paid Cost Rate         \$1,967         \$3,308         \$3,308         \$8,411           Provider Contracting Factor         0.984         0.984         0.984           FY2015 Incurred Cost Rate         \$1,935         \$3,254         \$3,254         \$8,280           Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:         At average age         \$2,023         \$3,137         \$3,137         \$8,342	Paid Claims Cost Rate	\$1,947	\$2,624	\$2,624	\$7,183
Provider Contracting Factor         0.967         0.967         0.967           FY2015 Incurred Cost Rate         \$2,147         \$2,893         \$2,893         \$8,087           Fiscal 2014 Incurred Claims         \$45,236,118         \$131,470,349         \$692,910         \$525,770,032           Membership         24,486         42,311         223         67,020           Paid Claims Cost Rate         \$1,847         \$3,107         \$3,107         \$7,845           Trend to FY2015         1.065         1.065         1.065         1.065           FY2015 Paid Cost Rate         \$1,967         \$3,308         \$3,308         \$8,411           Provider Contracting Factor         0.984         0.984         0.984           FY2015 Incurred Cost Rate         \$1,935         \$3,254         \$3,254         \$8,280           Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:           At average age         \$2,023         \$3,137         \$3,137         \$8,342	Trend to FY2015	1.140	1.140	1.140	
FY2015 Incurred Cost Rate         \$2,147         \$2,893         \$2,893         \$8,087           Fiscal 2014 Incurred Claims         \$45,236,118         \$131,470,349         \$692,910         \$525,770,032           Membership         24,486         42,311         223         67,020           Paid Claims Cost Rate         \$1,847         \$3,107         \$3,107         \$7,845           Trend to FY2015         1.065         1.065         1.065         1.065           FY2015 Paid Cost Rate         \$1,967         \$3,308         \$3,308         \$8,411           Provider Contracting Factor         0.984         0.984         0.984           FY2015 Incurred Cost Rate         \$1,935         \$3,254         \$3,254         \$8,280           Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:           At average age         \$2,023         \$3,137         \$3,137         \$8,342	FY2015 Paid Cost Rate	\$2,220	\$2,992	\$2,992	\$8,345
Fiscal 2014 Incurred Claims         \$45,236,118         \$131,470,349         \$692,910         \$525,770,032           Membership         24,486         42,311         223         67,020           Paid Claims Cost Rate         \$1,847         \$3,107         \$3,107         \$7,845           Trend to FY2015         1.065         1.065         1.065         1.065         1.065           FY2015 Paid Cost Rate         \$1,967         \$3,308         \$3,308         \$8,411           Provider Contracting Factor         0.984         0.984         0.984           FY2015 Incurred Cost Rate         \$1,935         \$3,254         \$3,254         \$8,280           Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:         \$2,023         \$3,137         \$3,137         \$8,342	Provider Contracting Factor	0.967	0.967	0.967	
Membership       24,486       42,311       223       67,020         Paid Claims Cost Rate       \$1,847       \$3,107       \$3,107       \$7,845         Trend to FY2015       1.065       1.065       1.065         FY2015 Paid Cost Rate       \$1,967       \$3,308       \$3,308       \$8,411         Provider Contracting Factor       0.984       0.984       0.984         FY2015 Incurred Cost Rate       \$1,935       \$3,254       \$3,254       \$8,280         Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:         At average age       \$2,023       \$3,137       \$3,137       \$8,342	FY2015 Incurred Cost Rate	\$2,147	\$2,893	\$2,893	\$8,087
Paid Claims Cost Rate       \$1,847       \$3,107       \$3,107       \$7,845         Trend to FY2015       1.065       1.065       1.065         FY2015 Paid Cost Rate       \$1,967       \$3,308       \$3,308       \$8,411         Provider Contracting Factor       0.984       0.984       0.984         FY2015 Incurred Cost Rate       \$1,935       \$3,254       \$3,254       \$8,280         Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:         At average age       \$2,023       \$3,137       \$3,137       \$8,342	Fiscal 2014 Incurred Claims	\$45,236,118	\$131,470,349	\$692,910	\$525,770,032
Trend to FY2015       1.065       1.065       1.065         FY2015 Paid Cost Rate       \$1,967       \$3,308       \$3,308       \$8,411         Provider Contracting Factor       0.984       0.984       0.984         FY2015 Incurred Cost Rate       \$1,935       \$3,254       \$3,254       \$8,280         Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:         At average age       \$2,023       \$3,137       \$3,137       \$8,342	Membership	24,486	42,311	223	67,020
FY2015 Paid Cost Rate       \$1,967       \$3,308       \$3,308       \$8,411         Provider Contracting Factor       0.984       0.984       0.984         FY2015 Incurred Cost Rate       \$1,935       \$3,254       \$3,254       \$8,280         Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:         At average age       \$2,023       \$3,137       \$3,137       \$8,342	Paid Claims Cost Rate	\$1,847	\$3,107	\$3,107	\$7,845
Provider Contracting Factor       0.984       0.984       0.984         FY2015 Incurred Cost Rate       \$1,935       \$3,254       \$3,254       \$8,280         Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:       At average age       \$2,023       \$3,137       \$3,137       \$8,342	Trend to FY2015	1.065	1.065	1.065	
FY2015 Incurred Cost Rate         \$1,935         \$3,254         \$3,254         \$8,280           Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:           At average age         \$2,023         \$3,137         \$3,137         \$8,342	FY2015 Paid Cost Rate	\$1,967	\$3,308	\$3,308	\$8,411
Weighted Average 7/1/2014-6/30/2015 Incurred Claims Cost Rates:         At average age       \$2,023       \$3,137       \$3,137       \$8,342	Provider Contracting Factor	0.984	0.984	0.984	
At average age \$2,023 \$3,137 \$3,137 \$8,342	FY2015 Incurred Cost Rate	\$1,935	\$3,254	\$3,254	\$8,280
	Weighted Average 7/1/2014-6/30/2015	Incurred Claims Cost R	ates:		
At age 65 \$2,624 \$2,624 \$2,624 \$8,132	At average age	\$2,023	\$3,137	\$3,137	\$8,342
	At age 65	\$2,624	\$2,624	\$2,624	\$8,132

# Teachers' Retirement System Defined Benefit Retirement Plan Description of Actuarial Methods and Valuation Procedures

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

Below are the results of this analysis:

# Distribution of Per Capita Claims Cost by Age for the Period July 1, 2014 through June 30, 2015

	Medical	Medical		Medicare
	and	and		Retiree
	Medicare	Medicare	Prescription	Drug
Age	Parts A & B	Part B Only	Drug	Subsidy
45	\$6,846	\$6,846	\$1,384	\$ —
50	7,746	7,746	1,644	_
55	8,764	8,764	1,953	_
60	10,408	10,408	2,263	_
65	1,657	7,920	2,624	507
70	2,016	9,636	2,827	546
75	2,394	11,442	3,015	583
80	2,579	12,326	3,091	597

# Teachers' Retirement System

#### Defined Benefit Retirement Plan

# Summary of Actuarial Assumptions and Changes in Assumptions

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

1.	Investment Return/Discount Rate	8.00% per year (geometric), compounded annually, net of expenses.
2.	Salary Scale	Inflation – $3.12\%$ per year. Productivity – $0.5\%$ per year. See Table 1 for salary scale rates.
3.	Payroll Growth	3.62% per year. (Inflation + Productivity).
4.	Total Inflation	Total inflation as measured by the Consumer Price Index for urban and clerical workers for Anchorage is assumed to increase 3.12% annually.
5.	Mortality (Pre-termination)*	Based upon the 2010-2013 actual experience. (See Table 2). 68% of male rates and 60% of female rates of post-termination mortality. Deaths are assumed to result from non-occupational causes 85% of the time.
6.	Mortality (Post-termination)*	Based upon the 2010-2013 actual experience. (See Table 3). 94% of male and 97% of female rates of RP-2000, 2000 Base Year projection to 2018 with Projection Scale BB, with a 3-year setback for males and a 4-year setback for females.
7.	Turnover	Select and ultimate rates based upon the 2010-2013 actual withdrawal experience. (See Table 4).
8.	Disability	Incidence rates based upon the 2010-2013 actual experience, in accordance with Table 5. Post-disability mortality in accordance with the RP-2000 Disabled Retiree Mortality Table, 2000 Base Year, projected to 2018 with Projection Scale BB.
9.	Retirement	Retirement rates based upon the 2010-2013 actual experience in accordance with Table 6. Deferred vested members are assumed to retire at their earliest unreduced retirement date.
10.	Marriage and Age Difference	Wives are assumed to be three years younger than husbands. 85% of male members and 75% of female members are assumed to be married.

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

13. COLA

Of those benefit recipients who are eligible for the COLA, 60% are

children.

Benefits to dependent children have been valued assuming members who

are married and between the ages of 25 and 45 have two dependent

5% of terminating members with vested benefits are assumed to have

assumed to remain in Alaska and receive the COLA.

\*The mortality assumptions include an allowance for future mortality improvement. The mortality table used was set in 2014 with an Actual Deaths to Expected Deaths ratio of 110%.

11. Dependent Children

12. Contribution Refunds

# Teachers' Retirement System

## **Defined Benefit Retirement Plan**

# Summary of Actuarial Assumptions and Changes in Assumptions

14.	Sick Leave	4.5 days of unused sick leave for each year of service are assumed to be available to be credited once the member is retired, terminates or dies.			
15.	Postretirement Pension Adjustment	50% and 75% of assumed inflation, or 1.56% and 2.34% respectively, is valued for the annual automatic Postretirement Pension Adjustment (PRPA) as specified in the statute.			
16.	Expenses	All expenses are net of the investmen	nt returi	n assumption.	
17.	Part-time Status	Part-time employees are assumed to	earn 0.7	75 years of credi	ted service per year.
18.	Re-Employment Option	We assume all re-employed retirees return to work under the Standard Option.			
19.	Service	Total credited service is provided by the State. We assume that this service is the only service that should be used to calculate benefits. Additionally, the State provides claimed service (including Bureau of Indian Affairs Service). Claimed service is used for vesting and eligibility purposes.			
20.	Final Average Earnings	Final Average Earnings is provided of is used as a minimum in the calcular			
21.	Per Capita Claims Cost	Sample claims cost rates adjusted to below:	age 65 t	for FY15 medica	al benefits are shown
				Medical	Prescription drugs
		Pre-Medicare	\$	12,362	2,624
		Medicare Parts A & B		1,657	2,624
		Medicare Part B Only		7,920	2,624
		Medicare Part D		N/A	507
22.	Third Party	\$193.98 per person per year; assume	ed trend	rate of 5% per	year.

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

Administrator Fees

Part B

Medicare

23.

Only

# **Actuarial Section**

# State of Alaska

# Teachers' Retirement System

#### Defined Benefit Retirement Plan

# Summary of Actuarial Assumptions and Changes in Assumptions

#### 24. 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, 10.0% is applied to the FY15 pre-Medicare medical claims costs to get the FY16 medical claims costs.

Medical pre-65	Medical post-65	Prescription drugs
10.0%	6.0%	6.0%
9.4	5.9	5.7
8.8	5.8	5.4
8.2	5.7	5.1
7.6	5.6	4.8
7.0	5.6	4.6
6.5	5.6	4.4
5.6	5.6	4.2
4.4	4.0	4.0
4.4	4.0	4.0
	7.6 7.0 6.5 5.6 4.4	pre-65         post-65           10.0%         6.0%           9.4         5.9           8.8         5.8           8.2         5.7           7.6         5.6           7.0         5.6           6.5         5.6           5.6         5.6           4.4         4.0

For the June 30, 2012 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 2012 and projects out to 2100. The model has been populated with assumptions that are specific to the State of Alaska.

### 25. Aging Factors

Age	Medical	Prescription drugs
0–44	2.0%	4.5%
45–54	2.5	3.5
55–64	3.5	3.0
65–73	4.0	1.5
74–83	1.5	0.5
84–95	0.5	_
94 +	<u> </u>	_

# Teachers' Retirement System

#### Defined Benefit Retirement Plan

# Summary of Actuarial Assumptions and Changes in Assumptions

26. Retired Member Contributions for Medical Benefits

Currently contributions are required for TRS members who are under age 60 and have less than 25 years of service. Eligible Tier 1 members are exempt from contribution requirements. Annual FY15 contributions based on monthly rates shown below for calendar 2014 and 2015 are assumed based on the coverage category for current retirees. The composite rate shown is used for current active and inactive members in Tier 2 who are assumed to retire prior to age 60 with less than 25 years of service and who are not disabled:

		Calend	ar 2015	Calendar 2014
Coverage category	_	Annual contribution	Monthly contribution	Monthly contribution
Retiree only	\$	9,876	823	823
Retiree and spouse		19,764	1,647	1,647
Retiree and child(ren)		13,956	1,163	1,163
Retiree and family		23,844	1,987	1,987
Composite		14,676	1,223	1,223

27. Trend Rate for Retired Member Medical Contribution

The table below shows the rate used to project the retired member medical contributions from the shown fiscal year to the next fiscal year. For example, 7.0% is applied to the FY15 retired member medical contributions to get the FY16 retired member medical contributions.

Fiscal year:	
2015	7.0%
2016	6.6
2017	6.2
2018	5.8
2019	5.4
2020	5.0
2025	4.1
2050	4.0
2100	4.0

Graded trend rates for retired member medical contributions were reinitialized for the June 30, 2014 valuation. Note that actual FY15 retired member medical contributions are reflected in the valuation so trend on such contribution during FY15 is not applicable.

28. Healthcare Participation

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

# Teachers' Retirement System

# Defined Benefit Retirement Plan

Table 1 Alaska TRS Salary Scale

Years of Service	Percent Increase
0	8.11%
1	7.51
2	6.91
3	6.41
4	6.11
5	6.11
6	5.90
7	5.69
8	5.55
9	5.40
10	5.26
11	5.11
12	4.96
13	4.84
14	4.72
15	4.60
16	4.49
17	4.37
18	4.27
19	4.17
20	4.07
21	3.97
21+	3.87

# Teachers' Retirement System

# Defined Benefit Retirement Plan

Table 2
Alaska TRS
Mortality Table (Pre-termination)

20         0.000182         0.000098         53         0.001295         0.000855           21         0.000191         0.000101         54         0.001483         0.0000985           22         0.000200         0.000104         55         0.001766         0.0001054           23         0.000209         0.000105         56         0.001766         0.001054           24         0.000216         0.000105         57         0.001901         0.00132           25         0.000222         0.000106         58         0.002117         0.001241           26         0.000228         0.000109         60         0.002409         0.001344           27         0.000228         0.000111         61         0.002291         0.001659           29         0.000229         0.000114         62         0.003229         0.001837           30         0.000231         0.000118         63         0.003599         0.002367           31         0.000238         0.000123         64         0.004021         0.002367           32         0.000249         0.000137         66         0.00557         0.00318           34         0.000350         0.000146	Age	Male	Female	Age	Male	Female
22         0.000200         0.000104         55         0.001615         0.000985           23         0.000209         0.000105         56         0.001766         0.001054           24         0.000216         0.000105         57         0.001901         0.001132           25         0.000222         0.000106         58         0.002117         0.001221           26         0.000228         0.000109         60         0.002643         0.001501           28         0.000228         0.000111         61         0.002917         0.001659           29         0.000229         0.000114         62         0.003229         0.001837           30         0.000231         0.000118         63         0.003599         0.002860           31         0.000238         0.000123         64         0.004021         0.002367           32         0.000249         0.000130         65         0.004504         0.002723           33         0.000269         0.000137         66         0.00594         0.003582           35         0.000340         0.000146         67         0.00594         0.003582           35         0.000340         0.000169         <	20	0.000182	0.000098	53	0.001295	0.000855
23         0.000209         0.000105         56         0.001766         0.001054           24         0.000216         0.000105         57         0.001901         0.001132           25         0.000222         0.000106         58         0.002117         0.001221           26         0.000226         0.000109         60         0.002643         0.001501           27         0.000228         0.000111         61         0.002917         0.001659           28         0.000229         0.000114         62         0.003229         0.001837           30         0.000231         0.000118         63         0.003599         0.00280           31         0.000238         0.000123         64         0.004021         0.002367           32         0.000249         0.000130         65         0.004504         0.002723           33         0.000259         0.000137         66         0.005594         0.00318           34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.00382         0.000177 <t< td=""><td>21</td><td>0.000191</td><td>0.000101</td><td>54</td><td>0.001483</td><td>0.000908</td></t<>	21	0.000191	0.000101	54	0.001483	0.000908
24         0.000216         0.000105         57         0.001901         0.00132           25         0.000222         0.000106         58         0.002117         0.001221           26         0.000226         0.000107         59         0.002409         0.001344           27         0.000228         0.000111         61         0.002917         0.001659           28         0.000229         0.000114         62         0.003229         0.001837           30         0.000231         0.000118         63         0.035299         0.00280           31         0.000238         0.000123         64         0.00421         0.002367           32         0.000249         0.000130         65         0.004504         0.002723           33         0.000269         0.000137         66         0.00557         0.003118           34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.000177         70         0.007828         0.005130           38         0.000425         0.000262 <td< td=""><td>22</td><td>0.000200</td><td>0.000104</td><td>55</td><td>0.001615</td><td>0.000985</td></td<>	22	0.000200	0.000104	55	0.001615	0.000985
25         0.000222         0.000106         58         0.002117         0.001221           26         0.000226         0.000107         59         0.002409         0.001344           27         0.000228         0.000109         60         0.002643         0.001501           28         0.000228         0.000111         61         0.002917         0.001659           29         0.000229         0.000114         62         0.003229         0.001837           30         0.000231         0.000118         63         0.003599         0.002360           31         0.000238         0.000123         64         0.004021         0.002367           32         0.000249         0.000130         65         0.004504         0.002723           33         0.000269         0.000137         66         0.00557         0.003118           34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.00017         70         0.007828         0.005130           38         0.00458         0.000217 <t< td=""><td>23</td><td>0.000209</td><td>0.000105</td><td>56</td><td>0.001766</td><td>0.001054</td></t<>	23	0.000209	0.000105	56	0.001766	0.001054
26         0.000226         0.000107         59         0.002409         0.001344           27         0.000228         0.000119         60         0.002643         0.001501           28         0.000228         0.000111         61         0.002917         0.001659           29         0.000229         0.000118         62         0.003229         0.001837           30         0.000231         0.000118         63         0.0035599         0.002080           31         0.000238         0.000123         64         0.004504         0.002723           32         0.000249         0.000130         65         0.004504         0.002723           33         0.000269         0.000137         66         0.005057         0.003118           34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.000193         69         0.007017         0.004546           37         0.000468         0.000240         71         0.008702         0.00596           39         0.000547         0.00028	24	0.000216	0.000105	57	0.001901	0.001132
27         0.000228         0.000109         60         0.002643         0.001501           28         0.000228         0.000111         61         0.002917         0.001659           29         0.000229         0.000118         62         0.003229         0.001837           30         0.000231         0.000118         63         0.003599         0.002080           31         0.000238         0.000123         64         0.004021         0.002367           32         0.000249         0.000130         65         0.004504         0.002723           33         0.000269         0.000137         66         0.00557         0.003118           34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.00017         70         0.007828         0.005130           38         0.000425         0.000217         70         0.007828         0.005130           38         0.000468         0.000240         71         0.008702         0.005696           39         0.000547         0.00023 <t< td=""><td>25</td><td>0.000222</td><td>0.000106</td><td>58</td><td>0.002117</td><td>0.001221</td></t<>	25	0.000222	0.000106	58	0.002117	0.001221
28         0.000228         0.000111         61         0.002917         0.001659           29         0.000229         0.000114         62         0.003229         0.001837           30         0.000231         0.000118         63         0.003599         0.002080           31         0.000238         0.000123         64         0.004021         0.002367           32         0.000249         0.000130         65         0.004504         0.002723           33         0.000269         0.000137         66         0.005597         0.003118           34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.000193         69         0.007017         0.004546           37         0.000425         0.000217         70         0.007828         0.005130           38         0.000468         0.000240         71         0.008702         0.005696           39         0.000599         0.000262         72         0.009643         0.006297           40         0.000547         0.00023	26	0.000226	0.000107	59	0.002409	0.001344
29         0.000229         0.000114         62         0.003229         0.001837           30         0.000231         0.000118         63         0.003599         0.002080           31         0.000238         0.000123         64         0.004021         0.002367           32         0.000249         0.000130         65         0.004504         0.002723           33         0.000269         0.000137         66         0.005594         0.003118           34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.000193         69         0.007017         0.004546           37         0.000425         0.000217         70         0.007828         0.005130           38         0.000468         0.000240         71         0.008702         0.005696           39         0.000599         0.000262         72         0.009643         0.006297           40         0.000547         0.000283         73         0.010813         0.006599           41         0.000584         0.000330	27	0.000228	0.000109	60	0.002643	0.001501
30         0.000231         0.000118         63         0.003599         0.002080           31         0.000238         0.000123         64         0.004021         0.002367           32         0.000249         0.000130         65         0.004504         0.002723           33         0.000269         0.000137         66         0.005597         0.003118           34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.000193         69         0.007017         0.004546           37         0.000425         0.000217         70         0.007828         0.005130           38         0.000468         0.000240         71         0.008702         0.005696           39         0.000509         0.000262         72         0.009643         0.006297           40         0.000547         0.000283         73         0.010813         0.006959           41         0.000584         0.000335         74         0.011964         0.007841           42         0.000618         0.000357	28	0.000228	0.000111	61	0.002917	0.001659
31         0.000238         0.000123         64         0.004021         0.002367           32         0.000249         0.000130         65         0.004504         0.002723           33         0.000269         0.000137         66         0.00557         0.003118           34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.000193         69         0.007017         0.004546           37         0.000425         0.000217         70         0.007828         0.005130           38         0.000468         0.000240         71         0.008702         0.005696           39         0.000509         0.000262         72         0.009643         0.006297           40         0.000547         0.000283         73         0.010813         0.006599           41         0.000584         0.000330         75         0.013285         0.008701           43         0.000618         0.000330         75         0.013285         0.008701           43         0.000653         0.000357	29	0.000229	0.000114	62	0.003229	0.001837
32         0.000249         0.000130         65         0.004504         0.002723           33         0.000269         0.000137         66         0.005057         0.003118           34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.000193         69         0.007017         0.004546           37         0.000425         0.000217         70         0.007828         0.005130           38         0.000468         0.000240         71         0.008702         0.005696           39         0.000509         0.000262         72         0.009643         0.006297           40         0.000547         0.000283         73         0.010813         0.006959           41         0.000584         0.000305         74         0.011964         0.007841           42         0.00618         0.000330         75         0.013285         0.008701           43         0.00653         0.000357         76         0.014797         0.009678           44         0.000787         0.000470         <	30	0.000231	0.000118	63	0.003599	0.002080
33         0.000269         0.000137         66         0.005057         0.003118           34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.000193         69         0.007017         0.004546           37         0.000425         0.000217         70         0.00828         0.005130           38         0.000468         0.000240         71         0.008702         0.005696           39         0.000509         0.000262         72         0.009643         0.006297           40         0.000547         0.000283         73         0.010813         0.006959           41         0.000584         0.000305         74         0.011964         0.007841           42         0.000618         0.000330         75         0.013285         0.008701           43         0.000653         0.000357         76         0.014797         0.009678           44         0.000692         0.000389         77         0.016508         0.010757           45         0.000736         0.000470	31	0.000238	0.000123	64	0.004021	0.002367
34         0.000302         0.000146         67         0.005594         0.003582           35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.000193         69         0.007017         0.004546           37         0.000425         0.000217         70         0.008702         0.005696           38         0.000468         0.000240         71         0.008702         0.005696           39         0.000509         0.000262         72         0.009643         0.006297           40         0.000547         0.000283         73         0.010813         0.006959           41         0.000584         0.000305         74         0.011964         0.007841           42         0.000618         0.000330         75         0.013285         0.008701           43         0.000653         0.000357         76         0.014797         0.009678           44         0.000692         0.000389         77         0.016508         0.010757           45         0.000736         0.000427         78         0.018423         0.011923           46         0.000787         0.000470	32	0.000249	0.000130	65	0.004504	0.002723
35         0.000340         0.000169         68         0.006202         0.004036           36         0.000382         0.000193         69         0.007017         0.004546           37         0.000425         0.000217         70         0.007828         0.005130           38         0.000468         0.000240         71         0.008702         0.005696           39         0.000509         0.000262         72         0.009643         0.006297           40         0.000547         0.000283         73         0.010813         0.006959           41         0.000584         0.000305         74         0.011964         0.007841           42         0.000618         0.000330         75         0.013285         0.008701           43         0.000653         0.000357         76         0.014797         0.009678           44         0.000692         0.000389         77         0.016508         0.010757           45         0.000736         0.000427         78         0.018423         0.011923           46         0.000787         0.000470         79         0.020534         0.013163           47         0.000846         0.000517	33	0.000269	0.000137	66	0.005057	0.003118
36         0.000382         0.000193         69         0.007017         0.004546           37         0.000425         0.000217         70         0.007828         0.005130           38         0.000468         0.000240         71         0.008702         0.005696           39         0.000509         0.000262         72         0.009643         0.006297           40         0.000547         0.000283         73         0.010813         0.006959           41         0.000584         0.000305         74         0.011964         0.007841           42         0.000618         0.000330         75         0.013285         0.008701           43         0.00653         0.000357         76         0.014797         0.009678           44         0.000692         0.000389         77         0.016508         0.010757           45         0.000736         0.000427         78         0.018423         0.011923           46         0.000787         0.000470         79         0.022841         0.014502           48         0.000913         0.000567         81         0.025382         0.015972           49         0.000979         0.000620	34	0.000302	0.000146	67	0.005594	0.003582
37         0.000425         0.000217         70         0.007828         0.005130           38         0.000468         0.000240         71         0.008702         0.005696           39         0.000509         0.000262         72         0.009643         0.006297           40         0.000547         0.000283         73         0.010813         0.006959           41         0.000584         0.000305         74         0.011964         0.007841           42         0.000618         0.000330         75         0.013285         0.008701           43         0.000653         0.000357         76         0.014797         0.009678           44         0.000692         0.000389         77         0.016508         0.010757           45         0.000736         0.000427         78         0.018423         0.011923           46         0.000787         0.000470         79         0.020534         0.013163           47         0.000846         0.000517         80         0.022841         0.014502           48         0.000913         0.000567         81         0.025382         0.015972           49         0.000979         0.000620	35	0.000340	0.000169	68	0.006202	0.004036
38         0.000468         0.000240         71         0.008702         0.005696           39         0.000509         0.000262         72         0.009643         0.006297           40         0.000547         0.000283         73         0.010813         0.006959           41         0.000584         0.000305         74         0.011964         0.007841           42         0.000618         0.000330         75         0.013285         0.008701           43         0.000653         0.000357         76         0.014797         0.009678           44         0.000692         0.000389         77         0.016508         0.010757           45         0.000736         0.000427         78         0.018423         0.011923           46         0.000787         0.000470         79         0.020534         0.013163           47         0.000846         0.000517         80         0.022841         0.014502           48         0.000913         0.000567         81         0.025382         0.015972           49         0.000979         0.000620         82         0.028208         0.017607           50         0.001050         0.000674	36	0.000382	0.000193	69	0.007017	0.004546
39         0.000509         0.000262         72         0.009643         0.006297           40         0.000547         0.000283         73         0.010813         0.006959           41         0.000584         0.000305         74         0.011964         0.007841           42         0.000618         0.000330         75         0.013285         0.008701           43         0.000653         0.000357         76         0.014797         0.009678           44         0.000692         0.000389         77         0.016508         0.010757           45         0.000736         0.000427         78         0.018423         0.011923           46         0.000787         0.000470         79         0.020534         0.013163           47         0.00846         0.000517         80         0.022841         0.014502           48         0.00913         0.000567         81         0.025382         0.015972           49         0.000979         0.000620         82         0.028208         0.017607           50         0.001050         0.000674         83         0.031344         0.019438           51         0.001126         0.000731         <	37	0.000425	0.000217	70	0.007828	0.005130
40         0.000547         0.000283         73         0.010813         0.006959           41         0.000584         0.000305         74         0.011964         0.007841           42         0.000618         0.000330         75         0.013285         0.008701           43         0.000653         0.000357         76         0.014797         0.009678           44         0.000692         0.000389         77         0.016508         0.010757           45         0.000736         0.000427         78         0.018423         0.011923           46         0.000787         0.000470         79         0.020534         0.013163           47         0.000846         0.000517         80         0.022841         0.014502           48         0.000913         0.000567         81         0.025382         0.015972           49         0.000979         0.000620         82         0.028208         0.017607           50         0.001050         0.000674         83         0.031344         0.019438           51         0.001126         0.000731         84         0.035081         0.021486	38	0.000468	0.000240	71	0.008702	0.005696
41       0.000584       0.000305       74       0.011964       0.007841         42       0.000618       0.000330       75       0.013285       0.008701         43       0.000653       0.000357       76       0.014797       0.009678         44       0.000692       0.000389       77       0.016508       0.010757         45       0.000736       0.000427       78       0.018423       0.011923         46       0.000787       0.000470       79       0.020534       0.013163         47       0.000846       0.000517       80       0.022841       0.014502         48       0.000913       0.000567       81       0.025382       0.015972         49       0.000979       0.000620       82       0.028208       0.017607         50       0.001050       0.000674       83       0.031344       0.019438         51       0.001126       0.000731       84       0.035081       0.021486	39	0.000509	0.000262	72	0.009643	0.006297
42       0.000618       0.000330       75       0.013285       0.008701         43       0.000653       0.000357       76       0.014797       0.009678         44       0.000692       0.000389       77       0.016508       0.010757         45       0.000736       0.000427       78       0.018423       0.011923         46       0.000787       0.000470       79       0.020534       0.013163         47       0.000846       0.000517       80       0.022841       0.014502         48       0.000913       0.000567       81       0.025382       0.015972         49       0.000979       0.000620       82       0.028208       0.017607         50       0.001050       0.000674       83       0.031344       0.019438         51       0.001126       0.000731       84       0.035081       0.021486	40	0.000547	0.000283	73	0.010813	0.006959
43       0.000653       0.000357       76       0.014797       0.009678         44       0.000692       0.000389       77       0.016508       0.010757         45       0.000736       0.000427       78       0.018423       0.011923         46       0.000787       0.000470       79       0.020534       0.013163         47       0.000846       0.000517       80       0.022841       0.014502         48       0.000913       0.000567       81       0.025382       0.015972         49       0.000979       0.000620       82       0.028208       0.017607         50       0.001050       0.000674       83       0.031344       0.019438         51       0.001126       0.000731       84       0.035081       0.021486	41	0.000584	0.000305	74	0.011964	0.007841
44         0.000692         0.000389         77         0.016508         0.010757           45         0.000736         0.000427         78         0.018423         0.011923           46         0.000787         0.000470         79         0.020534         0.013163           47         0.000846         0.000517         80         0.022841         0.014502           48         0.000913         0.000567         81         0.025382         0.015972           49         0.000979         0.000620         82         0.028208         0.017607           50         0.001050         0.000674         83         0.031344         0.019438           51         0.001126         0.000731         84         0.035081         0.021486	42	0.000618	0.000330	75	0.013285	0.008701
45       0.000736       0.000427       78       0.018423       0.011923         46       0.000787       0.000470       79       0.020534       0.013163         47       0.000846       0.000517       80       0.022841       0.014502         48       0.000913       0.000567       81       0.025382       0.015972         49       0.000979       0.000620       82       0.028208       0.017607         50       0.001050       0.000674       83       0.031344       0.019438         51       0.001126       0.000731       84       0.035081       0.021486	43	0.000653	0.000357	76	0.014797	0.009678
46       0.000787       0.000470       79       0.020534       0.013163         47       0.000846       0.000517       80       0.022841       0.014502         48       0.000913       0.000567       81       0.025382       0.015972         49       0.000979       0.000620       82       0.028208       0.017607         50       0.001050       0.000674       83       0.031344       0.019438         51       0.001126       0.000731       84       0.035081       0.021486	44	0.000692	0.000389	77	0.016508	0.010757
47     0.000846     0.000517     80     0.022841     0.014502       48     0.000913     0.000567     81     0.025382     0.015972       49     0.000979     0.000620     82     0.028208     0.017607       50     0.001050     0.000674     83     0.031344     0.019438       51     0.001126     0.000731     84     0.035081     0.021486	45	0.000736	0.000427	78	0.018423	0.011923
48       0.000913       0.000567       81       0.025382       0.015972         49       0.000979       0.000620       82       0.028208       0.017607         50       0.001050       0.000674       83       0.031344       0.019438         51       0.001126       0.000731       84       0.035081       0.021486	46	0.000787	0.000470	79	0.020534	0.013163
49     0.000979     0.000620     82     0.028208     0.017607       50     0.001050     0.000674     83     0.031344     0.019438       51     0.001126     0.000731     84     0.035081     0.021486	47	0.000846	0.000517	80	0.022841	0.014502
50     0.001050     0.000674     83     0.031344     0.019438       51     0.001126     0.000731     84     0.035081     0.021486	48	0.000913	0.000567	81	0.025382	0.015972
51 0.001126 0.000731 84 0.035081 0.021486	49	0.000979	0.000620	82	0.028208	0.017607
	50	0.001050	0.000674	83	0.031344	0.019438
52 0.001208 0.000791 85 0.039193 0.023782	51	0.001126	0.000731	84	0.035081	0.021486
	52	0.001208	0.000791	85	0.039193	0.023782

# Teachers' Retirement System

# Defined Benefit Retirement Plan

Table 3
Alaska TRS
Mortality Table (Post-termination)

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

# Teachers' Retirement System

# Defined Benefit Retirement Plan

# Summary of Actuarial Assumptions and Changes in Assumptions

# Table 4 Alaska TRS Turnover Assumptions

#### Select Rates of Turnover During the First 8 Year of Employment

Service	Female	Male
0	0.170	0.204
1	0.170	0.204
2	0.140	0.168
3	0.120	0.144
4	0.100	0.120
5	0.090	0.108
6	0.075	0.090
7	0.060	0.072

# Ultimate Rates of Turnover After the First 8 Years of Employment

Age	Female	Male	Age	Female	Male
15	0.037185	0.031209	40	0.036224	0.030159
16	0.037157	0.031170	41	0.036155	0.030085
17	0.037138	0.031138	42	0.036086	0.030010
18	0.037129	0.031107	43	0.035976	0.029866
19	0.037120	0.031091	44	0.035867	0.029721
20	0.036848	0.030847	 45	0.035757	0.029577
21	0.036848	0.030831	46	0.035648	0.029432
22	0.036839	0.030799	47	0.035538	0.029288
23	0.036839	0.030776	48	0.035380	0.029046
24	0.036830	0.030736	49	0.035221	0.028805
25	0.036830	0.030705	50	0.035063	0.028563
26	0.036820	0.030673	51	0.034847	0.028248
27	0.036762	0.030642	52	0.034595	0.027878
28	0.041480	0.030610	53	0.034296	0.027468
29	0.046198	0.030579	54	0.059961	0.046305
30	0.050917	0.030555	 55	0.059285	0.045414
31	0.055635	0.030540	56	0.058410	0.044334
32	0.060353	0.030516	57	0.057288	0.043012
33	0.055569	0.030500	58	0.056018	0.041567
34	0.050784	0.030455	 59	0.054401	0.039826
35	0.046000	0.030431	 60	0.052569	0.037868
36	0.041215	0.030407	61	0.050523	0.035694
37	0.036431	0.030383	62	0.048197	0.033170
38	0.036362	0.030308	63	0.045540	0.030294
39	0.036293	0.030234	64	0.042653	0.027176
			65+	0.066000	0.054000

# Teachers' Retirement System

## Defined Benefit Retirement Plan

Table 5 Alaska TRS Disability Table

Age	Unisex
20	0.000560
21	0.000563
22	0.000565
23	0.000574
24	0.000583
25	0.000593
26	0.000602
27	0.000611
28	0.000611
29	0.000612
30	0.000612
31	0.000613
32	0.000613
33	0.000622
34	0.000631
35	0.000641
36	0.000650
37	0.000659
38	0.000674
39	0.000689
40	0.000703
41	0.000718
42	0.000733
43	0.000770
44	0.000806
45	0.000843
46	0.000879
47	0.000916
48	0.000975
49	0.001034
50	0.001093
51	0.001152
52	0.001211
53	0.001356
54	0.001501

# Teachers' Retirement System

# Defined Benefit Retirement Plan

Summary of Actuarial Assumptions and Changes in Assumptions

Table 6 Alaska TRS Retirement Table

#### Retirement Rate

	Reduced	Unre	duced
Age at Retirement	Unisex Rates	Male	Female
<45	N/A	0.03	0.03
46	N/A	0.05	0.05
47	N/A	0.05	0.08
48	N/A	0.05	0.08
49	N/A	0.05	0.08
50	0.08	0.50	0.13
51	0.08	0.80	0.12
52	0.08	0.15	0.12
53	0.08	0.15	0.13
54	0.16	0.15	0.14
55	0.08	0.20	0.16
56	0.08	0.17	0.16
57	0.08	0.15	0.16
58	0.08	0.20	0.16
59	0.16	0.20	0.22
60	N/A	0.25	0.22
61	N/A	0.18	0.22
62	N/A	0.18	0.20
63	N/A	0.18	0.20
64	N/A	0.18	0.25
65	N/A	0.30	0.20
66	N/A	0.25	0.20
67	N/A	0.25	0.20
68	N/A	0.25	0.25
69	N/A	0.35	0.25
70	N/A	0.30	0.25
71	N/A	0.30	0.35
72	N/A	0.30	0.35
73	N/A	0.30	0.35
74	N/A	0.30	0.35
75-84	N/A	0.50	
85+	N/A	1.00	

# Teachers' Retirement System

# Defined Benefit Retirement Plan

Table 7
Alaska TRS
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

# Teachers' Retirement System

# Defined Benefit Retirement Plan

# Summary of Actuarial Assumptions and Changes in Assumptions

## Changes in Actuarial Assumptions Since the Prior Valuation

1	une 30, 2013	June 30,	2014
ш	une 30, 2013	june 30,	2017

Salary Scale	Based on actual experience from 2005 to 2009.	Rates adjusted on actual experience from 2010-2013.
Pre-termination Mortality	The 1994 GAM Sex-distinct Table, 1994 Base Year projected to 2013 using Projection Scale AA, adjusted 45% of males, and 55% for females.	68% of male rates and 60% of female rates of the post- termination mortality rates.  Deaths are assumed to result from non-occupational causes 85% of the time.
Post-termination Mortality	The 1994 GAM Sex-distinct Table, 1994 Base Year projected to 2013 using Projection Scale AA, setback 3-years for females and 4-years setback for males.	94% of male and 97% female rates of RP-2000, 2000 Base Year projected to 2018 with Projection Scale BB, with a 3-year setback for males and a 4-year setback for females.
Disability Mortality	RP-2000 Disabled Retiree Mortality Table.	RP-2000 Disabled Retiree Mortality, 2000 Base Year projected to 2018, with Scale BB.
Turnover	Based on actual experience from 2005 to 2009.	Select and ultimate rates based upon the 2010-2013 actual withdrawal experience.
Disability	Based on actual experience from 2005 to 2009 and stop rates at earliest retirement age.	Incidence rates based on 2010-2013 actual experience.  Male/Female rates increased and changed to Unisex rates.
Retirement	Rates were adjusted based on actual experience from 2005 to 2009.	Retirement rates based upon the 2010-2013 actual experience.
Part-time Service	0.60 years of credited service per year.	Part-time employees are assumed to earn 0.75 years of credited service per year.

June 30, 2013 June 30, 2014

Health Cost Trend

Fiscal year	Medical pre-65	Medical post-65	Prescription drugs	Fiscal year	Medical pre-65	Medical post-65	Prescription drugs
2014	8.7%	6.4%	6.3%	2015	10.0%	6.0%	6.0%
2015	8.5	6.3	6.2	2016	9.4	5.9	5.7
2016	8.0	6.3	6.2	2017	8.8	5.8	5.4
2017	7.5	6.2	6.1	2018	8.2	5.7	5.1
2018	7.0	6.1	6.0	2019	7.6	5.6	4.8
2019	6.6	6.1	5.8	2020	7.0	5.6	4.6
2020	6.4	6.1	5.8	2021	6.5	5.6	4.4
2025	6.0	6.0	5.7	2025	5.6	5.6	4.2
2050	5.0	5.0	5.0	2050	4.4	4.0	4.0
2100	4.5	4.5	4.5	2100	4.4	4.0	4.0

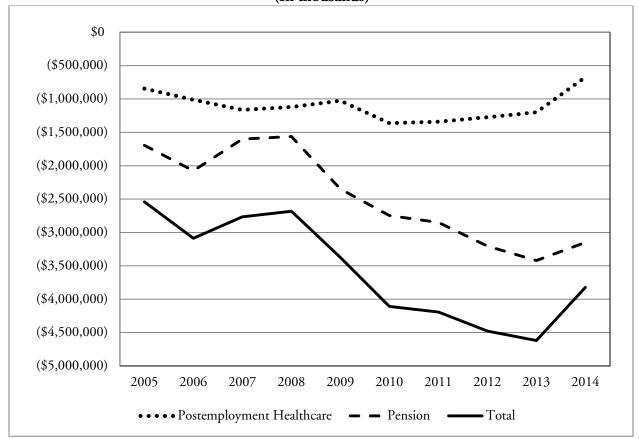
Trend Rate for Retired Member Medical Contribution

FY 13 Trend Assumption		FY 14 Trend Assumption	
Fiscal year:		Fiscal year:	
2014	8.2%	2015	7.09
2015	8.0	2016	6.6
2016	7.6	2017	6.2
2017	7.2	2018	5.8
2018	6.7	2019	5.4
2019	6.4	2020	5.0
2025	5.9	2025	4.1
2050	5.0	2050	4.0
2100	4.5	2100	4.0

Teachers' Retirement System
Defined Benefit Retirement Plan
Funding Excess/(Unfunded Liability)
(In thousands)

(III tilousullus)						
Actuarial Valuation Year Ended June 30	Postemployment Healthcare	Pension	Total Funding Excess/ (Unfunded Liability)	Funded Ratio		
2005	\$ (845,674)	\$ (1,693,934)	\$ (2,539,608)	60.9%		
2006	(1,012,540)	(2,075,617)	(3,088,157)	57.3		
2007	(1,163,423)	(1,601,581)	(2,765,004)	61.5		
2008	(1,120,634)	(1,561,568)	(2,682,202)	64.8		
2009	(1,026,288)	(2,348,268)	(3,374,556)	57.0		
2010	(1,361,547)	(2,747,113)	(4,108,660)	53.6		
2011	(1,340,703)	(2,850,155)	(4,190,858)	54.1		
2012	(1,272,507)	(3,204,783)	(4,477,290)	52.1		
2013	(1,198,791)	(3,419,240)	(4,618,031)	51.9		
2014	(671,535)	(3,150,223)	(3,821,758)	61.2		

# 10-YEAR TREND OF UNFUNDED LIABILITY (In thousands)



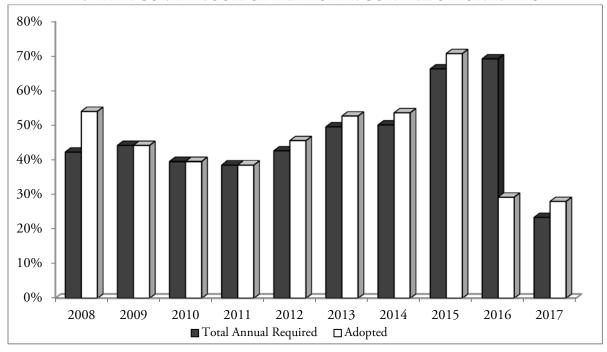
Teachers' Retirement System
Defined Benefit Retirement Plan
<b>Employer Contribution Rates</b>

Year Ended June 30	Actuarial Valuation Year Ended June 30	Normal Cost <sup>1</sup>	Past Service	Total Annual Required	Adopted
2008	2005	12.56%	29.70%	42.26%	54.03%2
2009	2006	9.37	34.80	44.17	44.17
2010	2007	7.59	31.94	39.53	39.53
2011	2008	7.56	31.00	38.56	38.56
2012	2009	6.57	36.04	42.61	45.55
2013	2010	7.47	42.09	49.56	52.67
2014	2011	6.59	43.51	50.10	53.62
2015	2012	6.40	59.91	66.31	70.75
2016	2013	5.70	63.54	69.24	29.27
2017	2014	4.63	18.77	23.40	28.02

<sup>&</sup>lt;sup>1</sup> Also referred to as the consolidated rate.

Valuations are used to set contribution rates in future years.

## 10-YEAR COMPARISON OF EMPLOYER CONTRIBUTION RATES



<sup>&</sup>lt;sup>2</sup> The ARMB recognized the fact that the Plan becomes a closed Plan on July 1, 2006, and set a rate reflecting no payroll growth.

Teachers' Retirement System
Defined Benefit Retirement Plan
Schedule of Active Member Valuation Data

Valuation Date	Number	Annual Earnings (In thousands)	Annual Average Earnings	Percent Increase In Average Earnings	Number of Participating Employers
June 30, 2014	5,861	\$ 474,873	\$ 81,023	2.1%	58
June 30, 2013	6,352	504,260	79,386	2.6	58
June 30, 2012	6,845	529,468	77,351	3.6	58
June 30, 2011	7,303	545,155	74,648	3.5	58
June 30, 2010	7,832	564,887	72,125	6.5	58
June 30, 2009	8,226	557,026	67,715	5.2	58
June 30, 2008	8,531	549,148	64,371	5.8	58
June 30, 2007	9,107	554,245	60,859	2.9	58
June 30, 2006	9,710	574,409	59,156	6.6	58
June 30, 2005	9,656	535,837	55,493	2.9	58

# Teachers' Retirement System Defined Benefit Retirement Plan Schedule of Pension Benefit Recipients Added to and Removed from Rolls

	Added to Rolls		:	Removed from Rolls		Rolls – End of Year		
Year Ended	No.*	Annual Pension Allowances*	No.*	Annual Pension Allowances*	No.	Annual Pension Allowances	Percent Increase/ (Decrease) In Annual Pension Allowances	Average Annual Pension Allowances
June 30, 2014	226	\$ 5,964,256	181	\$ (1,150,187)	11,750	\$ 403,274,146	1.80%	\$ 34,321
June 30, 2013	576	19,387,542	172	1,652,575	11,705	396,159,703	4.69	33,845
June 30, 2012	473	17,104,564	188	(617,561)	11,301	378,424,736	4.91	33,486
June 30, 2011	564	19,546,369	146	1,464,766	11,016	360,702,611	5.28	32,744
June 30, 2010	533	16,980,817	190	5,495,399	10,598	342,621,008	3.47	32,329
June 30, 2009	368	9,788,639	139	(2,857,118)	10,255	331,135,590	3.97	32,290
June 30, 2008	481	14,265,236	133	806,945	10,026	318,489,833	4.41	31,766
June 30, 2007	432	12,388,703	140	(14,114,559)	9,678	305,031,542	9.52	31,518
June 30, 2006	487	12,731,292	121	(50,838)	9,386	278,528,280	4.81	29,675
June 30, 2005	446	11,243,448	133	13,053,612	9,020	265,746,150	(0.68)	29,462

\*Numbers are estimated, and include other internal transfers.

# Teachers' Retirement System Defined Benefit Retirement Plan Pension Solvency Test (In thousands)

	Aggregat			of Accrued leavered by As			
Valuation Date	(1)  Active  Member  Contributions	(2) Inactive Members	(3) Active Members (Employer- Financed Portion)	Pension Valuation Assets	(1)	(2)	(3)
June 30, 2014	\$ 718,694	\$ 5,042,250	\$ 1,160,418	\$ 3,771,139	100.0%	60.5%	— %
June 30, 2013	726,139	4,726,282	1,137,132	3,170,313	100.0	51.7	_
June 30, 2012	727,435	4,532,982	1,139,360	3,194,994	100.0	54.4	_
June 30, 2011	717,819	4,352,035	1,126,250	3,345,949	100.0	60.4	_
June 30, 2010 <sup>1</sup>	716,675	4,153,119	1,137,187	3,259,868	100.0	61.2	_
June 30, 2009	692,105	3,815,020	956,862	3,115,719	100.0	63.5	_
June 30, 2008	654,662	3,700,812	876,180	3,670,086	100.0	81.5	_
June 30, 2007	638,420	3,567,894	837,134	3,441,867	100.0	78.6	_
June 30, 2006 <sup>12</sup>	615,207	3,432,703	811,426	3,296,934	100.0	78.1	_
June 30, 2005	589,169	3,200,339	545,077	3,184,976 <sup>3</sup>	100.0	81.1	_

<sup>&</sup>lt;sup>1</sup> Change in Assumptions

<sup>&</sup>lt;sup>2</sup> Change in Methods

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

# Teachers' Retirement System Defined Benefit Retirement Plan Postemployment Healthcare Solvency Test (In thousands)

		nployment Healt te Accrued Liabil				tion of Acc Liabilities vered by A	s
Valuation Date	(1)  Active  Member  Contributions	(2) Inactive Members	(3) Active Members (Employer- Financed Portion)	Post- Employment Healthcare Valuation Assets	(1)	(2)	(3)
June 30, 2014 <sup>12</sup>	\$ —	\$ 2,008,223	\$ 911,447	\$ 2,248,135	100.0%	100.0%	26.3%
June 30, 2013	_	2,012,114	990,440	1,803,763	100.0	89.6	_
June 30, 2012	_	1,933,288	1,013,379	1,674,160	100.0	86.6	_
June 30, 2011	_	1,879,564	1,053,127	1,591,988	100.0	84.7	_
June 30, 2010 <sup>1</sup>	_	1,755,961	1,084,846	1,479,260	100.0	84.2	_
June 30, 2009	_	1,477,788	905,739	1,357,239	100.0	91.8	_
June 30, 2008 <sup>1</sup>	_	1,480,864	906,660	1,266,890	100.0	85.6	_
June 30, 2007	_	1,344,131	801,824	982,532	100.0	73.1	_
June 30, 2006 <sup>12</sup>	_	1,493,219	877,296	844,766	100.0	56.6	_
June 30, 2005	_	1,493,837	670,134	773,963 <sup>3</sup>	100.0	51.8	_

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

<sup>&</sup>lt;sup>1</sup> Change in Assumptions

<sup>&</sup>lt;sup>2</sup> Change in Methods

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

# Teachers' Retirement System Defined Benefit Retirement Plan Analysis of Financial Experience

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

	Change in Employer/State Contribution Rate During Fiscal Year							
Type of (Gain) or Loss	2014	2013	2012	2011	2010			
Health Experience	(8.59)%	(1.21)%	(2.02)%	(0.72)%	0.19%			
Salary Experience	(0.43)	(0.30)	_	(0.03)	0.59			
Investment Experience	(6.31)	2.44	4.18	0.46	0.05			
Demographic Experience	1.75	0.38	(0.36)	(0.03)	(0.75)			
Contribution Shortfall	1.24	1.62	0.71	0.86	0.01			
(Gain) or Loss During Year From Experience	(12.34)	2.93	2.51	0.54	0.09			
Non-recurring changes								
Assumption and Method Changes	(33.50)	_	13.70	_	6.86			
System Benefit Changes								
Composite (Gain) or Loss During Year	(45.84)	2.93	16.21	0.54	6.95			
Beginning Total Employer/State Contribution Rate	69.24	66.31	50.10	49.56	42.61			
Ending Employer/State Contribution Rate	<u>23.40%</u>	<u>69.24%</u>	<u>66.31%</u>	<u>50.10%</u>	<u>49.56%</u>			
Fiscal Year Employer/State Contribution Rates	23.40%*	24.48%	44.25%	50.10%	49.56%			
Fiscal Year Above Rate is Applied	FY17	FY16	FY15	FY14	FY13			

<sup>\*</sup> Expected. Actual Rate to be determined.

NOTE: In the second session of the  $28^{th}$  Alaska legislature, the legislature changed the actuarial methodology from level dollar amortization to level percent of pay. The June 30, 2013 PERS actuarial valuation report was not updated for this change, but specific revisions for the amortization change were presented to reflect the change in amortization. The change in the amortization resulted in an adjusted FY 16 employer/state contribution rate of 24.48%.

# Teachers' Retirement System Defined Benefit Retirement Plan Analysis of Financial Experience

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

	Change in Employer/State Contribution Rate During Fiscal Year						
		Pension		Healthcare			
Type of (Gain) or Loss	2014	2013	2012	2014	2013	2012	
Health Experience	N/A	N/A	N/A	(8.59)%	(1.21)%	(2.02)%	
Salary Experience	(0.43)%	(0.30)%	%	N/A	N/A	N/A	
Investment Experience	(3.97)	2.09	3.47	(2.34)	0.35	0.71	
Demographic Experience	1.75	0.38	(0.36)	N/A	N/A	N/A	
Contribution Shortfall	1.10	1.34	0.52	0.14	0.28	0.19	
(Gain) or Loss During Year From Experience	(1.55)	3.51	3.63	(10.79)	(0.58)	(1.12)	
Non-recurring changes							
Assumption and Method Changes	(28.73)	_	9.52	(4.77)	_	4.18	
System Benefit Changes							
Composite (Gain) or Loss During Year	(30.28)	3.51	13.15	(15.56)	(0.58)	3.06	
Beginning Total Employer/State Contribution Rate	48.06	44.55	31.40	21.18	21.76	18.70	
Ending Total Employer/State Contribution Rate	<u>17.78</u> %	<u>48.06</u> %	<u>44.55</u> %	<u>5.62</u> %	<u>21.18</u> %	<u>21.76</u> %	
Fiscal Year Employer/State Contribution Rates	17.78%*	15.85%	29.90%	5.62%*	8.63%	14.35%	
Fiscal Year Above Rate is Applied	FY17	FY16	FY15	FY17	FY16	FY15	

<sup>\*</sup>Expected. Actual Rate to be determined.

# Teachers' Retirement System

### Defined Benefit Retirement Plan

# Summary of Plan Provisions and Changes in Plan Provisions

#### 1. Effective Date

July 1, 1955, with amendments through June 30, 2014. Chapter 97, 1990 Session Laws of Alaska, created a two-tier retirement system. Members who were first hired under the TRS before July 1, 1990 (Tier 1) are eligible for different benefits than members hired after June 30, 1990 (Tier 2). Chapter 9, 2005 Session Laws of Alaska, closed the plan to new members hired after June 30, 2006.

#### 2. Administration of Plan

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

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

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

#### 3. Employers Included

Currently, there are 58 employers participating in the TRS, including the State of Alaska, 53 school districts, and four other eligible organizations.

#### 4. Membership

Membership in the Alaska TRS is mandatory for the following employees hired before July 1, 2006:

- certificated full-time and part-time elementary and secondary teachers, certificated school nurses, and certificated employees in positions requiring teaching certificates;
- positions requiring a teaching certificate as a condition of employment in the Department of Education and Early Development and the Department of Labor and Workforce Development;
- University of Alaska full-time and part-time teachers, and full-time administrative employees in positions requiring academic standing if approved by the TRS administrator;
- certain full-time or part-time teachers of Alaska Native language or culture who have elected to be covered under the TRS;
- members on approved sabbatical leave under AS 14.20.310;
- certain State legislators who have elected to be covered under the TRS; and
- a teacher who has filed for worker's compensation benefits due to an on-the-job assault and who, as a result of the physical injury, is placed on leave without pay.

Employees participating in the University of Alaska's Optional Retirement Plan or other retirement plans funded by the State are not covered by the TRS.

# Teachers' Retirement System

# Defined Benefit Retirement Plan

# Summary of Plan Provisions and Changes in Plan Provisions

Employees who work half-time in the TRS and Public Employees' Retirement System (PERS) simultaneously are eligible for half-time TRS and PERS credit.

Senate Bill 141, signed into law on July 27, 2005, closes the plan effective July 1, 2006 to new members first hired on or after July 1, 2006.

#### 5. Credited Service

TRS members receive a year of membership credit if they work a minimum of 172 days during the school year (July 1 through June 30 of the following year). Fractional credit is determined based on the number of days worked. Part-time members who work at least 50% of full-time receive membership credit for each day in proportion to full-time service. Credit is granted for all Alaskan public school service.

Members may claim other types of service, including:

- Outside teaching service in out-of-state schools or Alaska private schools (not more than ten years may be claimed);
- Military service (not more than five years of military service or ten years of combined outside and military service may be claimed);
- Alaska Bureau of Indian Affairs (BIA) service;
- Retroactive Alaskan service that was not creditable at the time it occurred, but later became creditable because of legislative change;
- Unused sick leave credit after members retire; and
- Leave of absence without pay.

Except for retroactive Alaska service that occurred before July 1, 1955, and unused sick leave, contributions are required for all claimed service.

Members receiving TRS disability benefits continue to earn TRS credit while disabled.

Survivors who are receiving occupational death benefits continue to earn TRS service credit while occupational survivor benefits are being paid.

#### 6. Employer Contributions

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

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

The past service rate is a uniform rate for all participating employers to amortize the unfunded past service liability with payments that are a level dollar amount over fixed 25-year periods.

Employer rates cannot be less than the normal cost rate.

# Teachers' Retirement System Defined Benefit Retirement Plan

#### Summary of Plan Provisions and Changes in Plan Provisions

#### 7. Additional State Contribution

Pursuant to AS14.25.070 effective July 1, 2008, the State shall contribute an amount (in addition to the State contribution as an employer) that when combined with the employer contribution (12.56%) will be sufficient to pay the total contribution rate adopted by The State of Alaska Retirement Management Board.

#### 8. Member Contributions

**Mandatory Contributions:** Members are required to contribute 8.65% of their base salaries. Members' contributions are deducted from gross salaries before federal income taxes are withheld.

**Contributions for Claimed Service:** Member contributions are also required for most of the claimed service described in (5) above.

1% Supplemental Contributions: Members who joined the system before July 1, 1982 and elected to participate in the supplemental contributions provision are required to contribute an additional 1% of their salaries. Supplemental contributions are deducted from gross salaries after federal income taxes are withheld. Under the supplemental provision, an eligible spouse or dependent child will receive a survivor's allowance or spouse's pension if the member dies (see 13 below). Supplemental contributions are only refundable upon death (see 13 below).

**Interest:** Members' contributions earn 4.5% interest, compounded annually on June 30.

**Refund of Contributions:** Terminated members may receive refunds of their member contribution accounts which includes their mandatory contributions, indebtedness payments, and interest earned. Terminated members' accounts may be attached to satisfy claims under Alaska Statute 09.38.065, federal income tax levies, and valid Qualified Domestic Relations Orders.

**Reinstatement of Contributions:** Refunded accounts and the corresponding TRS service may be reinstated upon reemployment in the TRS prior to July 1, 2010. Interest accrues on refunds until paid in full or members retire.

### 9. Retirement Benefits

#### Eligibility:

- a. Members, including deferred vested members, are eligible for normal retirement at age 55 or early retirement at age 50 if they were hired before July 1, 1990 (Tier 1) and age 60 or early retirement at age 55 if they were hired on or after July 1, 1990 (Tier 2). Additionally, they must have at least:
  - i. eight years of paid-up membership service;
  - ii. 15 years of paid-up creditable service, the last five years of which are membership service, and they were first hired under the TRS before July 1, 1975;
  - iii. five years of paid-up membership service and three years of paid-up Alaska Bureau of Indian Affairs service:
  - iv. 12 years of combined part-time and full-time paid-up membership service;

# Teachers' Retirement System

#### **Defined Benefit Retirement Plan**

# Summary of Plan Provisions and Changes in Plan Provisions

- v. two years of paid-up membership service if they are vested in the Public Employees' Retirement System (PERS); or
- vi. one year of paid-up membership service if they are retired from the PERS.
- b. Members may retire at any age when they have:
  - i. 25 years of paid-up creditable service, the last five years of which are membership service;
  - ii. 20 years of paid-up membership service;
  - iii. 20 years of combined paid-up membership and Alaska Bureau of Indian Affairs service, the last five years of which are membership service; or
  - iv. 20 years of combined paid-up part-time and full-time membership service.

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

Members may select joint and survivor options and a last survivor option. Under those options and early retirement, benefits are actuarially adjusted so that members receive the actuarial equivalents of their normal benefit amounts.

**Benefit Calculation:** Retirement benefits are calculated by multiplying the average base salary (ABS) times the total TRS service times the percentage multiplier. The ABS is determined by averaging the salaries earned during the three highest school years. Members must earn at least 115 days of credit in a school year to include it in the ABS calculation. The TRS pays a minimum benefit of \$25.00 per month for each year of service when the calculated benefit is less.

The percentage multipliers are 2% for the first 20 years and 2.5% for all remaining service. Service before July 1, 1990 is calculated at 2%.

**Indebtedness:** Members who terminate and refund their TRS contributions are not eligible to retire unless they return to TRS employment and pay back their refunds plus interest or accrue additional service which qualifies them for retirement. TRS refunds must be paid in full if the corresponding service is to count toward the minimum service requirements for retirement. Refunded TRS service is included in total service for the purpose of calculating retirement benefits. However, when refunds are not completely paid before retirement, benefits are actuarially reduced for life. Indebtedness balances may also be created when a member purchases qualified claimed service.

#### 10. Reemployment of Retired Members

Retirees who return to work in a permanent full-time or part-time TRS position after a Normal Retirement are eligible to return under the Standard Option.

# Teachers' Retirement System

#### Defined Benefit Retirement Plan

# Summary of Plan Provisions and Changes in Plan Provisions

Under the Standard Option, retirement and retiree healthcare benefits are suspended while retired members are reemployed under the TRS. During reemployment, members earn additional TRS service and contributions are withheld from their wages.

Members retired under the RIP who return to employment under the TRS, Public Employees' Retirement System (PERS), Judicial Retirement System (JRS) or the University of Alaska's Optional Retirement Plan will:

- a. forfeit the three years of incentive credits that they received;
- b. owe the TRS 110% of the benefits that they received under the RIP, which may include costs for health insurance, excluding amounts that they paid to participate; and
- c. be charged 7% interest from the date that they are reemployed until their indebtedness is paid in full or they retire again. If the indebtedness is not completely paid, future benefits will be actuarially reduced for life.

Employers make contributions to the unfunded liability of the plan on behalf of rehired retired members at the rate the employer is making contributions to the unfunded liability of the plan for other members.

#### 11. Postemployment Healthcare Benefits

When pension benefits begin, major medical benefits are provided by the TRS to (1) all employees first hired before July 1, 1990 (Tier 1) and their surviving spouses and (2) members and their surviving spouses who have twenty-five years of membership service, are disabled or age sixty or older, regardless of their initial hire dates. Employees first hired after June 30, 1990 (Tier 2) and their surviving spouses may receive major medical benefits prior to age sixty by paying premiums.

#### 12. Disability Benefits

Monthly disability benefits are paid to permanently disabled members until they die, recover or become eligible for normal retirement. To be eligible, members must have at least five years of paid-up membership service.

Disability benefits are equal to 50% of the member's base salary at the time of disability. The benefit is increased by 10% of the base salary for each minor child, up to a maximum of 40%. Members continue to earn TRS service until eligible for normal retirement.

Members are appointed to normal retirement on the first of the month after they become eligible.

#### 13. Death Benefits

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

# Teachers' Retirement System Defined Benefit Retirement Plan

# Summary of Plan Provisions and Changes in Plan Provisions

Occupational Death: When an active member dies from occupational causes, a monthly survivor's pension may be paid to the spouse, unless benefits are payable under the supplemental contributions provision (below). The pension equals 40% of the member's base salary on the date of death or disability, if earlier. If there is no spouse, the pension may be paid to the member's dependent children. On the member's normal retirement date, the benefit converts to a normal retirement benefit. The normal benefit is based on the member's average base salary on the date of death and service, including service accumulated from the date of the member's death to the normal retirement date.

**Nonoccupational Death:** When a vested member dies from nonoccupational causes, the surviving spouse may elect to receive a monthly 50% joint and survivor benefit or a lump sum benefit, unless benefits are payable under the supplemental contributions provision (below). The monthly benefit is calculated on the member's average base salary and TRS service accrued at the time of death.

**Lump Sum Benefit:** Upon the death of an active member who has less than one year of service or an inactive member who is not vested, the designated beneficiary receives the member's contribution account, which includes mandatory contributions, indebtedness payments, and interest earned. Any supplemental contributions will also be refunded. If the member has more than one year of TRS service or is vested, the beneficiary also receives \$1,000 and \$100 for each year of TRS service, up to a maximum of \$3,000. An additional \$500 may be payable if the member is survived by dependent children.

**Supplemental Contributions Provision:** Members are eligible for supplemental coverage if they joined the TRS before July 1, 1982, elected to participate in the supplemental provision, and made the required contributions. A survivor's allowance or spouse's pension (below) may be payable if the member made supplemental contributions for at least one year and dies while in membership service or while disabled under the TRS. In addition, the allowance and pension may be payable if the member dies while retired or in deferred vested status if supplemental contributions were made for at least five years.

- a. **Survivor's Allowance:** If the member is survived by dependent children, the surviving spouse and dependent children are entitled to a survivor's allowance. The allowance for the spouse is equal to 35% of the member's base salary at the time of death or disability, plus 10% for each dependent child up to a maximum of 40%. The allowance terminates and a spouse's pension becomes payable when there is no longer an eligible dependent child.
- b. **Spouse's Pension:** The spouse's pension is equal to 50% of the retirement benefit that the deceased member was receiving or the unreduced retirement benefit that the deceased member would have received if retired at the time of death. The spouse's pension begins on the first of the month after the member's death or termination of the survivor's allowance.
- c. **Death After Retirement:** If a joint and survivor option was selected at retirement, the eligible spouse receives continuing, lifetime monthly benefits after the member dies. A survivor's allowance or spouse's pension may be payable if the member participated in the supplemental contributions provision. If a joint and survivor option was not selected and benefits are not payable under the supplemental contributions provision, the designated beneficiary receives the member's contribution account, less any benefits already paid and the member's last benefit check.

# Teachers' Retirement System

#### Defined Benefit Retirement Plan

# Summary of Plan Provisions and Changes in Plan Provisions

#### 14. Postretirement Pension Adjustments

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

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

Ad hoc PRPAs, up to a maximum of 4%, may be granted to eligible recipients who were first hired before July 1, 1990 (Tier 1) if the CPI increases and the funding ratio is at least 105%.

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

#### 15. Alaska Cost of Living Allowance

Eligible benefit recipients who reside in Alaska receive an Alaska cost of living allowance (COLA) equal to 10% of their base benefits. The following benefit recipients are eligible:

- a. members who were first hired under the TRS before July 1, 1990 (Tier 1) and their survivors;
- b. members who were first hired under the TRS after June 30, 1990 (Tier 2) and their survivors if they are at least age 65; and
- c. all disabled members.

#### Changes in Benefit Provisions Since the Prior Valuation

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

October 6, 2015



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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 Teachers' Retirement System Defined Contribution Retirement (TRS DCR) Plan as of June 30, 2014 performed by Buck Consultants, LLC.

The actuarial valuation is based on financial information provided in the financial statements audited by KPMG LLP and member data provided by the Division of Retirement and Benefits and summarized in this report. The benefits considered are those delineated in Alaska statutes effective June 30, 2014. The actuary did not verify the data submitted, but did perform tests for consistency and reasonableness.

All costs, liabilities and other factors under the Plan were determined in accordance with generally accepted actuarial principles and procedures. An actuarial cost method is used to measure the actuarial liabilities which we believe is reasonable. Buck Consultants, LLC 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 Plan.

The State of Alaska Teachers' Retirement System DCR Plan is funded by Employer Contributions in accordance with the funding policy adopted by the Alaska Retirement Management Board (Board) and as required by Alaska state statues. The funding objective for the State of Alaska Teachers' Retirement System DCR Plan is to pay required contributions that remain level as a percent of TRS DCR Compensation. The Board has also established a funding policy objective that the required contributions be sufficient to pay the Normal Costs of active plan members, Plan expenses, and amortize the Unfunded Actuarial Accrued Liability as a level percent of TRS DCR Compensation over a closed layered 25-year period. This objective is currently being met and is projected to continue to be met and as required by Alaska state statues.

# **Actuarial Section**

In our opinion, the actuarial assumptions used are reasonable, taking into account the experience of the Plan and reasonable long-term expectations, and represent our best estimate of the anticipated long-term experience under the Plan. The actuary performs an analysis of Plan experience periodically and recommends changes if, in the opinion of the actuary, assumption changes are needed to more accurately reflect expected future experience. The last full experience analysis was performed in 2013. A review of the healthcare assumptions was performed for this actuarial valuation and changes were made to the healthcare cost trend rates and the per capita claims cost rates, effective June 30, 2014, to better reflect expected future healthcare experience. A summary of the actuarial assumptions and methods used in this actuarial valuation are shown in Section 5.3.

The assumptions and methods used to determine the Actuarially Determined Contribution's (ADC) of the Employers to the State of Alaska Teachers' Retirement System DCR Plan as outlined in this report and all supporting schedules meet the parameters and requirements for disclosure of Governmental Accounting Standards Board (GASB) Statements No. 25, Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans, and 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 Schedule of Funding Progress, Schedule of Employer Contributions, and trend data schedules 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 and solvency test for the Actuarial Section of the CAFR.

The undersigned are Associates of the Society of Actuaries, Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all Applicable Actuarial Standards of Practice. We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate.

Respectfully submitted,

David H. Slishinsky, ASA, MAAA, FCA

David H. Alashinky

Principal, Consulting Actuary

Todd D. Kanaster, ASA, MAAA, FCA

Senior Consultant

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

Melissa A. Bissett, FSA, MAAA

Senior Consultant, Health & Productivity

# Teachers' Retirement System

## Defined Contribution Retirement Plan

## Description of Actuarial Methods and Valuation Procedures

The funding method used in this valuation was adopted by the Board in October 2006. The asset smoothing method used to determine valuation assets was implemented effective June 30, 2006.

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

#### Valuation of Liabilities

### **A.** Actuarial Method – Entry Age Actuarial Cost

Liabilities and contributions shown in the report are computed using the Entry Age Actuarial Cost method of funding. Any funding surpluses or unfunded accrued liability is amortized over 25 years as a level percentage of expected payroll. However, in keeping with GASB requirements, the net amortization period will not exceed 30 years. These requirements under GASB 25 have been amended by GASB 67, effective June 30, 2014. Per KPMG, the new accounting standards under GASB 67 and 68 are not applicable to the Occupational Death & Disability benefits under the DCR Plan.

Cost factors designed to produce annual costs as a constant percentage of each member's expected compensation in each year for death and disability benefits (constant dollar amount for retiree medical benefits), from the assumed entry age to the last age with a future benefit were applied to the projected benefits to determine the normal cost (the portion of the total cost of the Plan allocated to the current year under the method). The normal cost is determined by summing intermediate results for active members and determining an average normal cost rate which is then related to the total DCR Plan payroll of active members. The actuarial accrued liability for active members (the portion of the total cost of the Plan allocated to prior years under the method) was determined as the excess of the actuarial present value of projected benefits over the actuarial present value of future normal costs.

The actuarial accrued liability for beneficiaries and disabled members currently receiving benefits (if any) was determined as the actuarial present value of the benefits expected to be paid. No future normal costs are payable for these members.

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

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

## B. Valuation of Assets

Effective June 30, 2006, the asset valuation method recognizes 20% of the investment gain or loss in each of the current and preceding four years. This method will be phased in over five years. Fair Value of Assets were \$0 as of June 30, 2006. All assets are valued at fair value. Assets are accounted for on an accrued basis and are taken directly

# **Teachers' Retirement System**

# Defined Contribution Retirement Plan Description of Actuarial Methods and Valuation Procedures

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

### C. Valuation of Retiree Medical Benefits

The methodology used for the valuation of the retiree medical benefits is described in Section 6.2(c) of the State of Alaska Teachers' Retirement System Defined Benefit Plan Actuarial Valuation Report as of June 30, 2014.

Due to the lack of experience for the DCR Plan only, base claims costs are based on those described in the actuarial valuation as of June 30, 2014 for TRS with some adjustments. The claims costs were adjusted to reflect the differences between the DCR medical plan and the DB medical plan. These differences include network steerage, different coverage levels and an indexing of the retiree out-of-pocket dollar amounts. To account for higher initial copays, deductibles and out-of-pocket limits, FY14 claims costs were reduced 11.9% for medical and 7.1% for prescription drugs. Retiree out-of-pocket amounts were indexed 0.2% each year to reflect the effect of the deductible leveraging on trend and other plan design features.

No implicit subsidies are assumed. Employees projected to retire with 30 years of service prior to Medicare are valued with commencement deferred to Medicare eligibility, as such members will be required to pay the full plan premium. Explicit subsidies for disabled and normal retirement are determined using the plan-defined percentages of total projected plan costs, again with no implicit subsidy assumed.

## D. Healthcare Reform

Healthcare Reform legislation passed on March 23, 2010 included several provisions with potential implications for the State of Alaska Retiree Health Plan liability. Buck evaluated the impact due to the following provisions; however, only the Patient Centered Outcomes Research Institute fee impact have been included in the valuation results as part of administrative fee.

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

The Plan will be subject to the high cost plan excise tax (Cadillac tax). Based upon guidance available at the time of disclosure, Buck determined the impact to be immaterial based on a blend of pre-Medicare and Medicare retirees and the projected impact to future healthcare cost trends due to the estimated tax.

We have not identified any other specific provisions of healthcare reform 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.

## E. Changes in Methods From the Prior Valuation

There have been no changes in methods since the prior valuation.

## Teachers' Retirement System

## **Defined Contribution Retirement Plan**

## Summary of Actuarial Assumptions and Changes in Assumptions

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

1.	Investment Return / Discount Rate	8.00% per year (geometric), compounded annually, net of exp	enses.
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2. Salary Scale Inflation – 3.12% per year. Productivity – 0.5% per year. See Table 1 for

salary scale rates.

3. Payroll Growth 3.62% per year. (Inflation + Productivity).

4. Total Inflation Total inflation as measured by the Consumer Price Index for urban and

clerical workers for Anchorage is assumed to increase 3.12% annually.

5. Mortality (Pre-termination)\* Based upon the 2010-2013 actual experience. (See Table 2.) 68% of males

rate and 60% of female rates of post-termination mortality. Deaths are

assumed to result from occupational causes 15% of the time.

6. Mortality (Post-termination)\* Based upon the 2010-2013 actual experience. (See Table 3.) 94% of male

and 94% of male and 97% of female rates of RP-2000, 2000 Base Year projected to 2018 with Projection Scale BB, with a 3-year setback for males

and 4-year setback for female.

Disability Mortality in accordance with the RP-2000 Disability Retiree Mortality Table, 2000 Base Year, project to 2018 with Projection Scale BB.

7. Turnover Select and ultimate rates based upon the 2010-2013 actual withdrawal

experience. (See Table 4.)

8. Disability Incidence rates based upon the 2010-2013 actual experience, in accordance

with Table 5. Disabilities are assumed to result from occupational causes

15% of the time.

9. Retirement Retirement rates based upon the 2010-2013 actual experience in accordance

with Table 6. Deferred vested members are assumed to retire at their earliest

unreduced retirement date.

10. Marriage and Age Difference Wives are assumed to be three years younger than husbands. 85% of male

members and 75% of female members are assumed to be married.

11. Dependent Children Benefits to dependent children have been valued assuming members who are

married and between the ages of 25 and 45 have two dependent children.

<sup>\*</sup>The mortality assumptions include an allowance for expected future mortality improvement. The mortality table used was set in 2014 with an Actual Deaths to Expected Deaths ratio of 110%.

# Teachers' Retirement System

## **Defined Contribution Retirement Plan**

## Summary of Actuarial Assumptions and Changes in Assumptions

12. Contribution Refunds

5% 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.

13. Expenses

All expenses are net of the investment return assumption.

14. Per Capita Claims Cost

Sample claims cost rates adjusted to age 65 for FY15 medical benefits are shown below:

	 Medical	Prescription drugs
Pre-Medicare	\$ 12,362	2,624
Medicare Parts A & B	1,657	2,624
Medicare Part B Only	7,920	2,624
Medicare Part D	N/A	507

15. Third Party Administrator Fees

\$193.98 per person per year; assumed trend rate of 5% per year.

16. Base Claims Cost Adjustments

Due to higher initial copays, deductibles, out-of-pocket limits and member cost sharing compared to the DB medical plan, the following cost adjustments are applied to the per capita claims cost rates above:

- 0.881 for the medical plan.
- 0.929 for the prescription drug plan.
- 0.998 for the annual indexing of member cost sharing.

16. 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, 10.0% is applied to the FY15 pre-Medicare medical claims costs to get the FY16 medical claims costs.

Fiscal year	Medical pre-65	Medical post-65	Prescription drugs
2015	10.0%	6.0%	6.0%
2016	9.4	5.9	5.7
2017	8.8	5.8	5.4
2018	8.2	5.7	5.1
2019	7.6	5.6	4.8
2020	7.0	5.6	4.6
2021	6.5	5.6	4.4
2025	5.6	5.6	4.2
2050	4.4	4.0	4.0
2100	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. The model has been populated with assumptions that are specific to the State of Alaska.

# Teachers' Retirement System

## **Defined Contribution Retirement Plan**

## Summary of Actuarial Assumptions and Changes in Assumptions

## 17. Aging Factors

Age	Medical	Prescription drugs
0–44	2.0%	4.5%
45–54	2.5	3.5
55–64	3.5	3.0
65–73	4.0	1.5
74–83	1.5	0.5
84–95	0.5	_
94 +		_

## 18. Retiree Medical Participation

Decrement	due to	disability	Decren

Decrement	due to	retirement

Age	Percent participation	Age	Percent par	ticipation
<56	73.00%	55		40.00%
56	77.50	56		50.00
57	79.75	57		55.00
58	82.00	58		60.00
59	84.25	59		65.00
60	86.50	60		70.00
61	88.75	61		75.00
62	91.00	62		80.00
63	93.25	63		85.00
64	95.50	64		90.00
65+	94.00	65+	Years of Service	
			<15	70.50%
			15-19	75.20
			20-24	79.90
			25-29	89.30
			30+	94.00

<sup>\*</sup>Participation rates reflect the expected plan election rate that varies by reason for decrement, duration that a member may pay full cost prior to Medicare eligibility, and availability of alternative and/or lower cost options, particularly in the Medicare market.

# Teachers' Retirement System

## **Defined Contribution Retirement Plan**

Table 1 Alaska TRS DCR Plan Salary Scale

Years of Service	Percent Increase
0	8.11%
1	7.51
2	6.91
3	6.41
4	6.11
5	6.11
6	5.90
7	5.69
8	5.55
9	5.40
10	5.26
11	5.11
12	4.96
13	4.84
14	4.72
15	4.60
16	4.49
17	4.37
18	4.27
19	4.17
20	4.07
21	3.97
22+	3.87

# Teachers' Retirement System

## **Defined Contribution Retirement Plan**

Table 2
Alaska TRS DCR Plan
Mortality Table (Pre-termination)

Age	Male	Female	Age	Male	Female
20	0.000182	0.000098	55	0.001615	0.000985
21	0.000191	0.000101	56	0.001766	0.001054
22	0.000200	0.000104	57	0.001901	0.001132
23	0.000209	0.000105	58	0.002117	0.001221
24	0.000216	0.000105	59	0.002409	0.001344
25	0.000222	0.000106	60	0.002643	0.001501
26	0.000226	0.000107	61	0.002917	0.001659
27	0.000228	0.000109	62	0.003229	0.001837
28	0.000228	0.000111	63	0.003599	0.002080
29	0.000229	0.000114	64	0.004021	0.002367
30	0.000231	0.000118	65	0.004504	0.002723
31	0.000238	0.000123	66	0.005057	0.003118
32	0.000249	0.000130	67	0.005594	0.003582
33	0.000269	0.000137	68	0.006202	0.004036
34	0.000302	0.000146	69	0.007017	0.004546
35	0.000340	0.000169	70	0.007828	0.005130
36	0.000382	0.000193	71	0.008702	0.005696
37	0.000425	0.000217	72	0.009643	0.006297
38	0.000468	0.000240	73	0.010813	0.006959
39	0.000509	0.000262	74	0.011964	0.007841
40	0.000547	0.000283	75	0.013285	0.008701
41	0.000584	0.000305	76	0.014797	0.009678
42	0.000618	0.000330	77	0.016508	0.010757
43	0.000653	0.000357	78	0.018423	0.011923
44	0.000692	0.000389	79	0.020534	0.013163
45	0.000736	0.000427	80	0.022841	0.014502
46	0.000787	0.000470	81	0.025382	0.015972
47	0.000846	0.000517	82	0.028208	0.017607
48	0.000913	0.000567	83	0.031344	0.019438
49	0.000979	0.000620	84	0.035081	0.021486
50	0.001050	0.000674	85	0.039193	0.023782
51	0.001126	0.000731			
52	0.001208	0.000791			
53	0.001295	0.000855			
54	0.001483	0.000908			

# Teachers' Retirement System

## **Defined Contribution Retirement Plan**

Table 3
Alaska TRS DCR Plan
Mortality Table (Post-termination)

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

# Teachers' Retirement System

## **Defined Contribution Retirement Plan**

## Summary of Actuarial Assumptions and Changes in Assumptions

## Table 4 Alaska TRS DCR Plan Turnover Assumptions

## Select Rates of Turnover During the First 5 Year of Employment

Service	Female	Male
0	0.2180	0.2070
1	0.1870	0.1955
2	0.1540	0.1610
3	0.1320	0.1380
4	0.1100	0.1150
5	0.0805	0.0732

# Ultimate Rates of Turnover After the First 5 Years of Employment

Age	Female	Male	Age	Female	Male
15	0.066811	0.062959	40	0.065647	0.061753
16	0.066811	0.062959	41	0.065516	0.061604
17	0.066811	0.062959	42	0.065386	0.061455
18	0.066811	0.062959	43	0.065175	0.061081
19	0.066811	0.062959	44	0.064965	0.060706
20	0.066811	0.062959	45	0.064754	0.060332
21	0.066811	0.062959	46	0.064544	0.059957
22	0.066811	0.062959	47	0.064333	0.059583
23	0.066773	0.062903	48	0.063975	0.059053
24	0.066735	0.062847	49	0.063617	0.058522
25	0.066697	0.062791	50	0.063259	0.057992
26	0.066659	0.062735	51	0.062901	0.057461
27	0.066621	0.062679	52	0.062543	0.056931
28	0.066583	0.062623	53	0.061818	0.055800
29	0.066544	0.062567	54	0.061093	0.054670
30	0.066506	0.062512	55	0.060367	0.053539
31	0.066467	0.062456	56	0.059642	0.052409
32	0.066429	0.062400	57	0.058917	0.051278
33	0.066351	0.062360	58	0.060021	0.051711
34	0.066273	0.062320	59	0.061125	0.052144
35	0.066194	0.062280	60	0.062230	0.052578
36	0.066116	0.062240	61	0.063334	0.053011
37	0.066038	0.062200	62	0.064438	0.053444
38	0.065908	0.062051	63	0.066292	0.057296
39	0.065777	0.061902	64	0.068146	0.061148
			65+	0.070000	0.065000

# Teachers' Retirement System

## **Defined Contribution Retirement Plan**

Table 5 Alaska TRS DCR Plan Disability Table

Age	Unisex
<19	0.000560
20	0.000560
21	0.000563
22	0.000565
23	0.000574
24	0.000583
25	0.000593
26	0.000602
27	0.000611
28	0.000611
29	0.000612
30	0.000612
31	0.000613
32	0.000613
33	0.000622
34	0.000631
35	0.000641
36	0.000650
37	0.000659
38	0.000674
39	0.000689
40	0.000703
41	0.000718
42	0.000733
43	0.000770
44	0.000806
45	0.000843
46	0.000879
47	0.000916
48	0.000975
49	0.001034
50	0.001093
51	0.001152
52	0.001211
53	0.001356
54	0.001501

# Teachers' Retirement System

## **Defined Contribution Retirement Plan**

# Summary of Actuarial Assumptions and Changes in Assumptions

## Table 6 Alaska TRS DCR Plan Retirement Table

Age	Rate
<54	2.00%
55	3.00
56	3.00
57	3.00
58	3.00
59	3.00
60	5.00
61	5.00
62	10.00
63	5.00
64	5.00
65	25.00
66	25.00
67	25.00
68	20.00
69	20.00
>70	100.00

# Teachers' Retirement System

## **Defined Contribution Retirement Plan**

## Summary of Actuarial Assumptions and Changes in Assumptions

## Changes in Actuarial Assumptions Since the Prior Valuation

	June 30, 2013	June 30, 2014
Salary Scale	Based on actual experience from 2005 to 2009.	Rates adjusted on actual experience from 2010-2013.
Pre-termination Mortality	The 1994 GAM Sex-distinct Table, 1994 Base Year projected to 2013 using Projection Scale AA, adjusted 45% for males, and 55% for females.	68% of male rates and 60% of female rates of PR-2000, 2000 Base Year projected to 2018 with Projection Scale BB.  Deaths are assumed to result from non-occupational causes 85% of the time.
Post-termination Mortality	The 1994 GAM Sex-distinct Table, 1994 Base Year projected to 2013 using Projection Scale AA, setback 3-years for females and 4-years setback for males.	94% of male and 97% female rates of RP-2000, 2000 Base Year projected to 2018 with Projection Scale BB, with a 3-year setback for males and a 4-year setback for females.
Disability Mortality	RP-2000 Disabled Retiree Mortality Table.	RP-2000 Disabled Retiree Mortality, 2000 Base Year projected to 2018, with Scale BB.
Turnover	Based on actual experience from 2005 to 2009. Select and ultimate rates based upon the actual withdrawal experience.	
Disability	Based on actual experience from 2005 to 2009 and stop rates at earliest retirement age.  Incidence rates based on 2010-2013 a Male/Female rates increased and chan Disabilities are assumed to result fror causes 15% of the time.	
Retirement	Rates were adjusted based on actual experience from 2005 to 2009.	Retirement rates based upon the 2010-2013 actual experience.
Part-time Service	0.60 years of credited service per year.	Part-time employees are assumed to earn 0.75 years of

June 30, 2013 June 30, 2014

credited service per year.

Health Cost Trend

Fiscal year	Medical pre-65	Medical post-65	Prescription drugs	Fiscal year	Medical pre-65	Medical post-65	Prescription drugs
2014	8.7%	6.4%	6.3%	2015	10.0%	6.0%	6.0%
2015	8.5	6.3	6.2	2016	9.4	5.9	5.7
2016	8.0	6.3	6.2	2017	8.8	5.8	5.4
2017	7.5	6.2	6.1	2018	8.2	5.7	5.1
2018	7.0	6.1	6.0	2019	7.6	5.6	4.8
2019	6.6	6.1	5.8	2020	7.0	5.6	4.6
2020	6.4	6.1	5.8	2021	6.5	5.6	4.4
2025	6.0	6.0	5.7	2025	5.6	5.6	4.2
2050	5.0	5.0	5.0	2050	4.4	4.0	4.0
2100	4.5	4.5	4.5	2100	4.4	4.0	4.0

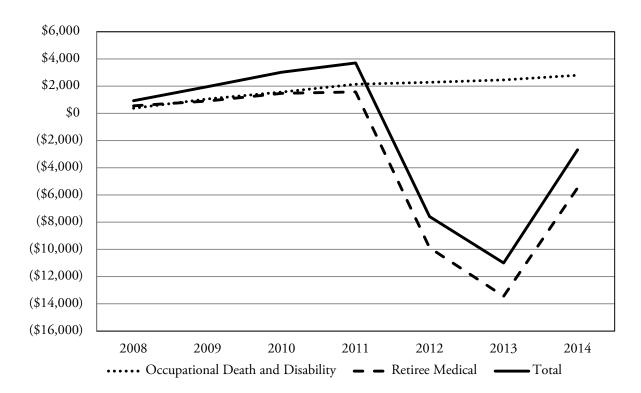
Trend Rate for Retired Member Medical Contribution

FY 13 Trend Assumption		FY 14 Trend Assumption		
Fiscal year:		Fiscal year:		
2014	8.2%	2015	7.09	
2015	8.0	2016	6.6	
2016	7.6	2017	6.2	
2017	7.2	2018	5.8	
2018	6.7	2019	5.4	
2019	6.4	2020	5.0	
2025	5.9	2025	4.1	
2050	5.0	2050	4.0	
2100	4.5	2100	4.0	

# Teachers' Retirement System Defined Contribution Retirement Plan Occupational Death and Disability and Retiree Medical Benefits Funding Excess/(Unfunded Liability) (In thousands)

Actuarial Valuation Year Ended June 30	Occupational Death and Disability	Retiree Medical	Total Funding Excess/ (Unfunded Liability)	Funded Ratio
2008	\$ 376	\$ 551	\$ 927	215.73%
2009	1,057	907	1,964	234.5
2010	1,559	1,465	3,024	223.5
2011	2,136	1,572	3,708	196.1
2012	2,285	(9,874)	(7,589)	55.0
2013	2,452	(13,444)	(10,992)	50.3
2014	2,797	(5,482)	(2,685)	83.5

# 7-YEAR TREND OF FUNDING EXCESS (In thousands)



# Teachers' Retirement System Defined Contribution Retirement Plan Occupational Death and Disability and Retiree Medical Benefits Employer Contribution Rates

Fiscal Year	Actuarial Valuation Year Ended June 30	Occupational Death and Disability	Retiree Medical	Total Annual Required	Adopted
2008	N/A	0.56%	0.99%	1.55%	1.55%
2009	N/A	0.62	0.99	1.61	1.61
2010	2007	0.32	1.03	1.35	1.35
2011	2008	0.28	0.68	0.96	0.96
2012	2009	_	0.58	0.58	0.58
2013	2010	_	0.49	0.49	0.49
2014	2011	_	0.47	0.47	0.47
2015	2012	_	2.04	2.04	2.04
2016	2013	_	2.04	2.04	2.04
2017	2014	_	1.05	1.05	1.05

Valuations are used to set contribution rates in future years.

# Teachers' Retirement System Defined Contribution Retirement Plan Occupational Death and Disability and Retiree Medical Benefits Schedule of Active Member Valuation Data

Valuation Date	Number	Annual Earnings <sup>1</sup> (In thousands)	Annual Average Earnings	Percent Increase/ (Decrease) in Average Earnings	Number of Participating Employers
June 30, 2014	3,547	\$ 219,701	\$ 61,940	2.4%	58
June 30, 2013	3,272	197,944	60,496	3.5	58
June 30, 2012	3,057	178,761	58,476	4.7	58
June 30, 2011	2,708	151,269	55,860	5.6	58
June 30, 2010	2,246	118,813	52,900	5.7	58
June 30, 2009	1,792	89,708	50,061	6.4	58
June 30, 2008	1,198	56,369	47,053	6.2	58
June 30, 2007	641	28,410	44,322	_	58
June 30, 2006	_	_	_	_	58

<sup>&</sup>lt;sup>1</sup> Annual earnings are the annualized earnings for the fiscal year ending on the valuation date.

# **Actuarial Section**

# Teachers' Retirement System Defined Contribution Retirement Plan Occupational Death and Disability Solvency Test (In thousands)

	Occupational Death and Disability Aggregate Accrued Liability For:					of Accrued vered by As	
Valuation Date	(1) Active Member Contributions	(2) Inactive Members	(3) Active Members (Employer- Financed Portion)	Occupational Death and Disability Valuation Assets	(1)	(2)	(3)
June 30, 2014 <sup>1</sup>	\$ —	\$ —	\$ 23	\$ 2,820	100.0%	100.0%	100.0%
June 30, 2013	_	_	80	2,532	100.0	100.0	100.0
June 30, 2012	_	_	63	2,348	100.0	100.0	100.0
June 30, 2011	_	_	57	2,193	100.0	100.0	100.0
June 30, 2010 <sup>1</sup>	_	_	18	1,577	100.0	100.0	100.0
June 30, 2009 <sup>1</sup>	_	_	14	1,071	100.0	100.0	100.0
June 30, 2008	_	_	44	420	100.0	100.0	100.0
June 30, 2007	_	_	16	_	100.0	100.0	0.0
June 30, 2006	_	_	_	_	N/A	N/A	N/A

<sup>&</sup>lt;sup>1</sup> Change in Assumptions

# **Actuarial Section**

# Teachers' Retirement System Defined Contribution Retirement Plan Retiree Medical Solvency Test (In thousands)

	Re Aggregate			of Accrued l			
Valuation Date	(1) Active Member Contributions	(2) Inactive Members	(3) Active Members (Employer- Financed Portion)	Retiree Medical Valuation Assets	(1)	(2)	(3)
June 20,2014 <sup>1</sup>	\$ —	\$ —	\$ 16,273	\$ 10,791	100.0%	100.0%	66.3%
June 20,2013	_	_	22,058	8,614	100.0	100.0	39.1
June 20,2012 <sup>1</sup>	_	_	16,811	6,937	100.0	100.0	41.3
June 30, 2011	_	—	3,801	5,373	100.0	100.0	100.0
June 30, 2010 <sup>1</sup>	_	_	2,430	3,895	100.0	100.0	100.0
June 30, 2009 <sup>1</sup>	_	—	1,446	2,353	100.0	100.0	100.0
June 30, 2008 <sup>1</sup>	_	_	757	1,308	100.0	100.0	100.0
June 30, 2007	_	_	358	597	100.0	100.0	100.0
June 30, 2006	_	_	_	_	N/A	N/A	N/A

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

<sup>&</sup>lt;sup>1</sup> Change in Assumptions

# Teachers' Retirement System

# Defined Contribution Retirement Plan Summary of Plan Provisions and Changes in Plan Provisions

## 1. Effective Date

July 1, 2006, with amendments through June 30, 2014.

#### 2. Administration of Plan

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

The Alaska Retirement Management Board prescribes policies, adopts regulations, invests the funds, and performs other activities necessary to carry out the provisions of the Plan.

## 3. Employers Included

Currently there are 58 employers participating in the TRS DCR Plan, including the State of Alaska, 53 school districts, and four other eligible organizations.

## 4. Membership

An employee of a participating employer who first enters service on or after July 1, 2006, or a member of the defined benefit plan who works for an employer who began participation on or after July 1, 2006, and meets the following criteria is a member in the Plan:

- Permanent full-time or part-time elementary or secondary teachers, school nurses, or a person in a position requiring a teaching certificate as a condition of hire in a public school of the State of Alaska, the Department of Education and Early Development or in the Department of Labor and Workforce Development.
- Full-time or part-time teachers at the University of Alaska or persons occupying full-time administrative positions requiring academic standing who are not in the University's Optional Retirement Plan.

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

#### 5. Member Contributions

There are no member contributions for the occupational death & disability and retiree medical benefits.

# Teachers' Retirement System

# Defined Contribution Retirement Plan Summary of Plan Provisions and Changes in Plan Provisions

### 6. Retiree Medical

- Member must retire directly from the plan to be eligible for retiree medical coverage. Normal retirement eligibility is the earlier of a) 30 years of service or b) Medicare eligible and 10 years of service.
- No retiree medical benefits are provided until normal retirement eligibility. The member's premium is 100% until they are Medicare eligible.
- Coverage cannot be denied except for failure to pay premium.
- Members who are receiving disability benefits or survivors who are receiving monthly survivor benefits are not
  eligible until the member meets, or would have met if he/she had lived, the normal retirement eligibility
  requirements.
- The plan's coverage is supplemental to Medicare.
- The Medicare-eligible premium will be based on the member's years of service. The percentage of premium paid by the member is as follows:

	Percent of Premium
Years of Service	Paid by Member
Less than 15 years	30.00%
15 – 19	25.00
20 - 24	20.00
25 – 29	15.00
30 years or more	10.00

## 7. Occupational Disability Benefits

- Benefit is 40% of salary at date of disability.
- Disability Benefit Adjustment: The disability benefit is increased by 75% of the cost of living increase in the preceding calendar year of 9%, whichever is less.
- Member earns service while on occupational disability.
- Benefits cease when the member becomes eligible for normal retirement at Medicare-eligible age and 10 years of service, or at any age with 30 years of service.
- No retiree medical benefits are provided until normal retirement eligibility. The member's premium is 100% until they are Medicare eligible. Medicare-eligible premiums follow the service-based schedule above.

# Teachers' Retirement System

# Defined Contribution Retirement Plan

## Summary of Plan Provisions and Changes in Plan Provisions

## 8. Occupational Death Benefits

- Benefit is 40% of salary.
- Survivor's Pension Adjustment: A survivor's pension is increased by 50% of the cost of living increase in the preceding calendar year or 6%, whichever is less, if the recipient is at least age 60 on July 1, or under age 60 if the recipient has been receiving TRS benefits for at least 8 years as of July 1.
- Benefits cease when the member would have become eligible for normal retirement.
- The period during which the survivor is receiving benefits is counted as service credit toward retiree medical benefits.
- No retiree medical benefits are provided until the member would have been eligible for normal retirement.
   The surviving spouse's premium is 100% until the member would have been Medicare eligible. Medicare-eligible premiums follow the service-based schedule above.

## **Changes Since the Prior Valuation**

Effective for the June 30, 2014 valuation, the Board adopted the changes to the demographic and economic assumptions recommended by the actuary, based on the results of an experience analysis performed on the population experience from July 1, 2009 to June 30, 2013. The changes in assumptions were adopted by the Board during the December 2014 Board meeting. We also updated the Healthcare Cost Trend and Contribution Trend assumptions.

Due to plan clarifications, the PRPA was added to the occupational death and disability benefits.

