Larry Langer
Principal, Retirement
Buck Consultants, LLC.
Lary.Langer@xerox.com
tel 312.846.3669

April 3, 2016

## VIA EMAIL

David J. Kershner
Principal, Retirement Buck Consultants, LLC.
David.Kershner@xerox.com
tel 602.864.3507

Mr. John Boucher
Deputy Commissioner
Department of Administration
State of Alaska
333 Willoughby Avenue
6th Floor State Office Building
Juneau, AK 99811-0208

## RE: Actuarial Analysis for Fiscal Note for Proposed Increase in the PERS Uniform Contribution Rate under SB 209

## Dear John:

As requested, we are providing the following information for the fiscal note for SB 209. SB 209 provides for an increase in the PERS uniform contribution rate.

## Summary of Provisions

PERS is funded by Employer, State, and Member Contributions in accordance with the funding policy adopted by the Alaska Retirement Management Board (Board) and as required by Alaska state statutes. The funding objective for PERS is to pay required contributions that remain level as a percent of total compensation. The established funding policy objective is that the required contributions be sufficient to pay the Normal Costs of active plan members, System expenses, and amortize the Unfunded Actuarial Accrued Liability as a level percentage of payroll over a closed 25 -year period and as required by Alaska state statutes. The closed 25 -year period was established effective June 30, 2014. Peace Officer/Firefighter members of PERS contribute $7.50 \%$ of pay while all other PERS members contribute $6.75 \%$ of pay. Pursuant to AS 39.35.255 effective July 1,2008 , each PERS employer pays a uniform contribution rate of up to $22 \%$ of total payroll. This amount is inclusive of DCR plan costs. Pursuant to AS 39.35.280, the State contributes an additional amount, which, when combined with member and employer contributions, is sufficient to pay the Plan's past service liability at the contribution rate adopted by the Board. SB 209 increases the $22 \%$ uniform contribution rates paid by employers, which results in a decrease in the State Assistance contributions. The change in funding policy maintains the total contributions to PERS, so the year-to-year funded ratio remains unchanged.

The provisions of SB 209 provide for increases in the uniform contribution rate limit from $22 \%$ of total payroll to:
i) 22 percent before July 1, 2016;
ii) 24.5 percent after June 30, 2016, and before July 1, 2017;
iii) 25.5 percent after June 30, 2017, and before July 1, 2018;
iv) 26.5 percent after June 30, 2018.

For purposes of this analysis, we have assumed that if the funding policy calculation, net of member contributions, is less than the uniform contribution rate limit, the employer contribution rate is limited to the calculated contribution rate. That is, the employers could pay less than the uniform contribution limited rates shown above.

## Summary of Analysis

The attached exhibits demonstrate the estimated impact of SB 209 on the financial projections of PERS. The highlights include:

- The employer uniform contribution rates have been increased to the point that, if all the actuarial assumptions are met, the State Assistance contribution is eliminated for several years. Employer contributions are projected to be less than the ultimate rate of $26.5 \%$ of pay for almost all years of the projection.
- As seen on the exhibit on page four, the State and Employers are projected to pay $\$ 19.7$ billion between FY 2017 and FY 2039. Currently, the State is projected to pay $50.3 \%$ of that amount as an employer, and $13.8 \%$ of that amount through the State Assistance contributions. Under SB 209, the State is projected to pay $58.0 \%$ of the $\$ 19.7$ billion as an employer and $0.6 \%$ through the State Assistance contributions. Overall, the State's total contributions for FY 2017 through FY 2039 (as an employer and through State Assistance contributions) are expected to decrease by $\$ 1.1$ billion.
- The amount of the State Assistance contribution will vary from year to year as the $26.50 \%$ rate is just one to two percent higher than the Board funding policy rate. One year of asset returns less than expected could quickly necessitate the need for a State Assistance contribution.


## Other Observations

The projections in the exhibit implicitly assume that employers will pay the increased contributions without repercussions to other portions of their budgets. Some employers may resort to reducing payroll and/or headcounts to accommodate fixed budgets. This could have the effect of partially mitigating the impact of this proposal.

Our analysis does not reflect the impact on projected contribution rates due to the different timing of Employer and State Assistance contributions. However, this effect would be minimal and is not expected to materially change the outcome of our analysis.

## Basis for Analysis

The assumptions and methods used in this analysis are the same as those described in the PERS draft actuarial valuation report as of June 30, 2015 dated January 12, 2016.
For purposes of determining the split between State and non-state employers, we made use of the projected FY 2017 payroll figures based on the June 30, 2015 valuation. We have assumed that $58.4 \%$ of total payroll is State payroll. We assumed these percentages would remain constant in future years.

This study includes only costs due to the shifting of contributions from the State to employers. It does not include other costs that may be incurred by employers outside of PERS.

Projected DCR contributions are not directly impacted by SB 209, but they are included in the exhibit on page four. The exhibits on page five and six do not include the DCR contributions.
Future actuarial measurements and projections may differ from the current measurements presented in this letter due to such factors as: plan experience different from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law.

Larry Langer is an Associate of the Society of Actuaries and David Kershner is a Fellow of the Society of Actuaries. Both are Enrolled 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 letter. This letter has been prepared in accordance with all applicable Actuarial Standards of Practice.

Please let us know if you need any further information.
Sincerely,


Larry Langer, ASA, EA, MAAA, FCA Principal and Consulting Actuary
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David J. Kershner, FSA, EA, MAAA, FCA Principal and Consulting Actuary

State of Alaska - PERS
Financial Projections (\$ in Thousands)
Based on Draft June 30, 2015 Actuarial Valuation*
Impact of SB 209 to Increase Employer Contribution Rates


* FY 2017 amounts are based on June 30, 2014 actuarial valuation

Stan totals differ due to rounding
State assumed to be $58.4 \%$ of total employer contributions
,

State of Alaska PERS
Financial Projections (\$ in Thousands)
Based on 2015 Actuarial Valuation Results, $0 \%$ Population Growth for Payroll
Baseline

| Fiscal Year End | FY 16 Investment Return $8.00 \%$ Investment Return of $8.00 \%$ for $\mathbf{F Y} 17$ and beyond. |  |  |  |  |  |  |  | Flow Amounts During Following 12 Months |  |  |  |  |  |  |  | $\begin{gathered} \text { Deferred } \\ \text { Asset } \\ \text { Gain/(Loss) } \end{gathered}$ | $\begin{gathered} \text { Ending } \\ \text { Actuarial } \\ \text { Assets } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Actuarial } \\ \text { Assets } \end{gathered}$ | $\begin{gathered} \text { Accrued } \\ \text { Liability } \end{gathered}$ | $\begin{gathered} \text { Funding } \\ \text { Ratio } \end{gathered}$ | $\begin{aligned} & \text { Surplus } \\ & \text { (Deficit) } \end{aligned}$ | $\begin{gathered} \text { Total } \\ \text { Salaries } \end{gathered}$ | $\underset{\substack{\text { Erb Rate }}}{\text { Cthen }}$ | State Assistance* Ctb Rate | $\begin{gathered} \text { DCR } \\ \text { CtbRate } \end{gathered}$ | $\begin{gathered} \text { Total } \\ \text { Ctb Rate } \end{gathered}$ | $\begin{aligned} & \text { DB Contribu } \\ & \hline \text { Employer } \end{aligned}$ | State Assistance | ude DCR co | $\frac{\text { Itributions) }}{\text { Total }}$ | $\begin{aligned} & \text { Benefit } \\ & \text { Payments } \end{aligned}$ | $\begin{gathered} \mathrm{Net} \\ \text { Contribs } \end{gathered}$ | Investment Earnings |  |  |
| 2016 | \$16,173,459 | \$20,688,112 | 78.2\% | (\$4,514,653) | \$2,281,060 | 17.39\% | 5.55\% | 4.61\% | 22.00\% | \$396,676 | \$126,520 | \$99,708 | \$622,904 | \$1,154,510 | $(\$ 531,606)$ | \$1,223,352 | (\$453,476) | \$16,714,047 |
| 2017 | 16,714,047 | 21,396,077 | 78.1\% | $(4,682,030)$ | 2,343,538 | 17.65\% | 4.23\% | 4.36\% | 22.01\% | 413,634 | 99,166 | 95,756 | 608,556 | 1,233,001 | $(624,445)$ | 1,276,276 | $(302,317)$ | 17,214,719 |
| 2018 | 17,214,719 | 22,061,253 | 78.0\% | $(4,846,534)$ | 2,410,994 | 17.28\% | 1.44\% | 4.72\% | 22.00\% | 416,620 | 34,718 | 91,802 | 543,140 | 1,309,546 | (766,406) | 1,319,970 | $(151,159)$ | 17,617,125 |
| 2019 | 17,617,125 | 22,707,675 | 77.6\% | $(5,090,550)$ | 2,481,805 | 16.91\% | 1.94\% | 5.09\% | 22.00\% | 419,673 | 48,147 | 87,983 | 555,803 | 1,385,206 | $(829,403)$ | 1,362,079 | 0 | 17,998,642 |
| 2020 | 17,998,642 | 23,294,878 | 77.3\% | $(5,296,236)$ | 2,555,313 | 16.56\% | 2.38\% | 5.44\% | 22.00\% | 423,160 | 60,817 | 84,100 | 568,077 | 1,460,336 | $(892,259)$ | 1,402,493 | 0 | 18,508,876 |
| 2021 | 18,508,876 | 23,836,176 | 77.7\% | $(5,327,300)$ | 2,631,109 | 16.23\% | 2.39\% | 5.77\% | 22.00\% | 427,029 | 62,883 | 80,340 | 570,252 | 1,535,417 | $(965,165)$ | 1,440,285 | 0 | 18,983,995 |
| 2022 | 18,983,995 | 24,328,894 | 78.0\% | $(5,344,899)$ | 2,711,488 | 15.91\% | 2.43\% | 6.09\% | 22.00\% | 431,398 | 65,889 | 76,539 | 573,826 | 1,612,726 | $(1,038,900)$ | 1,475,266 | 0 | 19,420,362 |
| 2023 | 19,420,362 | 24,767,570 | 78.4\% | $(5,347,208)$ | 2,794,017 | 15.60\% | 2.50\% | 6.40\% | 22.00\% | 435,867 | 69,851 | 72,635 | 578,353 | 1,689,949 | $(1,111,596)$ | 1,507,227 | 0 | 19,815,993 |
| 2024 | 19,815,993 | 25,147,993 | 78.8\% | $(5,332,000)$ | 2,879,779 | 15.31\% | 2.59\% | 6.69\% | 22.00\% | 440,894 | 74,586 | 68,910 | 584,390 | 1,764,918 | $(1,180,528)$ | 1,536,117 | 0 | 20,171,582 |
| 2025 | 20,171,582 | 25,468,830 | 79.2\% | $(5,297,248)$ | 2,968,351 | 15.04\% | 2.68\% | 6.96\% | 22.00\% | 446,440 | 79,551 | 53,511 | 579,502 | 1,838,613 | $(1,259,111)$ | 1,561,437 | 0 | 20,473,908 |
| 2026 | 20,473,908 | 25,726,951 | 79.6\% | $(5,253,043)$ | 3,060,673 | 14.79\% | 2.84\% | 7.21\% | 22.00\% | 452,674 | 86,923 | 49,232 | 588,829 | 1,898,110 | $(1,309,281)$ | 1,583,757 | 0 | 20,748,384 |
| 2027 | 20,748,384 | 25,920,281 | 80.0\% | $(5,171,897)$ | 3,160,652 | 14.56\% | 2.93\% | 7.44\% | 22.00\% | 460,191 | 92,607 | 45,303 | 598,101 | 1,966,536 | $(1,368,435)$ | 1,603,398 | 0 | 20,983,347 |
| 2028 | 20,983,347 | 26,046,267 | 80.6\% | $(5,062,920)$ | 3,262,922 | 14.34\% | 3.05\% | 7.66\% | 22.00\% | 467,903 | 99,519 | 41,679 | 609,101 | 2,033,717 | (1,424,616) | 1,620,048 | 0 | 21,178,779 |
| 2029 | 21,178,779 | 26,102,014 | 81.1\% | $(4,923,235)$ | 3,368,800 | 14.14\% | 3.19\% | 7.86\% | 22.00\% | 476,348 | 107,465 | 37,867 | 621,680 | 2,098,381 | $(1,476,701)$ | 1,633,748 | 0 | 21,335,826 |
| 2030 | 21,335,826 | 26,084,879 | 81.8\% | $(4,749,053)$ | 3,478,335 | 13.95\% | 3.34\% | 8.05\% | 22.00\% | 485,228 | 116,176 | 34,163 | 635,567 | 2,160,075 | $(1,524,508)$ | 1,644,585 | 0 | 21,455,904 |
| 2031 | 21,455,904 | 25,992,659 | 82.5\% | $(4,536,755)$ | 3,592,642 | 13.78\% | 3.49\% | 8.22\% | 22.00\% | 495,066 | 125,383 | 30,954 | 651,403 | 2,220,676 | $(1,569,273)$ | 1,652,608 | 0 | 21,539,239 |
| 2032 | 21,539,239 | 25,820,860 | 83.4\% | $(4,281,621)$ | 3,711,298 | 13.62\% | 3.65\% | 8.38\% | 22.00\% | 505,479 | 135,462 | 27,635 | 668,576 | 2,277,121 | $(1,608,545)$ | 1,657,957 | 0 | 21,588,651 |
| 2033 | 21,588,651 | 25,569,489 | 84.4\% | $(3,980,838)$ | 3,832,702 | 13.48\% | 3.81\% | 8.52\% | 22.00\% | 516,648 | 146,027 | 24,485 | 687,160 | 2,329,169 | $(1,642,009)$ | 1,660,854 | 0 | 21,607,497 |
| 2034 | 21,607,497 | 25,236,192 | 85.6\% | $(3,628,695)$ | 3,960,305 | 13.35\% | 4.01\% | 8.65\% | 22.00\% | 528,701 | 158,808 | 21,554 | 709,063 | 2,372,980 | $(1,663,917)$ | 1,661,877 | 0 | 21,605,457 |
| 2035 | 21,605,457 | 24,823,720 | 87.0\% | $(3,218,263)$ | 4,094,196 | 13.23\% | 4.19\% | 8.77\% | 22.00\% | 541,662 | 171,547 | 18,550 | 731,759 | 2,410,102 | $(1,678,343)$ | 1,661,544 | , | 21,588,657 |
| 2036 | 21,588,657 | 24,333,089 | 88.7\% | $(2,744,432)$ | 4,234,254 | 13.12\% | 4.41\% | 8.88\% | 22.00\% | 555,534 | 186,730 | 15,749 | 758,013 | 2,440,956 | $(1,682,943)$ | 1,660,535 | 0 | 21,566,250 |
| 2037 | 21,566,250 | 23,764,886 | 90.7\% | $(2,198,636)$ | 4,387,749 | 13.02\% | 4.62\% | 8.98\% | 22.00\% | 571,285 | 202,714 | 13,247 | 787,246 | 2,463,847 | $(1,676,601)$ | 1,659,567 | 0 | 21,549,215 |
| 2038 | 21,549,215 | 23,123,142 | 93.2\% | $(1,573,927)$ | 4,546,100 | 12.94\% | 4.92\% | 9.06\% | 22.00\% | 588,265 | 223,668 | 10,996 | 822,929 | 2,474,785 | $(1,651,856)$ | 1,659,992 | 0 | 21,557,352 |
| 2039 | 21,557,352 | 22,414,057 | 96.2\% | $(856,705)$ | 4,711,692 | 12.87\% | 5.68\% | 9.13\% | 22.00\% | 606,395 | 267,624 | 9,095 | 883,114 | 2,475,998 | $(1,592,884)$ | 1,664,745 | 0 | 21,629,213 |
| 2040 | 21,629,213 | 21,642,924 | 99.9\% | $(13,711)$ | 4,884,747 | 0.58\% | 0.00\% | 9.19\% | 9.77\% | 28,331 | 0 | 7,474 | 35,805 | 2,463,285 | $(2,427,480)$ | 1,626,884 | 0 | 20,828,616 |
| 2041 | 20,828,616 | 20,820,013 | 100.0\% | 8,603 | 5,065,731 | 0.08\% | 0.00\% | 9.23\% | 9.31\% | 4,052 | 0 | 5,842 | 9,894 | 2,441,004 | $(2,431,110)$ | 1,562,768 | 0 | 19,960,274 |
| 2042 | 19,960,274 | 19,951,563 | 100.0\% | 8,711 | 5,254,277 | 0.06\% | 0.00\% | 9.27\% | 9.33\% | 3,153 | 0 | 5,008 | 8,161 | 2,406,307 | $(2,398,146)$ | 1,494,710 | 0 | 19,056,838 |
| 2043 | 19,056,838 | 19,047,438 | 100.0\% | 9,400 | 5,446,533 | 0.05\% | 0.00\% | 9.29\% | 9.34\% | 2,724 | 0 | 3,621 | 6,345 | 2,360,682 | $(2,354,337)$ | 1,424,306 | 0 | 18,126,807 |
| 2044 | 18,126,807 | 18,116,556 | 100.1\% | 10,251 | 5,646,847 | 0.03\% | 0.00\% | 9.32\% | 9.35\% | 1,694 | 0 | 3,189 | 4,883 | 2,300,997 | (2,296,114) | 1,352,386 | 0 | 17,183,079 |
| 2045 | 17,183,079 | 17,171,749 | 100.1\% | 11,330 | 5,853,492 | 0.03\% | 0.00\% | 9.33\% | 9.36\% | 1,756 | 0 | 2,204 | 3,960 | 2,232,901 | $(2,228,941)$ | 1,279,751 | 0 | 16,233,889 |
|  |  |  |  |  |  |  |  |  | Totals: \$11,544,479 |  | \$2,842,782 | \$1,219,131 | \$15,606,392 |  |  |  |  |  |

The FY16 and FY17 Employer/State contribution rates don't match the September 26, 2014 and October 7, 2015 Allocation of Additional Contribution letters due to updated projected Total Salaries
The FY17 State assistance contribution was allocated $100 \%$ to pension
Prior service contribution rates set to be greater than or equal to $0 \%$ for both pension and medical
The employer contribution rate for Occupational Death \& Disability and Retiree Medical is $1.40 \%$ for Police/Fire and $1.39 \%$ for Others, determined as of June 30, 2014
The contributions amounts above reflect the impact of the DCR rates above, but the DCR dollar amounts are not shown.

* Note that the rates shown here are for employers and for the State Assistance contributions. To determine the amount of contribution for the State as an employer, the Employer rate shown should be applied to State payroll.


## State of Alaska PERS

Financial Projections (\$ in Thousands)
Based on 2015 Actuarial Valuation Results, 0\% Population Growth for Payroll Impact of SB 209 to Increase Employer Contribution Rates

| FiscalYear End |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\begin{gathered} \text { Deferred } \\ \text { Asset } \\ \text { Gain/(Loss) } \end{gathered}$ | EndingActuarial Assets |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Valuation Ar } \\ & \hline \text { Actuarial } \\ & \text { Assets } \end{aligned}$ | $\begin{aligned} & \text { Accrued } \\ & \text { Liability } \end{aligned}$ | $\begin{aligned} & \text { Funding } \\ & \text { Ratio } \end{aligned}$ | $\begin{aligned} & \text { Surplus } \\ & \text { (Deficit) } \end{aligned}$ | $\begin{gathered} \text { Total } \\ \text { Salaries } \end{gathered}$ | $\underset{\substack{\mathrm{Er}^{*} \\ \text { Ctb Rate }}}{ }$ | State Assistance* Ctb Rate |  | $\begin{gathered} \text { Total } \\ \text { CtbRate } \end{gathered}$ | DB Contributions (does not include DCR contributions) |  |  |  | $\begin{aligned} & \text { Benefit } \\ & \text { Payments } \end{aligned}$ | $\begin{gathered} \text { Net } \\ \text { Contribs } \end{gathered}$ | Investment Earnings |  |  |
|  |  |  |  |  |  |  |  |  |  | Employer | State Assistance | Employee | $\stackrel{T}{T}+$ |  |  |  |  |  |
| 2016 | \$16,173,459 | \$20,688,112 | 78.2\% | (\$4,514,653) | \$2,281,060 | 17.39\% | 5.55\% | 4.61\% | 22.00\% | \$396,676 | \$126,520 | \$99,708 | \$622,904 | \$1,154,510 | $(\$ 531,606)$ | \$1,223,352 | (\$453,476) | \$16,714,047 |
| 2017 | 16,714,047 | 21,396,077 | 78.1\% | $(4,682,030)$ | 2,343,538 | 20.14\% | 1.74\% | 4.36\% | 24.50\% | 471,989 | 40,778 | 95,756 | 608,523 | 1,233,001 | $(624,478)$ | 1,276,276 | $(302,317)$ | 17,214,719 |
| 2018 | 17,214,719 | 22,061,253 | 78.0\% | $(4,846,534)$ | 2,410,994 | 18.72\% | 0.00\% | 4.72\% | 23.44\% | 451,338 | 0 | 91,802 | 543,140 | 1,309,546 | $(766,406)$ | 1,319,970 | $(151,159)$ | 17,617,125 |
| 2019 | 17,617,125 | 22,707,675 | 77.6\% | $(5,090,550)$ | 2,481,805 | 18.85\% | 0.00\% | 5.09\% | 23.94\% | 467,820 | 0 | 87,983 | 555,803 | 1,385,206 | $(829,403)$ | 1,362,079 | 0 | 17,998,642 |
| 2020 | 17,998,642 | 23,294,878 | 77.3\% | $(5,296,236)$ | 2,555,313 | 18.94\% | 0.00\% | 5.44\% | 24.38\% | 483,976 | 0 | 84,100 | 568,076 | 1,460,336 | $(892,260)$ | 1,402,493 | 0 | 18,508,876 |
| 2021 | 18,508,876 | 23,836,176 | 77.7\% | $(5,327,300)$ | 2,631,109 | 18.62\% | 0.00\% | 5.77\% | 24.39\% | 489,912 | 0 | 80,340 | 570,252 | 1,535,417 | $(965,165)$ | 1,440,285 | 0 | 18,983,995 |
| 2022 | 18,983,995 | 24,328,894 | 78.0\% | $(5,344,899)$ | 2,711,488 | 18.34\% | 0.00\% | 6.09\% | 24.43\% | 497,287 | 0 | 76,539 | 573,826 | 1,612,726 | $(1,038,900)$ | 1,475,266 | 0 | 19,420,362 |
| 2023 | 19,420,362 | 24,767,570 | 78.4\% | $(5,347,208)$ | 2,794,017 | 18.10\% | 0.00\% | 6.40\% | 24.50\% | 505,717 | 0 | 72,635 | 578,352 | 1,689,949 | $(1,111,597)$ | 1,507,227 | 0 | 19,815,993 |
| 2024 | 19,815,993 | 25,147,993 | 78.8\% | $(5,332,000)$ | 2,879,779 | 17.90\% | 0.00\% | 6.69\% | 24.59\% | 515,481 | 0 | 68,910 | 584,391 | 1,764,918 | $(1,180,527)$ | 1,536,117 | 0 | 20,171,582 |
| 2025 | 20,171,582 | 25,468,830 | 79.2\% | $(5,297,248)$ | 2,968,351 | 17.72\% | 0.00\% | 6.96\% | 24.68\% | 525,992 | 0 | 53,511 | 579,503 | 1,838,613 | $(1,259,110)$ | 1,561,437 |  | 20,473,908 |
| 2026 | 20,473,908 | 25,726,951 | 79.6\% | ( $5,253,043$ ) | 3,060,673 | 17.63\% | 0.00\% | 7.21\% | 24.84\% | 539,597 | 0 | 49,232 | 588,829 | 1,898,110 | $(1,309,281)$ | 1,583,757 | 0 | 20,748,384 |
| 2027 | 20,748,384 | 25,920,281 | 80.0\% | $(5,171,897)$ | 3,160,652 | 17.49\% | 0.00\% | 7.44\% | 24.93\% | 552,798 | 0 | 45,303 | 598,101 | 1,966,536 | $(1,368,435)$ | 1,603,398 | 0 | 20,983,347 |
| 2028 | 20,983,347 | 26,046,267 | 80.6\% | $(5,062,920)$ | 3,262,922 | 17.39\% | 0.00\% | 7.66\% | 25.05\% | 567,422 | 0 | 41,679 | 609,101 | 2,033,717 | $(1,424,616)$ | 1,620,048 | 0 | 21,178,779 |
| 2029 | 21,178,779 | 26,102,014 | 81.1\% | $(4,923,235)$ | 3,368,800 | 17.33\% | 0.00\% | 7.86\% | 25.19\% | 583,813 | 0 | 37,867 | 621,680 | 2,098,381 | $(1,476,701)$ | 1,633,748 | 0 | 21,335,826 |
| 2030 | 21,335,826 | 26,084,879 | 81.8\% | $(4,749,053)$ | 3,478,335 | 17.29\% | 0.00\% | 8.05\% | 25.34\% | 601,404 | 0 | 34,163 | 635,567 | 2,160,075 | $(1,524,508)$ | 1,644,585 | 0 | 21,455,904 |
| 2031 | 21,455,904 | 25,992,659 | 82.5\% | $(4,536,755)$ | 3,592,642 | 17.27\% | 0.00\% | 8.22\% | 25.49\% | 620,449 | 0 | 30,954 | 651,403 | 2,220,676 | $(1,569,273)$ | 1,652,608 | 0 | 21,539,239 |
| 2032 | 21,539,239 | 25,820,860 | 83.4\% | $(4,281,621)$ | 3,711,298 | 17.27\% | 0.00\% | 8.38\% | 25.65\% | 640,941 | 0 | 27,635 | 668,576 | 2,277,121 | $(1,608,545)$ | 1,657,957 | 0 | 21,588,651 |
| 2033 | 21,588,651 | 25,569,489 | 84.4\% | $(3,980,838)$ | 3,832,702 | 17.29\% | 0.00\% | 8.52\% | 25.81\% | 662,674 | 0 | 24,485 | 687,159 | 2,329,169 | $(1,642,010)$ | 1,660,854 | 0 | 21,607,497 |
| 2034 | 21,607,497 | 25,236,192 | 85.6\% | $(3,628,695)$ | 3,960,305 | 17.36\% | 0.00\% | 8.65\% | 26.01\% | 687,509 | 0 | 21,554 | 709,063 | 2,372,980 | $(1,663,917)$ | 1,661,877 | 0 | 21,605,457 |
| 2035 | 21,605,457 | 24,823,720 | 87.0\% | $(3,218,263)$ | 4,094,196 | 17.42\% | 0.00\% | 8.77\% | 26.19\% | 713,209 | 0 | 18,550 | 731,759 | 2,410,102 | $(1,678,343)$ | 1,661,544 | 0 | 21,588,657 |
| 2036 | 21,588,657 | 24,333,089 | 88.7\% | $(2,744,432)$ | 4,234,254 | 17.53\% | 0.00\% | 8.88\% | 26.41\% | 742,265 | 0 | 15,749 | 758,014 | 2,440,956 | $(1,682,942)$ | 1,660,535 | 0 | 21,566,250 |
| 2037 | 21,566,250 | 23,764,886 | 90.7\% | $(2,198,636)$ | 4,387,749 | 17.52\% | 0.12\% | 8.98\% | 26.50\% | 768,734 | 5,265 | 13,247 | 787,246 | 2,463,847 | $(1,676,601)$ | 1,659,567 | 0 | 21,549,215 |
| 2038 | 21,549,215 | 23,123,142 | 93.2\% | $(1,573,927)$ | 4,546,100 | 17.44\% | 0.42\% | 9.06\% | 26.50\% | 792,840 | 19,094 | 10,996 | 822,930 | 2,474,785 | $(1,651,855)$ | 1,659,992 | 0 | 21,557,352 |
| 2039 | 21,557,352 | 22,414,057 | 96.2\% | $(856,705)$ | 4,711,692 | 17.37\% | 1.18\% | 9.13\% | 26.50\% | 818,421 | 55,598 | 9,095 | 883,114 | 2,475,998 | $(1,592,884)$ | 1,664,745 | 0 | 21,629,213 |
| 2040 | 21,629,213 | 21,642,924 | 99.9\% | $(13,711)$ | 4,884,747 | 0.58\% | 0.00\% | 9.19\% | 9.77\% | 28,332 | 0 | 7,474 | 35,806 | 2,463,285 | $(2,427,479)$ | 1,626,884 | 0 | 20,828,616 |
| 2041 | 20,828,616 | 20,820,013 | 100.0\% | 8,603 | 5,065,731 | 0.08\% | 0.00\% | 9.23\% | 9.31\% | 4,053 | 0 | 5,842 | 9,895 | 2,441,004 | $(2,431,109)$ | 1,562,768 | 0 | 19,960,274 |
| 2042 | 19,960,274 | 19,951,563 | 100.0\% | 8,711 | 5,254,277 | 0.06\% | 0.00\% | 9.27\% | 9.33\% | 3,153 | 0 | 5,008 | 8,161 | 2,406,307 | $(2,398,146)$ | 1,494,710 | 0 | 19,056,838 |
| 2043 | 19,056,838 | 19,047,438 | 100.0\% | 9,400 | 5,446,533 | 0.05\% | 0.00\% | 9.29\% | 9.34\% | 2,723 | 0 | 3,621 | 6,344 | 2,360,682 | $(2,354,338)$ | 1,424,306 | 0 | 18,126,807 |
| 2044 | 18,126,807 | 18,116,556 | 100.1\% | 10,251 | 5,646,847 | 0.03\% | 0.00\% | 9.32\% | 9.35\% | 1,694 | 0 | 3,189 | 4,883 | 2,300,997 | (2,296,114) | 1,352,386 | 0 | 17,183,079 |
| 2045 | 17,183,079 | 17,171,749 | 100.1\% | 11,330 | 5,853,492 | 0.03\% | 0.00\% | 9.33\% | 9.36\% | 1,756 | 0 | 2,204 | 3,960 | 2,232,901 | $(2,288,941)$ | 1,279,751 | 0 | 16,233,889 |

The FY16 and FY17 Employer/State contribution rates don't match the September 26, 2014 and October 7,2015 Allocation of Additional Contribution letters due to updated projected Total Salaries
The FY17 State assistance contribution was allocated $100 \%$ to pension
Prior service contribution rates set to be greater than or equal to 0\% for both pension and medical
The employer contribution rate for Occupational Death \& Disability and Retiree Medical is $1.40 \%$ for Police/Fire and $1.39 \%$ for Others, determined as of June 30, 2014
The contributions amounts above reflect the impact of the DCR rates above, but the DCR dollar amounts are not shown.

* Note that the rates shown here are for employers and for the State Assistance contributions. To determine the amount of contribution for the State as an employer, the Employer rate shown should be applied to State payroll.


[^0]:    cc: Ms. Kathy Lea, State of Alaska
    Mr. Kevin Worley, State of Alaska
    Ms. Melissa Bissett, Buck Consultants
    Mr. Todd Kanaster, Buck Consultants

