State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
Relating to the actuarial experience analysis for the Public Employees' Retirement System, Teachers' Retirement System, Judicial Retirement System, and Alaska National Guard and Naval Militia Retirement System

Resolution 2018-19

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee to the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policy for the funds of the Public Employees' Retirement System, Teachers' Retirement System, Judicial Retirement System, and Alaska National Guard and Naval Militia Retirement System; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, AS 37.10.220(a)(8) requires the Board to coordinate with the retirement system administrator to conduct an annual actuarial valuation of each retirement system to determine system assets, accrued liabilities and funding ratios, and to certify to the appropriate budgetary authority of each employer in the system an appropriate contribution rate for normal costs and an appropriate contribution rate for liquidating any past service liability;

WHEREAS, AS 37.10.220(a)(9) requires the Board to conduct an experience analyses of the retirement systems not less than once every four years, except for health cost assumptions which shall be reviewed annually, and that the results of all actuarial assumptions prepared under this paragraph shall be reviewed and certified by a second actuary before presentation to the board;

NOW THEREFORE BE IT RESOLVED BY THE ALASKA RETIREMENT MANAGEMENT BOARD, that the Public Employees' Retirement System's, Teachers' Retirement System's, Judicial Retirement System's, and Alaska National Guard and Naval Militia Retirement System's Actuarial Experience Analysis as of June 30, 2017, as well as the assumption and method changes recommended therein, and attached as Exhibit A, right hand column, prepared by Buck be approved.

DATED in Juneau, Alaska this 11th day of January, 2019.

Chair

ATTEST:

Secretary

# State of Alaska

## Summary of Current and Proposed Assumptions/Methods from 2017 Experience Study

Prepared by Buck for the December 12, 2018 Actuarial Committee Meeting

### 1. Economic Assumptions

| Assumption | Current | Proposed |
|---|---|---|
| Inflation Rate | 3.12% | 2.50%[1] |
| Real Rate of Return | 4.88% | 4.88%[1] |
| Investment Return[2] | 8.00% net of all expenses | 7.38% net of investment expenses |
| Payroll Growth Rate | Inflation + 50 bp (3.62%) | Inflation + 25 bp (2.75%) |
| Salary Increase Rates[3] | See Table 1 | See Table 1 |
| Trend Rates | See Table 2 | See Table 2 |

### 2. Demographic Assumptions

| Assumption | Current | Proposed |
|---|---|---|
| Pre-Retirement Mortality - Healthy | | |
| • PERS and NGNMRS | 60% (male) and 65% (female) of post-termination healthy mortality rates | 100% (male and female) of RP-2014 employee table with MP-2017 generational improvement |
| • TRS and JRS | 68% (male) and 60% (female) of post-termination healthy mortality rates | 100% (male and female) of RP-2014 white collar employee table with MP-2017 generational improvement |
| Post-Termination Mortality - Healthy | | |
| • PERS and NGNMRS | 96% of RP-2000, 2000 Base Year projected to 2018 with Scale BB | 91% (male) and 96% (female) of RP-2014 healthy annuitant table with MP-2017 generational improvement |
| • TRS and JRS | 94% (male) and 97% (female) of RP-2000, 2000 Base Year projected to 2018 with Scale BB, 3-yr setback for males and 4-yr setback for females | 93% (male) and 90% (female) of RP-2014 white collar healthy annuitant table with MP-2017 generational improvement |
| Post-Retirement Mortality - Disabled | RP-2000 Disabled Retiree Table, 2000 Base Year projected to 2018 with Scale BB | RP-2014 disabled table with MP-2017 generational improvement |
| Retirement - Unreduced | See Table 3 | See Table 3 |
| Retirement - Reduced | See Table 4 | See Table 4 |
| Retirement – Deferred Vested | Earliest age eligible for unreduced retirement benefit | No change |
| Withdrawal - Select[4] | See Table 5 | See Table 5 |
| Withdrawal – Ultimate[5] | See Table 6 | See Table 6 |
| Disability[5] | See Table 7 | See Table 7 |
| Occupational-Related Death/Disability | | |
| • PERS | 50% (P/F), 70% (Others) | 40% (P/F), 75% (Others) |
| • TRS | 15% | No change |

[1] Selected by the ARMB.
[2] For PERS, TRS and JRS. No change is being proposed to the 7% investment return net of investment expenses for NGNMRS.
[3] For PERS and TRS only. No changes are being proposed to the salary increase rates for JRS.
[4] For PERS DCR only. No changes are being proposed to the select withdrawal rates for all other plans.
[5] For PERS, TRS and NGNMRS. No changes are being proposed to the ultimate withdrawal rates for JRS.

| | | |
|---|---|---|
| Withdrawal of Contributions at Termination[6] | | |
| • PERS | 15% (P/F), 10% (Others) | 10% (P/F), 5% (Others) |
| • TRS | 5% | 0% |
| Percent Covering Dependent Spouse at Retirement Without Dual Coverage[7] | | |
| • PERS P/F | 85% (male), 60% (female) | 75% (male), 50% (female) |
| • PERS Others | 75% (male), 70% (female) | 65% (male), 60% (female) |
| • TRS | 85% (male), 75% (female) | 65% (male), 60% (female) |
| Age Difference | 3 years older (male), 3 years younger (female) | No change (male), 2 years younger (female) |
| Alaska Residency | | |
| • PERS P/F | 65% | No change |
| • PERS Others | 70% | No change |
| • TRS | 60% | No change |
| Part-Time Service Earned During the Year | | |
| • PERS P/F | 1.00 | No change |
| • PERS Others | 0.65 | 0.75 |
| • TRS | 0.75 | No change |
| Healthcare Participation - DB[8] | | |
| • If System-Paid | 100% when first eligible | No change |
| • If not System-Paid | 10% when first eligible | 20% when first eligible |
| Healthcare Participation - DCR | See Table 8 | See Table 8 |
| Healthcare Morbidity | See Table 9 | See Table 9 |
| Rehires[9] | | |
| • Pension | 14.23% (PERS), 18.49% (TRS) | 18.77% (PERS), 15.57% (TRS) |
| • Healthcare | 17.24% (PERS), 10.39% (TRS) | 17.09% (PERS), 12.03% (TRS) |
| Number of Dependent Children[8] | Benefits valued only for members currently covering dependent children. Coverage for dependent children assumed through age 23 (for life if dependent child is disabled). | No change |
| Number of Unused Sick Days[10] | 4.5 days for each year of service | No change |
| Active Population Growth[11] | 0% | No change |
| Form of Payment[12] | 100% elect lump sum (actives), 100% elect annuity (deferred vested) | 70% of actives and deferred vested elect lump sum |

[6] In all cases, the assumption is 100% if member is not vested at termination.
[7] Proposed assumption is set to include an allowance for future covered children. Applicable for healthcare benefits only (no change is being proposed for pension benefits).
[8] For PERS and TRS.
[9] For DB only. Percentages shown are loads to the Normal Cost.
[10] For TRS only.
[11] For PERS and TRS DB/DCR overall.
[12] For NGNMRS only.

## 3. Funding Methods

| Method | Current | Proposed |
|---|---|---|
| Healthcare Normal Cost and Actuarial Accrued Liability | Level Dollar | Level % of Pay |
| Administrative Expenses[13] | | |
| • PERS pension | None | 4.9% |
| • PERS healthcare | None | 7.9% |
| • TRS pension | None | 5.1% |
| • TRS healthcare | None | 10.0% |
| • PERS DCR ODD | None | 0.5% |
| • PERS DCR RM | None | 0.4% |
| • TRS DCR ODD | None | 3.9% |
| • TRS DCR RM | None | 1.5% |
| Unfunded Actuarial Accrued Liability (UAAL) Amortization Period[14] | 25-year closed period established effective 6/30/14 | For UAAL that exists on 6/30/18 prior to proposed assumptions/methods, no change to 25-year closed period that was established effective 6/30/14. For effects on UAAL at 6/30/18 due to proposed assumptions/methods, and all future years' changes in UAAL, separate 25-year closed periods. Level % of pay amortization is unchanged. |

**Note:** The proposed change in UAAL amortization period can be made at any time. The change does not have to be made effective 6/30/18 in conjunction with the 2017 experience study.

[13] Percentages are loads to Normal Cost. The percentages shown above are different than the percentages shown in our 9/19/18 meeting materials for two reasons: (i) we are now using a more refined calculation versus an estimated approach used previously; and (ii) we have excluded ASO fees from the administrative expenses based on additional information provided to us since the 9/19/18 meeting. The percentages shown above are based on the average of administrative expenses paid from the trust in FY16 and FY17. For the 6/30/18 valuations, we will use the average of the amounts paid from the trust in FY17 and FY18.

[14] For PERS and TRS DB only. No changes are being proposed for all other plans.

**Note:** Tables 1 to 9 provide the detailed rates related only to the assumptions for which we are proposing changes based on the 2017 experience study.

**Table 1 – Salary Increase Rates (DB and DCR)**

| | PERS P/F | | PERS Others | | TRS | |
|---|---|---|---|---|---|---|
| Years of Service | Current | Proposed | Current | Proposed | Current | Proposed |
| 0 | 9.66% | 7.75% | 8.55% | 6.75% | 8.11% | 6.75% |
| 1 | 8.66% | 7.25% | 7.36% | 6.25% | 7.51% | 6.25% |
| 2 | 7.16% | 6.75% | 6.35% | 5.75% | 6.91% | 5.75% |
| 3 | 7.03% | 6.25% | 6.11% | 5.25% | 6.41% | 5.25% |
| 4 | 6.91% | 5.75% | 5.71% | 4.75% | 6.11% | 4.75% |
| 5 | 6.41% | 5.25% | Age Based | 4.25% | 6.11% | 4.25% |
| 6 | 5.66% | 4.75% | Age Based | 3.75% | 5.90% | 3.75% |
| 7 | 4.92% | 4.25% | Age Based | 3.65% | 5.69% | 3.65% |
| 8 | 4.92% | 3.75% | Age Based | 3.55% | 5.55% | 3.55% |
| 9 | 4.92% | 3.65% | Age Based | 3.45% | 5.40% | 3.45% |
| 10 | 4.92% | 3.55% | Age Based | 3.35% | 5.26% | 3.35% |
| 11 | 4.92% | 3.45% | Age Based | 3.25% | 5.11% | 3.25% |
| 12 | 4.92% | 3.35% | Age Based | 3.15% | 4.96% | 3.15% |
| 13 | 4.92% | 3.25% | Age Based | 3.05% | 4.84% | 3.05% |
| 14 | 4.92% | 3.15% | Age Based | 2.95% | 4.72% | 2.95% |
| 15 | 4.92% | 3.05% | Age Based | 2.85% | 4.60% | 2.85% |
| 16 | 4.92% | 2.95% | Age Based | 2.75% | 4.49% | 2.75% |
| 17 | 4.92% | 2.85% | Age Based | 2.75% | 4.37% | 2.75% |
| 18 | 4.92% | 2.75% | Age Based | 2.75% | 4.27% | 2.75% |
| 19 | 4.92% | 2.75% | Age Based | 2.75% | 4.17% | 2.75% |
| 20+ | 4.92% | 2.75% | Age Based | 2.75% | 4.07%* | 2.75% |

* Current assumption for TRS is 3.97% at 21 years of service and 3.87% at 22+ years of service.

**Table 2 – Trend Rates**

**Current**

| Fiscal Year | Medical Pre-65 | Medical Post-65 | Prescription Drugs | RDS/EGWP | Retiree Contributions |
|---|---|---|---|---|---|
| 2018 | 8.0% | 5.5% | 9.0% | 6.5% | 8.0% |
| 2019 | 7.5% | 5.5% | 8.5% | 6.2% | 7.6% |
| 2020 | 7.0% | 5.4% | 8.0% | 6.0% | 7.2% |
| 2021 | 6.5% | 5.4% | 7.5% | 5.7% | 6.8% |
| 2022 | 6.3% | 5.4% | 7.1% | 5.5% | 6.5% |
| 2023 | 6.1% | 5.4% | 6.8% | 5.4% | 6.3% |
| 2024 | 5.9% | 5.4% | 6.4% | 5.2% | 6.0% |
| 2025 | 5.8% | 5.4% | 6.1% | 5.0% | 5.9% |
| 2026 | 5.6% | 5.4% | 5.7% | 4.8% | 5.6% |
| 2027 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2028 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2029 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2030 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2031 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2032 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2033 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2034 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2035 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2036 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2037 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2038 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2039 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2040 | 5.4% | 5.4% | 5.4% | 4.7% | 5.4% |
| 2041 | 5.2% | 5.2% | 5.2% | 4.6% | 5.2% |
| 2042 | 5.1% | 5.1% | 5.1% | 4.5% | 5.1% |
| 2043 | 5.0% | 5.0% | 5.0% | 4.5% | 5.0% |
| 2044 | 4.8% | 4.8% | 4.8% | 4.4% | 4.8% |
| 2045 | 4.7% | 4.7% | 4.7% | 4.3% | 4.7% |
| 2046 | 4.5% | 4.5% | 4.5% | 4.2% | 4.5% |
| 2047 | 4.4% | 4.4% | 4.4% | 4.2% | 4.4% |
| 2048 | 4.3% | 4.3% | 4.3% | 4.1% | 4.3% |
| 2049 | 4.1% | 4.1% | 4.1% | 4.0% | 4.1% |
| 2050+ | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% |

**Table 2 – Trend Rates**

**Proposed**

| Fiscal Year | Medical Pre-65 | Medical Post-65 | Prescription Drugs/EGWP | RDS | Retiree Contributions |
|---|---|---|---|---|---|
| 2018 | 8.0% | 5.5% | 9.0% | 4.7% | 8.0% |
| 2019 | 7.5% | 5.5% | 8.5% | 4.7% | 7.6% |
| 2020 | 7.0% | 5.4% | 8.0% | 4.7% | 7.2% |
| 2021 | 6.5% | 5.4% | 7.5% | 4.6% | 6.8% |
| 2022 | 6.3% | 5.4% | 7.1% | 4.6% | 6.5% |
| 2023 | 6.1% | 5.4% | 6.8% | 4.6% | 6.3% |
| 2024 | 5.9% | 5.4% | 6.4% | 4.6% | 6.0% |
| 2025 | 5.8% | 5.4% | 6.1% | 4.6% | 5.9% |
| 2026 | 5.6% | 5.4% | 5.7% | 4.6% | 5.6% |
| 2027 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2028 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2029 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2030 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2031 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2032 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2033 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2034 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2035 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2036 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2037 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2038 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2039 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2040 | 5.4% | 5.4% | 5.4% | 4.5% | 5.4% |
| 2041 | 5.3% | 5.3% | 5.3% | 4.5% | 5.3% |
| 2042 | 5.2% | 5.2% | 5.2% | 4.5% | 5.2% |
| 2043 | 5.1% | 5.1% | 5.1% | 4.5% | 5.1% |
| 2044 | 5.1% | 5.1% | 5.1% | 4.5% | 5.1% |
| 2045 | 5.0% | 5.0% | 5.0% | 4.5% | 5.0% |
| 2046 | 4.9% | 4.9% | 4.9% | 4.5% | 4.9% |
| 2047 | 4.8% | 4.8% | 4.8% | 4.5% | 4.8% |
| 2048 | 4.7% | 4.7% | 4.7% | 4.5% | 4.7% |
| 2049 | 4.6% | 4.6% | 4.6% | 4.5% | 4.6% |
| 2050+ | 4.5% | 4.5% | 4.5% | 4.5% | 4.5% |

| Getzen Model Components of Ultimate Trend Rates | Current | Proposed |
|---|---|---|
| Inflation | 3.12% | 2.50% |
| Real GDP | 0.88%[15] | 2.00% |
| Ultimate Trend Rate | 4.00% | 4.50% |

[15] The real GDP growth rate of 0.88% has been used to set the ultimate trend rates since the 6/30/14 valuations.

**Table 3 – Retirement Rates (Unreduced)**

**PERS P/F**

| | Female | | Male | |
|---|---|---|---|---|
| **Age** | **Current** | **Proposed** | **Current** | **Proposed** |
| <47 | 0.060000 | 0.060000 | 0.080000 | 0.088000 |
| 47 | 0.150000 | 0.150000 | 0.080000 | 0.088000 |
| 48 | 0.150000 | 0.150000 | 0.130000 | 0.143000 |
| 49 | 0.150000 | 0.150000 | 0.130000 | 0.143000 |
| 50 | 0.150000 | 0.150000 | 0.150000 | 0.165000 |
| 51 | 0.150000 | 0.150000 | 0.150000 | 0.165000 |
| 52 | 0.150000 | 0.150000 | 0.185000 | 0.203500 |
| 53 | 0.150000 | 0.150000 | 0.185000 | 0.203500 |
| 54 | 0.250000 | 0.250000 | 0.185000 | 0.203500 |
| 55 | 0.200000 | 0.200000 | 0.250000 | 0.275000 |
| 56 | 0.150000 | 0.150000 | 0.250000 | 0.275000 |
| 57 | 0.150000 | 0.150000 | 0.250000 | 0.275000 |
| 58 | 0.150000 | 0.150000 | 0.250000 | 0.275000 |
| 59 | 0.150000 | 0.150000 | 0.250000 | 0.275000 |
| 60 | 0.250000 | 0.250000 | 0.300000 | 0.330000 |
| 61 | 0.200000 | 0.200000 | 0.250000 | 0.275000 |
| 62 | 0.300000 | 0.300000 | 0.250000 | 0.275000 |
| 63 | 0.500000 | 0.500000 | 0.250000 | 0.275000 |
| 64 | 0.500000 | 0.500000 | 0.200000 | 0.220000 |
| 65 | 0.500000 | 0.500000 | 0.200000 | 0.220000 |
| 66 | 0.500000 | 0.500000 | 0.250000 | 0.275000 |
| 67 | 0.500000 | 0.500000 | 0.500000 | 0.550000 |
| 68 | 0.500000 | 0.500000 | 0.500000 | 0.550000 |
| 69 | 0.500000 | 0.500000 | 0.500000 | 0.550000 |
| 70+ | 1.000000 | 1.000000 | 1.000000 | 1.000000 |

**Table 3 – Retirement Rates (Unreduced)**

**PERS Others**

| Age | Female | | Male | |
|---|---|---|---|---|
| | Current (rounded) | Proposed (rounded) | Current (rounded) | Proposed (rounded) |
| <50 | 0.10 | 0.11 | 0.10 | 0.11 |
| 50 | 0.35 | 0.39 | 0.30 | 0.33 |
| 51 | 0.35 | 0.39 | 0.33 | 0.36 |
| 52 | 0.35 | 0.39 | 0.33 | 0.36 |
| 53 | 0.35 | 0.39 | 0.33 | 0.36 |
| 54 | 0.35 | 0.39 | 0.35 | 0.38 |
| 55 | 0.30 | 0.33 | 0.30 | 0.33 |
| 56 | 0.20 | 0.22 | 0.20 | 0.22 |
| 57 | 0.18 | 0.20 | 0.20 | 0.22 |
| 58 | 0.18 | 0.20 | 0.20 | 0.22 |
| 59 | 0.18 | 0.20 | 0.20 | 0.22 |
| 60 | 0.21 | 0.23 | 0.20 | 0.22 |
| 61 | 0.20 | 0.22 | 0.20 | 0.22 |
| 62 | 0.20 | 0.22 | 0.20 | 0.22 |
| 63 | 0.20 | 0.22 | 0.20 | 0.22 |
| 64 | 0.20 | 0.22 | 0.20 | 0.22 |
| 65 | 0.26 | 0.29 | 0.23 | 0.25 |
| 66 | 0.26 | 0.29 | 0.25 | 0.28 |
| 67 | 0.22 | 0.24 | 0.20 | 0.22 |
| 68 | 0.22 | 0.24 | 0.23 | 0.25 |
| 69 | 0.22 | 0.24 | 0.25 | 0.28 |
| 70 | 0.22 | 0.24 | 0.25 | 0.28 |
| 71 | 0.22 | 0.24 | 0.25 | 0.28 |
| 72 | 0.25 | 0.28 | 0.25 | 0.28 |
| 73 | 0.25 | 0.28 | 0.25 | 0.28 |
| 74 | 0.35 | 0.39 | 0.25 | 0.28 |
| 75-79 | 0.50 | 0.55 | 0.50 | 0.55 |
| 80-89 | 0.50 | 1.00 | 0.50 | 1.00 |
| 90+ | 1.00 | 1.00 | 1.00 | 1.00 |

**Table 3 – Retirement Rates (Unreduced)**

**TRS**

| | Female | | Male | |
|---|---|---|---|---|
| **Age** | **Current** | **Proposed** | **Current** | **Proposed** |
| <45 | 0.03 | 0.03 | 0.03 | 0.03 |
| 45 | 0.05 | 0.05 | 0.05 | 0.05 |
| 46 | 0.08 | 0.08 | 0.05 | 0.05 |
| 47 | 0.08 | 0.08 | 0.05 | 0.05 |
| 48 | 0.08 | 0.08 | 0.05 | 0.05 |
| 49 | 0.08 | 0.08 | 0.05 | 0.05 |
| 50 | 0.13 | 0.14 | 0.05 | 0.05 |
| 51 | 0.12 | 0.13 | 0.08 | 0.08 |
| 52 | 0.12 | 0.13 | 0.15 | 0.15 |
| 53 | 0.13 | 0.14 | 0.15 | 0.15 |
| 54 | 0.14 | 0.15 | 0.15 | 0.15 |
| 55 | 0.16 | 0.17 | 0.20 | 0.20 |
| 56 | 0.16 | 0.17 | 0.17 | 0.17 |
| 57 | 0.16 | 0.17 | 0.15 | 0.15 |
| 58 | 0.16 | 0.17 | 0.20 | 0.20 |
| 59 | 0.22 | 0.23 | 0.20 | 0.20 |
| 60 | 0.22 | 0.23 | 0.25 | 0.25 |
| 61 | 0.22 | 0.23 | 0.18 | 0.18 |
| 62 | 0.20 | 0.21 | 0.18 | 0.18 |
| 63 | 0.20 | 0.21 | 0.18 | 0.18 |
| 64 | 0.25 | 0.26 | 0.18 | 0.18 |
| 65 | 0.20 | 0.21 | 0.30 | 0.30 |
| 66 | 0.20 | 0.21 | 0.25 | 0.25 |
| 67 | 0.20 | 0.21 | 0.25 | 0.25 |
| 68 | 0.25 | 0.26 | 0.25 | 0.25 |
| 69 | 0.25 | 0.26 | 0.35 | 0.35 |
| 70 | 0.25 | 0.26 | 0.30 | 0.30 |
| 71 | 0.35 | 0.37 | 0.30 | 0.30 |
| 72 | 0.35 | 0.37 | 0.30 | 0.30 |
| 73 | 0.35 | 0.37 | 0.30 | 0.30 |
| 74 | 0.35 | 0.37 | 0.30 | 0.30 |
| 75-79 | 0.50 | 0.50 | 0.50 | 0.50 |
| 80-84 | 0.50 | 1.00 | 0.50 | 1.00 |
| 85+ | 1.00 | 1.00 | 1.00 | 1.00 |

**Table 4 – Retirement Rates (Reduced)**

**PERS P/F**

| | Female | | Male | |
|---|---|---|---|---|
| **Age** | **Current** | **Proposed** | **Current** | **Proposed** |
| <50 | N/A | | N/A | |
| 50 | 0.087041 | 0.050000 | 0.087041 | 0.050000 |
| 51 | 0.085580 | 0.070000 | 0.085580 | 0.050000 |
| 52 | 0.072383 | 0.070000 | 0.072383 | 0.070000 |
| 53 | 0.076688 | 0.070000 | 0.076688 | 0.070000 |
| 54 | 0.075561 | 0.350000 | 0.075561 | 0.070000 |
| 55 | 0.077429 | 0.080000 | 0.077429 | 0.070000 |
| 56 | 0.077106 | 0.080000 | 0.077106 | 0.070000 |
| 57 | 0.076730 | 0.080000 | 0.076730 | 0.070000 |
| 58 | 0.076820 | 0.080000 | 0.076820 | 0.070000 |
| 59 | 0.200000 | 0.200000 | 0.200000 | 0.200000 |
| 60+ | N/A | N/A | N/A | N/A |

**PERS Others**

| | Female | | Male | |
|---|---|---|---|---|
| **Age** | **Current** | **Proposed** | **Current** | **Proposed** |
| <50 | N/A | N/A | N/A | N/A |
| 50 | 0.06 | 0.08 | 0.04 | 0.06 |
| 51 | 0.06 | 0.08 | 0.04 | 0.06 |
| 52 | 0.08 | 0.08 | 0.06 | 0.09 |
| 53 | 0.08 | 0.08 | 0.06 | 0.09 |
| 54 | 0.14 | 0.15 | 0.14 | 0.20 |
| 55 | 0.06 | 0.06 | 0.05 | 0.06 |
| 56 | 0.06 | 0.06 | 0.05 | 0.06 |
| 57 | 0.06 | 0.06 | 0.05 | 0.06 |
| 58 | 0.06 | 0.06 | 0.05 | 0.06 |
| 59 | 0.16 | 0.20 | 0.14 | 0.15 |
| 60+ | N/A | N/A | N/A | N/A |

**TRS**

| | Female | | Male | |
|---|---|---|---|---|
| **Age** | **Current** | **Proposed** | **Current** | **Proposed** |
| <50 | N/A | N/A | N/A | N/A |
| 50 | 0.08 | 0.10 | 0.08 | 0.10 |
| 51 | 0.08 | 0.10 | 0.08 | 0.10 |
| 52 | 0.08 | 0.10 | 0.08 | 0.10 |
| 53 | 0.08 | 0.12 | 0.08 | 0.10 |
| 54 | 0.16 | 0.12 | 0.16 | 0.10 |
| 55 | 0.08 | 0.08 | 0.08 | 0.15 |
| 56 | 0.08 | 0.08 | 0.08 | 0.10 |
| 57 | 0.08 | 0.08 | 0.08 | 0.10 |
| 58 | 0.08 | 0.08 | 0.08 | 0.10 |
| 59 | 0.16 | 0.08 | 0.16 | 0.10 |
| 60+ | N/A | N/A | N/A | N/A |

**Table 4 – Retirement Rates (NGNMRS)**

| | Current | | Proposed | |
|---|---|---|---|---|
| Age | Male | Female | Male | Female |
| <51 | 10% | 10% | 13% | 13% |
| 51-52 | 10% | 10% | 13% | 13% |
| 53 | 12% | 12% | 15% | 15% |
| 54 | 15% | 15% | 20% | 20% |
| 55 | 20% | 20% | 25% | 25% |
| 56 | 25% | 25% | 35% | 35% |
| 57 | 30% | 30% | 40% | 40% |
| 58 | 35% | 35% | 45% | 45% |
| 59 | 40% | 40% | 50% | 50% |
| 60 | 45% | 45% | 55% | 55% |
| 61-64 | 50% | 50% | 60% | 60% |
| 65+ | 100% | 100% | 100% | 100% |

**Table 5 – Withdrawal Rates (Select)**

**PERS DCR P/F**

| Years of Service | Female | | Male | |
|---|---|---|---|---|
| | Current | Proposed (rounded) | Current | Proposed (rounded) |
| 0 | 0.17 | 0.21 | 0.18 | 0.19 |
| 1 | 0.13 | 0.16 | 0.14 | 0.15 |
| 2 | 0.11 | 0.14 | 0.10 | 0.11 |
| 3 | 0.10 | 0.13 | 0.09 | 0.09 |
| 4 | 0.09 | 0.11 | 0.08 | 0.08 |

**PERS DCR Others**

| Years of Service | Female | | Male | |
|---|---|---|---|---|
| | Current | Proposed (rounded) | Current | Proposed (rounded) |
| 0 | 0.27 | 0.28 | 0.23 | 0.24 |
| 1 | 0.21 | 0.22 | 0.20 | 0.21 |
| 2 | 0.17 | 0.18 | 0.16 | 0.17 |
| 3 | 0.14 | 0.14 | 0.13 | 0.13 |
| 4 | 0.18 | 0.12 | 0.09 | 0.09 |

**Table 6 – Withdrawal Rates (Ultimate)**

**PERS P/F (5 or more years of service)**

| | Female | | Male | | | Female | | Male | |
|---|---|---|---|---|---|---|---|---|---|
| **Age** | **Current** | **Proposed** | **Current** | **Proposed** | **Age** | **Current** | **Proposed** | **Current** | **Proposed** |
| 20 | 0.080000 | 0.068000 | 0.040894 | 0.047000 | 45 | 0.033802 | 0.032800 | 0.019012 | 0.018100 |
| 21 | 0.080000 | 0.068000 | 0.040894 | 0.047000 | 46 | 0.033527 | 0.032500 | 0.019506 | 0.018500 |
| 22 | 0.080000 | 0.068000 | 0.040894 | 0.047000 | 47 | 0.033251 | 0.032300 | 0.020000 | 0.019000 |
| 23 | 0.080000 | 0.068000 | 0.038801 | 0.044600 | 48 | 0.032862 | 0.031900 | 0.023333 | 0.022200 |
| 24 | 0.080000 | 0.068000 | 0.036708 | 0.042200 | 49 | 0.032474 | 0.031500 | 0.026667 | 0.025300 |
| 25 | 0.080000 | 0.068000 | 0.034616 | 0.039800 | 50 | 0.032085 | 0.064200 | 0.030000 | 0.031800 |
| 26 | 0.080000 | 0.068000 | 0.032523 | 0.037400 | 51 | 0.031581 | 0.063200 | 0.040000 | 0.042400 |
| 27 | 0.080000 | 0.068000 | 0.030430 | 0.035000 | 52 | 0.030941 | 0.061900 | 0.040000 | 0.042400 |
| 28 | 0.078000 | 0.066300 | 0.028877 | 0.033200 | 53 | 0.030201 | 0.060400 | 0.040000 | 0.042400 |
| 29 | 0.076000 | 0.064600 | 0.027324 | 0.031400 | 54 | 0.060402 | 0.030000 | 0.040000 | 0.042400 |
| 30 | 0.074000 | 0.062900 | 0.025771 | 0.029600 | 55 | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 31 | 0.072000 | 0.061200 | 0.024218 | 0.027900 | 56 | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 32 | 0.070000 | 0.059500 | 0.022665 | 0.026100 | 57 | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 33 | 0.063077 | 0.053600 | 0.021722 | 0.025000 | 58 | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 34 | 0.056154 | 0.047700 | 0.020779 | 0.023900 | 59 | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 35 | 0.049231 | 0.041800 | 0.019836 | 0.022800 | 60 | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 36 | 0.042308 | 0.036000 | 0.018893 | 0.021700 | 61 | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 37 | 0.035385 | 0.030100 | 0.017950 | 0.020600 | 62 | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 38 | 0.035234 | 0.029900 | 0.017866 | 0.020500 | 63 | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 39 | 0.035082 | 0.029800 | 0.017782 | 0.020400 | 64 | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 40 | 0.034930 | 0.033900 | 0.017699 | 0.016800 | 65 | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 41 | 0.034779 | 0.033700 | 0.017615 | 0.016700 | 65+ | 0.060402 | 0.020000 | 0.040000 | 0.030000 |
| 42 | 0.034627 | 0.033600 | 0.017531 | 0.016700 | | | | | |
| 43 | 0.034352 | 0.033300 | 0.018025 | 0.017100 | | | | | |
| 44 | 0.034077 | 0.033100 | 0.018519 | 0.017600 | | | | | |

**Table 6 – Withdrawal Rates (Ultimate)**

**PERS Others (5 or more years of service)**

| | Female | | Male | | | Female | | Male | |
|---|---|---|---|---|---|---|---|---|---|
| Age | Current | Proposed | Current | Proposed | Age | Current | Proposed | Current | Proposed |
| 20 | 0.136735 | 0.129900 | 0.095000 | 0.114000 | 45 | 0.045685 | 0.048000 | 0.039880 | 0.043900 |
| 21 | 0.136735 | 0.129900 | 0.095000 | 0.114000 | 46 | 0.043828 | 0.046000 | 0.039357 | 0.043300 |
| 22 | 0.136735 | 0.129900 | 0.095000 | 0.114000 | 47 | 0.041972 | 0.044100 | 0.038834 | 0.042700 |
| 23 | 0.128522 | 0.122100 | 0.090250 | 0.108500 | 48 | 0.041891 | 0.044000 | 0.038701 | 0.042600 |
| 24 | 0.120309 | 0.114300 | 0.085500 | 0.102600 | 49 | 0.041809 | 0.043900 | 0.038568 | 0.042400 |
| 25 | 0.112096 | 0.106500 | 0.080750 | 0.096900 | 50 | 0.041566 | 0.044500 | 0.038170 | 0.036300 |
| 26 | 0.103883 | 0.098700 | 0.076000 | 0.091200 | 51 | 0.041365 | 0.044300 | 0.037844 | 0.036000 |
| 27 | 0.095670 | 0.090900 | 0.071250 | 0.085500 | 52 | 0.041121 | 0.044000 | 0.037460 | 0.035600 |
| 28 | 0.091756 | 0.087200 | 0.069160 | 0.083000 | 53 | 0.040844 | 0.043700 | 0.037023 | 0.035200 |
| 29 | 0.087842 | 0.083400 | 0.067060 | 0.080500 | 54 | 0.057924 | 0.062000 | 0.043859 | 0.041700 |
| 30 | 0.083927 | 0.079700 | 0.064960 | 0.078000 | 55 | 0.057924 | 0.050000 | 0.043859 | 0.030000 |
| 31 | 0.080013 | 0.076000 | 0.062870 | 0.075400 | 56 | 0.057924 | 0.050000 | 0.043859 | 0.030000 |
| 32 | 0.076099 | 0.072300 | 0.060770 | 0.072900 | 57 | 0.057924 | 0.050000 | 0.043859 | 0.030000 |
| 33 | 0.072399 | 0.068800 | 0.058280 | 0.069900 | 58 | 0.057924 | 0.050000 | 0.043859 | 0.030000 |
| 34 | 0.068699 | 0.065300 | 0.055780 | 0.066900 | 59 | 0.057924 | 0.050000 | 0.043859 | 0.030000 |
| 35 | 0.064999 | 0.061700 | 0.053290 | 0.063900 | 60 | 0.057924 | 0.050000 | 0.043859 | 0.030000 |
| 36 | 0.061299 | 0.058200 | 0.050790 | 0.061000 | 61 | 0.057924 | 0.050000 | 0.043859 | 0.030000 |
| 37 | 0.057599 | 0.054700 | 0.048300 | 0.058000 | 62 | 0.057924 | 0.050000 | 0.043859 | 0.030000 |
| 38 | 0.056330 | 0.053500 | 0.046930 | 0.056300 | 63 | 0.057924 | 0.050000 | 0.043859 | 0.030000 |
| 39 | 0.055061 | 0.052300 | 0.045560 | 0.054700 | 64 | 0.057924 | 0.050000 | 0.043859 | 0.030000 |
| 40 | 0.053792 | 0.056500 | 0.044190 | 0.048600 | 65+ | 0.057924 | 0.050000 | 0.043859 | 0.030000 |
| 41 | 0.052523 | 0.055100 | 0.042820 | 0.047100 | | | | | |
| 42 | 0.051254 | 0.053800 | 0.041450 | 0.045600 | | | | | |
| 43 | 0.049398 | 0.051900 | 0.040930 | 0.045000 | | | | | |
| 44 | 0.047541 | 0.049900 | 0.040400 | 0.044400 | | | | | |

**Table 6 – Withdrawal Rates (Ultimate)**

**TRS (8 or more years of service)**

| | Female | | Male | | | Female | | Male | |
|---|---|---|---|---|---|---|---|---|---|
| Age | Current | Proposed | Current | Proposed | Age | Current | Proposed | Current | Proposed |
| 15 | 0.037185 | 0.038300 | 0.031209 | 0.026500 | 40 | 0.036224 | 0.027500 | 0.030159 | 0.022600 |
| 16 | 0.037157 | 0.038300 | 0.031170 | 0.026500 | 41 | 0.036155 | 0.027500 | 0.030085 | 0.022600 |
| 17 | 0.037138 | 0.038300 | 0.031138 | 0.026500 | 42 | 0.036086 | 0.027400 | 0.030010 | 0.022500 |
| 18 | 0.037129 | 0.038200 | 0.031107 | 0.026400 | 43 | 0.035976 | 0.027300 | 0.029866 | 0.022400 |
| 19 | 0.037120 | 0.038200 | 0.031091 | 0.026400 | 44 | 0.035867 | 0.027300 | 0.029721 | 0.022300 |
| 20 | 0.036848 | 0.038000 | 0.030847 | 0.026200 | 45 | 0.035757 | 0.027200 | 0.029577 | 0.022200 |
| 21 | 0.036848 | 0.038000 | 0.030831 | 0.026200 | 46 | 0.035648 | 0.027100 | 0.029432 | 0.022100 |
| 22 | 0.036839 | 0.037900 | 0.030799 | 0.026200 | 47 | 0.035538 | 0.027000 | 0.029288 | 0.022000 |
| 23 | 0.036839 | 0.037900 | 0.030776 | 0.026200 | 48 | 0.035380 | 0.026900 | 0.029046 | 0.021800 |
| 24 | 0.036830 | 0.037900 | 0.030736 | 0.026100 | 49 | 0.035221 | 0.026800 | 0.028805 | 0.021600 |
| 25 | 0.036830 | 0.037900 | 0.030705 | 0.026100 | 50 | 0.035063 | 0.044200 | 0.028563 | 0.034300 |
| 26 | 0.036820 | 0.037900 | 0.030673 | 0.026100 | 51 | 0.034847 | 0.043900 | 0.028248 | 0.033900 |
| 27 | 0.036762 | 0.037900 | 0.030642 | 0.026000 | 52 | 0.034595 | 0.043600 | 0.027878 | 0.033500 |
| 28 | 0.041480 | 0.042700 | 0.030610 | 0.026000 | 53 | 0.034296 | 0.043200 | 0.027468 | 0.033000 |
| 29 | 0.046198 | 0.047600 | 0.030579 | 0.026000 | 54 | 0.059961 | 0.075600 | 0.046305 | 0.030000 |
| 30 | 0.050917 | 0.052400 | 0.030555 | 0.026000 | 55 | 0.059285 | 0.050000 | 0.045414 | 0.020000 |
| 31 | 0.055635 | 0.057300 | 0.030540 | 0.026000 | 56 | 0.058410 | 0.050000 | 0.044334 | 0.020000 |
| 32 | 0.060353 | 0.062200 | 0.030516 | 0.025900 | 57 | 0.057288 | 0.050000 | 0.043012 | 0.020000 |
| 33 | 0.055569 | 0.057200 | 0.030500 | 0.025900 | 58 | 0.056018 | 0.050000 | 0.041567 | 0.020000 |
| 34 | 0.050784 | 0.052300 | 0.030455 | 0.025900 | 59 | 0.054401 | 0.050000 | 0.039826 | 0.020000 |
| 35 | 0.046000 | 0.047400 | 0.030431 | 0.025900 | 60 | 0.052569 | 0.050000 | 0.037868 | 0.020000 |
| 36 | 0.041215 | 0.042500 | 0.030407 | 0.025800 | 61 | 0.050523 | 0.050000 | 0.035694 | 0.020000 |
| 37 | 0.036431 | 0.037500 | 0.030383 | 0.025800 | 62 | 0.048197 | 0.050000 | 0.033170 | 0.020000 |
| 38 | 0.036362 | 0.037500 | 0.030308 | 0.025800 | 63 | 0.045540 | 0.050000 | 0.030294 | 0.020000 |
| 39 | 0.036293 | 0.037400 | 0.030234 | 0.025700 | 64 | 0.042653 | 0.050000 | 0.027176 | 0.020000 |
| | | | | | 65+ | 0.066000 | 0.050000 | 0.054000 | 0.020000 |

**Table 6 – Withdrawal Rates (Ultimate)**

**PERS DCR P/F (5 or more years of service)**

| | Female | | Male | | | Female | | Male | |
|---|---|---|---|---|---|---|---|---|---|
| Age | Current | Proposed | Current | Proposed | Age | Current | Proposed | Current | Proposed |
| 20 | 0.085500 | 0.119700 | 0.048000 | 0.055200 | 45 | 0.078800 | 0.110300 | 0.049678 | 0.057100 |
| 21 | 0.085500 | 0.119700 | 0.048000 | 0.055200 | 46 | 0.078400 | 0.109800 | 0.049061 | 0.056400 |
| 22 | 0.085500 | 0.119700 | 0.048000 | 0.055200 | 47 | 0.078000 | 0.109200 | 0.048444 | 0.055700 |
| 23 | 0.085500 | 0.119700 | 0.049120 | 0.056500 | 48 | 0.077400 | 0.108400 | 0.052256 | 0.060100 |
| 24 | 0.085500 | 0.119700 | 0.050240 | 0.057800 | 49 | 0.076800 | 0.107500 | 0.056067 | 0.064500 |
| 25 | 0.085500 | 0.119700 | 0.051360 | 0.059100 | 50 | 0.076200 | 0.106700 | 0.059878 | 0.068900 |
| 26 | 0.085500 | 0.119700 | 0.052480 | 0.060400 | 51 | 0.075600 | 0.105800 | 0.063689 | 0.073200 |
| 27 | 0.085500 | 0.119700 | 0.053600 | 0.061600 | 52 | 0.075000 | 0.105000 | 0.067500 | 0.077600 |
| 28 | 0.085275 | 0.119400 | 0.053528 | 0.061600 | 53 | 0.076154 | 0.106600 | 0.069300 | 0.079700 |
| 29 | 0.085050 | 0.119100 | 0.053456 | 0.061500 | 54 | 0.077308 | 0.108200 | 0.071100 | 0.081800 |
| 30 | 0.084825 | 0.118800 | 0.053384 | 0.061400 | 55 | 0.078462 | 0.109800 | 0.072900 | 0.083800 |
| 31 | 0.084600 | 0.118400 | 0.053312 | 0.061300 | 56 | 0.079615 | 0.111500 | 0.074700 | 0.085900 |
| 32 | 0.084375 | 0.118100 | 0.053239 | 0.061200 | 57 | 0.080769 | 0.113100 | 0.076500 | 0.088000 |
| 33 | 0.084214 | 0.117900 | 0.053119 | 0.061100 | 58 | 0.081923 | 0.114700 | 0.078480 | 0.090300 |
| 34 | 0.084054 | 0.117700 | 0.052998 | 0.060900 | 59 | 0.083077 | 0.116300 | 0.080460 | 0.092500 |
| 35 | 0.083893 | 0.117500 | 0.052878 | 0.060800 | 60 | 0.084231 | 0.117900 | 0.082440 | 0.094800 |
| 36 | 0.083732 | 0.117200 | 0.052757 | 0.060700 | 61 | 0.085385 | 0.119500 | 0.084420 | 0.097100 |
| 37 | 0.083571 | 0.117000 | 0.052636 | 0.060500 | 62 | 0.086538 | 0.121200 | 0.086400 | 0.099400 |
| 38 | 0.082857 | 0.116000 | 0.052415 | 0.060300 | 63 | 0.087692 | 0.122800 | 0.107600 | 0.123700 |
| 39 | 0.082143 | 0.115000 | 0.052194 | 0.060000 | 64 | 0.088846 | 0.124400 | 0.128800 | 0.148100 |
| 40 | 0.081429 | 0.114000 | 0.051972 | 0.059800 | 65+ | 0.090000 | 0.126000 | 0.150000 | 0.172500 |
| 41 | 0.080714 | 0.113000 | 0.051751 | 0.059500 | | | | | |
| 42 | 0.080000 | 0.112000 | 0.051529 | 0.059030 | | | | | |
| 43 | 0.079600 | 0.111400 | 0.050912 | 0.058500 | | | | | |
| 44 | 0.079200 | 0.110900 | 0.050295 | 0.057800 | | | | | |

**Table 6 – Withdrawal Rates (Ultimate)**

**PERS DCR Others (5 or more years of service)**

| | Female | | Male | | | Female | | Male | |
|---|---|---|---|---|---|---|---|---|---|
| Age | Current | Proposed | Current | Proposed | Age | Current | Proposed | Current | Proposed |
| 20 | 0.150000 | 0.165000 | 0.109667 | 0.137100 | 45 | 0.071847 | 0.079000 | 0.061728 | 0.077200 |
| 21 | 0.150000 | 0.165000 | 0.109667 | 0.137100 | 46 | 0.068938 | 0.075800 | 0.060789 | 0.076000 |
| 22 | 0.150000 | 0.165000 | 0.109667 | 0.137100 | 47 | 0.066029 | 0.072600 | 0.059850 | 0.074800 |
| 23 | 0.150067 | 0.165100 | 0.109674 | 0.137100 | 48 | 0.065749 | 0.072300 | 0.061414 | 0.076800 |
| 24 | 0.150133 | 0.165100 | 0.109681 | 0.137100 | 49 | 0.065469 | 0.072000 | 0.062977 | 0.078700 |
| 25 | 0.150200 | 0.165200 | 0.109689 | 0.137100 | 50 | 0.065189 | 0.071700 | 0.064541 | 0.080700 |
| 26 | 0.150267 | 0.165300 | 0.109696 | 0.137100 | 51 | 0.064908 | 0.071400 | 0.066104 | 0.082600 |
| 27 | 0.150333 | 0.165400 | 0.109703 | 0.137100 | 52 | 0.064628 | 0.071100 | 0.067668 | 0.084600 |
| 28 | 0.144910 | 0.159400 | 0.107312 | 0.134100 | 53 | 0.066022 | 0.072600 | 0.067714 | 0.084600 |
| 29 | 0.139486 | 0.153400 | 0.104921 | 0.131200 | 54 | 0.067416 | 0.074200 | 0.067760 | 0.084700 |
| 30 | 0.134062 | 0.147500 | 0.102529 | 0.128200 | 55 | 0.068809 | 0.075700 | 0.067806 | 0.084800 |
| 31 | 0.128638 | 0.141500 | 0.100138 | 0.125200 | 56 | 0.070203 | 0.077200 | 0.067853 | 0.084800 |
| 32 | 0.123214 | 0.135500 | 0.097747 | 0.122200 | 57 | 0.071597 | 0.078800 | 0.067899 | 0.084900 |
| 33 | 0.117230 | 0.129000 | 0.093219 | 0.116500 | 58 | 0.074069 | 0.081500 | 0.070131 | 0.087700 |
| 34 | 0.111246 | 0.122400 | 0.088692 | 0.110900 | 59 | 0.076541 | 0.084200 | 0.072363 | 0.090500 |
| 35 | 0.105261 | 0.115800 | 0.084164 | 0.105200 | 60 | 0.079014 | 0.086900 | 0.074595 | 0.093200 |
| 36 | 0.099277 | 0.109200 | 0.079637 | 0.099500 | 61 | 0.081486 | 0.089600 | 0.076827 | 0.096000 |
| 37 | 0.093293 | 0.102600 | 0.075110 | 0.093900 | 62 | 0.083958 | 0.092400 | 0.079059 | 0.098800 |
| 38 | 0.090749 | 0.099800 | 0.072996 | 0.091200 | 63 | 0.095528 | 0.105100 | 0.082239 | 0.102800 |
| 39 | 0.088205 | 0.097000 | 0.070883 | 0.088600 | 64 | 0.107097 | 0.117800 | 0.085420 | 0.106800 |
| 40 | 0.085661 | 0.094200 | 0.068770 | 0.086000 | 65+ | 0.118667 | 0.130500 | 0.088600 | 0.110800 |
| 41 | 0.083117 | 0.091400 | 0.066657 | 0.083200 | | | | | |
| 42 | 0.080573 | 0.094300 | 0.064544 | 0.080700 | | | | | |
| 43 | 0.077664 | 0.085400 | 0.063605 | 0.079500 | | | | | |
| 44 | 0.074756 | 0.082200 | 0.062667 | 0.078300 | | | | | |

**Table 6 – Withdrawal Rates (Ultimate)**

**TRS DCR (5 or more years of service)**

| | Female | | Male | | | Female | | Male | |
|---|---|---|---|---|---|---|---|---|---|
| Age | Current | Proposed | Current | Proposed | Age | Current | Proposed | Current | Proposed |
| 20 | 0.066811 | 0.083100 | 0.062959 | 0.094100 | 45 | 0.064754 | 0.080900 | 0.060332 | 0.090500 |
| 21 | 0.066811 | 0.083100 | 0.062959 | 0.094100 | 46 | 0.064544 | 0.080700 | 0.059957 | 0.089900 |
| 22 | 0.066811 | 0.083100 | 0.062959 | 0.094100 | 47 | 0.064333 | 0.080400 | 0.059583 | 0.089400 |
| 23 | 0.066773 | 0.083100 | 0.062903 | 0.094100 | 48 | 0.063975 | 0.080000 | 0.059053 | 0.088600 |
| 24 | 0.066735 | 0.083100 | 0.062847 | 0.094100 | 49 | 0.063617 | 0.079500 | 0.058522 | 0.087800 |
| 25 | 0.066697 | 0.083100 | 0.062791 | 0.094100 | 50 | 0.063259 | 0.079100 | 0.057992 | 0.087000 |
| 26 | 0.066659 | 0.083200 | 0.062735 | 0.094100 | 51 | 0.062901 | 0.078600 | 0.057461 | 0.086200 |
| 27 | 0.066621 | 0.083300 | 0.062679 | 0.094000 | 52 | 0.062543 | 0.078200 | 0.056931 | 0.085400 |
| 28 | 0.066583 | 0.083200 | 0.062623 | 0.093900 | 53 | 0.061818 | 0.077300 | 0.055800 | 0.083700 |
| 29 | 0.066544 | 0.083200 | 0.062567 | 0.093900 | 54 | 0.061093 | 0.076400 | 0.054670 | 0.082000 |
| 30 | 0.066506 | 0.083100 | 0.062512 | 0.093800 | 55 | 0.060367 | 0.075500 | 0.053539 | 0.080300 |
| 31 | 0.066467 | 0.083100 | 0.062456 | 0.093700 | 56 | 0.059642 | 0.074600 | 0.052409 | 0.078600 |
| 32 | 0.066429 | 0.083000 | 0.062400 | 0.093600 | 57 | 0.058917 | 0.073600 | 0.051278 | 0.076900 |
| 33 | 0.066351 | 0.082900 | 0.062360 | 0.093500 | 58 | 0.060021 | 0.075000 | 0.051711 | 0.077600 |
| 34 | 0.066273 | 0.082800 | 0.062320 | 0.093500 | 59 | 0.061125 | 0.076400 | 0.052144 | 0.078200 |
| 35 | 0.066194 | 0.082700 | 0.062280 | 0.093400 | 60 | 0.062230 | 0.077800 | 0.052578 | 0.078900 |
| 36 | 0.066116 | 0.082600 | 0.062240 | 0.093400 | 61 | 0.063334 | 0.079200 | 0.053011 | 0.079500 |
| 37 | 0.066038 | 0.082500 | 0.062200 | 0.093300 | 62 | 0.064438 | 0.080500 | 0.053444 | 0.080200 |
| 38 | 0.065908 | 0.082400 | 0.062051 | 0.093100 | 63 | 0.066292 | 0.082900 | 0.057296 | 0.085900 |
| 39 | 0.065777 | 0.082200 | 0.061902 | 0.092900 | 64 | 0.068146 | 0.085200 | 0.061148 | 0.091700 |
| 40 | 0.065647 | 0.082100 | 0.061753 | 0.092600 | 65+ | 0.070000 | 0.087500 | 0.065000 | 0.097500 |
| 41 | 0.065516 | 0.081900 | 0.061604 | 0.092400 | | | | | |
| 42 | 0.065386 | 0.081700 | 0.061455 | 0.092200 | | | | | |
| 43 | 0.065175 | 0.081500 | 0.061081 | 0.091600 | | | | | |
| 44 | 0.064965 | 0.081200 | 0.060706 | 0.091100 | | | | | |

**Table 6 – Withdrawal Rates (Ultimate)**

**NGNMRS**

| | Female | | Male | | | Female | | Male | |
|---|---|---|---|---|---|---|---|---|---|
| **Age** | **Current** | **Proposed** | **Current** | **Proposed** | **Age** | **Current** | **Proposed** | **Current** | **Proposed** |
| 22 | 0.089621 | 0.170300 | 0.089621 | 0.134400 | 45 | 0.053593 | 0.101800 | 0.053593 | 0.080400 |
| 23 | 0.085762 | 0.162900 | 0.085762 | 0.128600 | 46 | 0.051041 | 0.097000 | 0.051041 | 0.076600 |
| 24 | 0.082654 | 0.157000 | 0.082654 | 0.124000 | 47 | 0.047548 | 0.090300 | 0.047548 | 0.071300 |
| 25 | 0.080193 | 0.152400 | 0.080193 | 0.120300 | 48 | 0.043086 | 0.081900 | 0.043086 | 0.064600 |
| 26 | 0.078275 | 0.148700 | 0.078275 | 0.117400 | 49 | 0.037790 | 0.071800 | 0.037790 | 0.056700 |
| 27 | 0.076794 | 0.145900 | 0.076794 | 0.115200 | 50 | 0.032580 | 0.061900 | 0.032580 | 0.048900 |
| 28 | 0.075648 | 0.143700 | 0.075648 | 0.113500 | 51 | 0.028500 | 0.054200 | 0.028500 | 0.042700 |
| 29 | 0.074735 | 0.142000 | 0.074735 | 0.112100 | 52 | 0.025530 | 0.048500 | 0.025530 | 0.038300 |
| 30 | 0.073955 | 0.140500 | 0.073955 | 0.110900 | 53 | 0.023415 | 0.044500 | 0.023415 | 0.035100 |
| 31 | 0.073215 | 0.139100 | 0.073215 | 0.109800 | 54 | 0.021825 | 0.041500 | 0.021825 | 0.032700 |
| 32 | 0.072431 | 0.137600 | 0.072431 | 0.108600 | 55 | 0.020670 | 0.039300 | 0.020670 | 0.031000 |
| 33 | 0.071529 | 0.135900 | 0.071529 | 0.107300 | 56 | 0.020130 | 0.038200 | 0.020130 | 0.030200 |
| 34 | 0.070452 | 0.133900 | 0.070452 | 0.105700 | 57 | 0.020205 | 0.038400 | 0.020205 | 0.030300 |
| 35 | 0.069165 | 0.131400 | 0.069165 | 0.103700 | 58 | 0.020760 | 0.039400 | 0.020760 | 0.031100 |
| 36 | 0.067656 | 0.128500 | 0.067656 | 0.101500 | 59 | 0.021810 | 0.041400 | 0.021810 | 0.032700 |
| 37 | 0.065945 | 0.125300 | 0.065945 | 0.098900 | 60 | 0.021810 | 0.045000 | 0.021810 | 0.035000 |
| 38 | 0.064121 | 0.121800 | 0.064121 | 0.096200 | | | | | |
| 39 | 0.062309 | 0.118400 | 0.062309 | 0.093500 | | | | | |
| 40 | 0.060618 | 0.115200 | 0.060618 | 0.090900 | | | | | |
| 41 | 0.059132 | 0.112400 | 0.059132 | 0.088700 | | | | | |
| 42 | 0.057884 | 0.110000 | 0.057884 | 0.086800 | | | | | |
| 43 | 0.056726 | 0.107800 | 0.056726 | 0.085100 | | | | | |
| 44 | 0.055397 | 0.105300 | 0.055397 | 0.083100 | | | | | |

**Table 7 – Disability Rates**

**PERS P/F**

| Age | Unisex Current | Male Proposed | Female Proposed | Age | Unisex Current | Male Proposed | Female Proposed |
|---|---|---|---|---|---|---|---|
| 20 | 0.000224 | 0.000179 | 0.000112 | 40 | 0.001027 | 0.000822 | 0.000514 |
| 21 | 0.000224 | 0.000179 | 0.000112 | 41 | 0.001068 | 0.000854 | 0.000534 |
| 22 | 0.000224 | 0.000179 | 0.000112 | 42 | 0.001108 | 0.000887 | 0.000554 |
| 23 | 0.000305 | 0.000244 | 0.000153 | 43 | 0.001221 | 0.000977 | 0.000611 |
| 24 | 0.000387 | 0.000310 | 0.000194 | 44 | 0.001333 | 0.001066 | 0.000666 |
| 25 | 0.000468 | 0.000374 | 0.000234 | 45 | 0.001446 | 0.001157 | 0.000723 |
| 26 | 0.000550 | 0.000440 | 0.000275 | 46 | 0.001559 | 0.001247 | 0.000780 |
| 27 | 0.000631 | 0.000505 | 0.000316 | 47 | 0.001671 | 0.001337 | 0.000836 |
| 28 | 0.000658 | 0.000526 | 0.000329 | 48 | 0.001828 | 0.001462 | 0.000914 |
| 29 | 0.000685 | 0.000548 | 0.000342 | 49 | 0.001985 | 0.001588 | 0.000992 |
| 30 | 0.000712 | 0.000570 | 0.000356 | 50 | 0.002142 | 0.001714 | 0.001071 |
| 31 | 0.000739 | 0.000591 | 0.000369 | 51 | 0.002299 | 0.001839 | 0.001150 |
| 32 | 0.000765 | 0.000612 | 0.000383 | 52 | 0.002456 | 0.001965 | 0.001228 |
| 33 | 0.000793 | 0.000634 | 0.000396 | 53 | 0.002868 | 0.002294 | 0.001434 |
| 34 | 0.000821 | 0.000657 | 0.000410 | 54 | 0.003280 | 0.002624 | 0.001640 |
| 35 | 0.000849 | 0.000679 | 0.000425 | | | | |
| 36 | 0.000877 | 0.000702 | 0.000439 | | | | |
| 37 | 0.000905 | 0.000724 | 0.000452 | | | | |
| 38 | 0.000946 | 0.000757 | 0.000473 | | | | |
| 39 | 0.000986 | 0.000789 | 0.000493 | | | | |

**PERS Others**

| | Female | | Male | | | Female | | Male | |
|---|---|---|---|---|---|---|---|---|---|
| Age | Current | Proposed | Current | Proposed | Age | Current | Proposed | Current | Proposed |
| 20 | 0.000188 | 0.000376 | 0.000218 | 0.000327 | 40 | 0.000381 | 0.000762 | 0.000489 | 0.000734 |
| 21 | 0.000188 | 0.000376 | 0.000218 | 0.000327 | 41 | 0.000397 | 0.000794 | 0.000510 | 0.000765 |
| 22 | 0.000188 | 0.000376 | 0.000218 | 0.000327 | 42 | 0.000413 | 0.000826 | 0.000531 | 0.000797 |
| 23 | 0.000200 | 0.000400 | 0.000240 | 0.000360 | 43 | 0.000454 | 0.000908 | 0.000586 | 0.000879 |
| 24 | 0.000212 | 0.000424 | 0.000261 | 0.000392 | 44 | 0.000495 | 0.000990 | 0.000641 | 0.000962 |
| 25 | 0.000224 | 0.000448 | 0.000283 | 0.000425 | 45 | 0.000536 | 0.001072 | 0.000695 | 0.001043 |
| 26 | 0.000236 | 0.000472 | 0.000304 | 0.000456 | 46 | 0.000577 | 0.001154 | 0.000750 | 0.001125 |
| 27 | 0.000248 | 0.000496 | 0.000326 | 0.000489 | 47 | 0.000618 | 0.001236 | 0.000805 | 0.001208 |
| 28 | 0.000255 | 0.000510 | 0.000334 | 0.000501 | 48 | 0.000680 | 0.001360 | 0.000886 | 0.001329 |
| 29 | 0.000262 | 0.000524 | 0.000342 | 0.000513 | 49 | 0.000742 | 0.001484 | 0.000967 | 0.001451 |
| 30 | 0.000269 | 0.000538 | 0.000349 | 0.000524 | 50 | 0.000804 | 0.001608 | 0.001048 | 0.001572 |
| 31 | 0.000277 | 0.000554 | 0.000357 | 0.000536 | 51 | 0.000867 | 0.001734 | 0.001129 | 0.001694 |
| 32 | 0.000284 | 0.000568 | 0.000365 | 0.000548 | 52 | 0.000929 | 0.001858 | 0.001210 | 0.001815 |
| 33 | 0.000293 | 0.000586 | 0.000377 | 0.000566 | 53 | 0.001084 | 0.002168 | 0.001421 | 0.002132 |
| 34 | 0.000303 | 0.000606 | 0.000389 | 0.000584 | 54 | 0.001239 | 0.002478 | 0.001633 | 0.002450 |
| 35 | 0.000312 | 0.000629 | 0.000401 | 0.000602 | | | | | |
| 36 | 0.000322 | 0.000644 | 0.000413 | 0.000620 | | | | | |
| 37 | 0.000331 | 0.000662 | 0.000425 | 0.000638 | | | | | |
| 38 | 0.000348 | 0.000696 | 0.000446 | 0.000669 | | | | | |
| 39 | 0.000364 | 0.000728 | 0.000467 | 0.000701 | | | | | |

**Table 7 – Disability Rates**

**TRS**

| | Female | | Male | | | Female | | Male | |
|---|---|---|---|---|---|---|---|---|---|
| **Age** | **Current** | **Proposed** | **Current** | **Proposed** | **Age** | **Current** | **Proposed** | **Current** | **Proposed** |
| 20 | 0.000560 | 0.000612 | 0.000560 | 0.000337 | 40 | 0.000703 | 0.000703 | 0.000703 | 0.000387 |
| 21 | 0.000563 | 0.000612 | 0.000563 | 0.000337 | 41 | 0.000718 | 0.000718 | 0.000718 | 0.000395 |
| 22 | 0.000565 | 0.000612 | 0.000565 | 0.000337 | 42 | 0.000733 | 0.000733 | 0.000733 | 0.000403 |
| 23 | 0.000574 | 0.000612 | 0.000574 | 0.000337 | 43 | 0.000770 | 0.000770 | 0.000770 | 0.000423 |
| 24 | 0.000583 | 0.000612 | 0.000583 | 0.000337 | 44 | 0.000806 | 0.000806 | 0.000806 | 0.000443 |
| 25 | 0.000593 | 0.000612 | 0.000593 | 0.000337 | 45 | 0.000843 | 0.000843 | 0.000843 | 0.000464 |
| 26 | 0.000602 | 0.000612 | 0.000602 | 0.000337 | 46 | 0.000879 | 0.000879 | 0.000879 | 0.000483 |
| 27 | 0.000611 | 0.000612 | 0.000611 | 0.000337 | 47 | 0.000916 | 0.000916 | 0.000916 | 0.000504 |
| 28 | 0.000611 | 0.000612 | 0.000611 | 0.000337 | 48 | 0.000975 | 0.000975 | 0.000975 | 0.000536 |
| 29 | 0.000612 | 0.000612 | 0.000612 | 0.000337 | 49 | 0.001034 | 0.001034 | 0.001034 | 0.000569 |
| 30 | 0.000612 | 0.000612 | 0.000612 | 0.000337 | 50 | 0.001093 | 0.001093 | 0.001093 | 0.000601 |
| 31 | 0.000613 | 0.000613 | 0.000613 | 0.000337 | 51 | 0.001152 | 0.001152 | 0.001152 | 0.000634 |
| 32 | 0.000613 | 0.000613 | 0.000613 | 0.000337 | 52 | 0.001211 | 0.001211 | 0.001211 | 0.000666 |
| 33 | 0.000622 | 0.000622 | 0.000622 | 0.000342 | 53 | 0.001356 | 0.001356 | 0.001356 | 0.000746 |
| 34 | 0.000631 | 0.000631 | 0.000631 | 0.000347 | 54 | 0.001501 | 0.001501 | 0.001501 | 0.000826 |
| 35 | 0.000641 | 0.000641 | 0.000641 | 0.000353 | | | | | |
| 36 | 0.000650 | 0.000650 | 0.000650 | 0.000357 | | | | | |
| 37 | 0.000659 | 0.000659 | 0.000659 | 0.000362 | | | | | |
| 38 | 0.000674 | 0.000674 | 0.000674 | 0.000371 | | | | | |
| 39 | 0.000689 | 0.000689 | 0.000689 | 0.000379 | | | | | |

**Table 8 – DCR Healthcare Participation Rates**

**If Retire Directly from Disability**

| Age | Current | Proposed |
|---|---|---|
| <55 | 73.00% | 75.0% |
| 55 | 73.00% | 75.0% |
| 56 | 77.50% | 77.5% |
| 57 | 79.75% | 80.0% |
| 58 | 82.00% | 82.5% |
| 59 | 84.25% | 85.0% |
| 60 | 86.50% | 87.5% |
| 61 | 88.75% | 90.0% |
| 62 | 91.00% | 92.5% |
| 63 | 93.25% | 95.0% |
| 64 | 95.50% | 97.5% |
| 65+ | 94.40% | 100.0% |

**If Retire Directly from Employment (pre-age 65)**

| Age | Current | Proposed* |
|---|---|---|
| 55 | 40% | 50% |
| 56 | 50% | 55% |
| 57 | 55% | 60% |
| 58 | 60% | 65% |
| 59 | 65% | 70% |
| 60 | 70% | 75% |
| 61 | 75% | 80% |
| 62 | 80% | 85% |
| 63 | 85% | 90% |
| 64 | 90% | 95% |
| 65 | N/A | 100% |

* Proposed assumption is a combination of (i) the proposed service-based rates for retirement from employment at age 65+, and (ii) the proposed age-based rates for retirement from employment before age 65.

**If Retire Directly from Employment (age 65+)**

| Years of Service | Current | Proposed |
|---|---|---|
| < 15 | 70.5% | 75% |
| 15-19 | 75.2% | 80% |
| 20-24 | 79.9% | 85% |
| 25-29 | 89.3% | 90% |
| 30+ | 94.0% | 95% |

**Table 9 – Healthcare Morbidity**

| Age | Current | | Proposed | |
|---|---|---|---|---|
| | Medical | Prescription Drugs | Medical | Prescription Drugs |
| < 45 | 2.0% | 4.5% | 2.0% | 4.5% |
| 45-54 | 2.5% | 3.5% | 2.5% | 3.5% |
| 55-64 | 3.5% | 3.0% | 2.5% | 1.5% |
| 65-74 | 4.0% | 1.5% | 3.0% | 2.0% |
| 75-84 | 1.5% | 0.5% | 2.0% | (0.5)% |
| 85-94 | 0.5% | 0.0% | 0.3% | (2.5)% |
| 95 | 0.5% | 0.0% | 0.0% | 0.0% |
| 96+ | 0.0% | 0.0% | 0.0% | 0.0% |