

Appendix A

to the Standards for Actuarial Work

ACTUARIAL ASSUMPTIONS

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This appendix contains actuarial assumptions concerning: inflation, payroll growth, salary increases, merit and seniority pay increases, and mortality rates. These assumptions are included in this appendix for two reasons. A qualified pension plan must provide definitely determinable benefits pursuant to section 1.401-1 of the Tax Regulations, and the assumptions in this appendix can be used to determine an individual’s pension benefit. Additionally, the payroll growth and salary increase assumptions were previously located within Minnesota Statutes, section 356.215, subdivision 8; however, in 2018, this appendix was created and those assumptions were moved to this appendix.

Minnesota State Retirement System (MSRS) Plans

MSRS General Employees Retirement Plan

Update approved by the Commission on February 19, 2024; effective July 1, 2024.

Inflation 2.25% per year

Payroll growth 3.00% per year

Salary increases/
Merit & seniority
pay increases Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service during the year.

| Year | Salary Increase | Merit & Seniority Pay Increase |
|------|-----------------|--------------------------------|
| 1 | 11.75% | 8.75% |
| 2 | 7.50 | 4.50 |
| 3 | 5.65 | 2.65 |
| 4 | 5.50 | 2.50 |
| 5 | 5.20 | 2.20 |
| 6 | 5.00 | 2.00 |
| 7 | 4.80 | 1.80 |
| 8 | 4.60 | 1.60 |
| 9 | 4.50 | 1.50 |
| 10 | 4.30 | 1.30 |
| 11 | 4.20 | 1.20 |
| 12 | 4.10 | 1.10 |
| 13 | 4.00 | 1.00 |
| 14 | 3.90 | 0.90 |
| 15 | 3.70 | 0.70 |
| 16 | 3.60 | 0.60 |
| 17 | 3.50 | 0.50 |
| 18 | 3.40 | 0.40 |
| 19 | 3.40 | 0.40 |
| 20 | 3.40 | 0.40 |
| 21 | 3.30 | 0.30 |
| 22 | 3.20 | 0.20 |
| 23 | 3.20 | 0.20 |
| 24 | 3.20 | 0.20 |
| 25 | 3.20 | 0.20 |
| 26 | 3.20 | 0.20 |
| 27+ | 3.00 | 0.00 |

Mortality rates

Active Members

Male Pub-2010 Male General Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Female Pub-2010 Female General Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Healthy Retirees

Male Pub-2010 Male Healthy Retired General Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.04.

Female Pub-2010 Female Healthy Retired General Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.10.

Disabled Retirees

Male Pub-2010 Male General/Teacher Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.10.

Female Pub-2010 Female General/Teacher Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.17.

Minnesota State Retirement System (MSRS) Plans

MSRS State Patrol Retirement Plan

Update approved by the Commission on April 22, 2025; effective July 1, 2025.

Inflation 2.25% per year
 Payroll growth 3.00% per year

Salary increases/
 Merit & seniority
 pay increases Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service during the year.

| Year | Salary Increase | Merit & Seniority Pay Increase |
|------|-----------------|--------------------------------|
| 1 | 11.00% | 8.00% |
| 2 | 8.00 | 5.00 |
| 3 | 6.60 | 3.60 |
| 4 | 6.40 | 3.40 |
| 5 | 6.20 | 3.20 |
| 6 | 6.00 | 3.00 |
| 7 | 5.60 | 2.60 |
| 8 | 5.30 | 2.30 |
| 9 | 4.80 | 1.80 |
| 10 | 4.40 | 1.40 |
| 11 | 4.00 | 1.00 |
| 12 | 3.90 | 0.90 |
| 13 | 3.80 | 0.80 |
| 14 | 3.70 | 0.70 |
| 15 | 3.60 | 0.60 |
| 16 | 3.50 | 0.50 |
| 17 | 3.40 | 0.40 |
| 18 | 3.30 | 0.30 |
| 19 | 3.30 | 0.30 |
| 20 | 3.30 | 0.30 |
| 21 | 3.30 | 0.30 |
| 22 | 3.30 | 0.30 |
| 23 | 3.20 | 0.20 |
| 24 | 3.10 | 0.10 |
| 25+ | 3.00 | 0.00 |

Mortality rates

Active Members

Male Pub-2010 Male Public Safety Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Female Pub-2010 Female Public Safety Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Healthy Retirees

Male Pub-2010 Male Healthy Retired Public Safety Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Female Pub-2010 Female Healthy Retired Public Safety Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Disabled Retirees

Male Pub-2010 Male Public Safety Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Female Pub-2010 Female Public Safety Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Minnesota State Retirement System (MSRS) Plans

MSRS Correctional State Employees Retirement Plan

Update approved by the Commission on April 22, 2025; effective July 1, 2025.

Inflation 2.25% per year

Payroll growth 3.00% per year

Salary increases/
Merit & seniority
pay increases Reported salary at valuation date increased according to the rate table, to current fiscal year
and annually for each future year. Prior fiscal year salary is annualized for members with less
than one year of service during the year.

| Year | Salary Increase | Merit & Seniority Pay Increase |
|------|-----------------|--------------------------------|
| 1 | 11.00% | 8.00% |
| 2 | 6.50 | 3.50 |
| 3 | 4.80 | 1.80 |
| 4 | 4.60 | 1.60 |
| 5 | 4.50 | 1.50 |
| 6 | 4.50 | 1.50 |
| 7 | 4.50 | 1.50 |
| 8 | 4.50 | 1.50 |
| 9 | 4.50 | 1.50 |
| 10 | 4.50 | 1.50 |
| 11 | 4.25 | 1.25 |
| 12 | 4.15 | 1.15 |
| 13 | 3.95 | 0.95 |
| 14 | 3.75 | 0.75 |
| 15 | 3.75 | 0.75 |
| 16 | 3.75 | 0.75 |
| 17 | 3.75 | 0.75 |
| 18 | 3.50 | 0.50 |
| 19 | 3.25 | 0.25 |
| 20 | 3.25 | 0.25 |
| 21 | 3.25 | 0.25 |
| 22 | 3.00 | 0.00 |
| 23 | 3.00 | 0.00 |
| 24 | 3.00 | 0.00 |
| 25+ | 3.00 | 0.00 |

Mortality rates

Active Members

Male Pub-2010 Male Public Safety Employee Mortality Table, adjusted for mortality
improvements using projection scale MP-2021.

Female Pub-2010 Female Public Safety Employee Mortality Table, adjusted for mortality
improvements using projection scale MP-2021.

Healthy Retirees

Male Pub-2010 Male Healthy Retired Public Safety Mortality Table, adjusted for mortality
improvements using projection scale MP-2021.

Female Pub-2010 Female Healthy Retired Public Safety Mortality Table, adjusted for mortality
improvements using projection scale MP-2021.

Disabled Retirees

Male Pub-2010 Male Public Safety Disabled Retiree Mortality Table, adjusted for mortality
improvements using projection scale MP-2021.

Female Pub-2010 Female Public Safety Disabled Retiree Mortality Table, adjusted for mortality
improvements using projection scale MP-2021.

Minnesota State Retirement System (MSRS) Plans

MSRS Legislators Retirement Plan

Update approved by the Commission on February 19, 2024; effective July 1, 2024.

| | |
|---------------------------------|----------------|
| Inflation | 2.25% per year |
| Payroll growth | N/A |
| Salary increases | 4.25% per year |
| Merit & seniority pay increases | N/A |

Mortality rates

Active Members

| | |
|--------|---|
| Male | Pub-2010 Male General Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021. |
| Female | Pub-2010 Female General Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021. |

Healthy Retirees

| | |
|--------|--|
| Male | Pub-2010 Male Healthy Retired General Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.04. |
| Female | Pub-2010 Female Healthy Retired General Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.10. |

MSRS Judges Retirement Plan

Update approved by the Commission on April 22, 2025; effective July 1, 2025.

| | |
|---------------------------------|----------------|
| Inflation | 2.25% per year |
| Payroll growth | 2.5% per year |
| Salary increases | 2.5% per year |
| Merit & seniority pay increases | None |

Mortality rates

Active Members

| | |
|--------|--|
| Male | Pub-2010 Male General, Above Median Income, Mortality Table, adjusted for mortality improvements using projection scale MP-2021. |
| Female | Pub-2010 Female General, Above Median Income, Mortality Table, adjusted for mortality improvements using projection scale MP-2021. |

Healthy Retirees

| | |
|--------|--|
| Male | Pub-2010 Male Healthy Retired General, Above Median Income, Mortality Table, adjusted for mortality improvements using projection scale MP-2021. |
| Female | Pub-2010 Female Healthy Retired General, Above Median Income, Mortality Table, adjusted for mortality improvements using projection scale MP-2021. |

Disabled Retirees

| | |
|--------|---|
| Male | Pub-2010 Male General Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. |
| Female | Pub-2010 Female General Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. |

Public Employees Retirement Association (PERA) Plans

PERA General Employees Retirement Plan

Update approved by the Commission on February 19, 2024; effective July 1, 2024.

Inflation 2.25% per year
 Payroll growth 3.00% per year

Salary increases/
 Merit & seniority
 pay increases Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service during the year.

| Year | Salary Increase | Merit & Seniority Pay Increase |
|------|-----------------|--------------------------------|
| 1 | 11.50% | 8.50% |
| 2 | 6.75 | 3.75 |
| 3 | 6.00 | 3.00 |
| 4 | 5.50 | 2.50 |
| 5 | 5.25 | 2.25 |
| 6 | 5.00 | 2.00 |
| 7 | 4.75 | 1.75 |
| 8 | 4.50 | 1.50 |
| 9 | 4.40 | 1.40 |
| 10 | 4.40 | 1.40 |
| 11 | 4.20 | 1.20 |
| 12 | 4.10 | 1.10 |
| 13 | 4.00 | 1.00 |
| 14 | 3.90 | 0.90 |
| 15 | 3.80 | 0.80 |
| 16 | 3.70 | 0.70 |
| 17 | 3.60 | 0.60 |
| 18 | 3.50 | 0.50 |
| 19 | 3.50 | 0.50 |
| 20 | 3.40 | 0.40 |
| 21 | 3.30 | 0.30 |
| 22 | 3.30 | 0.30 |
| 23 | 3.20 | 0.20 |
| 24 | 3.20 | 0.20 |
| 25 | 3.10 | 0.10 |
| 26 | 3.10 | 0.10 |
| 27 | 3.10 | 0.10 |
| 28+ | 3.00 | 0.00 |

Mortality rates

Active Members

Male Pub-2010 Male General Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Female Pub-2010 Female General Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 0.94.

Healthy Retirees

Male Pub-2010 Male Healthy Retired General Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.09.

Female Pub-2010 Female Healthy Retired General Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Disabled Retirees

Male Pub-2010 Male General/Teacher Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.12.

Female Pub-2010 Female General/Teacher Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.23.

Public Employees Retirement Association (PERA) Plans

PERA Public Employees Police and Fire Retirement Plan

Update approved by the Commission on April 22, 2025; effective July 1, 2025.

Inflation 2.25% per year
 Payroll growth 3.00% per year

Salary increases/
 Merit & seniority
 pay increases Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service earned during the year.

| Year | Salary Increase | Merit & Seniority Pay Increase |
|------|-----------------|--------------------------------|
| 1 | 10.75% | 7.75% |
| 2 | 8.00 | 5.00 |
| 3 | 7.25 | 4.25 |
| 4 | 6.50 | 3.50 |
| 5 | 5.25 | 2.25 |
| 6 | 4.75 | 1.75 |
| 7 | 4.25 | 1.25 |
| 8 | 4.00 | 1.00 |
| 9 | 3.90 | 0.90 |
| 10 | 3.80 | 0.80 |
| 11 | 3.60 | 0.60 |
| 12 | 3.40 | 0.40 |
| 13 | 3.30 | 0.30 |
| 14 | 3.30 | 0.30 |
| 15 | 3.30 | 0.30 |
| 16 | 3.30 | 0.30 |
| 17 | 3.20 | 0.20 |
| 18 | 3.20 | 0.20 |
| 19 | 3.20 | 0.20 |
| 20 | 3.20 | 0.20 |
| 21 | 3.10 | 0.10 |
| 22 | 3.10 | 0.10 |
| 23 | 3.10 | 0.10 |
| 24+ | 3.00 | 0.00 |

Mortality rates

Active Members

Male Pub-2010 Male Public Safety Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Female Pub-2010 Female Public Safety Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Healthy Retirees

Male Pub-2010 Male Healthy Retired Public Safety Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.01.

Female Pub-2010 Female Healthy Retired Public Safety Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Disabled Retirees

Male Pub-2010 Male Public Safety Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.17.

Female Pub-2010 Female Public Safety Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Public Employees Retirement Association (PERA) Plans

PERA Local Government Correctional Service Retirement Plan

Update approved by the Commission on April 22, 2025; effective July 1, 2025.

Inflation 2.25% per year
 Payroll growth 3.00% per year

Salary increases/
 Merit & seniority
 pay increases Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service earned during the year.

| Year | Salary Increase | Merit & Seniority Pay Increase |
|------|-----------------|--------------------------------|
| 1 | 8.00% | 5.00% |
| 2 | 6.00 | 3.00 |
| 3 | 5.50 | 2.50 |
| 4 | 5.40 | 2.40 |
| 5 | 5.30 | 2.30 |
| 6 | 5.20 | 2.20 |
| 7 | 5.10 | 2.10 |
| 8 | 4.90 | 1.90 |
| 9 | 4.60 | 1.60 |
| 10 | 4.50 | 1.50 |
| 11 | 4.40 | 1.40 |
| 12 | 4.30 | 1.30 |
| 13 | 4.20 | 1.20 |
| 14 | 4.10 | 1.10 |
| 15 | 3.90 | 0.90 |
| 16 | 3.70 | 0.70 |
| 17 | 3.50 | 0.50 |
| 18 | 3.50 | 0.50 |
| 19 | 3.50 | 0.50 |
| 20+ | 3.00 | 0.00 |

Mortality rates

Active Members

Male Pub-2010 Male Public Safety Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Female Pub-2010 Female Public Safety Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Healthy Retirees

Male Pub-2010 Male Healthy Retired Public Safety Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Female Pub-2010 Female Healthy Retired Public Safety Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Disabled Retirees

Male Pub-2010 Male Public Safety Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Female Pub-2010 Female Public Safety Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021.

Teachers Retirement Association (TRA)

Update approved by the Commission on February 19, 2024; effective July 1, 2024.

Inflation 2.5% per year
Payroll growth 3% per year

Salary increases/
Merit & seniority
pay increases Reported salary for prior fiscal year, with new hires annualized, is increased according to the salary increase table shown in the rate table for current fiscal year and annually for each future year. See table of sample rates.

| Service | Select Salary Increase Before July 1, 2028 | Ultimate Salary Increase After June 30, 2028 |
|---------|---|---|
| 1 | 8.85% | 9.25% |
| 2 | 7.10 | 7.50 |
| 3 | 6.60 | 7.00 |
| 4 | 6.35 | 6.75 |
| 5 | 6.35 | 6.75 |
| 6 | 6.20 | 6.60 |
| 7 | 6.05 | 6.45 |
| 8 | 5.90 | 6.30 |
| 9 | 5.75 | 6.15 |
| 10 | 5.60 | 6.00 |
| 11 | 5.35 | 5.75 |
| 12 | 5.10 | 5.50 |
| 13 | 4.85 | 5.25 |
| 14 | 4.60 | 5.00 |
| 15 | 4.35 | 4.75 |
| 16 | 4.10 | 4.50 |
| 17 | 3.85 | 4.25 |
| 18 | 3.65 | 4.05 |
| 19 | 3.55 | 3.95 |
| 20 | 3.45 | 3.85 |
| 21 | 3.35 | 3.75 |
| 22 | 3.25 | 3.65 |
| 23 | 3.15 | 3.55 |
| 24 | 3.05 | 3.45 |
| 25 | 2.95 | 3.35 |
| 26+ | 2.85 | 3.25 |

Mortality rates

| | |
|---------------------------------|--|
| Active healthy pre-retirement | PubT-2010(A) Employee Mortality Table, male rates set forward 1 year and female rates unadjusted. Generational projection with the MP-2021 scale. |
| Retiree healthy post-retirement | PubT-2010(A) Retiree Mortality Table, male rates set forward 1 year and female rates unadjusted. Generational projection with the MP-2021 scale. |
| Beneficiaries | PubT-2010(A) Contingent Survivor Mortality Table, male rates set forward 1 year and female rates unadjusted. Generational projection with the MP-2021 scale. |
| Disabled | PubNS-2010 Disabled Retiree Mortality Table, male rates set forward 1 year and female rates unadjusted. Generational projection with the MP-2021 scale. |

St. Paul Teachers Retirement Fund Association (SPTRFA)

Update approved by the Commission on April 17, 2023; effective July 1, 2023.

Inflation 2.5% per year
 Payroll growth 2.5% per year

Salary increases/
 Merit & seniority
 pay increases

| Year | Salary Increase | Merit & Seniority Pay Increase |
|------|-----------------|--------------------------------|
| 1 | 8.00% | 5.50% |
| 2 | 6.75 | 4.25 |
| 3 | 6.50 | 4.00 |
| 4 | 6.25 | 3.75 |
| 5 | 6.00 | 3.50 |
| 6 | 5.75 | 3.25 |
| 7 | 5.50 | 3.00 |
| 8 | 5.25 | 2.75 |
| 9 | 5.00 | 2.50 |
| 10 | 4.75 | 2.25 |
| 11 | 4.50 | 2.00 |
| 12 | 4.25 | 1.75 |
| 13 | 4.00 | 1.50 |
| 14 | 3.75 | 1.25 |
| 15 | 3.50 | 1.00 |
| 16 | 3.40 | 0.90 |
| 17 | 3.30 | 0.80 |
| 18 | 3.20 | 0.70 |
| 19 | 3.10 | 0.60 |
| 20 | 2.90 | 0.40 |
| 21 | 2.70 | 0.20 |
| 22+ | 2.50 | 0.00 |

Mortality rates

Active Healthy
 Pre-retirement

- Male Pub-2010 Male Healthy Teacher Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021 from 2010.
- Female Pub-2010 Female Healthy Teacher Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021 from 2010.

Retiree Healthy
 and Disabled

- Male Pub-2010 Male Healthy Teacher Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021 from 2010. Rates are multiplied by a factor of 1.03.
- Female Pub-2010 Female Healthy Teacher Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021 from 2010. Rates are multiplied by a factor of 1.03.