

# **Appendix A**

## **to the Standards for Actuarial Work**

### **ACTUARIAL ASSUMPTIONS**

<b>Minnesota State Retirement System (MSRS) Plans.....</b>	<b>1</b>
MSRS General Employees Retirement Plan .....	1
MSRS State Patrol Retirement Plan .....	3
MSRS Correctional State Employees Retirement Plan .....	4
MSRS Legislators Retirement Plan.....	5
MSRS Judges Retirement Plan.....	5
 <b>Public Employees Retirement Association (PERA) Plans.....</b>	 <b>6</b>
PERA General Employees Retirement Plan.....	6
PERA Public Employees Police and Fire Retirement Plan .....	8
PERA Local Government Correctional Service Retirement Plan .....	9
 <b>Teachers Retirement Association (TRA) .....</b>	 <b>11</b>
 <b>St. Paul Teachers Retirement Fund Association (SPTRFA).....</b>	 <b>12</b>

## ***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.

MSRS State Patrol Retirement Plan*Update approved by the Commission on February 23, 2021; effective July 1, 2021.*

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	12.50%	9.50%
2	8.50	5.50
3	7.50	4.50
4	7.25	4.25
5	7.00	4.00
6	6.75	3.75
7	6.50	3.50
8	5.50	2.50
9	5.00	2.00
10	4.50	1.50
11	4.25	1.25
12	4.00	1.00
13	4.00	1.00
14	4.00	1.00
15	4.00	1.00
16	3.75	0.75
17	3.50	0.50

## Mortality rates

Active healthy pre-retirement	Pub-2010 General Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2019.
Retiree healthy post-retirement	Pub-2010 Healthy Retired General Mortality Table, adjusted for mortality improvements using projection scale MP-2019.
Disabled	Pub-2010 General Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2019.

MSRS Correctional State Employees Retirement Plan*Update approved by the Commission on February 23, 2021; effective July 1, 2021.*

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	7.00	4.00
3	5.00	2.00
4	5.00	2.00
5	4.75	1.75
6	4.75	1.75
7	4.75	1.75
8	4.75	1.75
9	4.50	1.50
10	4.50	1.50
11	4.50	1.50
12	4.50	1.50
13	4.25	1.25
14	4.00	1.00
15	3.75	0.75
16	3.75	0.75
17	3.75	0.75
18	3.50	0.50
19	3.50	0.50
20	3.50	0.50
21	3.25	0.25
22	3.25	0.25
23	3.25	0.25
24	3.25	0.25
25+	3.00	0.00

## Mortality rates

Active healthy pre-retirement Pub-2010 General Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2019.

Retiree healthy post-retirement Pub-2010 Healthy Retired General Mortality Table, adjusted for mortality improvements using projection scale MP-2019.

Disabled Pub-2010 General Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2019.

### 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 February 23, 2021; effective July 1, 2021.*

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 healthy pre-retirement Pub-2010 General Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2019.

Retiree healthy post-retirement Pub-2010 Healthy Retired General Mortality Table, adjusted for mortality improvements using projection scale MP-2019.

Disabled Pub-2010 General Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2019.

## ***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.



PERA Public Employees Police and Fire Retirement Plan

*Update approved by the Commission on February 23, 2021; effective July 1, 2021.*

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	11.75%	8.75%
2	9.25	6.25
3	8.00	5.00
4	7.00	4.00
5	5.50	2.50
6	4.80	1.80
7	4.60	1.60
8	4.30	1.30
9	4.10	1.10
10	4.00	1.00
11	3.90	0.90
12	3.80	0.80
13	3.70	0.70
14	3.60	0.60
15	3.50	0.50
16	3.50	0.50
17	3.50	0.50
18	3.50	0.50
19	3.40	0.40
20	3.40	0.40
21	3.40	0.40
22	3.30	0.30
23	3.15	0.15
24+	3.00	0.00

Mortality rates

Active healthy pre-retirement	Pub-2010 Public Safety Employee Mortality Table, adjusted for mortality improvements using projection scale MP-2021.
Retiree healthy post-retirement	Pub-2010 Healthy Retired Public Safety Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Male rates are adjusted by a factor of 0.98.
Disabled	Pub-2010 Public Safety Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Male rates are adjusted by a factor of 1.05.

PERA Local Government Correctional Service Retirement Plan

*Update approved by the Commission on February 23, 2021; effective July 1, 2021.*

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.

Age	Salary Increase	Merit & Seniority Pay Increase
<=20	11.00%	8.00%
21	10.50%	7.50
22	10.00%	7.00
23	9.50%	6.50
24	8.50%	5.50
25	7.75%	4.75
26	7.25%	4.25
27	7.00%	4.00
28	6.75%	3.75
29	6.50%	3.50
30	6.00%	3.00
31	5.75%	2.75
32	5.65%	2.65
33	5.60%	2.60
34	5.55%	2.55
35	5.50%	2.50
36	5.35%	2.35
37	5.20%	2.20
38	5.05%	2.05
39	4.90%	1.90
40	4.75%	1.75
41	4.60%	1.60
42	4.45%	1.45
43	4.30%	1.30
44	4.15%	1.15
45	4.00%	1.00
46	3.95%	0.95
47	3.90%	0.90
48	3.85%	0.85
49	3.80%	0.80
50	3.75%	0.75
51	3.70%	0.70
52	3.65%	0.65
53	3.60%	0.60
54	3.55%	0.55
55	3.50%	0.50

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.

Age	Salary Increase	Merit & Seniority Pay Increase
56	3.40%	0.40
57	3.30%	0.30
58	3.20%	0.20
59	3.10%	0.10
60	3.00%	0.00
61	3.00%	0.00
62	3.00%	0.00
63	3.00%	0.00
64	3.00%	0.00
65+	3.00%	0.00

#### Mortality rates

Active healthy pre-retirement	Pub-2010 Public Safety Mortality Table, adjusted for mortality improvements using projection scale MP-2021.
Retiree healthy post-retirement	Pub-2010 Healthy Retired Public Safety Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Male rates are adjusted by a factor of 0.98.
Disabled	Pub-2010 Public Safety Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Male rates are adjusted by a factor of 1.05.

**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            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.