

**MEDFORD
CONTRIBUTORY RETIREMENT SYSTEM**

December 31, 2020 Actuarial Valuation Report

GASB 67 & 68

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Introduction

This report presents the Governmental Accounting Standards Statements 67 & 68 based on the findings of an actuarial valuation as of January 1, 2020, of the Medford Contributory Retirement System. Liabilities were rolled forward to December 31, 2020 assuming all actuarial assumptions were met.

The actuarial valuation is based on:

- Provisions of Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2020.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Medford Contributory Retirement System as of December 31, 2020.
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2020.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

GASB Statements No. 67 and No. 68

Effective for periods beginning after June 15, 2013, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 67 and 68. These statements, which amend GASB Statements No. 25 and No. 27, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

The statement requires the system to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position. The statement of fiduciary net position presents the following items as of the end of the plan’s reporting period, as applicable:

- Assets
- Deferred outflows of resources (consumption of net assets by the employers that is applicable to a future reporting period)
- Liabilities
- Deferred inflows of resources (acquisition of net assets by the employers that is applicable to a future reporting period)
- Fiduciary net position (Assets + Deferred outflows – Liabilities – Deferred inflows)

The system is considered a cost-sharing multiple-employer pension plan since pension obligations exist for employees of more than one employer and plan assets can be used to pay the benefits of the employees of any employer.

This report does not include all items required under GASB Statements No. 67 and No. 68. Rather, it provides all items required that are not readily available from other sources such as the Annual Statement of the Financial Condition prepared by the Board, Chapter 32 of the Massachusetts General Laws and investment reports prepared by the plan’s investment consultant.

Discount Rate

The discount rate, and all other actuarial assumptions, are the as those described in Exhibit 5. The discount rate was selected based on a projection of employer and employee contributions, benefit payments, expenses and the long term expected rate of return on trust assets. Under Chapter 32 of the Massachusetts Laws, employers are required to make the necessary contributions to the trust such that the plan reaches a full funding status by 2040. In addition, Chapter 32 also gives the Retirement Board the right to go directly to the Assessors of the community and add an additional property tax to bills for amounts not paid by employer.

Based on these laws and assumptions, the pensions plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The Board selected 7.25% as the long term expectation of investment returns. The average return for the 35 years ending as of December 31, 2019 was 8.67%. The average return for the past 10 years ending December 31, 2019 was 7.48%.

Net Position Restricted for Pensions

The Net Position Restricted for Pensions as of December 31, 2020 is \$225,603,197. The 2020 Annual Statement of the Financial Condition contains the values for previous years and the changes in Net Position Restricted for Pensions. Investments are reported at fair value.

December 31, 2019 Net Position	207,058,822
Employer Contributions	12,989,190
Employee Contributions	4,721,100
Other Payments	469,481
Benefit Payments	(22,432,439)
Expenses	(400,766)
Investment Income	<u>23,197,809</u>
December 31, 2020 Net Position	225,603,197

Pension Liability as of December 31, 2020

The following presents the changes in the pension liability during 2020.

December 31, 2019 Liability	334,961,569
Service Cost	6,952,372
Interest on Liability and Service Cost	23,989,812
Change in Plan Provisions	0
Experience (Gain) and Loss	0
Change in Assumptions	0
Benefit Payments	(22,432,439)
Other	<u>0</u>
December 31, 2020 Liability	343,471,314

Net Pension Liability as of December 31, 2020

The following presents the net pension liability of the system calculated using the discount rate of 7.25%, as well as what the system's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate:

	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Total Pension Liability	\$ 378,111,631	\$ 343,471,314	\$ 313,801,317
Plan Fiduciary Net Position	<u>\$ 225,603,197</u>	<u>\$ 225,603,197</u>	<u>\$ 225,603,197</u>
Net Pension Liability	\$ 152,508,434	\$ 117,868,117	\$ 88,198,120

The Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 65.7%.

	1% Decrease <u>(6.25%)</u>	Current Discount Rate <u>(7.25%)</u>	1% Increase <u>(8.25%)</u>
City of Medford	144,536,513	111,706,915	83,587,828
Medford Housing Authority	<u>7,971,921</u>	<u>6,161,202</u>	<u>4,610,292</u>
	152,508,434	117,868,117	88,198,120

Employer Contributions during 2020

	<u>Contribution</u>	<u>Portion</u>
City of Medford	12,310,219	0.947728
Medford Housing Authority	678,971	0.052272

Pension Expense for 2020

Service Cost	6,952,372
Interest	23,989,812
Difference in Experience - Amortization	3,440,140
Change in Assumptions - Amortization	4,747,087
Changes in Plan Provisions	0
Employee Contributions	(4,721,100)
Projected Earnings	(14,846,029)
Administration Expense	400,766
Other Changes in Fiduciary Net Position	0
Asset (Gain) / Loss Amortization	<u>(1,274,484)</u>
Total Expense	18,688,564

Schedules of Required Supplementary Information

	<u>2020</u>
Total Pension Liability – Beginning	334,961,569
Total Pension Liability – Ending (a)	343,471,314
Plan Fiduciary Net Position – Beginning	207,058,822
Plan Fiduciary Net Position – Ending (b)	225,603,197
Net Pension Liability – Ending (a) – (b)	117,868,117
Plan Fiduciary Net Positions as a percentage of the Total Pension Liability	65.7%
Covered-employee payroll	47,613,178
Net Pension Liability as a percentage of Covered-employee Payroll	247.6%

Schedule of Net Position Restricted for Pensions Amortization Recognition

Below is the schedule of amortization adjustments to the Pension Expense for the coming years. A positive number indicates that the actual return was less than the expected return and will be added to the Pension Expense.

Investment Return

<u>Year</u>	<u>(Gain)/ Loss</u>	<u>Period</u>	<u>Increase (Decrease) arising from (Gains) or Losses</u>				
			<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>
2020	8,351,780	5	(1,670,356)	(1,670,356)	(1,670,356)	(1,670,356)	(1,670,356)
2019	(13,639,613)	5	(2,727,923)	(2,727,923)	(2,727,923)	(2,727,921)	
2018	19,744,728	5	3,948,946	3,948,946	3,948,944		
2017	(8,533,318)	5	(1,706,664)	(1,706,662)			
2016	4,407,565	5	881,513				

Experience

<u>Year</u>	<u>(Gain)/Loss</u>	<u>Period</u>	<u>Increase (Decrease) arising from (Gains) or Losses</u>					<u>2025</u>
			<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	
2019	11,094,920	5.15	2,154,353	2,154,353	2,154,353	2,154,353	323,155	
2017	6,081,774	4.73	1,285,787	938,626				

Assumptions

<u>Year</u>	<u>(Gain) / Loss</u>	<u>Period</u>	<u>Increase (Decrease) arising from (Gains) or Losses</u>				
			<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>
2019	24,447,496	5.15	4,747,087	4,747,087	4,747,087	4,747,087	712,061
2015	13,742,413	4.79	2,266,493				

Schedule of Pension Amounts

	<u>City</u>	<u>Housing Authority</u>	<u>Total</u>
Net Pension Liability	111,706,915	6,161,202	117,868,117
Deferred Outflows of Resources			
Differences between Expected and Actual Experience	7,321,048	403,792	7,724,840
Net Asset Loss	7,485,052	412,838	7,897,890
Changes in Assumptions	14,171,681	781,641	14,953,322
Changes in Proportion and Differences between Employer Contributions and proportionate share of contributions	254,432	192,866	447,298
Total Deferred Outflows	29,232,213	1,791,137	31,023,350
Deferred Inflows of Resources			
Differences between Expected and Actual Experience	0	0	0
Net Asset Gain	15,705,609	866,244	16,571,853
Changes in Assumptions	0	0	0
Changes in Proportion and Differences between Employer Contributions and proportionate share of contributions	192,866	254,432	447,298
Total Deferred Inflows	15,898,475	1,120,676	17,019,151
Pension Expense			
Proportionate share of plan Pension Expense	17,711,676	976,889	18,688,565
Net Amortization from changes in Share Proportions	108,582	(108,583)	(1)
Total Employer Pension Expense	17,820,258	868,306	18,688,564
Revenue	444,940	24,541	469,481

Reconciliation of Net Pension Liability for 2020

	<u>City</u>	<u>Housing</u>	<u>Total</u>
NPL Beginning	121,450,437	6,452,310	127,902,747
Expense	17,820,258	868,306	18,688,564
Contribution	(12,310,219)	(678,971)	(12,989,190)
Deferred Outflow Changes	(12,587,957)	(483,483)	(13,071,440)
Deferred Inflow Changes	(2,220,665)	27,582	(2,193,083)
Revenue	<u>(444,940)</u>	<u>(24,541)</u>	<u>(469,481)</u>
NPL Ending	111,706,915	6,161,202	117,868,117

EXHIBITS

Exhibit 1 - Age/Service Distribution with Salary as of January 1, 2020

Attained Age	Average Salary <5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	1 14,392	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 14,392
20-24	28 28,929	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	28 28,929
25-29	53 44,792	3 25,124	0 0	0 0	0 0	0 0	0 0	0 0	0 0	56 43,739
30-34	38 54,259	29 77,106	7 63,301	0 0	0 0	0 0	0 0	0 0	0 0	75 63,429
35-39	27 47,567	15 59,324	16 80,933	9 94,899	0 0	0 0	0 0	0 0	0 0	67 64,525
40-44	25 39,708	10 44,282	15 81,068	13 82,573	2 89,139	0 0	0 0	0 0	0 0	65 60,051
45-49	30 40,480	13 48,157	8 65,184	5 88,731	21 86,175	4 94,293	0 0	0 0	0 0	81 61,634
50-54	27 31,250	15 47,136	15 44,440	17 62,735	27 93,952	6 104,353	6 95,843	0 0	0 0	113 62,139
55-59	20 41,944	16 46,001	18 52,300	12 55,073	14 101,118	7 73,638	21 101,377	8 103,058	0 0	116 69,497
60-64	13 26,048	12 45,699	16 36,152	17 46,384	14 65,527	5 44,626	10 110,715	13 121,716	3 83,912	103 61,511
65-69	4 26,802	8 47,905	4 44,422	4 32,856	5 58,342	4 43,044	4 69,471	2 95,802	5 87,279	40 53,114
70+	5 14,065	2 22,393	1 45,405	3 30,626	4 54,494	5 44,018	9 48,690	1 14,196	1 66,750	31 39,020
Total Employees	271	123	100	80	87	31	50	24	9	776
Average Salary	40,408	54,387	58,851	63,880	84,682	68,844	90,544	108,857	83,876	59,282

Exhibit 2 - Retiree Distribution as of January 1, 2020

Attained Age	Number of Employees			Total Payments		
	Female	Male	Total	Female	Male	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	0	1	21776.52	0	21,777
40-44	0	0	0	0	0	0
45-49	1	0	1	814	0	814
50-54	4	2	6	135,692	79,837	215,528
55-59	6	7	13	150,565	165,728	316,292
60-64	20	15	35	469,772	701,753	1,171,525
65-69	31	55	86	794,047	3,273,042	4,067,088
70-74	41	46	87	904,258	1,943,404	2,847,662
75-79	48	31	79	1,025,311	1,274,672	2,299,983
80-84	37	26	63	931,357	874,734	1,806,092
85-89	32	24	56	752,461	726,196	1,478,657
90-94	26	16	42	381,664	444,384	826,048
95+	14	4	18	177,018	103,869	280,887
Total	261	226	487	5,744,735	9,587,619	15,332,354
Average (Age/Payment)	77.66	75.08	76.47	22,010	42,423	31,483
Frequency Percent	53.6	46.4	100.0	37.5	62.5	100.0

Exhibit 3 - Disabled Retiree Distribution as of January 1, 2020

Attained Age	Number of Employees			Total Payments		
	Female	Male	Total	Female	Male	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	1	0	1	69,947	0	69,947
45-49	0	3	3	0	159,146	159,146
50-54	2	2	4	44,771	72,932	117,703
55-59	2	9	11	83,506	412,122	495,628
60-64	5	16	21	152,156	811,569	963,726
65-69	1	20	21	27,761	1,019,127	1,046,888
70-74	2	26	28	72,252	1,300,571	1,372,823
75-79	0	14	14	0	559,921	559,921
80-84	2	8	10	36,735	371,918	408,653
85-89	0	5	5	0	138,068	138,068
90-94	0	2	2	0	73,540	73,540
95-99	0	1	1	0	37,693	37,693
Total	15	106	121	487,127	4,956,609	5,443,737
Average (Age/Payment)	63.72	70.29	69.47	32,475	46,760	44,990
Frequency Percent	12.4	87.6	100.0	8.9	91.1	100.0

EXHIBIT 4 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2020, and does not take into account any subsequent changes.

1. Administration

Each of the 104 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

- (i) Group 1: Most general employees in State and local government
- (ii) Group 2: Certain specified hazardous duty positions
- (iii) Group 3: State police officers and inspectors
- (iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

Chapter 176 of the Acts of 2011 created different plan provisions within these groups for those hired on or after April 2, 2012.

3. **Salary**

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. **Member Contributions**

Member contributions vary depending upon date hired as follows:

<u>Date of Hire</u>	<u>Member Contribution Rate</u>
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	Plus 2.0% of Salary in excess of \$30,000

For Group 1 employees who become members on or after April 2, 2012, the Contribution Rate shall be 6% after the completion of 30 years of service.

5. **Average Salary**

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.). For employees who become members on or after April 2, 2012, the averaging period shall be five years.

6. **Creditable Service**

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. Service Retirement

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

- (i) completion of 20 years of service
- (ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member
- (iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service
- (iv) for a Group 1 employee hired on or after April 2, 2012, attainment of age 60 and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table for those hired prior to April 2, 2012:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

For those hired after April 1, 2012 who retire with less than 30 years of service, the following rates are applied:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
67 or Over	.0250	.0250	.0250
66	.0235	.0250	.0250
65	.0220	.0250	.0250
64	.0205	.0250	.0250
63	.0190	.0250	.0250
62	.0175	.0250	.0250
61	.0160	.0235	.0250
60	.0145	.0220	.0250
59		.0205	.0250
58		.0190	.0250
57		.0175	.0250
56		.0160	.0235
55		.0145	.0220
54			.0205
53			.0190
52			.0175
51			.0160
50			.0145

For those hired after April 1, 2012 who retire with at least 30 years of service, the following rates are applied:

Age at Retirement	Percentage of Average Salary		
	Group 1	Group 2	Group 4
67 or Over	.02500	.02500	.02500
66	.02375	.02500	.02500
65	.02250	.02500	.02500
64	.02125	.02500	.02500
63	.02000	.02500	.02500
62	.01875	.02500	.02500
61	.01750	.02375	.02500
60	.01625	.02250	.02500
59		.02125	.02500
58		.02000	.02500
57		.01875	.02500
56		.01750	.02375
55		.01625	.02250
54			.02125
53			.02000
52			.01875
51			.01750
50			.01625

8. Deferred Vested Retirement

a. Eligibility:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability

a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus \$450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55 or age 60 if hired on or after April 2, 2012).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55 (age 60 if hired on or after April 2, 2012). If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55 (age 60 if hired on or after April 2, 2012), he

will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of \$500 per month to the surviving spouse, plus \$120 for the first child, plus \$90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of \$500 per month plus \$120 for the first child and \$90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$16,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

- (i) Option A – Life annuity
- (ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member
- (iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 5 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2020.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 7.25% per annum. This includes a 3% inflation assumption.

5. Salary Scale

It is assumed that salaries including longevity will increase at 3.5% per year:

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$16,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees'

Retirement Administration Commission (PERAC).

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

<u>Service</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
0	0.2080	0.1500
5	0.1020	0.1000
10	0.0650	0.0600
15	0.0417	0.0600
20	0.0400	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that mortality for is represented by the various SOA Pub-2010 Public Retirement Plans Mortality Tables specific to the Group, Pre-retirement versus Post, Disabled and Beneficiaries, with Scale MP-2019 improvements until 2025.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages for those hired prior to April 2, 2012:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0360	0.1019	0.0382
51	0.0405	0.0714	0.0351
52	0.0437	0.0562	0.0436
53	0.0366	0.0448	0.0527
54	0.0451	0.0488	0.0999
55	0.0477	0.0469	0.1110
56	0.0574	0.0518	0.1413
57	0.0632	0.0509	0.1292
58	0.0765	0.0552	0.1499
59	0.0917	0.0645	0.1679
60	0.1057	0.0774	0.1871
61	0.1224	0.1038	0.2073
62	0.1473	0.1168	0.2176
63	0.1777	0.1440	0.3338
64	0.2136	0.1708	0.5664
65	0.2615	0.1939	1.00000
66	0.2682	0.1959	1.00000
67	0.2500	0.2000	1.00000
68	0.2500	0.2000	1.00000
69	0.2500	0.2000	1.00000
70 to 76	0.2500	0.2500	1.00000
77 to 79	0.3500	0.2500	1.00000
80	1.0000	1.0000	1.00000

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages for those hired on or after April 2, 2012:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0000	0.0000	0.0191
51	0.0000	0.0000	0.0176
52	0.0000	0.0000	0.0436
53	0.0000	0.0000	0.0211
54	0.0000	0.0000	0.0266
55	0.0000	0.0000	0.0370
56	0.0000	0.0000	0.1060
57	0.0000	0.0000	0.1938
58	0.0000	0.0000	0.1499
59	0.0000	0.0000	0.1119
60	0.0477	0.0469	0.0936
61	0.0574	0.0518	0.1555
62	0.0632	0.0509	0.1741
63	0.0765	0.0552	0.2670
64	0.0917	0.0645	0.4720
65	0.1057	0.0774	1.0000
66	0.1224	0.1038	1.0000
67	0.1473	0.1168	1.0000
68	0.1777	0.1440	1.0000
69	0.2136	0.1708	1.0000
70	0.2615	0.1939	1.0000
70 to 76	0.2682	0.1959	1.0000
77 to 79	0.2500	0.2000	1.0000
80	1.0000	1.0000	1.0000

12. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

<u>Attained Age</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
20	0.000100	0.000500
30	0.000152	0.000967
40	0.000663	0.002500
50	0.001271	0.007634

In addition, it is assumed for the general employees that 20% of all disabilities are ordinary (80% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

13. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

14. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for plan year 2020 is \$425,000 and is anticipated to increase at 3.5% per year.

CERTIFICATION:

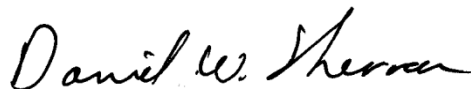
This report fairly represents the actuarial position of the Medford Retirement System as of December 31, 2020, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

The funded status measure is appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations. The funded status measure is appropriate for assessing the need for or the amount of future contributions. The funded status measure would be different if the measure reflected the market value of assets rather than the actuarial value of assets.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

The report was prepared under the supervision of Daniel Sherman, an Associate of the Society of Actuaries and a Member of the American Academy of Actuaries, who takes responsibility for the overall appropriateness of the analysis, assumptions and results. Daniel Sherman is deemed to meet the General Qualification Standard and the basic education and experience requirement in the pension area. Based on over thirty years of performing valuations of similar complexity, Mr. Sherman is qualified by experience. Daniel Sherman has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sherman Actuarial Services, LLC



Daniel W. Sherman, ASA, MAAA

April, 2021