



**FORMER CITY OF NASHVILLE  
PENSION PLAN**

*Valuation and Report as of June 30, 2022*

# ACTUARIAL VALUATION REPORT

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## A. SUMMARY OF REPORT

An actuarial valuation of the former City of Nashville Pension System was performed as of June 30, 2022. The purpose of the valuation was to examine the liabilities and cost implications of the two funds (the Civil Service Employees' Fund and the Firemen's and Policemen's Fund) which together comprise this closed pension system. Prior to June 30, 2005, the plan was being funded on a pay-as-you-go basis. The closed pension system is actuarially funded through the Guaranteed Payment Plan.

The former City of Nashville Pension System is larger than the former Davidson County System, because fewer members transferred to the successor Metro plan in 1963. In particular, no firemen or policemen transferred from the City plan to that Metro plan. However, all but one of the remaining actives transferred to Division B of the Metro plan when it became available in 1995. As of the valuation date, there were no active employees in the Plan. There were 45 retired employees and 150 beneficiaries in the plan as of June 30, 2022.

The present value of future benefits under the City system was \$20,630,488 as of the valuation date. All of this amount would be classified as "past service liability" if the entry age normal method (the method used for the valuation of the Metro plan) were applied to the City system. The amount listed includes the effect of the cost-of-living adjustment effective July 1, 2021.

Since the plan is a closed system with no active employees, funding had traditionally been conducted on a pay-as-you-go basis without following a fixed amortization schedule. However, commencing with the plan year beginning July 1, 2004, some prefunding of the plan has been undertaken through the Guaranteed Payment Plan. The Guaranteed Payment Plan is an umbrella plan created by the Metro Council to ensure actuarially sound funding for a group of five closed plans supervised by the Metro Employee Benefit Board and the Board of Education.

The table below shows the unfunded liabilities of the plan as of June 30, 2022.

Present Value of Benefits	\$20,630,488
Accumulated Assets	<u>(0)</u>
Unfunded Liability as of June 30, 2022	\$20,630,488

The following table shows the results of applying the usual "normal cost plus amortization of past service liabilities" approach to the funding of the closed system.

	<u>Annual Contribution</u>
20-Year Amortization	\$1,681,346
10-Year Amortization	2,665,657
5-Year Amortization	4,705,243

Under the GPP, unfunded liabilities of the aggregate plan are amortized over a period of no more than thirty years commencing July 1, 2000. Payments for the City System move to a payment account from which

distributions are paid to the constituent plans of the GPP as necessary to satisfy current benefits and to satisfy funding objectives of the GPP. During the 2021-2022 year, payments of \$14,297,691 were paid into the GPP on behalf of the plan. \$3,868,698 was transferred from the GPP account to the plan during this period for the payment of benefits. Funding issues that are specific to the GPP are addressed in a separate report. The following is a summary of GPP transfers for the City of Nashville Pension Plan.

GPP Appropriation for the Plan	\$14,297,691
Transfer for Benefit Payments	\$3,868,698
Transfer to the other GPP Plans	\$10,428,993
Transfer to the Open Plan Separate Account for Future Payments	\$0

Table III-4 of the Appendix illustrates the annual payout which could be expected from the entire City System during the next twenty calendar years. The annualized payout as of the beginning of the 2021-2022 fiscal year is expected to be approximately \$3,524,347. A level payout of this amount will amortize the full liability over a period of approximately 8 years.

The actuarial valuation underlying this report has been made utilizing employee data furnished by Metro and the actuarial assumptions summarized in Table VII of the Appendix. Quantities called for by Statement 25 of the Governmental Standards Accounting Board are set out in Table VI of the Appendix. Since the system was funded on a pay-as-you-go basis prior to June 30, 2005, no assets are shown for those dates.

## B. SUMMARY OF PLAN PROVISIONS

### CITY OF NASHVILLE PENSION PLANS

1. Eligibility

All employees of the former City of Nashville who were employed prior to April 1, 1963, who elected not to transfer to the Metropolitan Government Employee Benefit System on that date or on a later open enrollment date and who also (if still active) elected not to transfer to Division B of the Metro plan in 1995, are participants in the former City of Nashville Pension Plan, which included the Civil Service Employee's Pension Plan and the Policemen's and Firemen's Pension Plan.

2. Normal Retirement

(a) Condition

Except for firemen and policemen, the normal retirement date is the date the member completes 25 years of service and attains age 60. For firemen and policemen, the normal retirement date is the date the member completes 25 years of service. Retirement may be delayed, but not later than age 75.

(b) Benefit

The normal retirement benefit, payable monthly for life, is 50% of the member's final monthly salary.

3. Disability Retirement

A member who becomes disabled is eligible to receive a disability retirement benefit equal to 50% of the member's final monthly salary.

4. Survivor Benefits

If the death of a member occurs while he is an active member or after he has retired on service or disability retirement, his surviving widow while unmarried, or dependent mother, will receive a life income equal to \$675 per month. If no widow survives, any surviving dependent children under 16 years of age will receive such survivorship benefit, instead of the mother, for a period not to exceed 10 years.

5. Other Termination of Employment

If a member other than a fireman or policeman terminates his service after 25 years of service but before attaining age 60, he is eligible to receive a deferred vested benefit, commencing at age 60, equal to 50% of the member's final monthly salary.

6. Escalation Provision

Effective July 1, 2002, benefits under the provisions above are increased annually by the increase in the Consumer Price Index during the previous year.

7. Member Contributions

Prior to January 1, 1987, each member contributed by payroll deduction an amount equal to 5% of annual earnings for a period of 25 years, even after retirement (except that policemen or firemen disabled in the line of duty no longer had to make contributions). Contributions for females who elected

not to have survivor benefits under paragraph 4 above were 2-1/2%. Thereafter, members no longer contribute toward the cost of the plan.

8. Employer Contributions

The Metropolitan Government provides such additional amounts as are necessary to pay benefits as they become due.

## C. ASSESSMENT OF RISK

Risk Factor	Commentary on the Plan's Risk Exposure
Investment	<p>Over a period of years, investment returns below the expected level will create actuarial losses and lead to higher recommended and required contributions. Conversely, investment returns above the expected level will create actuarial gains and lead to lower recommended and required contributions.</p> <p>The plan's low current funded ratio means the plan has a relatively low exposure to investment return risk.</p>
Assumed Rate of Return	<p>Due to the plan's estimated duration of 4 to 5, a 1% decrease in the assumed rate of investment return would increase the measurement of the liability by 4% to 5%.</p>
Longevity	<p>Since all benefits are paid as annuities over the lifetime of the members and beneficiaries, the plan is sensitive to changes in overall population longevity. As a result, the liabilities will fluctuate with the actual mortality experience of the plan. Given the extreme age of the population, there is less sensitivity to long-term changes in overall mortality improvement.</p>
Other demographic factors	<p>No significant risk.</p>
Lump sums	<p>No significant risk.</p>
Inflation	<p>Inflation is a component of future interest rates and investment returns over a long period. As a result, changes to inflation can affect funded percentages. Additionally, the plan provides a cost-of-living adjustment (COLA) that is based on inflation. Higher actual or expected rates of inflation will have the impact of increasing plan liabilities.</p>

USI Consulting Group can perform more detailed assessments of these risks as desired by the plan sponsor to provide a better understanding of the risks.

## D. APPENDIX

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**TABLE I-1**  
**DISTRIBUTION OF ANNUAL BENEFITS BY AGE GROUPS**  
**CITY BENEFICIARIES**

<b>Age Group</b>	<b>Number</b>	<b>Total</b>	<b>Average</b>
Under 20	0	-	-
20 - 29	0	-	-
30 - 39	0	-	-
40 - 49	0	-	-
50 - 59	1	13,170	13,170
60 - 69	5	65,852	13,170
70 - 79	19	236,747	12,460
80 - 89	89	1,428,222	16,047
90 - 99	39	580,272	14,879
100 - 109	1	13,170	13,170
110 - 120	0	-	-
<b>Total</b>	<b>154</b>	<b>2,337,435</b>	<b>15,178</b>

**TABLE I-2**  
**DISTRIBUTION OF ANNUAL BENEFITS BY AGE GROUPS**  
**CITY SERVICE RETIREMENTS**

<b>Age Group</b>	<b>Number</b>	<b>Total</b>	<b>Average</b>
Under 20	0	-	-
20 - 29	0	-	-
30 - 39	0	-	-
40 - 49	0	-	-
50 - 59	1	15,305	15,305
60 - 69	4	42,579	10,645
70 - 79	2	5,600	2,800
80 - 89	24	668,855	27,869
90 - 99	13	431,824	33,217
100 - 109	1	22,749	22,749
110 - 120	0	-	-
<b>Total</b>	<b>45</b>	<b>1,186,912</b>	<b>26,376</b>

**TABLE I-3**  
**DISTRIBUTION OF ANNUAL BENEFITS BY AGE GROUPS**  
**CITY TOTALS - RETIRED LIVES**

<b>Age Group</b>	<b>Number</b>	<b>Total</b>	<b>Average</b>
Under 20	0	-	-
20 - 29	0	-	-
30 - 39	0	-	-
40 - 49	0	-	-
50 - 59	2	28,475	14,238
60 - 69	9	108,431	12,048
70 - 79	21	242,348	11,540
80 - 89	113	2,097,077	18,558
90 - 99	52	1,012,096	19,463
100 - 109	2	35,920	17,960
110 - 120	0	-	-
<b>Total</b>	<b>199</b>	<b>3,524,347</b>	<b>17,710</b>

**TABLE II-1**  
**PROJECTION OF BENEFIT PAYOUT AND LIABILITY**  
**CITY BENEFICIARIES**

<b>Plan Year</b>	<b>Number of Retirees</b>	<b>Annual Benefits</b>	<b>Beginning of Year Liability</b>
2022	154	2,337,435	13,733,855
2023	135	2,134,260	12,022,225
2024	119	1,911,698	10,469,178
2025	105	1,700,844	9,070,615
2026	93	1,503,057	7,820,592
2027	80	1,319,429	6,711,657
2028	70	1,150,633	5,735,133
2029	60	996,983	4,881,452
2030	52	858,503	4,140,457
2031	44	734,950	3,501,660
2032	38	625,809	2,954,494
2033	31	530,347	2,488,571
2034	26	447,641	2,093,885
2035	23	376,628	1,761,009
2036	19	316,140	1,481,242
2037	15	264,990	1,246,703
2038	13	222,021	1,050,370
2039	10	186,118	886,075
2040	9	156,250	748,479
2041	8	131,468	633,028
2042	7	110,924	535,888
2043	6	93,878	453,873
2044	5	79,692	384,369
2045	3	67,828	325,250
2046	3	57,844	274,800

**TABLE II-2**  
**PROJECTION OF BENEFIT PAYOUT AND LIABILITY**  
**CITY SERVICE RETIREMENTS**

<b>Plan Year</b>	<b>Number of Retirees</b>	<b>Annual Benefits</b>	<b>Beginning of Year Liability</b>
2022	45	1,186,912	6,896,633
2023	44	1,066,562	6,031,924
2024	42	949,339	5,262,249
2025	40	848,241	4,579,910
2026	38	761,427	3,977,544
2027	36	687,273	3,448,159
2028	33	624,365	2,985,091
2029	30	571,511	2,581,948
2030	28	527,639	2,232,589
2031	25	491,808	1,931,143
2032	22	463,164	1,672,021
2033	20	440,831	1,449,961
2034	18	423,949	1,260,103
2035	16	411,697	1,098,017
2036	13	403,292	959,708
2037	12	398,017	841,629
2038	11	395,241	740,645
2039	9	394,425	654,004
2040	8	395,107	579,321
2041	7	388,485	514,552
2042	6	391,001	457,968
2043	5	394,102	408,136
2044	5	397,612	363,893
2045	4	383,696	324,315
2046	4	387,460	288,694

**TABLE II-3**  
**PROJECTION OF BENEFIT PAYOUT AND LIABILITY**  
**CITY TOTALS - RETIRED LIVES**

<b>Plan Year</b>	<b>Number of Retirees</b>	<b>Annual Benefits</b>	<b>Beginning of Year Liability</b>
2022	199	3,524,347	20,630,488
2023	179	3,200,822	18,054,149
2024	161	2,861,037	15,731,427
2025	145	2,549,085	13,650,525
2026	131	2,264,484	11,798,136
2027	116	2,006,702	10,159,816
2028	103	1,774,998	8,720,224
2029	90	1,568,494	7,463,400
2030	80	1,386,142	6,373,046
2031	69	1,226,758	5,432,803
2032	60	1,088,973	4,626,515
2033	51	971,178	3,938,532
2034	44	871,590	3,353,988
2035	39	788,325	2,859,026
2036	32	719,432	2,440,950
2037	27	663,007	2,088,332
2038	24	617,262	1,791,015
2039	19	580,543	1,540,079
2040	17	551,357	1,327,800
2041	15	519,953	1,147,580
2042	13	501,925	993,856
2043	11	487,980	862,009
2044	10	477,304	748,262
2045	7	451,524	649,565
2046	7	445,304	563,494

TABLE III  
CITY OF NASHVILLE PENSION PLAN  
DETAILED CALCULATION OF FUNDING LEVELS

The contribution levels for the fiscal year beginning June 30, 2022 were derived as follows:

(1)	Present Value of Benefits	\$20,630,488
(2)	Past Service Liability	20,630,488
(3)	Allocated Assets	<u>(0)</u>
(4)	Unfunded Past Service Liability (2) - (3)	\$20,630,488
(5)	Present Value of Future Normal Costs (1) - (2)	\$ 0
(6)	Present Value of Future Salaries	0
(7)	Normal Cost Pct (5)/(6)	0
(8)	Eligible Payroll	0
(9)	Normal Cost (7) x (8)	0
(10)	Total Cost, Including Amortization of Unfunded Past Service Liability Over Specified Period (assuming payments made uniformly throughout plan year)	
	20 Years	\$1,681,346
	10 Years	2,655,657
	5 Years	4,705,243

TABLE IV

ROSTER OF FORMER PARTICIPANTS WITH DEFERRED VESTED BENEFITS

There are no former participants.



TABLE V  
GOVERNMENTAL ACCOUNTING STANDARDS BOARD  
STATEMENT NO. 25 INFORMATION

The following is a schedule of funding progress based upon comparison to the unfunded past service liability on the valuation dates for the years in which the calculations are consistent with the parameters. The schedule presented herein is based upon valuation results for the current valuation period and historical periods. More information on the Funded Status pursuant to the Government Accounting Standard Board Statements No. 67 and No. 68 can be found in the Actuarial Report GASB 67 and GASB 68, dated October 19, 2022.

Former City of Nashville Pension Plan  
Schedule of Funding Progress

June 30, 2022

Plan Year	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	Unfunded Actuarial Accrued Liability as a Pct of Covered Payroll
June 30, 1996	\$ 0	\$103,380,560	\$103,380,560	0.00%	\$36,419	283,864.4%
June 30, 1998	0	101,792,628	101,792,628	0.00%	0	na
June 30, 2000	0	91,006,918	91,006,918	0.00%	0	na
June 30, 2002	0	106,725,860	106,725,860	0.00%	0	na
June 30, 2004	0	85,325,799	85,325,799	0.00%	0	na
June 30, 2006	3,303,691	78,318,066	75,014,375	4.22%	0	na
June 30, 2008	6,816,106	68,552,808	61,736,702	9.94%	0	na
June 30, 2009	5,540,723	63,040,366	57,499,643	8.79%	0	na
June 30, 2010	6,171,083	57,090,961	50,919,878	10.81%	0	na
June 30, 2011	7,274,892	55,674,185	48,399,293	13.07%	0	na
June 30, 2012	0	54,198,258	54,198,258	0.00%	0	na
June 30, 2013	0	47,300,784	47,300,784	0.00%	0	na
June 30, 2014	0	42,631,286	42,631,286	0.00%	0	na
June 30, 2015	0	37,777,737	37,777,737	0.00%	0	na
June 30, 2016	0	36,585,493	36,588,493	0.00%	0	na
June 30, 2017	0	33,262,448	33,262,448	0.00%	0	na
June 30, 2018	0	30,065,824	30,065,824	0.00%	0	na
June 30, 2019	0	27,547,576	27,547,576	0.00%	0	na
June 30, 2020	0	24,460,568	24,460,568	0.00%	0	na
June 30, 2021	0	22,749,799	22,749,799	0.00%	0	na
June 30, 2022	0	20,630,488	20,630,488	0.00%	0	na

TABLE VI  
SUMMARY OF ACTUARIAL ASSUMPTIONS

(Sample Values per 1,000 Lives)

	AGE			
	60	70	80	90
<b>Mortality Rates – Inactive Members</b>				
Male: 112% RP-2014 Blue Collar	9.96	22.56	58.87	172.58
Females: 112% RP-2014 Blue Collar	7.17	15.31	43.64	136.81
(Rates projected to 2023 with Scale MP-21)				
 <b>Mortality Improvement Rates – Inactive Members</b>				
Improvement Scale MP-21, Fully Generational				
<b>Withdrawal Rates</b>	N/A	N/A	N/A	N/A
<b>Salary Scale</b>	N/A	N/A	N/A	N/A
<b>Disability Rates</b>	N/A	N/A	N/A	N/A
<b>Rate of Death and Recovery Among Disabled Lives</b>				
Male: 120% RP-2014 Disabled Mortality	31.92	48.42	91.94	207.61
Female: 120% RP-2014 Disabled Mortality	20.40	33.84	73.24	159.18
<b>Rate of Normal Retirement</b>				
Assume retirement as soon as eligible.				
<b>Rate of Investment Return</b>				
5.50% per annum				
<b>Cost-of-Living Adjustment</b>				
2.50% per annum				

**Spouse Frequency and Ages**

Assume 85% married, with husbands four years older than wives

**Actuarial Valuation Method**

Entry Age Normal

**Asset Valuation Method**

Market Value

TABLE VII  
ACTUARIAL CERTIFICATION

This report has been prepared under my supervision; I am a member of the American Academy of Actuaries, a Fellow of the Society of Actuaries, and a consulting actuary USI Consulting Group of Brentwood, Tennessee, and have met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions herein. To the best of our knowledge this report has been prepared in accordance with generally accepted actuarial standards, including the overall appropriateness of the analysis, assumptions, and results and conforms to appropriate Standards of Practice as promulgated from time to time by the Actuarial Standards Board, which standards form the basis for the actuarial report. We are not aware of any direct or material indirect financial interest or relationship, including investment management or other services that could create, or appear to create, a conflict of interest that would impair the objectivity of our work.

June 30 2023

Date



S. Kevin Sullivan, F.S.A.

Enrollment Number 23-06235