



**FORMER CITY OF NASHVILLE  
PENSION PLAN**

*Valuation and Report as of June 30, 2023*

# 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, 2023. 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 145 beneficiaries in the plan as of June 30, 2023.

The present value of future benefits under the City system was \$20,718,564 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, 2022.

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, 2023.

Present Value of Benefits	\$20,718,564
Accumulated Assets	<u>(0)</u>
Unfunded Liability as of June 30, 2023	\$20,718,564

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	\$1,558,469
10-Year Amortization	2,562,011
5-Year Amortization	4,617,899

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 2023-2024 year, payments of \$14,297,691 were paid into the GPP on behalf of the plan. \$3,651,034 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	\$3,651,034
Transfer to the other GPP Plans	\$10,646,657
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 2023-2024 fiscal year is expected to be approximately \$3,508,960. A level payout of this amount will amortize the full liability over a period of approximately 7 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>
Low-Default-Risk Obligation Measurement	<p>In accordance with Actuarial Standards of Practice (ASOP) No. 4, the actuary is required to provide a "Low-Default-Risk Obligation Measurement" (LDRM). The intended purpose of the measurement is to show how the pension obligation could hypothetically be settled on the measurement date using current interest rate conditions. This may provide additional information regarding the security of benefits that members have earned. This is not intended to be a precise calculation as assumptions such as early retirement provisions, lump sum election percentages, and various other assumptions may need to be revised to reflect a terminal liability. This disclosure is required and does not imply the plan sponsor has considered or is considering the termination of this plan and may not be appropriate for other uses. As of the valuation date, the Low-Default-Risk Obligation for the plan is \$21,131,718, an increase of 2%.</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**

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<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	13,829	13,829
60 - 69	4	55,316	13,829
70 - 79	18	248,585	13,810
80 - 89	85	1,463,935	17,223
90 - 99	44	729,702	16,584
100 - 109	1	13,829	13,829
110 - 120	0	-	-
<b>Total</b>	<b>153</b>	<b>2,525,196</b>	<b>16,505</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	15,885	15,885
60 - 69	4	44,144	11,036
70 - 79	2	5,672	2,836
80 - 89	21	629,387	29,971
90 - 99	9	288,676	32,075
100 - 109	0	-	-
110 - 120	0	-	-
<b>Total</b>	<b>37</b>	<b>983,764</b>	<b>26,588</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	29,714	14,857
60 - 69	8	99,460	12,432
70 - 79	20	254,257	12,713
80 - 89	106	2,093,322	19,748
90 - 99	53	1,018,378	19,215
100 - 109	1	13,829	13,829
110 - 120	0	-	-
<b>Total</b>	<b>190</b>	<b>3,508,960</b>	<b>18,468</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>
2023	145	2,614,009	17,071,512
2024	132	2,343,738	14,926,607
2025	120	2,087,274	12,994,195
2026	108	1,846,265	11,265,601
2027	96	1,621,967	9,730,595
2028	85	1,415,246	8,377,641
2029	75	1,226,667	7,194,142
2030	66	1,056,518	6,166,652
2031	57	904,797	5,281,073
2032	50	771,120	4,522,894
2033	43	654,717	3,877,558
2034	37	554,491	3,330,853
2035	31	469,093	2,869,260
2036	27	397,004	2,480,241
2037	23	336,672	2,152,442
2038	20	286,552	1,875,767
2039	17	245,148	1,641,407
2040	15	211,058	1,441,825
2041	13	183,006	1,270,683
2042	11	159,856	1,122,753
2043	10	140,627	993,800
2044	9	124,490	880,455
2045	7	110,764	780,085
2046	7	98,905	690,665
2047	5	88,493	610,655

**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>
2023	45	702,135	3,647,053
2024	39	599,481	3,031,714
2025	33	507,165	2,506,581
2026	28	425,375	2,062,489
2027	23	353,944	1,690,163
2028	19	292,430	1,380,517
2029	17	240,157	1,124,880
2030	13	196,274	915,160
2031	11	159,830	743,989
2032	9	129,850	604,827
2033	7	105,382	491,972
2034	6	85,550	400,552
2035	5	69,559	326,467
2036	4	56,711	266,317
2037	3	46,396	217,321
2038	2	38,097	177,242
2039	2	31,389	144,307
2040	2	25,924	117,121
2041	1	21,430	94,606
2042	1	17,691	75,925
2043	1	14,551	60,433
2044	1	11,895	47,625
2045	1	9,638	37,097
2046	0	7,725	28,516
2047	0	6,112	21,599

**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>
2023	190	3,316,144	20,718,564
2023	171	2,943,219	17,958,321
2024	153	2,594,439	15,500,776
2025	136	2,271,640	13,328,090
2026	119	1,975,911	11,420,758
2027	104	1,707,676	9,758,158
2028	92	1,466,824	8,319,022
2029	79	1,252,792	7,081,812
2030	68	1,064,627	6,025,062
2031	59	900,970	5,127,721
2032	50	760,099	4,369,530
2033	43	640,041	3,731,405
2034	36	538,652	3,195,727
2035	31	453,715	2,746,558
2036	26	383,068	2,369,763
2037	22	324,649	2,053,009
2038	19	276,537	1,785,714
2039	17	236,982	1,558,946
2040	14	204,436	1,365,289
2041	12	177,547	1,198,678
2042	11	155,178	1,054,233
2043	10	136,385	928,080
2044	8	120,402	817,182
2045	7	106,630	719,181
2046	5	94,605	632,254

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

The contribution levels for the fiscal year beginning June 30, 2023 were derived as follows:

(1)	Present Value of Benefits	\$20,718,564
(2)	Past Service Liability	20,718,564
(3)	Allocated Assets	<u>(0)</u>
(4)	Unfunded Past Service Liability (2) - (3)	\$20,718,564
(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	\$1,558,469
	10 Years	2,562,011
	5 Years	4,617,899

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 January 17, 2024.

Former City of Nashville Pension Plan  
Schedule of Funding Progress

June 30, 2023

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
June 30, 2023	0	20,718,564	20,718,564	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>				
4.50% per annum				
<b>LD-ROM Discount Rate</b>				
4.13% per annum, compounded annually				
Based on the 6/30 S&P Municipal Bond 20-year high grade rate index				

**Cost-of-Living Adjustment**

2.50% per annum

**Spouse Frequency and Ages**

Assume 50% of remaining retirees 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.

May 31, 2024

Date



S. Kevin Sullivan, F.S.A.

Enrollment Number 23-06235