

## **Cincinnati Retirement System**

**GASB 67/68 Report  
as of June 30, 2024**

**Produced by Cheiron**

**October 2024**

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***Letter of Transmittal***

October 14, 2024

Board of Trustees  
Cincinnati Retirement System  
801 Plum Street  
Suite 328  
Cincinnati, Ohio 45202

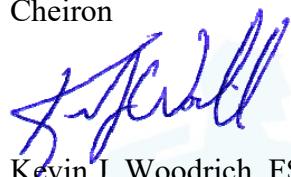
Dear Members of the Board:

The purpose of this report is to provide accounting and financial disclosure information under the Governmental Accounting Standards Board (GASB) Statement No. 67 for the Cincinnati Retirement System and GASB Statement No. 68 for the employer. This information includes:

- Calculation of the Net Pension Liability at the discount rate as well as discount rates 1% higher and lower than the discount rate,
- Changes in the Net Pension Liability,
- Schedule of Employer Contributions,
- Disclosure of Deferred Inflows and Outflows, and
- Calculation of the Annual Pension Expense for the employer.

If you have any questions about the report or would like additional information, please let us know.

Sincerely,  
Cheiron

A handwritten signature in blue ink, appearing to read "Kevin J. Woodrich".

Kevin J. Woodrich, FSA, EA, MAAA  
Principal Consulting Actuary

A handwritten signature in blue ink, appearing to read "Janet Cranna".

Janet Cranna, FSA, EA, MAAA, FCA  
Principal Consulting Actuary

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION I – BOARD SUMMARY**

The purpose of this report is to provide accounting and financial disclosure information under the Governmental Accounting Standards Board (GASB) Statement No. 67 for the City of Cincinnati Retirement System and Statement No. 68 for the employer. This information includes:

- Calculation of the Net Pension Liability at the discount rate as well as discount rates 1% higher and lower than the discount rate,
- Changes in the Net Pension Liability,
- Schedule of Employer Contributions,
- Disclosure of Deferred Inflows and Outflows, and
- Calculation of the Annual Pension Expense for the employer.

## **Highlights**

The reporting date for the City of Cincinnati Retirement System (CRS) is June 30, 2024. Measurements as of the reporting date are based on the fair value of assets as of June 30, 2024 and Total Pension Liability (TPL) as of the December 31, 2023 valuation date, updated to June 30, 2024.

All results shown for years prior to June 30, 2019 are based on the prior actuary's reports.

The table below provides a summary of the key results during this reporting period.

<b>Summary of Results</b>			
<b>Reporting Date</b>	<b>6/30/2024</b>	<b>6/30/2023</b>	
<b>Measurement Date</b>	<b>6/30/2024</b>	<b>6/30/2023</b>	
<b>Valuation Date</b>	<b>12/31/2023</b>	<b>12/31/2023</b>	<b>12/31/2022</b>
Total Pension Liability	\$ 2,654,067	\$ 3,302,594	
Plan Fiduciary Net Position	<u>1,740,734</u>	<u>1,698,573</u>	
Net Pension Liability	\$ 913,333	\$ 1,604,021	
Deferred Outflows	(7,658)	(38,694)	
Deferred Inflows	<u>304,937</u>	<u>0</u>	
Net Impact on Statement of Net Position	\$ 1,210,612	\$ 1,565,327	
Pension Expense (\$ Amount)	\$ (307,362)	\$ 408,136	
Pension Expense (% of Payroll)	(118.12%)	167.96%	

*Amounts in Thousands*

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION I – BOARD SUMMARY**

The Net Pension Liability (NPL) decreased by \$690,688 thousands from the prior year. Assumption changes led to a decrease of \$684,007 thousands in the TPL. This decrease was attributable to using a discount rate of 7.50% compared to the 5.23% used last year. More details about these changes can be found in Section III of this report. Assumption changes and an actuarial loss of \$18,599 thousands are recognized over the average remaining service life, which is 1.70 years.

The System had an investment gain of \$46,978 thousands based on an investment return of 10.40%. This investment gain is recognized over five years.

Unrecognized amounts are reported as deferred inflows and deferred outflows. As of the end of the reporting year, the employer would report a Net Pension Liability of \$913,333 thousands, Deferred Inflows of \$304,937, and Deferred Outflows of \$7,658 thousands. Consequently, the net impact on the employer's Statement of Net Position due to the Cincinnati Retirement System would be \$1,210,612 thousands at the end of the reporting year. In addition, any contributions between the measurement date and the reporting date would be reported as deferred outflows to offset the cash outflow reported.

For the measurement year ending June 30, 2024, the annual pension expense is negative \$307,362 thousands or negative 118.1% of covered payroll. This amount is not related to the employer's contribution to the Retirement System (\$ 47,353 thousands) but instead represents the change in the net impact on the employer's Statement of Net Position plus employer contributions (\$1,210,612 – \$1,565,327 + \$47,353). The pension expense is less than the expense for the prior year. Volatility in pension expense from year to year is to be expected. It will largely be driven by investment gains or losses, but other changes can also have a significant impact such as the changes in the discount rate. The decrease in this year's pension expense was primarily due to the change in the discount rate from 5.23% to 7.50% and the favorable investment return. A breakdown of the components of the net pension expense is shown in this report.

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION II – CERTIFICATION**

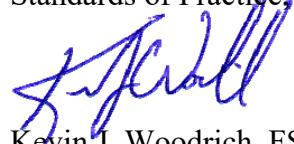
The purpose of this report is to provide accounting and financial reporting information under GASB No. 67 for the Cincinnati Retirement System and under GASB No. 68 for the employer. This report is for the use of the Cincinnati Retirement System, the employer, and their auditors in preparing financial reports in accordance with applicable law and accounting requirements. This report is not appropriate for other purposes, including the measurement of funding requirements for the Cincinnati Retirement System.

In preparing our report, we relied on information (some oral and some written) supplied by the City. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

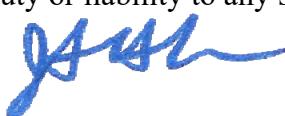
Future actuarial measurements may differ significantly from the current measurements due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, and changes in plan provisions or applicable law.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This report was prepared for the Cincinnati Retirement System and the employer for the purposes described herein and for the use by the Plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any such other user.



Kevin J. Woodrich, FSA, EA, MAAA  
Principal Consulting Actuary



Janet Cranna, FSA, FCA, EA, MAAA  
Principal Consulting Actuary

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION III – DETERMINATION OF DISCOUNT RATE**

The discount rate used to measure the Total Pension Liability was 7.50%.

The projection of cash flows used to determine the discount rate assumed that Plan member contributions will continue to be made at the rates specified in the City Code. Employer contributions were assumed to be made in accordance with the Collaborative Settlement Agreement. That agreement includes contributions equal to 17.75% of pay for full-time active and DROP members effective July 1, 2024. A contribution totaling 3.00% of pay is made on behalf of part-time actives. In addition, we reflected the City's intent to contribute \$2.7 million each year for the remaining 12 years to pay for the increase in liabilities due to the Early Retirement Incentive Program (ERIP). In accordance with GASB, the projected contribution amounts for new hires were reduced by the portion expected to cover the normal cost for these new hires. Total payroll was projected using the December 31, 2023 census data and the assumptions shown in Appendix B.

Based on these assumptions, the System's fiduciary net position was projected to be available to make projected future benefit payments for current members. Projected benefit payments are discounted at the long-term expected return on assets of 7.50% to the extent the fiduciary net position is available to make the payments. Consequently, the single equivalent rate used to determine the Total Pension Liability as of June 30, 2024 is 7.50%. By comparison, the single equivalent rate used to determine the Total Pension Liability as of June 30, 2023 was 5.23%.

The projections are based upon the System's financial status on the Valuation Date, the indicated set of methods and assumptions and the requirements described in GASB 67. As such, the projections are not reflective of the cash flows and asset accumulations that would occur on an ongoing basis, reflecting the impact of future members.

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION IV – PROJECTION OF TOTAL PENSION LIABILITY**

The Total Pension Liability (TPL) at the end of the measurement year, June 30, 2024, is measured as of the valuation date of December 31, 2023 and projected to June 30, 2024. Valuations will be completed every year. Each valuation will be rolled forward six months to provide the GASB liability. There were assumption changes during the period, which are reflected in these numbers. The table below shows the projection of the TPL at the discount rate used for disclosure and plus and minus one percent from the rate used for disclosure. TPL and Service Cost have been determined using the entry age actuarial cost method as mandated in GASB Statement 67.

<b>Discount Rate</b>	<b>6.50%</b>	<b>7.50%</b>	<b>8.50%</b>
<b>Valuation Total Pension Liability, 12/31/2023</b>			
Actives	\$ 616,657	\$ 529,529	\$ 457,993
Deferred Vested	31,291	26,488	22,676
Retirees	<u>2,264,600</u>	<u>2,087,365</u>	<u>1,934,180</u>
<b>Total</b>	<b>\$ 2,912,548</b>	<b>\$ 2,643,382</b>	<b>\$ 2,414,849</b>
 <b>Service Cost</b>	 16,317	 12,847	 10,223
 <b>Benefit Payments</b>	 (98,179)	 (98,179)	 (98,179)
 <b>Interest</b>	 92,132	 96,017	 98,941
 <b>Total Pension Liability, 6/30/2024</b>	 <b>\$ 2,922,818</b>	 <b>\$ 2,654,067</b>	 <b>\$ 2,425,834</b>

*Amounts in Thousands*

The TPL as of June 30, 2024 was determined using standard projection (roll forward) techniques. The roll forward calculation shown above adds the service cost (also called the normal cost), reflecting the experience and assumption changes, for the first half of 2024, subtracts the expected benefit payments for the period, and then adjusts for interest based on the single equivalent interest rate used to measure TPL as of the Valuation Date.

The roll forward calculation for the expected change, as shown in the following table, is determined using a similar procedure, except that the TPL and service cost are based on GASB 67/68 results as of the prior Measurement Date, therefore a one-year projection is used, and actual benefit payments are subtracted. The difference between the expected TPL and the projected experience TPL as of June 30, 2024, before reflecting any assumption changes, is the experience (gain) or loss for the period. Finally, there is an assumption gain from increasing the discount rate from 5.23% to 7.50%.

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION IV – PROJECTION OF TOTAL PENSION LIABILITY**

<b>Projection of Total Pension Liability from Valuation to Measurement Date</b>			
	Expected	Experience	Assumption
Measurement Date	6/30/2023	12/31/2023	12/31/2023
Projection Period	1 year	1/2 year	1/2 year
Discount Rate	5.23%	5.23%	7.50%
<b>Total as of Measurement Date</b>	\$ 3,302,594	\$ 3,328,580	\$ 2,643,382
Service Cost	43,316	22,420	12,847
Benefit Payments	(196,357)	(98,179)	(98,179)
Interest	<u>169,922</u>	<u>85,253</u>	<u>96,017</u>
<b>Net Changes</b>	<u>\$ 16,881</u>	<u>\$ 9,494</u>	<u>\$ 10,685</u>
<b>Balance at 6/30/2024</b>	<b>\$ 3,319,475</b>	<b>\$ 3,338,074</b>	<b>\$ 2,654,067</b>
Experience (Gain)/Loss [Experience - Expected]		\$ 18,599	
Assumption (Gain)/Loss [Assumption - Experience]			\$ (684,007)

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION V – NOTE DISCLOSURES**

The table below shows the changes in the Total Pension Liability, the Plan Fiduciary Net Position (i.e., fair value of System assets), and the Net Pension Liability during the Measurement Year.

	<b>Change in Net Pension Liability</b>		
	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
<b>Balances at 6/30/2023</b>	\$ 3,302,594	\$ 1,698,573	\$ 1,604,021
<b>Changes for the year:</b>			
Service cost	43,316		43,316
Interest	169,922		169,922
Changes of benefits	0		0
Differences between expected and actual experience	18,599		18,599
Changes of assumptions	(684,007)		(684,007)
Contributions - employer		47,353	(47,353)
Contributions - member		23,543	(23,543)
Net investment income		169,676	(169,676)
Benefit payments	(196,357)	(196,357)	0
Administrative expense		(2,054)	2,054
<b>Net changes</b>	<b>\$ (648,527)</b>	<b>\$ 42,161</b>	<b>\$ (690,688)</b>
<b>Balances at 6/30/2024</b>	<b>\$ 2,654,067</b>	<b>\$ 1,740,734</b>	<b>\$ 913,333</b>

*Amounts in Thousands*

Assumption changes led to a decrease of \$684,007 thousands in the TPL. This decrease was attributable to using a discount rate of 7.50% compared to the 5.23% used last year. More details about this change can be found in Section III of this report. In addition, there was an experience loss of \$18,599 thousands in the TPL.

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION V – NOTE DISCLOSURES**

Changes in the discount rate affect the measurement of the TPL. Lower discount rates produce a higher TPL, and higher discount rates produce a lower TPL. Because the discount rate does not affect the measurement of assets, the percentage change in the NPL can be very significant for a relatively small change in the discount rate. The table below shows the sensitivity of the NPL to the discount rate.

<b>Sensitivity of Net Pension Liability to Changes in Discount Rate</b>			
	1% Decrease <b>6.50%</b>	Discount Rate <b>7.50%</b>	1% Increase <b>8.50%</b>
Total Pension Liability	\$ 2,922,818	\$ 2,654,067	\$ 2,425,834
Plan Fiduciary Net Position	<u>1,740,734</u>	<u>1,740,734</u>	<u>1,740,734</u>
Net Pension Liability	<u><u>\$ 1,182,084</u></u>	<u><u>\$ 913,333</u></u>	<u><u>\$ 685,100</u></u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	59.6%	65.6%	71.8%

*Amounts in Thousands*

A 1% decrease in the discount rate increases the TPL by approximately 10% and increases the NPL by approximately 29%. A 1% increase in the discount rate decreases the TPL by approximately 9% and decreases the NPL by approximately 25%.

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION VI – REQUIRED SUPPLEMENTARY INFORMATION**

The schedules on the following two pages show the change in NPL and related ratios required by GASB for the past ten years.

<b>Schedule of Changes in Net Pension Liability and Related Ratios</b>						
	FYE 2024	FYE 2023	FYE 2022	FYE 2021	FYE 2020	
<b><u>Total Pension Liability (TPL)</u></b>						
Service cost (MOY)	\$ 43,316	\$ 38,909	\$ 21,528	\$ 61,020	\$ 37,451	
Interest	169,922	166,638	185,265	133,779	162,407	
Changes of benefit terms	0	0	0	24,407	0	
Differences between expected and actual experience	18,599	3,217	10,251	85,273	26,726	
Changes of assumptions	(684,007)	57,421	663,620	(1,395,498)	798,211	
Benefit payments, including refunds	(196,357)	(194,986)	(192,406)	(185,241)	(175,505)	
<b>Net change in TPL</b>	<b>\$ (648,527)</b>	<b>\$ 71,199</b>	<b>\$ 688,258</b>	<b>\$ (1,276,260)</b>	<b>\$ 849,290</b>	
<b>TPL - beginning</b>	<b><u>3,302,594</u></b>	<b><u>3,231,395</u></b>	<b><u>2,543,137</u></b>	<b><u>3,819,397</u></b>	<b><u>2,970,107</u></b>	
<b>TPL - ending</b>	<b><u>\$ 2,654,067</u></b>	<b><u>\$ 3,302,594</u></b>	<b><u>\$ 3,231,395</u></b>	<b><u>\$ 2,543,137</u></b>	<b><u>\$ 3,819,397</u></b>	
<b><u>Plan fiduciary net position</u></b>						
Contributions - employer	\$ 47,353	\$ 42,963	\$ 38,774	\$ 34,425	\$ 34,410	
Contributions - member	23,543	21,963	20,514	20,025	19,892	
Net investment income	169,676	124,694	(81,641)	478,701	(20,930)	
Benefit payments, including refunds of member contributions	(196,357)	(194,986)	(192,406)	(185,241)	(175,505)	
Administrative expense	(2,054)	(1,850)	(1,768)	(1,799)	(1,868)	
<b>Net change in plan fiduciary net position</b>	<b>\$ 42,161</b>	<b>\$ (7,216)</b>	<b>\$ (216,527)</b>	<b>\$ 346,111</b>	<b>\$ (144,001)</b>	
<b>Plan fiduciary net position - beginning</b>	<b><u>1,698,573</u></b>	<b><u>1,705,789</u></b>	<b><u>1,922,316</u></b>	<b><u>1,576,205</u></b>	<b><u>1,720,206</u></b>	
<b>Plan fiduciary net position - ending</b>	<b><u>\$ 1,740,734</u></b>	<b><u>\$ 1,698,573</u></b>	<b><u>\$ 1,705,789</u></b>	<b><u>\$ 1,922,316</u></b>	<b><u>\$ 1,576,205</u></b>	
<b>Net pension liability - ending</b>	<b><u>\$ 913,333</u></b>	<b><u>\$ 1,604,021</u></b>	<b><u>\$ 1,525,606</u></b>	<b><u>\$ 620,821</u></b>	<b><u>\$ 2,243,192</u></b>	
<b>Plan fiduciary net position as a percentage of the TPL</b>	<b>65.59%</b>	<b>51.43%</b>	<b>52.79%</b>	<b>75.59%</b>	<b>41.27%</b>	
<b>Covered payroll</b>	<b>\$ 260,209</b>	<b>\$ 242,989</b>	<b>\$ 226,762</b>	<b>\$ 218,178</b>	<b>\$ 218,451</b>	
<b>Net pension liability as a percentage of covered payroll</b>	<b>351.00%</b>	<b>660.12%</b>	<b>672.78%</b>	<b>284.55%</b>	<b>1026.86%</b>	

*Amounts in Thousands*

**CITY OF CINCINNATI RETIREMENT SYSTEM**  
**GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION VI – REQUIRED SUPPLEMENTARY INFORMATION**

<b>Schedule of Changes in Net Pension Liability and Related Ratios</b>						
	FYE 2019	FYE 2018	FYE 2017	FYE 2016*	FYE 2015	
<b>Total Pension Liability (TPL)</b>						
Service cost (MOY)	\$ 23,750	\$ 22,834	\$ 20,576	\$ 31,764	\$ 27,785	
Interest	172,502	163,313	159,912	143,383	149,052	
Changes of benefit terms	0	0	29,208	(76,301)	0	
Differences between expected and actual experience	46,025	29,889	3,545	4,137	(14,024)	
Changes of assumptions	538,042	50,392	0	(627,693)	155,948	
Benefit payments, including refunds	<u>(169,901)</u>	<u>(168,482)</u>	<u>(167,320)</u>	<u>(163,931)</u>	<u>(161,407)</u>	
<b>Net change in TPL</b>	<b>\$ 610,418</b>	<b>\$ 97,946</b>	<b>\$ 45,921</b>	<b>\$ (688,641)</b>	<b>\$ 157,354</b>	
<b>TPL - beginning</b>	<b><u>2,359,689</u></b>	<b><u>2,261,743</u></b>	<b><u>2,215,822</u></b>	<b><u>2,904,463</u></b>	<b><u>2,747,109</u></b>	
<b>TPL - ending</b>	<b><u>\$ 2,970,107</u></b>	<b><u>\$ 2,359,689</u></b>	<b><u>\$ 2,261,743</u></b>	<b><u>\$ 2,215,822</u></b>	<b><u>\$ 2,904,463</u></b>	
<b>Plan fiduciary net position</b>						
Contributions - employer	\$ 33,763	\$ 32,586	\$ 30,868	\$ 67,939	\$ 29,084	
Contributions - member	19,457	18,873	17,740	16,337	16,186	
Net investment income	76,163	140,314	209,299	226,266	49,138	
Benefit payments, including refunds of member contributions	<u>(169,901)</u>	<u>(168,482)</u>	<u>(167,320)</u>	<u>(163,931)</u>	<u>(161,407)</u>	
Administrative expense	<u>(1,472)</u>	<u>(1,485)</u>	<u>(1,572)</u>	<u>(5,418)</u>	<u>(1,570)</u>	
<b>Net change in plan fiduciary net position</b>	<b>\$ (41,990)</b>	<b>\$ 21,806</b>	<b>\$ 89,015</b>	<b>\$ 141,193</b>	<b>\$ (68,569)</b>	
<b>Plan fiduciary net position - beginning</b>	<b><u>1,762,196</u></b>	<b><u>1,740,390</u></b>	<b><u>1,651,375</u></b>	<b><u>1,510,182</u></b>	<b><u>1,578,751</u></b>	
<b>Plan fiduciary net position - ending</b>	<b><u>\$ 1,720,206</u></b>	<b><u>\$ 1,762,196</u></b>	<b><u>\$ 1,740,390</u></b>	<b><u>\$ 1,651,375</u></b>	<b><u>\$ 1,510,182</u></b>	
<b>Net pension liability - ending</b>	<b><u>\$ 1,249,901</u></b>	<b><u>\$ 597,493</u></b>	<b><u>\$ 521,353</u></b>	<b><u>\$ 564,447</u></b>	<b><u>\$ 1,394,281</u></b>	
<b>Plan fiduciary net position as a percentage of the TPL</b>		57.92%	74.68%	76.95%	74.5%	52.0%
<b>Covered payroll</b>	\$ 215,683	\$ 208,317	\$ 196,445	\$ 174,963	\$ 164,575	
<b>Net pension liability as a percentage of covered payroll</b>		579.51%	286.82%	265.39%	322.61%	847.20%

*Amounts in Thousands*

\* Includes a one-time amount to pay off the remaining liability of the 2007 Early Retirement Incentive Program (ERIP).

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

## **SECTION VI – REQUIRED SUPPLEMENTARY INFORMATION**

If an Actuarially Determined Contribution (ADC) is defined, a schedule of the last 10 years of these amounts compared to the actual amount contributed should be disclosed. An ADC is a contribution amount determined in accordance with Actuarial Standards of Practice.

Schedule of Employer Contributions						
	FYE 2024	FYE 2023	FYE 2022	FYE 2021	FYE 2020	
Actuarially Determined Contribution	\$ 75,831	\$ 68,354	\$ 70,017	\$ 67,309	\$ 63,405	
Actual Employer Contributions						
City of Cincinnati Financial Reporting Entity	\$ 39,042	\$ 35,241	\$ 31,488	\$ 28,027	\$ 27,879	
City of Cincinnati Operating Unit (MSD)	<u>8,311</u>	<u>7,722</u>	<u>7,286</u>	<u>6,398</u>	<u>6,531</u>	
Total Actual Employer Contributions	<u>47,353</u>	<u>42,963</u>	<u>38,774</u>	<u>34,425</u>	<u>34,410</u>	
Contribution Deficiency/(Excess)	<u>\$ 28,478</u>	<u>\$ 25,391</u>	<u>\$ 31,243</u>	<u>\$ 32,884</u>	<u>\$ 28,995</u>	
Covered Payroll	\$ 260,209	\$ 242,989	\$ 226,762	\$ 218,178	\$ 218,451	
Contributions as a Percentage of Covered Payroll	18.20%	17.68%	17.10%	15.78%	15.75%	
	FYE 2019	FYE 2018	FYE 2017	FYE 2016	FYE 2015	
Actuarially Determined Contribution	\$ 52,709	\$ 48,046	\$ 46,689	\$ 69,939	\$ 75,566	
Actual Employer Contributions						
City of Cincinnati Financial Reporting Entity	\$ 27,382	\$ 26,506	\$ 25,221	\$ 21,908	\$ 24,566	
City of Cincinnati Operating Unit (MSD)	<u>6,381</u>	<u>6,080</u>	<u>5,647</u>	<u>4,701</u>	<u>4,518</u>	
Total Actual Employer Contributions	<u>33,763</u>	<u>32,586</u>	<u>30,868</u>	<u>26,609</u>	<u>29,084</u>	
Contribution Deficiency/(Excess)	<u>\$ 18,946</u>	<u>\$ 15,460</u>	<u>\$ 15,821</u>	<u>\$ 43,330</u>	<u>\$ 46,482</u>	
Covered Payroll	\$ 215,683	\$ 208,317	\$ 196,445	\$ 174,963	\$ 164,575	
Contributions as a Percentage of Covered Payroll	15.65%	15.64%	15.71%	15.21%	17.67%	

*Amounts in Thousands*

The notes below summarize the key methods and assumptions used to determine the ADC for FYE June 30, 2024.

## **Notes to Schedule**

The ADC rates are determined as of December 31, eighteen months prior to the end of the fiscal year in which contributions are reported (as of December 31, 2022 for the fiscal year ending June 30, 2024 contributions).

## Key Methods and Assumptions Used to Determine Contribution Rates

## Actuarial Cost Method:      Entry Age Normal Cost Method

Asset Valuation Method: 5-year Smoothed Value

Amortization Method: 30 Years; Open

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION VI – REQUIRED SUPPLEMENTARY INFORMATION**

**Key Methods and Assumptions Used to Determine Contribution Rates (continued)**

Discount Rate	7.5%, net of pension plan investment expenses
Amortization Growth Rate:	0.00% (Level Dollar)
Inflation:	2.75%
Salary Increases:	3.75% to 8.75%
Mortality:	Active Members: Pub-2010 General Employees Amount-Weighted Mortality Table [ <i>PubG-2010 Employee</i> ] as published by the Society of Actuaries (SOA), and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.  Healthy Inactive Members: Pub-2010 General Healthy Retirees Amount-Weighted Mortality Table [ <i>PubG-2010 Healthy Retiree</i> ] as published by the SOA with a 110% adjustment for males and 115% adjustment for females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.  Disabled Inactive Members: Pub-2010 Non-Safety Disabled Retirees Amount-Weighted Mortality Table [ <i>PubNS-2010 Disabled Retiree</i> ] as published by the SOA, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

A complete description of the methods and assumptions used to determine contribution rates for the year ending June 30, 2024 can be found in the December 31, 2022 valuation report.

**CITY OF CINCINNATI RETIREMENT SYSTEM  
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**SECTION VII – EMPLOYER REPORTING AMOUNTS**

The employer was required to implement GASB 68 for its reporting date of June 30, 2015. At that time, the employer elected to use the 2014 measurement date for its 2015 reporting. As a result, the schedules in this section will be used by the employer for its June 30, 2025 reporting.

The impact of experience gains or losses and assumption changes on the TPL are recognized in expense over the average expected remaining service life of all active and inactive members of the System. As of the beginning of the measurement period, this recognition period was 1.70 years.

During the year, there was an experience loss of \$18,599 thousands. Of that loss, \$10,941 thousands was recognized as an increase in pension expense in the current year, and the balance (\$7,658 thousands) will be recognized next year, resulting in a deferred outflow of resources as of June 30, 2024 of \$7,658 thousands. The unrecognized amounts due to experience from the prior years was a net experience loss of \$1,302 thousands of which \$1,302 thousands was recognized as an increase in pension expense in the current year, leaving a deferred outflow of resources as of June 30, 2024 of \$0 thousands for these prior year amounts.

Any Plan changes that resulted in an increase or decrease in the TPL are recognized immediately. There were no Plan changes during the year ending June 30, 2024.

As a result of the depletion test, the discount rate used in measuring the TPL was increased from 5.23% to 7.50%. This change decreased liabilities by \$684,007 thousands. Of this amount, \$402,357 thousands was recognized as a decrease in pension expense in the current measurement year, and the balance will be recognized next year, resulting in a deferred inflow of resources as of the June 30, 2024 measurement date of \$281,650 thousands. Unrecognized amounts due to the assumption changes in the prior year totaled \$23,242 thousands of which \$23,242 thousands was recognized as an increase in pension expense in the current measurement year, leaving a deferred outflow of resources of \$0 thousands as of the June 30, 2024 measurement date for these prior year amounts.

The impact of investment gains or losses is recognized over a period of five years. During the measurement year, there was an investment gain of \$46,978 thousands. Of this gain, \$9,396 thousands were recognized in the current measurement year. A net unrecognized investment loss from the four prior years was \$14,150 thousands of which \$145 thousands was recognized as a decrease in pension expenses in the current measurement year. The combination of the unrecognized investment gain this year and unrecognized net investment gains from prior periods result in a deferred inflow of resources as of the June 30, 2024 measurement date of \$23,287 thousands.

The table on the following page summarizes the current balances of deferred outflows and deferred inflows of resources along with the net recognition over the next five years.

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION VII – EMPLOYER REPORTING AMOUNTS**

**Schedule of Deferred Inflows and Outflows of Resources**

	<b>Deferred Outflows of Resources</b>	<b>Deferred Inflows of Resources</b>
Differences between expected and actual	\$ 7,658	\$ 0
Changes in assumptions	0	281,650
Net difference between projected and actual earnings on pension plan investments	0	23,287
<b>Total</b>	<b><u>\$ 7,658</u></b>	<b><u>\$ 304,937</u></b>

Amounts reported as deferred outflows and deferred inflows of resources will be recognized in pension expense as follows:

**Measurement year ended June 30:**

2025	\$ (312,613)
2026	34,449
2027	(9,721)
2028	(9,394)
2029	0
Thereafter	\$ 0

*Amounts in Thousands*

The table on the following page shows the details of the inflows and outflows shown in the table above.

**CITY OF CINCINNATI RETIREMENT SYSTEM**  
**GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION VII – EMPLOYER REPORTING AMOUNTS**

**Recognition of Experience (Gains) and Losses**

Experience Year	Recognition Period	Total Amount	Beginning	Ending	Recognition Year						
			Remaining Amount	Remaining Amount	2024	2025	2026	2027	2028	2029	Thereafter
2024	1.70	\$ 18,599	\$ 18,599	\$ 7,658	\$ 10,941	\$ 7,658	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2023	1.68	\$ 3,217	\$ 1,302	\$ 0	\$ 1,302	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Deferred Outflows			19,901	7,658	12,243	7,658	0	0	0	0	0
Deferred (Inflows)			0	0	0	0	0	0	0	0	0
Net Change in Pension Expense			\$ 19,901	\$ 7,658	\$ 12,243	\$ 7,658	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

*Amounts in Thousands*

**Recognition of Assumption Changes**

Change Year	Recognition Period	Total Amount	Beginning	Ending	Recognition Year						
			Remaining Amount	Remaining Amount	2024	2025	2026	2027	2028	2029	Thereafter
2024	1.70	\$ (684,007)	\$ (684,007)	\$ (281,650)	\$ (402,357)	\$ (281,650)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2023	1.68	\$ 57,421	\$ 23,242	\$ 0	\$ 23,242	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Deferred Outflows			23,242	0	23,242	0	0	0	0	0	0
Deferred (Inflows)			(684,007)	(281,650)	(402,357)	(281,650)	0	0	0	0	0
Net Change in Pension Expense			\$ (660,765)	\$ (281,650)	\$ (379,115)	\$ (281,650)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

*Amounts in Thousands*

**CITY OF CINCINNATI RETIREMENT SYSTEM**  
**GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION VII – EMPLOYER REPORTING AMOUNTS**

**Recognition of Investment (Gains) and Losses**

Experience Year	Recognition Period	Total Amount	Beginning		Ending		Recognition Year					
			Remaining Amount	Remaining Amount	2024	2025	2026	2027	2028	2029	Thereafter	
2024	5.00	\$ (46,978)	\$ (46,978)	\$ (37,582)	\$ (9,396)	\$ (9,396)	\$ (9,396)	\$ (9,396)	\$ (9,394)	\$ 0	\$ 0	
2023	5.00	\$ (1,617)	\$ (1,294)	\$ (971)	\$ (323)	\$ (323)	\$ (323)	\$ (325)	\$ 0	\$ 0	\$ 0	
2022	5.00	220,848	132,508	88,338	44,170	44,170	44,168	0	0	0	0	
2021	5.00	(365,368)	(146,146)	(73,072)	(73,074)	(73,072)	0	0	0	0	0	
2020	5.00	145,414	29,082	0	29,082	0	0	0	0	0	0	
Net Change in Pension Expense			\$ (32,828)	\$ (23,287)	\$ (9,541)	\$ (38,621)	\$ 34,449	\$ (9,721)	\$ (9,394)	\$ 0	\$ 0	

*Amounts in Thousands*

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION VII – EMPLOYER REPORTING AMOUNTS**

The annual pension expense recognized by the employer can be calculated in two different ways. First, it is the change in the amounts reported on the employer's Statement of Net Position that relate to the Cincinnati Retirement System and are not attributable to employer contributions. That is, it is the change in NPL plus the changes in deferred outflows and inflows plus employer contributions.

Alternatively, annual pension expense can be calculated by its individual components. While GASB does not require or suggest the organization of the individual components shown in the table below, we believe it helps to understand the level and volatility of pension expense.

<b>Calculation of Pension Expense</b>			
	<b>Measurement Year Ending</b>		
	<b>2024</b>	<b>2023</b>	
Change in Net Pension Liability	\$ (690,688)	\$ 78,415	
Change in Deferred Outflows	31,036	286,758	
Change in Deferred Inflows	304,937	0	
Employer Contributions	<u>47,353</u>	<u>42,963</u>	
<b>Pension Expense</b>	<b>\$ (307,362)</b>	<b>\$ 408,136</b>	
<b>Pension Expense as % of Payroll</b>	<b>(118.12%)</b>	<b>167.96%</b>	
<b>Operating Expenses</b>			
Service cost	\$ 43,316	\$ 38,909	
Employee contributions	(23,543)	(21,963)	
Administrative expenses	<u>2,054</u>	<u>1,850</u>	
Total	\$ 21,827	\$ 18,796	
<b>Financing Expenses</b>			
Interest cost	\$ 169,922	\$ 166,638	
Expected return on assets	<u>(122,698)</u>	<u>(123,077)</u>	
Total	\$ 47,224	\$ 43,561	
<b>Changes</b>			
Benefit changes	\$ 0	\$ 0	
Recognition of assumption changes	(379,115)	329,121	
Recognition of liability gains and losses	12,243	6,471	
Recognition of investment gains and losses	<u>(9,541)</u>	<u>10,187</u>	
Total	\$ (376,413)	\$ 345,779	
<b>Pension Expense</b>	<b>\$ (307,362)</b>	<b>\$ 408,136</b>	

*Amounts in Thousands*

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**SECTION VII – EMPLOYER REPORTING AMOUNTS**

First, there are components referred to as operating expenses. These are items directly attributable to the operation of the Plan during the measurement year. Service cost less employee contributions represents the increase in employer-provided benefits attributable to the year, and administrative expenses are the cost of operating CRS for the year.

Second, there are the financing expenses: the interest on the Total Pension Liability less the expected return on assets.

The final category is changes. This category will drive most of the volatility in pension expense from year to year. It includes any changes in benefits made during the year and the recognized amounts due to assumption changes, gains, or losses on the TPL, and investment gains or losses.

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**APPENDIX A – MEMBERSHIP INFORMATION**

The data for this valuation was provided electronically by the Cincinnati Retirement System staff. Cheiron did not perform a formal audit of the data. However, we did perform checks of the data for reasonableness and consistency in accordance with Actuarial Standards of Practice No. 23 – Data Quality.

Data reported in this Appendix is as of December 31, 2023.

**CITY OF CINCINNATI RETIREMENT SYSTEM**  
**GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Status Reconciliation of Participating Members**

	Status Reconciliation of Participating Members							Total
	Active Full-Time	Active Part-Time	Terminated			Beneficiary		
			Vested	Retired	Disabled			
As of December 31, 2022	2,718	1,257	275	3,553	122	630	8,555	
New Hires	78	655					733	
To Active Part-Time	(23)	23					0	
To Active Full-Time	250	(250)					0	
Terminated Vested	(37)	(5)	42				0	
Terminated Non-Vested	(101)	(405)					(506)	
Refund of Contributions							0	
Retired	(61)		(13)	74			0	
Disabled	(1)				1		0	
Deceased with Beneficiary				(50)		50	0	
Deceased without Beneficiary			(22)	(74)	(8)	(38)	(142)	
Miscellaneous Changes		(5)		2	1		(2)	
As of December 31, 2023	2,823	1,270	282	3,505	116	642	8,638	

Not included in the counts above are 10,685 and 9,820 inactive participants as of December 31, 2023 and 2022, respectively. These are former employees who have an employee account balance but are not otherwise vested in an employer-provided benefit. Included in the retired counts above are 143 and 157 members as of December 31, 2023 and 2022 currently participating in DROP.

**CITY OF CINCINNATI RETIREMENT SYSTEM**  
**GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>Age</b>	<b>Active Member Count by Age and Service as of December 31, 2023</b>									<b>Total Count</b>
	<b>Years of Service</b>									
<b>0-4</b>	<b>5-9</b>	<b>10-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30-34</b>	<b>35-39</b>	<b>40 &amp; Over</b>		
Under 25	55	8	0	0	0	0	0	0	0	63
25-29	151	46	13	0	0	0	0	0	0	210
30-34	151	107	18	10	0	0	0	0	0	286
35-39	140	115	76	30	6	0	0	0	0	367
40-44	130	115	82	53	40	4	0	0	0	424
45-49	89	82	66	56	59	30	4	0	0	386
50-54	78	70	73	67	78	47	3	0	0	416
55-59	48	56	51	39	67	67	18	2	0	348
60-64	24	39	25	35	46	39	15	5	0	228
65-69	9	22	11	10	13	9	3	4	0	81
70 & Over	0	2	3	0	3	3	0	1	2	14
<b>Total Count</b>	<b>875</b>	<b>662</b>	<b>418</b>	<b>300</b>	<b>312</b>	<b>199</b>	<b>43</b>	<b>12</b>	<b>2</b>	<b>2,823</b>

Average Service: 11.3

**CITY OF CINCINNATI RETIREMENT SYSTEM**  
**GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**APPENDIX A – MEMBERSHIP INFORMATION**

Age	Years of Service										Avg. Comp.
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Over		
Under 25	\$55,946	\$44,340	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$54,472
25-29	63,984	66,261	63,003	0	0	0	0	0	0	0	64,421
30-34	71,451	75,497	73,651	75,590	0	0	0	0	0	0	73,248
35-39	68,949	82,318	84,810	85,794	77,282	0	0	0	0	0	77,936
40-44	75,075	79,947	87,006	89,000	85,412	86,751	0	0	0	0	81,530
45-49	73,802	80,315	84,892	84,808	89,901	90,992	84,245	0	0	0	82,584
50-54	74,883	77,793	86,249	91,582	90,428	85,469	131,758	0	0	0	84,578
55-59	69,869	85,980	80,762	83,787	79,515	90,335	93,871	69,458	0	0	82,654
60-64	84,731	79,973	81,170	87,214	77,503	79,962	77,202	96,556	0	0	81,398
65-69	74,519	88,338	71,234	85,925	78,412	77,580	114,555	62,012	0	0	81,064
70 & Over	0	61,976	76,837	0	73,770	76,654	0	64,619	79,457	73,519	
Average	70,180	78,813	83,220	87,038	84,523	86,397	91,247	77,864	79,457	79,015	

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>Summary of Inactive Membership Data as of December 31, 2023</b>					
<b>Group</b>	<b>Count</b>	<b>Total Annual Benefit</b>	<b>Average Annual Benefit</b>		
Retirees	3,505	\$ 168,628,624	\$ 48,111		
Disableds	116	\$ 2,277,139	\$ 19,631		
Survivor	<u>642</u>	<u>\$ 19,153,590</u>	<u>\$ 29,834</u>		
Total	4,263	\$ 190,059,353	\$ 44,583		

**CITY OF CINCINNATI RETIREMENT SYSTEM**  
**GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>Annual Benefits by Age as of December 31, 2023</b>				
<b>Attained Age</b>	<b>Number of Members</b>	<b>Total Annual Benefits</b>	<b>Average Annual Benefit</b>	
< 40	4	\$ 125,571	\$ 31,393	
40 - 44	2	37,567	18,784	
45 - 49	29	1,415,445	48,808	
50 - 54	180	8,519,262	47,329	
55 - 59	489	21,714,619	44,406	
60 - 64	772	34,368,939	44,519	
65 - 69	945	43,697,186	46,240	
70 - 74	837	39,050,208	46,655	
75 - 79	463	20,447,794	44,164	
80 - 84	318	13,213,648	41,552	
85 - 89	152	5,148,057	33,869	
90 - 94	62	2,131,115	34,373	
95 - 99	9	184,230	20,470	
100+	1	5,712	5,712	
<b>Total</b>	<b>4,263</b>	<b>\$ 190,059,353</b>	<b>\$ 44,583</b>	

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**A. Actuarial Assumptions**

*Rationale for Economic and Demographic Assumptions*

The actuarial assumptions were adopted by the Board of Trustees on March 23, 2023 based on an experience study performed for the period January 1, 2017 to December 31, 2021. The results of this study were presented to the Board on March 2, 2023 and are incorporated into this report by reference. An investment return assumption of 7.50% was used as prescribed by item 29 of the Collaborative Settlement Agreement (CSA) signed October 5, 2015. In conjunction with the experience study, the investment consultant reported an annual expected return of 8.04% based on the System's portfolio and their most recent capital market assumptions.

**1. Discount Rate / Expected Return on Assets**

7.50% per year, net of investment expenses

**2. Single Equivalent Discount Rate for GASB 67/68**

7.50% per annum, 5.23% prior year

**3. Inflation Assumption**

2.75% per annum

**4. Expenses**

Estimated budgeted administrative expenses of 0.80% of payroll are added to the normal cost rate

**5. Salary Increases**

Salary increases are assumed to vary by service. Representative rates are as follows:

Service	Annual Increase
0	8.75%
1	8.25
2	7.75
3	7.25
4	6.75
5	6.25
6	5.75
7	5.25
8-14	4.75
15-20	4.25
21+	3.75

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**6. Mortality Rates**

Active Members: Pub-2010 General Employees Amount-Weighted Mortality Table [*PubG-2010 Employee*] as published by the Society of Actuaries (SOA), and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

Healthy Inactive Members: Pub-2010 General Healthy Retirees Amount-Weighted Mortality Table [*PubG-2010 Healthy Retiree*] as published by the SOA with a 110% adjustment for males and 115% adjustment for females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

Disabled Inactive Members: Pub-2010 Non-Safety Disabled Retirees Amount-Weighted Mortality Table [*PubNS-2010 Disabled Retiree*] as published by the SOA, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

**7. Retirement Rates**

Age	5 Years of Service	Annual Rates of Retirement Groups C, E, and F		
		6 – 24 Years of Service	25 – 28 Years of Service	29+ Years of Service
50-54				60.0%
55-56			6.0%	60.0
57			6.0	70.0
58			6.0	80.0
59			10.0	80.0
60	12.5%	12.5%	12.5	60.0
61	12.5	12.5	12.5	40.0
62-63	12.5	12.5	12.5	50.0
64	12.5	12.5	12.5	60.0
65	12.5	20.0	20.0	80.0
66	12.5	12.5	12.5	80.0
67	12.5	35.0	35.0	80.0
68-69	12.5	20.0	20.0	80.0
70	100.0	100.0	100.0	100.0

**CITY OF CINCINNATI RETIREMENT SYSTEM  
GASB 67 AND 68 REPORTING FOR JUNE 30, 2024 MEASUREMENT DATE**

**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

Age	Annual Rates of Retirement Group G				
	5 Years of Service	6 – 14 Years of Service	15 – 28 Years of Service	29-30 Years of Service	31+ Years of Service
57			6.0%	6.0%	6.0%
58			6.0	6.0	6.0
59			10.0	10.0	10.0
60			10.0	10.0	10.0
61			10.0	10.0	10.0
62			10.0	60.0	50.0
63			10.0	60.0	50.0
64			10.0	70.0	60.0
65			10.0	80.0	80.0
66			10.0	80.0	80.0
67	12.5%	35.0%	35.0	60.0	80.0
68	12.5	20.0	20.0	80.0	80.0
69	12.5	20.0	20.0	80.0	80.0
70	100.0	100.0	100.0	100.0	100.0

**8. Termination Rates**

Sample termination rates are as follows:

Annual Rates of Termination	
Years of Service	Rate of Withdrawal
< 1	15.00%
1	10.00
2	8.00
3	7.00
4	6.50
5	6.00
6	5.00
7	4.00
8	3.00
9-14	2.50
15+	2.00

60% of vested members who terminate elect to leave their contributions in the Plan in order to be eligible for a benefit at their normal retirement; 40% of members elect to withdraw their contributions

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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**9. Disability Rates**

Sample disability rates are as follows:

Age	Annual Rates of Disability <sup>1</sup>
20	0.0025%
25	0.0050%
30	0.0075%
35	0.0125%
40	0.0225%
45	0.0375%
50	0.0675%
55	0.1050%
60	0.1250%
64	0.1250%

<sup>1</sup> Rates are 0% when member is eligible for normal retirement

**10. Part-time Active Members**

All part-time active members are assumed to receive a refund of their employee contributions with interest upon leaving the System.

**11. DROP Participation**

30% of eligible CSA Employee members eligible for DROP benefits are assumed to decline participation and 70% are assumed to elect participation. Those electing to participate are assumed to remain in DROP for three years.

**12. DROP Crediting Rate**

3.25% per annum

**13. Percent Married**

60% of members are assumed to be married for the purpose of valuing pre-retirement survivor benefits.

**14. Spouse Age Difference**

Unless otherwise reported in the data, the male spouse is assumed to be three-years-older than the female spouse.

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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**15. New Entrant Assumptions for Projections**

For purposes of projecting total payroll, the active population was assumed to remain stable with decrementing actives assumed to be replaced by new entrants hired at the following ages (based on observed experience in the census data):

Hire Age	Percent Male	Percent Female
20	8.0%	4.0%
25	14.0%	9.0%
30	8.0%	9.0%
35	6.0%	9.0%
40	7.0%	7.0%
45	3.0%	4.0%
50	<u>7.0%</u>	<u>5.0%</u>
<b>Total</b>	<b>53.0%</b>	<b>47.0%</b>

Using the census data, average salaries for new hires were assumed to be \$60,000 indexed with general wage inflation of 3.75% per year for future years.

**16. Changes Since Last Valuation**

No changes except to the GASB 67/68 Single Equivalent Discount Rate.

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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

## **B. Methods**

### **1. Actuarial Funding Method**

The funding method for the valuation of liabilities used for this valuation is the Entry Age Normal (EAN) method. Under this funding method, a normal cost rate is determined as a level percentage of pay for each active member. The normal cost rate multiplied by payroll equals the total normal cost for each member. The normal cost contributions (Employer and Member) will pay for projected benefits at retirement for each active member.

The actuarial liability is the difference between the present value of future benefits and the present value of future normal costs. The difference between this actuarial liability and the actuarial value of assets is the unfunded actuarial liability (UAL).

The portion of the actuarial liability in excess of plan assets, the UAL, is amortized to develop an additional cost that is added to each year's employer normal cost. Under this funding method, actuarial gains and losses are directly reflected in the size of the unfunded actuarial liability. The amortization method is described below.

### **2. Amortization Method**

The actuarially determined contribution (ADC) is determined as the sum of (a) the employer normal cost rate, (b) the administrative expense rate, and (c) the UAL rate. Based on the Board's funding benchmark, the UAL rate represents the amount necessary to amortize the UAL (excluding liabilities due to the ERIP) over a 30-year open period as a level dollar amount. If the City were to contribute based on the ADC, the unfunded liability would not be expected to be fully paid off based on the open 30-year amortization period.

In addition, the City is paying for the Early Retirement Incentive Program in 15 level annual amounts beginning January 1, 2022.

### **3. Actuarial Value of Assets**

The actuarial value of assets recognizes a portion of the difference between the actual market value of assets and the expected market value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between actual market value and expected market value. In addition, the actuarial value of assets cannot be less than 80%, or more than 120%, of the market value of assets.

### **4. Valuation Software**

Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate the liabilities, normal costs, and projected benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this actuarial valuation.

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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**5. Projection Model**

We have used Cheiron's *P-Scan* model to project contributions and assets for the purpose of determining the GASB 67/68 discount rate.

The *P-Scan* deterministic projection uses standard roll-forward techniques that implicitly assumes a stable active population. Changes in the demographic characteristics of the active population will lead to different results.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**1. Membership**

All employees of the City of Cincinnati shall be members of the System except for the following:

- Members of the Police and Fireman's Disability and Pension Fund of Ohio,
- Elected City officials,
- Employees for whom the City contributes to the Ohio Public Employees Retirement System,
- Members of the faculties, teaching staffs, research staffs, and administrative staff of the University of Cincinnati appointed to positions covered by the Teachers Insurance and Annuity Association Social Security Plan,
- Persons becoming employees after June 1, 1961, who are employed in any of the following employment classifications: bricklayer, carpenter, carpenter foreman, cement finisher, electrician, electrician foreman, painter, painter foreman, plasterer, plumber, sign painter, steamfitter, and pipefitter, tinsmith, or composition roofer,
- Persons hired as police recruits who are not currently enrolled as a member of the System prior to their date of hire, and
- Current contributing members of the Ohio School Employees Retirement System (SERS) or the Ohio State Teachers Retirement System (STRS) who are hired by the City on a seasonal, temporary, or part-time basis.

Members of the System are divided into the following groups:

Group	Criteria
A, B	Any member who has retired prior to 7/1/2011
C	Any member who, as of June 30, 2011, was an active or deferred vested member and had either: a) Completed at least 30 years of service, or b) Reached age 60 and completed at least 5 years of service
D	Any active member who, between July 1, 2011 and December 31, 2013: 1) Either a) Completed at least 30 years of service, or b) Reached age 60 and completed at least 5 years of service; and 2) Retired prior to January 1, 2014
E	Any active member who: 1) Between July 1, 2011 and December 31, 2013 either: a) Completed at least 30 years of service, or b) Reached age 60 and completed at least 5 years of service; and 2) Retires on or after January 1, 2014.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

<b>Group</b>	<b>Criteria</b>
F	<p>Any active member whose most recent membership enrollment date was prior to January 1, 2010 and who is not in groups A through E.</p> <p>Any deferred vested member whose most recent membership enrollment date was prior to January 1, 2010, is not in groups A through E, and has at least five years of service prior to the date separated from employment.</p>
G	<p>Any member whose most recent membership enrollment date is on or after January 1, 2010, or</p> <p>Any member rehired on or after January 1, 2010, who has fewer than five years of service as of June 30, 2011, or</p> <p>Any retiree of the System who is receiving service retirement allowance and is re-employed on or after April 1, 2013.</p>

Members in the System are further classified as follows:

<b>Class</b>	<b>Criteria</b>
CSA Retiree (CSA participants corresponding to Retirees Class)	Group A and B members and their designated optionees
CSA Employee (CSA participants corresponding to Current Employees Class)	Group C, D, E, and F members (and their designated optionees) that were vested and employed on July 1, 2011
CMC Employee (Non-CSA participants)	Group E and F members (and their designated optionees) that were either vested or employed on July 1, 2011 and no break in employment service since January 1, 2010 and prior to becoming vested
Non-CSA	Group G members and their designated optionees

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**2. Service Retirement Benefit**

***Groups A, B, C, and D***

Normal Retirement Eligibility	Age 60 with 5 years of service or 30 years of service
Early Retirement Eligibility	Age 55 with 25 years of service
Benefit Formula Multiplier	Members hired prior to July 12, 1998 were given a one-time irrevocable option to choose either the benefit formula using a 2.22% multiplier or the benefit formula using a 2.50% multiplier. For members hired on or after July 12, 1998, benefits are calculated using a 2.50% multiplier.
Average Highest Compensation	Average of the highest three consecutive years of compensation
Years of Service	Years or fractional years of full-time service rendered to the plan sponsor
Benefit	<ul style="list-style-type: none"><li>a) An annuity that is actuarially equivalent to the accumulated contributions of the member at the time of retirement.</li><li>b) A pension which together with the annuity produces a total annual retirement allowance equal to the product of the applicable benefit formula multiplier, the member's average highest compensation, and the number of years of service.</li></ul>
	Early Retirement Benefit is actuarially reduced from normal retirement age.

***Group E***

Normal Retirement Eligibility	Age 60 with 5 years of service or 30 years of service
Early Retirement Eligibility	Age 55 with 25 years of service
Retirement benefit is composed of as many as three components:	
	<i>Part A Benefit</i>
	For service earned through December 31, 2013
	<i>Part B Benefit</i>
	For service earned on and after January 1, 2014 up to a combined (Part A and Part B) 20 years of service
	<i>Part C Benefit</i>
	For service earned on and after January 1, 2014 in excess of a combined (Part A and Part B) 20 years of service

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

Benefit Formula Multiplier	<p><i>Part A Benefit</i> Members hired prior to July 12, 1998 were given a one-time irrevocable option to choose either the benefit formula using a 2.22% multiplier or the benefit formula using a 2.50% multiplier. For members hired on or after July 12, 1998, benefits are calculated using a 2.50% multiplier.</p> <p><i>Part B Benefit</i> Members hired prior to July 12, 1998 were given a one-time irrevocable option to choose either the benefit formula using a 2.22% multiplier or the benefit formula using a 2.50% multiplier. For members hired on or after July 12, 1998, benefits are calculated using a 2.50% multiplier.</p> <p><i>Part C Benefit</i> 2.20% multiplier</p>
Average Highest Compensation	<p><i>Part A Benefit</i></p>
Average Highest Compensation	Average of the highest three consecutive years of compensation
	<p><i>Part B Benefit</i></p>
	Average of the highest five consecutive years of compensation
	<p><i>Part C Benefit</i></p>
	Average of the highest five consecutive years of compensation
Years of Service	Years or fractional years of full-time service rendered to the plan sponsor
Benefit	<ul style="list-style-type: none"><li>a) An annuity that is actuarially equivalent to the accumulated contributions of the member at the time of retirement.</li><li>b) A pension which together with the annuity produces a total annual retirement allowance equal to the sum of Part A, Part B, and Part C benefits each of which is the product of the applicable benefit formula multiplier, the applicable average highest compensation, and the applicable number of years of service.</li></ul>
	Early Retirement Benefit is actuarially reduced from normal retirement age.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

***Group F***

Normal Retirement Eligibility      Age 60 with 5 years of service or 30 years of service

Early Retirement Eligibility      Age 55 with 25 years of service

Retirement benefit is composed of as many as three components:

*Part A Benefit*

For service earned through June 30, 2011

*Part B Benefit*

For service earned on and after July 1, 2011 up to a combined (Part A and Part B) 20 years of service

*Part C Benefit*

For service earned on and after July 1, 2011 in excess of a combined (Part A and Part B) 20 years of service

Benefit Formula Multiplier

*Part A Benefit*

Members hired prior to July 12, 1998 were given a one-time irrevocable option to choose either the benefit formula using a 2.22% multiplier or the benefit formula using a 2.50% multiplier. For members hired on or after July 12, 1998, benefits are calculated using a 2.50% multiplier.

*Part B Benefit*

Members hired prior to July 12, 1998 were given a one-time irrevocable option to choose either the benefit formula using a 2.22% multiplier or the benefit formula using a 2.50% multiplier. For members hired on or after July 12, 1998, benefits are calculated using a 2.50% multiplier.

*Part C Benefit*

2.20% multiplier

Average Highest Compensation

*Part A Benefit*

Average of the highest three consecutive years of compensation

*Part B Benefit*

Average of the highest five consecutive years of compensation

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## APPENDIX C – SUMMARY OF PLAN PROVISIONS

### *Part C Benefit*

Average of the highest five consecutive years of compensation

Years of Service	Years or fractional years of full-time service rendered to the plan sponsor
Benefit	<p>a) An annuity that is actuarially equivalent to the accumulated contributions of the member at the time of retirement.</p> <p>b) A pension which together with the annuity produces a total annual retirement allowance equal to the sum of Part A, Part B, and Part C benefits each of which is the product of the applicable benefit formula multiplier, the applicable average highest compensation, and the applicable number of years of service.</p>
	Early Retirement Benefit is actuarially reduced from normal retirement age.
<b>Group G</b>	
Normal Retirement Eligibility	Age 67 with 5 years of service or age 62 with 30 years of service
Early Retirement Eligibility	Age 57 with 15 years of service
Benefit Formula Multiplier	Benefit is calculated using a 2.20% multiplier for all years of service up to 30 years and a 2.00% multiplier for all service in excess of 30 years.
Average Highest Compensation	Average of the highest five consecutive years of compensation
Years of Service	Years or fractional years of full-time service rendered to the plan sponsor
Benefit	<p>a) An annuity that is actuarially equivalent to the accumulated contributions of the member at the time of retirement.</p> <p>b) A pension which together with the annuity produces a total annual retirement allowance equal to the product of the applicable benefit formula multiplier, the member's average highest compensation, and the number of years of service.</p>
	Early Retirement Benefit is actuarially reduced from normal retirement age.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

***All Groups***

In no event shall the retirement allowance be greater than 90% of a member's average highest compensation.

In no event shall the retirement allowance be greater than that permitted by Section 415 of the Internal Revenue Code.

The average highest compensation used in the calculation of benefits depends on which benefit formula applies to the member. The formula that uses the 2.22% multiplier includes overtime compensation and the lump sum payment for unused vacation and sick pay. The formulas that use all other multipliers do not include overtime or the lump sum payment.

**3. Disability Retirement Benefit**

Eligibility	5 years of service
Benefit	<p>90% of normal retirement benefit at disability date but not less than the smaller of:</p> <ul style="list-style-type: none"><li>a) 25% of average highest compensation</li><li>b) 90% of the retirement benefit the member would have become entitled to had he continued in service to normal retirement age without further change in average highest compensation</li></ul>

**4. Deferred Vested Retirement Benefit**

Eligibility	5 years of service
Benefit	Normal retirement benefit beginning at normal retirement age

**5. Pre-retirement Death Benefit**

- 1) Contributions with interest
- 2) Survivor Benefits according to the type of survivors if the member has at least 18 months of service

**6. Post-retirement Death Benefit**

- 1) \$5,000 lump sum for Groups A and B
- 2) If no Joint and Survivor Option is selected, the balance of member contributions not received back in retirement benefit payments prior to death

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**7. Optional Forms of Benefit**

- 1) Joint and 100% Survivor Payment
- 2) Joint and 50% Survivor Payment
- 3) 66 2/3% Joint and Survivor Payment
- 4) 80% Joint and Survivor Payment

**8. Cost-of-Living Adjustments (COLA)**

Groups A and B

3% simple COLA based on the member's benefit on January 1, 2016, including all previously granted COLAs. Effective January 1, 2016, the COLA will be suspended for a 3-year period.

In the 3<sup>rd</sup> year of the COLA suspension (calendar year 2018), members will receive a one-time payment that is the lesser of 3% of their base pension benefit or \$1,000. This payment will be made on January 1, or the anniversary date of the member's retirement according to when the member normally receives a COLA.

Groups C, D, E, F, and G

3% simple COLA based on the initial gross monthly benefit with a 3-year delay following each member's date of retirement.

Poverty Exception

Any member of the Retirees Class or Current Employees Class who retired or retires with at least 5 years of service and whose household income is below 150% of federal poverty guidelines will receive a 3% compounding COLA until such time income exceeds 150% of federal poverty guidelines, at which time the member will receive a 3% simple COLA.

**9. Contributions**

Members

Each member, commencing January 1, 1978, contributes at a rate of 7.0% of the salary used to compute retirement benefits until retirement. Beginning January 1, 2010, the employee contribution rate was increased by 0.5% per year over 4 years to reach 9.0% of pay. The CSA establishes that the contribution rate for members shall not exceed 9.0% of pay for the term of the agreement.

Employers

The sponsoring employer makes annual contributions based on members' salaries so that, when members become eligible for benefits, reserves will have been accumulated to provide the pension and other benefits payable by the plan on account of creditable service.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**10. Deferred Retirement Option Plan (DROP)**

Eligibility	Current Employees Class members with at least 30 years of service
Maximum Participation Period	5 years
Minimum Participation Period	Participation in DROP for less than 2 years results in forfeiture of all interest earnings credited to the member's DROP account
Benefit	Monthly pension benefit is calculated as if the eligible member actually retired on their DROP effective date, including any adjustments for an assigned optionee. The monthly pension benefit will be contributed to the member's DROP account in the CRS Pension Trust and paid out as a lump sum upon termination from the DROP.
Employee Contributions	Members continue to contribute 9.0% of pay while participating in DROP. 75% of the contribution is credited to the member's DROP account and the remaining 25% of the contribution is paid to the CRS Pension Trust to offset the costs of administering the DROP.
Employer Contributions	Employer contributions to the CRS Pension Trust continue to apply in the same manner as for other actively employed members who are not participating in the DROP. Employer contributions are not credited to the member's DROP account.
Interest	DROP account balances are credited each month at a rate equal to the 10-year U.S. Treasury Note Business Day Series adjusted quarterly with a cap of 5% but not less than 0%.

**11. Changes Since Last Valuation**

None.

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**APPENDIX D – GLOSSARY OF TERMS**

**1. Actuarially Determined Contribution**

A target or recommended contribution for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

**2. Actuarial Valuation Date**

The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's reporting date.

**3. Deferred Inflow of Resources**

An acquisition of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience gains on the Total Pension Liability, assumption changes reducing the Total Pension Liability, or investment gains that are recognized in future reporting periods.

**4. Deferred Outflow of Resources**

A consumption of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience losses on the Total Pension Liability, assumption changes increasing the Total Pension Liability or investment losses that are recognized in future reporting periods.

**5. Entry Age Actuarial Cost Method**

The actuarial cost method required for GASB 67 and 68 calculations. Under this method, the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Service Cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future service costs is called the Total Pension Liability.

**6. Measurement Date**

The date as of which the Total Pension Liability and Plan Fiduciary Net Position are measured. The Total Pension Liability may be projected from the Actuarial Valuation Date to the Measurement Date. The Measurement Date must be the same as the Reporting Date for the Plan.

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**APPENDIX D – GLOSSARY OF TERMS**

**7. Net Pension Liability**

The liability of the employer and non-employer contributing entities for employees for benefits provided through a defined benefit pension plan. It is calculated as the Total Pension Liability less the Plan Fiduciary Net Position.

**8. Plan Fiduciary Net Position**

The fair or market value of assets.

**9. Reporting Date**

The last day of the Plan or employer's fiscal year.

**10. Service Cost**

The portion of the actuarial present value of projected benefit payments that is attributed to the current period of employee service in conformity with the requirements of GASB 67 and 68. The Service Cost is the normal cost calculated under the entry age actuarial cost method.

**11. Total Pension Liability**

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of GASB 67 and 68. The Total Pension Liability is the actuarial liability calculated under the entry age actuarial cost method.