REGULAR MEETING OF THE ANNUITY AND PENSION BOARD
EMPLOYES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
789 N. WATER ST. (Employes' Retirement System)
TUESDAY, JUNE 25, 2024 – 9:00 A.M.

Special Notice: The meeting will be held remotely via video conference. Instructions on how to observe the meeting will be available on ERS's website (www.cmers.com) prior to the meeting.

Please note and observe the following remote attendance etiquette to ensure a smooth and productive meeting:

• In order to cut down on background noise, participants in the meeting should put their phones on mute when they are not participating.

• At the start of the meeting, the Chairman will announce the names of the members of the Board present on the call, as well as anyone else who will be participating.

• Please request to be recognized by the Chairman if you would like to speak.

• Those participating on the call should identify themselves whenever they speak, and should ensure that the other participants on the call can hear them clearly.

REGULAR MEETING

I. Approval of Minutes.
   A. Regular Meeting Held May 28, 2024.
   B. Special Board Meeting Held June 6, 2024.

II. Chief Investment Officer Report.

III. Investment Committee Report.
   A. Approval of UBS Hedge Fund Solutions and CMERS Low Beta LLC Contract Amendment.
   B. Approval of Harrison Street Core Property Fund Data Center Allocation Proposal.

Please be advised that the Annuity and Pension Board may vote to convene in closed session on the following item (III.C.), as provided in Section 19.85(1)(g), Wisconsin State Statutes, to confer with legal counsel concerning strategy to be adopted by the body with respect to litigation in which it is or is likely to become involved. The Board may then vote to reconvene in open session following the closed session.

   C. Approval of Action Regarding Stock Loan Settlement.

IV. Administration & Operations Committee Report.
   A. Approval of A&O Committee Audit Charter and Internal Audit Charter.
   B. CLA Audit Reports.

Please be advised that the Annuity and Pension Board may vote to convene in closed session on the following item (IV.C.), as provided in Section 19.85(1)(d), Wisconsin State Statutes, to consider "strategy for crime detection and prevention." The Board may then vote to reconvene in open session following the closed session.

   C. 2023 Cybersecurity Assessments.

V. New Business.

A. Presentation by Larry Langer and Aaron Chochon of Cavanaugh Macdonald and Acceptance of 2024 Actuarial Valuation Report.
B. Retirements, Death Claims, and Refunds (May).
C. Conference Requests – June 2024 Board Meeting.
D. Approval of At Large Member Election Bulletin No. 198.

VI. Medical Reports.

Please be advised that the Annuity and Pension Board may vote to convene in closed session on the following item (VI.A.), as provided in Section 19.85(1)(f), Wisconsin State Statutes, for considering financial, medical, social or personal histories or disciplinary data of specific persons, preliminary consideration of specific personnel problems or the investigation of charges against specific persons except where par. (b) applies which, if discussed in public, would be likely to have a substantial adverse effect upon the reputation of any person referred to in such histories or data, or involved in such problems or investigations.

A. All Duty & Ordinary Disability Applications & Re-examinations (June).

VII. Unfinished Business.

A. Pending Legal Opinions and Service Requests Report.
B. Pending Legislation Report.
C. Executive Director's Report – Inventory of ERS Projects.

VIII. Informational.

Please be advised that the Annuity and Pension Board may vote to convene in closed session on the following item (VIII.A.), as provided in Section 19.85(1)(g), Wisconsin State Statutes, to confer with legal counsel concerning strategy to be adopted by the body with respect to litigation in which it is or is likely to become involved. The Board may then vote to reconvene in open session following the closed session.

A. Pending Litigation Report.
B. Conferences.
C. Class Action Income 2024.
D. Minutes of the Investment Committee Meeting Held June 6, 2024.
E. Report on Bills.
F. Deployment of Assets.
G. Securities Lending Revenue and Budget Report.
H. Preliminary Performance Report and Asset Allocation.

MEETING REMINDERS

REGULAR MEETING OF THE ANNUITY AND PENSION BOARD

TUESDAY, JULY 30, 2024 – 9:00 A.M.

789 N. WATER ST.

I.

APPROVAL OF MINUTES

A. Regular Meeting Held May 28, 2024.
B. Special Board Meeting Held June 6, 2024.

EMPLOYES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
ANNUITY AND PENSION BOARD

Minutes of the Regular Meeting
held May 28, 2024 via teleconference

The meeting was called to order at 9:02 a.m.

Board Members Present:	Matthew Bell, Chair Bill Christianson Deborah Ford Timothy Heling Molly King Thomas Klusman Rudolph Konrad
Board Members Not Present:	Nik Kovac (arrived 9:05 a.m.)
Retirement System Staff Present:	Jerry Allen, Executive Director David Silber, Chief Investment Officer Erich Sauer, Deputy Chief Investment Officer Keith Dickerson, Pension Investment Analyst – Sr. Aaron Shew, Pension Investment Analyst – II. Thomas Courtright, Pension Investment Analyst – II. Daniel Gopalan, Chief Financial Officer Gust Petropoulos, Deputy Director – Disability Mary Turk, Business Operations Analyst Jan Wills, Board Stenographer

Others Present: Larry Langer, Aaron Chochon, Cavanaugh Macdonald; Lisa Kasel, Erin Scharlau, Carolyn Stittleburg, Legislative Audit Bureau; Patrick McClain, City Attorney's Office; Terry Siddiqui, DS Consulting, Inc., four members of the public called in to the meeting.

Regular Meeting.

Approval of Minutes.

Regular Meeting Held April 23, 2024. It was moved by Mr. Heling, seconded by Mr. Christianson, and unanimously carried, to approve the minutes of the Regular Meeting Held April 23, 2024.

Chief Investment Officer Report. As a matter of information, Board members received the May 28, 2024 Performance Update. Mr. Sauer said the Fund as of April 30, 2024, had a value of $5.81 billion dollars. He said the Fund return of -2.1% in April, gross of fees, underperformed by approximately 2 basis points, which was close to flat with the benchmark. Mr. Sauer said the primary driver of relative Performance was Public Equity which was a combination of Manager Performance and Style Bias which detracted 8 basis points this month, and the Fund's elevated weighting in Cash added 7 basis points to the Fund's return. Mr. Sauer added the Fund has underperformed the benchmark in the year-to-date and one-year time periods, while outperforming in the five-, 10-, 15- and 20-year periods. He said as of May 27, 2024, the Fund return is 2.4% month-to-date, bringing the year-to-date return to up 3.1%, and the Fund value to $5.95 billion. Mr. Sauer noted 10 out of 15 active mandates are outperforming year-to-date. He said the Fixed Income and Absolute Return asset classes are outperforming their respective benchmarks year-to-date. Mr. Sauer said year-to-date, the Fund has an investment change of a positive $183.9 million, paid benefits and expenses of $165.9 million, and has received contributions of $220.8 million. He said the monthly manager withdrawals are $12.4 million from Brandes, $9.4 million from BlackRock Global Alpha Tilts, $7.5 million from MFS, $6.2 million from DFA International, and $4.1 million from AQR.

Mr. Silber introduced Aaron Shew who was hired as an Investment Analyst. He said Mr. Shew is a CFA Charterholder and comes to the ERS from SWIB's operations department where he specialized in Private Equity. Messrs. Silber and Bell welcomed Mr. Shew and Mr. Dickerson to the Investment team. Mr. Silber noted the next Investment Committee Meeting is June 6, 2024.

New Business.

Retirements, Death Claims, and Refunds (April). Mr. Allen presented the following activity for the month of April 2024.

Administrative Withdrawal	$7,184.73
Full Refund	$33,680.19
Active Death Benefits reported	$0.00
Deferred Death	$0.00
Deferred Death-Member Only Refund	$1,308.40
Ordinary Death Benefits reported	$78,366.04
Retired Death Benefits reported	$5,859.67
Survivor Death – Termination Benefits reported	$5,091.10
Refund of Member Contributions paid	$44,915.84

It was moved by Ms. King, seconded by Mr. Kovac, and unanimously carried, to approve the Retirements, Death Claims, and Refunds report for April 2024.

Conference Requests – May 2024 Board Meeting.

Erich Sauer, Aaron Shew	Loomis Sayles & MFS Due Diligence; Prologis meeting
Sponsor:	Loomis Sayles, MFS, Prologis
Location:	Boston, MA
Date(s):	July 23-25, 2024
Estimated Cost:	$1,750.00 per person

David Silber, Keith Dickerson	2024 Goldman Sachs Due Diligence; Principal Real Asset Meeting
Sponsor:	Goldman Sachs and Principal Asset Management
Location:	Seattle, WA
Date(s):	September 17-19, 2024
Estimated Cost:	$1,800.00 per person

Mr. Allen also noted Mr. McClain's request to attend the NAPPA Conference on June 25-28, 2024, in Fort Lauderdale, FL at an estimated cost of $2,190.00.

It was moved by Ms. Ford, seconded by Mr. Konrad, and unanimously carried, to approve the Conference Requests – May 2024 Board Meeting.

Medical Reports.

Mr. Bell advised that the Annuity and Pension Board may vote to convene in closed session on the following item (IV.A. and B.), as provided in Section 19.85(1)(f), Wisconsin State Statutes, for considering financial, medical, social or personal histories or disciplinary data of specific persons, preliminary consideration of specific personnel problems or the investigation of charges against specific persons except where par. (b) applies which, if discussed in public, would be likely to have a substantial adverse effect upon the reputation of any person referred to in such histories or data, or involved in such problems or investigations.

A. All Duty & Ordinary Disability Applications & Re-examinations (May).
B. Disability Findings – James L. Gentry Sr.

Mr. Allen presented certifications (May 2024) of the Fire and Police Medical Panel Physicians and the Medical Council relative to Duty & Ordinary Disability Retirement benefits as follows:

All Duty & Ordinary Disability Applications & Re-examinations (May).

Police – Applications – Duty	Recommendation
Elmer Montano Effective 03/21/2023	Approval
Andrew Wilkiewicz Effective 12/10/2023	Approval

Police – Applications – Ordinary	Recommendation
Andrew Wilkiewicz	Denial

Fire – Re-examinations – Duty	Recommendation
Teresa Macguire	Approval
William Soderbeck	Approval

General City – Re-examinations – Ordinary	Recommendation
Ibrahim Dais	Approval
Ronald Watson	Approval

It was moved by Mr. Klusman, seconded by Ms. King, and unanimously carried, to convene in closed session. The motion prevailed by the following roll call vote: AYES: Mses. Ford, and King; Messrs. Bell, Christianson, Heling, Klusman, Konrad, and Kovac. NOES: None.

The Board convened in closed session at 9:19 a.m. and reconvened in open session at 10:13 a.m.

It was moved by Mr. Konrad, seconded by Mr. Heling, and unanimously carried, to approve the Duty & Ordinary Disability Applications & Re-examinations (May).

Mr. Bell presented Hearing Examiner Reilly's Decision which states "I recommend the Board deny Mr. Gentry's application for Duty Disability." Correspondence was also received from the City Attorney's office dated May 17, 2024 with the conclusion that "Mr. Gentry has not raised any valid basis to question the hearing examiner's report and recommendation. Respondent therefore asks this Board to accept Judge Reilly's report and affirm the denial of Mr. Gentry's DDR application."

It was moved by Mr. Konrad, seconded by Ms. Ford, and unanimously carried, to approve the Hearing Examiner's recommendation regarding item IV.B.

Unfinished Business.

Pending Legal Opinions and Service Requests Report. Mr. McClain stated the Legal Opinion is nearly complete and will be presented at the June Board meeting. He stated it would not disrupt the current practice that is happening with enrolling new hires that are returning to City service into the WRS.

Pending Legislation Report. Mr. Allen noted on the previous Service Requests Report that the City Attorney's Office has completed their review of the proposed second amendment to the investment contract for the USB Hedge Fund Solutions Second Amendment and it will be presented for approval at the June 6 Investment Committee Meeting. Mr. Allen said there is no pending legislation to discuss today.

Funding of 5.8% Employee Pension Contribution Offset Case Judgment – Presentation by Larry Langer of Cavanaugh Macdonald. As a matter of information, Board members received from Cavanaugh Macdonald a memo regarding the "Impact of 5.8% Pension Offset Lawsuit on the January 1, 2024 Actuarial Valuation."

Mr. Langer said Cavanaugh Macdonald is working on the January 1, 2024 Actuarial Valuation which determines contributions for Plan Year 2025, and as part of that valuation, it is necessary to reflect the 5.8% Pension Contribution Offset Lawsuit. He noted there was a 5.8% pension offset payment that the courts ruled should be included in the calculation of benefits and this ruling resulted in an increase in benefits for both current and potential future recipients of these duty disability retirement benefits. Mr. Langer discussed the table that showed the increase in actuarial accrued liability (AAL) for policemen and firemen as of January 1, 2024. He noted the estimated retroactive payments for firemen are $6.3 million and for policemen, $2.8 million, for a total of $9.1 million. Mr. Langer said that this amount is just for payments that did not happen since the 5.8% pension contribution payments would have been made and it dates back to 2017 or 2018. He said there is also an increase in accrued liability for these members for future payments which includes people currently receiving benefits as well as future folks. Mr. Langer said liability for the current members are $13.3 million and potential future recipients who are actives because there is an assumption that some people might get these benefits and that is reflected in the $418,000 number. He noted the total accrued liability as of January 1, 2024 is $22.9 million dollars. Mr. Langer said these liabilities will appear in the January 1, 2024 actuarial valuation which will be presented at next month's meeting. Mr. Langer said the information received for the 2024 valuations included the annual benefits, retro payments which will be paid in Plan Year 2024. He recommended the contributions for funding the judgement be added to the contributions for only Police and Fire and not allocated to the remaining groups. Discussion ensued.

The Chair called for a break at 10:55 a.m.

The Chair resumed the meeting at 11:05 a.m.

Update from Comptroller Regarding Year-To-Date Sales Tax Collections. As a matter of information, Board members received the "City of Milwaukee Sales and Use Tax YTD 2024 Results" from Mr. Christianson. He provided Background, YTD City Sales Tax Distributions, and Seasonality & Scale Up in his presentation. Mr. Christianson stated the sales tax increase went into effect on January 1, 2024 which increased the City sales tax from 5.5% to 7.9%. He said people may notice when dining at restaurants or bars, the 8.4% tax which is because of the exposition center tax which is an additional half-percent tax for food and beverage sales within Milwaukee County. Mr. Christianson said proceeds are collected by the retailers and remitted to the state DOR. He said retailers report sales taxes to the DOR on a monthly basis and the DOR distributes it to the City afterwards. Mr. Christianson noted the City Comptroller's office is responsible for making revenue estimates in the City's budget and had estimated $184 million of revenue which was a conservative figure. He said the City receives distributions around the 25th of each month and the first full distribution of $11.1 million was received in March. Mr. Christianson noted the total 2024 YTD Revenue for February, March, and April was $46.1 million. He discussed seasonality and said spending patterns are lower in January and February and taxable sales are higher in the summer months and December. Mr. Christianson mentioned Scale Up and noted retailers implement sales tax slowly when the tax rate is increased. He stated retailers are on the hook for submitting the correct amount of sales tax to the state even if they did not charge the customer and there are interest and penalties of one-and-half percent per month for sales tax that was not remitted to the state. Mr. Christianson concluded that it is too early to project year-end totals, but in August or September, a 2025 Sales Tax Revenue Estimate will be available and distributions received by the City are posted on the DOR website. Discussion ensued.

Executive Director's Report – Inventory of ERS Projects. As a matter of information, Staff presented a report on the ERS projects and updated the Board on ERS activities, a copy of which is on file with the ERS. As a part of this month's report Mr. Allen also presented a succession plan for the ERS Executive Director position due to his intention toretire at the end of December 2025. Discussion ensued.

Informational.

Please be advised that the Annuity and Pension Board may vote to convene in closed session on the following item as provided in Section 19.85(1)(g), Wisconsin State Statutes, to confer with legal counsel concerning strategy to be adopted by the body with respect to litigation in which it is or is likely to become involved. The Board may then vote to reconvene in open session following the closed session.

The Board did not convene in closed session as noticed.

1) Pending Litigation Report.

Mr. McClain noted the most recent news in the 5.8% employee pension contribution offset litigation, which is still ongoing, is that CMERS did achieve a not insignificant victory in which the Court ruled that the Common Fund Doctrine does not apply to this case. He said the plaintiffs were seeking an award of attorneys' fees out of the retroactive amounts that were due to affected members from all three protective service unions - the Police Association, the Police Supervisors Organization and the Milwaukee Professional Firefighters' Union. He said they were seeking a portion of those benefits to be paid directly to the attorneys under the Common Fund Doctrine. Mr. McClain said the city had opposed that , the Milwaukee Police Association also joined the case as a defendant to oppose that and the Court sided with CMERS because the Common Fund Doctrine does not apply in these types of cases. He explained this case is not a true Common Fund case, but an aggregated, individual benefits case. He also stated that ERS benefits are protected by Wisconsin State Statutes, Section 62.634, which says that ERS benefits are not assignable for any reason except for spousal support and child support. He further said a status conference is scheduled for Friday (May 31) to discuss the remainder of the case to get to a final resolution to make these retroactive payments as the ERS has been trying to do since March of last year, but has been prohibited from doing so due to a plaintiff's stay that was imposed in the middle of last year.

Regarding another case, Mr. McClain added that they did get a favorable Court of Appeals decision last month in the case that dealt with the Policemen's and Firemen's Survivorship dissolution bonuses. He said the case goes back a few years but deals with a discrete set of police officers who began their employment in February 2000 and were attempting to get some benefits applicable to police officers hired in January 2000. He said the Court of Appeals affirmed the prior favorable grant of Summary Judgment that was awarded to the ERS.

2) Conferences.
3) Class Action Income 2024.
4) Adjusted Quarterly Cost Basis of Equity.
5) Minutes of the Administration & Operations Committee Meeting Held April 17, 2024.
6) Minutes of the Investment Committee Meeting Held April 18, 2024.

The following is a list of activities since the last Board meeting, copies sent with meeting notice and attached to minutes:

7) Report on Bills.
8) Deployment of Assets.
9) Securities Lending Revenue and Budget Report.
10) Preliminary Performance Report and Asset Allocation.

Mr. Bell accepted and placed the Informational items on file.

There being no further business to come before the meeting, it was moved by Mr. Heling and seconded by Ms. Ford, to adjourn the meeting.

Mr. Bell adjourned the meeting at 11:54 a.m.

Bernard J. Allen
Secretary and Executive Director

NOTE: All proceedings of the Annuity and Pension Board Meetings and related Committee Meetings are recorded. All recordings and material mentioned herein are on file in the office of the Employes' Retirement System, 789 N. Water Street, Suite 300.)

EMPLOYES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
ANNUITY AND PENSION BOARD

Minutes of the Special Meeting
held June 6, 2024 via teleconference

The meeting was called to order at 11:32 a.m.

Board Members Present:	Matthew Bell, Chair Bill Christianson Deborah Ford Timothy Heling Tom Klusman Rudolph Konrad Nik Kovac
Board Members Not Present:	Molly King (excused, but arrived at 11:56 a.m.)
Retirement System Staff Present:	Jerry Allen, Executive Director Melody Johnson, Deputy Director Dan Gopalan, Chief Financial Officer David Silber, Chief Investment Officer Erich Sauer, Deputy Chief Investment Officer Keith Dickerson, Pension Investment Analyst – Sr. Aaron Shew, Pension Investment Analyst – II Thomas Courtright, Pension Investment Analyst – II Mary Turk, Business Operations Analyst Jan Wills, Board Stenographer

Others Present: Aaron Chochon, Larry Langer, Cavanaugh Macdonald; Carolyn Stittleburg, Legislative Audit Bureau; Patrick McClain, City Attorney's Office; Terry Siddiqui, DS Consulting, Inc.; six members of the public called in.

Special Meeting

Unfinished Business.

Approval of Funding of 5.8% Employee Pension Contribution Offset Case Judgment – Presentation by Larry Langer of Cavanaugh Macdonald.

As a matter of information, Board members received from Cavanaugh Macdonald a June 3, 2024 memo regarding the "Impact of 5.8% Pension Offset Lawsuit on the January 1, 2024 Actuarial Valuation."

Mr. Langer said at the last Board meeting, they discussed the funding of what Mr. Langer called the lawsuit or the funding of the 5.8% pension contribution judgment. He referenced Cavanaugh

Macdonald's May 20, 2024 letter discussed at the May 28th Board meeting regarding amortizing unfunded liabilities generated by that lawsuit. o He said the discussion at that Board meeting noted that there was a little bit of gray area in terms of how to characterize the liabilities resulting from the lawsuit, and how the liabilities might be amortized over a period of years like a gain/loss incurred in the normal course of business. Mr. Langer said Cavanaugh Macdonald's June 3rd letter updated the previous letter to amortize all the unfunded liabilities as gains/losses over a period of 10 years for the January 1, 2024 valuation, and indicating the contribution amounts attributable to that approach. He said the June 3rd letter, indicates retroactive payment liabilities of approx. $2.3 million for firemen, and for police, a little over $1 million dollars. Mr. Langer stated the payment of the unfunded actual accrued liability amounts are virtually the same and would continue for 10 years. He compared the amortization treatment referenced above to that in the May 20th letter where the retro payments are paid off in one year. Instead of a payment of $3 million in one year, the payment is $12 million in the first year and then it drops off to about $2 million per year thereafter. Mr. Langer said Cavanaugh is requesting a decision so they can wrap up the presentation and the reports scheduled to be delivered at the June 25th Board meeting. He said the two alternatives are both reasonable as outlined in either the May 20th letter or the June 3rd letter. Discussion ensued.

It was moved by Mr. Konrad, seconded by Mr. Heling, and unanimously carried, to approve the agenda item titled Approval of Funding of 5.8% Employee Pension Contribution Offset Case Judgment to be paid and amortized over 10 years as outlined in the Cavanaugh Macdonald letter, dated June 3, 2024 a/k/a Proposal #2) .

It was moved by Mr. Klusman and seconded by Ms. Ford to adjourn the meeting.

There being no further business, Mr. Bell adjourned the meeting at 12:03 p.m.

Bernard J. Allen
Secretary and Executive Director

(**NOTE:** All proceedings of the Annuity and Pension Board Meetings and related Committee Meetings are recorded. All recordings and material mentioned herein are on file in the office of the Employes' Retirement System, 789 N. Water Street, Suite 300.)

II.

CHIEF INVESTMENT OFFICER REPORT

Milwaukee Employes' Retirement System - June 25, 2024

Fund as of May 31, 2024

***Fund value of $5.91b.**

***Fund return of 2.4% in May, gross of fees, outperformed by approximately 15bp.**

***Primary Relative Perf. Drivers:**
Manager Selection
Private Equity 27bp

Style Bias -13bp
Primarily Value

***Fund has underperformed the benchmark in the YTD and 1-year periods, while outperforming in the 5, 10, 15, and 20-year periods.**

June Update (as of 6/17/24)
***Fund return 0.1% MTD**
***Fund return 3.2% YTD**
***Fund value $5.92b**

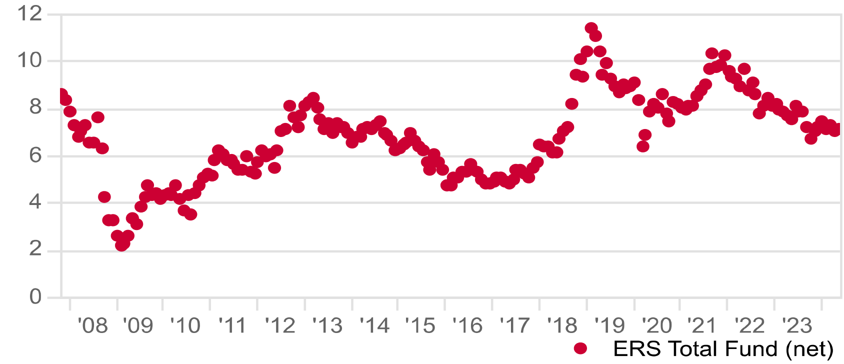
***10 out of 15 active mandates outperforming YTD.**

***Fixed Income and Absolute Return asset classes outperforming their respective benchmarks YTD.**

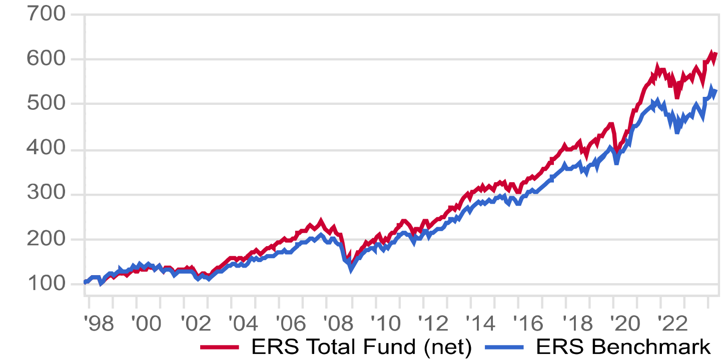
***Investment Change: $194.1m**
***Benefits & Expenses: 205.7m**
***Contributions: 222.1m**

Monthly Withdrawals:
AQR $4.0m

Total Fund - 10-Year Rolling Returns
11/28/1997 to 5/31/2024



Growth of $100 - Total Fund & ERS Benchmark
11/28/1997 to 5/31/2024



Return Data

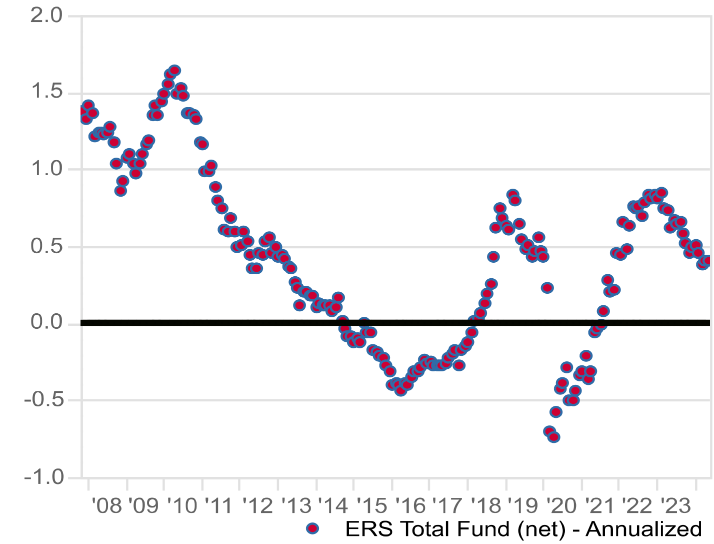
Source Data: Monthly Return

	1 Month	YTD	1 Year	5 Year	10 Year	15 Year	20 Year
Total Fund (net)	2.4	3.1	10.5	8.3	7.1	9.1	7.2
ERS Benchmark	2.2	4.1	12.3	8.0	6.7	8.5	6.9

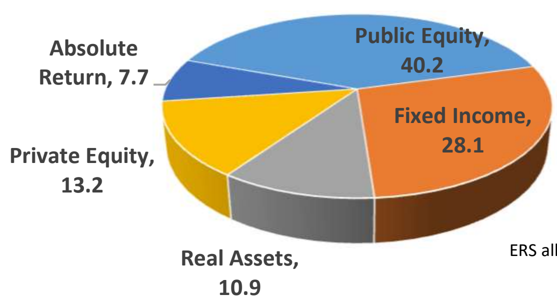
Total Fund - 20-Year Risk & Return Data

	Return	Std Dev	Tracking Error	Info Ratio (arith)	Sharpe Ratio	Alpha	Beta
Total Fund (net)	7.2	10.3	2.5	0.1	0.5	-0.3	1.1
ERS Benchmark	6.9	9.2	--	--	0.6	0.0	1.0

Total Fund - 10-Year Rolling Excess Returns
11/28/1997 to 5/31/2024

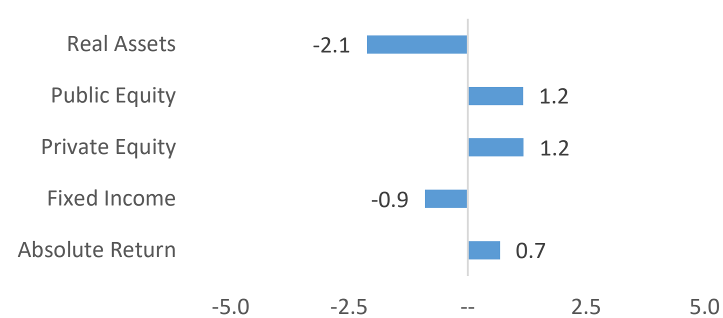


ERS Allocation as of May 31, 2024

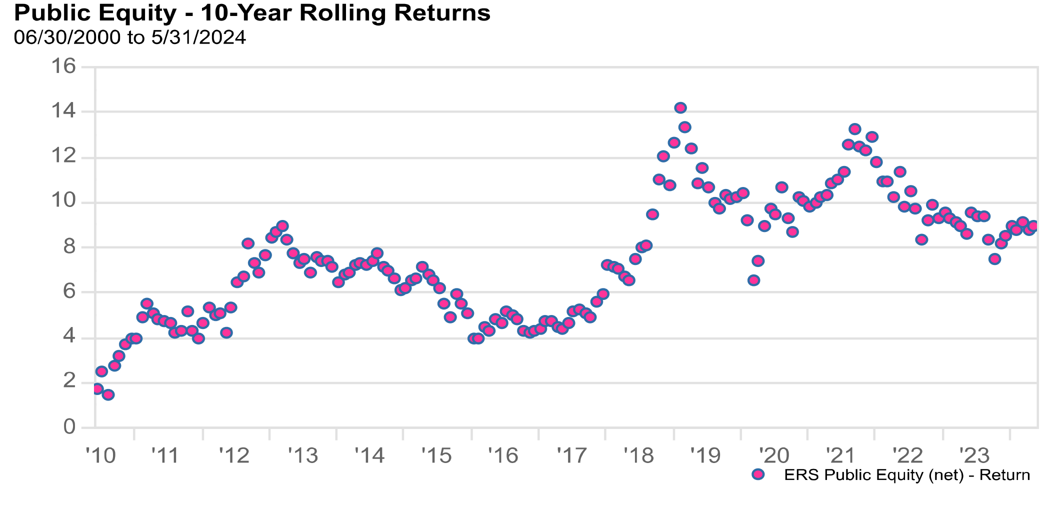


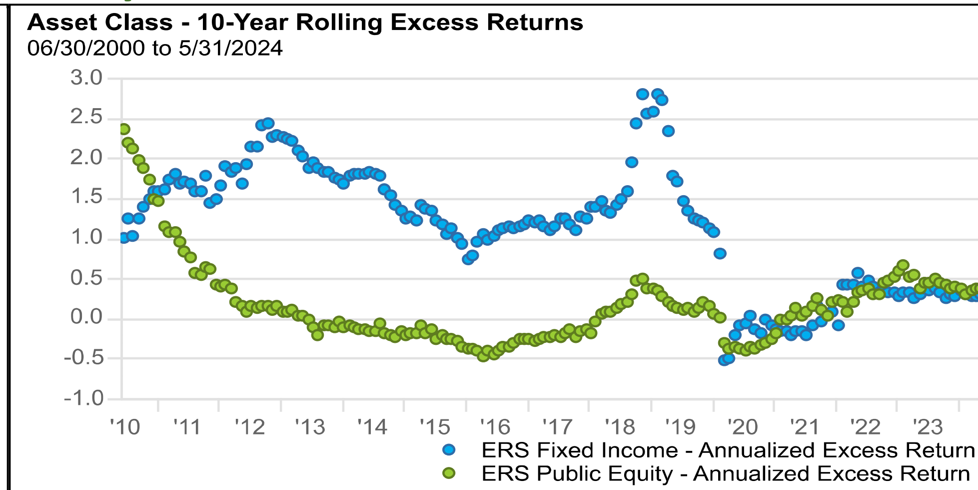
ERS allocation weights may not total 100% due to rounding

Asset Allocation vs Policy as of May 31, 2024



Milwaukee Employes' Retirement System - June 25, 2024



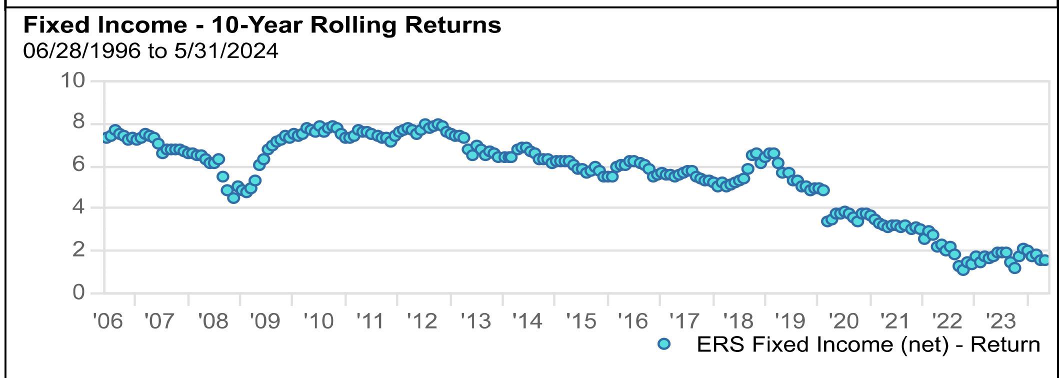


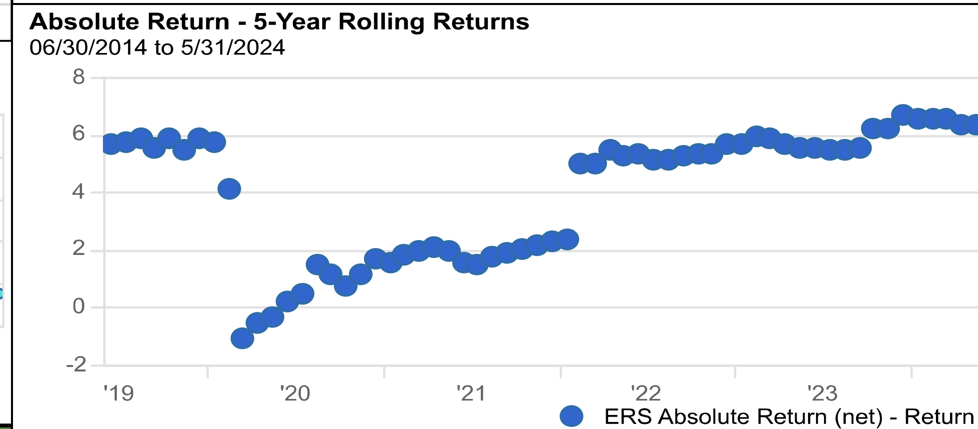
Return Data

	1 Month	YTD	1 Year	5 Year	10 Year	15 Year	20 Year
Public Equity	3.7	7.6	23.9	12.3	9.3	11.6	8.4
Public Equity (net)	3.7	7.5	23.5	11.9	8.9	11.2	8.1
Public Equity Benchmark	4.1	8.3	23.0	11.3	8.5	10.9	7.9
MSCI ACWI IMI NR USD	4.1	8.3	23.0	11.3	8.2	10.2	8.0

Risk Adjusted Returns (6/30/14 - 5/31/24)

	Return	Std Dev	Sharpe Ratio	Max Drawdown
Public Equity (net)	8.7	15.5	0.5	-25.3
Fixed Income (net)	1.5	6.6	0.0	-13.6
Absolute Return (net)	5.8	9.3	0.5	-27.1





Return Data

	1 Month	YTD	1 Year	5 Year	10 Year	15 Year	20 Year
Fixed Income	1.8	-1.1	2.5	0.2	1.7	3.9	4.3
Fixed Income (net)	1.8	-1.1	2.4	0.1	1.6	3.8	4.2
Bbg US Agg Bond TR USD	1.7	-1.6	1.3	-0.2	1.3	2.5	3.1

Return Data

	1 Month	YTD	1 Year	3 Year	5 Year	7 Year
Absolute Return (net)	0.5	4.2	9.1	12.9	6.4	5.9
90-Day T-Bill + 3%	0.7	3.5	8.6	6.2	5.2	5.1

III.

INVESTMENT COMMITTEE REPORT

A. Approval of UBS Hedge Fund Solutions and CMERS Low Beta LLC Contract Amendment.

B. Approval of Harrison Street Core Property Fund Data Center Allocation Proposal.

Please be advised that the Annuity and Pension Board may vote to convene in closed session on the following item (III. C.), as provided in Section 19.85(1)(g), Wisconsin State Statutes, to confer with legal counsel concerning strategy to be adopted by the body with respect to litigation in which it is or is likely to become involved. The Board may then vote to reconvene in open session following the closed session.

C. Approval of Action Regarding Stock Loan Settlement.

Memorandum

To: CMERS Investment Committee
From: Erich Sauer, CFA, CAIA
Date: June 6, 2024
Re: UBS Hedge Fund Solutions Contract Amendment

Attached you will find a contract amendment from UBS Hedge Fund Solutions (UBS), which manages one of CMERS' custom Hedge Fund of Fund vehicles. As UBS explains in the attached investor letter, the firm recently underwent an internal reorganization that changed the legal structure of the entity that manages our account. This has no impact on the day-to-day operations of the business unit that manages our investments.

Our standard practice when one of our managers undergoes a reorganization like this is to formalize it with a contact amendment. That amendment is attached, followed by a redline that outlines the changes. The only new change is to reflect the corporate reorganization mentioned previously. You will also see several guideline changes in the redline. Those have already been approved by the CMERS Investment Committee at past meetings, and are only showing up in the redline because UBS has taken this opportunity to "restate" the IMA to reflect them. Since those guidelines are already in effect, you are not being asked to approve them at his meeting. UBS has also amended and restated the side letter to reflect the corporate change. The updated side letter and redline are included as well.

UBS Hedge Fund Solutions LLC
600 Washington Boulevard
Stamford, Connecticut 06901
United States

February 23, 2024

Re: **Merger of UBS Hedge Fund Solutions LLC with and into UBS Asset Management (Americas)**

Dear Investor:

We trust that 2024 is off to a good start. We are writing to notify you of a forthcoming internal reorganization of certain businesses within UBS's Asset Management Division. The purpose of the restructuring is to streamline the legal entities within UBS's Asset Management Division. Currently, UBS Hedge Fund Solutions LLC ("UBS HFS") is a wholly-owned subsidiary of UBS Asset Management (Americas) Inc. (CRD# 106838/SEC# 801-34910). It is expected that, during the first quarter of 2024, UBS Asset Management (Americas) Inc. will be converted from a Delaware corporation into a Delaware limited liability company and renamed UBS Asset Management (Americas) LLC ("UBS AM Americas"). In connection with such reorganization, it is also anticipated that UBS HFS and UBS AM Americas will consummate a statutory merger pursuant to which UBS HFS will merge with and into UBS AM Americas effective on or about April 1, 2024 (the "Merger").

Upon completion of the Merger, UBS AM Americas (doing business as UBS Hedge Fund Solutions) will thereafter serve as the investment manager or investment adviser of all funds and accounts currently managed or advised by UBS HFS. Please note that UBS HFS will continue to operate as a distinct business unit within UBS AM Americas, and the Merger is not expected to have a material impact on the day-to-day operations of UBS HFS as it exists today or UBS HFS personnel responsible for managing the fund in which you are currently invested.

Enclosed is a draft supplement to the confidential memorandum of the UBS HFS-managed fund in which you are currently invested (the "Draft OM Supplement"). The Draft OM Supplement describes the relevant material disclosure updates following the consummation of the Merger and will only be effective upon the consummation of the Merger (at which time a final supplement will be distributed to you). In the event that the Merger is not consummated, we intend to provide you with a separate notification and the Draft OM Supplement should be disregarded.

Please contact your UBS representative if you have any questions regarding this letter or the Draft OM Supplement. Thank you for your continued support and partnership.

Very truly yours,

UBS Hedge Fund Solutions LLC

SECOND AMENDED AND RESTATED INVESTMENT MANAGEMENT AGREEMENT

SECOND AMENDED AND RESTATED INVESTMENT MANAGEMENT AGREEMENT (this "Agreement") to be effective as of the [•] day of March 2024, among CMERS Low Beta LLC, a limited liability company organized under the laws of the State of Delaware, United States (the "Fund") and UBS Asset Management (Americas) LLC, a limited liability company organized under the laws of the State of Delaware, United States (doing business as UBS Hedge Fund Solutions) (the "Investment Manager").

WHEREAS, the Fund has been organized for the purpose of pursuing the "Investment Program" set forth in Appendix A by seeking appreciation in the value of its assets principally through the allocation of assets among a select group of investment funds and/or managed accounts without limited liability (the "Portfolio Funds") to which alternative asset managers (the "Submanagers") provide investment advisory services;

WHEREAS, the Fund may also invest assets directly in Financial Instruments (as defined below) in order to obtain indirect exposure to a Portfolio Fund, to hedge, for short term cash management, to engage in overlay trades or for other purposes when consistent with the Investment Program;

WHEREAS, the Fund and the Investment Manager (f/k/a UBS Alternative and Quantitative Investments LLC and UBS Hedge Fund Solutions LLC thereafter) entered into an Investment Management Agreement effective as of December 18, 2014 (the "Original Agreement");

WHEREAS, the Fund and the Investment Manager entered into an Amended and Restated Investment Management Agreement effective as of July 31, 2016 (the "Amended and Restated Agreement"), thereby amending and restating the Original Agreement;

WHEREAS, the Fund desires to amend and restate the Amended and Restated Agreement and any amendments thereto to continue to avail itself of the experience, sources of information, advice and assistance available to the Investment Manager and to have the Investment Manager perform for it various investment management services under the terms hereof;

WHEREAS, the Investment Manager has received a copy of the Limited Liability Company Agreement of the Fund, as amended (the "Fund Agreement"), the confidential memorandum of the Fund, as revised or supplemented (the "Memorandum") and any resolutions or minutes of meetings (together, the "Resolutions") of the management board of the Fund (the "Management Board") relating to the offering of shares of the Fund (the Fund Agreement, the Resolutions and the Memorandum, collectively, the "Fund Documents"), each as in effect as of the date of this Agreement; and

WHEREAS, the Investment Manager is willing to continue to perform such services under the terms and conditions set forth herein and in accordance with the Fund Documents;

NOW, THEREFORE, in consideration of the mutual covenants herein contained and for other good and valuable consideration, the receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. Appointment of Investment Manager. The Investment Manager shall act as investment manager to the Fund for the purpose of selecting Submanagers and Portfolio Funds with which the Fund will invest its assets in accordance with the Investment Program and shall be responsible for all investment decisions for the Fund. The Investment Manager undertakes to give the Fund the benefit of its best judgment, efforts and facilities in rendering its services.

2. Authority of Investment Manager. In connection with its obligations hereunder, the Investment Manager shall have the authority for and in the name of the Fund, subject to Section 5 of this Agreement, without limitation, to engage in the following activities:

(a) Submanagers and Portfolio Funds.

(i) Provide research and analysis and direct the formulation of investment policies and strategies for the Fund utilizing a multi-asset, multiple Submanager approach whereby the assets of the Fund shall from time to time be committed by the Investment Manager to Submanagers and/or the Portfolio Funds employing various investment strategies which may involve the purchase and sale of Financial Instruments (as defined in the Fund Agreement);

(ii) Identify Submanagers, determine the amount of Fund assets to be allocated to each Submanager for investment in Portfolio Funds and/or managed accounts and invest the Fund's assets with such Submanagers through investments in such Portfolio Funds and/or managed accounts, either directly or through derivative instruments, which investments shall be subject in each case to the terms and conditions of the documents governing such Portfolio Funds or managed accounts; and

(iii) At its option, select as Submanagers and allocate assets in the aggregate of up to 20% of the Fund's net asset value ("NAV") at the time such investment is made, to Portfolio Funds and managed accounts for which UBS AG ("UBS") and its branches or affiliates, including the Investment Manager, serve as Submanager, *provided, however*, that investments in investment funds managed by the Investment Manager or its affiliates that allocate capital to investment funds managed by third-party investment managers (the "Platform"), and cash management provided by affiliates of the Investment Manager through one or more investment funds on the Platform (or otherwise), shall not be included in the foregoing limitation.

(b) Direct Investments.

(i) Invest and re-invest and otherwise enter into, directly or indirectly, on margin or otherwise, in Financial Instruments;

(ii) Provide research and analysis and direct the formulation of investment policies and strategies for the Fund;

(iii) Acquire a long position or a short position with respect to any Financial Instrument and make purchases or sales increasing, decreasing or liquidating such position or changing from a long position to a short position or from a short position to a long position, without any limitation as to the frequency of the fluctuation in such positions or as to the frequency of the changes in the nature of such positions;

(iv) Purchase Financial Instruments and hold them for investment and to make such representations to the seller of such Financial Instruments, and to other persons, that the Investment Manager may deem proper in such circumstances, including, without limitation, the representation that such Financial Instruments are purchased by the Fund for investment and not with a view to their sale or other disposition;

(v) Structure Financial Instruments on behalf of the Fund and for other accounts to whom the Investment Manager or any of its affiliates provide investment services ("Other Clients"), which may involve creating a new Financial Instrument, as opposed to trading a Financial Instrument available in the market;

(vi) Enter into contracts or other arrangements with investors (including affiliates of the Investment Manager), including, without limitation, total return swaps, structured notes or other derivative instruments, and such investors' investment returns would be based in whole or in part on the investment returns of the Fund;

(vii) Engage in such other lawful transactions in Financial Instruments as the Investment Manager may from time to time determine;

(viii) Invest the cash balances of the Fund in short-term investments deemed appropriate by the Investment Manager;

(ix) Enter into any hedging arrangements;

(x) Enter into contracts for or in connection with investments in Financial Instruments; and

(xi) Invest in other pooled investment vehicles for any purpose, which investments shall be subject, in each case, to the terms and conditions of the respective governing document for such vehicle.

(c) Other Authority.

(i) Open, maintain and close bank accounts and brokerage accounts, including custodial accounts and escrow accounts, in the name of the Fund;

(ii) Lend, either with or without security, any Financial Instruments, assets or other properties of the Fund, including by entering into repurchase or reverse purchase agreements and, from time to time, without limit as to the amount, borrow or raise funds, and secure the payment of obligations of the Fund by mortgage upon, or pledge or hypothecation of, all or any part of the property of the Fund;

(iii) Borrow or raise funds in a manner consistent with the Investment Program, in the name and on behalf of the Fund, and, from time to time, without limitation as to amount or manner and time of repayment, issue, accept, endorse and execute promissory notes, drafts, bills of exchange, warrants, bonds, debentures and other negotiable or non-negotiable instruments and evidences of indebtedness and secure the payment of such or other obligations by mortgage upon, or hypothecation or pledge of, all or part of the property of the Fund, whether at the time owned or thereafter acquired, to, without limitation, (aa) meet redemptions and (bb) otherwise conduct the Fund's trading activities;

(iv) Establish and utilize any subsidiary, special purpose vehicle or structure to address, without limitation, legal or regulatory constraints, transfer risk, obtain counterparty credit, obtain financing or employ leverage in a more efficient manner, invest in a more tax efficient manner and/or facilitate participation in certain types of investments (each such subsidiary, special purpose vehicle or structure, a "Fund Subsidiary") and cause the Fund to act as guarantor for one or more Fund Subsidiaries;

(v) Possess, transfer, mortgage, pledge or otherwise deal in, and exercise all rights, powers, privileges and other incidents of ownership or possession with respect to, Financial Instruments and other property and assets held or owned by the Fund;

(vi) Organize one or more corporations or other entities formed to hold record title, as nominee for the Fund (whether alone or together with the Other Clients), to hold Financial Instruments or assets of the Fund;

(vii) Enter into joint venture arrangements and co-invest with third parties;

(viii) Open, maintain, and close accounts, including margin and custodial accounts, with brokers, including brokers affiliated with the Investment Manager, which power shall include the authority to issue all instructions and authorizations to brokers regarding the Financial Instruments and/or money therein; pay, or authorize the payment and reimbursement of, brokerage commissions that may be in excess of the lowest rates available that are paid to brokers who execute transactions for the account of the Fund and who supply or pay for (or rebate a portion of the Fund's brokerage commissions to the Fund for payment of) the cost of brokerage, research, products or services as described in the Fund Documents, that are of benefit to the Fund or the Other Clients, *provided* that such higher brokerage commissions are reasonable in relation to the value of the product and/or service provided while taking into account various factors, including, among others, a broker's or dealer's willingness to commit capital, its financial stability, its systems, facilities and recordkeeping and its experience in handling similar transactions (based on size, market conditions and type of security, among others). In connection with the foregoing, the Fund acknowledges and authorizes the use of "soft dollars" outside of the parameters of Section 28(e) of the U.S. Securities Exchange Act of 1934, as amended;

(ix) Combine purchase or sale orders on behalf of the Fund with orders for Other Clients and allocate the Financial Instruments or other assets so purchased or sold as described in the Fund Documents;

(x) Enter into arrangements with brokers to open "average price" accounts wherein orders placed during a trading day are placed on behalf of the Fund and Other Clients and are allocated among such accounts using an average price;

(xi) Cause the Fund to engage in agency, cross, agency cross and principal transactions to the extent permitted by applicable securities laws;

(xii) Supply the administrator and auditor of, and other service providers to, the Fund with such information and instructions as may be necessary to enable such person or persons to perform their duties in accordance with the applicable agreements;

(xiii) Engage subadvisers, including, without limitation, affiliates of the Investment Manager, to assist with managing the Fund's portfolio of investments or with investments generally;

(xiv) Engage personnel, whether part-time or full-time, and attorneys, independent accountants, or such other persons as the Investment Manager may deem necessary or advisable;

(xv) To perform any actions requested or permitted to be taken by the Fund, including, without limitation, acting under delegated authority from the Fund as to matters agreed upon under this Agreement or otherwise;

(xvi) Authorize any employee or other agent of the Investment Manager or any employee or other agent of the Fund to act for and on behalf of the Fund in all matters incidental to the foregoing; and

(xvii) Do any and all acts on behalf of the Fund as it may deem necessary or advisable in connection with the maintenance and administration of the Fund, and exercise all rights of the Fund, with respect to its interest in any person, including, without limitation, the voting of Financial Instruments, participation in arrangements with creditors, the institution and settlement or compromise of suits and administrative proceedings and other like or similar matters.

3. Periodic Reports. The Investment Manager shall submit such periodic reports to the Fund regarding the Investment Manager's activities hereunder as the Fund may reasonably request, and a representative of the Investment Manager shall be available to meet with, and attend meetings of, the Management Board.

4. Status of Investment Manager. The Investment Manager shall for all purposes be an independent contractor of the Fund, and nothing in this Agreement shall be construed as making the Fund a partner or co-venturer with the Investment Manager or any of its affiliates or clients. The Investment Manager shall have no authority to act for, represent, bind or obligate the Fund except as specifically provided for in this Agreement.

5. Limitations on Authority.

(a) All actions or inactions by the Investment Manager pursuant to the authority it is granted under this Agreement shall at all times conform to and be in accordance with the requirements imposed by:

(i) any provisions of applicable law;

(ii) provisions of each of the Fund Documents; *provided*, *however*, that the Investment Manager shall not be bound by any additional Fund Documents or any supplement or revisions to any of the Fund Documents until it has been given notice thereof in accordance with Section 16 of this Agreement; and

(iii) such policies as may be adopted from time to time by the Management Board, including, without limitation, the policies described in the Memorandum; *provided*, *however*, that the Investment Manager shall not be bound by any such policies until it has been given notice thereof in accordance with Section 16 of this Agreement.

(b) The Investment Manager may not, directly or indirectly, cause or authorize the Fund to pay any fee to, reimburse any expense of, or make any other payment to, the Investment Manager; any such payment shall require the prior approval of a member of the Management Board who is not employed or otherwise affiliated with the Investment Manager.

6. Fees.

(a) The Fund shall pay a management fee (the "Management Fee") to the Investment Manager on the terms and conditions and in such manner and frequency as set forth in the Memorandum or as set forth in relevant Resolutions. The Management Fee may exceed the expenses borne by the Investment Manager in connection with the management of the Fund. The Management Board and the Investment Manager may agree to waive or impose different fees or otherwise modify the Management Fee with respect to any unitholder.

(b) Payment of the Management Fee, if any, shall be made on the last Business Day (as defined in the Memorandum or the Fund Agreement, as the case may be) of the period in which the Management Fee becomes payable as set forth in the Memorandum.

(c) The Fund hereby agrees that it shall promptly deliver to the Investment Manager copies of any revised or supplemented Memorandum or newly adopted Resolutions affecting the Management Fee, if any, payable to the Investment Manager; *provided* that failure to deliver such copies shall not affect the Investment Manager's right to receive such Management Fee. The Management Fee shall not be changed without the prior consent of the Investment Manager.

(d) For purposes of this Agreement, Resolutions shall be deemed to be delivered to the Investment Manager if an employee of the Investment Manager is serving as a member of the Management Board at the time such Resolutions are adopted and such member of the Management Board either (i) attends the meeting of the Management Board at which such Resolutions are passed, (ii) executes such Resolutions or (iii) sends his/her apologies for being unable to attend a meeting of the Management Board; otherwise, such Resolutions shall be deemed to be delivered when delivered in accordance with Section 16 of this Agreement or as otherwise agreed by the parties hereto.

7. <u>Expenses of the Fund; Reimbursement by the Fund</u>.

(a) In addition to the fees and disbursements referred to in other sections of this Agreement, the Fund shall bear responsibility for the Fund Expenses (as defined in the Memorandum or the Resolutions, as the case may be) as provided for in the Memorandum or as set forth in relevant Resolutions.

(b) Expenses incurred by the Fund (other than those paid for through the use of "soft dollars" as permitted under this Agreement and the Memorandum) for products and services which benefit the Fund and Other Clients, generally shall be allocated to the Fund and such Other Clients in accordance with their use of such products and services or on a *pro rata* basis in accordance with the NAV of each of the Fund and the Other Clients.

(c) The Investment Manager may retain, in connection with its responsibilities hereunder, the services of others to assist in the investment advice to be given to the Fund, including, without limitation, any affiliate of the Investment Manager, but payment for any such services shall be assumed by the Investment Manager and the Fund shall not have any liability therefor; *provided*, *however*, that the Investment Manager, in its discretion, may retain the services of independent third party professionals, including, without limitation, attorneys, accountants and consultants, to advise and assist it in connection with the performance of its activities on behalf of the Fund hereunder, and the Fund shall bear full responsibility therefor and for the reasonable expense of any fees and disbursements arising therefrom.

8. <u>RESERVED</u>.

9. Exculpation; Indemnification.

(a) Except as provided by applicable law, including U.S. federal securities law, none of the Investment Manager or its affiliates or any of their respective shareholders, members, partners, affiliates, directors, officers or employees or the legal representatives of any of them (each, together with the Investment Manager, an "Indemnified Party") shall be liable to any Member or the Fund for any loss, cost or expense, arising from any mistake of judgment or any action or inaction of such persons that did not constitute gross negligence, willful misconduct or bad faith in the performance of the Investment Manager's obligations or duties hereunder, or for any loss, cost or expense due to any mistake of judgment, action or inaction or due to the negligence, willful misconduct or bad faith of any broker or other agent of the Investment Manager, *provided* that the selection, engagement or retention of such broker or other agent by the Investment Manager did not involve gross negligence, willful misconduct or bad faith. Each Indemnified Party may consult with legal counsel and accountants in respect of the affairs of the Fund and shall be fully protected and justified in any action or inaction which is taken in accordance with the advice or opinion of such legal counsel or accountants, *provided* that the selection of such legal counsel or accountants did not involve gross negligence, willful misconduct or bad faith. For the avoidance of doubt, the term "Indemnified Party" shall include, without limitation, a subadviser affiliated with the Investment Manager.

(b) The Fund shall indemnify and hold harmless each Indemnified Party from and against any loss, cost or expense suffered or sustained by it by reason of the fact that it is or was an Indemnified Party, including, without limitation, any judgment, award, settlement, reasonable attorneys' fees and other costs or expenses incurred in connection with the defense of any actual or threatened action, suit, proceeding or claim, *provided* that such loss, cost or expense resulted from a mistake of judgment on the part of an Indemnified Party, or from an action or inaction that did not constitute gross negligence, willful misconduct or bad faith on the part of an Indemnified Party, or for any loss, cost or expense due to any mistake of judgment, action or inaction or due to the negligence, willful misconduct or bad faith of any broker or other agent of an Indemnified Party, *provided* that the selection, engagement or retention of such broker or other agent by the Indemnified Party did not involve gross negligence, willful misconduct or bad faith; *provided, further*, that such loss, cost or expense did not result solely from any action brought by any Indemnified Party against any other Indemnified Party. The Fund shall, in the discretion of the Management Board, advance to any Indemnified Party reasonable attorneys' fees and other costs and expenses incurred in connection with the defense of any action or proceeding that arises out of such conduct or alleged conduct. In the event that such an advance is made by the Fund, the Indemnified Party must agree to reimburse the Fund for such fees, costs and expenses to the extent that it is finally determined that it, he or she was not entitled to indemnification in respect thereof.

(c) The Fund agrees that if any subadviser is engaged by the Investment Manager pursuant to the authority granted to the Investment Manager in Section 2, then such subadviser shall be entitled to receive the benefits of the exculpation and indemnification provisions provided for under this Section 9 as an Indemnified Party.

(d) Notwithstanding any of the foregoing to the contrary, this Section 9 shall not be construed to relieve any Indemnified Party of any liability to the extent that such liability may not be waived, modified or limited under applicable law (including liability under federal securities laws which, under certain circumstances, impose liability even on persons acting in good faith), but shall be construed so as to effectuate these exculpation and indemnification provisions to the fullest extent permitted by law.

10. Activities of the Investment Manager and Others. The Investment Manager and its affiliates may engage, simultaneously with their investment management activities on behalf of the Fund in other businesses, in transactions on behalf of other investment funds and accounts which involve the same Portfolio Funds in which the Fund may invest and the same Financial Instruments in which the Fund or Portfolio Funds may invest, and may render investment management services to other investment funds and accounts in which the Fund will have no interest and that have similar or dissimilar investment objectives to those of the Fund and/or which may or may not follow investment programs similar to the Fund. The Investment Manager and its affiliates shall not by reason of such engaging in other businesses or through the rendering of services for others be deemed to be acting in conflict with the interests of the Fund even if such activities may be in competition with the Fund and/or may involve substantial time and resources of the Investment Manager and its personnel. Notwithstanding the foregoing, the Investment Manager and its personnel shall devote as much time to the activities of the Fund as they deem necessary and appropriate. In addition, each unitholder, member, partner, director, officer, employee or legal representative of the Investment Manager or its affiliates, in its individual capacity, may engage in Financial Instrument transactions which may be different than, and contrary to, transactions engaged in by the Investment Manager on behalf of the Fund. The Investment Manager, its affiliates, and their respective shareholders, members, partners, directors, officers or employees or the legal representatives of any of them, in their individual capacities, may be members, partners, Management Board members, officers or employees of the Fund but shall not be deemed to have interests which are in conflict with the interests of the Fund. Generally, it is the policy of the Investment Manager to allocate, to the extent possible, investment opportunities to the Fund over a period of time on a fair and equitable basis relative to its Other Clients. In cases where an investment opportunity may be limited, priority may be granted to the Fund or Other Clients, for example and without limitation, where the Fund or Other Clients, as the case may be, are below their respective minimum investment allocations, have been waiting to invest in a Portfolio Fund for more than a month or are making an initial investment in a Portfolio Fund. In circumstances when it is unsuitable, impractical or undesirable for trades or investment opportunities (*e.g.*, private placements, options or swaps) and/or their related hedge positions to be allocated among the Fund and Other Clients as described above, the Investment Manager shall allocate such trades and investment opportunities among the Fund and Other Clients in a manner that the Investment Manager in its discretion determines is fair and equitable.

11. Custody. Custody and prime brokerage arrangements may be established with banks and broker-dealers, including broker-dealers which are affiliates of the Investment Manager. The Investment Manager shall not be liable for any act or omission of any custodian or prime broker appointed by the Fund. Any compensation to a custodian for its services to the Fund shall be the obligation of the Fund and not the Investment Manager.

12. Term. This Agreement shall remain in effect through a term concluding December 31, 2024 and shall be automatically extended for additional one-year terms thereafter, except that it may be terminated by the Investment Manager, on the one hand, or by the Fund, on the other hand, upon at least 90 days' prior written notice to the other party. To the extent the Investment Manager makes any investments or transacts any business whatsoever on behalf of, or in the name of, the Fund on a date after its termination date, such actions must be approved by the Management Board. If this Agreement is terminated by either party, the Investment Manager shall be entitled to receive the Management Fee earned or accrued through the date of termination.

13. Limitations on Use of Name.

(a) The Fund shall not distribute or circulate any sales literature or promotional or other material which contains any reference to "UBS", "Asset Management (Americas)", "Hedge Fund Solutions" or "O'Connor" without the prior approval of the Investment Manager. The Fund shall submit in draft form all such materials requiring approval of the Investment Manager, allowing sufficient time for review by the Investment Manager and its counsel prior to any deadline for printing. The Fund also agrees to indemnify and hold harmless each Indemnified Party from and against any and all losses, costs or expenses, joint or several, including, without limitation, attorneys' fees and disbursements, which may arise out of the Fund's use or misuse of the term "UBS", "Asset Management (Americas)", "Hedge Fund Solutions" or "O'Connor," or out of any breach of or failure to comply with this Section 13.

(b) If the Investment Manager or any successor to its business shall cease to furnish services to the Fund under this Agreement or similar contractual arrangement, for any reason whatsoever, the Fund, at its expense:

(i) as promptly as practicable, shall take all necessary action to cause the Fund Documents to be amended to eliminate any reference to "UBS", "Asset Management (Americas)", "Hedge Fund Solutions" or "O'Connor" or any name, mark or logo type derived from it or similar to it or indicating that the Fund is managed by or otherwise associated with the Investment Manager; and

(ii) within 60 days after the termination of this Agreement or such similar contractual arrangement, shall cease to use in any other manner, including, without limitation, use in any sales literature or promotional material, the name "UBS", "Asset Management (Americas)", "Hedge Fund Solutions" or "O'Connor" or any name, mark or logo type derived from it or similar to it or indicating that the Fund is managed by or otherwise associated with the Investment Manager.

14. Intellectual Property.

(a) The Fund agrees that all work product resulting from the services performed by the Investment Manager related to the services provided to the Fund hereunder, which the Investment Manager or its employees or consultants made, make, conceived or conceive (either solely or jointly with others) in connection with and during the term of this Agreement (collectively, "New Materials") shall be deemed to be created and prepared as, and shall therefore constitute, a "work made for hire" by the Investment Manager as the "author" and owner to the extent permitted by United States copyright law. To the extent (if any) that any New Materials may be deemed not to constitute a "work made for hire," the Fund hereby agrees that this Agreement shall automatically constitute an irrevocable assignment from the Fund to the Investment Manager for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, of all rights, title and interest to such New Materials. The Investment Manager shall exclusively own, and is perpetually and irrevocably entitled to, all right, title and interest now or hereafter provided by law in and to the New Materials throughout the universe in perpetuity in any and all media whether now known or hereafter developed (including, without limitation, any and all registrations, applications, copyright rights, renewals, extensions, restorations and reversions, patent rights, trade secret rights, trademark rights and all other proprietary and intellectual property rights in or relating to the New Materials), as well as the right to collect all royalties and income generated therefrom and the right to sue, counterclaim and recover for all past, present and future violations thereof.

15. Arm's-Length Agreement. The Fund and the Investment Manager represent, warrant and agree to the other that this Agreement constitutes an arm's-length agreement between the Fund and the Investment Manager. The Management Board represents that it has reviewed and understands the compensation arrangement and its risks and approves the Fund entering into this Agreement.

16. Miscellaneous.

(a) Notices. Any notice, consent or other communication made or given in connection with this Agreement shall be in writing and shall be deemed to have been duly given when delivered by hand, email or facsimile or five days after mailed by certified mail, return receipt requested, or on the next Business Day (in the place of delivery) if sent by recognized overnight courier service for next-Business Day delivery as follows:

If to the Fund, to:

CMERS Low Beta LLC
c/o UBS Asset Management (Americas) LLC (d/b/a UBS Hedge Fund Solutions)
600 Washington Boulevard, 9th Floor
Stamford, CT 06901

Attention: Edward M. Burman
Email address: edward.burman@ubs.com

If to the Investment Manager, to:

UBS Asset Management (Americas) LLC (d/b/a UBS Hedge Fund Solutions)
600 Washington Boulevard, 9th Floor
Stamford, CT 06901

Attention: Edward M. Burman
Email address: edward.burman@ubs.com

Either party hereto may, from time to time, by notice in writing served upon the other as aforesaid, designate a different mailing address or a different or additional person to which all such notices or demands thereafter are to be addressed.

(b) Entire Agreement. This Agreement amends and restates the Amended and Restated Agreement and contains all of the terms agreed upon or made by the parties relating to the subject matter of this Agreement, and supersedes all prior and contemporaneous agreements, negotiations, correspondence, undertakings and communications of the parties, oral or written, respecting such subject matter.

(c) Severability. Each section of this Agreement and any and every provision therein shall be severable from every other section of this Agreement and any and every provision thereof, and the invalidity or unenforceability of any section or provision by any court shall not affect the validity of any other section or provision of this Agreement and such remaining provisions shall remain and continue to be in full force and effect.

(d) Amendments. This Agreement may not be amended unless such amendment is in writing and signed by the parties sought to be bound. Except as provided herein, no alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by the parties hereto, and no oral understanding or agreement not incorporated herein shall be binding on any of the parties hereto.

(e) Waivers. No delay on the part of any party in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any waiver on the part of any party of any right, power or privilege hereunder, nor any single or partial exercise of any right, power or privilege hereunder, preclude any other or further exercise thereof or the exercise of any other right, power or privilege hereunder.

(f) Binding Effect; Assignment. This Agreement shall be binding upon and inure to the benefit of each of the Fund, the Investment Manager, each Indemnified Party and their respective successors and permitted assignees. No party to this Agreement may assign (as such term is defined under the Investment Advisers Act of 1940, as amended) all or any portion of its rights, obligations or liabilities under this Agreement without the prior written consent of the other parties to this Agreement.

(g) Governing Law; Consent to Jurisdiction. Notwithstanding the place where this Agreement may be executed by any of the parties thereto, the parties expressly agree that all terms and provisions hereof, as well as all claims in contract, tort, equity or otherwise among the parties, shall be governed by, and construed in accordance with, the internal laws of the State of New York applicable to contracts made between residents of that State, entered into and wholly performed, and to transactions wholly consummated, within that State. Each party also consents to the exclusive jurisdiction of the federal and state courts of the State of New York, located in the City of New York, for the resolution of any dispute involving the construction, interpretation or enforcement of this Agreement or any other claims in contract, tort, equity or otherwise among the parties.

(h) Force Majeure. No party to this Agreement shall be liable for damages resulting from delayed or defective performance when such delays arise out of causes beyond the control and without the fault or negligence of the offending party. Such causes may include, without limitation, acts of God or of the public enemy, acts of the State in its sovereign capacity, fires, floods, power failure, disabling strikes, epidemics, quarantine restrictions and freight embargoes.

(i) Titles or Headings. Titles or headings are not part of this Agreement, are for convenience of reference only, and shall have no effect on the construction or legal effect of this Agreement.

(j) Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

(k) Additional Documents. The Investment Manager and the Fund shall execute such additional documents and perform such further acts as may be reasonable and necessary to carry out the provisions of this Agreement.

(l) Cumulative Remedies. The rights and remedies provided herein are cumulative and are not exclusive of any rights or remedies which any party may otherwise have at law or in equity.

(m) Survival. The provisions of Sections 6, 7, 9, 12, 13, 14 and 16 hereof shall survive the termination of this Agreement.

(n) Construction. All pronouns shall be deemed to refer to the masculine, feminine, neuter, singular or plural as the identity of the person or persons' firm or company may require in the context thereof.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date first written above.

CMERS LOW BETA LLC

By: ____

Name:
Title:

By: ____

Name:
Title:

UBS ASSET MANAGEMENT (AMERICAS) LLC
(D/B/A UBS HEDGE FUND SOLUTIONS)

By: ____

Name:
Title:

By: ____

Name:
Title:

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date first written above.

EMPLOYES' RETIREMENT SYSTEM

By: __________________________________

By: __________________________________

APPENDIX A

INVESTMENT PROGRAM

Investment Objectives

Generally, the Investment Manager will attempt to construct a broad based neutral portfolio with exposure to a number of hedge fund strategies.

The Fund seeks to target limited beta to equity markets over an economic cycle (3-5 years), as measured relative to the MSCI $ World Index.

Investment guidelines and restrictions represent initial guidelines only and may be modified in the future as agreed by all parties involved after initial implementation as Fund preferences evolve.

Investment Guidelines

The Fund acknowledges that Investment Objectives represent initial guidelines only and may be modified in the future as agreed by all parties involved (the "Investment Guidelines").

Strategies and Anticipated Allocation Ranges

- Equity Hedged: (0-50%)
  - The Fund will retain flexibility to invest in managers who may exhibit either long or short bias to risky assets depending on market environment provided downside risk is seen to be adequately restrained. Sub-strategies currently include: Fundamental and Equity Event.
- 13F Strategy: (0-5%)
  - The Fund is permitted to invest in a Portfolio Fund managed by the Investment Manager which pursues the Investment Manager's "13F Strategy," an equity trading strategy that seeks to replicate the aggregate performance characteristics of a portfolio of equity securities held by a select number of Submanagers which have listed them on their respective filings under SEC Form 13F. The 13F Strategy shall be considered a subset of Equity Hedged such that the allocation range for the 13F Strategy and Equity Hedge together shall be (0-50%).
- Credit / Income (0-50%)
  - Credit: These strategies in aggregate are subject to a guideline of no more than 50% of the total portfolio. The Fund will retain flexibility to invest in managers who may exhibit either long or short bias to risky assets depending on market environment provided downside risk is seen to be adequately restrained.
  - Sub-strategies currently include: Distressed, Corporate Long/Short, Structured Products and will not exceed 40% of the total portfolio.
  - Income: The Fund will retain flexibility to invest in managers that participate in reinsurance strategies. Reinsurance strategies will not exceed 10% of the portfolio.

- Relative Value: (0-60%)
    - The Fund is permitted to invest in all Relative Value strategies, including: Quantitative Equity, Merger Arbitrage, Capital Structure/Volatility Arbitrage, Fixed Income Relative Value (FIRV), and Agency MBS.
- Trading: (0-40%)
    - The Fund is permitted to invest in all Trading strategies, including Global Macro, Commodities and Systematic CTAs. Sub-strategies currently include: Systematic, Global Macro, Commodities.
- Other: (0-10%)
    - This category contains investment approaches that are outside of the mainstream hedge fund strategies (Equity Hedged, Credit, Relative Value, and Trading). The category includes other alternative strategies, such as tactical asset allocation/risk parity, private equity, and real estate dealings, as well as new niche investment approaches that do not fit into any of the other mainstream strategies.
- Direct Trading: (0-5%)
- Multi-Strategy:
    - The Fund is permitted to invest in Multi-Strategy managers, which include allocations to a combination of strategies. These offerings are often the result of commonalties in the research and trading talent required for successful execution of the strategies. These funds allocate capital opportunistically among strategies believed to offer a suitable risk-adjusted return profile going forward.
    - Applicable guidelines for multi-strategy managers will be monitored on a look-through basis to the underlying Strategies and will count toward the specified limits above.

For additional strategy descriptions please refer to the Memorandum. Please be advised that the Investment Manager typically reviews and revises strategy classifications on an annual basis.

Note that target percentages are not intended to be guarantees or assurances that the Fund's portfolio will be within such target ranges at all times. They are intended as goals the Fund seeks to achieve and apply only after the Fund has completed (i) its investment build up phase expected to be up to one year or (ii) a rebalancing of the portfolio after a liquidity request.

Investments in Portfolio Funds Managed by Affiliates of the Investment Manager

The Investment Manager will select and utilize its affiliates to source, implement, subadvise, and/or manage direct trades made on behalf of the Fund, for example, UBS O'Connor. Except with respect to the implementation of a Direct Trading Strategy, investments in Portfolio Funds managed by affiliates of the Investment Manager will be capped at 20% and would be limited to customized baskets ("CBs"), managed accounts ("MAs") or other special purpose vehicles ("SPVs") where the Investment Manager may seek to attain certain exposures pursuant to the investment objectives of the Fund and where such exposure may otherwise not be accessible to the Fund. The Investment Manager will not charge the Fund additional management fees or performance fees within the CBs, MAs, SPVs, or in any vehicle through which the Investment Manager implements its Direct Trading strategies.

Diversification

The Investment Manager will determine the appropriate number of Portfolio Funds in its sole discretion. However, the number will typically range between 15-39 Portfolio Funds, excluding co-investments, unless otherwise agreed by the Fund.

Liquidity Considerations

The Investment Manager will seek to invest in Portfolio Funds with a mix of different liquidity profiles. However, the Investment Manager will seek to maintain:

- At least 70% of the net asset value of the Fund to be allocated to Portfolio Funds with stated liquidity terms (with penalties) that allow for redemption within 1 year.
- Up to 30% of the net asset value of the Fund may be allocated to Portfolio Funds with stated liquidity terms that allow for redemption greater than a 1 year hard lock up. Up to 1/3 of these Portfolio Funds (approximately 20% of the Fund) may have a hard lock up of greater than 2 years, but no more than 3 years unless they fall into the category of Portfolio Funds with no predefined redemption period. The latter shall also fall inside the 20% limitation. The Investment Manager may increase the 20% limitation with consent of investors on an investor-by-investor basis.
- An investor gate can cause a position to fall into multiple liquidity buckets. For example, a 1/8th quarterly liquidity fund would have 50% of its position in the "within 1 year" bucket and the remainder in the "greater than 1 year bucket", none of which would fall into the greater than 2 year bucket.

The above terms do not include audit withholds imposed by Portfolio Funds. The Fund acknowledges and understands that disbursements of any withheld amounts could take between 12 and 18 months to receive and will not be counted toward the above liquidity considerations.

From time to time, a manager may segregate certain securities from its Portfolio Fund and establish a "side pocket" structure and/or share class, which may have less liquid characteristics. The Investment Manager will attempt to limit the Fund's exposure to side pocket holdings. However, the ultimate side pocket exposure will be at the discretion of the each underlying manager.

Leverage

The Investment Manager does not expect to employ leverage above and beyond what may be undertaken by the underlying Portfolio Funds. The Fund indicated it is able to provide additional cash with sufficient notice for operating purposes such as funding short term subscriptions or coverage for FX currency hedging.

Investment Manager Bespoke Structures/Co-Investments

The Fund is eligible to participate in A&Q bespoke structures and co-investments with full discretion of the Investment Manager; provided, however, that the Investment Manager will limit the Fund's exposure to co-investments and direct trading, in aggregate, to not more than 5% of the NAV of the Fund at the time of any investment to obtain such exposure.

Investment Eligibility

The Fund may invest in both US tax transparent funds and/or offshore vehicles.

Tail/Overlay Hedging

The Fund is eligible to participate in A&Q Tail/Overlay Program (TAU).

New Issues

The Fund is eligible to participate in new issues, and as such the Fund may invest in the new issues eligible share classes, if deemed appropriate.

Guideline Monitoring

Investment guidelines as agreed in this document will be additionally signed-off and monitored by UBS Risk Control. In the event of a limit violation, the Investment Manager will contact the Fund to identify the issue(s) and agree on an appropriate plan of action to resolve the issue(s) in a timely manner.

~~EXECUTION COPY~~

SECOND AMENDED AND RESTATED INVESTMENT MANAGEMENT AGREEMENT

SECOND AMENDED AND RESTATED INVESTMENT MANAGEMENT AGREEMENT (this "Agreement") to be effective as of the ~~31st~~[•] day of ~~July 2016~~March 2024, among CMERS Low Beta LLC, a limited liability company organized under the laws of the State of Delaware, United States (the "Fund") and UBS ~~Hedge Fund Solutions~~Asset Management (Americas) LLC, a limited liability company organized under the laws of the State of Delaware, United States (doing business as UBS Hedge Fund Solutions) (the "Investment Manager").

WHEREAS, the Fund has been organized for the purpose of pursuing the "Investment Program" set forth in Appendix A by seeking appreciation in the value of its assets principally through the allocation of assets among a select group of investment funds and/or managed accounts without limited liability (the "Portfolio Funds") to which alternative asset managers (the "Submanagers") provide investment advisory services;

WHEREAS, the Fund may also invest assets directly in Financial Instruments (as defined below) in order to obtain indirect exposure to a Portfolio Fund, to hedge, for short term cash management, to engage in overlay trades or for other purposes when consistent with the Investment Program;

WHEREAS, the Fund and the Investment Manager (f/k/a UBS Alternative and Quantitative Investments LLC and UBS Hedge Fund Solutions LLC thereafter) entered into an Investment Management Agreement effective as of December 18, 2014 (the "Original Agreement");

WHEREAS, the Fund and the Investment Manager entered into an Amended and Restated Investment Management Agreement effective as of July 31, 2016 (the "Amended and Restated Agreement"), thereby amending and restating the Original Agreement;

WHEREAS, the Fund desires to amend and ~~restated the Original~~restate the Amended and Restated Agreement and any amendments thereto to continue to avail itself of the experience, sources of information, advice and assistance available to the Investment Manager and to have the Investment Manager perform for it various investment management services under the terms hereof;

WHEREAS, the Investment Manager has received a copy of the Limited Liability Company Agreement of the Fund, as amended (the "Fund Agreement"), the confidential memorandum of the Fund, as revised or supplemented (the "Memorandum") and any resolutions or minutes of meetings (together, the "Resolutions") of the management board of the Fund (the "Management Board") relating to the offering of shares of the Fund (the Fund Agreement, the Resolutions and the Memorandum, collectively, the "Fund Documents"), each as in effect as of the date of this Agreement; and

WHEREAS, the Investment Manager is willing to continue to perform such services under the terms and conditions set forth herein and in accordance with the Fund Documents;

NOW, THEREFORE, in consideration of the mutual covenants herein contained and for other good and valuable consideration, the receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. Appointment of Investment Manager. The Investment Manager shall act as investment manager to the Fund for the purpose of selecting Submanagers and Portfolio Funds with which the Fund will invest its assets in accordance with the Investment Program and shall be responsible for all investment decisions for the Fund. The Investment Manager undertakes to give the Fund the benefit of its best judgment, efforts and facilities in rendering its services.

2. Authority of Investment Manager. In connection with its obligations hereunder, the Investment Manager shall have the authority for and in the name of the Fund, subject to Section 5 of this Agreement, without limitation, to engage in the following activities:

(a) Submanagers and Portfolio Funds.

(i) Provide research and analysis and direct the formulation of investment policies and strategies for the Fund utilizing a multi-asset, multiple Submanager approach whereby the assets of the Fund shall from time to time be committed by the Investment Manager to Submanagers and/or the Portfolio Funds employing various investment strategies which may involve the purchase and sale of Financial Instruments (as defined in the Fund Agreement);

(ii) Identify Submanagers, determine the amount of Fund assets to be allocated to each Submanager for investment in Portfolio Funds and/or managed accounts and invest the Fund's assets with such Submanagers through investments in such Portfolio Funds and/or managed accounts, either directly or through derivative instruments, which investments shall be subject in each case to the terms and conditions of the documents governing such Portfolio Funds or managed accounts; and

(iii) At its option, select as Submanagers and allocate assets in the aggregate of up to 20% of the Fund's net asset value ("NAV") at the time such investment is made, to Portfolio Funds and managed accounts for which UBS AG ("UBS") and its branches or affiliates, including the Investment Manager, serve as Submanager, *provided, however*, that investments in investment funds managed by the Investment Manager or its affiliates that allocate capital to investment funds managed by third-party investment managers (the "Platform"), and cash management provided by affiliates of the Investment Manager through one or more investment funds on the Platform (or otherwise), shall not be included in the foregoing limitation.

(b) Direct Investments.

(i) Invest and re-invest and otherwise enter into, directly or indirectly, on margin or otherwise, in Financial Instruments;

(ii) Provide research and analysis and direct the formulation of investment policies and strategies for the Fund;

(iii) Acquire a long position or a short position with respect to any Financial Instrument and make purchases or sales increasing, decreasing or liquidating such position or changing from a long position to a short position or from a short position to a long position, without any limitation as to the frequency of the fluctuation in such positions or as to the frequency of the changes in the nature of such positions;

(iv) Purchase Financial Instruments and hold them for investment and to make such representations to the seller of such Financial Instruments, and to other persons, that the Investment Manager may deem proper in such circumstances, including, without limitation, the representation that such Financial Instruments are purchased by the Fund for investment and not with a view to their sale or other disposition;

(v) Structure Financial Instruments on behalf of the Fund and for other accounts to whom the Investment Manager or any of its affiliates provide investment services ("Other Clients"), which may involve creating a new Financial Instrument, as opposed to trading a Financial Instrument available in the market;

(vi) Enter into contracts or other arrangements with investors (including affiliates of the Investment Manager), including, without limitation, total return swaps, structured notes or other derivative instruments, and such investors' investment returns would be based in whole or in part on the investment returns of the Fund;

(vii) Engage in such other lawful transactions in Financial Instruments as the Investment Manager may from time to time determine;

(viii) Invest the cash balances of the Fund in short-term investments deemed appropriate by the Investment Manager;

(ix) Enter into any hedging arrangements;

(x) Enter into contracts for or in connection with investments in Financial Instruments; and

(xi) Invest in other pooled investment vehicles for any purpose, which investments shall be subject, in each case, to the terms and conditions of the respective governing document for such vehicle.

(c) Other Authority.

(i) Open, maintain and close bank accounts and brokerage accounts, including custodial accounts and escrow accounts, in the name of the Fund;

(ii) Lend, either with or without security, any Financial Instruments, assets or other properties of the Fund, including by entering into repurchase or reverse purchase agreements and, from time to time, without limit as to the amount, borrow or raise funds, and secure the payment of obligations of the Fund by mortgage upon, or pledge or hypothecation of, all or any part of the property of the Fund;

(iii) Borrow or raise funds in a manner consistent with the Investment Program, in the name and on behalf of the Fund, and, from time to time, without limitation as to amount or manner and time of repayment, issue, accept, endorse and execute promissory notes, drafts, bills of exchange, warrants, bonds, debentures and other negotiable or non-negotiable instruments and evidences of indebtedness and secure the payment of such or other obligations by mortgage upon, or hypothecation or pledge of, all or part of the property of the Fund, whether at the time owned or thereafter acquired, to, without limitation, (aa) meet redemptions and (bb) otherwise conduct the Fund's trading activities;

(iv) Establish and utilize any subsidiary, special purpose vehicle or structure to address, without limitation, legal or regulatory constraints, transfer risk, obtain counterparty credit, obtain financing or employ leverage in a more efficient manner, invest in a more tax efficient manner and/or facilitate participation in certain types of investments (each such subsidiary, special purpose vehicle or structure, a "Fund Subsidiary") and cause the Fund to act as guarantor for one or more Fund Subsidiaries;

(v) Possess, transfer, mortgage, pledge or otherwise deal in, and exercise all rights, powers, privileges and other incidents of ownership or possession with respect to, Financial Instruments and other property and assets held or owned by the Fund;

(vi) Organize one or more corporations or other entities formed to hold record title, as nominee for the Fund (whether alone or together with the Other Clients), to hold Financial Instruments or assets of the Fund;

(vii) Enter into joint venture arrangements and co-invest with third parties;

(viii) Open, maintain, and close accounts, including margin and custodial accounts, with brokers, including brokers affiliated with the Investment Manager, which power shall include the authority to issue all instructions and authorizations to brokers regarding the Financial Instruments and/or money therein; pay, or authorize the payment and reimbursement of, brokerage commissions that may be in excess of the lowest rates available that are paid to brokers who execute transactions for the account of the Fund and who supply or pay for (or rebate a portion of the Fund's brokerage commissions to the Fund for payment of) the cost of brokerage, research, products or services as described in the Fund Documents, that are of benefit to the Fund or the Other Clients, *provided* that such higher brokerage commissions are reasonable in relation to the value of the product and/or service provided while taking into account various factors, including, among others, a broker's or dealer's willingness to commit capital, its financial stability, its systems, facilities and recordkeeping and its experience in handling similar transactions (based on size, market conditions and type of security, among others). In connection with the foregoing, the Fund acknowledges and authorizes the use of "soft dollars" outside of the parameters of Section 28(e) of the U.S. Securities Exchange Act of 1934, as amended;

(ix) Combine purchase or sale orders on behalf of the Fund with orders for Other Clients and allocate the Financial Instruments or other assets so purchased or sold as described in the Fund Documents;

(x) Enter into arrangements with brokers to open "average price" accounts wherein orders placed during a trading day are placed on behalf of the Fund and Other Clients and are allocated among such accounts using an average price;

(xi) Cause the Fund to engage in agency, cross, agency cross and principal transactions to the extent permitted by applicable securities laws;

(xii) Supply the administrator and auditor of, and other service providers to, the Fund with such information and instructions as may be necessary to enable such person or persons to perform their duties in accordance with the applicable agreements;

(xiii) Engage subadvisers, including, without limitation, affiliates of the Investment Manager, to assist with managing the Fund's portfolio of investments or with investments generally;

(xiv) Engage personnel, whether part-time or full-time, and attorneys, independent accountants, or such other persons as the Investment Manager may deem necessary or advisable;

(xv) To perform any actions requested or permitted to be taken by the Fund, including, without limitation, acting under delegated authority from the Fund as to matters agreed upon under this Agreement or otherwise;

(xvi) Authorize any employee or other agent of the Investment Manager or any employee or other agent of the Fund to act for and on behalf of the Fund in all matters incidental to the foregoing; and

(xvii) Do any and all acts on behalf of the Fund as it may deem necessary or advisable in connection with the maintenance and administration of the Fund, and exercise all rights of the Fund, with respect to its interest in any person, including, without limitation, the voting of Financial Instruments, participation in arrangements with creditors, the institution and settlement or compromise of suits and administrative proceedings and other like or similar matters.

3. Periodic Reports. The Investment Manager shall submit such periodic reports to the Fund regarding the Investment Manager's activities hereunder as the Fund may reasonably request, and a representative of the Investment Manager shall be available to meet with, and attend meetings of, the Management Board.

4. Status of Investment Manager. The Investment Manager shall for all purposes be an independent contractor of the Fund, and nothing in this Agreement shall be construed as making the Fund a partner or co-venturer with the Investment Manager or any of its affiliates or clients. The Investment Manager shall have no authority to act for, represent, bind or obligate the Fund except as specifically provided for in this Agreement.

5. Limitations on Authority.

(a) All actions or inactions by the Investment Manager pursuant to the authority it is granted under this Agreement shall at all times conform to and be in accordance with the requirements imposed by:

(i) any provisions of applicable law;

(ii) provisions of each of the Fund Documents; *provided*, *however*, that the Investment Manager shall not be bound by any additional Fund Documents or any supplement or revisions to any of the Fund Documents until it has been given notice thereof in accordance with Section 16 of this Agreement; and

(iii) such policies as may be adopted from time to time by the Management Board, including, without limitation, the policies described in the Memorandum; *provided*, *however*, that the Investment Manager shall not be bound by any such policies until it has been given notice thereof in accordance with Section 16 of this Agreement.

(b) The Investment Manager may not, directly or indirectly, cause or authorize the Fund to pay any fee to, reimburse any expense of, or make any other payment to, the Investment Manager; any such payment shall require the prior approval of a member of the Management Board who is not employed or otherwise affiliated with the Investment Manager.

6. Fees.

(a) The Fund shall pay a management fee (the "Management Fee") to the Investment Manager on the terms and conditions and in such manner and frequency as set forth in the Memorandum or as set forth in relevant Resolutions. The Management Fee may exceed the expenses borne by the Investment Manager in connection with the management of the Fund. The Management Board and the Investment Manager may agree to waive or impose different fees or otherwise modify the Management Fee with respect to any unitholder.

(b) Payment of the Management Fee, if any, shall be made on the last Business Day (as defined in the Memorandum or the Fund Agreement, as the case may be) of the period in which the Management Fee becomes payable as set forth in the Memorandum.

(c) The Fund hereby agrees that it shall promptly deliver to the Investment Manager copies of any revised or supplemented Memorandum or newly adopted Resolutions affecting the Management Fee, if any, payable to the Investment Manager; *provided* that failure to deliver such copies shall not affect the Investment Manager's right to receive such Management Fee. The Management Fee shall not be changed without the prior consent of the Investment Manager.

(d) For purposes of this Agreement, Resolutions shall be deemed to be delivered to the Investment Manager if an employee of the Investment Manager is serving as a member of the Management Board at the time such Resolutions are adopted and such member of the Management Board either (i) attends the meeting of the Management Board at which such Resolutions are passed, (ii) executes such Resolutions or (iii) sends his/her apologies for being unable to attend a meeting of the Management Board; otherwise, such Resolutions shall be deemed to be delivered when delivered in accordance with Section 16 of this Agreement or as otherwise agreed by the parties hereto.

7. Expenses of the Fund; Reimbursement by the Fund.

(a) In addition to the fees and disbursements referred to in other sections of this Agreement, the Fund shall bear responsibility for the Fund Expenses (as defined in the Memorandum or the Resolutions, as the case may be) as provided for in the Memorandum or as set forth in relevant Resolutions.

(b) Expenses incurred by the Fund (other than those paid for through the use of "soft dollars" as permitted under this Agreement and the Memorandum) for products and services which benefit the Fund and Other Clients, generally shall be allocated to the Fund and such Other Clients in accordance with their use of such products and services or on a *pro rata* basis in accordance with the NAV of each of the Fund and the Other Clients.

(c) The Investment Manager may retain, in connection with its responsibilities hereunder, the services of others to assist in the investment advice to be given to the Fund, including, without limitation, any affiliate of the Investment Manager, but payment for any such services shall be assumed by the Investment Manager and the Fund shall not have any liability therefor; *provided*, *however*, that the Investment Manager, in its discretion, may retain the services of independent third party professionals, including, without limitation, attorneys, accountants and consultants, to advise and assist it in connection with the performance of its activities on behalf of the Fund hereunder, and the Fund shall bear full responsibility therefor and for the reasonable expense of any fees and disbursements arising therefrom.

8. RESERVED.

9. Exculpation; Indemnification.

(a) Except as provided by applicable law, including U.S. federal securities law, none of the Investment Manager or its affiliates or any of their respective shareholders, members, partners, affiliates, directors, officers or employees or the legal representatives of any of them (each, together with the Investment Manager, an "Indemnified Party") shall be liable to any Member or the Fund for any loss, cost or expense, arising from any mistake of judgment or any action or inaction of such persons that did not constitute gross negligence, willful misconduct or bad faith in the performance of the Investment Manager's obligations or duties hereunder, or for any loss, cost or expense due to any mistake of judgment, action or inaction or due to the negligence, willful misconduct or bad faith of any broker or other agent of the Investment Manager, *provided* that the selection, engagement or retention of such broker or other agent by the Investment Manager did not involve gross negligence, willful misconduct or bad faith. Each Indemnified Party may consult with legal counsel and accountants in respect of the affairs of the Fund and shall be fully protected and justified in any action or inaction which is taken in accordance with the advice or opinion of such legal counsel or accountants, *provided* that the selection of such legal counsel or accountants did not involve gross negligence, willful misconduct or bad faith. For the avoidance of doubt, the term "Indemnified Party" shall include, without limitation, a subadviser affiliated with the Investment Manager.

(b) The Fund shall indemnify and hold harmless each Indemnified Party from and against any loss, cost or expense suffered or sustained by it by reason of the fact that it is or was an Indemnified Party, including, without limitation, any judgment, award, settlement, reasonable attorneys' fees and other costs or expenses incurred in connection with the defense of any actual or threatened action, suit, proceeding or claim, *provided* that such loss, cost or expense resulted from a mistake of judgment on the part of an Indemnified Party, or from an action or inaction that did not constitute gross negligence, willful misconduct or bad faith on the part of an Indemnified Party, or for any loss, cost or expense due to any mistake of judgment, action or inaction or due to the negligence, willful misconduct or bad faith of any broker or other agent of an Indemnified Party, *provided* that the selection, engagement or retention of such broker or other agent by the Indemnified Party did not involve gross negligence, willful misconduct or bad faith; *provided, further*, that such loss, cost or expense did not result solely from any action brought by any Indemnified Party against any other Indemnified Party. The Fund shall, in the discretion of the Management Board, advance to any Indemnified Party reasonable attorneys' fees and other costs and expenses incurred in connection with the defense of any action or proceeding that arises out of such conduct or alleged conduct. In the event that such an advance is made by the Fund, the Indemnified Party must agree to reimburse the Fund for such fees, costs and expenses to the extent that it is finally determined that it, he or she was not entitled to indemnification in respect thereof.

(c) The Fund agrees that if any subadviser is engaged by the Investment Manager pursuant to the authority granted to the Investment Manager in Section 2, then such subadviser shall be entitled to receive the benefits of the exculpation and indemnification provisions provided for under this Section 9 as an Indemnified Party.

(d) Notwithstanding any of the foregoing to the contrary, this Section 9 shall not be construed to relieve any Indemnified Party of any liability to the extent that such liability may not be waived, modified or limited under applicable law (including liability under federal securities laws which, under certain circumstances, impose liability even on persons acting in good faith), but shall be construed so as to effectuate these exculpation and indemnification provisions to the fullest extent permitted by law.

10. Activities of the Investment Manager and Others. The Investment Manager and its affiliates may engage, simultaneously with their investment management activities on behalf of the Fund in other businesses, in transactions on behalf of other investment funds and accounts which involve the same Portfolio Funds in which the Fund may invest and the same Financial Instruments in which the Fund or Portfolio Funds may invest, and may render investment management services to other investment funds and accounts in which the Fund will have no interest and that have similar or dissimilar investment objectives to those of the Fund and/or which may or may not follow investment programs similar to the Fund. The Investment Manager and its affiliates shall not by reason of such engaging in other businesses or through the rendering of services for others be deemed to be acting in conflict with the interests of the Fund even if such activities may be in competition with the Fund and/or may involve substantial time and resources of the Investment Manager and its personnel. Notwithstanding the foregoing, the Investment Manager and its personnel shall devote as much time to the activities of the Fund as they deem necessary and appropriate. In addition, each unitholder, member, partner, director, officer, employee or legal representative of the Investment Manager or its affiliates, in its individual capacity, may engage in Financial Instrument transactions which may be different than, and contrary to, transactions engaged in by the Investment Manager on behalf of the Fund. The Investment Manager, its affiliates, and their respective shareholders, members, partners, directors, officers or employees or the legal representatives of any of them, in their individual capacities, may be members, partners, Management Board members, officers or employees of the Fund but shall not be deemed to have interests which are in conflict with the interests of the Fund. Generally, it is the policy of the Investment Manager to allocate, to the extent possible, investment opportunities to the Fund over a period of time on a fair and equitable basis relative to its Other Clients. In cases where an investment opportunity may be limited, priority may be granted to the Fund or Other Clients, for example and without limitation, where the Fund or Other Clients, as the case may be, are below their respective minimum investment allocations, have been waiting to invest in a Portfolio Fund for more than a month or are making an initial investment in a Portfolio Fund. In circumstances when it is unsuitable, impractical or undesirable for trades or investment opportunities (*e.g.*, private placements, options or swaps) and/or their related hedge positions to be allocated among the Fund and Other Clients as described above, the Investment Manager shall allocate such trades and investment opportunities among the Fund and Other Clients in a manner that the Investment Manager in its discretion determines is fair and equitable.

11. Custody. Custody and prime brokerage arrangements may be established with banks and broker-dealers, including broker-dealers which are affiliates of the Investment Manager. The Investment Manager shall not be liable for any act or omission of any custodian or prime broker appointed by the Fund. Any compensation to a custodian for its services to the Fund shall be the obligation of the Fund and not the Investment Manager.

12. Term. This Agreement shall remain in effect through a term concluding December 31, ~~2016~~2024 and shall be automatically extended for additional one-year terms thereafter, except that it may be terminated by the Investment Manager, on the one hand, or by the Fund, on the other hand, upon at least 90 days' prior written notice to the other party. To the extent the Investment Manager makes any investments or transacts any business whatsoever on behalf of, or in the name of, the Fund on a date after its termination date, such actions must be approved by the Management Board. If this Agreement is terminated by either party, the Investment Manager shall be entitled to receive the Management Fee earned or accrued through the date of termination.

13. Limitations on Use of Name.

(a) The Fund shall not distribute or circulate any sales literature or promotional or other material which contains any reference to "UBS", "Asset Management (Americas)", "Hedge Fund Solutions" or "O'Connor" without the prior approval of the Investment Manager. The Fund shall submit in draft form all such materials requiring approval of the Investment Manager, allowing sufficient time for review by the Investment Manager and its counsel prior to any deadline for printing. The Fund also agrees to indemnify and hold harmless each Indemnified Party from and against any and all losses, costs or expenses, joint or several, including, without limitation, attorneys' fees and disbursements, which may arise out of the Fund's use or misuse of the term "UBS", "Asset Management (Americas)", "Hedge Fund Solutions" or "O'Connor," or out of any breach of or failure to comply with this Section 13.

(b) If the Investment Manager or any successor to its business shall cease to furnish services to the Fund under this Agreement or similar contractual arrangement, for any reason whatsoever, the Fund, at its expense:

(i) as promptly as practicable, shall take all necessary action to cause the Fund Documents to be amended to eliminate any reference to "UBS", "Asset Management (Americas)", "Hedge Fund Solutions" or "O'Connor" or any name, mark or logo type derived from it or similar to it or indicating that the Fund is managed by or otherwise associated with the Investment Manager; and

(ii) within 60 days after the termination of this Agreement or such similar contractual arrangement, shall cease to use in any other manner, including, without limitation, use in any sales literature or promotional material, the name "UBS", "Asset Management (Americas)", "Hedge Fund Solutions" or "O'Connor" or any name, mark or logo type derived from it or similar to it or indicating that the Fund is managed by or otherwise associated with the Investment Manager.

14. Intellectual Property.

(a) The Fund agrees that all work product resulting from the services performed by the Investment Manager related to the services provided to the Fund hereunder, which the Investment Manager or its employees or consultants made, make, conceived or conceive (either solely or jointly with others) in connection with and during the term of this Agreement (collectively, "New Materials") shall be deemed to be created and prepared as, and shall therefore constitute, a "work made for hire" by the Investment Manager as the "author" and owner to the extent permitted by United States copyright law. To the extent (if any) that any New Materials may be deemed not to constitute a "work made for hire," the Fund hereby agrees that this Agreement shall automatically constitute an irrevocable assignment from the Fund to the Investment Manager for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, of all rights, title and interest to such New Materials. The Investment Manager shall exclusively own, and is perpetually and irrevocably entitled to, all right, title and interest now or hereafter provided by law in and to the New Materials throughout the universe in perpetuity in any and all media whether now known or hereafter developed (including, without limitation, any and all registrations, applications, copyright rights, renewals, extensions, restorations and reversions, patent rights, trade secret rights, trademark rights and all other proprietary and intellectual property rights in or relating to the New Materials), as well as the right to collect all royalties and income generated therefrom and the right to sue, counterclaim and recover for all past, present and future violations thereof.

15. Arm's-Length Agreement. The Fund and the Investment Manager represent, warrant and agree to the other that this Agreement constitutes an arm's-length agreement between the Fund and the Investment Manager. The Management Board represents that it has reviewed and understands the compensation arrangement and its risks and approves the Fund entering into this Agreement.

16. Miscellaneous.

(a) Notices. Any notice, consent or other communication made or given in connection with this Agreement shall be in writing and shall be deemed to have been duly given when delivered by hand, email or facsimile or five days after mailed by certified mail, return receipt requested, or on the next Business Day (in the place of delivery) if sent by recognized overnight courier service for next-Business Day delivery as follows:

If to the Fund, to:

CMERS Low Beta LLC
c/o UBS ~~Alternative and Quantitative Investments LLC~~Asset Management (Americas) LLC (d/b/a UBS Hedge Fund Solutions)
600 Washington Boulevard, 9th Floor
Stamford, CT 06901

Attention: ~~Michael Kim~~
~~Facsimile No.: 203-719-1399~~Edward M. Burman
Email address: ~~michael.kim~~edward.burman@ubs.com

If to the Investment Manager, to:

UBS Asset Management (Americas) LLC (d/b/a UBS Hedge Fund Solutions ~~LLC~~)
600 Washington Boulevard, 9th Floor
Stamford, CT 06901

Attention: ~~Michael Kim~~
~~Facsimile No.: 203-719-1399~~Edward M. Burman
Email address: ~~michael.kim~~edward.burman@ubs.com

Either party hereto may, from time to time, by notice in writing served upon the other as aforesaid, designate a different mailing address or a different or additional person to which all such notices or demands thereafter are to be addressed.

(b) Entire Agreement. This Agreement amends and restates the ~~Original~~Amended and Restated Agreement and contains all of the terms agreed upon or made by the parties relating to the subject matter of this Agreement, and supersedes all prior and contemporaneous agreements, negotiations, correspondence, undertakings and communications of the parties, oral or written, respecting such subject matter.

(c) Severability. Each section of this Agreement and any and every provision therein shall be severable from every other section of this Agreement and any and every provision thereof, and the invalidity or unenforceability of any section or provision by any court shall not affect the validity of any other section or provision of this Agreement and such remaining provisions shall remain and continue to be in full force and effect.

(d) Amendments. This Agreement may not be amended unless such amendment is in writing and signed by the parties sought to be bound. Except as provided herein, no alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by the parties hereto, and no oral understanding or agreement not incorporated herein shall be binding on any of the parties hereto.

(e) Waivers. No delay on the part of any party in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any waiver on the part of any party of any right, power or privilege hereunder, nor any single or partial exercise of any right, power or privilege hereunder, preclude any other or further exercise thereof or the exercise of any other right, power or privilege hereunder.

(f) Binding Effect; Assignment. This Agreement shall be binding upon and inure to the benefit of each of the Fund, the Investment Manager, each Indemnified Party and their respective successors and permitted assignees. No party to this Agreement may assign (as such term is defined under the Investment Advisers Act of 1940, as amended) all or any portion of its rights, obligations or liabilities under this Agreement without the prior written consent of the other parties to this Agreement.

(g) Governing Law; Consent to Jurisdiction. Notwithstanding the place where this Agreement may be executed by any of the parties thereto, the parties expressly agree that all terms and provisions hereof, as well as all claims in contract, tort, equity or otherwise among the parties, shall be governed by, and construed in accordance with, the internal laws of the State of New York applicable to contracts made between residents of that State, entered into and wholly performed, and to transactions wholly consummated, within that State. Each party also consents to the exclusive jurisdiction of the federal and state courts of the State of New York, located in the City of New York, for the resolution of any dispute involving the construction, interpretation or enforcement of this Agreement or any other claims in contract, tort, equity or otherwise among the parties.

(h) Force Majeure. No party to this Agreement shall be liable for damages resulting from delayed or defective performance when such delays arise out of causes beyond the control and without the fault or negligence of the offending party. Such causes may include, without limitation, acts of God or of the public enemy, acts of the State in its sovereign capacity, fires, floods, power failure, disabling strikes, epidemics, quarantine restrictions and freight embargoes.

(i) Titles or Headings. Titles or headings are not part of this Agreement, are for convenience of reference only, and shall have no effect on the construction or legal effect of this Agreement.

(j) Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

(k) Additional Documents. The Investment Manager and the Fund shall execute such additional documents and perform such further acts as may be reasonable and necessary to carry out the provisions of this Agreement.

(l) Cumulative Remedies. The rights and remedies provided herein are cumulative and are not exclusive of any rights or remedies which any party may otherwise have at law or in equity.

(m) Survival. The provisions of Sections 6, 7, 9, 12, 13, 14 and 16 hereof shall survive the termination of this Agreement.

(n) Construction. All pronouns shall be deemed to refer to the masculine, feminine, neuter, singular or plural as the identity of the person or persons' firm or company may require in the context thereof.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date first written above.

CMERS LOW BETA LLC

By: ______________________________

Name:
Title:

By: ______________________________

Name:
Title:

UBS ASSET MANAGEMENT (AMERICAS) LLC (D/B/A UBS HEDGE FUND SOLUTIONS ~~LLC~~)

By: ______________________________

Name:
Title:

By: ______________________________

Name:
Title:

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date first written above.

EMPLOYES' RETIREMENT SYSTEM

By: ________________________________

By: ________________________________

APPENDIX A

INVESTMENT PROGRAM

Investment Objectives

Generally, the Investment Manager will attempt to construct a broad based neutral portfolio with exposure to a number of hedge fund strategies.

The Fund seeks to target limited beta to equity markets over an economic cycle (3-5 years), as measured relative to the MSCI $ World Index.

Investment guidelines and restrictions represent initial guidelines only and may be modified in the future as agreed by all parties involved after initial implementation as Fund preferences evolve.

Investment Guidelines

The Fund acknowledges that Investment Objectives represent initial guidelines only and may be modified in the future as agreed by all parties involved (the "Investment Guidelines").

Strategies and Anticipated Allocation Ranges

- Equity Hedged: (0-50%)
  - The Fund will retain flexibility to invest in managers who may exhibit either long or short bias to risky assets depending on market environment provided downside risk is seen to be adequately restrained. Sub-strategies currently include: Fundamental and Equity Event.
- 13F Strategy: (0-5%)
  - The Fund is permitted to invest in a Portfolio Fund managed by the Investment Manager which pursues the Investment Manager's "13F Strategy," an equity trading strategy that seeks to replicate the aggregate performance characteristics of a portfolio of equity securities held by a select number of Submanagers which have listed them on their respective filings under SEC Form 13F. The 13F Strategy shall be considered a subset of Equity Hedged such that the allocation range for the 13F Strategy and Equity Hedge together shall be (0-50%).
- Credit / Income (0-50%)
  - Credit: These strategies in aggregate are subject to a guideline of no more than 50% of the total portfolio. The Fund will retain flexibility to invest in managers who may exhibit either long or short bias to risky assets depending on market environment provided downside risk is seen to be adequately restrained.
  - Sub-strategies currently include: Distressed, Corporate Long/Short, Structured Products and will not exceed 40% of the total portfolio.

- Income: The Fund will retain flexibility to invest in managers that participate in reinsurance strategies. Reinsurance strategies will not exceed 10% of the portfolio.

- Relative Value: (0-60%)
  - The Fund is permitted to invest in all Relative Value strategies, including: Quantitative Equity, Merger Arbitrage, Capital Structure/Volatility Arbitrage, Fixed Income Relative Value (FIRV), and Agency MBS.
- Trading: (0-40%)
  - The Fund is permitted to invest in all Trading strategies, including Global Macro, Commodities and Systematic CTAs. Sub-strategies currently include: Systematic, Global Macro, Commodities.
- Other: (0-10%)
  - This category contains investment approaches that are outside of the mainstream hedge fund strategies (Equity Hedged, Credit, Relative Value, and Trading). The category includes other alternative strategies, such as tactical asset allocation/risk parity, private equity, and real estate dealings, as well as new niche investment approaches that do not fit into any of the other mainstream strategies.
- Direct Trading: (0-5%)
- Multi-Strategy:
  - The Fund is permitted to invest in Multi-Strategy managers, which include allocations to a combination of strategies. These offerings are often the result of commonalties in the research and trading talent required for successful execution of the strategies. These funds allocate capital opportunistically among strategies believed to offer a suitable risk-adjusted return profile going forward.
  - Applicable guidelines for multi-strategy managers will be monitored on a look-through basis to the underlying Strategies and will count toward the specified limits above.

For additional strategy descriptions please refer to the Memorandum. Please be advised that the Investment Manager typically reviews and revises strategy classifications on an annual basis.

Note that target percentages are not intended to be guarantees or assurances that the ~~Fund's~~Fund's portfolio will be within such target ranges at all times. They are intended as goals the Fund seeks to achieve and apply only after the Fund has completed (i) its investment build up phase expected to be up to one year or (ii) a rebalancing of the portfolio after a liquidity request.

Investments in Portfolio Funds Managed by Affiliates of the Investment Manager

~~Investments~~The Investment Manager will select and utilize its affiliates to source, implement, subadvise, and/or manage direct trades made on behalf of the Fund, for example, UBS O'Connor. Except with respect to the implementation of a Direct Trading Strategy, investments in Portfolio Funds managed by affiliates of the Investment Manager will be capped at 20% and would be limited to ~~Customized Baskets~~customized baskets ("CBs"), ~~Managed Accounts~~managed accounts ("MAs") or other ~~Special Purpose Vehicles (~~special purpose vehicles ("SPVs") where the Investment Manager may seek to attain certain exposures pursuant to the investment objectives of the Fund and where such exposure may otherwise not be accessible to the Fund. ~~In the event such investments are implemented, the~~The Investment Manager will not charge the Fund additional management fees or performance fees within the CBs, MAs~~ or SPVs. Aside from such investments in CBs, MAs or SPVs, no investments will be made to UBS affiliates (e.g. O'Connor).~~, SPVs, or in any vehicle through which the Investment Manager implements its Direct Trading strategies.

Diversification

The Investment Manager will determine the appropriate number of Portfolio Funds in its sole discretion. However, the number will typically range between 15-39 Portfolio Funds, excluding co-investments, unless otherwise agreed by the Fund.

Liquidity Considerations

The Investment Manager will seek to invest in Portfolio Funds with a mix of different liquidity profiles. However, the Investment Manager will seek to maintain:

- At least 70% of the net asset value of the Fund to be allocated to Portfolio Funds with stated liquidity terms (with penalties) that allow for redemption within 1 year.
- Up to 30% of the net asset value of the Fund may be allocated to Portfolio Funds with stated liquidity terms that allow for redemption greater than a 1 year hard lock up. Up to 1/3 of these Portfolio Funds (approximately ~~10~~20% of the Fund) may have a hard lock up of greater than 2 years, but no more than 3 years unless they fall into the category of Portfolio Funds with no predefined redemption period. The latter shall also fall inside the ~~10~~20% limitation. The Investment Manager may increase the 20% limitation with consent of investors on an investor-by-investor basis.
- An investor gate can cause a position to fall into multiple liquidity buckets. For example, a 1/8th quarterly liquidity fund would have 50% of its position in the "within 1 year" bucket and the remainder in the "greater than 1 year bucket", none of which would fall into the greater than 2 year bucket.

The above terms do not include audit withholds imposed by Portfolio Funds. The Fund acknowledges and understands that disbursements of any withheld amounts could take between 12 and 18 months to receive and will not be counted toward the above liquidity considerations.

From time to time, a manager may segregate certain securities from its Portfolio Fund and establish a ~~“~~"side pocket~~”~~" structure and/or share class, which may have less liquid characteristics. The Investment Manager will attempt to limit the ~~Fund’s~~Fund's exposure to side pocket holdings. However, the ultimate side pocket exposure will be at the discretion of the each underlying manager.

Leverage

The Investment Manager does not expect to employ leverage above and beyond what may be undertaken by the underlying Portfolio Funds. The Fund indicated it is able to provide additional cash with sufficient notice for operating purposes such as funding short term subscriptions or coverage for FX currency hedging.

Investment Manager Bespoke Structures/Co-Investments

The Fund is eligible to participate in A&Q bespoke structures and co-investments with full discretion of the Investment Manager; provided, however, that the Investment Manager will limit the Fund's exposure to co-investments and direct trading, in aggregate, to not more than 5% of the NAV of the Fund at the time of any investment to obtain such exposure.

Investment Eligibility

The Fund may invest in both US tax transparent funds and/or offshore vehicles.

Tail/Overlay Hedging

The Fund is eligible to participate in A&Q Tail/Overlay Program (TAU).

New Issues

The Fund is eligible to participate in new issues, and as such the Fund may invest in the new issues eligible share classes, if deemed appropriate.

Guideline Monitoring

Investment guidelines as agreed in this document will be additionally signed-off and monitored by UBS Risk Control. In the event of a limit violation, the Investment Manager will contact the Fund to identify the issue(s) and agree on an appropriate plan of action to resolve the issue(s) in a timely manner~~.~~.

Summary report: **Litera Compare for Word 11.4.0.111 Document comparison done on 3/17/2024 11:15:06 AM**	
Style name: Sidley Default	
Intelligent Table Comparison: Active	
Original DMS: nd://4879-0301-4317/1/2nd A&R IMA - City of Milwaukee.docx	
Modified DMS: nd://4879-0301-4317/2/2nd A&R IMA - City of Milwaukee.docx	
Changes:	
Add	65
~~Delete~~	37
~~Move From~~	1
Move To	1
Table Insert	0
~~Table Delete~~	0
Table moves to	0
~~Table moves from~~	0
Embedded Graphics (Visio, ChemDraw, Images etc.)	0
Embedded Excel	0
Format changes	0
Total Changes:	104

UBS Asset Management (Americas) LLC (d/b/a
UBS Hedge Fund Solutions)
600 Washington Boulevard, 9th Floor
Stamford, CT 06901
Tel. +1-203 719 3000

www.ubs.com

March [•], 2024
City of Milwaukee Employes' Retirement System
789 North Water Street
Suite 300
Milwaukee, WI 53202

To Whom it May Concern:

This amended and restated letter agreement (the "Letter Agreement") is being entered into with respect to an investment by the City of Milwaukee Employes' Retirement System ("CMERS") in Units of CMERS Low Beta LLC (the "Fund"). The Fund and UBS Asset Management (Americas) LLC (d/b/a UBS Hedge Fund Solutions) (the "Investment Manager"), the investment manager of the Fund, on its own behalf and in its capacity as the investment manager of the Fund, hereby agree to the terms set forth below.

Reference is made to that certain letter agreement dated December 18, 2014 (the "Prior Agreement") by and between the Fund and the CMERS. The parties now desire to amend and restate the Prior Agreement as set forth herein.

All capitalized terms used but not defined herein have the meanings set forth in the Fund's Confidential Memorandum dated December 2014 (the "Memorandum") and the Fund's Amended and Restated Limited Liability Company Agreement dated as of December 18, 2014 (the "Agreement," and together with the Memorandum, the "Offering Documents").

Notwithstanding the terms set forth in the Offering Documents, the parties hereto agree as follows:

1. Most-Favored Nation.

(a) If, while CMERS is invested in the Fund, the Investment Manager offers Preferential Fee Terms to a Relevant Client, the Investment Manager shall promptly offer the Preferential Fee Terms to CMERS and CMERS may accept the Preferential Fee Terms by notifying the Investment Manager within 30 days of receiving such notice; provided, that CMERS shall agree to be bound by any obligations, restrictions and other terms that are more restrictive than the obligations, restrictions and other terms imposed on CMERS.

(b) "Preferential Fee Terms" shall mean overall fee terms payable by a Relevant Client to the Investment Manager or its affiliates (including any performance fee, extrapolated from a targeted rate of return), expressed as a percentage of the Relevant Client's net asset value, that are less than the overall fee terms to be payable by the Fund to the Investment Manager, also expressed as a percentage of the Fund's net asset value. The Investment Manager, in its sole and reasonable discretion, shall determine whether a Relevant Client has been offered Preferential Fee Terms.

(c) A "Relevant Client" shall mean any single investor fund focused on a broad based multi-strategy investment program managed by the Investment Manager on a discretionary basis with an initial subscription amount less than or equal to CMERS' initial subscription amount in the Fund. The Investment Manager, in its sole and reasonable discretion, shall determine whether another client is a Relevant Client.

2. Accuracy of the Memorandum. The Investment Manager represents that the Memorandum does not contain any untrue statement of a material fact or omit to state a material fact necessary in order to

make the statements contained therein, taken as a whole in light of the circumstances under which they were made, not misleading.

3. No Bad Acts/Litigation. The Fund and the Investment Manager represent and warrant that (a) there are no actions, proceedings or investigations pending or, to the knowledge of the Fund or the Investment Manager, threatened against the Fund, the Investment Manager or any managing member of the Investment Manager, and (b) during the five (5) years prior to the date hereof none of the Investment Manager or any managing member of the Investment Manager has been the subject of any action, proceeding or investigation that claimed or alleged fraud, misrepresentation, or violation of any federal or state securities law, rule or regulation.

4. Payment of Directors' Fees. Any directors' fees or directors' expenses (including the fees and expenses of the Management Board) paid by the Fund shall be reimbursed by the Investment Manager.

5. Notice of Certain Matters. The Investment Manager shall notify CMERS as soon as reasonably practicable of (a) any claims for indemnification formally made against the Fund pursuant to Section 2.08 of the Agreement and (b) the commencement of any lawsuit against the Fund, or (c) subpoena, request for information (whether in connection with a formal order naming the Investment Manager, or any of its personnel or otherwise), "Wells Notice," a notice regarding the commencement of any legal or disciplinary proceedings by the Securities and Exchange Commission, the Financial Industry Regulatory Authority Inc., the Commodity Futures Trading Commission and state or attorney-general office or any other regulatory or governmental body involving the Fund or the Investment Manager that could reasonably be expected to have a material adverse effect on the Fund or CMERS' investment.

6. Anti-Bribery. The Investment Manager, on behalf of the Fund, and its officers, managers, employees, independent contractors, representatives or agents, covenants that (i) it has and will only use funds for lawful purposes, (ii) it has and will not violate applicable anticorruption laws, including without limitation, the Foreign Corrupt Practices Act ("FCPA"), the United Kingdom Bribery Act of 2010, the OECD Convention on Combatting Bribery of Foreign Public Officials in International Business Transactions and any other applicable anticorruption laws in countries where the Fund engages in investment activities, (iii) it has not and will not, directly or indirectly, give or offer anything of value, including, but not limited to, cash, contributions, gifts, or entertainment, to foreign or domestic government officials or to any private commercial person or entity for the purpose of gaining an improper business advantage in violation of any such applicable anticorruption laws and (iv) it has or will establish sufficient internal controls and procedures to ensure compliance with all applicable anticorruption laws.

7. Anti-Money Laundering. The Investment Manager confirms that it interprets its duties to require that it conduct the business of the Fund in compliance with all applicable laws in all material respects, and will cause the Fund not to knowingly make any payments to any persons in violation of the FCPA and the regulations promulgated thereunder, and shall use its commercially reasonable efforts to cause the Fund to comply with the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, the Trading with the Enemy Act (50 U.S.C. § 1 et seq., as amended), the substantive prohibitions of the anti-boycott laws of the United States, any of the foreign assets control regulations of the United States Treasury Department (31 CFR, Subtitle B, Chapter V, as amended), and any enabling legislation or executive order relating thereto.

8. Representations and Warranties by the Investment Manager. The Investment Manager represents and warrants that each of the following statements is true and correct as of the date hereof:

(a) The Units acquired by CMERS pursuant to the Prior Agreement were duly and validly issued interests in the Fund.

(b) The Agreement, a copy of each of which has been furnished to CMERS, has been duly executed and delivered on behalf of the Investment Manager and constitutes the legal, valid and binding obligation of the Investment Manager, enforceable against the Investment Manager in accordance with its terms. This Letter Agreement has been duly executed and delivered on behalf of the Investment Manager and constitutes the legal, valid and binding obligation of the Investment Manager, enforceable against the Investment Manager in accordance with its terms.

(c) The Investment Manager has all requisite power and authority to conduct its business as described in the Agreement.

(d) Neither the execution and delivery of the Agreement and this Letter Agreement nor the consummation of any of the transactions contemplated thereby or hereby, will result in a violation of any order, writ, injunction, decree or award of any court or governmental authority to which the Fund or the Investment Manager may be subject. The execution and delivery by the Investment Manager of the Agreement and this Letter Agreement do not require any filing with, or the approval or consent of, any governmental authority which has not already been made or obtained, except, if deemed necessary or advisable by the Investment Manager, the filings under applicable securities laws.

9. Tax Assistance. The Investment Manager agrees to use commercially reasonable efforts to assist CMERS when Fund assistance is needed to avoid taxation or to reclaim taxes withheld. The Investment Manager will provide CMERS with the opportunity to contest any claim that CMERS is subject to taxation.

10. Closing Documents. The Investment Manager agrees to provide CMERS and CMERS' outside counsel, Reinhart Boerner van Deuren, s.c., to the attention of Jussi P. Snellman, copies of all amendments to the Agreement within 60 days following the execution thereof.

11. Entire Agreement. This Letter Agreement and the Agreement shall constitute the whole and only agreement among the Investment Manager, the Fund and CMERS in relation to the subject matter set forth herein and supersede and extinguish any prior drafts, agreements, undertakings, representations, warranties, promises, assurances and arrangements of any nature whatsoever, whether or not in writing, relating thereto.

12. Governing Law. This Letter Agreement is governed by and shall in all respects be construed and enforced in accordance with the laws of Delaware. The parties hereto each consent to the exclusive jurisdiction of the federal and state courts in the State of Wisconsin with respect to any claims or disputes arising hereunder.

13. Counterparts. This Letter Agreement and any amendments, waivers, consents or supplements hereto may be executed in any number of counterparts and by different parties hereto in separate counterparts, and each of them when so executed and delivered shall be deemed an original, but all such counterparts together shall constitute but one and the same instrument.

[signature page to follow]

CMERS LOW BETA, LLC

____
Cassandra Powell
Title: Management Board Member

____
Philip Dickie
Title: Management Board Member

UBS ASSET MANAGEMENT (AMERICAS) LLC
(D/B/A UBS HEDGE FUND SOLUTIONS)

____
Name:
Title:

____
Name:
Title:

AGREED AND ACKNOWLEDGED:

CITY OF MILWAUKEE EMPLOYES' RETIREMENT SYSTEM

____
Name:

CMERS LOW BETA, LLC

____
Cassandra Powell
Title: Management Board Member

____
Philip Dickie
Title: Management Board Member

UBS ASSET MANAGEMENT (AMERICAS) LLC
(D/B/A UBS HEDGE FUND SOLUTIONS)

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Name:
Title:

____
Name:
Title:

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Title:

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Philip Dickie
Title: Management Board Member

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Name:
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AGREED AND ACKNOWLEDGED:

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Name:

CMERS LOW BETA, LLC

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Cassandra Powell
Title: Management Board Member

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Philip Dickie
Title: Management Board Member

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Name:
Title:

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Name:
Title:

AGREED AND ACKNOWLEDGED:

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Name:

UBS Asset Management (Americas) LLC
(d/b/a UBS Hedge Fund Solutions)
~~**UBS Alternative and Quantitative Investments LLC**~~
~~677 Washington Boulevard~~
600 Washington Boulevard, 9th Floor
Stamford, CT 06901
Tel. +~~1-203-719~~1-203 719 3000

www.ubs.com

~~December 18~~March [•], ~~2014~~2024
City of Milwaukee Employes' Retirement System
789 North Water Street
Suite 300
Milwaukee, WI 53202

To Whom it May Concern:

This amended and restated letter agreement (the "Letter Agreement") is being entered into ~~in connection~~ with~~, and as an inducement for,~~ respect to an investment by the City of Milwaukee Employes' Retirement System ("CMERS") in Units of CMERS Low Beta LLC (the "Fund"). The Fund and UBS ~~Alternative and Quantitative Investments LLC (~~Asset Management (Americas) LLC (d/b/a UBS Hedge Fund Solutions) (the "Investment Manager"), the investment manager of the Fund, on its own behalf and in its capacity as the investment manager of the Fund, hereby agree to the terms set forth below.

Reference is made to that certain letter agreement dated December 18, 2014 (the "Prior Agreement") by and between the Fund and the CMERS. The parties now desire to amend and restate the Prior Agreement as set forth herein.

All capitalized terms used but not defined herein have the meanings set forth in the Fund's Confidential Memorandum dated December 2014 (the "Memorandum") and the Fund's Amended and Restated Limited Liability Company Agreement dated as of December 18, 2014 (the "Agreement," and together with the Memorandum, the "Offering Documents").

Notwithstanding the terms set forth in the Offering Documents, the parties hereto agree as follows:

1. Most-Favored Nation.

(a) If, while CMERS is invested in the Fund, the Investment Manager offers Preferential Fee Terms to a Relevant Client, the Investment Manager shall promptly offer the Preferential Fee Terms to CMERS and CMERS may accept the Preferential Fee Terms by notifying the Investment Manager within 30 days of receiving such notice; provided, that CMERS shall agree to be bound by any obligations, restrictions and other terms that are more restrictive than the obligations, restrictions and other terms imposed on CMERS.

(b) "Preferential Fee Terms" shall mean overall fee terms payable by a Relevant Client to the Investment Manager or its affiliates (including any performance fee, extrapolated from a targeted rate of return), expressed as a percentage of the Relevant Client's net asset value, that are less than the overall fee terms to be payable by the Fund to the Investment Manager, also expressed as a percentage of the Fund's net asset value. The Investment Manager, in its sole and reasonable discretion, shall determine whether a Relevant Client has been offered Preferential Fee Terms.

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(c) A "Relevant Client" shall mean any single investor fund focused on a broad based multi-strategy investment program managed by the Investment Manager on a discretionary basis with an initial subscription amount less than or equal to CMERS' initial subscription amount in the Fund. The Investment Manager, in its sole and reasonable discretion, shall determine whether another client is a Relevant Client.

2. Accuracy of the Memorandum. The Investment Manager represents that the Memorandum does not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements contained therein, taken as a whole in light of the circumstances under which they were made, not misleading.

3. No Bad Acts/Litigation. The Fund and the Investment Manager represent and warrant that (a) there are no actions, proceedings or investigations pending or, to the knowledge of the Fund or the Investment Manager, threatened against the Fund, the Investment Manager or any managing member of the Investment Manager, and (b) during the five (5) years prior to the date hereof none of the Investment Manager or any managing member of the Investment Manager has been the subject of any action, proceeding or investigation that claimed or alleged fraud, misrepresentation, or violation of any federal or state securities law, rule or regulation.

4. Payment of Directors' Fees. Any directors' fees or directors' expenses (including the fees and expenses of the Management Board) paid by the Fund shall be reimbursed by the Investment Manager.

5. Notice of Certain Matters. The Investment Manager shall notify CMERS as soon as reasonably practicable of (a) any claims for indemnification formally made against the Fund pursuant to Section 2.08 of the Agreement and (b) the commencement of any lawsuit against the Fund, or (c) subpoena, request for information (whether in connection with a formal order naming the Investment Manager, or any of its personnel or otherwise), "Wells Notice," a notice regarding the commencement of any legal or disciplinary proceedings by the Securities and Exchange Commission, the Financial Industry Regulatory Authority Inc., the Commodity Futures Trading Commission and state or attorney-general office or any other regulatory or governmental body involving the Fund or the Investment Manager that could reasonably be expected to have a material adverse effect on the Fund or CMERS' investment.

6. Anti-Bribery. The Investment Manager, on behalf of the Fund, and its officers, managers, employees, independent contractors, representatives or agents, covenants that (i) it has and will only use funds for lawful purposes, (ii) it has and will not violate applicable anticorruption laws, including without limitation, the Foreign Corrupt Practices Act ("FCPA"), the United Kingdom Bribery Act of 2010, the OECD Convention on Combatting Bribery of Foreign Public Officials in International Business Transactions and any other applicable anticorruption laws in countries where the Fund engages in investment activities, (iii) it has not and will not, directly or indirectly, give or offer anything of value, including, but not limited to, cash, contributions, gifts, or entertainment, to foreign or domestic government officials or to any private commercial person or entity for the purpose of gaining an improper business advantage in violation of any such applicable anticorruption laws and (iv) it has or will establish sufficient internal controls and procedures to ensure compliance with all applicable anticorruption laws.

7. Anti-Money Laundering. The Investment Manager confirms that it interprets its duties to require that it conduct the business of the Fund in compliance with all applicable laws in all material respects, and will cause the Fund not to knowingly make any payments to any persons in violation of the FCPA and the regulations promulgated thereunder, and shall use its commercially reasonable efforts to cause the Fund to comply with the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, the Trading with the Enemy Act (50 U.S.C. § 1 et seq., as

amended), the substantive prohibitions of the anti-boycott laws of the United States, any of the foreign assets control regulations of the United States Treasury Department (31 CFR, Subtitle B, Chapter V, as amended), and any enabling legislation or executive order relating thereto.

8. Representations and Warranties by the Investment Manager. The Investment Manager represents and warrants that each of the following statements is true and correct as of the date hereof:
(a) The Units ~~to be~~ acquired by CMERS pursuant to the Prior Agreement ~~represent~~were duly and validly issued interests in the Fund.
(b) The Agreement, a copy of each of which has been furnished to CMERS, has been duly executed and delivered on behalf of the Investment Manager and constitutes the legal, valid and binding obligation of the Investment Manager, enforceable against the Investment Manager in accordance with its terms. This Letter Agreement has been duly executed and delivered on behalf of the Investment Manager and constitutes the legal, valid and binding obligation of the Investment Manager, enforceable against the Investment Manager in accordance with its terms.
(c) The Investment Manager has all requisite power and authority to conduct its business as described in the Agreement.
(d) Neither the execution and delivery of the Agreement and this Letter Agreement nor the consummation of any of the transactions contemplated thereby or hereby, will result in a violation of any order, writ, injunction, decree or award of any court or governmental authority to which the Fund or the Investment Manager may be subject. The execution and delivery by the Investment Manager of the Agreement and this Letter Agreement do not require any filing with, or the approval or consent of, any governmental authority which has not already been made or obtained, except, if deemed necessary or advisable by the Investment Manager, the filings under applicable securities laws.

9. Tax Assistance. The Investment Manager agrees to use commercially reasonable efforts to assist CMERS when Fund assistance is needed to avoid taxation or to reclaim taxes withheld. The Investment Manager will provide CMERS with the opportunity to contest any claim that CMERS is subject to taxation.

10. Closing Documents. The Investment Manager agrees to provide CMERS and CMERS' outside counsel, Reinhart Boerner van Deuren, s.c., to the attention of Jussi P. Snellman, ~~two complete sets of the executed documents (i.e., the Agreement and a signed opinion of counsel to the Investment Manager) by no later than December 31, 2014, and~~ copies of all amendments ~~thereto~~to the Agreement within 60 days following the execution thereof.

11. Entire Agreement. This Letter Agreement and the Agreement shall constitute the whole and only agreement among the Investment Manager, the Fund and CMERS in relation to the subject matter set forth herein and supersede and extinguish any prior drafts, agreements, undertakings, representations, warranties, promises, assurances and arrangements of any nature whatsoever, whether or not in writing, relating thereto.

12. Governing Law. This Letter Agreement is governed by and shall in all respects be construed and enforced in accordance with the laws of Delaware. The parties hereto each consent to the exclusive jurisdiction of the federal and state courts in the State of Wisconsin with respect to any claims or disputes arising hereunder.

13. Counterparts. This Letter Agreement and any amendments, waivers, consents or supplements hereto may be executed in any number of counterparts and by different parties hereto in separate counterparts, and each of them when so executed and delivered shall be deemed an original, but all such counterparts together shall constitute but one and the same instrument.

[signature page to follow]

CMERS LOW BETA, LLC

____
Cassandra Powell
Title: Management Board Member

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~~William E.J. Walmsley~~
Philip Dickie
Title: Management Board Member

UBS ~~ALTERNATIVE AND QUANTITATIVE INVESTMENTS~~ASSET MANAGEMENT (AMERICAS) LLC (D/B/A UBS HEDGE FUND SOLUTIONS)

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Name:
Title:

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Name:
Title:

AGREED AND ACKNOWLEDGED:

CITY OF MILWAUKEE EMPLOYES' RETIREMENT SYSTEM

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Name:

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Philip Dickie
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Name:

Summary report: Litera Compare for Word 11.4.0.111 Document comparison done on 3/17/2024 11:18:33 AM	
Style name: Sidley Default	
Intelligent Table Comparison: Active	
Original DMS: nd://4877-3211-7933/1/A&R Side Letter - CMERS-UBS.doc	
Modified DMS: nd://4877-3211-7933/2/A&R Side Letter - CMERS-UBS.doc	
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~~Delete~~	29
~~Move From~~	1
Move To	1
Table Insert	0
~~Table Delete~~	0
Table moves to	0
~~Table moves from~~	0
Embedded Graphics (Visio, ChemDraw, Images etc.)	0
Embedded Excel	0
Format changes	0
Total Changes:	63

Callan

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San Francisco, CA 94104

Main 415.974.5060
Fax 415.291.4014

www.callan.com

Memorandum

To: City of Milwaukee Employes' Retirement System

From: Callan LLC

Date: June 2024

Subject: Harrison Street Core Property Fund Data Center Allocation Proposal

Background

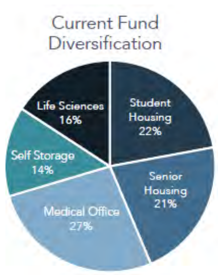
City of Milwaukee Employes' Retirement System ("CMERS") made a $50 million commitment to the Harrison Street Core Property Fund in 2023 ("the Fund"). The Harrison Street Core Property Fund invests in life sciences, student housing, self-storage, medical office, and senior housing.

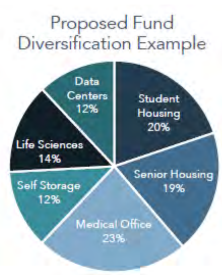
Proposal

The Fund is requesting approval from investors to allow the Fund to add data centers as an allowable investment. Specifically, the Fund would be able to invest up to 20% of its gross market value in data centers. The Fund will primarily target purchasing completed powered shell data centers leased to investment-grade companies. On a selective basis the Fund will participate in de-risked, pre-leased development (i.e., fully leased development, debt in place, power procurement secured, guaranteed maximum price agreed upon. This is similar to Harrison Street's strategy in medical office). Harrison Street believes investing in the sector is consistent with the Fund's investment thesis given the demographic-driven demand and need to serve mission-critical functions. The data center strategy will be focused on pre-leased single-tenant assets, with credit tenants and 10- to 15-year leases. Harrison Street seeks to structure the leases with the data center tenants to be triple net, whereby the tenant pays expenses and capital costs.

This amendment requires that over 50% of investors approve it before Harrison Street can implement the change to the Fund. Harrison Street has requested investor votes by June 30, 2024.

Below is the current Fund diversification alongside the proposed diversification with the new allocation to data centers. Harrison Street plans to build the allocation over time.





Harrison Street has experience investing in data centers in its other real estate products. They started investing in data centers in 2017, have made 31 investments to date, and invested over $4 billion.

Opinion

Callan recommends CMERS vote in support of the proposal. The data center allocation is consistent with the themes and strategy of the Fund. Investment in this sector and the approach will further diversify Harrison Street's ability to invest in long-term stable income-producing assets.

IV.

ADMINISTRATION & OPERATIONS COMMITTEE REPORT

A. Approval of A&O Committee Audit Charter and Internal Audit Charter.

Employes' Retirement System
of the City of Milwaukee

Administration & Operations Committee Audit Charter
May 2024

Purpose

The purpose of this Administration and Operations (A&O) Committee Audit Charter dated May 2024 is to assist the Board Members in fulfilling their oversight responsibilities for the financial reporting process, the system of internal control, the audit process, and the agency's process for monitoring compliance with laws and regulations and the code of conduct. Because of the existing member composition of the A&O Committee as well as the limited number of members, this committee will also have responsibility for the Internal Audit function.

I. AUTHORITY

II. RESPONSIBILITIES

(1) Financial Statements

(2) System of Risk Management

(3) Internal Control

(4)) Internal Audit

(5) External Audit of the Financial Statements

(6) Agency's Processes for Monitoring Compliance

(7) Special Investigations and Whistleblower Mechanism

(8) A&O Committee Management and Reporting Responsibilities

III. MEETINGS

I. AUTHORITY

The A&O Committee has authority to request the Board to conduct or authorize investigation in to any matters within its scope of responsibility. It is empowered to:

- Recommend independent auditors to be engaged by the agency, review and approve the planned and budgeted fees of the independent auditors, review and evaluate the performance of the independent auditors and obtain Board approval for any proposed discharge of the independent auditors.
- Pre-approve all auditing and non-audit services.
- Resolve any disagreements between management and the audit team encountered during the course of the audit including any restrictions on the scope of the work or access to required information.
- Retain independent accountants, or others to advise the A&O Committee or assist in the conduct of an investigation as necessary.
- Seek any information required from employees, all of who are directed to cooperate with the committee's requests.

II. RESPONSIBILITIES

The committee will oversee the following responsibilities:

(1) Financial Statements

- Review significant accounting and reporting issues, including complex or unusual transactions, highly judgmental areas, and recent professional and regulatory pronouncements, and understand their impact on the financial statements.
- Review with management and the external auditors the results of the external audit, including any difficulties encountered.
- Review the annual financial statements and consider whether they are complete, consistent with information known to committee members and reflect appropriate accounting principles.
- Review with the City Attorney or outside legal counsel the status of legal matters that may have an effect on the financial statements.
- Review with management and the external auditors all matters required to be communicated to the committee under generally accepted auditing Standards.
- Understand how management develops interim financial information, and the nature and extent of external and internal auditor involvement.
- Review interim financial reports with management and the external auditors and consider whether they are complete and consistent with the information known to committee members.

(2) System of Risk Management

- Ensure that the organization has a comprehensive policy on risk management.
- Consider the effectiveness of the organization's risk management system, including risks of information technology systems.
- Consider the risks of business relationships with significant vendors and consultants.
- Review reports on management's self-assessment of risks and the mitigations of these risks.
- Understand the scope of the internal auditor's review of risk management over financial reporting and internal controls and obtain reports on significant findings and recommendations with management's responses.
- Hire outside experts and consultants in risk management as necessary.

(3) Internal Control

- Consider the effectiveness of the organization's internal control system, including information technology security and control.
- Understand the scope of internal auditor's and external auditor's review of internal control over financial reporting and its processes and obtain reports on significant findings and recommendations with management's responses.

- Ensure that the organization has a comprehensive policy on internal control and compliance and periodically review the policies on ethics, the code of conduct and fraud.
- Review the role of the internal auditor's involvement in the governance process, including governance documentation and training.
- Ensure that contracts with external service providers contain appropriate record-keeping and audit language.

(4) Internal Audit

- Assure and maintain through the organizational structure of the agency and by other means, the independence of the internal audit process. Review with management the department charter, objectives, plans, activities, staffing, budget, qualifications, and organizational structure of the internal audit function.
- Obtain the information and training needed to enhance the committee members' understanding of the purpose of internal audits so that the committee may adequately oversee the internal audit function.
- Ensure there are no unjustified restrictions or limitations placed on Internal Audit and internal audit staff. Ensure that internal auditors have access to all documents, information and systems in the organization.
- Receive and review all internal audit reports and management letters. Review any changes in the scope of their internal audit. Review the responsiveness and timeliness of management's follow-up activities pertaining to any reported findings and recommendations.
- Review the performance of Internal Audit periodically.

(5) External Audit of the Financial Statements

- Review the external auditor's proposed audit scope and approach, including coordination of audit effort with internal audit. Pre-approve all services to be performed by the external financial statement auditor.
- Review the independence of the external financial statement audit firm by obtaining statements from the auditors on relationships between the audit firm and the organization, including any non-audit services, and discussing these relationships with the audit firm. Obtain from management a listing of all services provided by the external audit firm.
- Review the performance of the external financial statement audit firm.
- Exercise final approval on the request for proposal, the appointment, and retention or discharge of the audit firm.
- Review and approve the audited financial statements, associated management letter, attestation on the effectiveness of the internal control system and procedures for financial reporting, other required auditor communications, and all other auditor reports and communications relating to the financial statements.
- Define the services that the external financial statement auditor is allowed to perform and the services that are prohibited. Ensure production of a report of all costs of and payments to the external financial statement auditor. The listing should separately disclose the costs of the financial statement audit, other attest projects, agreed-upon-procedures and any non-audit services provided.

(6) Agency's Processes for Monitoring Regulatory Compliance

- Review the effectiveness of the system for monitoring compliance with laws and regulations and the results of management's investigation and follow-up (including disciplinary action) of any instance of noncompliance.
- Review the findings of any examinations by regulatory agencies and any auditor observations, including investigations of misconduct and fraud.
- Review the process for communicating to all affected parties the ethics policy, code of conduct and fraud policy to agency personnel and for monitoring compliance.
- Obtain regular updates from management and organization legal counsel regarding compliance matters.
- Monitor changes and proposed changes in laws, regulations and rules affecting the agency.

(7) Special Investigations and Whistleblower Mechanism

- Institute and oversee special investigations as needed.
- Provide an appropriate confidential mechanism for whistleblowers to provide information on potentially fraudulent financial reporting or breaches of internal control to the A&O Committee, City Comptroller's Fraud Hotline or City of Milwaukee Ethics Board.

(8) A&O Committee Management and Reporting Responsibilities

- Provide an open avenue of communication between internal audit, the external financial statement auditors, other external auditors, and management Board members.
- Confirm annually that all responsibilities outlined in this charter have been carried out and review the charter on an annual basis to determine updates.
- Report annually to the Board, members, retirees and beneficiaries describing the committee's composition, responsibilities and how they were discharged and any other pertinent information, including approval of non-audit services and proposed changes and ensure appropriate disclosure as may be required by law or regulation.
- Evaluate the committee's and individual member's performance on a regular basis and report to the Board.

III. MEETINGS

The A&O Committee will meet at least four times a year on a quarterly basis. All committee members are expected to attend each meeting. The agendas for meetings should be prepared and provided to members in advance, along with appropriate briefing materials. The committee may invite members of management or others to attend meetings and provide pertinent information as necessary. Minutes will be prepared by and filed with the Board members.

Employes' Retirement System of the City of Milwaukee

Internal Audit Charter May 2024

Purpose

The purpose of this Internal Audit Charter dated May 2024, is to assist the internal auditors in fulfilling their mission and fiduciary responsibilities under the oversight of the Administration and Operations (A&O) Committee. The provisions of this charter apply to the activities of the Employes' Retirement System (ERS) of the City of Milwaukee Internal Audit function only, and should be used for no other purpose. This document includes the following topics.

I. MISSION
II. OBJECTIVES & SCOPE
III. INDEPENDENCE
IV. AUTHORITY
V. ACCESS
VI. RESPONSIBILITIES & ACCOUNTABILITY
VII. PROFESSIONAL STANDARDS
VIII. REPORT DISTRIBUTION & FOLLOW-UP
IX. RELATIONSHIP TO PREVENTION, DETECTION & CORRECTION ACTIVITIES
X. SIGNATURE SECTION

I. MISSION

The mission of Internal Audit is to provide independent, objective assurance and consulting services designed to add value and improve the operations of ERS. It assists the Board and the Executive Director in accomplishing their oversight responsibilities by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, internal control, and governance processes. The following are specific tasks to be carried out by Internal Audit to accomplish the mission:

- Supporting the agency's efforts to achieve its objectives through conducting a risk assessment every three years, designing, reviewing and executing an annual audit plan, and providing a wide range of quality independent internal auditing services.

- Assessing the integrity, quality, and efficiency of the systems of internal control.

- Assessing the degree to which ERS complies with various policies, procedures, laws, and regulations in a manner that facilitates operational efficiency, quality of service, and fiduciary responsibility.

- Examining and testing the performance of important control elements.

- Assessing the integrity of the financial reporting processes.

- Communicating results of audit projects through timely written reports delivered to the Board, the Executive Director, and management identified as stakeholders.

- Assessing through follow-up audit projects the degree to which management action plans created in response to recommendations in audit reports are carried out effectively and timely.

II. OBJECTIVES & SCOPE

Auditing Objectives. The objectives of the auditing services are to provide independent assurance to the A&O Committee and management that ERS' assets are safeguarded, operating efficiency is enhanced, and compliance is maintained with prescribed laws and regulations and Board and management policies. These objectives of auditing services include an independent assessment of the agency's risk awareness, reliability and integrity of the organization's data and information, and achievement of the agency's goals and objectives.

Consulting and Advisory Objectives. The objectives of internal audit's consulting and advisory services are to provide ERS management with recommendations for improving processes that will advance the goals and objective to successfully achieve the overall mission of the organization. The objectives will also allow internal audit the opportunity to follow-up with management to ensure action steps were taken to mitigate the risk.

Scope. The scope of work of internal audit is to determine whether the agency's network of risk management, internal control, and governance processes, as designed and represented by management, are adequate and functioning in a manner to ensure:

- Programs are operating within the highest fiduciary standards and are in compliance with the requirements defined in the Federal and State constitutions, laws, and regulations, local government ordinances and rules, and the policies and procedures of the agency.
- Programs and processes are in synchrony with industry best practices, using the best public and private examples and all resources available as benchmarks.
- Significant legislative or regulatory issues impacting the agency are recognized and addressed appropriately and timely.
- Operations, processes and programs are consistent with established missions, objectives and goals and they are being executed in accordance with management's plan.
- Existing policies and procedures are appropriate and updated.
- Internal and external risks are identified and managed.
- Employers appropriately enroll employees, accurately report member earnings, and appropriately report other employee data.
- Interaction with appropriate governance groups occurs as needed.
- Significant financial, managerial, and operating information is accurate, reliable, and timely.

- Resources are acquired economically, used efficiently, and adequately protected.
- Quality service and continuous improvement are fostered in the organization's control process.
- Contractors, including third-party administrators, are meeting the objectives of the contracts, while in conformance with applicable laws, regulations, policies, procedures and best practices and the agency's contract monitoring process is effective to ensure minimal risk.
- Responsibilities and activities of the external financial statement auditors are coordinated with those of the internal auditors in order to provide continuity of audit efforts and to avoid duplication.
- Access for auditors is provided as appropriate.
- Specific operations, processes or programs are reviewed at the request of the A&O Committee, the Board, and management.

Opportunities for improving member service, management of risks, internal control, governance, cost benefit, and the organization's effectiveness and image may be identified during audits. This information will be communicated to the A&O Committee and to appropriate levels of management.

III. INDEPENDENCE

Independent Professional Standards. The A&O Committee recognizes that professional independence requires the auditors have knowledge of operations and appropriate expertise in the subject matter that is being audited. Internal Audit must provide the credentials of any or all staff members upon request of the A&O Committee.

Conflict of Interest. Internal Audit shall discuss any potential issues regarding impairment of independence and/or conflicts of interest and their mitigation(s) with the A&O Committee as necessary.

IV. AUTHORITY

The Internal Audit function is established by the Board of this agency and governed by the A&O Committee. This Charter is approved and all future amendments to it are to be approved by the A&O Committee through a majority vote. This Charter shall be reviewed at least annually and updated as required by the A&O Committee.

Internal Audit functionally reports to the A&O Committee. Meetings are held with the A&O Committee on at least a quarterly basis. The portion of the A&O Committee agenda regarding Internal Audit generally include:

- A discussion of current year Plan status
- Points of emphasis of audit reports issued in the quarter
- Status of audits in process
- Changes or proposed changes to the Plan
- Audit follow-up status reports as necessary (based on exceptions noted)
- Special requests for audits from the Board or from Management with Board approval

- Closed sessions, when necessary, as provided for under the Wisconsin open meetings law

The A&O Committee retains the right to provide input and approve the annual audit plan presented by Internal Audit. The risk assessment and Plan are discussed in the meeting at the end of the quarter in which they are completed. Internal Audit shall inform the A&O Committee of the status of the audit plan and any changes needed. Management may request special audits outside of the plan to be conducted, which must be approved by the A&O Committee. The mission, responsibilities, and workings of the A&O Committee are described in the committee charter.

Internal Audit staff is not authorized to initiate or approve accounting transactions external to those related to the function. Internal Audit staff is not authorized to direct the activities of any agency employee not employed by the function, except to the extent such employees have been appropriately assigned to auditing teams or to otherwise assist the internal auditors.

V. ACCESS

The Internal Audit staff, as appropriate, are granted authority for full, free and unrestricted access to all of the agency's functions, records, files and information systems, personnel, contractors, external auditors, physical properties, rental locations, and any other item relevant to the function, process or department under review. All contracts with vendors shall contain standard audit language enabling the internal auditors and other auditors and specialists to have access to relevant records and information. Documents and information given to Internal Audit shall be handled in the same prudent and confidential manner as by those employees normally accountable for them. All of the ERS employees are required to assist the staff of Internal Audit in fulfilling their audit functions and fiduciary duties.

VI. RESPONSIBILITIES & ACCOUNTABILITY

Internal Audit is responsible for the following in order to meet the mission, objectives and scope of this Charter:

1. Establish policies for conducting Internal Audit activities and directing its technical and administrative functions according to the agency's policies and direction provided by the A&O Committee and professional standards described in Section VII.
2. Perform a risk-assessment every three years and review the flexible annual audit plan that will accomplish the mission, objectives and scope of this Charter. This plan will include some unassigned hours in order to provide flexibility for changing conditions. This plan shall in part be based upon risks and control concerns identified by management.
3. Facilitate the implementation of the audit plan.
4. Implement the annual audit plan, as approved, including, as appropriate, any plan amendments, special tasks or projects requested by management, the Board and the A&O Committee.

5. Obtain updates to follow-up on management action plans as they relate to the recommendations provided by Internal Audit for improvement to ensure the risks are being mitigated timely.
6. Transmit copies of all audit reports and management letters to the A&O Committee.
7. Assess periodically whether the purpose, authority and responsibility, as defined in this Charter, continue to be adequate to accomplish its mission, objectives and scope. The result of this periodic assessment should be communicated to the A&O Committee.
8. Assist in the investigation of significant suspected fraudulent activities within the organization and notify the A&O Committee, the Board and other Executives, as appropriate, of the results.

VII. PROFESSIONAL STANDARDS

Internal Audit shall follow the professional standards of relevant professional organizations. These professional standards include, but are not limited to, the following:

- Institute of Internal Auditors (IIA) Professional Standards and Code of Ethics
- American Institute of Certified Public Accountants (AICPA) Professional Standards and Code of Ethics, as applicable
- Generally Accepted Government Auditing Standards (GAGAS) from the United States General Accounting Office (GAO), as applicable

VIII. REPORT DISTRIBUTION & FOLLOW-UP

Draft audit reports are first distributed to the Executive Director or their designee for comments. After comment, they are then distributed to the applicable department head. Internal Audit is responsible for obtaining management responses and issuing the final version of the audit report according to the following time schedule:

- Once a draft report is issued to a department head, 15 business days are allowed for management responses to be prepared and forwarded to Internal Audit. Internal Audit may extend the deadline, though the maximum number of business days for a response will be 25 days.
- Upon receipt of acceptable management responses, Internal Audit has 10 business days to issue the final version of the report.
- In cases where the department under review does not meet the above schedule, Internal Audit has the authority to issue the report without management responses to the chairman of the A&O Committee.

Final audit reports are distributed as follows:

- The department head, under review, receives a complete copy of the full report.
- The Executive Director, the Board, and the A&O Committee also receive a copy of the full report.

IX. RELATIONSHIP TO PREVENTION, DETECTION AND CORRECTION ACTIVITIES

Internal Audit strives to participate in the initial stages of major agency-wide projects so that risks can be appropriately managed and internal controls instituted in the design phase in order to prevent problems and minimize the associated costs. It recognizes that it is more expensive to detect and correct problems than it is to prevent them in the initial stages of a project.

X. SIGNATURE SECTION

The A&O Committee reviewed and adopted this Internal Audit Charter in May 2024, and transmitted it to the Board. The Internal Audit Charter is effective immediately and is hereby signed by the following persons who have authority and responsibilities under this Charter.

______________________________	______________________
Chair, A&O Committee	Date
______________________________	______________________
Chairman, ERS Board	Date
______________________________	______________________
Executive Director	Date

Internal Audit Update
City of Milwaukee **Employes'** Retirement System

Administration and Operations Committee

June 18, 2024

We'll get you there.

CPAs | CONSULTANTS | WEALTH ADVISORS

Executive Summary

Since the A&O Committee Meeting on September 20, 2023, Internal Audit has completed the following:

- Entity Level Controls & Governance Audit,
- Accounting & Financial Reporting,
- Benefit Calculation Audit,
- HR & Payroll Audit,
- Benefit Administration Audit and the
- IT Internal Vulnerability Assessment.

A description of the detailed audit procedures and findings performed for each audit can be found in the full internal audit reports that have been provided separately. A summary discussion of each audit is provided today.

2024 Audit Plan is provided for review, discussion and approval.

2023 Audit Plan

2023 Audit Plan	Est. Hours	Actual Hours*	Actual Cost*	Target Start Date	Status/Comments
Accounting & Finance Audit	100	80	$11,920	Complete	Presented 6/18/2024
Benefit Administration Audit	100	90	$13,410	Complete	Presented 6/18/2024
Benefit Calculation Audit	100	80	$11,920	Complete	Presented 6/18/2024
Enrollment & Membership Audit	60	30	$4,470	Complete	Presented 9/20/23
Entity Level Controls & Governance Audit	50	50	$7,450	Complete	Presented 6/18/2024
HR & Payroll Audit	45	40	$6,970	Complete	Presented 6/18/2024
Investment Management Audit	80	75	$11,175	Complete	Presented 9/20/23
Internal Vulnerability Assessment	120	Project Billed	$23,940	Complete	Presented 6/18/2024
SOC Review (subsequent request)	40	40	$9,000	In-Progress	Draft Report is being prepared
Engagement Management Fees	45	95	$9,145	On-Going	Oversight, administration and meetings
Totals	750	540	$109,400		
2023 Budgeted Cost	$120,560				

** Totals through 6/9/24*

2024 Audit Plan

2024 Audit Plan	Hours Budget	Target Start Date	Comments
Risk Assessment	60	Q3 2024	
Benefit Payroll Audit	80	Q3 2024	
Contributions Audit	60	Q3 2024	
IT General Controls (Includes SOC Review)	200	Q3/Q4 2024	
Business Continuity	100	Q3/Q4 2024	
External Vulnerability Assessment	65	Q3/Q4 2024	
Internal Vulnerability Assessment	120	Q3/Q4 2024	
Purple Team Assessment	30	Q3/Q4 2024	
Engagement Management	95	On-Going	Oversight, administration and meetings
Totals:	810		
2024 Budgeted Cost:	$143,495		

Questions

CPAs | CONSULTANTS | WEALTH ADVISORS

March 20, 2024

Accounting and Financial Reporting Process Audit:

City of Milwaukee
Employes' Retirement System

Prepared by:
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CPAS | CONSULTANTS | WEALTH ADVISORS

Table of Contents

Background 3

Internal Controls Assessment Objectives and Scope 4

Procedures Performed 5

Audit and Assessment Results – Executive Summary 6

Observations, Recommendations, and Management Responses 9

Closing 10

Appendix 11

Background

At the request and direction of the Administration and Operations (A&O) Committee, an audit of the Accounting and Financial Reporting Process and controls for the City of Milwaukee Employes' Retirement System (CMERS) was performed during the period from December 20, 2023, through March 20, 2024. The audit was requested to review, evaluate and test the organization's Accounting and Financial Reporting process against leading practices, test controls and determine whether control deficiencies existed within the internal control environment or whether there were identified control design or operating deficiencies. This audit cannot be relied upon to disclose errors, fraud, or noncompliance with laws and regulations.

We have concluded our consulting engagement to perform the procedures described in the attached report. These procedures, which were agreed to by CMERS, were applied solely to assist in evaluating the internal controls of CMERS. Management of CMERS is responsible for their operations and internal controls. The execution and maintenance of adequate internal controls is solely the responsibility of the management of CMERS. Consequently, we make no representations regarding the sufficiency of the procedures described in the attached document either for the purpose for which this report has been requested or for any other purpose.

CliftonLarsonAllen (CLA) was not engaged by CMERS to conduct a financial audit, for which the objective would be the expression of an opinion on the financial statements. Had we been hired to perform an audit of financial statement information in accordance with U.S. generally accepted auditing standards, other issues may have come to our attention that would have been reported to you. Therefore, we express no opinion on the effectiveness of CMERS's controls over all or any part of its financial statements.

Internal Controls Assessment Objectives and Scope

The objective of the Accounting and Financial Reporting Process Audit was to review, evaluate, and test processes and controls currently in place against leading practices and evaluate operating effectiveness. The focus of the assessment was to address the following risks:

1. Assess the suitability of the design for process and controls over Accounting and Financial Reporting Process, including the inherent risk of inaccurate payments and non-compliance with financial reporting requirements.
2. Assess the governance and accountability over the Accounting and Financial Reporting process, as well as the inherent risks from misappropriation, fraud, and abuse.
3. Compare current state internal controls versus leading practices and test for operating effectiveness.
4. Propose future state changes that mitigate risk or enhance CMERS' internal control structure and outcomes.

<u>The following processes and sub-processes are in-scope, as well as segregation of duties in each area:</u>

The objective of the Accounting and Financial Reporting Process Audit included the review of processes and controls related to the design and test of operating effectiveness, including:

1. Procurement and Cash Disbursements Process and Controls
   a. Vendor Selection
   b. Procurement Process
   c. Invoice Review and Approval

2. General Accounting Process
   a. Journal Entry Review and Approval
   b. Balance Sheet Reconciliations
   c. Intra-Government Reimbursement Process

3. Third Party Service Reports review (SSAE SOC-1)

4. Financial Reporting Process
   a. Financial Statement Compilation and Review Process
   b. Preparation and Approval of the Annual Budget

5. Control over Complex Accounting Spreadsheets

6. Actuarial Reports
   a. Preparation and Review of Actuarial Data
   b. Review and Approval Actuarial Reports

7. System Access Restrictions
   a. User System Access Review and Approval
   b. Segregation of Duties

8. Organizational Resilience
   a. Review and Update of Standard Practice Instructions (SPIs)
   b. Cross Training Procedures

Procedures Performed

As part of the audit, various techniques were used to audit and assess the effectiveness of the internal controls, including:

1. Interviewed members of CMERS
   - Dan Gopalan, Chief Financial Officer
   - Terry Siddiqui, IT Consultant

2. Gathered supporting documents describing current state processes (e.g., policies, procedures, screenshots, flowcharts, reconciliations, analyses, etc.)

3. Gathered evidence and tested CMERS processes and controls for the following functions;
   - Procurement and Cash Disbursement Process
   - General Accounting Process
   - Third Party Service SSAE 18 SOC-1 reviews
   - Financial Reporting process
   - Actuarial reports
   - System Access Restrictions
   - Organizational Resilience

4. Ranked current-state processes against five levels of maturity definition (1. Initial; 2. Repeatable; 3. Defined; 4. Managed; and 5. Optimized)

We would like to acknowledge and thank management with whom we interacted. The time, effort, and discussions they provided were instrumental in our understanding and provided the necessary information to complete our project. During the course of our assessment and audit, management and personnel provided all the materials requested and answered all of our questions promptly.

Audit and Assessment Results – Executive Summary

All the established processes and controls that were assessed during the audit were rated as Defined Maturity*: Management has established defined and documented formalized processes, procedures, and transaction flows that are regularly updated. This level of maturity is considered suitable for these control environments by management and internal audit.

Processes	Control Description	Control Deficiency?	Issues Identified	Process Maturity Level
Procurement and Cash Disbursements Process	Vendors used by CMERS are selected according to City of Milwaukee Purchasing Guidelines. Contracts of a particular size or type require the appropriate review and approval by CMERS management and the City Attorney's Department. Once selected, the vendor is set-up in PeopleSoft by the City's Purchasing Department. Any subsequent changes to the vendor's profile in PeopleSoft are changed by the City's Purchasing Department.	**No**	**None**	**Defined**
	Vendor Invoices are reviewed and approved by the members of management based on an established delegation of authority before they are submitted to the City of Milwaukee for repayment.	**No**	**None**	**Defined**
General Accounting Process	Journal Entries are reviewed and approved by management prior to being recorded in the General Ledger. Each Journal Entry is properly supported with the appropriate documentation.	**No**	**None**	**Defined**
	Balance Sheet Accounts are reconciled during the year and at yearend and are supported by the appropriate documentation. Each reconciliation is reviewed and approved by a member of management, who was independent from preparing the reconciliation.	**No**	**None**	
	CMERS follows a defined process when reimbursing the City of Milwaukee for the administrative costs that it incurs during the year. At the end of each month, the reimbursable amount is calculated based on the known administrative expenses incurred during the period. When complete, the reimbursement payment is reviewed by CMERS Management and the City of Milwaukee Comptroller's office.	**No**	**None**	

Financial Reporting Process	The Finance Department follows a defined process when gathering the organization's financial information and preparing its Annual Financial Statements and Footnotes. When complete, the financial statements are reviewed by management, CMERS external audit firm and CMERS BOD before they are issued to the public.	**No**	**None**	**Defined**
	The Annual Budget is reviewed and approved by both CMERS management and its BOD.	**No**	**None**	
	Management maintains control over key complex accounting and financial reporting spreadsheets that are used in the compilation of CMERS Annual Financial Statements. The spreadsheets themselves are: > Found on the Finance Department Network Drive where they can only be accessed by members of the Finance Department. > Password protected to prevent non-financial department personnel from accessing the spreadsheets. > Formulas used in these spreadsheets are Cell Protected from intentional or incidental change.	**No**	**None**	
Third Party Service Reports	Annually, Management documents its review and evaluation of its Third-Party Service Provider Reports (SSAE SOC-1) as evidence that no internal control deficiencies existed that would have posed a risk and impacted CMERS operations.	**No**	**None**	**Defined**
Actuarial Reports	Annually, management prepares and submits membership data so that it can be used by its actuary to calculate the Pension Obligation Liability. Data submitted to the actuary is reviewed in detail and approved by management before being submitted.	**No**	**None**	**Defined**
	The Annual Actuary Report is reviewed and approved by management before it is presented to the CMERS BOD for approval and acceptance.	**No**	**None**	
	The Five-Year Experience Study is reviewed and approved by management before it is presented to the CMERS BOD for approval and acceptance. As part of its review, management will review the data with a second Actuary in order to ensure the assumptions and results used in the report are reasonable and accurate.	**No**	**None**	

System Access Controls	Employee access to CMERS systems is reviewed by management twice a year to ensure that ERS's employees and business partners have the appropriate system access and that no "high-risk" Segregation of Duties conflicts exist.	**No**	**None**	**Defined**
Organization Resilience	Standard Practice Instructions (SPIs) are regularly reviewed and updated by management to reflect current processes and controls.	**No**	**None**	**Defined**
	Management regularly cross trains and evaluates department personnel as to their ability to competently perform duties outside of the employee's current role and responsibilities.	**No**	**None**	

PROCESS MATURITY DEFINITIONS	
***DEFINED MATURITY**	Policies and processes are established and are reviewed and updated as needed (e.g., annually) to reflect changing business needs; preventive and detective controls are employed but are primarily reliant on manual activities; performance monitoring is performed using a mix of manual and automated processes. ***See Appendix for all Maturity Definitions.***

Following the conclusion of our testing of CMERS Internal Control Environment, we identified No Internal Control Deficiencies.

Observations, Recommendations, and Management Responses

None.

Closing

We wish to extend our appreciation to management and staff for their timely cooperation and assistance during the project.

* * * * * * * * *

This report has been prepared in accordance with Statement of Standards for Consulting Services issued by the American Institute of Certified Public Accountants and is solely for use by management. It is not intended for use, in whole or in part, by outside parties without the specific consent of CliftonLarsonAllen LLP.

CliftonLarsonAllen LLP
March 20, 2024

Appendix

Maturity Definitions

Capability Level	Capability Description	Capabilities Attribute
5. Optimized	Policies and processes are continuously reviewed and improved within a highly automated control environment.	• Processes and controls are continuously reviewed and improved. • Preventive and detective controls are highly automated to reduce human error and cost of operation. • Comprehensive, defined performance metrics exist, with extensive automated performance monitoring. • Extensive use of best practices, benchmarking, and/or self-assessment to continuously improve process.
4. Managed	Policies and processes are documented, standardized, regularly updated and controls increasingly use automation.	• Procedures and controls are well documented and kept current. • Preventive and detective controls are employed, with greater use of automation to reduce human error. • Many metrics are used with a blend of automated and manual performance monitoring. • Best practices and/or benchmarking are used to improve process
3. Defined	Policies and processes are established and are reviewed and updated as needed (e.g., annually) to reflect changing business needs; preventive and detective controls are employed but are primarily reliant on manual activities; performance monitoring is performed using a mix of manual and automated processes.	• Procedures are well documented, but not kept current to reflect changing business needs. • Preventive and detective controls are employed, still reliant on manual activities. • Some metrics are used, but performance monitoring is still manual and/or infrequent. • Generally occurs during periodic (e.g., annual) policy and procedure renewal.
2. Repeatable	Some standard processes are defined and success depends largely on "tribal knowledge" and detective controls.	• Some standard procedures exist, relies on “tribal knowledge.” • Mostly detective are in place, minimal preventive controls, and highly manual. • Few performance metrics exist, thus performance monitoring is inconsistent or informal. • Most likely in reaction to audits or service disruptions.
1. Initial	Few processes are defined and success depends on individual effort and heroics.	• No formal procedures exist. • Controls are non-existent or primarily in reaction to a “surprise.” • There are no metrics or performance monitoring.

March 20, 2024

Benefit Administration Process Audit:

City of Milwaukee
Employes' Retirement System

Prepared by:
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Table of Contents

Background .... Error! Bookmark not defined.
Internal Controls Assessment Objectives and Scope **4**
Procedures Performed **5**
Audit and Assessment Results – Executive Summary **6**
Observations, Recommendations, and Management Responses **8**
Closing **9**
Appendix **10**

Background

At the request and direction of the Administration and Operations (A&O) Committee, an audit of Benefit Administration process and controls for the City of Milwaukee Employes' Retirement System (CMERS) was performed during the period from January 8, 2024, through March 20, 2024. The audit was requested to review, evaluate and test the organization's Benefit Administration process against leading practices, test controls and determine whether control deficiencies existed within the internal control environment or whether there were identified control design or operating deficiencies. This audit cannot be relied upon to disclose errors, fraud, or noncompliance with laws and regulations.

We have concluded our consulting engagement to perform the procedures described in the attached report. These procedures, which were agreed to by CMERS, were applied solely to assist in evaluating the internal controls of CMERS. Management of CMERS is responsible for their operations and internal controls. The execution and maintenance of adequate internal controls is solely the responsibility of the management of CMERS. Consequently, we make no representations regarding the sufficiency of the procedures described in the attached document either for the purpose for which this report has been requested or for any other purpose.

CliftonLarsonAllen (CLA) was not engaged by CMERS to conduct a financial audit, for which the objective would be the expression of an opinion on the financial statements. Had we been hired to perform an audit of financial statement information in accordance with U.S. generally accepted auditing standards, other issues may have come to our attention that would have been reported to you. Therefore, we express no opinion on the effectiveness of CMERS's controls over all or any part of its financial statements.

Internal Controls Assessment Objectives and Scope

The objective of the Benefit Administration Process Audit was to review, evaluate, and test processes and controls currently in place against leading practices and evaluate operating effectiveness. The focus of the assessment was to address the following risks:

1. Perform a current state process assessment, internal controls assessment and organization assessment of the Benefit Administration Process to evaluate the design of current state processes and internal controls as it pertains to the organization's Benefit Administration processes.
2. Assess the governance and accountability over the Benefit Administration process, as well as the inherent risks from misappropriation, fraud, and abuse.
3. Compare current state internal controls versus leading practices and test for operating effectiveness.
4. Propose future state changes that mitigate risk or enhance CMERS' internal control structure and outcomes.

<u>The following processes and sub-processes are in-scope, as well as segregation of duties in each area:</u>

The objective of the Benefit Administration Process Audit included the review of processes and controls related to the design and test of operating effectiveness, including:

1. Health & Dental Insurance Benefits
    a. Rate Accuracy
    b. Benefit Election Approval
    c. Change Authorization
    d. Deduction Reconciliations
    e. Premium Reconciliations

2. Life Insurance Benefits
    a. Benefit Election Approval
    b. Premium Reconciliations
    c. Receipt, Collection and Reconciliation of Participant Receivables
    d. Death Benefit Claim Administration

3. System Access Restrictions
    a. System Access Review and Approval
    b. Access and Safeguarding of PII
    c. Segregation of Duties

4. Organizational Resilience
    a. Standard Practice Instructions (SPIs)
    b. Cross Training Procedures

Procedures Performed

As part of the audit, various techniques were used to audit and assess the effectiveness of the internal controls, including:

1. Interviewed members of CMERS
    - Dan Gopalan, Chief Financial Officer
    - Mike Dzuik, Retirement Plan Manager
    - Terry Siddiqui, IT Consultant

2. Gathered supporting documents describing current state processes (e.g., policies, procedures, screenshots, flowcharts, reconciliations, analyses, etc.)

3. Gathered evidence and tested CMERS processes and controls for the following functions;
    - Health and Dental Insurance Process & Controls
    - Life Insurance Process & Controls
    - System Access Restrictions
    - Organizational Resilience

4. Ranked current-state processes against five levels of maturity definition (1. Initial; 2. Repeatable; 3. Defined; 4. Managed; and 5. Optimized)

We would like to acknowledge and thank management with whom we interacted. The time, effort, and discussions they provided were instrumental in our understanding and provided the necessary information to complete our project. During the course of our assessment and audit, management and personnel provided all of the materials requested and answered all of our questions promptly.

Audit and Assessment Results – Executive Summary

All the established processes and controls that were assessed during the audit were rated as Defined Maturity*: Management has established defined and documented formalized processes, procedures, and transaction flows that are regularly updated. This level of maturity is considered suitable for these control environments by management and internal audit.

Processes	Control Description	Control Finding?	Process Maturity Level
Health and Dental Insurance Process & Controls	Member Health and Dental Insurance benefit rates are regularly updated to reflect the current participant rates. Once updated, these rates are then reviewed and approved by another CMERS team member to ensure the rates are accurate and have been properly applied in MERITS.	**No**	**Managed**
	Requested Health and Dental Insurance Benefits are properly authorized by the participant and are accurately recorded in MERITS.	**No**	**Defined**
	Member requested changes to Health and Dental Insurance are properly authorized by the member. These requested payroll deductions are then accurately updated and recorded in MERITS.	**No**	**Defined**
	Member Health and Dental payroll deductions report is properly reconciled and reviewed before it submitted to the City of Milwaukee	**No**	**Defined**
	Health and Dental Insurance Premiums reconcilaitions are properly reviewed and approved before they are submitted to the City of Milwaukee for payment.	**No**	**Defined**
Life Insurance Process & Controls	Requested Life Insurance Benefit are properly authorized by the participant and are accurately recorded in MERITS.	**No**	**Defined**
	Life Insurance Premium reconciliation is properly reviewed and approved before they are submitted to the City of Milwaukee for payment.	**No**	**Defined**
	CMERS monitors the receipt and collection of member Life Insurance Premiums. A reconciliation of member collections and outstanding receivables is performed monthly.	**No**	**Defined**
	Life Insurance death benefit claims are properly reviewed and recalculated to determine the authenticity of the claim and the accuracy of the Death Benefit.	**No**	**Defined**

System Access, Segregation of Duties and Access to PII	Employee access to CMERS systems is reviewed by management twice a year to ensure that ERS's employees and business partners have the appropriate system access and that no Segregation of Duties conflicts exist. In addition, internal organization policies and system controls are in place that guide and control employee access to member Personal Identifiable Information (PII) that are regularly reviewed and monitored by CMERS management.	**No**	**Defined**
Organization Resilience	Standard Practice Instructions (SPIs) are regularly reviewed and updated by management to ensure process and control procedural document is complete and accurate.	**No**	**Defined**
	Management regularly cross trains and evaluates department personnel as to their ability to competently perform duties outside of the employee's current role and responsibilities.	**No**	
PROCESS MATURITY DEFINITIONS			
***DEFINED MATURITY**	**Policies and processes are established and are reviewed and updated as needed (e.g., annually) to reflect changing business needs; preventive and detective controls are employed but are primarily reliant on manual activities; performance monitoring is performed using a mix of manual and automated processes.**		
***Managed Maturity**	**Procedures and controls are well documented and kept current; Preventive and detective controls are employed, with greater use of automation to reduce human error. Many metrics are used with a blend of automated and manual performance monitoring. Best practices and/or benchmarking are used to improve process.**		
See Appendix for all Maturity Definitions.			

Following the conclusion of our testing of CMERS Internal Control Environment, we identified No Internal Control Deficiencies.

Observations, Recommendations, and Management Responses

None.

Closing

We wish to extend our appreciation to management and staff for their timely cooperation and assistance during the project.

* * * * * * * * *

This report has been prepared in accordance with Statement of Standards for Consulting Services issued by the American Institute of Certified Public Accountants and is solely for use by management. It is not intended for use, in whole or in part, by outside parties without the specific consent of CliftonLarsonAllen LLP.

CliftonLarsonAllen LLP
March 20, 2024

Appendix

Maturity Definitions

Capability Level	Capability Description	Capabilities Attribute
5. Optimized	Policies and processes are continuously reviewed and improved within a highly automated control environment	• Processes and controls are continuously reviewed and improved. • Preventive and detective controls are highly automated to reduce human error and cost of operation. • Comprehensive, defined performance metrics exist, with extensive automated performance monitoring. • Extensive use of best practices, benchmarking, and/or self-assessment to continuously improve process.
4. Managed	Policies and processes are documented, standardized, regularly updated and controls increasingly use automation.	• Procedures and controls are well documented and kept current. • Preventive and detective controls are employed, with greater use of automation to reduce human error. • Many metrics are used with a blend of automated and manual performance monitoring. • Best practices and/or benchmarking are used to improve process
3. Defined	Policies and processes are documented, standardized and updated, e.g., annually with heavy reliance on manual processes.	• Procedures are well documented, but not kept current to reflect changing business needs. • Preventive and detective controls are employed, still reliant on manual activities. • Some metrics are used, but performance monitoring is still manual and/or infrequent. • Generally occurs during periodic (e.g., annual) policy and procedure renewal.
2. Repeatable	Some standard processes are defined and success depends largely on "tribal knowledge" and detective controls.	• Some standard procedures exist, relies on “tribal knowledge.” • Mostly detective are in place, minimal preventive controls, and highly manual. • Few performance metrics exist, thus performance monitoring is inconsistent or informal. • Most likely in reaction to audits or service disruptions.
1. Initial	Few processes are defined and success depends on individual effort and heroics.	• No formal procedures exist. • Controls are non-existent or primarily in reaction to a “surprise.” • There are no metrics or performance monitoring.

March 20, 2024

Benefit Calculation Process Audit:

City of Milwaukee
Employes' Retirement System

Prepared by:
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Table of Contents

Background 3

Internal Controls Assessment Objectives and Scope 4

Procedures Performed 5

Audit and Assessment Results – Executive Summary 6

Observations, Recommendations, and Management Responses 8

Closing 9

Appendix 10

Background

As part of the annual Enterprise Risk Assessment and related Audit Plan, under direction of Administration and Operations (A&O) Committee, an audit of the Benefit Calculation Process for the City of Milwaukee Employes' Retirement System (CMERS) was performed during the period from December 20, 2023, through March 20, 2024. The audit was requested to review and evaluate the organization's Benefit Calculation process against leading practices and determine whether control deficiencies existed within the internal control environment. This audit cannot be relied upon to disclose errors, fraud, or noncompliance with laws and regulations.

We have concluded our consulting engagement to perform the procedures described in the attached report. These procedures, which were agreed to by CMERS, were applied solely to assist in evaluating the internal controls of CMERS. Management of CMERS is responsible for their operations and internal controls. The execution and maintenance of adequate internal controls is solely the responsibility of the management of CMERS. Consequently, we make no representations regarding the sufficiency of the procedures described in the attached document either for the purpose for which this report has been requested or for any other purpose.

CliftonLarsonAllen (CLA) was not engaged by CMERS to conduct a financial audit, for which the objective would be the expression of an opinion on the financial statements. Had we been hired to perform an audit of financial statement information in accordance with U.S. generally accepted auditing standards, other issues may have come to our attention that would have been reported to you. Therefore, we express no opinion on the effectiveness of CMERS's controls over all or any part of its financial statements.

Internal Controls Assessment Objectives and Scope

The objective of the Benefit Calculation Process Audit was to review and evaluate processes and controls currently in place against leading practices. The focus of the assessment was to address the following risks:

1. Perform a current state process assessment, internal controls assessment and organization assessment of the Benefit Calculation Process Team to evaluate the design of current state processes and internal controls as it pertains to the organizations Benefit Calculation processes.
2. Assess the governance and accountability over the Benefit Calculation process, as well as the inherent risks from misappropriation, fraud, and abuse.
3. Compare current state internal controls versus leading practices.
4. Propose future state changes that mitigate risk, better support internal controls of CMERS.

<u>The following processes and sub-processes are in-scope, as well as segregation of duties in each area:</u>

The objective of the Accounting and Financial Reporting Process Audit included the review of processes and controls related to the design and test of operating effectiveness, including:

1. Participant Benefit Calculations
    a. Processes and Controls
    b. System Applications and Controls
    c. Use of Authorized Supporting Documentation
    d. Management Review and Approval Procedures

2. Employment Contracts
    a. Impact of Employee Contract Changes in MERITS
    b. Impact of Retroactive Changes

3. System Access Restrictions
    a. System Access Review and Approval
    b. Access and Safeguarding of PII
    c. Segregation of Duties

4. Organizational Resilience
    a. Standard Practice Instructions (SPIs)
    b. Cross Training Procedures

Procedures Performed

The Benefit Calculation Process Audit was performed in collaboration with members of CMERS.

As part of the audit, various techniques were used to audit and assess the effectiveness of the internal controls, including:

1. Interviewed members of CMERS
    - Dan Gopalan, Chief Financial Officer
    - Terry Siddiqui, IT Consultant

2. Gathered supporting documents describing current state processes (e.g., policies, procedures, screenshots, flowcharts, reconciliations, analyses, etc.)

3. Reviewed, tested and evaluated CMERS processes and controls for the following functions;
    - Benefit Calculation process controls covering;
        - Service Retirement Payments
        - Early Retirement Payments
        - Global Pension Settlement (GPS) Lump Sum Retirement Payments
        - Disability Retirement Payments
        - Early Termination Payments
        - Survivorship Benefit Payments
        - Service Reciprocity Retirement Payments
    - Employee Contract Changes in MERITS
    - Physical Access and Policies governing the use of PII
    - Employee Cross Training
    - User System Access
    - Segregation of Duties

4. Ranked current-state processes against five levels of maturity definition (1. Initial; 2. Repeatable; 3. Defined; 4. Managed; and 5. Optimized)

We would like to acknowledge and thank management with whom we interacted. The time, effort, and discussions they provided were instrumental in our understanding and provided the necessary information to complete our project. During the course of our assessment, management and personnel provided all of the materials requested and answered all of our questions promptly. Below is the assessment executive summary.

Audit and Assessment Results – Executive Summary

All the established processes and controls that were assessed during the audit were rated as Defined Maturity*: Management has established defined and documented formalized processes, procedures, and transaction flows that are regularly updated. This level of maturity is considered suitable for these control environments by management and internal audit.

<table>
<tr><th>Processes</th><th>Control Description</th><th>Control Finding?</th><th>Process Maturity Level</th></tr>
<tr><td rowspan="8">Benefit Calculation Process</td><td>ERS has developed and implemented defined procedures to accurately compile and calculate member benefit calculation payments. For each calculation, the Benefit Calculation Team will.
• Verify the members compensation history and ensure that the members earnings are adjusted for any retroactive payments.
• The appropriate documentation initiating the transaction is properly authorized by the member.
• Benefit Payment calculations are accurate and are then independently reviewed by appropriate personnel.
• Payment Calculation Testing Results:</td><td>No</td><td rowspan="8">Managed</td></tr>
<tr><td>o Service Retirement Payments</td><td>No</td></tr>
<tr><td>o Early Retirement Payments</td><td>No</td></tr>
<tr><td>o Global Pension Settlement (GPS) Lump Sum Retirement Payments</td><td>No</td></tr>
<tr><td>o Disability Retirement Payments</td><td>No</td></tr>
<tr><td>o Employee Termination Payments</td><td>No</td></tr>
<tr><td>o Survivorship Benefit Payments</td><td>No</td></tr>
<tr><td>o Service Reciprocity Retirement Payments</td><td>No</td></tr>
<tr><td>Employment Contract</td><td>Employee Contract Updates and Changes approved by the Common Council are properly updated and reflected in MERITS.</td><td>No</td><td>Managed</td></tr>
<tr><td>System Access, Segregation of Duties and Access to PII</td><td>Employee access to CMERS systems is reviewed by management twice a year to ensure that ERS's employees and business partners have the appropriate system access and that no Segregation of Duties conflicts exist.

In addition, internal organization policies and system controls are in place that guide and control employee access to member Personal Identifiable Information (PII) that are regularly reviewed and monitored by CMERS management.</td><td>No</td><td>Defined</td></tr>
</table>

<table>
<tr><td>Organization Resilience</td><td>Standard Practice Instructions (SPIs) are regularly reviewed and updated by management to ensure process and control procedural document is complete and accurate.</td><td>No</td><td rowspan="2">Defined</td></tr>
<tr><td></td><td>Management regularly cross trains and evaluates department personnel as to their ability to competently perform duties outside of the employee’s current role and responsibilities.</td><td>No</td></tr>
<tr><td>*DEFINED MATURITY</td><td colspan="3">Internal control uniform across the entity's processes; transaction flows documented; risk of fraud, errors, and omissions identified; control processes for mitigating risks have enhanced documentation and integration.</td></tr>
<tr><td>* Maturity Managed</td><td colspan="3">Procedures and controls are well documented and kept current; Preventive and detective controls are employed, with greater use of automation to reduce human error. Many metrics are used with a blend of automated and manual performance monitoring. Best practices and/or benchmarking are used to improve process.</td></tr>
<tr><td colspan="4"><u>See Appendix for all Maturity Definitions.</u></td></tr>
</table>

Following the conclusion of our testing of CMERS Internal Control Environment, we identified No Internal Control Deficiencies.

Observations, Recommendations, and Management Responses

None.

Closing

We wish to extend our appreciation to management and staff for their timely cooperation and assistance during the project.

* * * * * * * * *

This report has been prepared in accordance with Statement of Standards for Consulting Services issued by the American Institute of Certified Public Accountants and is solely for use by management. It is not intended for use, in whole or in part, by outside parties without the specific consent of CliftonLarsonAllen LLP.

CliftonLarsonAllen LLP
March 20, 2024

Appendix

Maturity Definitions

Capability Level	Capability Description	Capabilities Attribute
5. Optimized	Policies and processes are continuously reviewed and improved within a highly automated control environment.	• Processes and controls are continuously reviewed and improved. • Preventive and detective controls are highly automated to reduce human error and cost of operation. • Comprehensive, defined performance metrics exist, with extensive automated performance monitoring. • Extensive use of best practices, benchmarking, and/or self-assessment to continuously improve process.
4. Managed	Policies and processes are documented, standardized, regularly updated and controls increasingly use automation.	• Procedures and controls are well documented and kept current. • Preventive and detective controls are employed, with greater use of automation to reduce human error. • Many metrics are used with a blend of automated and manual performance monitoring. • Best practices and/or benchmarking are used to Improve.
3. Defined	Policies and processes are documented, standardized and updated, e.g., annually with heavy reliance on manual processes.	• Procedures are well documented, but not kept current to reflect changing business needs. • Preventive and detective controls are employed, still reliant on manual activities. • Some metrics are used, but performance monitoring is still manual and/or infrequent. • Generally occurs during periodic (e.g., annual) policy and procedure renewal.
2. Repeatable	Some standard processes are defined and success depends largely on "tribal knowledge" and detective controls.	• Some standard procedures exist, relies on “tribal knowledge.” • Mostly detective are in place, minimal preventive controls, and highly manual. • Few performance metrics exist, thus performance monitoring is inconsistent or informal. • Most likely in reaction to audits or service disruptions.
1. Initial	Few processes are defined and success depends on individual effort and heroics.	• No formal procedures exist. • Controls are non-existent or primarily in reaction to a “surprise.” • There are no metrics or performance monitoring.

March 20, 2024

COSO 2013 Assessment of Entity Level Controls

City of Milwaukee
Employees' Retirement System

Table of Contents

Background 4
Findings & Observations – Executive Summary 5
Internal Control Assessment Objectives and Scope 6
Internal Controls Procedures Performed 8
Process Assessment – Executive Summary 9
Current Year Findings, Observations, Recommendations, and Management Responses 9
Closing 14
Appendix 15

Background

As part of the City of Milwaukee Employes' Retirement Systems (CMERS) 2023 Internal Audit Plan, a COSO 2013 Assessment of Entity Controls was performed during the period from October 2, 2023, through March 20, 2024. The COSO 2013 Assessment of Entity Controls was performed to benchmark CMERS' Entity Level Controls against leading practices of the Committee of Sponsoring Organizations of the Treadway Commission (COSO) Internal Control – Integrated Framework (2013). This assessment cannot be relied upon to disclose errors, fraud, or noncompliance with laws and regulations.

The internal control assessment was performed in accordance with statement on standards for consulting services established by the AICPA. CliftonLarsonAllen (CLA) was not engaged by CMERS to conduct a financial audit, for which the objective would be the expression of an opinion on the financial statements. Had we been hired to perform an audit of financial statement information in accordance with U.S. generally accepted auditing standards, other issues may have come to our attention that would have been reported to you. Therefore, we express no opinion on the effectiveness of CMERS's controls over all or any part of its financial statements.

CMERS's management agrees to assume all management responsibilities; oversee the services by designating an individual, preferably within senior management, who possesses suitable skill, knowledge, and/or experience to understand and oversee the services; evaluate the adequacy and results of the services; and accept responsibility for the results of the services. You are also responsible for establishing and maintaining internal controls, including the monitoring of ongoing activities.

In addition, the procedures performed by CLA are not a substitution for management's responsibility to maintain a system of controls to mitigate risk. The internal audit was designed to provide CMERS with insight to inherent and specific risks and deficiencies throughout the organization. Our procedures alone cannot identify errors, fraud and /or irregularities related to the scope of this project.

We appreciate the opportunity to assist CMERS in performing this assessment. Management and staff involved in the process were a pleasure to work with and very open to sharing their opinions and knowledge. This cooperation was invaluable to the outcome of this project. If you have any questions, please feel free to contact us for assistance.

Findings & Observations – Executive Summary

We appreciate the opportunity to assist CMERS's management as they continue to focus on improvements related to their internal control infrastructure. The members of management and staff we interviewed were a pleasure to work with and open to sharing their opinions and knowledge. Their cooperation was invaluable to the outcome of this project.

Overall, we thought individuals were very knowledgeable of the processes and procedures for which they are responsible and were able to provide the information needed to complete our assessment procedures in a timely and efficient manner.

Following the conclusion of our assessment and testing of CMERS Internal Control Environment, we identified No Internal Control or Design Deficiencies.

Internal Control Assessment Objectives and Scope

The objective of the COSO 2013 Controls Framework Assessment was to review and evaluate the Entity Level processes and controls that are in place against leading practices of the COSO Internal Control – Integrated Framework (2013). The focus of the assessment was to compare the organization's entity level controls against the 2013 COSO Framework (*Framework*)which includes 5 components according to its 17 principles and approximately 70 points of focus

Control Environment

1. The organization demonstrates a commitment to integrity and ethical values.
2. The board of directors demonstrates independence from management and exercises oversight of the development and performance of internal control.
3. Management establishes, with board oversight, structures, reporting lines, and appropriate authorities and responsibilities in the pursuit of objectives.
4. The organization demonstrates a commitment to attract, develop, and retain competent individuals in alignment with objectives.
5. The organization holds individuals accountable for their internal control responsibilities in the pursuit of objectives.

Risk Assessment

6. The organization specifies objectives with sufficient clarity to enable the identification and assessment of risks relating to objectives.
7. The organization identifies risks to the achievement of its objectives across the entity and analyzes risks as a basis for determining how the risks should be managed.
8. The organization considers the potential for fraud in assessing risks to the achievement of objectives.
9. The organization identifies and assesses changes that could significantly impact the system of internal control

Control Activities

10. The organization selects and develops control activities that contribute to the mitigation of risks to the achievement of objectives to acceptable levels.
11. The organization selects and develops general control activities over technology to support the achievement of objectives.
12. The organization deploys control activities through policies that establish what is expected and procedures that put policies into action.

Information and Communication

13. The organization obtains or generates and uses relevant, quality information to support the functioning of internal control.
14. The organization internally communicates information, including objectives and responsibilities for internal control, necessary to support the functioning of internal control.
15. The organization communicates with external parties regarding matters affecting the functioning of internal control.

Monitoring Activities

16. The organization selects, develops, and performs ongoing and/or separate evaluations to ascertain whether the components of internal control are present and functioning.
17. The organization evaluates and communicates internal control deficiencies in a timely manner to those parties responsible for taking corrective action.

Benefits: Internal control helps entities achieve important objectives and sustain and improve performance. COSO's *Internal Control—Integrated Framework (Framework)* enables organizations to effectively and efficiently develop systems of internal control that adapt to changing business and operating environments, mitigate risks to acceptable levels, and support sound decision making and governance of the organization.

The ***Framework*** assists management, boards of directors, external stakeholders, and others interacting with the CMERS in their respective duties regarding internal control without being overly prescriptive. It does so by providing both understanding of what constitutes a system of internal control and insight into when internal control is being applied effectively.

Internal Controls Procedures Performed

The CMERS COSO 2013 Assessment of Entity Level Controls was performed via virtual walkthroughs in collaboration with members of CMERS Executive Management.

Techniques used to assess the effectiveness of the internal controls, included:

1. Review of the COSO 2013 Framework tool with CMERS' Management and gain an understanding of the entity level controls currently in place.
2. Gathering evidence from management supporting the effectiveness of those controls that are in place.
3. For a select number of controls (4), sample test of the company's compliance with these selected controls and assessed their effectiveness; for the remainder of controls Internal Audit performed inquiry and inspection of supporting documentation.
4. Assessing the overall effectiveness of CMERS' Entity Level Control Environment according to COSO 2013 Controls Framework.

The following personnel participated in the COSO 2013 Internal Controls Framework Assessment:

- Jerry Allen, Executive Director
- Melody Johnson, Deputy Executive Director
- Dan Gopalan, ERS Chief Financial Officer
- Terry Siddiqui, IT Consultant

Process Assessment – Executive Summary

All but one of the processes assessed were rated as Defined Maturity*: Management has established defined, formalized processes, procedures, and transaction flows. This level of maturity is considered suitable for these control environments by management and internal audit.

COSO Control	COSO 2013 Control Objective	Control Description	Control Deficiency?	Process Maturity
CE 1	Annual review of BOD/Organization charters, including audit committee.	The Administrative & Operations (A&O) Committee and the Audit Committee Charter are reviewed and approved by the BOD on an annual basis.	**No**	**Defined**
CE 2	Monitoring of execution of Board Charters.	CMERS has developed an internal checklist to track and manage its annual BOD activities. All actions requiring BOD approval are recorded in the Committee minutes.	**No**	**Defined**
CE 3	Financial expert on the Audit Committee.	The City Comptroller is a permanent member of the A&O Committee.	**No**	**Defined**
CE 4	Succession planning for Board and Executive Management.	CMERS BOD members are either elected by the active members of the retirement system or elected or appointed by the Mayor of Milwaukee. In the event the Executive Director of CMERS becomes open, the Executive Deputy Director will assume responsibility according to the Rules defined in Chapter 36. CMERS has evaluated its personnel and have identified those individuals who could step in either replace or assume responsibility in the event of employee turnover.	**No**	**Defined**
CE 5	Employee acknowledgement of handbook and code of ethics.	Annually, employees are asked to review and acknowledge receipt and compliance with CMERS Basic Office Guidelines Policy and Protecting Personal and Private Information Policy.	**No**	**Defined**
CE 6	Approach to disciplinary action for employee violations of code of conduct.	Employee disciplinary action arising from conduct violations is governed and administered according to the Loudermill Hearing process. Upon an employee's termination, an employee exit checklist is completed, and an email is sent to the Department of Employee Relations to alert them to cancel that employee's payroll.	**No**	**Defined**

CE 7	Compensation Committee oversight of management compensation and incentives.	Compensation increases are determined by the Department of Employee Relations and approved by the Common Council. Increases typically fall into three categories; > Cost of Living Increases > Employee promotions > An employee chooses to live in the City of Milwaukee	**No**	**Defined**
CE 8	Defined procedures exist for hiring and recruiting.	The City of Milwaukee Department of Employee Relations (DER) has provided CMERS with detailed instructions for both the recruiting and hiring employees.	**No**	**Defined**
CE 9	Annual review of employee performance and compensation.	Before 2020, Employee Performance Evaluations were not required for City of Milwaukee Employees. Following the COVID-19 Pandemic and an interest of the City's workforce to work remotely, the City has decided to implement a Performance Evaluation Process.	**No**	**Defined**
CE 10	Organization charts are used to define roles and reporting structure.	CMERS maintains up to date organization charts that define organizational roles and responsibilities of its management and personnel.	**No**	**Defined**
CE 11	Employee job descriptions are defined.	Employee job descriptions within CMERS are defined and current.	**No**	**Defined**
CE 12	Management preparation of the Fraud Risk Assessment.	CMERS relies on several processes and systems that are provided by the City of Milwaukee to conduct its day-to-day operations. As these systems fall outside CMERS direct control, CMERS is unable to comprehensively assess and prepare a Fraud Risk Assessment. In lieu of a Fraud Risk Assessment, CMERS has developed and implemented preventative and detective internal controls to address the Risk of Fraud within those processes and systems that it has direct control. These controls are routinely evaluated and updated by management as needed.	**No**	**Defined**
CE 13	Board and management review of budget to actual for forecasts.	CMERS Management and its BOD reviews and approve the annual budget.	**No**	**Defined**

CE 14	Functioning whistleblower hotline exists.	A functioning employee hotline is provided by the City of Milwaukee to CMERS employees. CMERS employees are aware of the hotline and how to use it, if needed.	**No**	**Defined**
CE 15	Audit committee review of SOX scoping, risk assessment and materiality, including Audit Committee oversight of SOX testing and control deficiencies.	CMERS is not a publicly traded company and does not need to comply SOX. This control objective is **NOT APPLICABLE**. ***(1)*** ***(1)*** *SOX Compliance Control Objective has been included in the table for completeness as it is an integral part of the COSO 2013 Control framework.*	**N/A**	**N/A**
CE 16	Annual internal control testing to validate key control functioning.	An Audit Plan is prepared annually. The plan identifies those IT and Administrative processes that will be tested during the year. At the completion, an Audit Report is prepared that identifies any findings or procedural improvements.	**No**	**Defined**
CE 17	Independent internal audit function / activity, in-house or outsourced.	CMERS Audit Committee Charter provides for the use of an independent Internal Auditor. CMERS has chosen to utilize an Independent Third Party to provide Internal Audit Services to the organization.	**No**	**Defined**
CE 18	Monitoring of reports from external agencies, e.g., FDA or other regulators.	Monitoring and compliance with External Agencies (e.g., IRS Determination Letter) is monitored by CMERS Management.	**No**	**Defined**
CE 19	Delegation of authority matrix exists and is regularly reviewed.	CMERS Delegation of Authority Matrix is aligned with the City of Milwaukee directives and is effectively communicated within the organization. Only Authorized members of CMERS management are capable of approving vendor transactions.	**No**	**Defined**
CE 20	Management preparation of the Enterprise Risk Assessment with mitigation strategies or a strategic plan identifying key risks.	An Enterprise Risk Assessment is prepared every three years by CMERS Internal Audit department. The Risk Assessment is then used to develop a Three-Year Audit plan.	**No**	**Defined**

CE 21	Monitoring of financial reporting process.	The Financial Reporting process is monitored and reviewed by both CMERS Executive Management throughout the Calendar year.	**No**	**Defined**
CE 22	Accounting policies and procedures.	CMERS maintains detailed policies and procedures that ensure that organization's financial statements are properly prepared.	**No**	**Defined**
CE 23	IT systems are well controlled to support information management.	IT General Controls Environment and Security Infrastructure are regularly reviewed and updated to ensure that the environment and security measures are capable of meeting the needs of the organization and protecting its members Personal Identifiable Information.	**No**	**Defined**
***DEFINED MATURITY**	Policies and processes are documented, standardized, and updated, e.g., annually with heavy reliance on manual processes. ***See Appendix for all Maturity Definitions.***			

Following the conclusion of our testing of CMERS Internal Control Environment, we identified no internal control deficiencies.

Current Year Findings, Observations, Recommendations, and Management Responses

None.

Closing

We would like to acknowledge and thank management with whom we interacted. The time, effort, and discussions they provided were instrumental in our understanding and provided the necessary information to complete our project. During the course of our assessment, management and personnel provided all of the materials requested and answered all of our questions promptly.

* * * * * * * * *

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CliftonLarsonAllen LLP

March 20, 2024

Appendix

Maturity Definitions

Capability Level	Capability Description	Capabilities Attribute
5. Optimized	Policies and processes are continuously reviewed and improved within a highly automated control environment.	• Processes and controls are continuously reviewed and improved • Preventive and detective controls are highly automated to reduce human error and cost of operation. • Comprehensive, defined performance metrics exist, with extensive automated performance monitoring. • Extensive use of best practices, benchmarking, and/or self-assessment to continuously improve process.
4. Managed	Policies and processes are documented, standardized, regularly updated and controls increasingly use automation.	• Procedures and controls are well documented and kept current. • Preventive and detective controls are employed, with greater use of automation to reduce human error. • Many metrics are used with a blend of automated and manual performance monitoring. • Best practices and/or benchmarking are used to improve process
3. Defined	Policies and processes are established, are reviewed, and updated as needed (e.g., annually) to reflect changing business needs; preventive and detective controls are employed but are primarily reliant on manual activities; performance monitoring is performed using a mix of manual and automated processes.	• Procedures are well documented, but not kept current to reflect changing business needs. • Preventive and detective controls are employed, still reliant on manual activities. • Some metrics are used, but performance monitoring is still manual and/or infrequent. • Generally occurs during periodic (e.g., annual) policy and procedure renewal.
2. Repeatable	Some standard processes are defined, and success depends largely on "tribal knowledge" and detective controls.	• Some standard procedures exist, relies on “tribal knowledge.” • Mostly detective are in place, minimal preventive controls, and highly manual. • Few performance metrics exist, thus performance monitoring is inconsistent or informal. • Most likely in reaction to audits or service disruptions.
1. Initial	Few processes are defined and success depends on individual effort and heroics.	• No formal procedures exist. • Controls are non-existent or primarily in reaction to a “surprise.” • There are no metrics or performance monitoring.

March 20, 2024

Human Resources and Payroll Process Audit:

City of Milwaukee Employes' Retirement System

Prepared by:
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Table of Contents

Background 3
Internal Controls Assessment Objectives and Scope 4
Procedures Performed 5
Audit and Assessment Results – Executive Summary 6
Observations, Recommendations, and Management Responses 8
Closing 9
Appendix 10

Background

At the request and direction of the Administration and Operations (A&O) Committee, an audit of the Human Resources and Payroll Process and controls for the City of Milwaukee Employes' Retirement System (CMERS) was performed during the period from January 8, 2024, through March 20, 2024. The audit was requested to review, evaluate and test the organization's Human Resource and Payroll process against leading practices, test controls and determine whether control deficiencies existed within the internal control environment or whether there were identified control design or operating deficiencies. This audit cannot be relied upon to disclose errors, fraud, or noncompliance with laws and regulations.

We have concluded our consulting engagement to perform the procedures described in the attached report. These procedures, which were agreed to by CMERS, were applied solely to assist in evaluating the internal controls of CMERS. Management of CMERS is responsible for their operations and internal controls. The execution and maintenance of adequate internal controls is solely the responsibility of the management of CMERS. Consequently, we make no representations regarding the sufficiency of the procedures described in the attached document either for the purpose for which this report has been requested or for any other purpose.

CliftonLarsonAllen (CLA) was not engaged by CMERS to conduct a financial audit, for which the objective would be the expression of an opinion on the financial statements. Had we been hired to perform an audit of financial statement information in accordance with U.S. generally accepted auditing standards, other issues may have come to our attention that would have been reported to you. Therefore, we express no opinion on the effectiveness of CMERS's controls over all or any part of its financial statements.

Internal Controls Assessment Objectives and Scope

The objective of the Human Resource and Payroll Process Audit was to review, evaluate, and test processes and controls currently in place against leading practices and evaluate operating effectiveness. The focus of the assessment was to address the following risks:

1. Assess the suitability of the design for process and controls over Human Resource and Payroll Process, including the inherent risk of inaccurate payments and non-compliance with financial reporting requirements.
2. Assess the governance and accountability over the Human Resource and Payroll Process, as well as the inherent risks from misappropriation, fraud, and abuse.
3. Compare current state internal controls versus leading practices and test for operating effectiveness.
4. Propose future state changes that mitigate risk or enhance CMERS' internal control structure and outcomes.

<u>The following processes and sub-processes are in-scope, as well as segregation of duties in each area:</u>

The objective of the Human Resources and Payroll Process Audit included the review of processes and controls related to the design and test of operating effectiveness, including:

1. Human Resource Compliance with City Milwaukee Department of Employee Relations (DER)
    a. Background Check of Eligible Candidates
    b. Hiring, Transfer, and Promotion of Employees
    c. Termination of Employees
    d. Approval of Wage Increases

2. Payroll Process
    a. Employee Time Sheet Approval
    b. Payroll Reconciliation

3. System Access Restrictions
    a. User System Access Review and Approval
    b. Segregation of Duties

4. Organizational Resilience
    a. Review and Update of Standard Practice Instructions (SPIs)
    b. Cross Training Procedures

Procedures Performed

As part of the audit, various techniques were used to audit and assess the effectiveness of the internal controls, including:

1. Interviewed members of CMERS
    - Dan Gopalan, Chief Financial Officer
    - Terry Siddiqui, IT Consultant

2. Gathered supporting documents describing current state processes (e.g., policies, procedures, screenshots, flowcharts, reconciliations, analyses, etc.)

3. Gathered evidence and tested CMERS processes and controls for the following functions;
    - Human Resource Compliance with City of Milwaukee Department of Employee Relations (DER)
    - Payroll Process
    - System Access Restrictions
    - Organizational Resilience

4. Ranked current-state processes against five levels of maturity definition (1. Initial; 2. Repeatable; 3. Defined; 4. Managed; and 5. Optimized)

We would like to acknowledge and thank management with whom we interacted. The time, effort, and discussions they provided were instrumental in our understanding and provided the necessary information to complete our project. During the course of our assessment and audit, management and personnel provided all the materials requested and answered all of our questions promptly.

Audit and Assessment Results – Executive Summary

All the established processes and controls that were assessed during the audit were rated as Defined Maturity*: Management has established defined and documented formalized processes, procedures, and transaction flows that are regularly updated. This level of maturity is considered suitable for these control environments by management and internal audit.

Processes	Control Description	Control Deficiency?	Issues Identified	Process Maturity Level
Human Resource Compliance with City of Milwaukee Department of Employee Relations (DER)	Background checks are performed by the City of Milwaukee DER or their Service Provider for those individuals' seeking employment at CMERS. Employees passing the background check are then "eligible" to participate in the interview process. All new hires, hired at CMERS had the appropriate documentation required by the DER and exhibited the appropriate level of management approval.	**No**	**None**	**Defined**
	DER policies and documentation requirements surrounding the Hiring, Transfer and Promotion of Employees were properly prepared and exhibited the appropriate approval. Wage increases were properly approved by the CMERS Executive Director.	**No**	**None**	**Defined**
	CMERS employees whose employment terminated, followed DER and CMERS guidelines. The necessary documentation and checklists were properly followed to ensure access to CMERS offices and systems were properly secured in a timely manner.	**No**	**None**	**Defined**
	Prior to receiving an employee wage increase, an annual review of the employee's performance is conducted. Any employee wage increases are properly approved by the Executive Director and Deputy Director and are properly recorded in PeopleSoft.	**No**	**None**	**Defined**
Payroll Process	Weekly Time Sheets, including time-off requests, are properly approved by the appropriate member of management.	**No**	**None**	**Defined**
	Bi-weekly time reports are properly reviewed and approved by the appropriate member of CMERS management in PeopleSoft. Once complete, the Payroll Clerk performs a final review of the payroll report before it is submitted to the City of Milwaukee.	**No**	**None**	

Payroll Process	As an additional test of the control environment, CLA selected a sample of employees from a sample of pay periods and determined that the approved pay rates were properly reflected in each pay period and the employee's pay was properly calculated.	**No**	**None**	**Defined**
	Monthly, CMERS reimburses the City of Milwaukee for its operating expenses, including payroll expense, which has been incurred during the month. This reimbursement is reviewed by CMERS leadership for accuracy and completeness before payment is made.	**No**	**None**	**Defined**
System Access Controls	Employee access to CMERS systems is reviewed by management twice a year to ensure that ERS's employees and business partners have the appropriate system access, and that no "high-risk" Segregation of Duties conflicts exist.	**No**	**None**	**Defined**
Organization Resilience	Standard Practice Instructions (SPIs) are regularly reviewed and updated by management to reflect current processes and controls.	**No**	**None**	**Defined**
	Management regularly cross trains and evaluates department personnel as to their ability to competently perform duties outside of the employee's current role and responsibilities.	**No**	**None**	

PROCESS MATURITY DEFINITIONS	
***DEFINED MATURITY**	**Policies and processes are established and are reviewed and updated as needed (e.g., annually) to reflect changing business needs; preventive and detective controls are employed but are primarily reliant on manual activities; performance monitoring is performed using a mix of manual and automated processes.** ***See Appendix for all Maturity Definitions.***

Following the conclusion of our testing of CMERS Internal Control Environment, we identified No Internal Control Deficiencies.

Observations, Recommendations, and Management Responses

None.

Closing

We wish to extend our appreciation to management and staff for their timely cooperation and assistance during the project.

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CliftonLarsonAllen LLP
March 20, 2024

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1. Initial	Few processes are defined and success depends on individual effort and heroics.	• No formal procedures exist. • Controls are non-existent or primarily in reaction to a “surprise.” • There are no metrics or performance monitoring.

V.

NEW BUSINESS

A. Presentation by Larry Langer and Aaron Chochon of Cavanaugh Macdonald and Acceptance of 2024 Actuarial Valuation Report.
B. Retirements, Death Claims, and Refunds (May).
C. Conference Requests – June 2024 Board Meeting.
D. Approval of At Large Member Election Bulletin No. 198.

Cavanaugh Macdonald

CONSULTING, LLC

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Results of the January 1, 2024 Actuarial Valuation for the City of Milwaukee Employes' Retirement System

Presented by Larry Langer and Aaron Chochon

June 25, 2024

Purpose of an Actuarial Valuation

Performed Annually as of January 1

- Update previous valuation with Calendar Year 2023 events
- Comment on Calendar Year 2023 events that impacted the January 1, 2024 valuation
- Includes Funding and GASB Results

Funding Results

- Employer Contribution for Plan Year 2025 (January 1, 2025 through December 31, 2025)
- Funded status as of January 1, 2024
- UAAL (Unfunded Actuarial Accrued Liability) as of January 1, 2024
- Unless otherwise noted, this presentation focuses on Funding Results

GASB 67/68

- Accounting results as prescribed by the Governmental Accounting Standards Board for Pensions (67/68)
- Pension Expense and Net Pension Liability are analogous to Contribution and UAAL
- Note, the impact of Act 12 is first reflected in the December 31, 2023 GASB results

Purpose of the Actuarial Valuation

Section 36-15-15 of the Milwaukee City Charter requires the Actuary and Pension Board to "….prepare an annual valuation of the assets and liabilities of the funds of the retirement system". The primary purposes of performing a valuation are to:

- estimate the liabilities for future benefits expected to be paid by the System;
- determine the actuarially determined employer contributions required to fund the System on an actuarial basis in accordance with 2023 Wisconsin Act 12 (Act 12);
- disclose certain asset and liability measures, and the funded status, as of the valuation date;
- assess and disclose the key risks associated with funding the System;
- monitor any deviation between actual plan experience and experience projected by the actuarial assumptions, and
- analyze and report on any significant trends in contributions, assets and liabilities over the past several years.

Actuarial Valuation Process
Reserve Funding

Builds funds during working careers.

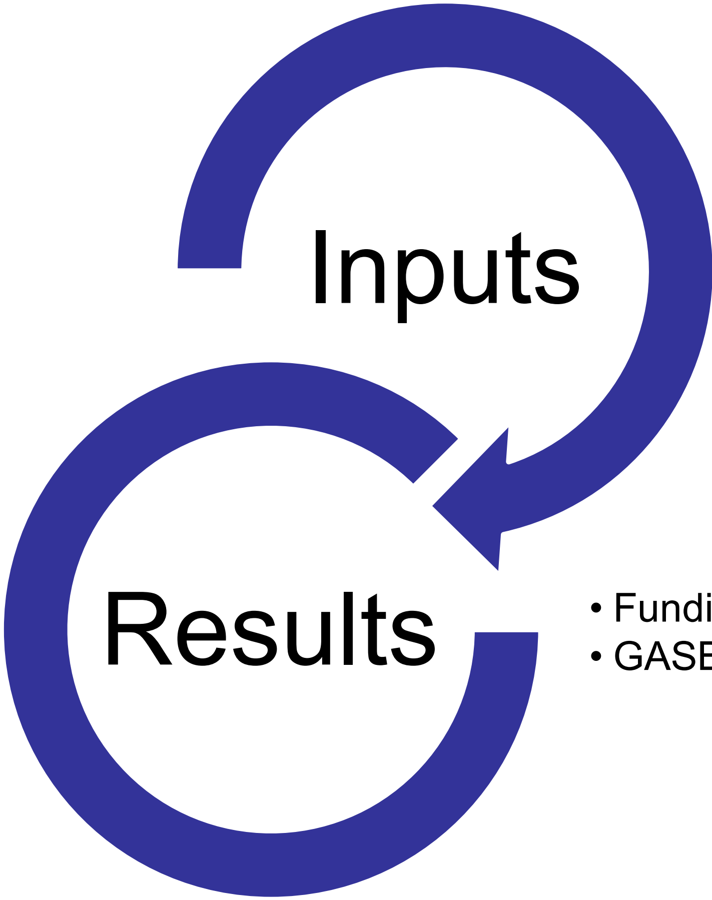
Investment returns help pay for benefits.

Actuarial valuation is mathematical model of financial future of system.

Actuarial cost method's goal is level contributions as percent of payroll.

Contribution equity among generations of active members and taxpayers.

Actuarial Valuation Process



- Member Data
- Asset Information
- Benefit Provisions
- Assumptions
- Actuarial Methods

- Funding Results
- GASB 67/68

The valuation process can be viewed as a budgeting process. Like a budget, we make use of information we know as of a certain date and using assumptions we estimate what we think will happen in the future.

To the right are the inputs and results of the valuation process.

Member Data, Asset Information and Benefit Provisions are provided by Staff. Thank you!!

Assumptions and Actuarial Methods will vary depending on the purpose of the calculation. Unless prescribed elsewhere, such as the investment return assumption and 30-year amortization policy under Act 12, these are determined by the Board of Trustees, with input from the actuary and other professionals.

Events During Calendar Year 2023 Which Impacted the January 1, 2024 Actuarial Valuation Results

Plan Experience	• Market return for Calendar Year 2023 of 9.98%, as reported by Northern Trust, was greater than the 6.80% assumption; Return on an actuarial basis was 7.64% due to scheduled recognition of deferred asset experience, resulting in an actuarial gain of $48.0 million • Larger cost-of-living adjustments and salary increases than expected, based on actuarial assumptions, resulted in an actuarial loss of $37.2 million on the System's liabilities
5.8% Employee Pension Contribution Offset Lawsuit	• Policemen and Firemen who are injured on the job and become totally and permanently disabled from performing their duties are entitled to duty disability retirement (DDR) benefits • Under collective bargaining agreements, certain members were entitled to a 5.8% pension contribution offset payment, which was originally excluded from DDR benefit determinations • It was recently ruled in court that the 5.8% employee pension contribution offset payment should be included. As a result, this increased DDR benefits for Policemen and Firemen, which increased the January 1, 2024 UAAL by 22.9 million • The cost will be paid by the Policemen and Firemen groups over a 10-year period, increasing the Plan Year 2025 contribution by $1.0 million for Policemen and $2.3 million for Firemen

Impact of Events during Calendar Year 2023 on the January 1, 2024 Actuarial Valuation Results

Funded Ratio	• The Funded Ratio increased slightly from 76.6% to 76.7% • The Market Value Funded Ratio increased from 72.4% to 74.0% due to asset returns
UAAL	• UAAL increased from $1.78 billion to $1.82 billion; $1.80 billion was expected
Employer Contribution	• Total actuarially determined employer contributions increased from $217.2 million for Plan Year 2024 to $220.6 million for Plan Year 2025
Future Results	• The UAAL is expected to increase while the funded ratio decreases as deferred investment experience from Calendar Year 2022 is recognized over the next three years

Change in UAAL

		($ in millions)
Unfunded Actuarial Accrued Liability as of 01/01/2023	$	1,783.6
- Expected Change		12.9
- Actual Contributions Versus Actuarial Contributions		(0.7)
- Investment Experience		(48.0)
- Demographic Experience		37.2
- 5.8% Employee Pension Contribution Offset Lawsuit		22.9
- Other Experience		13.0
Unfunded Actuarial Accrued Liability as of 01/01/2024	$	1,820.9

- The UAAL increased by $37.3 million primarily due to the 5.8% Employee Pension Contribution Offset Lawsuit and unfavorable liability experience during Calendar Year 2023 and was partially offset by actuarial investment experience

Change in Funded Ratio

	Funded Ratio Based On Actuarial Value of Assets	Market Value of Assets
January 1, 2023 Funded Ratio	76.6%	72.4%
- Expected Change	0.2%	0.0%
- Actual Contributions Versus Actuarial Contributions	0.0%	0.0%
- Investment Experience	0.5%	2.2%
- Demographic Experience	(0.3%)	(0.3%)
- 5.8% Employee Pension Contribution Offset Lawsuit	(0.3%)	(0.3%)
- Other Experience	0.0%	0.0%
- Total change	0.1%	1.6%
January 1, 2024 Funded Ratio	76.7%	74.0%

- On an Actuarial Basis, the Funded Ratio increased by 0.1% primarily due to investment experience.
- On a Market Value basis, the funded ratio increased by 1.6% due to investment returns.

Change in Employer Contribution

		($ Millions)
Actuarially Determined Employer Contribution for 2024 Plan Year	$	217.2
- Expected Change		0.0
- Change in Employer Normal Cost		(0.8)
- Actual Contributions Versus Actuarial Contributions		(0.1)
- Investment Experience		(3.8)
- Demographic Experience		5.2
- 5.8% Employee Pension Contribution Offset Lawsuit		3.3
- Other Experience		(0.4)
Actuarially Determined Employer Contribution for 2025 Plan Year	$	220.6

- The Actuarially Determined Employer Contribution increased by $3.4 million. This increase was primarily due to the 5.8% Employee Pension Contribution Offset Lawsuit and unfavorable liability experience during Calendar Year 2023.

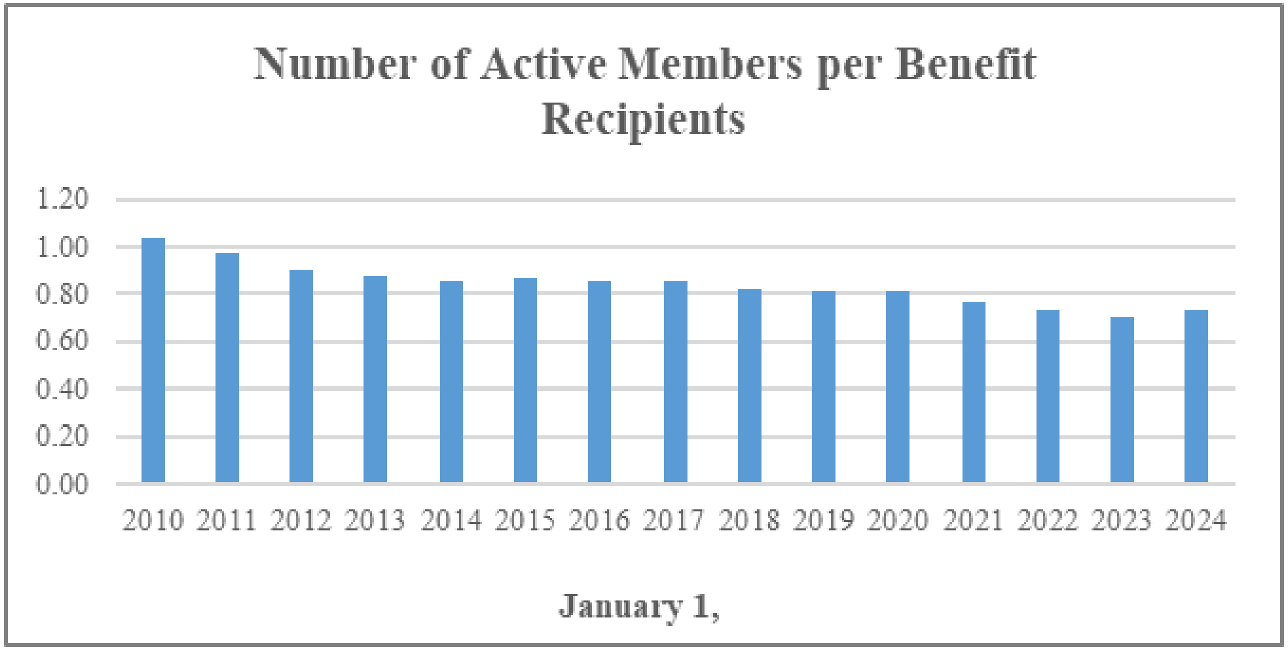
- Recall that the increases in the UAAL are amortized over a shorter period than decreases.

Comparative Summary of Census Data

	January 1, 2024	January 1, 2023	% Change
Membership Data			
a. Active Members			
(i) Count			
- General Employees	7,816	7,509	4.1%
- Policemen	1,601	1,592	0.6%
- Firemen	691	699	(1.1%)
- Total	10,108	9,800	3.1%
(ii) Total Estimated Payroll			
- General Employees	$453,218,000	$390,258,000	16.1%
- Policemen	147,304,000	146,653,000	0.4%
- Firemen	61,714,000	62,373,000	(1.1%)
- Total	$662,236,000	$599,284,000	10.5%
b. Retirees, Beneficiaries and Disabled Members			
(i) Number	13,867	13,853	0.1%
(ii) Total Annual Benefits	$465,940,000	$451,053,000	3.3%
(iii) Average Annual Benefit	$33,601	$32,560	3.2%

Additional summaries of census information submitted for the valuation can be found in the report.

Historical Census Data



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Active	10,675	10,964	10,982	11,083	10,845	10,851	10,974	10,567	10,094	9,800	10,108
In-Pay	12,468	12,580	12,746	12,872	13,181	13,355	13,543	13,636	13,747	13,842	13,867
Act/In-Pay	0.86	0.87	0.86	0.86	0.82	0.81	0.81	0.77	0.73	0.71	0.73

Employees hired after January 1, 2024 do not participate in CMERS. Therefore, active counts will decrease in the future.

Comparative Summary of Assets and Liabilities

	January 1, 2024	January 1, 2023	% Change
Assets and Liabilities			
a. Asset Values (includes contributions receivable)			
(i) Actuarial Value of Assets (AVA)	$6,008,486,000	$5,847,404,000	2.8%
(ii) Market Value of Assets (MVA)	$5,796,501,000	$5,525,958,000	4.9%
b. Actuarial Accrued Liability (AAL)	$7,829,371,000	$7,631,007,000	2.6%
c. Funded Status			
(i) Unfunded AAL (Based on AVA)	$1,820,885,000	$1,783,603,000	2.1%
(ii) Funded Ratio (Based on AVA)	76.7%	76.6%	0.1%
(iii) Unfunded AAL (Based on MVA)	$2,032,870,000	$2,105,049,000	(3.4%)
(iv) Funded Ratio (Based on MVA)	74.0%	72.4%	2.2%

- Like other public funds with January 1, 2024 valuation dates, the market value of assets experienced favorable returns during Calendar Year 2023.
- Liabilities grew more than expected due to larger cost-of-living adjustments and salary increases than expected according to the actuarial assumptions and the Lawsuit.
- The net result was a higher-than-expected UAAL and lower-than-expected Funded Ratio.

Market Value of Assets

1. Market Value of Assets as of January 1, 2023	$	5,525,958
2. Transfer of Assets as of January 1, 2023	$	0
3. Contributions During Year		
a. Member	$	32,688
b. Employer		171,042
c. Total	$	203,730
4. Disbursements During Year		
a. Monthly Annuities	$	466,604
b. Refunds		4,444
c. Administrative Expenses		8,015
d. Total	$	479,063
5. Investment Return (net of Investment Expenses)	$	545,876
6. Market Value of Assets as of December 31, 2023 (1) + (2) + (3c) - (4d) + (5)	$	5,796,501
7. Rate of Return, as Reported by Northern Trust (ERS' Custodian)		9.98%

Investment experience during 2023 was favorable.

Note the amount of contributions relative to disbursements. It is common in a mature plan for contributions to be less than disbursements, with investment returns making up the difference.

Over 98% of the assets are in the Combined Fund.

Actuarial Value of Assets

1. Actuarial Value of Assets as of January 1, 2023	$	5,847,404
2. Transfer of Assets as of January 1, 2023	$	0
3. Contributions During Year		
a. Member	$	32,688
b. Employer		171,042
c. Total	$	203,730
4. Disbursements During Year		
a. Monthly Annuities	$	466,604
b. Refunds		4,444
c. Administrative Expenses		8,015
d. Total	$	479,063
5. Investment Return (net of Investment Expenses)	$	436,415
7. Actuarial Value of Assets as of December 31, 2023 (1) + (2) + (3c) - (4d) + (5)	$	6,008,486
8. Estimated Rate of Return		7.64%

Return during 2023 was above the 6.80% assumed rate of return. As a result, the funded ratio using the actuarial value of assets increased.

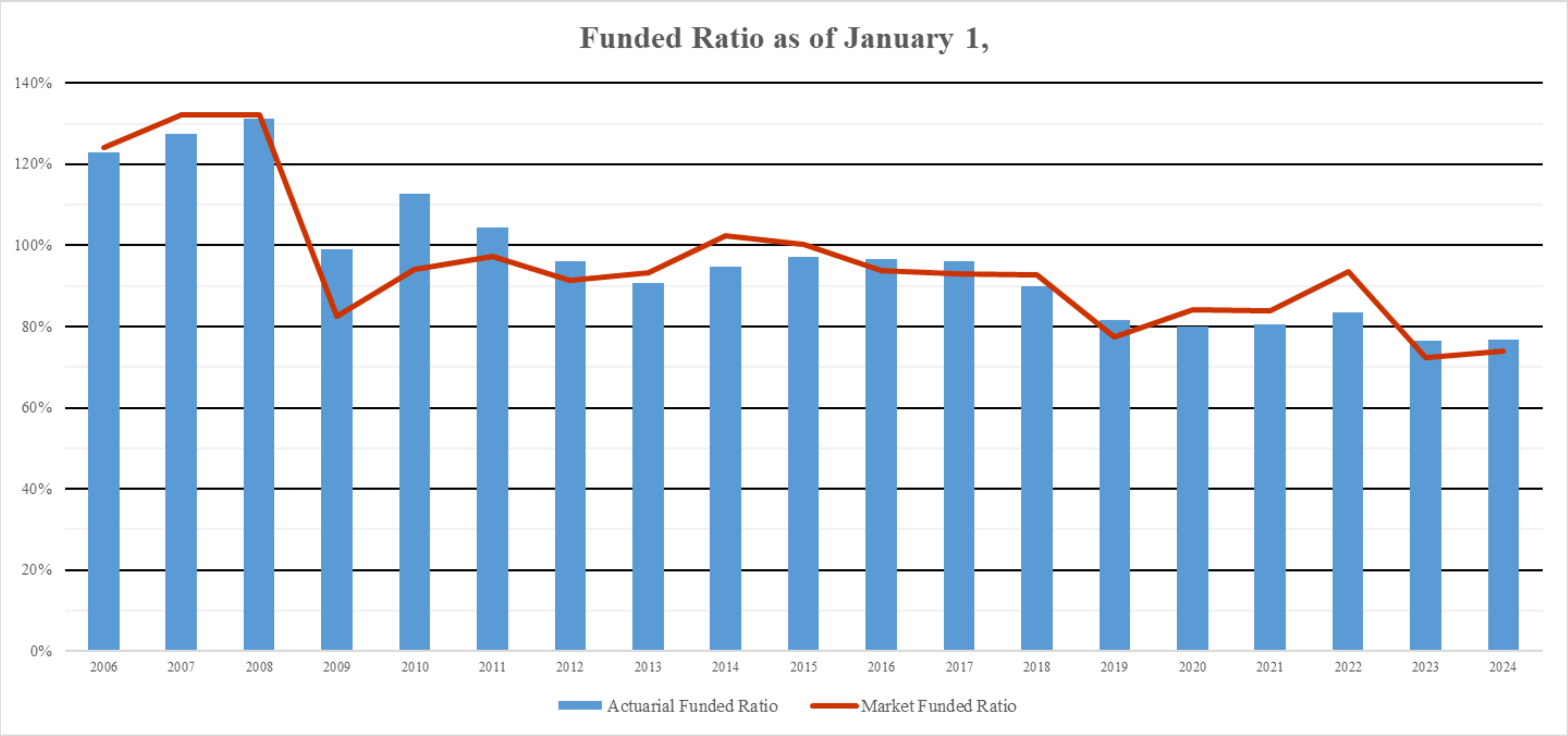
Note the amount of contributions relative to disbursements. It is common in a mature plan for contributions to be less than disbursements, with investment returns and accumulated assets making up the difference.

Over 98% of the assets are in the Combined Fund.

Historical Asset Returns

Returns on an actuarial basis are smoother than on a market basis, which results in increased contribution stability. Note that before 2010, a 10% corridor was used, resulting in more volatility. Use of an asset smoothing method is almost universal for public plans.

Historical Funded Ratio



The funded ratio over the period shown has reduced primarily due to the Great Recession of 2007 to 2009 and the reduction in the assumed rate of return from 8.50% in 2006 to 6.80% as of 2023.

Employer Contributions for Plan Year 2025 as of January 1, 2025

Total Employer Contribution Across All Funds

	Combined Fund	Retirement Fund	General Employees' Duty Disability Fund	Combined Retirement & Disability Fund	Total
Employer					
1) City of Milwaukee					
a) General*	$48,887,113	$5,795	$47	$103,990	$48,996,945
b) Policemen	86,552,616	0	0	42,461	86,595,077
c) Firemen	42,404,770	0	0	23	42,404,793
d) Total City	$177,844,499	$5,795	$47	$146,474	$177,996,815
2) Non-City Agencies					
a) Water Department	$4,550,018	$0	$0	$132	$4,550,150
b) School Board	28,002,464	14,672	201	109,858	28,127,195
c) Milwaukee Technical College	214,982	0	0	0	214,982
d) Sewerage Commission	5,373,803	0	0	3,308	5,377,111
e) Veolia	1,372,756	0	0	0	1,372,756
f) Wisconsin Center District	1,065,711	0	0	1,384	1,067,095
g) Housing Authority	1,893,932	0	0	1,442	1,895,374
h) Total Non-City	$42,473,666	$14,672	$201	$116,124	$42,604,663
3) Total System: 1d + 2h	$220,318,165	$20,467	$248	$262,598	$220,601,478

* Includes Elected Officials and Redevelopment Authority

Note: Amounts shown as of January 1, 2025. Interest accrues at 6.80% for contributions made after January 1, 2025.

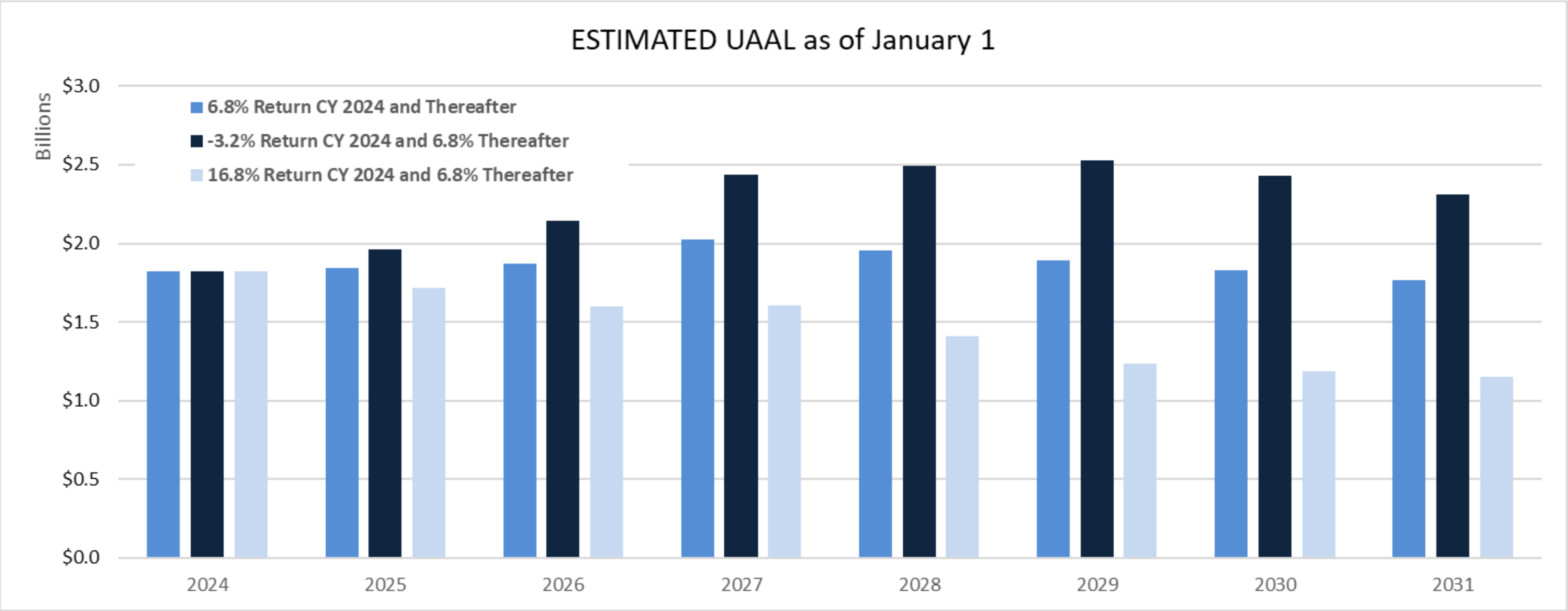
ESTIMATED Employer Contributions Allocated by Employer

Estimated Employer Contributions for Plan Years 2024-2028 as of January 1 Allocated by Employer	2024	2025	2026	2027	2028
1) City of Milwaukee					
a) General	$48,609,007	$48,996,945	$49,470,638	$50,160,682	$54,997,134
b) Policemen	86,009,793	86,595,077	89,707,240	92,761,990	102,704,367
c) Firemen	40,444,032	42,404,793	42,140,091	43,902,008	48,796,124
d) Total City	$175,062,832	$177,996,815	$181,317,969	$186,824,680	$206,497,625
2) Non-City Employers					
a) Water Dept	$4,493,408	$4,550,150	$4,616,287	$4,699,387	$5,170,056
b) School Board	27,499,578	28,127,195	28,341,020	28,687,093	31,290,381
c) Milwaukee Technical College	259,247	214,982	206,169	197,132	206,853
d) Sewerage Commission	5,564,646	5,377,111	5,423,956	5,498,016	6,048,451
e) Veolia	1,408,947	1,372,756	1,381,101	1,399,574	1,558,008
f) Wisconsin Center District	981,530	1,067,095	1,050,129	1,062,065	1,151,926
g) Housing Authority	1,951,107	1,895,374	1,924,332	1,965,095	2,170,259
h) Total Non-City	$42,158,463	$42,604,663	$42,942,994	$43,508,362	$47,595,934
3) Total System: 1d + 2h	$217,221,295	$220,601,478	$224,260,963	$230,333,042	$254,093,559

Note: Amounts are shown as of January 1 of each year. Contributions made after January 1 accrue with interest at 6.80%.

Contributions for Plan Years 2024 and 2025 are final. Future estimates will be replaced by actual amounts in future actuarial valuations. As we will see on slide 21, with the elimination of the Stable Employer Contribution Policy due to Act 12, there is the potential for significant employer contribution volatility.

ESTIMATED UAAL: Based on Calendar Year 2024 returns of 6.8%, -3.2% and 16.8%; and 6.8% Thereafter

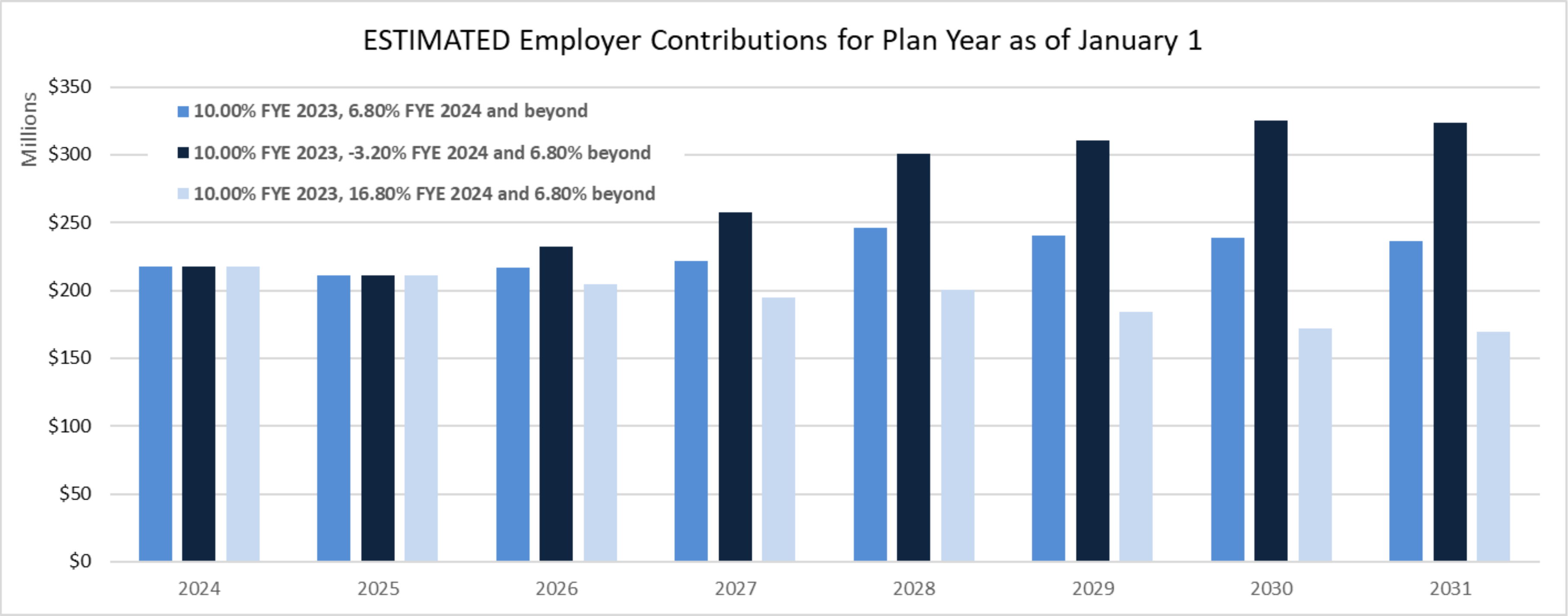


The graph above is an estimate of future UAAL under alternate investment returns in CY 2024 and 6.80% thereafter.

Under the five-year asset smoothing, the impact of returns that differ from the 6.80% return assumption is phased in over five years. This means that the full impact of the CY 2024 return will not be fully reflected until the January 1, 2029 actuarial valuation. The estimated UAAL is projected to increase over the period even if 6.80% is achieved in each of the following years due to unrecognized investment losses that occurred during CY 2022. These losses will continue to be recognized over the next three years.

Based on the level dollar amortization of the UAAL, the UAAL is expected to decrease absent these unrecognized asset losses.

ESTIMATED Employer Contributions: Based on Calendar Year 2024 returns of 6.8%, -3.2% and 16.8%; and 6.8% Thereafter



The graph above is an estimate of future Employer Contributions under alternate investment returns during CY 2024 and 6.80% thereafter.

Under the five-year asset smoothing, the impact of returns that differ from the 6.80% return assumption is phased in over five years. This means that the full impact of the CY 2024 return will not be fully reflected until the January 1, 2029 actuarial valuation, which sets the employer contribution for Plan Year 2030. The estimated employer contribution is projected to increase over the period even if 6.80% is achieved in each of the following years due to unrecognized investment losses that occurred during CY 2022. These losses will continue to be recognized over the next three years.

Based on the level dollar amortization of the UAAL and the closure of CMERS, we would expect Employer Contributions to decrease absent the unrecognized asset losses.

What a Difference a Year Makes

From left to right, we show estimated Employer Contributions from the Second 2023 and 2024 Actuarial Valuations.

All estimates are based on all assumptions being met.

Future expected contributions have increased since the Second 2023 Actuarial Valuation due to the 5.8% Employee Pension Contribution Offset Lawsuit and unfavorable liability experience.

The purpose here is a reminder that results will change from year-to-year. This volatility is why we perform actuarial valuations every year.

Key Takeaways

Both favorable and unfavorable experience during CY 2023.

5.8% Employee Pension Contribution Offset Lawsuit increased the UAAL by $22.8 million, which will be paid by increased Policemen and Firemen employer contributions over the next 10 years.

Returns in 2023 for CMERS, like many Funds, were higher than expected.

As noted in the projections, the UAAL is expected to increase over the next few years with Employer Contributions increasing.

Actuarial Certification

The results were prepared under the direction of actuaries who meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. These results have been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about them.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law.

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Questions?

Thank you!

Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

Employes' Retirement System of the City of Milwaukee

Actuarial Valuation Report of the 86th Annual Actuarial Valuation as of January 1, 2024 For Determining Actuarially Determined Employer Contributions For Plan Year 2025

June 14, 2024

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TABLE OF CONTENTS

Section	Page
Actuarial Certification Letter	
Section I – Executive Summary	1
Section II – Scope of the Report	9
Section III – Member Data Summary	11
Table 1 – Member Counts by Vested Status	11
Table 2 – Member Counts by Consent Status	12
Table 3 – Member Data Summary	13
Section IV – Asset Data	15
Table 4 – Market Value of Assets	16
Table 5 – Actuarial Value of Assets	17
Table 6 – Historical Asset Returns	18
Table 7 – Allocation of Assets Among Funds	19
Table 8 – Allocations Between Non-Consenters Who Consented to GPS During 2023 and Those Who Did Not	20
Section V – System Liabilities	21
Table 9 – Actuarial Accrued Liability by Employer	22
Table 10 – Funded Status on Actuarial and Market Value by Fund	23
Table 11 – Actuarial Balance Sheet	24
Table 12 – Calculation of Actuarial Gain/(Loss)	25
Table 13 – Expected Benefit Payments	26
Table 14 – Schedule of Funding Progress	27
Section VI – System Actuarially Determined Employer Contributions	29
Table 15 – Projected Unfunded Actuarial Accrued Liability by Fund	31
Table 16 – Projected UAAL for Each Participating Employer	32
Tables 17A-D – Amortization of the Unfunded Actuarial Accrued Liability	33
Tables 18A-D – Allocation of the 2025 Actuarially Determined Employer Contributions to Employers for Each Fund	38
Table 19 – Allocation of Total 2025 Actuarially Determined Employer Contributions to Individual Employers	42
Table 20 – Actuarially Determined Employer Contributions Eligible to be Paid From Act 12 Sales Tax	43
Section VII – Risk Considerations	45
Table 21 – Ratio of Active to Retiree Count	47
Table 22 – Historical Cash Flows	48
Table 23 – Liability Maturity Measurements	49
Table 24 – Comparison of Valuation Results for the Combined Fund Under Alternate Investment Return Assumptions	50

Appendices

A.	Membership Data	51
B.	Summary of Benefit Provisions	81
C.	Summary of Actuarial Methods and Assumptions	103
D.	Glossary of Terms	113

June 14, 2024

Annuity and Pension Board
Employes' Retirement System of the City of Milwaukee
789 North Water Street, Suite 300
Milwaukee, WI 53202

Members of the Board:

At your request, we performed this Eighty-Sixth Annual Actuarial Valuation of the Employes' Retirement System of the City of Milwaukee (referred to as "ERS" or "System") as of January 1, 2024 to be used for determining actuarially determined employer contributions for Plan Year 2025. For the purposes of this report, Plan Year 2025 refers to the allowable employer contribution window, as defined under Chapter 36 of the City Charter, beginning January 1, 2025 and ending December 31, 2025. The major findings of the valuation are contained in this report, which reflects the benefit provisions and funding policy in place on January 1, 2024.

The primary purposes of the valuation report are to determine the actuarially determined employer contribution for Plan Year 2025, to describe the current financial condition of ERS, and to analyze changes in such conditions. Use of this report for any other purposes, or by anyone other than ERS and its auditors, may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. Because of the risk of misinterpretation of actuarial results, you should ask Cavanaugh Macdonald Consulting (CavMac) to review any statement you wish to make on the results contained in this report. CavMac will not accept any liability for any such statement made without prior review.

In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by ERS staff. This information includes, but is not limited to, statutory provisions, member data and financial information. Although reviewed for reasonableness and consistency with the prior valuation, these elements have not been audited by CavMac and we cannot certify as to the accuracy and completeness of the data supplied. The valuation results depend on the integrity of this information. If any of the information is inaccurate or incomplete, our results may be different, and our calculations may need to be revised. The valuation results are also based on the actuarial assumptions, benefit provisions and funding policy as disclosed in this report. If you have reason to believe that the plan provisions are incorrectly described, that important plan provisions relevant to this valuation are not disclosed, or that conditions have changed since the calculations were made, you should contact the authors of this actuarial report prior to relying on this information.

The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C. We believe that these assumptions are appropriate and reasonable and also comply with all applicable Actuarial Standards of Practice (ASOPs). We certify that all costs and liabilities have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the plan and reasonable expectations) and which, in combination, offer the best estimate of anticipated experience affecting the plan. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that projected by the actuarial assumptions.

In order to prepare the results in this report, we have utilized appropriate actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the necessary results. Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period) and changes in plan provisions or applicable law. Due to the limited scope of this assignment, CavMac has not performed an analysis of the potential range of such future measurements.

Actuarial computations presented in this report are for purposes of evaluating the funding of the Plan and determining actuarially determined employer contributions for the following plan year. Actuarial computations for purposes of fulfilling financial accounting requirements under Governmental Accounting Standard Number 67 and 68 are provided in separate reports. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Plan's funding requirements and goals. Determinations for other purposes may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualifications Standards to render the actuarial opinions contained in this report. In addition, this report has been prepared in accordance with all applicable Actuarial Standards of Practice. We are available to answer questions about it or to provide additional information, as needed.

Respectfully submitted,

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Consulting Actuary

Aaron Chochon, ASA, EA, FCA, MAAA
Senior Actuary

SECTION I: EXECUTIVE SUMMARY

Introduction and Background

The law governing the Employes' Retirement System (ERS) requires the Actuary and Pension Board to "….prepare an annual valuation of the assets and liabilities of the funds of the retirement system" (Section 36-15-15 of the Milwaukee City Charter (MCC)). Cavanaugh Macdonald Consulting, the Actuary, has completed the eighty-sixth annual actuarial valuation of the ERS as of January 1, 2024. The primary purposes of performing a valuation are to:

- estimate the liabilities for future benefits expected to be paid by the System;
- determine the actuarially determined employer contributions required to fund the System on an actuarial basis in accordance with 2023 Wisconsin Act 12 (Act 12);
- disclose certain asset and liability measures, and the funded status, as of the valuation date;
- assess and disclose the key risks associated with funding the System;
- monitor any deviation between actual plan experience and experience projected by the actuarial assumptions, and
- analyze and report on any significant trends in contributions, assets and liabilities over the past several years.

Events Impacting this January 1, 2024 Actuarial Valuation for Determining Actuarially Determined Employer Contributions During Plan Year 2025

5.8% Employee Pension Contribution Offset Lawsuit (Lawsuit): The Milwaukee City Charter entitles Policemen and Firemen injured on the job to duty disability retirement (DDR) benefits. DDR benefits provide for monthly wage replacement payments to members who are unable to continue active service due to injuries sustained while on duty. Under collective bargaining agreements certain members were entitled to a 5.8% pension contribution offset payment. This 5.8% pension offset payment was not included in the development of the DDR benefits for these members. The court recently ruled that the pension offset amounts should be included in the calculation of these benefits. This ruling results in increased benefits for both current and potential future recipients of DDR benefits, as well as retroactive lump sum payments for members whose DDR benefit determination did not include the pension offset payment.

The increase in UAAL due to the Lawsuit will be amortized over a closed 10-year period, which is the period to be used for actuarial experience resulting in increased liabilities. Consideration was given to amortizing the impact over a period shorter than ten years used for plan provision changes affecting members in payment status as well. Given the ambiguity of the nature of the change, in our judgment a period of ten years or less is reasonable. Lawsuit resulted in an increase to the System's UAAL of $22.9 million, as well as an increase to the Plan Year 2025 actuarial determined employer contributions of $1.0 million for Policemen and $2.3 million for Firemen. The actuarial determined employer contribution amounts for all other employers were unaffected by the Lawsuit.

System Experience during 2023: System experience was mixed during 2023 as noted below:

- Investment Experience: There was favorable investment experience on the market value of assets during calendar year 2023, resulting in a return on assets of 9.98% as reported by Northern Trust. Due to the asset smoothing method the return on the actuarial value of assets was 7.64%, which is above the assumed rate of return of 6.80% for 2023. This resulted in an actuarial gain on assets.

- Liability Experience: Liability gains (losses) result from actual experience that results in lower (higher) liability than expected based on the actuarial assumptions. Overall, there was unfavorable experience during 2023 for the System's liabilities, as expressed by a larger actuarial accrued liability than expected. The largest sources of unfavorable experience were larger cost-of-living adjustments and salary increases than expected during 2023.

- The Global Pension Settlement (GPS) provides that members enrolled through June 28, 2000, must provide written consent to the ERS in order to be eligible for the benefit enhancements of GPS. Members enrolled after June 28, 2000 are automatically participants in the Combined Fund. Since the January 1, 2023 valuation, seven individuals who were eligible for ERS benefits as of June 28, 2000 – and who had not previously consented to GPS – have now consented. As a result, assets will be transferred from the non-consenter funds in which these members previously participated to the Combined Fund. Due to the small number of individuals who consented and the associated liability, this did not have a significant impact on the valuation results and we did not isolate the impact.

Fiscal Impact of Events

In this section, we discuss the fiscal impact of the events above on the UAAL, funded ratio and the actuarially determined employer contribution for CMERS.

A summary of the changes to the ***UAAL*** from the *Second* January 1, 2023 valuation to the January 1, 2024 valuations is shown in the table and discussion below:

		($ in millions)
Unfunded Actuarial Accrued Liability as of 01/01/2023	$	1,783.6
- Expected Change		12.9
- Actual Contributions Versus Actuarial Contributions		(0.7)
- Investment Experience		(48.0)
- Demographic Experience		37.2
- 5.8% Employee Pension Contribution Offset Lawsuit		22.9
- Other Experience		13.0
Unfunded Actuarial Accrued Liability as of 01/01/2024	$	1,820.9

The UAAL was ***expected*** to increase by 12.9 million during 2023 because the employer contributions for Plan Year 2023 were based on the *first* January 1, 2023 actuarial valuation, which was based on an investment return assumption of 7.50%.

Actual contributions which were greater than the actuarial determined employer contribution amount decreased the UAAL by $0.7 million

There was favorable ***investment experience*** on the market value of assets during calendar year 2023, resulting in a return on assets of 9.98% as reported by Northern Trust. Due to the asset smoothing method the return on the actuarial value of assets was 7.64%, which is above the assumed rate of return of 6.80% for 2023. As a result, the unfunded actuarial accrued liability decreased by $48.0 million. Due to the favorable investment experience on the market value of assets during 2023, the net deferred investment loss of $321 million in last year's valuation has decreased to $212 million. Absent offsetting favorable experience in the future, the net deferred investment loss will decrease the funded ratio and increase the actuarially determined employer contribution as it flows through the asset smoothing method.

The purpose of conducting an actuarial valuation of a retirement system is to estimate the costs and liabilities for the benefits provided by the system, to determine the annual level of actuarially determined employer contributions required to support these benefits and, finally, to analyze the system's actual experience as it compares with the actuarial assumptions used in the valuation. The costs and liabilities reported in the valuation depend not only upon the dollar amount of the benefits to be paid, but also upon factors such as mortality rates, termination rates, and retirement rates. The net liability ***demographic experience*** for the System during 2023 was an actuarial loss of $37.2 million. The largest sources of unfavorable experience were larger cost-of-living adjustments and salary increases than expected during 2023.

The ***5.8% Employee Pension Contribution Offset Lawsuit*** increased the UAAL by $22.9 million.

Other experience increased the UAAL by $13.0 million. This includes the impact due to seven ***GPS Non-consenters*** who elected to participate in the Combined Fund during 2023. They represent about 3% of the total non-consenters. Due to the small number of individuals who consented and the associated liability, this did not have a significant impact on the valuation results and we did not isolate the impact above. Other experience also includes the impact of transferring the assets under the Securities Lending Fund to the Global Combined Fund as of January 1, 2023 as directed by the Legislative Audit Bureau.

The ***funded ratio*** is the ratio of assets to the actuarial accrued liabilities of the System. Traditionally the measurement is based on the actuarial value of assets, but we have included the measurement on the market basis as well. Generally, increases in the UAAL result in decreases in the funded ratio. A summary of the changes to the funded ratio on both an actuarial and market basis from the *Second* January 1, 2023 valuation to the January 1, 2024 valuation is shown in the table and discussion below. Unless noted, our discussion focuses on the funded ratio based on actuarial value of assets:

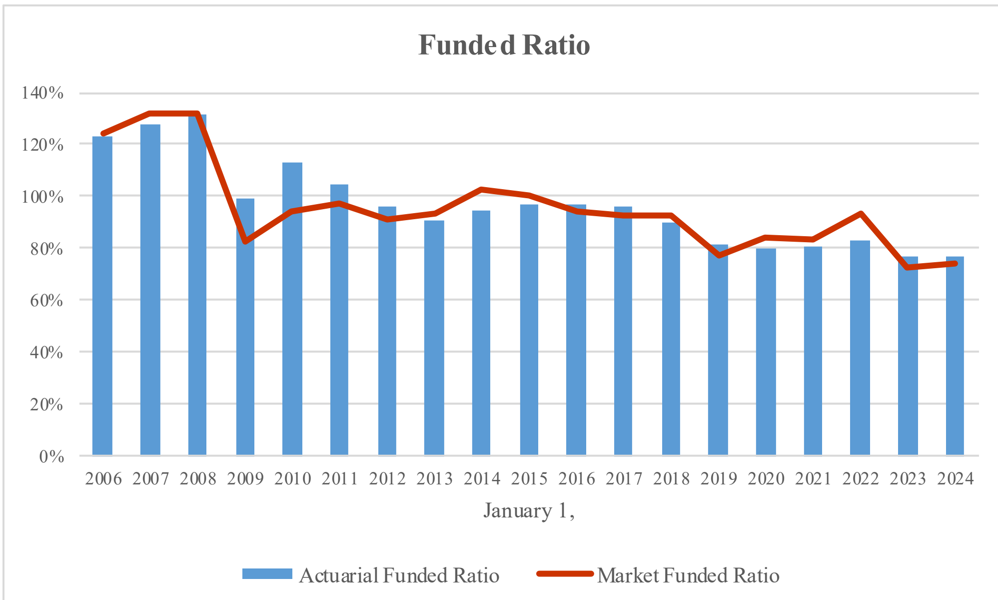
	Funded Ratio Based On	
	Actuarial Value of Assets	Market Value of Assets
January 1, 2023 Funded Ratio	76.6%	72.4%
- Expected Change	0.2%	0.0%
- Actual Contributions Versus Actuarial Contributions	0.0%	0.0%
- Investment Experience	0.5%	2.2%
- Demographic Experience	(0.3%)	(0.3%)
- 5.8% Employee Pension Contribution Offset Lawsuit	(0.3%)	(0.3%)
- Other Experience	0.0%	0.0%
- Total change	0.1%	1.6%
January 1, 2024 Funded Ratio	76.7%	74.0%

The funded ratio was ***expected*** to increase by 0.2% during 2023. ***Actual contributions***, which were greater than the actuarial determined employer contribution amount, were not significant enough to impact the funded ratio.

Investment experience on an actuarial, or smoothed, basis increased the funded ratio by 0.5% due to a

7.64% rate of return, which was greater than the 6.80% expected return for 2023. On a market basis, the increase was 2.2% due to the reflection of the 9.98% investment return during 2023. ***Demographic experience*** decreased the funded ratio by 0.3%. The ***5.8% Employee Pension Contribution Offset Lawsuit*** decreased the funded ratio by 0.3%.

The following graph shows the historical funded ratio using both the market value and actuarial value of assets.



Note that the funded ratio does not necessarily indicate whether or not additional funding is needed, nor does it indicate whether or not the plan has sufficient funds to settle all current obligations.

A summary of the changes in the ***Actuarially Determined Employer Contributions*** for the System is shown below:

		($ Millions)
Actuarially Determined Employer Contribution for 2024 Plan Year	$	217.2
- Expected Change		0.0
- Change in Employer Normal Cost		(0.8)
- Actual Contributions Versus Actuarial Contributions		(0.1)
- Investment Experience		(3.8)
- Demographic Experience		5.2
- 5.8% Employee Pension Contribution Offset Lawsuit		3.3
- Other Experience		(0.4)
Actuarially Determined Employer Contribution for 2025 Plan Year	$	220.6

The actuarial determined employer contribution amount is ***expected*** to be very stable from year-to-year due to the Systems' level-dollar UAAL amortization policy, with changes only expected to occur due to the elimination of amortization bases and changes in employer normal cost. ***Actual contributions,*** which were greater than the actuarial contribution rate, decreased the Plan Year 2025 actuarial determined employer contribution amount by $0.1 million.

Investment experience on an actuarial, or smoothed, basis resulted in a reduction of $3.8 million in the actuarial determined employer contribution as the actuarial return was above the assumed return of 6.80% for 2023. ***Demographic experience*** increased the actuarial determined employer contribution by $5.2 million. The changes due to the ***5.8% Employee Pension Contribution Offset Lawsuit*** increased the actuarial determined employer contribution by $3.3 million.

Other experience decreased the actuarial determined employer contribution by $0.4 million. This includes the impact due to seven ***GPS Non-consenters*** who elected to participate in the Combined Fund during 2023. Other experience also includes the impact of transferring the assets under the Securities Lending Fund to the Global Combined Fund as of January 1, 2023.

Summary of Key Valuation Results

This report, prepared as of January 1, 2024, presents the results of the eighty-sixth annual valuation of the System. The actuarially determined employer contributions for Plan Year 2025, which reflect the prescribed funding policy under 2023 Wisconsin Act 12 (Act 12), are summarized below:

Total Employer Contribution Across All Funds

	Combined Fund	Retirement Fund	General Employees' Duty Disability Fund	Combined Retirement & Disability Fund	Total
Employer					
1) City of Milwaukee					
a) General*	$48,887,113	$5,795	$47	$103,990	$48,996,945
b) Policemen	86,552,616	0	0	42,461	86,595,077
c) Firemen	42,404,770	0	0	23	42,404,793
d) Total City	$177,844,499	$5,795	$47	$146,474	$177,996,815
2) Non-City Agencies					
a) Water Department	$4,550,018	$0	$0	$132	$4,550,150
b) School Board	28,002,464	14,672	201	109,858	28,127,195
c) Milwaukee Technical College	214,982	0	0	0	214,982
d) Sewerage Commission	5,373,803	0	0	3,308	5,377,111
e) Veolia	1,372,756	0	0	0	1,372,756
f) Wisconsin Center District	1,065,711	0	0	1,384	1,067,095
g) Housing Authority	1,893,932	0	0	1,442	1,895,374
h) Total Non-City	$42,473,666	$14,672	$201	$116,124	$42,604,663
3) Total System: 1d + 2h	$220,318,165	$20,467	$248	$262,598	$220,601,478

* Includes Elected Officials and Redevelopment Authority

Note: Amounts shown as of January 1, 2025. Interest accrues at 6.80% for contributions made after January 1, 2025.

Key Takeaways

- The 5.8% Employee Pension Contribution Offset Lawsuit resulted in an increase to the System's UAAL of $22.9 million, as well as an increase to the Plan Year 2025 actuarial determined employer contributions of $1.0 million for Policemen and $2.3 million for Firemen.

- Due to the positive investment return on the market value of assets during 2023, the net deferred investment loss (actuarial value of assets greater than market value) of $321 million in last year's valuation has decreased to $212 million in the current valuation. Absent offsetting favorable experience in the future, the net deferred investment loss will decrease the funded ratio and increase the actuarially determined employer contribution as it flows through the asset smoothing method. While this will have a negative impact on future valuation results, other actuarial experience may offset the impact of the deferred investment losses.

At the February 27, 2023 Retirement Board meeting, one of our recommendations, which the Retirement Board adopted, was the use of a 10-year level dollar amortization of the UAAL if CMERS was closed. However, Act 12 prescribed a 30-year amortization of the January 1, 2024 UAAL, which is inconsistent with our recommendation. While not required under ASOP 4, we will be disclosing the actuarially determined employer contribution based on our pre-Act 12 recommendation of a closed 10-year amortization period using level dollar payments as adopted by the Retirement Board. Under a 10-year level dollar amortization policy, the actuarially determined employer contribution would increase by $106.8 million, from $220.6 million to $327.4 million.

A typical retirement plan faces many different risks. The term "risk" is most commonly associated with an outcome with undesirable results. However, in the actuarial world risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future actuarially determined employer contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. Actuarial Standard of Practice Number 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions. Risk evaluation is an important part of managing a defined benefit plan. Please see the Risk Considerations section of this report for an in-depth discussion of the specific risks facing CMERS.

We conclude this executive summary by presenting comparative statistics and actuarial information from both the *Second* January 1, 2023 and this January 1, 2024 valuations.

Summary of Principal Results

	January 1, 2024	January 1, 2023	% Change
1. Membership Data			
a. Active Members			
(i) Count			
- General Employees	7,816	7,509	4.1%
- Policemen	1,601	1,592	0.6%
- Firemen	691	699	(1.1%)
- Total	10,108	9,800	3.1%
(ii) Total Estimated Payroll			
- General Employees	$453,218,000	$390,258,000	16.1%
- Policemen	147,304,000	146,653,000	0.4%
- Firemen	61,714,000	62,373,000	(1.1%)
- Total	$662,236,000	$599,284,000	10.5%
b. Retirees, Beneficiaries and Disabled Members			
(i) Number	13,867	13,853	0.1%
(ii) Total Annual Benefits	$465,940,000	$451,053,000	3.3%
(iii) Average Annual Benefit	$33,601	$32,560	3.2%
2. Assets and Liabilities			
a. Asset Values (includes contributions receivable)			
(i) Actuarial Value of Assets (AVA)	$6,008,486,000	$5,847,404,000	2.8%
(ii) Market Value of Assets (MVA)	$5,796,501,000	$5,525,958,000	4.9%
b. Actuarial Accrued Liability (AAL)	$7,829,371,000	$7,631,007,000	2.6%
c. Funded Status			
(i) Unfunded AAL (Based on AVA)	$1,820,885,000	$1,783,603,000	2.1%
(ii) Funded Ratio (Based on AVA)	76.7%	76.6%	0.1%
(iii) Unfunded AAL (Based on MVA)	$2,032,870,000	$2,105,049,000	(3.4%)
(iv) Funded Ratio (Based on MVA)	74.0%	72.4%	2.2%
3. Total Employer Contribution (All Funds)*	Due 01/01/2025	Due 01/01/2024	
1) City of Milwaukee			
a) General*	$48,996,945	$48,609,007	0.8%
b) Policemen	86,595,077	86,009,793	0.7%
c) Fire	42,404,793	40,444,032	4.8%
d) City Subtotal	$177,996,815	$175,062,832	1.7%
2) Non-City Agencies			
a) Water Department	$4,550,150	$4,493,408	1.3%
b) School Board	28,127,195	27,499,578	2.3%
c) Milwaukee Technical College	214,982	259,247	(17.1%)
d) Sewerage Commission	5,377,111	5,564,646	(3.4%)
e) Veolia	1,372,756	1,408,947	(2.6%)
f) Wisconsin Center District	1,067,095	981,530	8.7%
g) Housing Authority	1,895,374	1,951,107	(2.9%)
3) Total	$220,601,478	$217,221,295	1.6%

* Interest accrues at 6.80% per year for contributions made after the due date shown above.

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SECTION II: SCOPE OF THE REPORT

This report presents the actuarial valuation of the Employes' Retirement System of the City of Milwaukee as of January 1, 2024, and reflects the statutory changes brought forth under Act 12, as well as any subsequent actions taken by the Annuity and Pension Board. This valuation was prepared at the request of the System's Annuity and Pension Board. The report is based on the funding policy, plan provisions, actuarial assumptions, and actuarial methods in effect as of January 1, 2024.

Please pay particular attention to our cover letter, where the guidelines employed in the preparation of this report are outlined. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings are based. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

A summary of the findings resulting from this valuation is presented in the previous section. Section III summarizes the membership data as of the valuation date. Section IV describes the assets and investment experience of the System. Sections V discloses the obligations (liabilities) of the System and Section VI includes the calculation of actuarially determined employer contributions for the following plan year. Section VII discloses key maturity measurements and discusses the key risks facing the funding of the System.

This report includes several appendices:

- Appendix A Schedules of valuation data classified by various categories of members.
- Appendix B A summary of the current benefit structure, as determined by the provisions of governing law on the valuation date.
- Appendix C A summary of the actuarial methods and assumptions used to estimate liabilities and determine actuarially determined employer contributions.
- Appendix D A glossary of actuarial terms.

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TABLE 1

Member Counts by Vested Status

	1/1/2024			1/1/2023
Number of Members	**Vested**	**Non-Vested**	**Total**	**Total**
Active				
- General Employees	5,143	2,673	7,816	7,509
- Policemen	1,338	263	1,601	1,592
- Firemen	514	177	691	699
- Total Active Members	**6,995**	**3,113**	**10,108**	**9,800**
Inactive				
- Deferred Retirees			3,658	3,578
- Refunds Payable			2,478	2,382
- Total Inactive Members			**6,136**	**5,960**
Benefit Recipients				
- Combined Fund				
General Employees			9,753	9,761
Policemen			2,675	2,670
Firemen			1,428	1,411
- Combined Fund Subtotal			13,856	13,842
- Retirement Fund			11	11
- Duty Disability Funds				
General Employees			0	0
Policemen			0	0
Firemen			0	0
- Duty Disability Funds Subtotal			0	0
- Firemen's Heart & Lung Fund			0	0
- Total Benefit Recipients			**13,867**	**13,853**
Total Membership			**30,111**	**29,613**

Note: Members are vested once they attain four years of service.

TABLE 2

Member Counts by Consent Status

	1/1/2024 Membership		
Number of Members	**Consenters**	**Others**	**Total**
Active			
- General Employees	7,784	32	7,816
- Policemen	1,600	1	1,601
- Firemen	691	0	691
- Total Active Members	**10,075**	**33**	**10,108**
Inactive			
- Deferred Retirees	3,478	180	3,658
- Refunds Due	2,476	2	2,478
- Total Inactive Members	**5,954**	**182**	**6,136**
Benefit Recipients			
- Combined Fund	13,856	NA	13,856
- Retirement Fund	NA	11	11
- Duty Disability Funds			
General Employees	0	0	0
Policemen	0	0	0
Firemen	0	0	0
- Duty Disability Funds Subtotal	0	0	0
- Firemen's Heart & Lung Fund	0	0	0
- Total Benefit Recipients	**13,856**	**11**	**13,867**
Total Membership	**29,885**	**226**	**30,111**

Notes: (1) In addition to the above, there are members who have separated from service without vested rights to either a pension or a refund of accumulated contributions. There is no current actuarial liability for such individuals, and their membership will be terminated if they do not return to active service within five years of their date of separation from ERS covered employment.

(2) Active members who worked fewer than 100 hours in the prior year, but who have not officially terminated employment are included in the count of inactives in Table 1 and Table 2. These members are not assumed to earn additional service in future years.

TABLE 3

Member Data Summary

	1/1/2024	1/1/2023
Projected Annual Earnings		
- General Employees	$ 453,218,000	$ 390,258,000
- Policemen	147,304,000	146,653,000
- Firemen	61,714,000	62,373,000
- Total Projected Annual Earnings	**$ 662,236,000**	**$ 599,284,000**
Average Projected Earnings		
- General Employees	$ 57,986	$ 51,972
- Policemen	$ 92,007	$ 92,119
- Firemen	$ 89,311	$ 89,232
Annual Benefit Payments Currently Being Made		
- Combined Fund	$ 465,663,000	$ 450,787,000
- Retirement Fund	$ 277,000	$ 266,000
- Duty Disability Funds		
General Employees	$ 0	$ 0
Policemen	0	0
Firemen	0	0
- Duty Disability Funds Subtotal	$ 0	$ 0
- Firemen's Heart & Lung Fund	$ 0	$ 0
- Total Benefit Payments	**$ 465,940,000**	**$ 451,053,000**

Notes: (1) "Projected Annual Earnings" represents the expected earnable compensation for the year following the valuation date.

(2) "Annual Benefit Payments Currently Being Made" equals 12 times the full December monthly payment. The amounts shown include all amounts payable by the ERS and have been reduced by workers' compensation offsets for members who are currently repaying a workers' compensation award.

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In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is January 1, 2024. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System, which are generally in excess of assets. The actuarial process then leads to a method of determining the actuarially determined employer contributions needed by members and the employer in the future to balance the System's assets and liabilities.

Market Value of Assets

The current market value represents the "snapshot" or "cash-out" value of System assets as of the valuation date. In addition, the market value of assets provides a basis for measuring investment performance during the year. Table 4 summarizes the change in the market value of assets from January 1, 2023 to January 1, 2024.

Actuarial Value of Assets

Neither the market value of assets, representing a "cash-out" value of System assets, nor the book values of assets, representing the cost of investments, may be the best measure of the System's ongoing ability to meet its obligations.

To arrive at a suitable value of assets for the actuarial valuation, a technique for determining the actuarial value of assets is used which dampens swings in the market value while still indirectly recognizing market values. Under the asset smoothing methodology, the difference between the actual and assumed investment return on the market value of assets is recognized evenly over a five-year period.

Table 5 shows the development of the actuarial value of assets as of the valuation date.

TABLE 4

Market Value of Assets
(Dollars in thousands)

	Global Combined Fund	Retirement Fund	Combined Retirement Fund	General Employees' Duty Disability Fund	Employers' Reserve Fund	Securities Lending Fund	Total
1. Market Value of Assets as of January 1, 2023	$ 5,427,104	$ 9,821	$ 5,987	$ 99	$ 80,739	$ 2,208	$ 5,525,958
2. Transfer of Assets as of January 1, 2023	$ 3,931	$ (1,654)	$ (24)	$ (45)	$ 0	$ (2,208)	$ 0
3. Contributions During Year							
a. Member	$ 32,687	$ 0	$ 1	$ 0	$ 0	$ 0	$ 32,688
b. Employer	170,822	0	220	0	0	0	171,042
c. Total	$ 203,509	$ 0	$ 221	$ 0	$ 0	$ 0	$ 203,730
4. Disbursements During Year							
a. Monthly Annuities	$ 466,506	$ 52	$ 46	$ 0	$ 0	$ 0	$ 466,604
b. Refunds	4,313	10	121	0	0	0	4,444
c. Administrative Expenses	8,015	0	0	0	0	0	8,015
d. Total	$ 478,834	$ 62	$ 167	$ 0	$ 0	$ 0	$ 479,063
5. Investment Return (net of Investment Expenses)	$ 539,933	$ 905	$ 662	$ 6	$ 4,370	$ 0	$ 545,876
6. Market Value of Assets as of December 31, 2023 (1) + (2) + (3c) - (4d) + (5)	$ 5,695,643	$ 9,010	$ 6,679	$ 60	$ 85,109	$ 0	$ 5,796,501
7. Rate of Return, as Reported by Northern Trust (ERS' Custodian)							9.98%

Note: Effective January 1, 2023, assets under the Securities Lending Fund were transferred to the Global Combined Fund.

TABLE 5
Actuarial Value of Assets
(Dollars in thousands)

1.	Market Value of Assets Available for Benefit Payments on January 1, 2023*	$	5,445,219
2.	Contributions During 2023**		203,730
3.	Benefit Payments and Administrative Expenses During 2023**		(479,063)
4.	Expected Investment Income at 6.80% on (1), (2) and (3)		361,068
5.	Expected Market Value of Assets Available for Benefit Payments on January 1, 2024	$	5,530,954
6.	Market Value of Assets Available for Benefit Payments on January 1, 2024*	$	5,711,392
7.	Excess/(Shortfall) of Investment Income		
	a. Year Ending 12/31/23: (6) - (5)	$	180,438
	b. Year Ending 12/31/22		(1,061,487)
	c. Year Ending 12/31/21		699,388
	d. Year Ending 12/31/20		4,009
	e. Year Ending 12/31/19		532,533
8.	Deferral of Excess/(Shortfall) of Investment Income		
	a. Year Ending 12/31/23 (80.0%)	$	144,350
	b. Year Ending 12/31/22 (60.0%)		(636,892)
	c. Year Ending 12/31/21 (40.0%)		279,755
	d. Year Ending 12/31/20 (20.0%)		802
	e. Year Ending 12/31/19 (0.0%)		0
	f. Total	$	(211,985)
10.	Preliminary Actuarial Value of Assets on January 1, 2024 (6) - (8f)	$	5,923,377
11.	Employers' Reserve Fund on January 1, 2024	$	85,109
12.	Final Actuarial Value of Assets on January 1, 2024 (10) + (11)	$	6,008,486
13.	Total Market Value of Assets on January 1, 2024	$	5,796,501
14.	Actuarial Value Divided by Market Value (12) ÷ (13)		103.7%
15.	Estimated Rate of Return		7.64%

* Excludes the Employers' Reserve Fund.

** Excludes cash flows, if any, from the Employers' Reserve Fund.

TABLE 6
Historical Asset Returns

The table below provides a history of the rate of return on the actuarial value and market value of assets. The current assumed rate of return is 6.80%. Note that the System utilized a 10% asset corridor prior to 2009, which impacted the calculation of the actuarial value of assets and, therefore, the return on the actuarial value of assets. Rates of return on a market value basis are provided by the System's custodian, Northern Trust.

Year	Actuarial Value of Assets	Market Value of Assets
2004	9.49%	12.61%
2005	15.34%	8.46%
2006	11.83%	15.13%
2007	10.17%	7.21%
2008	(17.88%)	(30.84%)
2009	22.62%	23.30%
2010	1.34%	13.86%
2011	(0.09%)	(1.43%)
2012	0.43%	13.88%
2013	12.85%	19.29%
2014	9.91%	5.09%
2015	7.00%	0.54%
2016	8.33%	8.83%
2017	9.09%	16.38%
2018	5.33%	(2.91%)
2019	6.94%	18.44%
2020	9.22%	6.62%
2021	11.76%	18.89%
2022	7.60%	(6.49%)
2023	7.64%	9.98%
Average*	7.15%	7.09%
Max	22.62%	23.30%
Min	(17.88%)	(30.84%)
Range	40.50%	54.14%

Note: Rates of return on Actuarial Value of Assets prior to 2018 were provided by the prior actuary.
* Average is calculated on a geometric basis.

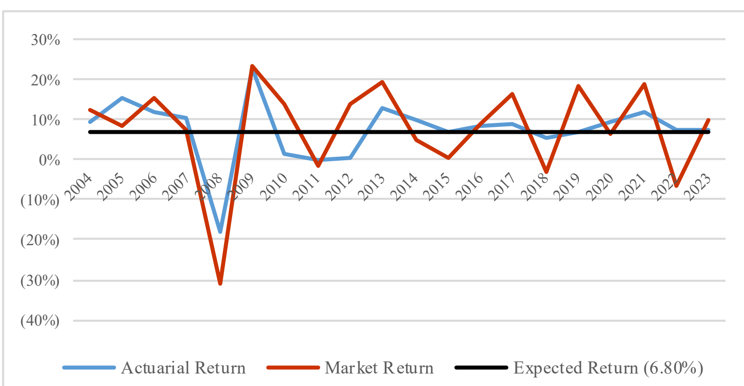


TABLE 7

Allocation of Assets Among Funds
(Dollars in thousands)

As part of the financial statements, the System provides a breakdown of the total market value of assets by Fund. The Employer Reserve Fund and Security Lending Fund are valued at market value for actuarial purposes and earmarked for specific purposes other than directly funding the benefits of the System's members. The actuarial value of assets is determined in total and then adjusted by subtracting the Employer Reserve Fund and Security Lending Fund. The remaining actuarial value of assets is then allocated to each Fund based on its portion of the total market value.

Fund	Market Value	Actuarial Value
1. Combined Fund	$ 5,695,643	$ 5,907,044
2. Employers' Reserve Fund	$ 85,109	$ 85,109
3. Retirement Fund	$ 9,010	$ 9,344
4. General Employees' Duty Disability Fund	$ 60	$ 62
5. Fire & Police Duty Disability Fund	$ 0	$ 0
6. Firemen's Heart & Lung Fund	$ 0	$ 0
7. Combined Retirement & Disability Fund	$ 6,679	$ 6,927
8. Securities Lending Fund	$ 0	$ 0
9. Total All Funds	$ 5,796,501	$ 6,008,486

Notes: Values shown include January 31, 2024 contributions receivable.
Effective January 1, 2023, assets under the Securities Lending Fund were transferred to the Global Combined Fund.

TABLE 8
Allocations Between Non-Consenters Who Consented to GPS During 2023 and Those Who Did Not
(Dollars in thousands)

The Global Pension Settlement (GPS) provides that members enrolled through June 28, 2000 must provide written consent to the ERS in order to be eligible for the benefit enhancements of GPS. Members enrolled after June 28, 2000 are automatically participants in the Combined Fund. Since the January 1, 2023 valuation, seven individuals who were eligible for ERS benefits as of June 28, 2000 – and who had not previously consented to GPS – have now consented.

GPS provides that the market value of the assets in the funds for Non-Consenters be divided among Consenters and Non-Consenters. The division is based on the actuarial accrued liability covered by each fund under the pre-GPS plan provisions. The required division of assets for members who consented during 2023 was calculated as of January 1, 2023. As a result, assets will be transferred from the non-consenter Funds in which these members previously participated to the Global Combined Fund, as shown below.

	Allocation of 1/1/2023 Market Value of Assets in Funds for Non-Consenters in Proportion to 1/1/2023 Actuarial Accrued Liability			Allocation of 1/31/2024 Employer Contribution to Funds for Non-Consenters in Proportion to 1/1/2023 Covered Compensation		
Fund	Consenters in 2023	Others	Total (Audited)	Consenters in 2023	Others	Total
1. Retirement Fund	$ 371	$ 9,450	$ 9,821	$ 0	$ 0	$ 0
2. General Employees' Duty Disability Fund	5	94	99	0	0	0
3. Fire & Police Duty Disability Fund	0	0	0	0	0	0
4. Firemen's Heart & Lung Fund	0	0	0	0	0	0
5. Combined Retirement & Disability Fund	274	5,713	5,987	8	212	220
6. Total Funds for Non-Consenters	$ 650	$ 15,257	$ 15,907	$ 8	$ 212	$ 220

Notes: (i) January 1, 2023 assets allocated to members who consented to Global Settlement during 2023 are transferred to the Combined Fund as of January 1, 2023.
(ii) January 31, 2024 Employer Contributions allocated to members who consented to Global Settlement during 2023 are credited to the Combined Fund instead of to the funds for non-consenters.

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of the System's assets as of the valuation date, January 1, 2024. In this section, the discussion will focus on the commitments (future benefit payments) of the System, which are referred to as its liabilities. All liabilities reflect the benefit provisions in place as of January 1, 2024.

Present Value of All Future Benefits (PVFB)

Table 9 contains an analysis of the actuarial present value of all future benefits (PVFB) for contributing members, inactive members, retirees and their beneficiaries.

The liabilities summarized in Table 9 include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes the measurement of both benefits already earned and future benefits to be earned. For all members, active and retired, the value extends over benefits earnable and payable for the rest of their lives and for the lives of the surviving beneficiaries.

Actuarial Accrued Liability (AAL)

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to the period in which benefits are earned, rather than to the period of benefit distribution. An actuarial cost method is a mathematical technique that allocates the present value of future benefits into annual costs. In order to do this allocation, it is necessary for the funding method to "breakdown" the present value of future benefits into two components:

(1) that which is attributable to the past and

(2) that which is attributable to the future.

Actuarial terminology calls the part attributable to the past the "past service liability" or the "actuarial accrued liability" or "AAL". The portion allocated to the future is known as the present value of future normal costs, with the specific piece of it allocated to the current year being called the "normal cost." Table 9 contains the calculation of actuarial accrued liability for the System. The Entry Age Normal actuarial cost method is used to develop the actuarial accrued liability.

TABLE 9
Actuarial Accrued Liability by Employer
(Dollars in thousands)

	General City*	Water Department	School Board	Milwaukee Technical College	Sewerage Commission	Veolia	Wisconsin Center District	Housing Authority	Policemen	Firemen	Total
1. Present Value of Future Benefits for Active Members											
a. Retirement Benefits	597,971	57,772	394,456	0	63,365	4,601	15,698	22,350	1,030,791	407,716	2,594,720
b. Withdrawal Benefits	44,456	4,533	33,211	0	5,716	0	1,788	1,317	19,783	5,854	116,658
c. Disability Benefits	10,117	1,044	6,989	0	1,154	14	343	316	26,226	45,488	91,691
d. Death Benefits	7,619	851	4,829	0	890	38	261	263	6,213	3,246	24,210
Total	660,163	64,200	439,485	0	71,125	4,653	18,090	24,246	1,083,013	462,304	2,827,279
2. Present Value of Future Normal Costs	197,044	20,506	137,087	0	22,319	321	7,436	5,953	383,318	188,354	962,338
3. Actuarial Accrued Liability (AAL) for Active Members (1) - (2)	463,119	43,694	302,398	0	48,806	4,332	10,654	18,293	699,695	273,950	1,864,941
4. Present Value of Future Benefits for Inactive Members											
- Members with Deferred Benefits	61,708	3,575	58,221	0	5,740	0	2,578	3,938	55,455	11,121	202,336
- Members with Refunds Payable	1,561	133	2,387	0	61	0	28	58	238	56	4,522
- Retirees, Beneficiaries and Disabled Members	1,321,493	116,431	600,474	12,358	155,989	66,748	15,880	51,251	2,230,896	1,186,052	5,757,572
Total	1,384,762	120,139	661,082	12,358	161,790	66,748	18,486	55,247	2,286,589	1,197,229	5,964,430
5. Total Actuarial Accrued Liability (3) + (4)	1,847,881	163,833	963,480	12,358	210,596	71,080	29,140	73,540	2,986,284	1,471,179	7,829,371

* Includes Elected Officials and Redevelopment Authority

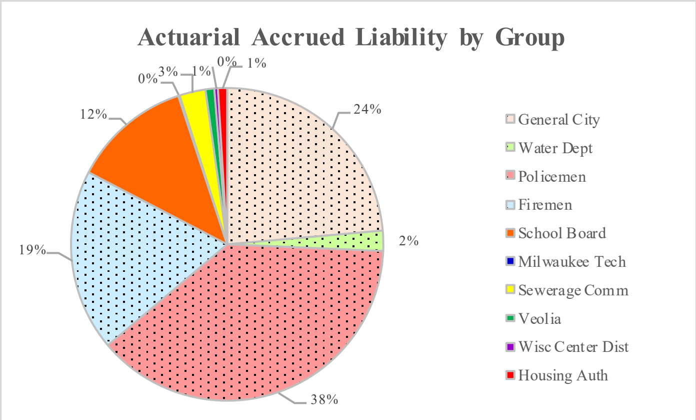


TABLE 10

Funded Status on Actuarial and Market Value by Fund
(Dollars in thousands)

Fund	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Market Value of Assets (MVA)	Unfunded Actuarial Accrued Liability Based on AVA (UAAL)	Unfunded Actuarial Accrued Liability Based on MVA (UAAL)	Percent Funded Based on AVA	Percent Funded Based on MVA
1. Combined Fund	$ 7,814,694	$ 5,907,044	$ 5,695,643	$ 1,907,650	$ 2,119,051	75.6%	72.9%
2. Employers' Reserve Fund	0	85,109	85,109	(85,109)	(85,109)	N/A	N/A
3. Retirement Fund	5,853	9,344	9,010	(3,491)	(3,157)	159.6%	153.9%
4. General Employees' Duty Disability Fund	4	62	60	(58)	(56)	1550.0%	1500.0%
5. Fire & Police Duty Disability Fund	0	0	0	0	0	N/A	N/A
6. Firemen's Heart & Lung Fund	0	0	0	0	0	N/A	N/A
7. Combined Retirement & Disability Fund	8,820	6,927	6,679	1,893	2,141	78.5%	75.7%
8. Securities Lending Fund	0	0	0	0	0	N/A	N/A
9. Total All Funds	$ 7,829,371	$ 6,008,486	$ 5,796,501	$ 1,820,885	$ 2,032,870	76.7%	74.0%

Note: Effective January 1, 2023, assets under the Securities Lending Fund were transferred to the Global Combined Fund.

TABLE 11

Actuarial Balance Sheet
As of January 1, 2024

The valuation balance sheet shows the assets and liabilities of ERS (in total, all employers and all Funds). The items shown in the balance sheet are present values actuarially determined as of the current valuation date.

ASSETS		
Actuarial Value of Assets		$ 6,008,486,000
Unfunded Actuarial Accrued Liability		1,820,885,000
Present Value of Future Normal Costs		$ 962,338,000
Total Assets		$ 8,791,709,000
LIABILITIES		
Present Value of Future Benefits		
Active members		
Retirement	$ 2,594,720,000	
Withdrawal	116,658,000	
Disability	91,691,000	
Death	24,210,000	
Total		$ 2,827,279,000
Inactive members		206,858,000
Retirees, disabilities and beneficiaries		5,757,572,000
Total Liabilities		$ 8,791,709,000

TABLE 12

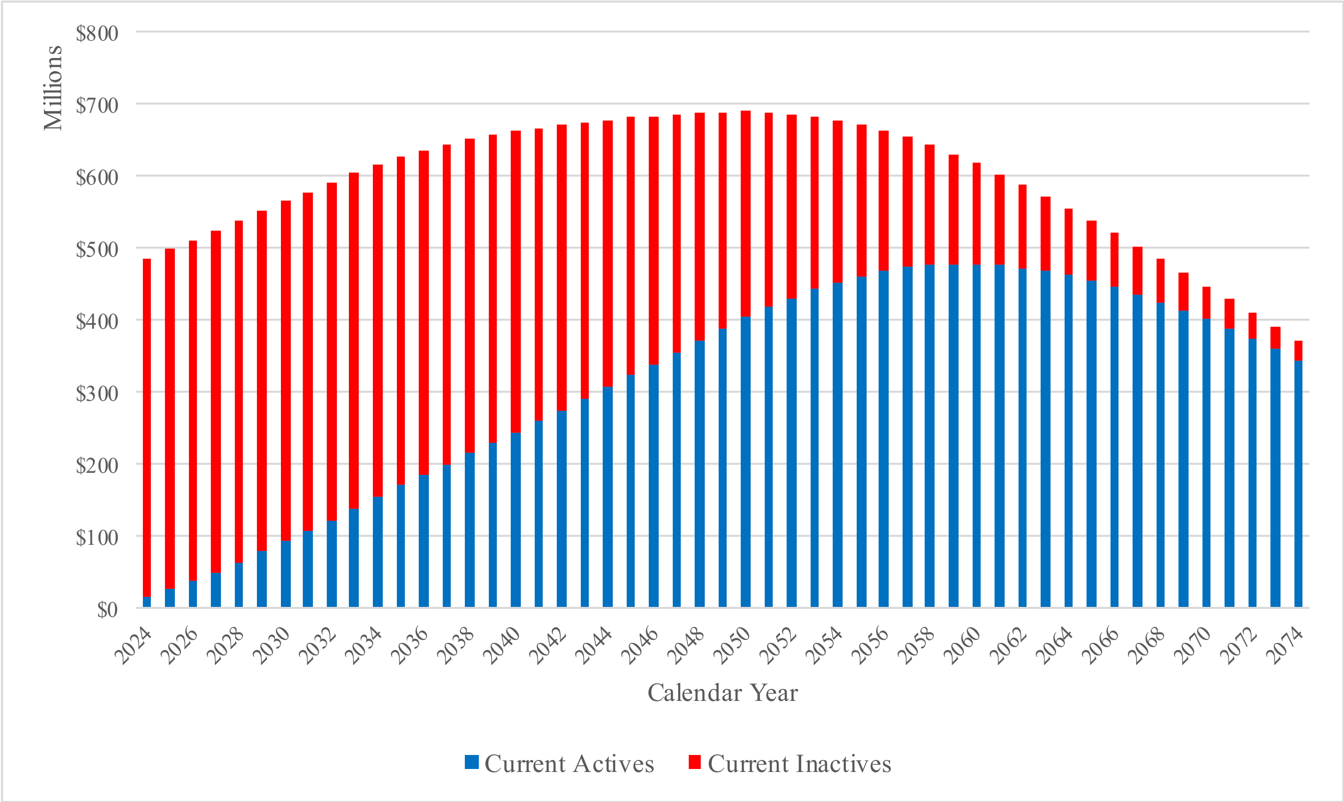
Calculation of Actuarial Gain/(Loss)

The overall actuarial gain/(loss) is comprised of both a liability gain/(loss) and an actuarial asset gain/(loss). Each of these represents the difference between the expected and actual values as of January 1, 2024.

Liabilities	
1. Actuarial Accrued Liability as of January 1, 2023	$7,631,007,000
2. Normal Cost During 2023	99,473,000
3. Benefit Payments During 2023	(471,048,000)
4. Interest on (1), (2) and (3) at 6.80%	509,920,000
5. 5.8% Employee Pension Contribution Offset Lawsuit	22,855,000
6. Expected Actuarial Accrued Liability as of January 1, 2024	$7,792,207,000
7. Actuarial Accrued Liability as of January 1, 2024	$7,829,371,000
Assets	
8. Actuarial Value of Assets as of January 1, 2023	$5,847,404,000
9. Contributions During 2023	203,730,000
10. Benefit Payments and Administrative Expenses During 2023	(479,063,000)
11. Interest on (8), (9) and (10) at 6.80%	388,416,000
12. Expected Actuarial Value of Assets as of January 1, 2024	$5,960,487,000
13. Actuarial Value of Assets as of January 1, 2024	$6,008,486,000
Gain / (Loss)	
14. Liability Gain/(Loss) (6) - (7)	($37,164,000)
15. Asset Gain/(Loss) (13) - (12)	$47,999,000
16. Total Gain/(Loss) (14) + (15)	$10,835,000

TABLE 13

Expected Benefit Payments



Note: Cash flows are the expected future non-discounted payments to current members. These numbers exclude refund payouts to current non-vested inactive members and assume all actuarial assumptions are met in the future, including the retirement assumption.

TABLE 14

Schedule of Funding Progress

(Dollars in thousands)

Valuation as of January 1	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio
2008	$ 5,192,000	$ 3,958,061	$ 0	131.2%
2009	4,076,297	4,113,089	36,792	99.1%
2010	4,814,402	4,269,324	0	112.8%
2011	4,641,425	4,447,548	0	104.4%
2012	4,404,635	4,587,915	183,280	96.0%
2013	4,259,889	4,689,814	429,925	90.8%
2014	4,580,729	4,831,689	250,960	94.8%
2015	4,797,437	4,935,482	138,045	97.2%
2016	4,899,155	5,065,141	165,986	96.7%
2017	5,055,700	5,259,300	203,600	96.1%
2018	5,233,486	5,819,762	586,276	89.9%
2019	5,219,184	6,400,901	1,181,717	81.5%
2020	5,285,205	6,597,457	1,312,252	80.1%
2021	5,440,867	6,745,299	1,304,432	80.7%
2022	5,734,986	6,875,927	1,140,941	83.4%
2023	5,847,404	7,067,109	1,219,705	82.7%
2023*	5,847,404	7,631,007	1,783,603	76.6%
2024	6,008,486	7,829,371	1,820,885	76.7%

* Due to the passage of 2023 Wisconsin Act 12, the investment return assumption was lowered from 7.5% to 6.8% and a second 2023 actuarial valuation report was issued for the primary purpose of determining the actuarial determined employer contribution amount for Plan Year 2024.

Note: Information prior to 2019 is from the prior actuary.

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SECTION VI: SYSTEM ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTIONS

The previous two sections were devoted to a discussion of the assets and liabilities of the System. A comparison of Tables 5 and Table 9 indicates that current assets fall short of meeting the present value of future benefits (total liability). This deficiency has to be made up by future actuarially determined employer contributions and investment income. An actuarial valuation sets out a schedule of future actuarially determined employer contributions that will deal with this deficiency in an orderly fashion.

The method used to determine the incidence of the contributions in various years is called the actuarial cost method. Under an actuarial cost method, the actuarially determined employer contributions required to meet the difference between current assets and current liabilities are allocated each year between two elements: (1) the normal cost and (2) the payment on the unfunded actuarial accrued liability. The actuarial cost method for the System is the traditional Entry Age Normal (EAN) level-percent of pay cost method. Under this EAN cost method, the actuarial present value of each member's projected benefits is allocated as a level-percent of their compensation from their entry age to their assumed exit age. The portion of the actuarial present value allocated to the valuation year is called the normal cost. The actuarial present value of benefits allocated to prior years of service is called the actuarial accrued liability. The unfunded actuarial accrued liability represents the difference between the actuarial accrued liability and the actuarial value of assets as of the valuation date. The unfunded actuarial accrued liability is calculated each year and reflects experience gains/losses.

On June 20, 2023, the Wisconsin Legislature enacted 2023 Wisconsin Act 12 (Act 12). In exchange for adopting the various restrictions to the City of Milwaukee under Act 12, some of which do not directly affect the System, the City was allowed to pass a sales tax which will help pay for the additional costs resulting from the lower assumed rate of return and the natural operation of a retirement system that is closed to future employees. This sales tax is set to expire once the Systems attains a 100% funded ratio or after 30 years has passed, whichever occurs first. For as long as the sales tax remains in place, Act 12 allows an amount of no more than 90% of the sales tax revenue collected in the first full calendar year (2024) to help fund certain costs under the System.

Act 12 eliminated the Stable Employer Contribution Policy that had been used to determine required employer contribution rates under the Combined Fund since 2013. In place of the Stable Employer Contribution Policy, Act 12 prescribed a new statutory policy which requires participating employers to contribute an actuarially calculated amount each year. At their July 24, 2023 meeting, the Board voted to adopt a one-year contribution lag upon the recommendation of their actuary. Therefore, the January 1, 2024 actuarial valuation will serve as the basis for determining the required employer contribution amounts for Plan Year 2025.

For purposes of calculating the Systems' unfunded actuarial accrued liability (UAAL) amortization payment, Act 12 stipulates that the projected January 1, 2024 UAAL, as calculated in the *second* January 1, 2023 actuarial valuation, be amortized as a level-dollar amount over a closed 30-year period (29 years remaining as of the January 1, 2024 actuarial valuation). Future changes in the System's UAAL are to be amortized in accordance with Actuarial Standards of Practice. The current amortization policies, which were adopted by the Board at its February 24, 2023 meeting and subsequently adjusted to reflect the changes under 2023 Wisconsin Act 12, include:

- Future increases in the Systems' UAAL resulting from experience losses will be amortized over a closed 10-year period.
- Future decreases in the System's UAAL resulting from experience gains will be amortized over either a closed 10-year period or the remainder of the 30-year period beginning on January 1, 2024, whichever is longer.

- If the UAAL is negative, all prior bases will be eliminated, and the participating employers will be required to contribute their share of the annual normal cost and administrative expenses. If the UAAL becomes positive again, it will be amortized over a closed 10-year period.
- Changes to the UAAL arising from changes to plan provisions will be amortized over various periods, depending on the nature of the change and which participants are affected.
- Changes to the UAAL arising from contributions which are above or below the actuarially determined employer contribution will be amortized over a closed 5-year period.

Please note that the use of closed amortization periods, coupled with the employers contributing the full actuarially determined contribution each year, will result in the Plan being fully funded at the end of the amortization period, if all actuarial assumptions are met. Due to the use of a level-dollar amortization method, contributions are expected to exceed normal cost plus interest on the UAAL each year.

Following this page are several tables which document the development of the elements of the actuarially determined employer contribution for each fund allocated by employer, The exhibits are as follows:

- Table 15 shows the development of the projected January 1, 2025 UAAL by Fund, which is the basis for the beginning of the year for which we are determining the actuarially determined employer contributions.
- Table 16 shows the development of the amounts in Table 15 by Fund for each participating employer.
- Tables 17A-D develop each employer's proportionate share of the total UAAL amortization payment under each Fund using the projected UAAL amounts from Table 15. These tables also show each employer's proportionate share of administrative expenses. Each employer's proportionate share is developed in accordance with the provisions under 2023 Wisconsin Act 12 and Board policy.
- Tables 18A-D show each employer's share of the total Actuarially Determined Employer Contribution amount under each Fund for Plan Year 2025. These amounts are allocated based on each employer's percentage share of the total AAL. Note that administrative expenses are allocated only to the Combined Fund.
- Table 19 shows the Actuarially Determined Employer Contribution by Employer for all Funds payable as of select dates. It is important to note that the amounts shown for January 1, 2025 are summarized from Tables 18A-D and the amounts shown for subsequent dates are adjusted for interest at 6.80%.
- Table 20 shows the amount of the Actuarially Determined Employer Contributions for Plan Year 2025 that are eligible to be paid from 2023 Wisconsin Act 12 Sales Tax Proceeds.

TABLE 15

Projected Unfunded Actuarial Accrued Liability at January 1, 2025 by Fund

	Combined Fund	Retirement Fund	General Employees Duty Disability Fund	Combined Retirement & Disability Fund	Total For All Funds
1. Actuarial Accrued Liability, January 1, 2024	$7,814,693,567	$5,853,036	$4,357	$8,820,043	$7,829,371,003
2. Normal Cost for 2024	104,025,892	38,220	266	209,737	104,274,115
3. Expected Benefit Payments During 2024	(486,777,861)	(199,390)	0	(76,836)	(487,054,087)
4. Interest at 6.80%	522,194,656	393,938	314	611,456	523,200,364
5. Projected Actuarial Accrued Liability, January 1, 2025	$7,954,136,254	$6,085,804	$4,937	$9,564,400	$7,969,791,395
6. Actuarial Value of Assets, January 1, 2024	$5,907,044,000	$9,344,000	$62,000	$6,927,000	$5,923,377,000
7. Expected Contributions During 2024	247,866,115	15,509	0	419,687	248,301,311
8. Expected Benefit Payments and Expenses During 2024	(494,993,236)	(199,390)	0	(76,836)	(495,269,462)
9. Interest at 6.80%	401,980,891	629,779	4,216	497,005	403,111,891
10. Projected Actuarial Value of Assets, January 1, 2025	$6,061,897,770	$9,789,898	$66,216	$7,766,856	$6,079,520,740
11. Projected Unfunded Actuarial Accrued Liability, January 1, 2025	$1,892,238,484	($3,704,094)	($61,279)	$1,797,544	$1,890,270,655
12. Projected UAAL Attributable to 5.8% Employee Pension Contribution Offset Lawsuit	24,409,462	0	0	0	24,409,462
13. Remaining Projected UAAL to be Allocated Across All Employers	$1,867,829,022	($3,704,094)	($61,279)	$1,797,544	$1,865,861,193

Note: The projected UAAL attributable to the 5.8% Employee Pension Contribution Offset Lawsuit is funded only by the Policemen and Firemen groups.

TABLE 16

Projected Unfunded Actuarial Accrued Liability at January 1, 2025 by Fund for Each Participating Employer

	City			Non-City Employers							
	General	Policemen	Firemen	Water Department	School Board	Milwaukee Technical College	Sewerage Commission	Veolia	Wisconsin Center District	Housing Authority	Total For All Employers
Combined Fund											
Actuarial Accrued Liability	1,861,285,411	3,055,177,436	1,495,156,377	166,685,786	977,924,858	11,529,421	210,895,508	70,486,986	30,133,878	74,860,593	7,954,136,254
Actuarial Value of Assets	1,422,646,814	2,329,722,946	1,130,503,464	127,406,459	747,477,914	8,812,525	161,198,208	53,876,803	23,032,862	57,219,775	6,061,897,770
Unfunded Actuarial Accrued Liability	438,638,597	725,454,490	364,652,913	39,279,327	230,446,944	2,716,896	49,697,300	16,610,183	7,101,016	17,640,818	1,892,238,484
5.8% Employee Pension Contribution Offset Lawsuit UAAL	N/A	7,608,658	16,800,804	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24,409,462
Remaining UAAL	438,638,597	717,845,832	347,852,109	39,279,327	230,446,944	2,716,896	49,697,300	16,610,183	7,101,016	17,640,818	1,867,829,022
Retirement Fund											
Actuarial Accrued Liability	1,686,591	549,237	109,101	0	3,541,524	0	116,510	0	60,830	22,011	6,085,804
Actuarial Value of Assets	2,713,126	883,527	175,505	0	5,697,055	0	187,423	0	97,854	35,408	9,789,898
Unfunded Actuarial Accrued Liability	(1,026,535)	(334,290)	(66,404)	0	(2,155,531)	0	(70,913)	0	(37,024)	(13,397)	(3,704,094)
General Employees' Duty Disability Fund											
Actuarial Accrued Liability	1,336	0	0	0	3,601	0	0	0	0	0	4,937
Actuarial Value of Assets	17,919	0	0	0	48,297	0	0	0	0	0	66,216
Unfunded Actuarial Accrued Liability	(16,583)	0	0	0	(44,696)	0	0	0	0	0	(61,279)
Combined Retirement & Disability Fund											
Actuarial Accrued Liability	3,655,690	1,481,041	1,686	9,360	3,985,679	0	235,447	0	92,907	102,590	9,564,400
Actuarial Value of Assets	2,968,635	1,202,693	1,369	7,601	3,236,606	0	191,197	0	75,446	83,309	7,766,856
Unfunded Actuarial Accrued Liability	687,055	278,348	317	1,759	749,073	0	44,250	0	17,461	19,281	1,797,544
Total for All Funds	438,282,534	725,398,548	364,586,826	39,281,086	228,995,790	2,716,896	49,670,637	16,610,183	7,081,453	17,646,702	1,890,270,655

TABLE 17A

Amortization of Unfunded Actuarial Accrued Liability (UAAL)
(Combined Fund)

The table below provides the calculation of the UAAL amortization payment for the Combined Fund, applicable for Plan Year 2025.

Amortization Base	Original Amount	Projected Balance as of January 1, 2025	Remaining Amortization Period	Annual Payment*
2024 UAAL Base**	$ 1,894,284,452	$ 1,873,497,597	29	$ 140,073,219
2025 Experience Base	(5,668,575)	(5,668,575)	29	(423,815)
2025 Pension Offset Lawsuit - Policemen	7,608,658	7,608,658	10	1,004,970
2025 Pension Offset Lawsuit - Firemen	16,800,804	16,800,804	10	2,219,092
Total		1,892,238,484		142,873,466
Amount for Allocating Across All Employers		**$ 1,867,829,022**		**$ 139,649,404**

* Reflects beginning of year timing.
** Due to the passage of Act 12 by the 2023 Wisconsin Legislature, the projected UAAL as of January 1, 2024 was re-amortized over a closed 30-year period.

TABLE 17A (Continued)

Amortization of Unfunded Actuarial Accrued Liability (UAAL)
(Combined Fund)

The table below provides the allocation of the UAAL payment and administrative expenses for all participating agencies. These figures include costs associated with the 5.8% Employee Pension Contribution Offset Lawsuit in 2023 for Policemen and Firemen.

Employer	Projected January 1, 2025 Unfunded AAL**	Employer Percentage Share	UAAL Payment***	Administrative Expenses
1) City of Milwaukee				
a) General*	$438,638,597	23.48%	$32,795,089	$1,913,530
b) Policemen	717,845,832	38.43%	54,675,162	3,131,552
c) Firemen	347,852,109	18.63%	28,226,472	1,517,481
d) Total City	$1,504,336,538	80.54%	$115,696,723	$6,562,563
2) Non-City Agencies				
a) Water Department	$39,279,327	2.10%	$2,936,743	$171,353
b) School Board	230,446,944	12.34%	17,229,510	1,005,309
c) Milwaukee Technical College	2,716,896	0.15%	203,130	11,852
d) Sewerage Commission	49,697,300	2.66%	3,715,650	216,801
e) Veolia	16,610,183	0.89%	1,241,871	72,461
f) Wisconsin Center District	7,101,016	0.38%	530,912	30,978
g) Housing Authority	17,640,818	0.94%	1,318,927	76,957
h) Total Non-City	$363,492,484	19.46%	$27,176,743	$1,585,711
Total: 1(d) + 2(h)	$1,867,829,022	100.00%	$142,873,466	$8,148,274

* Includes Elected Officials and Redevelopment Authority
** Does not include the projected UAAL attributable to the 5.8% Employee Pension Contribution Offset Lawsuit settled in 2023.
*** For Policemen and Firemen, includes an additional payment for the 5.8% Employee Pension Contribution Offset Lawsuit settled in 2023.
Note: Actual contribution requirement will be adjusted for the actual payment date of the contribution.

TABLE 17B

Amortization of the Unfunded Actuarial Accrued Liability (UAAL)
(Retirement Fund)

The tables below provide the calculation of the UAAL amortization payment for the Retirement Fund, applicable for Plan Year 2025, as well as the allocation of the UAAL payment and administrative expenses for all participating agencies.

Amortization Base	Original Amount	Projected Balance as of January 1, 2025	Remaining Amortization Period	Annual Payment*
2025 UAAL Base	$ (3,704,094)	$ (3,704,094)	N/A	$ 0
Total		**$ (3,704,094)**		**$ 0**

* Reflects beginning of year timing.

Employer	Projected January 1, 2025 Unfunded AAL	Employer Percentage Share	UAAL Payment	Administrative Expenses
1) City of Milwaukee				
a) General*	($1,026,535)	27.71%	$0	$0
b) Policemen	(334,290)	9.02%	0	0
c) Firemen	(66,404)	1.81%	0	0
d) Total City	($1,427,229)	38.54%	$0	$0
2) Non-City Agencies				
a) Water Department	$0	0.00%	$0	$0
b) School Board	(2,155,531)	58.19%	0	0
c) Milwaukee Technical College	0	0.00%	0	0
d) Sewerage Commission	(70,913)	1.91%	0	0
e) Veolia	0	0.00%	0	0
f) Wisconsin Center District	(37,024)	1.00%	0	0
g) Housing Authority	(13,397)	0.36%	0	0
h) Total Non-City	($2,276,865)	61.46%	$0	$0
Total: 1(d) + 2(h)	($3,704,094)	100.00%	$0	$0

* Includes Elected Officials and Redevelopment Authority
Note: Actual contribution requirement will be adjusted for the actual payment date of the contribution.

TABLE 17C

Amortization of the Unfunded Actuarial Accrued Liability (UAAL)
(General Employees Duty Disability Fund)

The tables below provide the calculation of the UAAL amortization payment for the General Employees Duty Disability Fund, applicable for Plan Year 2025, as well as the allocation of the UAAL payment and administrative expenses for all participating agencies.

Amortization Base	Original Amount	Projected Balance as of January 1, 2025	Remaining Amortization Period	Annual Payment*
2025 UAAL Base	$ (61,279)	$ (61,279)	N/A	$ 0
Total		**$ (61,279)**		**$ 0**

* Reflects beginning of year timing.

Employer	Projected January 1, 2025 Unfunded AAL	Employer Percentage Share	UAAL Payment	Administrative Expenses
1) City of Milwaukee				
a) General*	($16,583)	27.06%	$0	$0
b) Policemen	0	0.00%	0	0
c) Firemen	0	0.00%	0	0
d) Total City	($16,583)	27.06%	$0	$0
2) Non-City Agencies				
a) Water Department	$0	0.00%	$0	$0
b) School Board	(44,696)	72.94%	0	0
c) Milwaukee Technical College	0	0.00%	0	0
d) Sewerage Commission	0	0.00%	0	0
e) Veolia	0	0.00%	0	0
f) Wisconsin Center District	0	0.00%	0	0
g) Housing Authority	0	0.00%	0	0
h) Total Non-City	($44,696)	72.94%	$0	$0
Total	($61,279)	100.00%	$0	$0

* Includes Elected Officials and Redevelopment Authority
Note: Actual contribution requirement will be adjusted for the actual payment date of the contribution.

TABLE 17D

Amortization of the Unfunded Actuarial Accrued Liability (UAAL)
(Combined Retirement & Disability Fund)

The tables below provide the calculation of the UAAL amortization payment for the Combined Retirement and Disability Fund, applicable for Plan Year 2025, as well as the allocation of the UAAL payment and administrative expenses for all participating agencies.

Amortization Base	Original Amount	Projected Balance as of January 1, 2025	Remaining Amortization Period	Annual Payment*
2024 UAAL Base**	$ 2,836,969	$ 2,805,838	29	$ 209,780
2025 Experience Base	(1,008,294)	(1,008,294)	29	(75,386)
Total		**$ 1,797,544**		**$ 134,394**

* Reflects beginning of year timing.
** Due to the passage of Act 12 by the 2023 Wisconsin Legislature, the projected UAAL as of January 1, 2024 was re-amortized over a closed 30-year period.

Employer	Projected January 1, 2025 Unfunded AAL	Employer Percentage Share	UAAL Payment	Administrative Expenses
1) City of Milwaukee				
a) General*	$687,055	38.22%	$51,368	$0
b) Policemen	278,348	15.48%	20,811	0
c) Firemen	317	0.03%	23	0
d) Total City	$965,720	53.73%	$72,202	$0
2) Non-City Agencies				
a) Water Department	$1,759	0.10%	$132	$0
b) School Board	749,073	41.67%	56,005	0
c) Milwaukee Technical College	0	0.00%	0	0
d) Sewerage Commission	44,250	2.46%	3,308	0
e) Veolia	0	0.00%	0	0
f) Wisconsin Center District	17,461	0.97%	1,305	0
g) Housing Authority	19,281	1.07%	1,442	0
h) Total Non-City	$831,824	46.27%	$62,192	$0
Total	$1,797,544	100.00%	$134,394	$0

* Includes Elected Officials and Redevelopment Authority
Note: Actual contribution requirement will be adjusted for the actual payment date of the contribution.

TABLE 18A

Allocation of the January 1, 2025 Actuarially Determined Employer Contribution by Employer for the Combined Fund

	(1) Total Projected 2025 Normal Cost	(2) Projected Member Contributions	(3) = (1) - (2) Employer Share Projected 2025 Normal Cost	(4) Expected Administrative Expenses	(5) Employer Share UAAL Payment	(6) = (3)+(4)+(5) Total Employer Contribution
Employer						
1) City of Milwaukee						
a) General	$22,672,954	$8,494,460	$14,178,494	$1,913,530	$32,795,089	$48,887,113
b) Policemen	38,488,032	9,742,130	28,745,902	3,131,552	54,675,162	86,552,616
c) Firemen	16,799,711	4,138,894	12,660,817	1,517,481	28,226,472	42,404,770
d) Total City	$77,960,697	$22,375,484	$55,585,213	$6,562,563	$115,696,723	$177,844,499
2) Non-City Agencies						
a) Water Department	$2,308,130	$866,208	$1,441,922	$171,353	$2,936,743	$4,550,018
b) School Board	16,210,144	6,442,499	9,767,645	1,005,309	17,229,510	28,002,464
c) Milwaukee Technical College	0	0	0	11,852	203,130	214,982
d) Sewerage Commission	2,378,628	937,276	1,441,352	216,801	3,715,650	5,373,803
e) Veolia	82,330	23,906	58,424	72,461	1,241,871	1,372,756
f) Wisconsin Center District	815,000	311,179	503,821	30,978	530,912	1,065,711
g) Housing Authority	788,296	290,248	498,048	76,957	1,318,927	1,893,932
h) Total Non-City	$22,582,528	$8,871,316	$13,711,212	$1,585,711	$27,176,743	$42,473,666
3) Total System: 1d + 2h	$100,543,225	$31,246,800	$69,296,425	$8,148,274	$142,873,466	$220,318,165

Note: Amounts shown are as of January 1, 2025. Interest accrues at 6.80% per year for contributions made after January 1, 2025.

TABLE 18B

Allocation of the January 1, 2025 Actuarially Determined Employer Contribution by Employer for the Retirement Fund

	(1) Total Projected 2025 Normal Cost	(2) Projected Member Contributions	(3) = (1) - (2) Employer Share Projected 2025 Normal Cost	(4) Expected Administrative Expenses	(5) Employer Share UAAL Payment	(6) = (3)+(4)+(5) Total Employer Contribution
Employer						
1) City of Milwaukee						
a) General	$8,713	$2,918	$5,795	$0	$0	$5,795
b) Policemen	0	0	0	0	0	0
c) Firemen	0	0	0	0	0	0
d) Total City	$8,713	$2,918	$5,795	$0	$0	$5,795
2) Non-City Agencies						
a) Water Department	$0	$0	$0	$0	$0	$0
b) School Board	27,146	12,474	14,672	0	0	14,672
c) Milwaukee Technical College	0	0	0	0	0	0
d) Sewerage Commission	0	0	0	0	0	0
e) Veolia	0	0	0	0	0	0
f) Wisconsin Center District	0	0	0	0	0	0
g) Housing Authority	0	0	0	0	0	0
h) Total Non-City	$27,146	$12,474	$14,672	$0	$0	$14,672
3) Total System: 1d + 2h	$35,859	$15,392	$20,467	$0	$0	$20,467

Note: Amounts shown are as of January 1, 2025. Interest accrues at 6.80% per year for contributions made after January 1, 2025.

TABLE 18C

Allocation of January 1, 2025 Actuarially Determined Employer Contribution by Employer for the General Employees Duty Disability Fund

	(1) Total Projected 2025 Normal Cost	(2) Projected Member Contributions	(3) = (1) - (2) Employer Share Projected 2025 Normal Cost	(4) Expected Administrative Expenses	(5) Employer Share UAAL Payment	(6) = (3)+(4)+(5) Total Employer Contribution
Employer						
1) City of Milwaukee						
a) General	$47	$0	$47	$0	$0	$47
b) Policemen	0	0	0	0	0	0
c) Firemen	0	0	0	0	0	0
d) Total City	$47	$0	$47	$0	$0	$47
2) Non-City Agencies						
a) Water Department	$0	$0	$0	$0	$0	$0
b) School Board	201	0	201	0	0	201
c) Milwaukee Technical College	0	0	0	0	0	0
d) Sewerage Commission	0	0	0	0	0	0
e) Veolia	0	0	0	0	0	0
f) Wisconsin Center District	0	0	0	0	0	0
g) Housing Authority	0	0	0	0	0	0
h) Total Non-City	$201	$0	$201	$0	$0	$201
3) Total System: 1d + 2h	$248	$0	$248	$0	$0	$248

Note: Amounts shown are as of January 1, 2025. Interest accrues at 6.80% per year for contributions made after January 1, 2025.

TABLE 18D

Allocation of the January 1, 2025 Actuarially Determined Employer Contribution by Employer for the Combined Retirement and Disability Fund

	(1) Total Projected 2025 Normal Cost	(2) Projected Member Contributions	(3) = (1) - (2) Employer Share Projected 2025 Normal Cost	(4) Expected Administrative Expenses	(5) Employer Share UAAL Payment	(6) = (3)+(4)+(5) Total Employer Contribution
Employer						
1) City of Milwaukee						
a) General	$83,671	$31,049	$52,622	$0	$51,368	$103,990
b) Policemen	28,818	7,168	21,650	0	20,811	42,461
c) Firemen	0	0	0	0	23	23
d) Total City	$112,489	$38,217	$74,272	$0	$72,202	$146,474
2) Non-City Agencies						
a) Water Department	$0	$0	$0	$0	$132	$132
b) School Board	88,852	34,999	53,853	0	56,005	109,858
c) Milwaukee Technical College	0	0	0	0	0	0
d) Sewerage Commission	0	0	0	0	3,308	3,308
e) Veolia	0	0	0	0	0	0
f) Wisconsin Center District	743	664	79	0	1,305	1,384
g) Housing Authority	0	0	0	0	1,442	1,442
h) Total Non-City	$89,595	$35,663	$53,932	$0	$62,192	$116,124
3) Total System: 1d + 2h	$202,084	$73,880	$128,204	$0	$134,394	$262,598

Note: Amounts shown are as of January 1, 2025. Interest accrues at 6.80% per year for contributions made after January 1, 2025.

TABLE 19

Allocation of the Actuarially Determined Employer Contributions to Individual Employers

	Total Employer Contribution Across All Funds as of:				
	Jan 1, 2025	April 1, 2025	July 1, 2025	Oct 1, 2025	Dec 31, 2025
Employer					
1) City of Milwaukee					
a) General*	$48,996,945	$49,809,458	$50,635,445	$51,475,129	$52,328,737
b) Policemen	86,595,077	88,031,077	89,490,890	90,974,911	92,483,542
c) Firemen	42,404,793	43,107,989	43,822,846	44,549,557	45,288,319
d) Total City	$177,996,815	$180,948,524	$183,949,181	$186,999,597	$190,100,598
2) Non-City Agencies					
a) Water Department	$4,550,150	$4,625,605	$4,702,311	$4,780,289	$4,859,560
b) School Board	28,127,195	28,593,626	29,067,792	29,549,821	30,039,844
c) Milwaukee Technical College	214,982	218,547	222,171	225,855	229,600
d) Sewerage Commission	5,377,111	5,466,279	5,556,926	5,649,076	5,742,754
e) Veolia	1,372,756	1,395,520	1,418,662	1,442,188	1,466,104
f) Wisconsin Center District	1,067,095	1,084,791	1,102,780	1,121,067	1,139,658
g) Housing Authority	1,895,374	1,926,805	1,958,757	1,991,239	2,024,260
h) Total Non-City	$42,604,663	$43,311,173	$44,029,399	$44,759,535	$45,501,780
3) Total System: 1d + 2h	$220,601,478	$224,259,697	$227,978,580	$231,759,132	$235,602,378

* Includes Elected Officials and Redevelopment Authority

Note: Interest accrues at 6.80% per year for contributions made after January 1, 2025.
Amounts are not additive. Figures shown represent each employer's full actuarially determined employer contribution amount at the respective contribution dates.

TABLE 20

Actuarially Determined Employer Contributions Eligible to be Paid From 2023 Wisconsin Act 12 Sales Tax Proceeds

Wisconsin Act 12 of 2023 (Act 12) allows an amount of no more than 90% of the sales tax revenue collected in the first full calendar year (2024) to help fund the following costs under the System:

1. The City's share of the unfunded actuarial accrued liability (UAAL) as of January 1, 2024. This portion of the UAAL is to be amortized on a level-dollar basis over a closed, 30-year period using an assumed rate of return no greater than what has been adopted by the Wisconsin Retirement System.
2. The City's share of the cost of amortizing future changes to the UAAL. Future increases in the UAAL are to be amortized using the same basis as the January 1, 2024 UAAL, but over a closed 10-year period. Future decreases in the UAAL will be amortized over either a closed 10-year period or the remainder of the 30-year period beginning on January 1, 2024, whichever is longer.
3. The increase in normal costs attributable to the Combined Fund from 2022 to the present year for both the City and non-City employers.

Under Act 12, administrative expenses are to be included in all normal cost contributions. The following table shows the Plan Year 2025 contribution amounts for each employer that are eligible to be paid from the Act 12 sales tax proceeds. Amounts are shown as of January 1, 2025.

	Total Normal Cost for the Combined Fund Only			Total UAAL	
	2022 Total	2025 Total	Increase/ (Decrease)	Payment for All Funds	Total
1) City of Milwaukee					
a) General	$16,236,384	$24,586,484	$8,350,100	$32,846,457	$41,196,557
b) Policemen	33,883,422	41,619,584	7,736,162	54,695,973	62,432,135
c) Firemen	15,750,167	18,317,192	2,567,025	28,226,495	30,793,520
d) Total City	$65,869,973	$84,523,260	$18,653,287	$115,768,925	$134,422,212
2) Non-City Employers					
a) Water Dept	$1,729,279	$2,479,483	$750,204	N/A	$750,204
b) School Board	12,447,912	17,215,453	4,767,541	N/A	4,767,541
c) Milwaukee Technical College	0	11,852	11,852	N/A	11,852
d) Sewerage Commission	1,899,423	2,595,429	696,006	N/A	696,006
e) Veolia	85,835	154,791	68,956	N/A	68,956
f) Wisconsin Center District	503,437	845,978	342,541	N/A	342,541
g) Housing Authority	661,527	865,253	203,726	N/A	203,726
h) Total Non-City	$17,327,413	$24,168,239	$6,840,826	N/A	$6,840,826
3) Total System: 1(d) + 2(h)	$83,197,386	$108,691,499	$25,494,113	$115,768,925	$141,263,038

TABLE 20
(continued)

Actuarially Determined Employer Contributions Eligible to be Paid From 2023 Wisconsin Act 12 Sales Tax Proceeds

Development of 2022 Normal Cost

There are various methods for calculating the amount contributed to cover the normal cost expense during 2022 that could be utilized for this purpose. Two reasonable alternatives include:

1. Use the normal cost amount calculated for the January 1, 2022 actuarial valuation, which is based on the assumptions adopted by the Annuity and Pension Board (Board) in 2017 for the 2018 through 2022 actuarial valuations and the 7.50% investment return adopted by the Board for the 2019 through 2022 actuarial valuations.
2. Calculate the 2022 normal cost based upon the assumptions used for the development of the Stable Employer Contribution Rate in effect during plan years 2018 through 2022. These are the assumptions which were adopted by the Annuity and Pension Board (Board) in 2017 and include an investment return assumption of 8.00% for 2018 through 2022 and 8.25% thereafter.

Since the employer contributions to the Combined Fund for plan year 2022 are based on the Stable Employer Contribution Policy, our calculation is based on the second alternative. The Stable Employer Contribution Policy rates for 2018 through 2022 were developed by the prior actuary, and sufficient documentation indicating how to separate the individual contribution components, such as normal cost, was not provided. However, during the transition process we were able to replicate the prior actuary's results within reasonable limits. Therefore, we used the results of the January 1, 2022 actuarial valuation, which Cavanaugh Macdonald Consulting developed, and updated those results to reflect the prior actuary's investment return assumption (8.00% for 2018 through 2022 and 8.25% thereafter).

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September, 2017, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, was first applicable for the January 1, 2019 actuarial valuation for the Employes' Retirement System of the City of Milwaukee (System).

While actuarial assumptions allow for a projection of how future actuarially determined employer contributions and investment returns will meet the cash flow needs for future benefit payments, actual experience will not unfold exactly as anticipated by the assumptions. In this section, we discuss some of the risk factors that can have a significant impact – positive or negative – on the actuarial projection of liability and actuarially determined employer contributions .

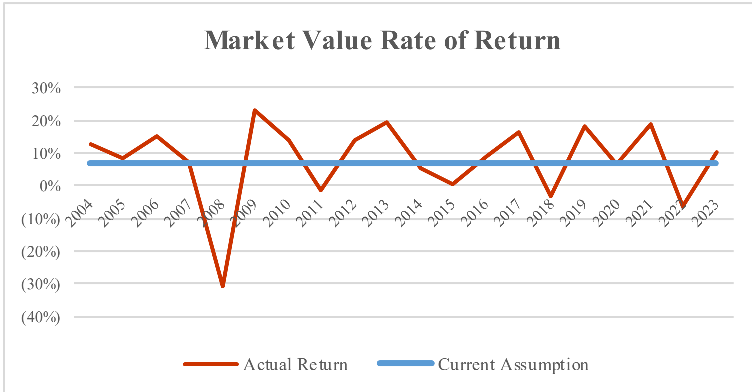
There are a number of risks inherent in the funding of a defined benefit plan. These include:
- economic risks, such as investment return and inflation;
- demographic risks such as mortality, payroll growth, aging population, and retirement ages;
- contribution risk like volatility making it difficult for the plan sponsor to fund the plan; and
- external risks such as the regulatory and political environment (not included in ASOP 51).

The last two are not risks that the actuary must opine on under ASOP 51.

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions of at least the full actuarially determined employer contributions each year. Under 2023 Wisconsin Act 12 (Act 12), the main source of funding for the System comes from the sales tax permitted under Act 12. This sales tax is currently set to expire once the System attains a 100% funded ratio or after 30 years have passed, whichever occurs first. Finally, Act 12 allows an amount of no more than 90% of the sales tax revenue collected in the first full calendar year (2024) to help fund the following costs under the System:
1. The City's share of the unfunded actuarial accrued liability (UAAL) as of January 1, 2024.
2. The City's share of the cost of amortizing future changes to the UAAL.
3. The increase in normal costs attributable to the Combined Fund from 2022 to the present year for both the City and non-City employers.

Currently, 90% of the sales tax revenue collected during 2024 is expected to be sufficient to fund all the eligible costs outlined above in the future. However, unfavorable asset or liability experience in the future may change this. Another factor that could significantly impact the System's costs is future changes to the investment return assumption. Under Act 12, the Systems' investment return assumption cannot be greater than the rate used by the Wisconsin Retirement System, and so ERS does not have full control over the most impactful assumption used in actuarial valuation. Please see Table 24 for an illustration of the cost impact due to lowering the investment return assumption based on the current valuation results.

The most significant risk factor for most plans is investment return because of the volatility of the returns and the size of an asset fund under a mature plan. A perusal of historical rates over 10-20 years reveals that the actual return each year is rarely close to the average return over the same period. This is an expected result given the underlying capital market assumptions and the asset allocation. However, the valuation is a measurement based on a single investment return, usually around the median of the distribution of returns. The magnitude of variations in investment returns and the short timeframe in which they occur makes the management of this risk very challenging. See the chart below for the historical rates of return over the past 20 years.



This metric means the same investment experience would move the actuarially determined employer contributions more significantly for CMERS as compared to most other public plans. For example, a return that is 10% lower than assumed (or -3.20%) equates to an actuarial loss of about $571 million. Given the amortization period of 10 years for actuarial losses, an increase of about $81 million each year for each of the next 10 years would be required to compensate for an investment return that is 10% below the assumed rate of return in just one year. Note that the System's asset smoothing method would initially dampen the contribution impact.

Under the revised Actuarial Standards of Practice (ASOP) No. 4 effective for valuations after February 15, 2023, we are required to include a low-default-risk obligation measure of the System's liability in our funding valuation report. This is an informational disclosure as described below and would not be appropriate for assessing the funding progress or health of the plan. This measure uses the unit credit cost method and reflects all the assumptions and provisions of the funding valuation except that the discount rate is derived from considering low-default-risk fixed income securities. We considered the FTSE Pension Discount Curve based on market bond rates published by the Society of Actuaries as of December 31, 2023 and with the 30-year spot rate used for all durations beyond 30. Using these assumptions, we calculate a liability of approximately $9.4 billion. This amount approximates the termination liability if the plan (or all covered employment) ended on the valuation date and all of the accrued benefits had to be paid with cash-flow matched bonds. This assurance of funded status and benefit security is typically more relevant for corporate plans than for governmental plans since governments rarely have the need or option to completely terminate a plan. However, this informational disclosure is required for all plans whether corporate or governmental and care should be taken to ensure the one size fits all metric is not misconstrued.

A key demographic risk for all retirement systems, including CMERS, is improvements in mortality (longevity) greater than anticipated. While the mortality assumption used in the valuation reflects some improvement in mortality experience and this assumption is evaluated and refined in each experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could rapidly improve mortality rates and increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, as experienced with the COVID-19 pandemic. This type of event is also significant, although more easily absorbed. While either of these events could happen, it represents a relatively small probability and thus represents much less risk than the volatility associated with investment returns.

As plan demographics change over time, along with the funded status, the risk factors may also change. The following exhibits summarize certain historical information that provide an indication as to how key risk metrics have changed over time.

TABLE 21

RATIO OF ACTIVE TO RETIREE COUNT

The System has experienced a 13% decline in the active membership over the past 14 years which can create more volatility (risk) on the actuarially determined employer contributions to fund the System. Given the closure of the plan to new hires as of January 1, 2024 due to Act 12, we expect an accelerated reduction in this ratio over the upcoming years.

Valuation Date January 1	Active Count	In-Pay Count	Active/ In-Pay
2010	11,664	11,178	1.04
2011	11,247	11,542	0.97
2012	10,767	11,937	0.90
2013	10,714	12,109	0.88
2014	10,675	12,468	0.86
2015	10,964	12,580	0.87
2016	10,982	12,746	0.86
2017	11,083	12,872	0.86
2018	10,845	13,181	0.82
2019	10,851	13,355	0.81
2020	10,974	13,543	0.81
2021	10,567	13,636	0.77
2022	10,094	13,747	0.73
2023	9,800	13,842	0.71
2024	10,108	13,867	0.73

Note the ratio of active members to benefit recipients is not as critical for ERS as it is for, say, Social Security. The Plan has been funded, in advance, precisely for this reason and those assets exist to help pay the benefits of members. It is, however, a sign of the maturity of the System.

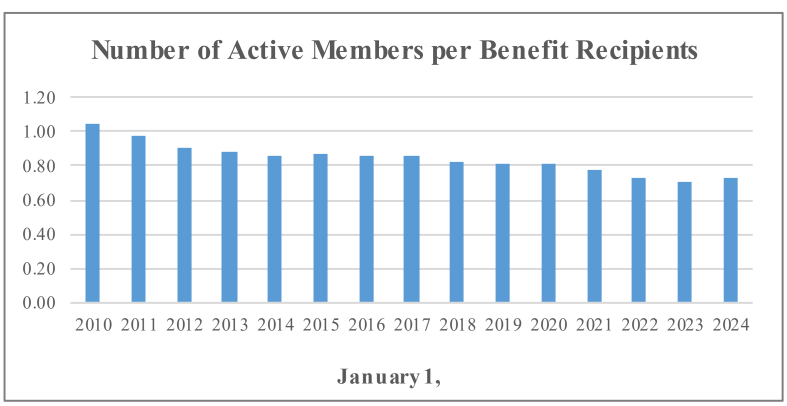


TABLE 22

HISTORICAL CASH FLOWS
(Dollars in thousands)

Plans with large negative cash flows generally experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions minus benefit payments. If the System has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that often follow. Negative cash flows can also impact the System's asset allocation and is a consideration in setting the investment policy of the system. CMERS has a relatively high negative cash flow so this metric should be closely monitored. The higher the net cash flow is as a percentage of the market value of assets, the greater the risk to the System's funding.

Year End	Market Value of Assets (MVA)	Contributions	Benefit Payments and Expenses	Net Cash Flow	Net Cash Flow as a Percent of MVA
12/31/2009	$4,020,640	$95,992	$255,014	($159,022)	(3.96%)
12/31/2010	4,322,384	35,699	271,710	(236,011)	(5.46%)
12/31/2011	4,197,264	52,675	285,565	(232,890)	(5.55%)
12/31/2012	4,375,197	138,968	302,439	(163,471)	(3.74%)
12/31/2013	4,949,534	122,157	334,858	(212,701)	(4.30%)
12/31/2014	4,953,150	116,507	342,569	(226,062)	(4.56%)
12/31/2015	4,752,308	121,751	347,888	(226,137)	(4.76%)
12/31/2016	4,886,669	110,013	351,303	(241,290)	(4.94%)
12/31/2017	5,396,527	116,018	385,331	(269,313)	(4.99%)
12/31/2018	4,950,881	115,251	400,707	(285,456)	(5.77%)
12/31/2019	5,557,077	129,022	416,104	(287,082)	(5.17%)
12/31/2020	5,649,734	119,852	436,331	(316,479)	(5.60%)
12/31/2021	6,431,356	122,621	451,989	(329,368)	(5.12%)
12/31/2022	5,525,958	153,775	464,799	(311,024)	(5.63%)
12/31/2023	5,796,501	203,730	479,063	(275,333)	(4.75%)

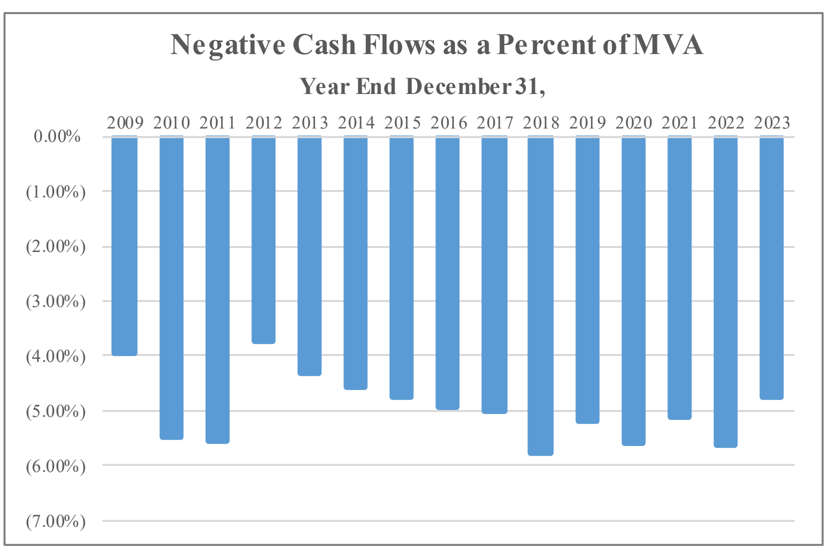


TABLE 23

LIABILITY MATURITY MEASUREMENTS
(Dollars in thousands)

Most public sector retirement systems have been in operation for many decades like CMERS. As a result, they have mature plan demographics, resulting in an increased ratio of retirees to active members and a growing percentage of retiree liability. For CMERS, this trend is expected to accelerate now that the System has been closed to new hires as of January 1, 2024. Despite closing the System to new hires, its liabilities will be substantial for many years. As the number of contributing active participants decreases, a larger proportion of increased costs due to future actuarial experience or assumption changes, if any, will be borne by the participating employers.

Actuarial Valuation Date	Retiree Liability (a)	Total Actuarial Accrued Liability (b)	Retiree Percentage (a / b)
1/1/2010	$2,637,961	$4,269,324	61.8%
1/1/2011	2,835,309	4,447,548	63.7%
1/1/2012	2,987,922	4,587,915	65.1%
1/1/2013	3,121,007	4,689,814	66.5%
1/1/2014	3,254,212	4,831,689	67.4%
1/1/2015	3,344,604	4,935,482	67.8%
1/1/2016	3,462,308	5,065,141	68.4%
1/1/2017	3,512,367	5,259,300	66.8%
1/1/2018	3,993,493	5,819,762	68.6%
1/1/2019	4,491,023	6,400,901	70.2%
1/1/2020	4,682,004	6,597,457	71.0%
1/1/2021	4,907,245	6,745,299	72.8%
1/1/2022	5,106,118	6,875,927	74.3%
1/1/2023	5,606,392	7,631,007	73.5%
1/1/2024	5,757,572	7,829,371	73.5%

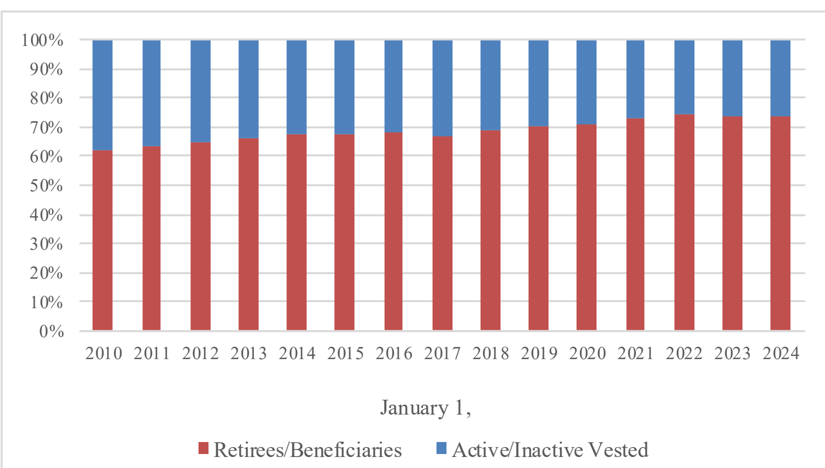


TABLE 24

Comparison of Valuation Results Under Alternate Investment Return Assumptions
(Dollars in thousands)

This exhibit compares the key January 1, 2024 valuation results for the System under three (3) different investment return assumptions to illustrate the impact of different assumptions on the System's funding. Note that only the investment return assumption is changed, as identified in the heading below, and the assumption cannot exceed the rate used by the Wisconsin Retirement System, which is currently 6.80% for active employees. All other assumptions are unchanged for purposes of this analysis.

Investment Return Assumption	**5.80%**	**6.30%**	**6.80%**
Contributions			
- Total Normal Cost	$128,943	$113,766	$100,781
- Member Contributions	(31,336)	(31,336)	(31,336)
- Employer Normal Cost	$97,607	$82,430	$69,445
- Projected Administrative Expenses	$8,148	$8,148	$8,148
- Unfunded Actuarial Accrued Liability	$261,019	$199,539	$143,008
Total Employer Contribution	$366,774	$290,117	$220,601
Actuarial Value of Assets	$6,008,486	$6,008,486	$6,008,486
Actuarial Accrued Liability	8,797,555	8,290,072	7,829,371
Unfunded Actuarial Accrued Liability	$2,789,069	$2,281,586	$1,820,885
Funded Ratio	68.3%	72.5%	76.7%

Note: Numbers may not add due to rounding. All other assumptions are unchanged for purposes of this sensitivity analysis.

MEMBER DATA RECONCILIATION

January 1, 2023 to January 1, 2024

The number of members included in the valuation, as summarized in the table below, is in accordance with the data submitted by the System for members of the valuation date.

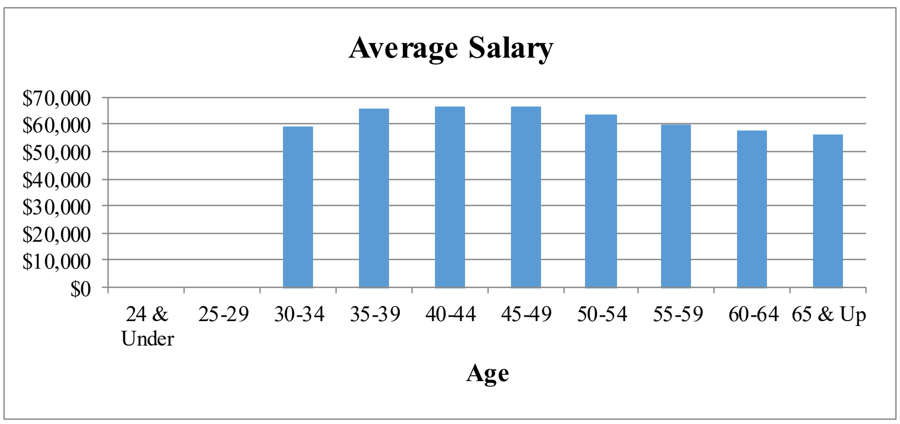
				Benefit Recipients			
	Active Members	Refund Payable	Deferred Vested	Disabled Members	Retirees	Beneficiaries	Total
Participants as of January 1, 2023	9,800	2,382	3,578	466	11,365	2,022	29,613
New Participants	1,293	157	72	0	0	143	1,665
Return to Work	120	(65)	(55)	0	0	0	0
Terminations							
- Refunded	(130)	(340)	(107)	0	0	0	(577)
- Refund Payable	(337)	345	(8)	0	0	0	0
- Deferred Vested	(331)	0	331	0	0	0	0
Service Retirements							
- Annuity	(280)	0	(133)	0	413	0	0
- Lump Sum	(5)	0	(9)	0	0	0	(14)
Disabilities							
- Duty-Related	(3)	0	0	3	0	0	0
- Non Duty-Related	(3)	0	(4)	7	0	0	0
Deaths	(16)	(1)	(7)	(17)	(398)	(135)	(574)
Benefit Payments Stopped	0	0	0	(1)	0	(1)	(2)
Reached Service Retirement Conversion Age	0	0	0	(19)	19	0	0
Data Adjustments	0	0	0	1	(1)	0	0
Participants as of January 1, 2024	10,108	2,478	3,658	440	11,398	2,029	30,111

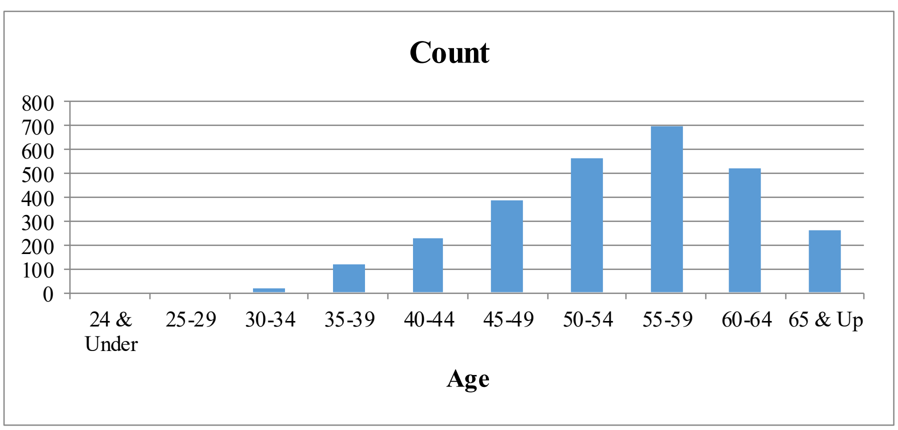
Notes: Duty disabled members who have reached their conversion age are included in the Retirees count.
Refund Payable counts include beneficiaries and estates that are owed a lump sum benefit as of January 1, 2024.

SUMMARY OF ACTIVE MEMBERS
as of January 1, 2024

General Employees – Tier 1

	Count			Reported FY 2023 Earnings		
Age	Male	Female	Total	Male	Female	Total
24 & Under	0	0	0	$ 0	$ 0	$ 0
25-29	0	0	0	0	0	0
30-34	12	11	23	762,143	599,661	1,361,804
35-39	62	56	118	4,503,175	3,285,403	7,788,578
40-44	108	124	232	7,962,696	7,453,718	15,416,414
45-49	190	197	387	14,021,916	11,678,344	25,700,260
50-54	275	290	565	20,148,333	15,611,915	35,760,248
55-59	334	362	696	23,100,731	18,280,863	41,381,594
60-64	231	290	521	15,879,368	14,148,449	30,027,817
65 & Up	113	147	260	8,014,474	6,585,908	14,600,382
Total	1,325	1,477	2,802	$ 94,392,836	$ 77,644,261	$ 172,037,097

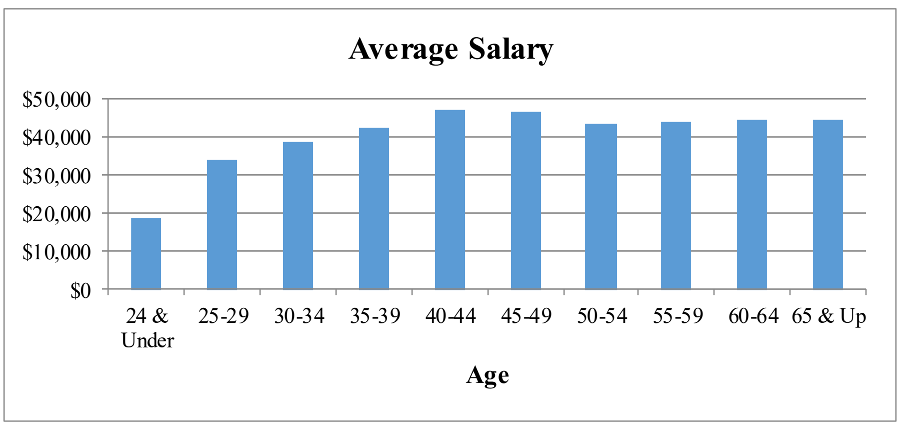


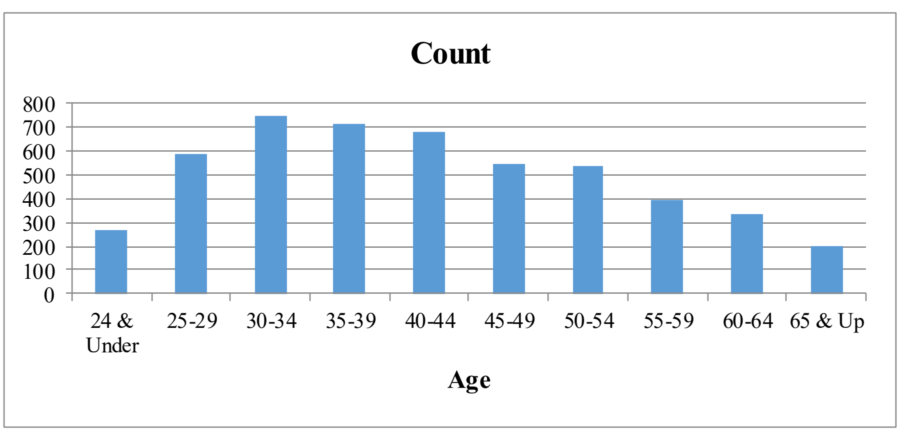


SUMMARY OF ACTIVE MEMBERS
as of January 1, 2024

General Employees – Tier 2

	Count			Reported FY 2023 Earnings		
Age	Male	Female	Total	Male	Female	Total
24 & Under	114	156	270	$ 2,705,810	$ 2,382,845	$ 5,088,655
25-29	238	351	589	8,791,014	11,174,035	19,965,049
30-34	298	450	748	13,265,428	15,432,354	28,697,782
35-39	275	436	711	14,105,692	15,848,415	29,954,107
40-44	283	394	677	15,294,971	16,589,377	31,884,348
45-49	210	333	543	11,296,339	13,897,354	25,193,693
50-54	242	296	538	11,491,588	11,670,471	23,162,059
55-59	174	222	396	8,841,802	8,388,119	17,229,921
60-64	160	178	338	8,496,594	6,522,284	15,018,878
65 & Up	96	108	204	5,346,053	3,655,818	9,001,871
Total	2,090	2,924	5,014	$ 99,635,291	$ 105,561,072	$ 205,196,363

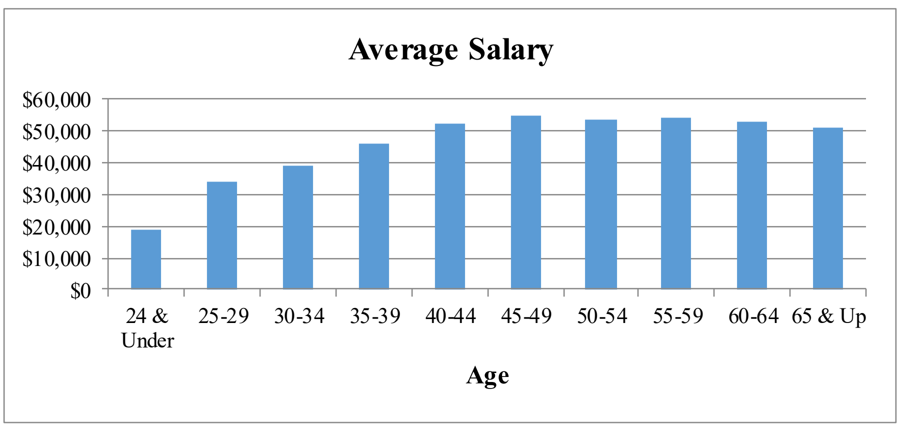


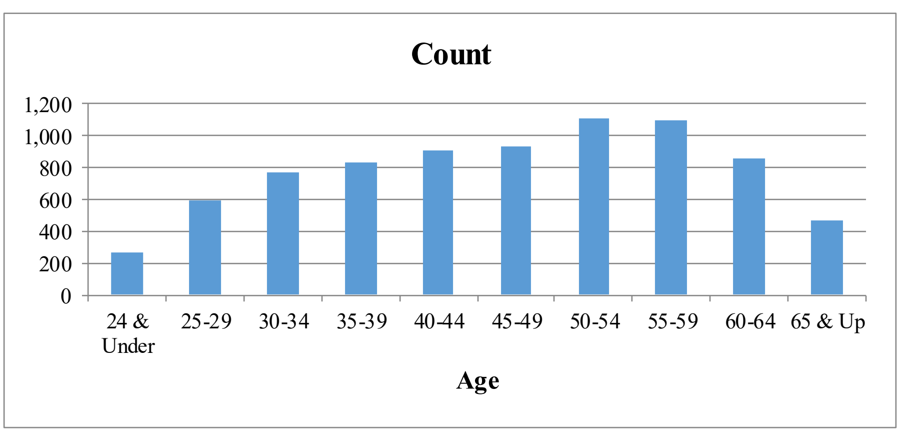


SUMMARY OF ACTIVE MEMBERS
as of January 1, 2024

General Employees – Total

	Count			Reported FY 2023 Earnings		
Age	Male	Female	Total	Male	Female	Total
24 & Under	114	156	270	$ 2,705,810	$ 2,382,845	$ 5,088,655
25-29	238	351	589	8,791,014	11,174,035	19,965,049
30-34	310	461	771	14,027,571	16,032,015	30,059,586
35-39	337	492	829	18,608,867	19,133,818	37,742,685
40-44	391	518	909	23,257,667	24,043,095	47,300,762
45-49	400	530	930	25,318,255	25,575,698	50,893,953
50-54	517	586	1,103	31,639,921	27,282,386	58,922,307
55-59	508	584	1,092	31,942,533	26,668,982	58,611,515
60-64	391	468	859	24,375,962	20,670,733	45,046,695
65 & Up	209	255	464	13,360,527	10,241,726	23,602,253
Total	3,415	4,401	7,816	$ 194,028,127	$ 183,205,333	$ 377,233,460

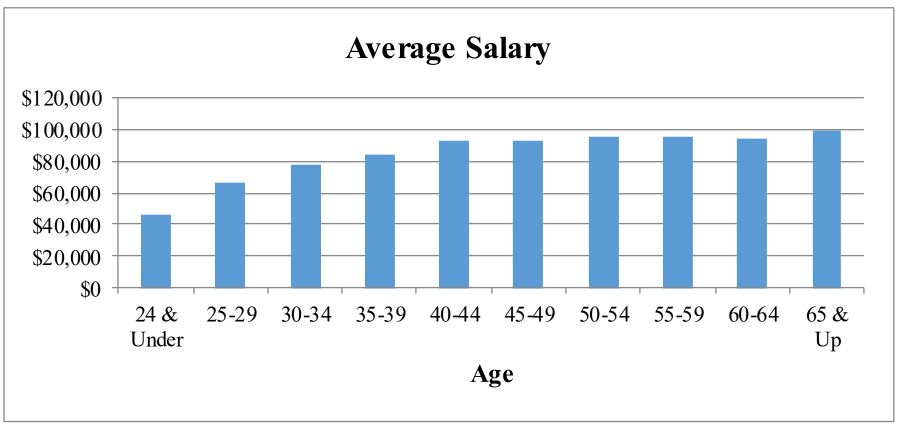


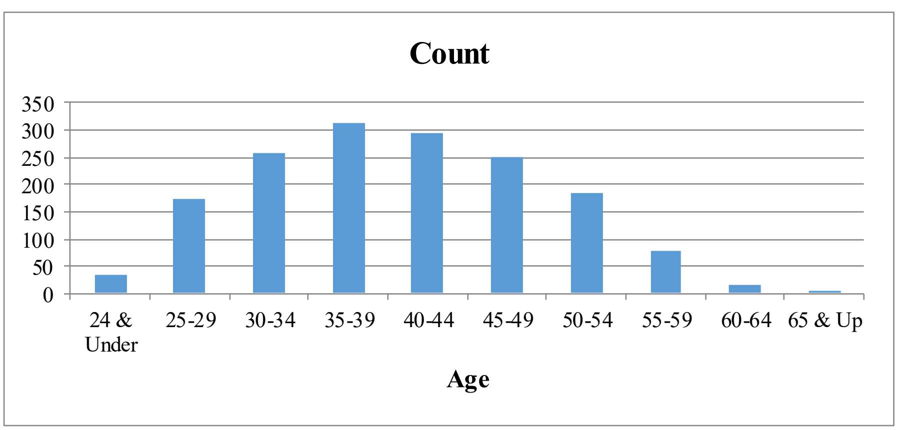


SUMMARY OF ACTIVE MEMBERS
as of January 1, 2024

Policemen

	Count			Reported FY 2023 Earnings		
Age	Male	Female	Total	Male	Female	Total
24 & Under	25	8	33	$ 1,088,653	$ 440,656	$ 1,529,309
25-29	139	34	173	9,055,231	2,317,215	11,372,446
30-34	221	38	259	17,276,305	2,970,896	20,247,201
35-39	265	46	311	22,159,218	4,015,183	26,174,401
40-44	243	52	295	22,401,257	4,836,737	27,237,994
45-49	212	38	250	19,685,284	3,599,479	23,284,763
50-54	156	27	183	14,661,162	2,673,401	17,334,563
55-59	69	9	78	6,532,999	879,794	7,412,793
60-64	13	3	16	1,192,660	303,546	1,496,206
65 & Up	2	1	3	205,976	90,765	296,741
Total	1,345	256	1,601	$ 114,258,745	$ 22,127,672	$ 136,386,417

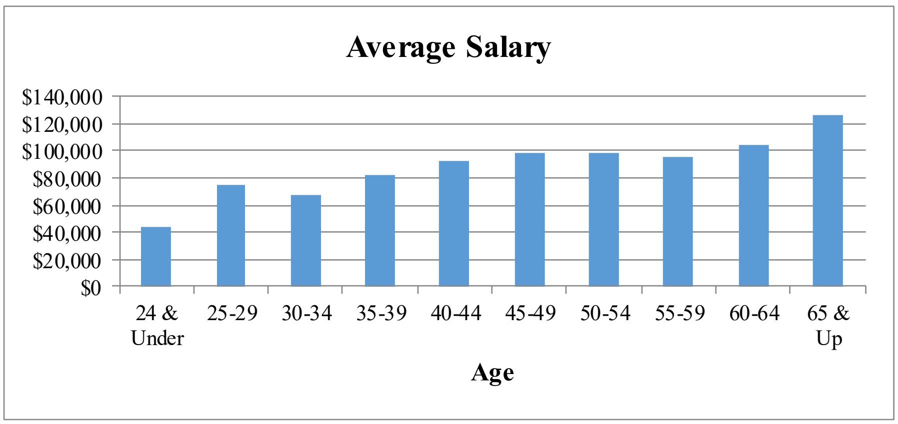


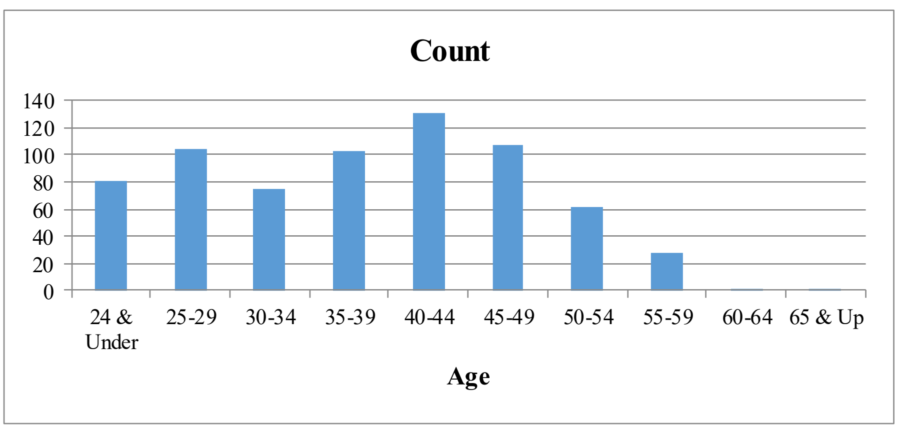


SUMMARY OF ACTIVE MEMBERS
as of January 1, 2024

Firemen

	Count			Reported FY 2023 Earnings		
Age	Male	Female	Total	Male	Female	Total
24 & Under	62	18	80	$ 2,698,708	$ 871,093	$ 3,569,801
25-29	89	15	104	6,590,479	1,132,148	7,722,627
30-34	69	6	75	4,688,940	400,542	5,089,482
35-39	96	6	102	7,887,666	502,586	8,390,252
40-44	127	4	131	11,754,622	358,197	12,112,819
45-49	104	3	107	10,149,488	295,432	10,444,920
50-54	61	0	61	5,998,640	0	5,998,640
55-59	27	1	28	2,578,514	102,327	2,680,841
60-64	2	0	2	209,341	0	209,341
65 & Up	1	0	1	126,582	0	126,582
Total	638	53	691	$ 52,682,980	$ 3,662,325	$ 56,345,305



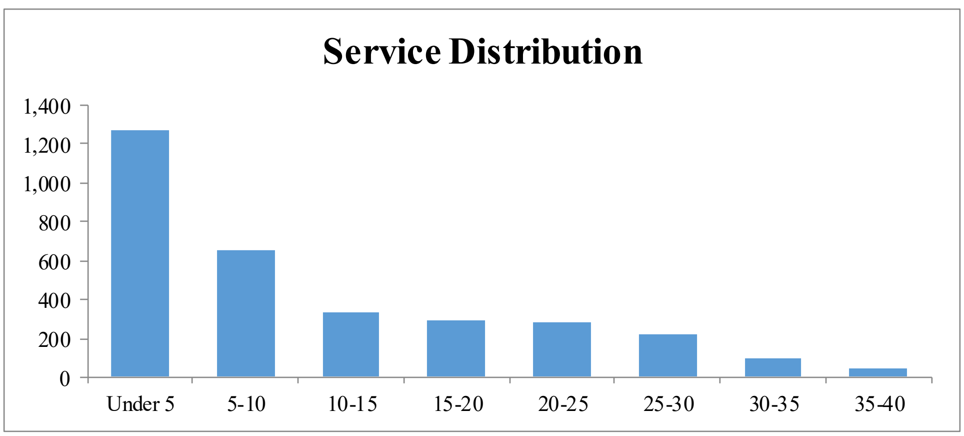


DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

General City*

	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	70	0	0	0	0	0	0	0	70
25-29	199	16	0	0	0	0	0	0	215
30-34	207	67	9	0	0	0	0	0	283
35-39	176	100	55	12	0	0	0	0	343
40-44	176	126	55	52	14	1	0	0	424
45-49	142	87	52	62	55	19	1	0	418
50-54	123	97	57	58	77	67	18	1	498
55-59	89	58	45	51	79	84	20	10	436
60-64	61	69	37	37	38	38	39	20	339
65 & Up	28	37	21	26	15	7	16	18	168
Total	1,271	657	331	298	278	216	94	49	3,194

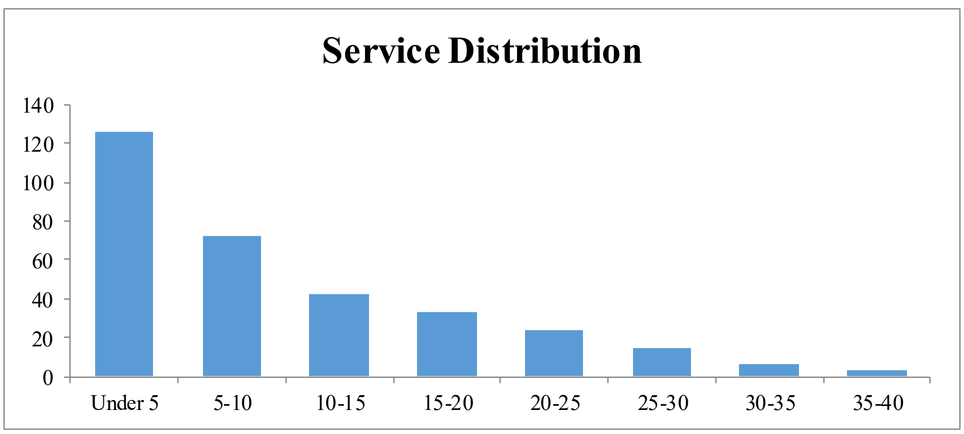
* Includes Elected Officials, General Employees of the City of Milwaukee, and Redevelopment Authority



DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

Water Department

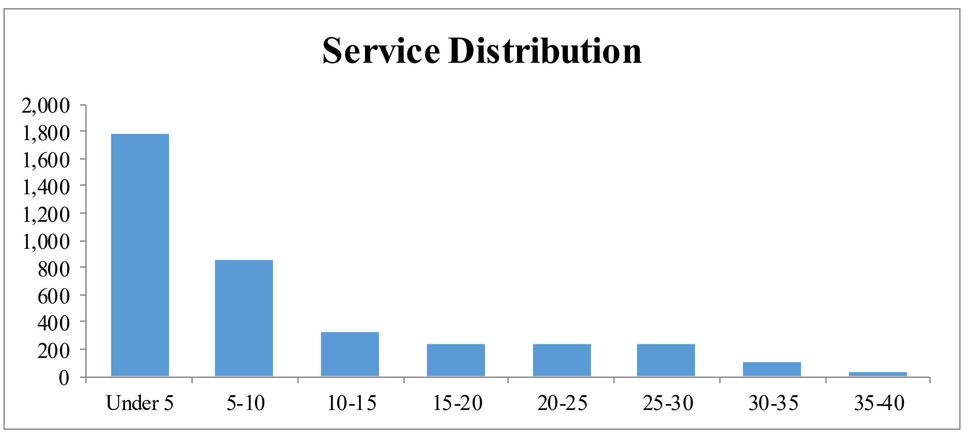
	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	3	0	0	0	0	0	0	0	3
25-29	22	3	0	0	0	0	0	0	25
30-34	28	8	1	0	0	0	0	0	37
35-39	18	14	2	0	0	0	0	0	34
40-44	14	11	6	6	2	0	0	0	39
45-49	10	10	8	7	7	2	0	0	44
50-54	15	12	7	8	6	1	1	0	50
55-59	9	8	12	8	8	8	3	0	56
60-64	4	5	6	4	1	2	1	3	26
65 & Up	3	1	0	0	0	2	1	0	7
Total	126	72	42	33	24	15	6	3	321



DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

School Board

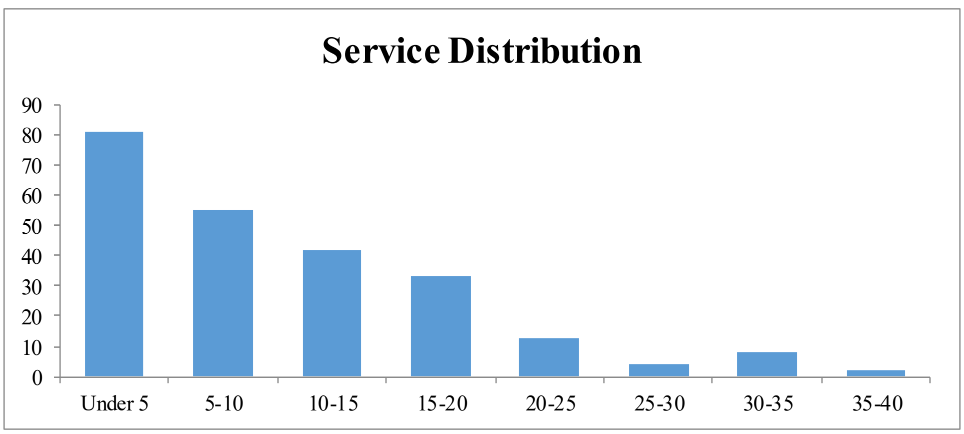
	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	180	2	0	0	0	0	0	0	182
25-29	286	26	0	0	0	0	0	0	312
30-34	285	101	7	0	0	0	0	0	393
35-39	240	132	27	3	0	0	0	0	402
40-44	206	117	36	25	5	0	0	0	389
45-49	163	106	46	46	23	16	0	0	400
50-54	158	113	59	50	55	50	12	1	498
55-59	114	101	64	66	66	82	41	8	542
60-64	103	87	56	37	51	60	43	13	450
65 & Up	53	72	27	18	33	25	15	13	256
Total	1,788	857	322	245	233	233	111	35	3,824



DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

Sewerage Commission

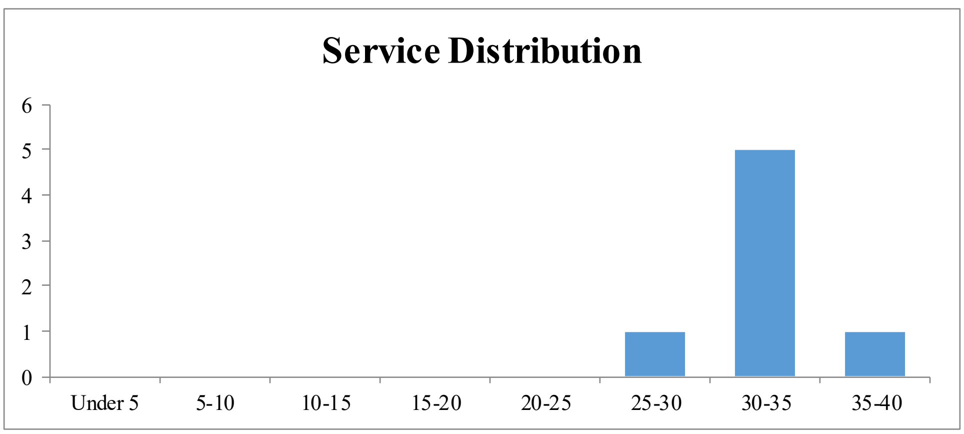
	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	4	0	0	0	0	0	0	0	4
25-29	17	0	0	0	0	0	0	0	17
30-34	24	10	3	0	0	0	0	0	37
35-39	10	14	9	0	0	0	0	0	33
40-44	5	9	10	3	0	0	0	0	27
45-49	10	5	12	10	2	0	0	0	39
50-54	5	5	4	9	1	0	1	0	25
55-59	3	6	2	4	5	2	1	1	24
60-64	2	4	1	5	2	1	4	0	19
65 & Up	1	2	1	2	3	1	2	1	13
Total	81	55	42	33	13	4	8	2	238



DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

Veolia

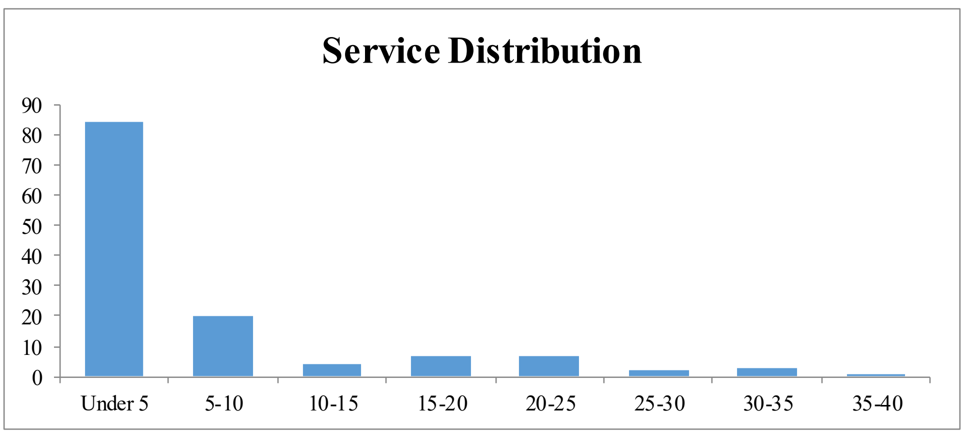
	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	0	0	0	0	0
45-49	0	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	1	1	0	2
60-64	0	0	0	0	0	0	3	0	3
65 & Up	0	0	0	0	0	0	1	1	2
Total	0	0	0	0	0	1	5	1	7



DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

Wisconsin District Center

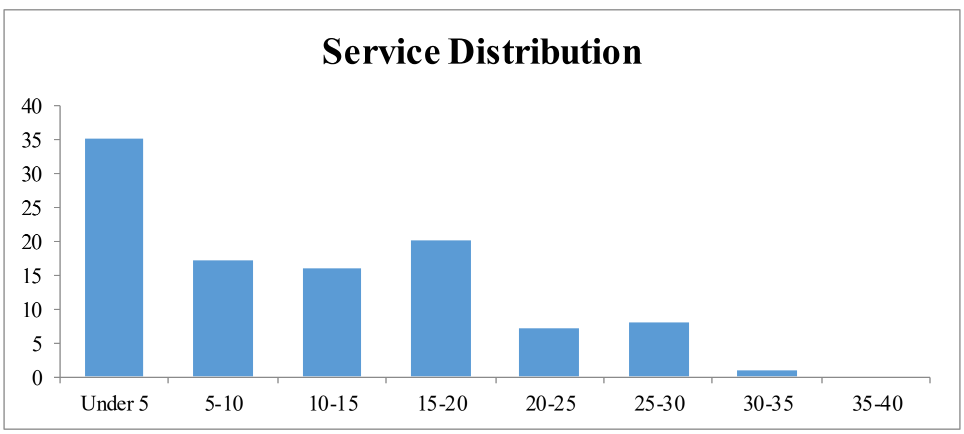
	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	9	0	0	0	0	0	0	0	9
25-29	14	2	0	0	0	0	0	0	16
30-34	14	1	1	0	0	0	0	0	16
35-39	6	3	0	0	0	0	0	0	9
40-44	14	2	0	2	1	0	0	0	19
45-49	5	3	2	2	2	0	0	0	14
50-54	8	3	0	1	1	2	0	0	15
55-59	5	3	0	0	0	0	2	0	10
60-64	3	2	0	1	2	0	1	0	9
65 & Up	6	1	1	1	1	0	0	1	11
Total	84	20	4	7	7	2	3	1	128



DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

Housing Authority

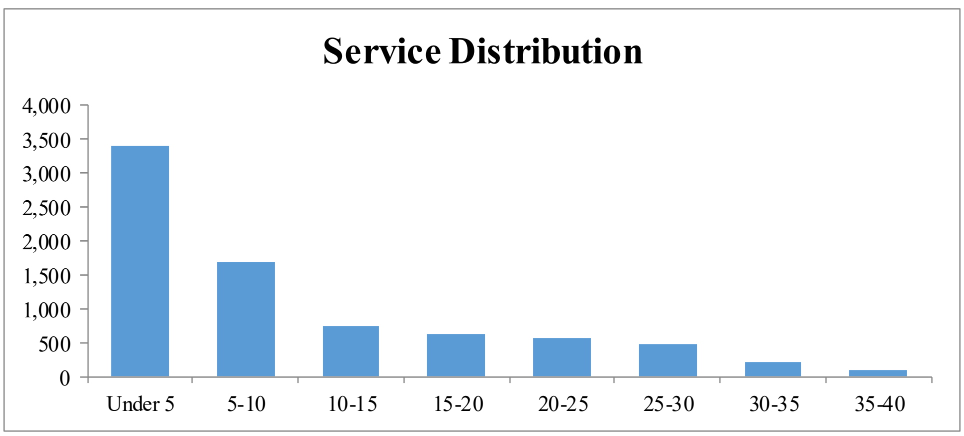
	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	2	0	0	0	0	0	0	0	2
25-29	4	0	0	0	0	0	0	0	4
30-34	4	0	1	0	0	0	0	0	5
35-39	5	1	1	1	0	0	0	0	8
40-44	5	3	2	1	0	0	0	0	11
45-49	3	6	1	5	0	0	0	0	15
50-54	4	3	4	2	3	0	1	0	17
55-59	4	1	4	5	2	6	0	0	22
60-64	1	2	2	4	2	2	0	0	13
65 & Up	3	1	1	2	0	0	0	0	7
Total	35	17	16	20	7	8	1	0	104



DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

General Employees – Total

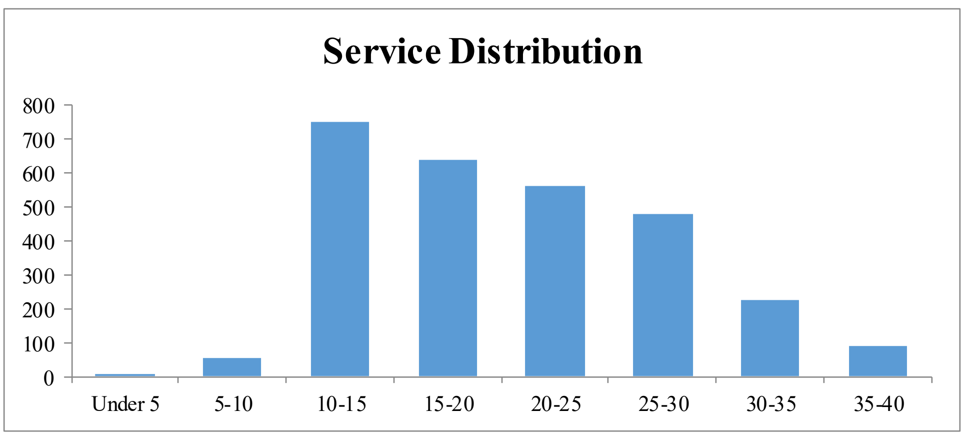
	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	268	2	0	0	0	0	0	0	270
25-29	542	47	0	0	0	0	0	0	589
30-34	562	187	22	0	0	0	0	0	771
35-39	455	264	94	16	0	0	0	0	829
40-44	420	268	109	89	22	1	0	0	909
45-49	333	217	121	132	89	37	1	0	930
50-54	313	233	131	128	143	120	33	2	1,103
55-59	224	177	127	134	160	183	68	19	1,092
60-64	174	169	102	88	96	103	91	36	859
65 & Up	94	114	51	49	52	35	35	34	464
Total	3,385	1,678	757	636	562	479	228	91	7,816



DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

General Employees – Tier 1

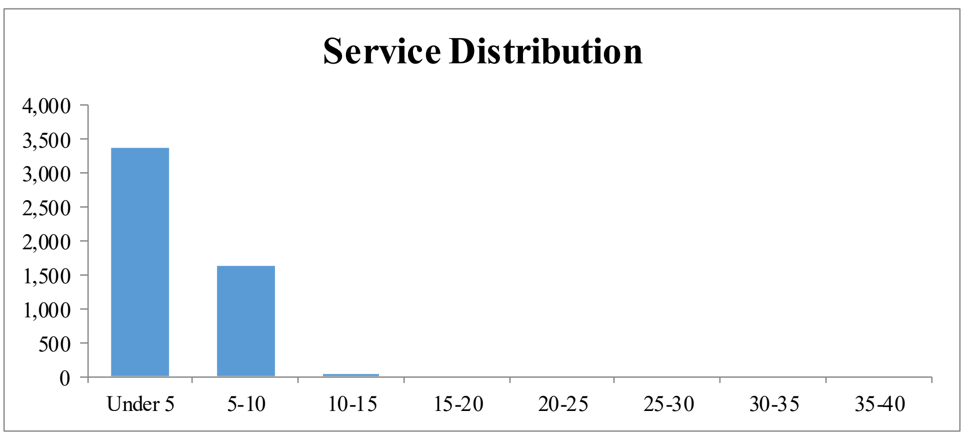
	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	1	1	21	0	0	0	0	0	23
35-39	0	9	93	16	0	0	0	0	118
40-44	1	11	108	89	22	1	0	0	232
45-49	0	8	120	132	89	37	1	0	387
50-54	1	10	128	128	143	120	33	2	565
55-59	0	7	125	134	160	183	68	19	696
60-64	1	4	102	88	96	103	91	36	521
65 & Up	1	4	50	49	52	35	35	34	260
Total	5	54	747	636	562	479	228	91	2,802



DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

General Employees – Tier 2

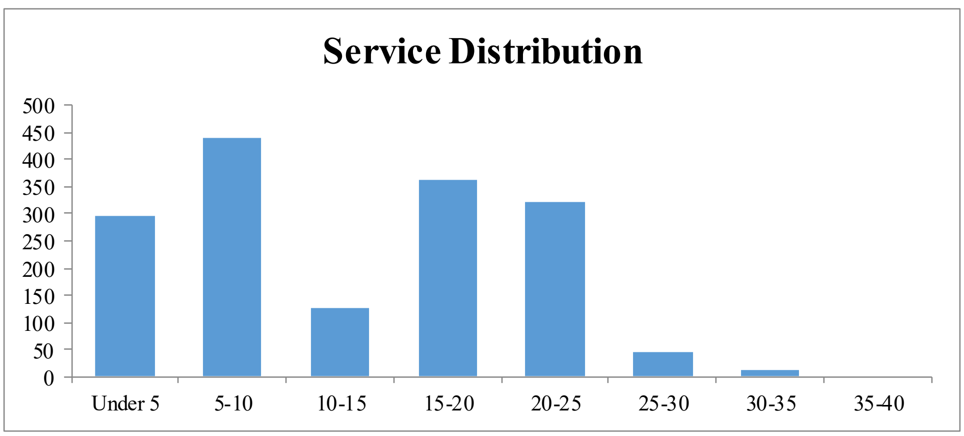
	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	268	2	0	0	0	0	0	0	270
25-29	542	47	0	0	0	0	0	0	589
30-34	561	186	1	0	0	0	0	0	748
35-39	455	255	1	0	0	0	0	0	711
40-44	419	257	1	0	0	0	0	0	677
45-49	333	209	1	0	0	0	0	0	543
50-54	312	223	3	0	0	0	0	0	538
55-59	224	170	2	0	0	0	0	0	396
60-64	173	165	0	0	0	0	0	0	338
65 & Up	93	110	1	0	0	0	0	0	204
Total	3,380	1,624	10	0	0	0	0	0	5,014



DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

Policemen

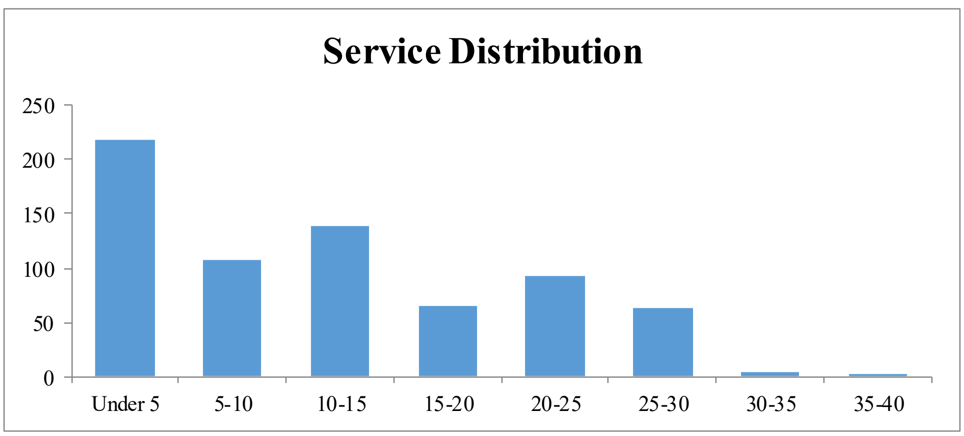
	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	33	0	0	0	0	0	0	0	33
25-29	104	69	0	0	0	0	0	0	173
30-34	70	148	34	7	0	0	0	0	259
35-39	54	122	49	73	13	0	0	0	311
40-44	15	61	28	128	59	4	0	0	295
45-49	11	25	12	92	100	10	0	0	250
50-54	7	9	3	43	98	20	3	0	183
55-59	1	1	1	15	41	12	7	0	78
60-64	0	3	0	2	9	0	2	0	16
65 & Up	0	0	0	1	0	0	2	0	3
Total	295	438	127	361	320	46	14	0	1,601



DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2024

Firemen

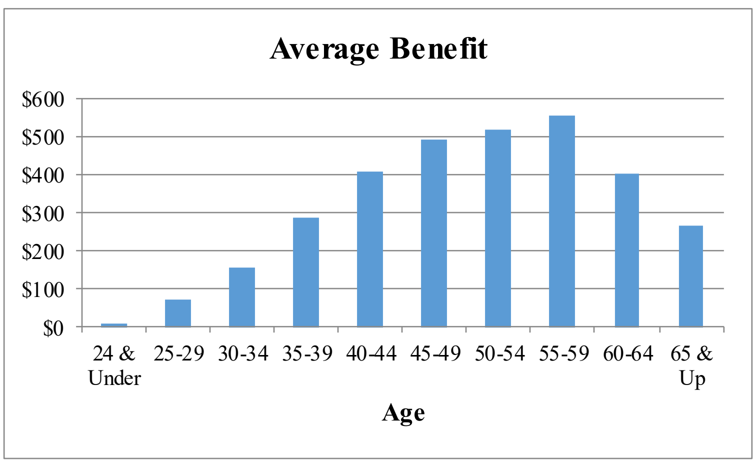
	Service								
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Total
24 & Under	80	0	0	0	0	0	0	0	80
25-29	44	60	0	0	0	0	0	0	104
30-34	46	28	1	0	0	0	0	0	75
35-39	29	7	38	27	1	0	0	0	102
40-44	9	7	59	10	35	11	0	0	131
45-49	3	6	26	17	26	29	0	0	107
50-54	4	0	12	6	22	17	0	0	61
55-59	2	0	3	6	8	6	3	0	28
60-64	0	0	0	0	0	1	1	0	2
65 & Up	0	0	0	0	0	0	0	1	1
Total	217	108	139	66	92	64	4	1	691

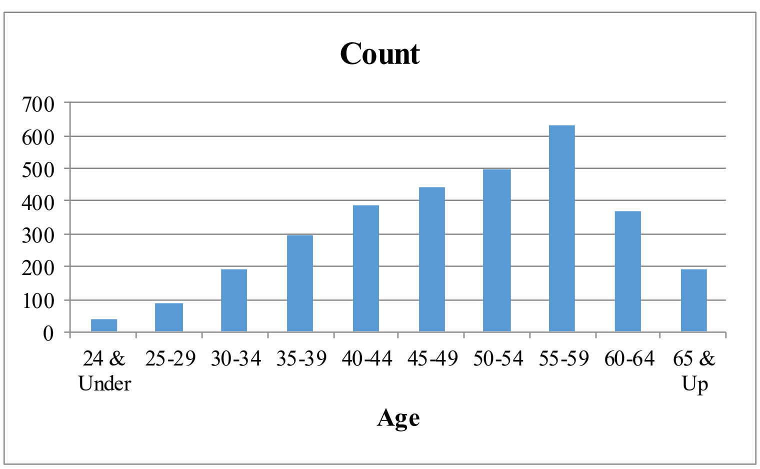


SUMMARY OF INACTIVE VESTED MEMBERS
as of January 1, 2024

General Employees

	Count			Estimated Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
24 & Under	13	25	38	$ 111	$ 249	$ 360
25-29	36	51	87	2,639	3,378	6,017
30-34	65	126	191	9,728	19,491	29,219
35-39	104	192	296	28,843	55,544	84,387
40-44	162	224	386	78,429	78,915	157,344
45-49	171	269	440	97,433	118,609	216,042
50-54	206	293	499	122,980	135,949	258,929
55-59	260	375	635	167,298	184,324	351,622
60-64	133	235	368	51,389	97,038	148,427
65 & Up	75	115	190	20,880	29,501	50,381
Total	1,225	1,905	3,130	$ 579,730	$ 722,998	$ 1,302,728

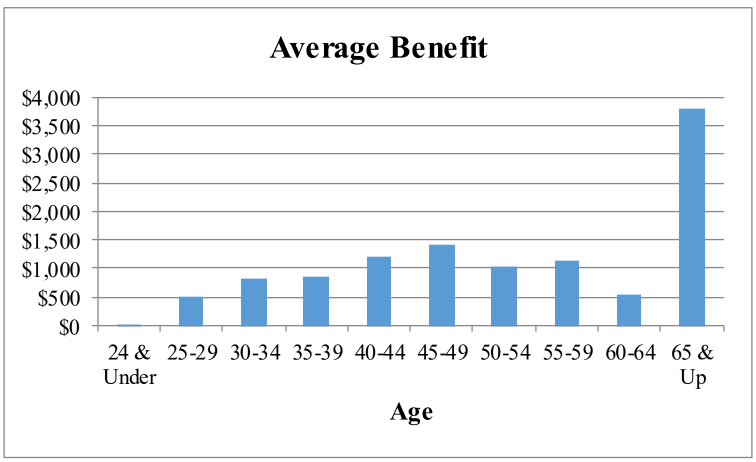


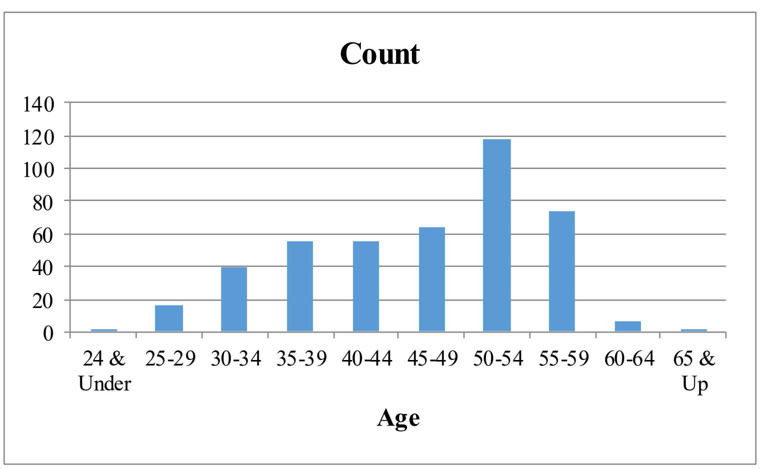


SUMMARY OF INACTIVE VESTED MEMBERS
as of January 1, 2024

Policemen

	Count			Estimated Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
24 & Under	2	0	2	$ 16	$ 0	$ 16
25-29	12	5	17	5,976	2,895	8,871
30-34	32	8	40	27,726	4,896	32,622
35-39	45	11	56	40,246	8,119	48,365
40-44	40	15	55	52,467	13,248	65,715
45-49	50	14	64	77,689	13,502	91,191
50-54	85	33	118	95,795	27,684	123,479
55-59	56	18	74	61,870	21,943	83,813
60-64	5	1	6	2,397	965	3,362
65 & Up	1	0	1	3,795	0	3,795
Total	328	105	433	$ 367,977	$ 93,252	$ 461,229

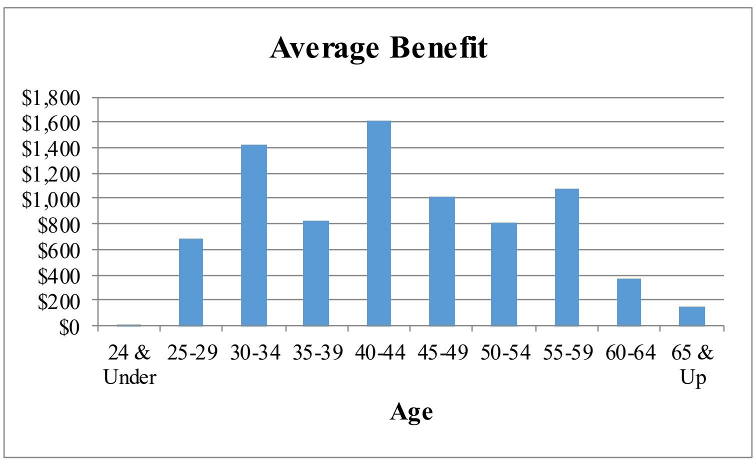


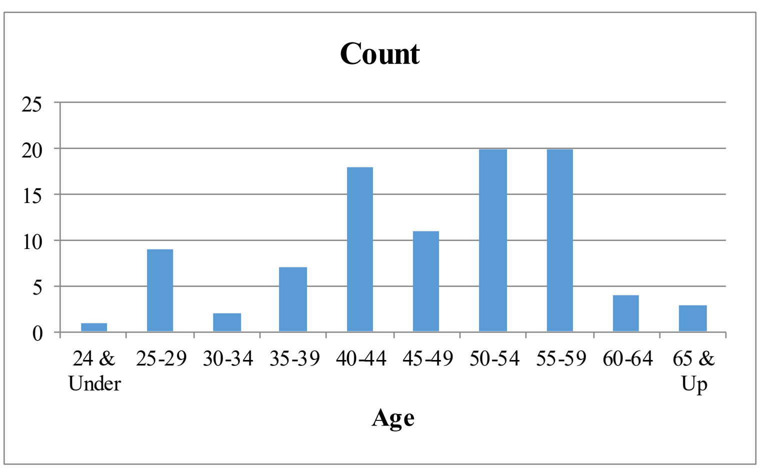


SUMMARY OF INACTIVE VESTED MEMBERS
as of January 1, 2024

Firemen

	Count			Estimated Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
24 & Under	1	0	1	$ 4	$ 0	$ 4
25-29	8	1	9	5,530	704	6,234
30-34	2	0	2	2,862	0	2,862
35-39	6	1	7	5,800	9	5,809
40-44	18	0	18	29,163	0	29,163
45-49	11	0	11	11,220	0	11,220
50-54	18	2	20	16,321	31	16,352
55-59	19	1	20	20,087	1,479	21,566
60-64	4	0	4	1,479	0	1,479
65 & Up	3	0	3	441	0	441
Total	90	5	95	$ 92,907	$ 2,223	$ 95,130



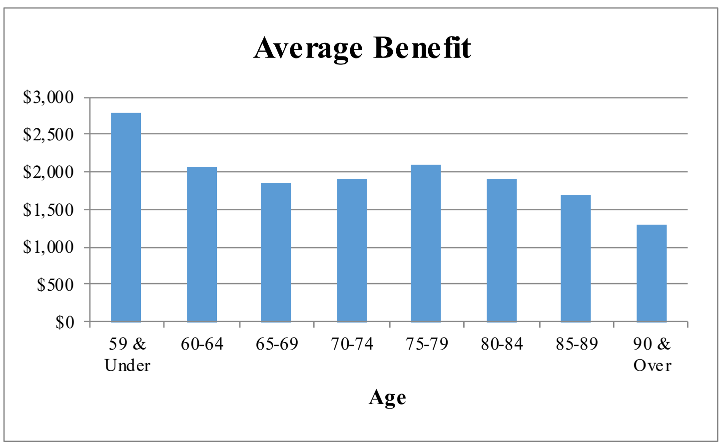


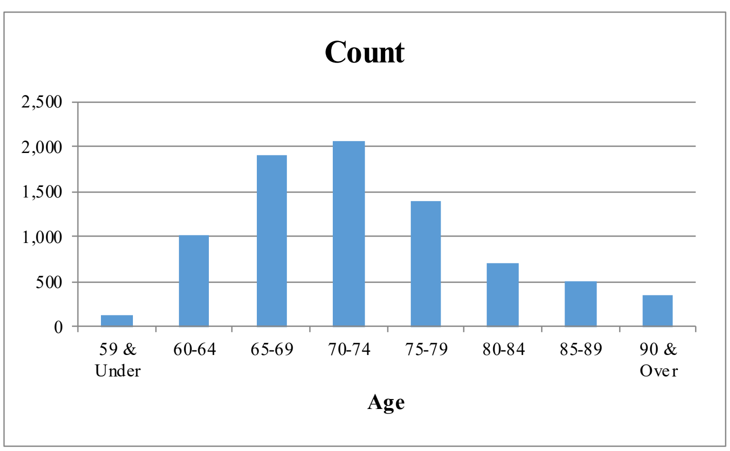
SUMMARY OF RETIRED MEMBERS
as of January 1, 2024

General Employees

	Count			Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
59 & Under	69	62	131	$ 210,792	$ 153,939	$ 364,731
60-64	467	558	1,025	1,128,456	991,467	2,119,923
65-69	895	1,001	1,896	2,105,440	1,434,755	3,540,195
70-74	976	1,087	2,063	2,300,606	1,660,490	3,961,096
75-79	717	678	1,395	1,966,998	951,000	2,917,998
80-84	294	414	708	820,224	534,708	1,354,932
85-89	215	290	505	559,594	297,059	856,653
90 & Over	119	241	360	294,501	175,310	469,811
Total	3,752	4,331	8,083	$ 9,386,611	$ 6,198,728	$ 15,585,339

Note: The counts shown are for members who are receiving benefits as of January 1, 2024. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.



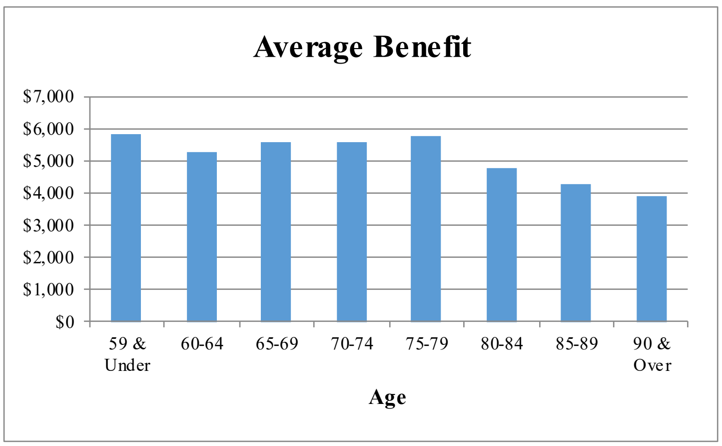


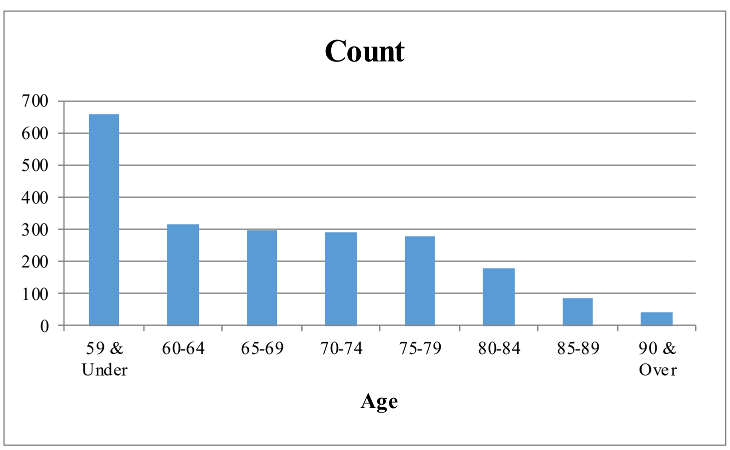
SUMMARY OF RETIRED MEMBERS
as of January 1, 2024

Policemen

	Count			Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
59 & Under	525	131	656	$ 3,028,600	$ 774,742	$ 3,803,342
60-64	263	56	319	1,388,970	293,888	1,682,858
65-69	247	49	296	1,380,825	268,556	1,649,381
70-74	254	35	289	1,426,514	192,970	1,619,484
75-79	266	13	279	1,546,572	61,313	1,607,885
80-84	177	0	177	844,111	0	844,111
85-89	87	1	88	373,731	4,106	377,837
90 & Over	41	1	42	159,443	3,056	162,499
Total	1,860	286	2,146	$ 10,148,766	$ 1,598,631	$ 11,747,397

Note: The counts shown are for members who are receiving benefits as of January 1, 2024. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.



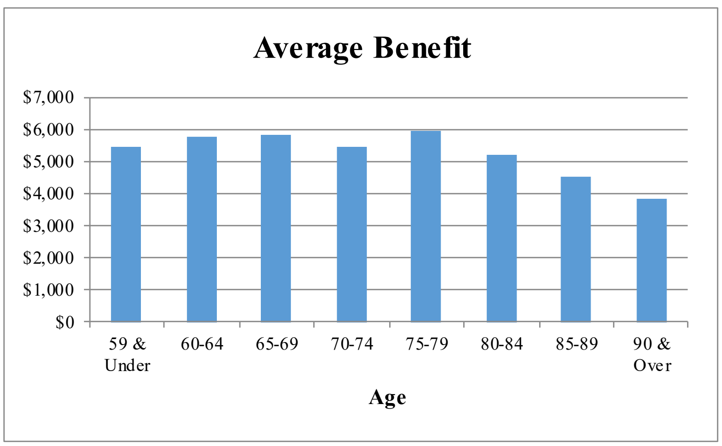


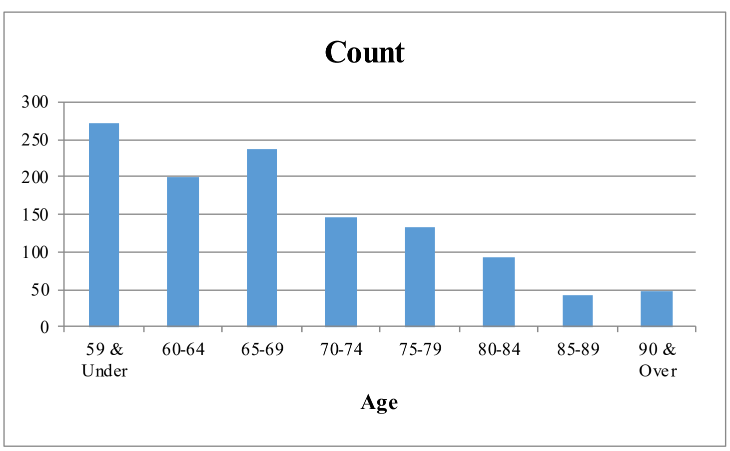
SUMMARY OF RETIRED MEMBERS
as of January 1, 2024

Firemen

	Count			Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
59 & Under	254	17	271	$ 1,386,166	$ 97,204	$ 1,483,370
60-64	182	17	199	1,046,514	101,375	1,147,889
65-69	223	14	237	1,312,710	66,398	1,379,108
70-74	141	5	146	780,054	19,723	799,777
75-79	133	1	134	788,312	5,693	794,005
80-84	93	0	93	481,158	0	481,158
85-89	42	0	42	190,855	0	190,855
90 & Over	46	1	47	176,516	4,248	180,764
Total	1,114	55	1,169	$ 6,162,285	$ 294,641	$ 6,456,926

Note: The counts shown are for members who are receiving benefits as of January 1, 2024. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.



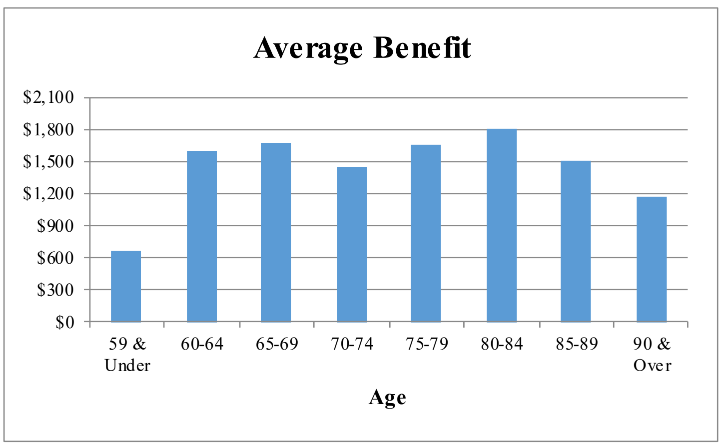


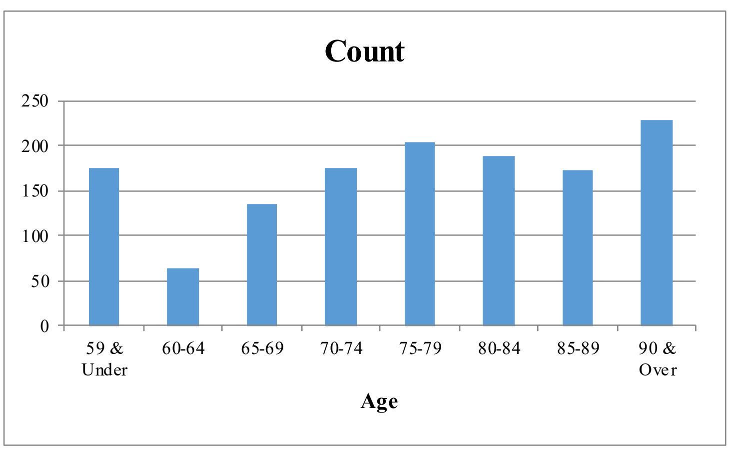
SUMMARY OF BENEFICIARIES
as of January 1, 2024

General Employees

	Count			Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
59 & Under	69	105	174	$ 38,772	$ 77,730	$ 116,502
60-64	11	54	65	7,035	96,213	103,248
65-69	28	106	134	31,509	192,515	224,024
70-74	32	144	176	26,132	228,542	254,674
75-79	30	174	204	27,902	308,961	336,863
80-84	19	169	188	15,330	325,139	340,469
85-89	14	159	173	13,263	247,318	260,581
90 & Over	26	203	229	14,735	252,286	267,021
Total	229	1,114	1,343	$ 174,678	$ 1,728,704	$ 1,903,382

Note: The counts shown are for members who are receiving benefits as of January 1, 2024. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.



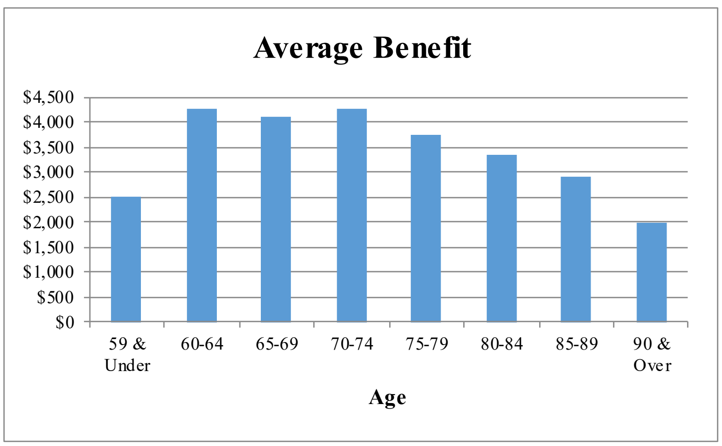


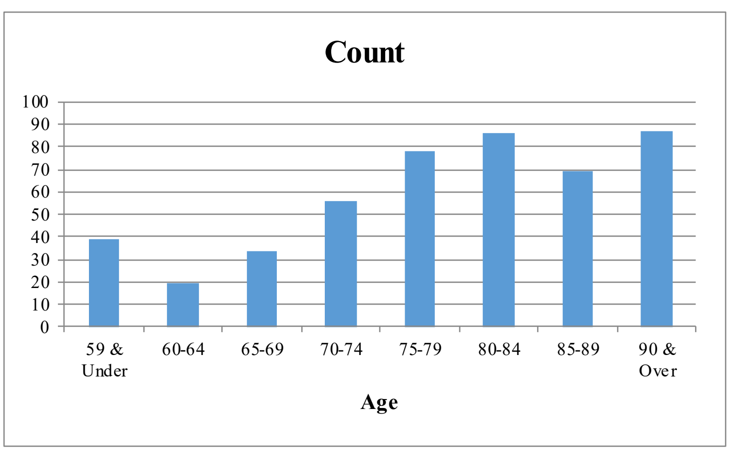
SUMMARY OF BENEFICIARIES
as of January 1, 2024

Policemen

	Count			Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
59 & Under	7	32	39	$ 10,335	$ 87,654	$ 97,989
60-64	0	19	19	0	80,752	80,752
65-69	3	31	34	4,673	134,242	138,915
70-74	2	54	56	5,628	233,068	238,696
75-79	2	76	78	5,189	285,229	290,418
80-84	0	86	86	0	287,386	287,386
85-89	0	69	69	0	200,703	200,703
90 & Over	1	86	87	1,142	169,777	170,919
Total	15	453	468	$ 26,967	$ 1,478,811	$ 1,505,778

Note: The counts shown are for members who are receiving benefits as of January 1, 2024. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.



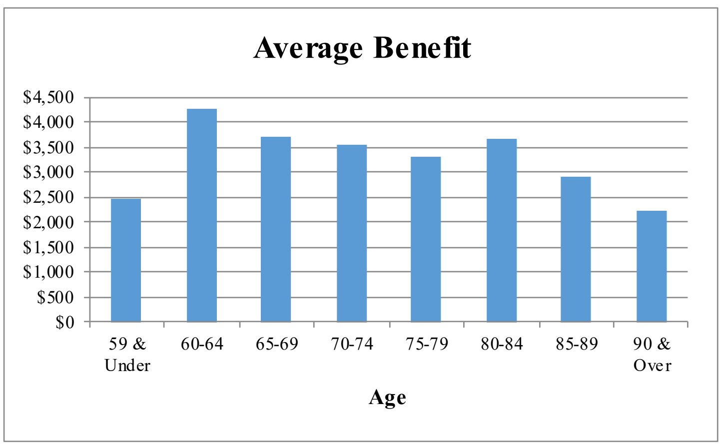


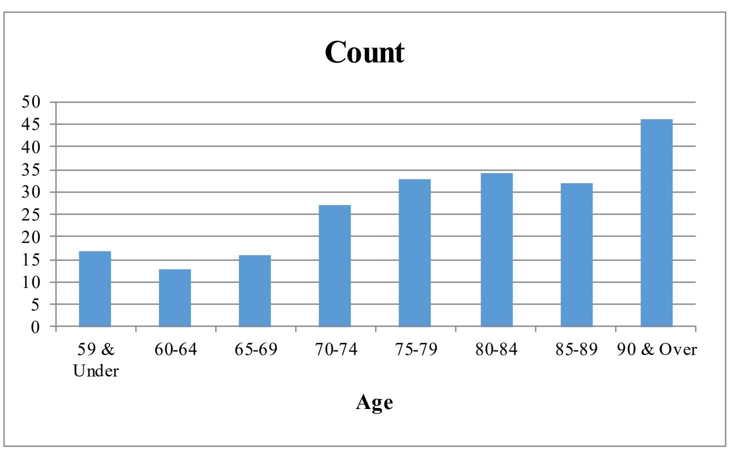
SUMMARY OF BENEFICIARIES
as of January 1, 2024

Firemen

	Count			Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
59 & Under	7	10	17	$ 8,142	$ 33,433	$ 41,575
60-64	1	12	13	1,995	53,488	55,483
65-69	0	16	16	0	59,384	59,384
70-74	0	27	27	0	95,945	95,945
75-79	0	33	33	0	108,971	108,971
80-84	0	34	34	0	124,907	124,907
85-89	0	32	32	0	93,144	93,144
90 & Over	0	46	46	0	102,905	102,905
Total	8	210	218	$ 10,137	$ 672,177	$ 682,314

Note: The counts shown are for members who are receiving benefits as of January 1, 2024. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.



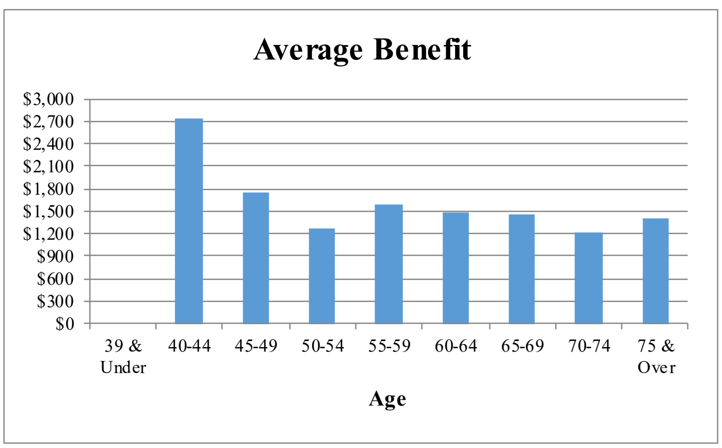


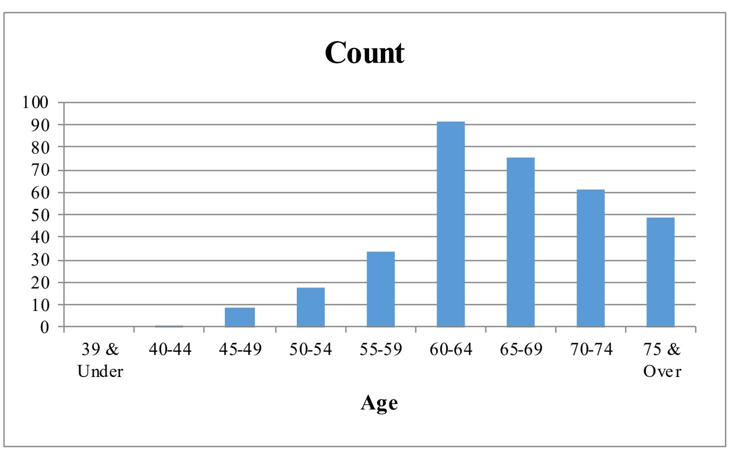
SUMMARY OF DISABLED MEMBERS
as of January 1, 2024

General Employees

	Count			Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
39 & Under	0	0	0	$ 0	$ 0	$ 0
40-44	1	0	1	2,724	0	2,724
45-49	5	4	9	7,661	8,017	15,678
50-54	8	10	18	10,927	11,836	22,763
55-59	17	17	34	35,768	18,189	53,957
60-64	43	48	91	80,815	53,204	134,019
65-69	33	42	75	66,016	43,823	109,839
70-74	29	32	61	39,940	34,491	74,431
75 & Over	26	23	49	44,751	23,443	68,194
Total	162	176	338	$ 288,602	$ 193,003	$ 481,605

Note: The counts shown are for members who are receiving benefits as of January 1, 2024. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.



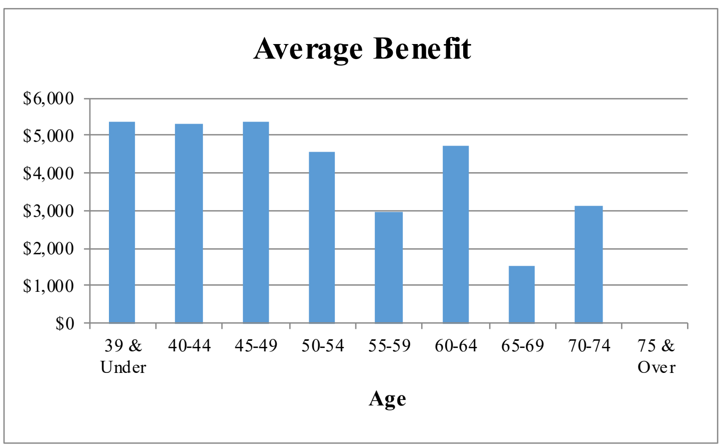


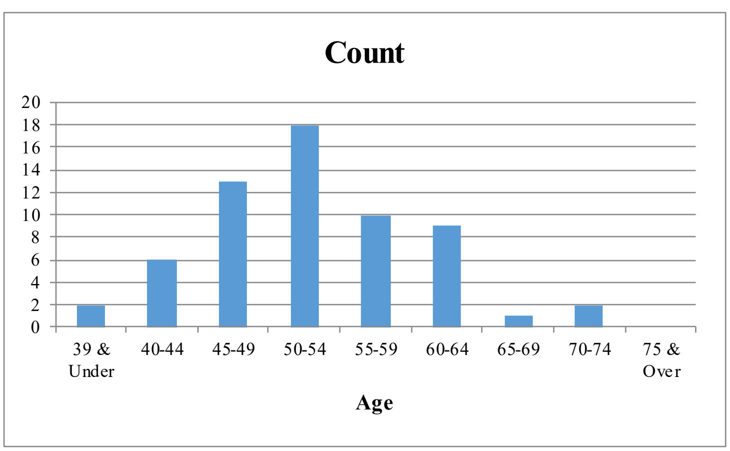
SUMMARY OF DISABLED MEMBERS
as of January 1, 2024

Policemen

	Count			Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
39 & Under	2	0	2	$ 10,685	$ 0	$ 10,685
40-44	4	2	6	22,711	9,116	31,827
45-49	11	2	13	58,552	11,183	69,735
50-54	9	9	18	39,996	42,638	82,634
55-59	7	3	10	16,011	13,652	29,663
60-64	5	4	9	25,336	17,074	42,410
65-69	0	1	1	0	1,542	1,542
70-74	2	0	2	6,295	0	6,295
75 & Over	0	0	0	0	0	0
Total	40	21	61	$ 179,586	$ 95,205	$ 274,791

Note: The counts shown are for members who are receiving benefits as of January 1, 2024. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.



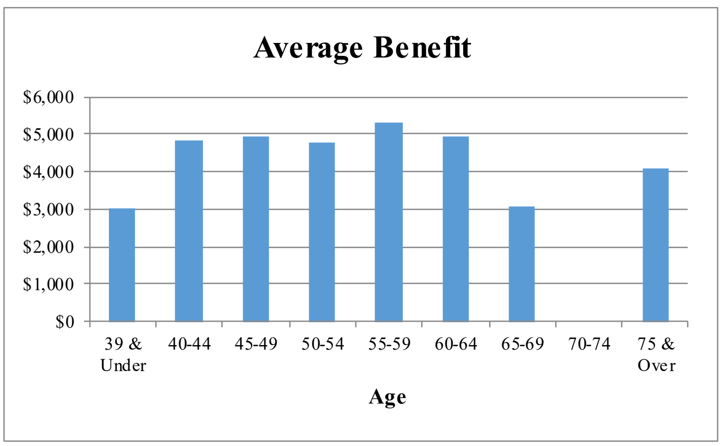


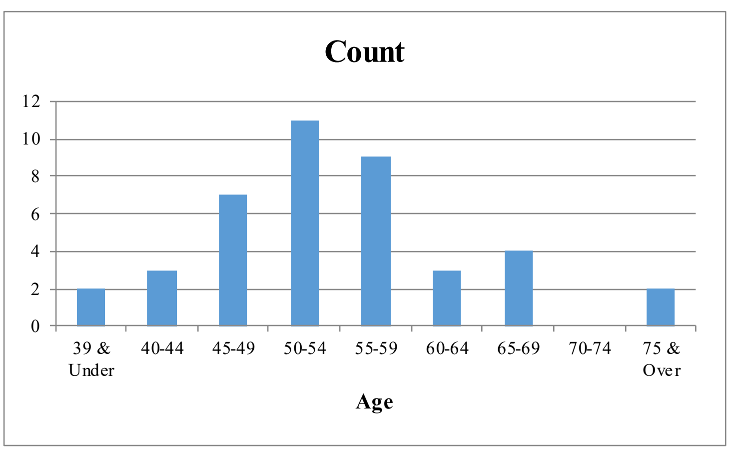
SUMMARY OF DISABLED MEMBERS
as of January 1, 2024

Firemen

	Count			Monthly Benefits		
Age	Male	Female	Total	Male	Female	Total
39 & Under	2	0	2	$ 6,041	$ 0	$ 6,041
40-44	3	0	3	14,465	0	14,465
45-49	7	0	7	34,734	0	34,734
50-54	11	0	11	52,690	0	52,690
55-59	9	0	9	47,651	0	47,651
60-64	2	1	3	8,705	6,051	14,756
65-69	2	2	4	6,414	5,902	12,316
70-74	0	0	0	0	0	0
75 & Over	2	0	2	8,161	0	8,161
Total	38	3	41	$ 178,861	$ 11,953	$ 190,814

Note: The counts shown are for members who are receiving benefits as of January 1, 2024. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





SUMMARY OF BENEFIT PROVISIONS

A summary of the main benefit provisions of the Retirement System and of the sources of revenue from which benefits are paid is presented in the following digest. Items in parentheses in the text are the provisions applicable to law enforcement officers.

Eligibility for Membership

Membership is optional for all Employees that were in service as of January 1, 1938. Individuals employed prior to January 1, 2024 are automatically members as a condition of employment. Membership is optional for public officials elected prior to January 1, 2024. Note that unless specifically stated, elected officials follow the same rules as General Employees.

Additionally, effective January 1, 2014, there are two tiers of benefits. Tier 1 is for General Employees enrolled prior to January 1, 2014, and all Fire and Police Employees. Tier 2 is for General Employees enrolled on or after January 1, 2014.

As a result of 2023 Wisconsin Act 12, employees hired on or after January 1, 2024 are not eligible to participate in ERS.

Participation in the Combined Fund

On January 19, 2001 the Combined Fund was created and was retroactive to January 1, 2000. Individuals who participate in the Combined Fund may be eligible for certain benefit enhancements which are described in this Summary of Plan Provisions. Members who enroll in the ERS after June 28, 2000, and their eligible survivors, are automatically participants in the Combined Fund. Members enrolled in the ERS on or before June 28, 2000, and their eligible survivors, participate in the Combined Fund provided that the members consented in writing to the Global Pension Settlement. Eligible survivors of members or retirees who died on or before June 28, 2000 participate in the Combined Fund provided that the eligible survivors consented in writing to the Global Pension Settlement. Members or survivors whose benefit payments ceased prior to January 1, 2000, are not eligible for benefits from the Combined Fund.

Creditable Service

Creditable service equals prior service plus membership service. Prior service includes service as an employee prior to January 1, 1938, or prior to an amendment which made the employee eligible for membership in the ERS. Membership service means service as an employee since last becoming a member, on account of which contributions are made.

- For most Employees, 2080 hours of service constitute one year of creditable service. For prevailing wage Employees (carpenters and other tradespeople) 2000 hours constitute one year. For members employed by the school board for a 10-month school year, 1600 hours of service constitute a year of creditable service. After July 2006, for members serving as firefighters, 2590 hours of service constitutes one year of creditable service. After September 2016, for members serving as firefighters, 2756 hours of service constitutes one year of creditable service.

- Under certain conditions creditable service may be granted for periods of absence due to military service.

- For purposes of computing the service retirement allowance only, creditable service is granted for periods of eligibility for a duty disability retirement allowance.

- No more than one year of creditable service is granted for service in a single calendar year.

Imputed Service

Imputed service credit may be granted, under specified conditions, to members who consented to the Global Pension Settlement. Imputed service credit is used to calculate the amount of certain benefits but is not used to determine eligibility for any kind of benefit. An individual may be eligible for one or more types of imputed service credit.

Eligibility for Imputed Service Credit

Only individuals participating in the Combined Fund can become eligible for the following types of imputed service credit.

a) Imputed military service credit: The member must have been active in the armed forces of the United States of America prior to his or her enrollment in the ERS, and must have been honorably discharged. A member must be described as in 36-04-1-c. An individual eligible for imputed military service credit must apply for the credit.

b) Imputed fire and police service credit: The member must be described as in 36-04-4-a. The member must have been in active ERS service as a Fireman or Policeman as of January 1, 2000, and must also retire from ERS service as a Fireman or Policeman, or die while a Fireman or Policeman eligible for protective survivorship option benefits. To be eligible, the member must retire or die as a Policeman or Fireman and must have attained the minimum service retirement requirements as outlined in 36-05-1.

c) Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund, (the "Fund"): The member must be described as in 36-04-4-b. The member must have been a Policeman who was an active member of the "Fund" as of January 1, 2000. If the Policeman was in active ERS service as of January 1, 2000, he must either retire as a Policeman on a service retirement allowance at the minimum service retirement age of 57 or after completing 25 years of creditable service as a Fireman or Policeman; or he must retire on a Policeman's duty disability retirement allowance and subsequently convert to a service retirement allowance. If the Policeman was retired on a duty disability retirement allowance as of January 1, 2000, then he must subsequently convert to a service retirement allowance.

Benefits Affected by Imputed Service Credit

a) Imputed military service credit and/or imputed fire and police service credit: The amount of the service retirement allowance, the conversion service retirement allowance, protective survivorship option benefits, and the extended life duty disability retirement allowance are affected. If the eligible individual is also entitled to a 5% Lump Sum Bonus, and/or an 8.6% Dissolution Bonus that is based on the affected benefit, then the imputed service credit is included in calculating the base for the bonus payment(s).

b) Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund: The amount of the service retirement allowance and the conversion service retirement allowance are affected. If the service retirement allowance is affected, then the imputed service credit is included in calculating the base for the 5% Lump Sum Bonus.

See the benefit descriptions later in this summary for further details on how imputed service credit is used.

Amount of Imputed Service Credit

a) Imputed military service credit: A period of eligible military service consists of a period of at least 90 consecutive days of active service in the armed forces of the United States prior to enrollment in the ERS. Total eligible military service equals the sum of all periods of eligible military service. Imputed military service credit equals one-third of the member's total eligible military service, to a maximum of three years of imputed military service credit.

b) Imputed fire and police service credit: For Policemen and Firemen with 20 years of creditable service as a Fireman or Policeman - 1.5 years. For Firemen with less than 20 years of creditable service as a Fireman or Policeman: 1.5 years times the full years of creditable fire and police service, divided by 20.

c) Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund: 2 years.

Seasonal Service

Seasonal service credit may be granted under specified conditions to certain General City Employees. Seasonal service credit is used to calculate the amount of certain benefits but is not used to determine eligibility for any kind of benefit.

Eligibility for Seasonal Service Credit

In order to be eligible for seasonal service credit, a member must be a General City employee with five or more years of City service credit, and a member of one of the groups as outlined in 36-04-1-d.

Benefits Affected by Seasonal Service Credit

Seasonal service credit affects the amount of the service retirement allowance, the conversion service retirement allowance and protective survivorship option benefits. If the eligible individual is also entitled to a 5% Lump Sum Bonus that is based on the affected benefit, then the seasonal service credit is included in calculating the base for the bonus payment.

Amount of Seasonal Service Credit

Seasonal service is based on the hours worked as a City Labor-Seasonal employee and/or Playground Laborer-Seasonal employee (MPS), but limited to one year of additional service credit.

Qualifying for an ERS Benefit

Rules regarding qualifying time are encapsulated in the ERS Board Rules & Regulations, XV.G. The rules have been adopted and applied prospectively for enrollments prior to 1995, 1995 to 2001 and post 2001. All members are fully vested after attaining four years of qualifying time.

Earnable Compensation

The annual regular base salary that would be payable to a member if he or she worked the full normal working time for his or her position as described in 36-02-12. Earnable compensation for the calendar year preceding retirement may also include special pays as negotiated in labor agreements such as longevity in rank pay, (limited) variable shift assignment pay, police liaison officer pay, and/or certification pay for Policemen; and emergency medical technician pay for Firemen. Earnable compensation for school board Employees represented by Local 950, OEIU, also includes site differential pay.

Final Average Salary

a) For General Employees, final average salary means the average annual earnable compensation computed on the 3 years of creditable service preceding retirement, death or separation from service during which earnable compensation was the highest.
b) For Policemen and Firemen, final average salary means the average annual earnable compensation computed on the year of creditable service preceding retirement, death or separation from service during which earnable compensation was the highest.
c) For members converting from a duty disability retirement allowance to a service retirement allowance, the service retirement allowance is computed on the basis of the current compensation of the member's position at the service retirement date.

Service Retirement

Eligibility for Service Retirement

For Tier 1 Benefits (applicable to General Employees enrolled prior to January 1, 2014 and all Fire and Police Employees), eligibility for service retirement is as defined under 36-05-01 as follows:

a) A service retirement allowance is payable to any member who elects to retire after attaining the minimum service retirement age, which is age 60 for General Employees and age 57 for Policemen and Firemen.

b) General Employees that have attained age 55 and completed 30 years of qualifying time are eligible for service retirement.

c) Policemen who participate in the Combined Fund are eligible for service retirement at any age after attaining 25 years of fire or police qualifying time, if they were hired prior to December 20, 2015.

d) Policemen who participate in the Combined Fund, who have attained age 50 are eligible for service retirement after completing 25 years of police qualifying time, if they were hired on/after December 20, 2015.

e) Firemen who participate in the Combined Fund, who have attained age 49 and completed 22 years of fire or police qualifying time, are eligible for service retirement, if they were hired prior to July 30, 2016.

f) Firemen who participate in the Combined Fund, who have attained age 52 and completed 25 years of fire qualifying time, are eligible for service retirement, if they were hired on/after July 30, 2016.

g) Policeman and Firemen who are not participants in the Combined Fund are eligible for service retirement after attaining age 52 and completing 25 years of fire or police qualifying time.

For Tier 2 Benefits (applicable to General Employees enrolled on or after January 1, 2014), eligibility for service retirement is as defined under 36-05-01 as follows:

a) A service retirement allowance is payable to any member who elects to retire after attaining the minimum service retirement age, which is age 65 for General Employees.

b) General Employees that have attained age 60 and completed 30 years of qualifying time are eligible for service retirement.

Amount of Service Retirement Allowance

The amount of a member's service retirement allowance under 36-05-01 is equal to the following:

a) For General Employees, enrolled prior to January 1, 2014, 2% of final average salary for each year of creditable service, imputed military service, or seasonal service limited to 70% of final average salary. For General Employees, enrolled on or after January 1, 2014, 1.6% of final average salary for each year of creditable service, imputed military service, or seasonal service limited to 70% of final average salary.

b) For Firemen enrolled prior to March 1, 1989, and Policemen enrolled prior to July 1, 1989, and who were in active service on or after January 1, 1995, 2.5% of final average salary for each year of creditable service or imputed service (of any kind).

c) For Firemen enrolled after February 28, 1989, and Policemen enrolled after June 30, 1989, 2.5% of final average salary for each year of creditable service or imputed military service, limited to 90% of final average salary, plus 2.5% of final average salary for each year of imputed fire and police service or imputed service under the dissolution of the Firemen and Policemen's Survivorship Fund.

d) For elected officials enrolled prior to January 1, 2014, 2.6% of final average salary for each year of creditable service as an elected official for years before 1996, limited to 70% of the final average salary; from 1996 forward the rate of accrual for creditable service, imputed military service, or seasonal service is 2.5% except for the mayor, who will have an accrual rate of 2.0%, limited to 70% of the final average salary, except for elected officials who were enrolled prior to 2014 and are first elected to office on or after January 1, 2014, in which case their accrual rate is 2% for each year if they contribute 5.5% of their earnable compensation, or 2.5% for each year if they contribute 7% of their earnable compensation. For elected officials enrolled on or after January 1, 2014, 1.6% of final average salary for each year of creditable service as an elected official limited to 70% of the final average salary.

Funds Charged with Service Retirement Allowance

For individuals participating in the Combined Fund, service retirement allowance payments are charged to the Combined Fund. For all other individuals, the service retirement allowance is charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member enrolled on or after February 1, 1996.

Ordinary Disability Retirement Allowance

Eligibility for Ordinary Disability Retirement Allowance

A member who the medical council certifies is mentally or physically incapacitated for further performance of duty that such incapacity is likely to be permanent and that such member should be retired, is eligible for the ordinary disability retirement allowance. The ordinary disability allowance is not payable if the member qualifies for the duty disability allowance.

Amount of Ordinary Disability Retirement Allowance

Imputed service credit and seasonal service credit are not used in any part of the calculation of the Ordinary Disability Retirement Allowance. The "service retirement allowance" referred to below is calculated based on creditable service only.

a) For General Employees, 90% of the service retirement allowance based on creditable service to date of disability retirement, but no less than 25% of final average salary, provided such amount does not exceed 90% of the retirement allowance payable had the member continued in service to the minimum service retirement age.

b) For Policemen and Firemen hired after January 1, 1971, who have 5 years of service, 25% of final average salary plus 2% thereof for each year of creditable service in excess of 5 years up to a maximum of 50% of final average salary.

c) For Policemen and Firemen hired before January 1, 1971, the greater of the benefit described in (a), or the benefit described in (b).

d) The benefit is payable for life while the member remains disabled, except that for General Employees with less than 10 years of qualifying time, the duration is limited to one-fourth (1/4) of the period of the service accrued to the date of disability.

e) Members receiving benefits for life may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary.

Funds Charged with Ordinary Disability Retirement Allowance

Ordinary disability retirement allowance payments are charged to the Combined Fund if the eligible individual is a participant in the Combined Fund. Otherwise, the allowance is charged to (i) the Retirement Fund, if the member's enrollment date is before February 1, 1996, and (ii) the Combined Retirement and Disability Fund, if the member's enrollment date is on or after February 1, 1996.

Duty Disability Retirement Allowance

Eligibility for Duty Disability Retirement Allowance

If a member becomes permanently and totally incapacitated for duty as a result of the performance of his duty, and his mental or physical incapacitation is medically certified, such member is eligible for a duty disability retirement allowance. Unless the member is beyond his/her conversion age, in which case the member would be eligible for an extended lifetime Duty Disability benefit. The medical certification is made by the Medical Council for General Employees, for members of the MPA enrolled after June 28, 2005, and for members of the MPFFA enrolled after December 13, 2005 with disability based on a mental injury. For all other members, the medical certification is made by the Medical Panel, except as indicated below. There are certain diseases that are considered presumptive for purposes of duty disabilities.

All new duty disability applications are reviewed by the Medical Council effective June 19, 2016 for MPA members, effective January 1, 2016 for MPSO members, and effective July 29, 2016 for MPFFA members.

Effective July 14, 2015, a new state law was enacted related to duty disability benefits for mental injuries (section 62.624 Wis. Stat.). The ERS may only provide a duty disability benefit for a mental injury if the following criteria are met:

a) The mental injury resulted from a situation of greater dimensions than the day-to-day mental stresses and tension and post-traumatic stress that all similarly situated Employees must experience as part of the employment, ***and***

b) The employer certifies that the mental injury is a duty-related injury.

Only if a duty-related mental injury has occurred, can the duty disability application be forwarded to the Medical Panel or Medical Council for the examination and requisite certification.

Amount of Duty Disability Related Benefits

Imputed service credit and seasonal service credit are not used when calculating a duty disability retirement allowance. Imputed service credit or seasonal service credit is used when calculating the conversion service retirement allowance referred to in paragraphs (a) - (c) below. Eligibility for imputed military service credit depends upon the date of the conversion, not upon the date of the duty disability retirement.

a) For General Employees, the duty disability retirement allowance equals 75% of the member's final average salary. Members receive the allowance, while disability continues, until the later of age 65, or for a period of 5 years, at which time they convert to a service retirement allowance. General Employees receiving duty disability benefits may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary.

b) For Firemen and Policemen, the duty disability retirement allowance is 75% of the current annual salary for the position held by the member at retirement, plus $40 per month for each child younger than age 18 (up to a maximum of 20% of the member's salary). In certain cases of extreme disability, when approved by a panel of physicians, the disability allowance will be 90% of such salary. Duty disability benefits paid to Firemen on account of heart and lung disease are at the 75% level. In the event of the death of a Policeman or Fireman receiving a 75% or 90% disability allowance, 70% or 75%, respectively, of the amount of the member's allowance shall be paid to the member's spouse during her lifetime.

The 90% duty disability allowances are payable for life. For Policemen enrolled on or after January 1, 1990, and Firemen enrolled on or after December 17, 1989, the 75% duty disability allowances are payable until the earlier of attainment of age 57, or completion of 25 years of service and attainment of age 52, at which time the member must either convert to a service retirement allowance or irrevocably elect to receive a recalculated duty disability allowance, referred to as an extended life duty disability allowance, as described in (c), below. Different conversion age requirements apply to Policemen enrolled prior to January 1, 1990, and Firemen enrolled prior to December 17, 1989, as discussed in (d), below. A Fireman or Policeman who becomes duty disabled on or after his conversion age may choose between a service retirement or extended life duty disability retirement.

c) The extended life duty disability allowance referred to in (b), above, equals the lesser of the conversion service retirement allowance, or 75% of the current annual salary, provided further that the benefit will not be less than 57% of current annual salary for a Fireman, or 60% of current annual salary for a Policeman. “Current annual salary” here refers to the salary at the conversion age, for the position held by the member at the time of injury. The extended life duty disability allowance is payable for life and, unlike the duty disability allowance, is a fixed amount that does not change after the conversion age, notwithstanding any cost-of-living adjustments. Firemen or Policemen receiving extended life duty disability benefits may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary. Their spouses are not eligible to receive the 70% benefit payable to surviving spouses of Firemen and Policemen who die while in receipt of the 75% duty disability benefit.

d) For Policemen enrolled prior to January 1, 1990, and Firemen enrolled prior to December 17, 1989, the conversion age determination depends upon the member’s enrollment date and whether or not the member signed the DeBraska II release form.

Under Charter Ordinance 980130 Substitute 2 (DeBraska I), duty disabled Firemen and Policemen who retired on duty disability before October 17, 1992, have a conversion age equal to the greater of the conversion age in effect when they were enrolled, or the conversion age in effect at the time of their disability retirement.

Under Charter Ordinance 000789 (DeBraska II), duty disabled Firemen and Policemen who signed the DeBraska II release form are subject to the following conversion requirements: (i) members retired on duty disability prior to February 8, 1972, will receive duty disability benefits for life; (ii) members enrolled prior to February 8, 1972, who are either Policemen who retired on duty disability on or after August 1, 1985, or Firemen who retired on duty disability on or after March 1, 1984, will have a conversion age of 63; (iii) members enrolled on or after February 8, 1972, who retired on duty disability on or after October 17, 1992, will not be required to convert to service retirement prior to the conversion age requirements that were in effect when they enrolled; and (iv) for all other members who signed the DeBraska II release form, there is no difference between the conversion requirements of Charter Ordinance 980130 Substitute 2, and Charter Ordinance 000789. In general, only members who were duty disabled prior to January 1, 2001 were given the opportunity to sign the DeBraska II release form.

Under the Charter Ordinance (which reflects the Rehrauer decision) Firemen and Policemen who retire (or previously retired) on duty disability and who did not sign the DeBraska II release form will convert at the highest conversion age agreed upon during their employment (Section 36-05-3). Members who enrolled prior to February 8, 1972, who are either Policemen who retired on duty disability on or after November 1, 1976, or Firemen who retired on duty disability on or after October 1, 1977, will receive duty disability for life if they did not sign the DeBraska II release form, and will have a conversion age of 63 if they did sign the DeBraska II release form.

Funds Charged with Duty Disability Related Benefits

a) For participants in the Combined Fund, duty disability benefits paid to members, benefits paid to survivors of members who die while duty disabled, child allotment payments, conversion service retirement benefits, and extended life duty disability benefits are paid from the Combined Fund.

b) For General Employees who do not participate in the Combined Fund, duty disability benefits, and survivor benefits paid to beneficiaries of General Employees who elect an optional form of payment and die while disabled, are paid from (i) the General Employees Duty Disability Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.

c) For members who do not participate in the Combined Fund, benefits paid after conversion to either a service retirement allowance or an extended life disability benefit are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.

Ordinary Death Benefit

Eligibility and Amount of Ordinary Death Benefit

a) In the event of death of a member while in service, a death benefit equal to the sum of the member's accumulated contributions, plus if the member has one or more years of active service, one-half his final average salary is payable to the designated beneficiary. Optional forms of payment of such benefit to the beneficiary are provided. If the member had elected a protective survivorship option – and duty death benefits are not payable – such option will become effective and the ordinary death benefit will not be payable. If a duty death benefit is payable the ordinary death benefit will not be paid.

b) Unless the member elects an optional death benefit, the death benefit subsequent to retirement is the amount remaining, if any, of the member's contributions with interest to retirement less the sum of the allowance payments made prior to the member's death.

Funds Charged with Ordinary Death Benefits

Ordinary death benefits paid on behalf of a participant in the Combined Fund are charged to the Combined Fund. Otherwise, ordinary death benefits are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.

Protective Survivorship Option

Eligibility and Amount of Protective Survivorship Option

Firemen may elect a Protective Survivorship Option (PSO) during the 6 months that precede the earlier of attainment of age 49 and completion of 22 years of qualifying time as a Fireman or Policeman, or age 52 and 25 years of qualifying time as a Fireman or Policeman, or age 57. Policemen may elect a Protective Survivorship Option (PSO) during the 6 months that precede the earlier of attainment of age 57, or completion of 25 years of qualifying time as a Policeman or Fireman. Firemen and Policemen who fail to elect a PSO during the eligible period are deemed to have elected an Option 2 PSO with the spouse as the named beneficiary.

General Employees who enrolled prior to January 1, 2014, may elect a PSO during the 6 months that precede the earlier of attainment of age 60 or completion of 30 years of qualifying time and attainment of age 55. General Employees who enrolled on or after January 1, 2014, may elect a PSO during the 6 months that precede the earlier of attainment of age 65, or completion of 30 years of qualifying time and attainment of age 60.

Firemen and Policemen are allowed to reselect a PSO if they marry, or divorce, and to select a different option and/or beneficiary at retirement, if they wish. As of June 5, 2012, General Employees may also reselect a PSO if they marry, or divorce, or select a different option and/or beneficiary at retirement.

The PSO may be canceled if the joint annuitant predeceases the member before retirement; or if the member is divorced from the joint annuitant before retirement.

Under a PSO, if a member eligible to retire on a service retirement allowance dies prior to retirement, benefits begin to the named beneficiary just as if the member retired under such option immediately prior to his or her death, except that imputed service credit arising from the dissolution of the Firemen and Policemen's Survivorship Fund will not be used in the calculation of the PSO benefit. If a Fireman who is eligible for PSO coverage dies prior to age 49, benefits for the named beneficiary will be deferred until the date the Fireman would have attained age 49. Imputed military service, imputed fire and police service, and seasonal service credit may be used in the calculation of the deferred PSO benefit.

In all cases where the requirements are met for both a PSO benefit and a duty death benefit, the duty death benefit will be payable in lieu of the PSO.

Funds Charged with PSO Benefits

PSO benefits for participants in the Combined Fund are charged to the Combined Fund. Benefits for individuals who do not participate in the Combined Fund are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.

Duty Death Benefits

Eligibility and Amount of Duty Death Benefits

In the event the member's death occurs in the performance of his duty, a lump sum payment equal to the member's accumulated contributions, plus an annuity of 60% of such deceased member's final average salary will be paid to one of the following (payable in this order):

- The member's surviving spouse
- The member's children until their 21st birthday
- The member's dependent parents
- Death of a Fireman that is due to heart or lung disease is considered a duty death.

Funds Charged with Duty Death Benefits

Benefits payable to participants in the Combined Fund are charged to the Combined Fund. Heart & Lung duty death benefits payable to individuals who are not participants in the Combined Fund are charged to the Heart & Lung Fund. Duty death benefits (other than Heart & Lung) payable to individuals who are not participants in the Combined Fund are charged to (i) the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.

Member Contributions

Member contribution rates are the following percentages of annual salary:

General Employees	5.5% (tier 1 – enrolled prior to January 1, 2014) 4.0% (tier 2 – enrolled on or after January 1, 2014)
Firemen and Policemen-	7.0%
Elected Officials	7.0% (tier 1 – enrolled prior to January 1, 2014 and elected to an office prior to January 1, 2014; if enrolled prior to January 1, 2014, and elected or the first time to an office on or after January 1, 2014, and employee was paying contributions prior to being elected, employee pays contributions at the rate they were paying prior to becoming an elected official; if enrolled prior to January 1, 2014, and elected or the first time to an office on or after January 1, 2014, and employer was picking up contributions on behalf of the employee prior to being elected, employer pays 7.0%) 4.0% (tier 2 – enrolled on or after January 1, 2014)

Under state law, per 2011 Wisconsin Act 10, participating employers are no longer permitted to make contributions on the member’s behalf (with the exception of contractually agreed upon arrangements).

Member contributions made for or by participants in the Combined Fund are credited to the Combined Fund. Member contributions made for or by individuals who are not participants in the Combined Fund are credited to (i) the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.

Pension Escalators

Several different pension escalators are paid by the ERS as listed and described under section 36-05-1(h). They are as follows:

- Fire and Police $50 Escalator

  Eligible Groups and Amounts

  a) Firemen in Local 215 who retired under a service retirement allowance between March 1, 1990, and December 31, 1992; members of the Milwaukee Police Association (MPA) who retired under a service retirement allowance between January 1, 1990, and December 31, 1992; members of the Milwaukee Police Supervisors Organization who retired under a service retirement allowance between January 1, 1991, and December 31, 1992; and Firemen in Local 215 or members of the MPA who elect a deferred retirement allowance after separating from service between January 1, 1993, and December 31, 1994, with 25 years of service; are eligible for a pension escalator which increases their allowance by $50 per month on the 4th, 7th, and 10th anniversary of retirement.

  b) Members who both retired on duty disability and converted from duty disability to service retirement during the eligibility period are eligible for the escalators on the 4th, 7th, and 10th anniversaries of their conversion dates.

  c) The surviving spouses of eligible retirees, or of members who died during the eligibility period, are eligible provided that the member elected an optional benefit at retirement – or elected a protective survivorship option (PSO) prior to retirement – with the spouse as beneficiary. The member's surviving spouse receives increases on the member's 4th, 7th, and 10th anniversary of retirement (or spouse's retirement date in the case of a PSO) with the amount of the escalator adjusted to reflect the option elected by the member.

  Funds Charged with Duty Death Benefits

  Fire and Police $50 escalators paid to participants in the Combined Fund are charged to the Combined Fund.

  Fire and Police $50 escalators paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- January 1996 Catch-up COLA for pre-October, 1987 Retirees

  Eligible Group

  a) General Employees that attained the minimum service retirement age and retired with a service retirement allowance prior to October 1, 1987, or who retired on a duty disability allowance and converted to a service retirement allowance prior to October 1, 1987.

  b) Firemen and Policemen who retired prior to October 1, 1987, who became eligible to retire on service retirement at age 57, or after attaining age 52 and completing 25 years of service. Also, Firemen and Policemen who retired on a duty disability allowance and converted to a service retirement allowance prior to October 1, 1987.

c) Surviving spouses of eligible retirees, or of members who elected a PSO and died prior to October 1 1987, after naming their spouse as the designated beneficiary under Option 2, Option 3, or Option 4 with a percentage to the beneficiary.

Timing and Amount of Increase

The catch-up COLA was a permanent increase in the ERS monthly benefit which was granted effective January 1, 1996. The increase was an amount equal to (i) the total ERS benefit in payment, multiplied by the greater of (ii) the total percentage change in the cost of living for each full calendar month between the 8th anniversary of service retirement and October 1, 1995, and (iii) the total percentage change required to bring the member's allowance to 60% of its full inflation adjusted value considering inflation for the period from retirement to October 1, 1995. The percentage change in the cost of living was measured by the increase in the CPI-U, U.S. Cities, as reported by the U.S. Department of Labor, Bureau of Labor Statistics.

When the catch-up COLA was calculated, the factor was not applied to supplemental, pass through benefits, which are paid by the ERS but are not a liability of the ERS. These pass through benefits, which appear on the pension payroll data supplied to the actuary, are part of an old guaranteed minimum program. The ERS is a paying agent for these benefits, but is reimbursed by the City for all such payments.

Funds Charged

Catch-up COLA amounts paid to participants in the Combined Fund are charged to the Combined Fund. Catch-up COLA amounts paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- 2% Escalator for pre-1993 Retirees

Eligible Group

a) General Employees that attained the minimum service retirement age and retired with a service retirement allowance prior to January 1, 1993, or who retired on a duty disability allowance and converted to a service retirement allowance prior to January 1, 1993.

b) Firemen and Policemen who retired prior to January 1, 1993, who became eligible to retire on service retirement at age 57, or after attaining age 52 and completing 25 years of service. Also, Firemen and Policemen who retired on a duty disability allowance and converted to a service retirement allowance prior to January 1, 1993.

c) Surviving spouses of eligible members who elected Option 3 with the spouse as the beneficiary, or of members who died prior to January 1, 1993 after electing an Option 3 PSO with the spouse as the beneficiary.

<u>Timing and Amount of Increase</u>

The first increase occurs with the later of the January 1996 installment or the installment next following the 8th anniversary of the member's service retirement date (or the 8th anniversary of the surviving spouse's retirement date in the case of a PSO). Thereafter, increases occur annually on the anniversary of the first increase.

The first increase is 2% of the total ERS benefit in payment. That is, the monthly benefit to which the increase is applied includes $50 fire and police escalators, and the January, 1996 catch-up COLA amount, if any, but it excludes supplemental pass through payments, if any. Increases after the first are also 2%, and are compounded -- that is, they are applied to the total ERS benefit in payment, including all prior increases, and again, excluding any supplemental pass through payments. (The benefit initially payable to an eligible spouse upon the member's death includes 50% of any increases in payment at the member's death.)

<u>Funds Charged</u>

2% escalators paid to participants in the Combined Fund are charged to the Combined Fund. 2% escalators paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- CPI Escalator for post-1992 Fire and Police Retirees who don't Participate in the Combined Fund and Pre-2000 CPI Escalator for post-1992 Fire and Police Retirees who do Participate in the Combined Fund

<u>Eligible Group</u>

a) Firemen and Policemen in active service on or after January 1, 1993, who become eligible to retire on service retirement at age 57 or after attaining age 52 and completing 25 years of service.

b) Firemen and Policemen who retire on either a 75% Fire & Police duty disability benefit or a Heart & Lung duty disability benefit (i) between January 1, 1993, and December 31, 1994, and thereafter convert to service retirement; or (ii) on or after January 1, 1995, and who are eligible to elect between service retirement and extended life duty disability benefits at their conversion age.

c) Police in active service on or after January 1, 1995, who separate with 25 years of service and elect a deferred retirement allowance.

d) Surviving spouses of eligible members who elect Option 2 or 3, or who elect Option 4 with a percentage to the spouse, or who elect a PSO with a percentage to the spouse.

Timing and Amount of Increase

For members who retired on service retirement between January 1, 1993, and December 31, 1994; or who retired on duty disability between January 1, 1993, and December 31, 1994, and later convert to service retirement; and for eligible surviving spouses of members who died prior to retirement between January 1, 1993, and December 31, 1994, with PSO coverage in effect; the first increase occurs for March of the year following the first full calendar year of service retirement. For all others, the first increase occurs one full year after the member's service retirement date. Thereafter, increases occur annually on the anniversary of the first increase.

The monthly benefit is increased by an amount equal to (i) the total allowance for the preceding December (including all prior increases), multiplied by the lesser of (ii) 3%, and (iii) the increase in the CPI-U, U.S. Cities Average, for the calendar year preceding the increase. (The benefit initially payable to an eligible spouse upon the member's death includes a proportionate share of any increases in payment at the member's death, based on the option elected.)

Funds Charged

Benefits payable to participants in the Combined Fund are charged to the Combined Fund. For individuals who are not participants in the Combined Fund: (i) benefits are charged to the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) benefits are charged to the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.

- Post-1999 CPI Escalator for post-1992 Fire and Police Retirees who Participate in the Combined Fund

Eligible Group

The eligible group is restricted to individuals who were Firemen and Policemen who retired on duty disability between October 17, 1992, and December 31, 1992; or who were in active service on or after January 1, 1993, who either retire as Firemen or Policemen, or who die in active service as Firemen or Policemen; and their eligible surviving spouses. The types of benefits that receive the CPI escalator include:

a) The service retirement allowance and ordinary disability retirement allowance.

b) Benefits paid to members after the duty disability conversion age: the conversion service retirement allowance or the extended life duty disability retirement allowance.

c) Benefits paid to members after separation from service: the deferred retirement allowance, early retirement allowance, involuntary separation allowance, or the ERS allowance paid under the County transfer or State reciprocity provisions.

d) The spouse survivor allowance paid to the surviving spouse of an eligible member who elects Option 2 or 3, or who elects Option 4 with a percentage to the spouse, or who elects a PSO with a percentage to the spouse.

e) The fire and police or heart & lung duty disability surviving spouse allowance.

f) The duty death surviving spouse allowance.

Timing and Amount of Increases that occur after 1999

a) The first post-1999 increase occurs the later of March 2000 and March of the year following the first full calendar year of retirement for: members who retired on service retirement or ordinary disability between January 1, 1993, and December 31, 1994; or who convert to service retirement after a period of duty disability which commenced between January 1, 1993, and December 31, 1994; or who separated from service between January 1, 1993, and December 31, 1994, and subsequently retire on a deferred, early, involuntary separation, or County transfer/ State reciprocity allowance; eligible spouse survivors of such members, including PSO spouse survivors when the member died between January 1, 1993, and December 31, 1994; duty death surviving spouses of members who died between January 1, 1993, and December 31, 1994; and duty disability surviving spouses where both the member’s duty disability retirement date and duty disabled death date were between January 1, 1993, and December 31, 1994.

b) The first post-1999 increase occurs the later of the year 2000 anniversary or the first anniversary of the member’s date of death for: duty disability surviving spouses where the member’s duty disability death date is on or after January 1, 1995.

c) For all others, the first post-1999 increase occurs the later of the year 2000 anniversary or the first anniversary of the member’s retirement or pre-retirement death. (Note: this group includes members who retired on duty disability between October 17, 1992, and December 31, 1994, who subsequently elect an extended life duty disability retirement allowance, and members who retired on duty disability between October 17, 1992, and December 31, 1992, who subsequently convert to service retirement.)

Thereafter, increases occur annually on the anniversary of the first post-1999 increase.

The monthly benefit is increased by an amount equal to (i) the total allowance for the preceding December (including all prior increases), multiplied by the lesser of (ii) 3%, and (iii) the increase in the CPI-U, U.S. Cities Average, for the calendar year preceding the increase. If the member retired on duty disability between October 17, 1992, and December 31, 1992, and subsequently converts to service retirement, then the 2nd, 3rd, and 4th increases will not be less than 1.5%, and the 5th and subsequent increases will not be less than 2%. (The benefit initially payable to an eligible spouse upon the member’s death includes a proportionate share of any increases in payment at the member’s death, based on the option elected.)

Funds Charged

The CPI escalator is charged to the Combined Fund.

- 2% Guarantee for Fire and Police CPI Escalator for Participants in Combined Fund

  The eligible group is restricted to Firemen and Policemen who retire on service retirement, their spouse survivors, and PSO spouse survivors. In addition, Firemen members of Local 215 and Policemen members of the MPA must have been in active service on or after January 1, 1998; Policemen members of the MPSO must have been in active service on or after January 1, 1999; and non-represented Firemen and Policemen must have been in active service on or after January 1, 2000. The benefit is a guarantee that the CPI Escalator will not be less than 2% per annum.

- 2% Escalator for post-1992 General Employee Retirees who do Not Participate in Combined Fund

  <u>Eligible Group</u>

  a) General Employees who retire on a service retirement allowance on or after January 1, 1993 who have either (i) attained age 60, or (ii) completed 30 years of service and attained age 55.
  b) General Employees receiving a duty disability retirement allowance who convert to service retirement on or after January 1, 1993.
  c) Spouses of eligible members who either elect Option 3 at retirement with the spouse as beneficiary, or who die after electing an Option 3 PSO with the spouse as beneficiary.

  <u>Timing and Amount of Increase</u>

  The first increase occurs with the installment next following the 8th anniversary of the member's service retirement or conversion to service retirement date (or the 8th anniversary of the surviving spouse's retirement date in the case of a PSO). Thereafter, increases occur annually on the anniversary of the first increase.

  Each increase is 2%, and increases after the first are compounded -- that is, they are applied to the total benefit in payment, including all prior increases. (The benefit initially payable to an eligible spouse upon the member's death includes 50% of any increases in payment at the member's death.)

  <u>Funds Charged</u>

  For members whose enrollment dates are prior to February 1, 1996, the 2% escalator for post-1992 general employee retirees is paid from the Retirement Fund. For members whose enrollment dates are on or after February 1, 1996, the 2% escalator for post-1992 general employee retirees is paid from the Combined Retirement and Disability Fund.

- Post-1999 1.5% / 2% Escalator for General Employee Retirees and for Pre-1993 Fire and Police Retirees who Participate in the Combined Fund

  <u>Eligible Group</u>

  The eligible group includes (i) pre-1993 retirees and surviving spouses who are not eligible for either the 2% Escalator for pre-1993 retirees, or the Post-1999 CPI Escalator for post-1992 fire and police retirees; and (ii) post-1992 general employee retirees and their surviving spouses. The types of benefits that receive the 1.5%/2% escalator include:

a) The service retirement allowance and ordinary disability retirement allowance for all members, and the duty disability retirement allowance for General Employees.
b) Benefits paid to members after the duty disability conversion age: the conversion service retirement allowance for all members or the extended life duty disability retirement allowance for fire and police.
c) Benefits paid to members after separation from service: the deferred retirement allowance, early retirement allowance, involuntary separation allowance, or the ERS allowance paid under the County transfer or State reciprocity provisions.
d) The spouse survivor allowance paid to the surviving spouse of an eligible member who elects Option 2 or 3, or who elects Option 4 with a percentage to the spouse, or who elects a PSO with a percentage to the spouse.
e) The fire and police or heart & lung duty disability surviving spouse allowance.
f) The duty death surviving spouse allowance.

Timing and Amount of Increases that occur after 1999

a) The first post-1999 increase occurs for January 2000 for eligible Option 2 and 4 spouse survivors of members retired on a service retirement allowance or a conversion service retirement allowance - and for eligible Option 2 and 4 PSO spouse survivors - when the member's date of retirement or pre-retirement death was prior to January 1988.
b) The first post-1999 increase occurs the later of the year 2000 anniversary or the 2nd anniversary of the member's date of death for: duty disability surviving spouses of Firemen and Policemen.
c) For all others, the first post-1999 increase occurs the later of the year 2000 anniversary or the 2nd anniversary of the member's retirement or pre-retirement death.

Thereafter, increases occur annually on the anniversary of the first increase.

All increases for the group described in paragraph (a) are 2% increases. For paragraphs (b) and (c), an increase which takes effect on the 2nd, 3rd, or 4th anniversary is a 1.5% increase. An increase which takes effect on the 5th or subsequent anniversary is a 2% increase. Increases after the first one are compounded -- that is, they are applied to the total benefit in payment, including all prior increases. (The benefit initially payable to an eligible spouse upon the member's death includes the spouse's proportionate share of any increases in payment at the member's death, based on the option elected.)

Tier 2 Employees receive an increase of 2% on the fifth anniversary of their retirement and on each anniversary that follows, but only for service retirement.

Fire and Police Survivorship Benefits Prior to the Global Pension Settlement

The survivors of Firemen or Policemen who die in active service or while in receipt of a disability allowance may be entitled to a survivorship benefit. The survivorship benefit is payable to the spouse of the deceased member provided the spouse has one or more eligible children in her care. Eligible children include unmarried children who are either under the age of 18, or are over age 18, but who suffer from a disability which commenced before the age of 18. The amount of the survivorship benefit for a death occurring in 2000 is $600 monthly for the spouse and one child or for two or more eligible children. If there is no surviving widow and only one child, the benefit is $300. Upon attainment of age 57, $300 is payable to the spouse for her lifetime. Benefits payable to a spouse cease on remarriage and benefits payable in respect of children cease on attainment of age 18 (unless disabled prior to age 18) or marriage. For member deaths that occurred prior to 2000 the monthly amount payable depends upon the plan provisions in effect at the member's death.

Fire and Police Survivorship Benefits for Survivors Participating in the Combined Fund

Survivors of Firemen or Policemen who died prior to 2000 while in active service or while retired on disability (and contributing to the Fire and Police Survivorship Fund) may be entitled to a survivorship benefit. The survivorship benefit is payable to the spouse of the deceased member provided the spouse has one or more eligible children in her care. For participants in the Combined Fund, the amount of the survivorship benefit for a death occurring prior to 2000 is $600 monthly for the spouse and one child under age 18, or for two or more children under age 18. If there is no surviving widow and only one child, the benefit is $300. The monthly amount payable to a disabled child over the age of 18 depends upon the plan provisions in effect at the member's death. Upon attainment of age 57, $300 is payable to the spouse for her lifetime. Benefits payable to a spouse cease on remarriage and benefits payable in respect of children cease on attainment of age 18 (unless disability commenced prior to age 18) or marriage.

Survivorship Benefits for Participants in the Combined Fund are charged to the Combined Fund.

Separation Benefits

Eligibility and Amounts

Should a member separate from service, and no other benefit is payable, such a member will possibly be entitled to one of the options outlined below. Additional eligibility information about Separation Benefits is provided under 36-05-6.

a) If the member has less than four years of creditable service, a refund of member contributions (not paid by the member's employer). Interest at 4.0% per annum on the 4%, 5.5%, or 7% member paid contributions is also payable.

b) If the member has four years of creditable service, a deferred allowance payable at the minimum service retirement age.

c) A refund of the member contributions and interest, including contributions paid on the member's behalf, is payable to (i) General Employees after 4 years of creditable service, or (ii) Firemen or Policemen after 10 years of creditable service.

d) If the member's service is involuntarily terminated, or the member terminates voluntarily after attaining age 55 and completing 15 years of creditable service, such member may elect to receive a deferred allowance at the minimum service retirement age, or an immediate allowance that is the actuarial equivalent of the deferred allowance.

e) If the member has 25 years of qualifying time as a Fireman or Policeman, and is not participating in the Combined Fund, a deferred allowance payable at age 52.

f) If the member is a Fireman with 25 years of qualifying time as a Fireman or Policeman, had not attained age 49 at the date of separation from service, and is participating in the Combined Fund, a deferred allowance payable at age 52.

Imputed service credit and seasonal service credit are not used when calculating separation benefits.

Funds Charged with Separation Benefits

Benefits paid to participants in the Combined Fund are charged to the Combined Fund. Separation benefits paid to individuals not participating in the Combined Fund are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Fund if the member's enrollment date is on or after February 1, 1996.

Lump Sum Bonus Payments

Under the Global Pension Settlement, various lump sum bonus payments may be made to eligible individuals participating in the Combined Fund. An individual may be eligible for one or more types of lump sum bonus payments.

Eligibility for Lump Sum Bonus Payments

Only individuals participating in the Combined Fund can become eligible for the following types of lump sum bonus payments. In addition, the following conditions apply to the individual lump sum bonuses.

a) 5% lump sum bonus: Members who are inactive as of January 1, 2000, will become eligible at the time that their deferred retirement allowance commences.

   Members in active service as of January 1, 2000, will become eligible when they first retire.

   If a member in active service as of January 1, 2000, dies prior to retirement and the member's surviving spouse is eligible for either a surviving spouse duty death benefit (including Heart & Lung duty death) or a PSO spouse survivor benefit then the surviving spouse is eligible for this bonus payment.

   Only one 5% lump sum bonus will be paid on account of an individual member. Thus, if a member receiving a duty disability retirement allowance receives a 5% lump sum bonus on account of the duty disability benefit, then the member will not be eligible for an additional 5% lump sum bonus at the time of conversion.

b) 8.6% lump sum bonus: A Fireman or Policeman in active service as of January 1, 2000, who (i) retires as a Fireman or Policeman on a service retirement allowance; or (ii) converts to service retirement or elects an extended life duty disability retirement allowance after retiring as a Fireman or Policeman on duty disability; (iii) attains age 63 while in receipt of an ordinary disability retirement allowance or a lifetime Fire & Police or Heart & Lung duty disability retirement allowance, is eligible for this bonus so long as the member did not receive 2 years of imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund; (iv) or retires as a Fireman or Policeman on an extended life duty disability.

   If a Fireman or Policeman in active service as of January 1, 2000, dies prior to retirement and the member's surviving spouse is eligible for either a surviving spouse duty death benefit (including Heart & Lung duty death) or a PSO spouse survivor benefit then the surviving spouse is eligible for this bonus payment.

A Fireman or Policeman retired on disability as of January 1, 2000, who is also an active member of the Firemen and Policemen's Survivorship Fund as of January 1, 2000 - under age 57 at 1/1/2000, and made all required contributions to the Survivorship Fund – is eligible for this bonus if he (i) converts to service retirement or elects an extended life duty disability retirement allowance; or (ii) is ineligible to convert to service retirement and attains age 63 while in receipt of the disability retirement allowance; provided that he (iii) did not receive 2 years of imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund.

Amount of Lump Sum Bonus Payments

Age factors are used in the 5% lump sum bonus and the 8.6% lump sum bonus calculations. The age factors for these bonus payments are contained in s. 36-05-11-a.

a) 5% lump sum bonus: For members who are either inactive or active as of January 1, 2000, who retire in the future, the bonus payment equals 5% times their initial annual retirement allowance times a factor based on attained age on the retirement date. The retirement allowance used in the bonus calculation is to be reduced for early retirement, if applicable, but is not to be reduced for any optional election the member might have made under s. 36-05-7.

   If a member in active service as of January 1, 2000 dies prior to retirement and the member's surviving spouse is eligible for this bonus payment, then the bonus will equal 5% times the spouse's initial annual benefit times a factor based on the spouse's attained age when the benefit commences.

b) 8.6% lump sum bonus: In the explanation that follows, whenever an annual allowance is used in calculating a bonus due to a member, the allowance used is the allowance that would be paid if the member did not elect an option under s. 36-05-7.

   For members who retire on service retirement: 8.6% times the annual service retirement allowance times a factor based on attained age at retirement.

   For surviving spouses who receive either a PSO benefit or a duty death benefit: 8.6% times the initial annual allowance payable to the spouse times a factor based on the spouse's attained age when the benefit commences.

   For a member who is retired on duty disability as of January 1, 2000 - or who retires on duty disability thereafter - and who is eligible to convert to service retirement: 8.6% times the annual conversion service retirement allowance earned as of the conversion age times a factor based on attained age at conversion.

   For a member who is retired on disability as of January 1, 2000 – or who retired on disability thereafter – who is ineligible to convert to service retirement, and who is age 63 or younger at the later of 1/1/2000 or the disability retirement date: 8.6% times the "hypothetical" annual conversion service retirement allowance earned at age 63 times the attained age factor for age 63. The "hypothetical" allowance is calculated as if the member were eligible to convert at age 63.

   For a member who retires on disability after January 1, 2000, who is older than age 63 at the disability retirement date: 8.6% times the annual disability allowance payable when the allowance commences times a factor based on the member's attained age at retirement.

Funds Charged

The 5% lump sum bonus and the 8.6% lump sum bonus are paid from the Combined Fund.

Benefits Not Valued

None.

Actuarial Methods

The method of financing the ERS is prescribed in Section 36.08 of the MCC.

Actuarial Cost Method

The method used to determine Normal Cost and Accrued Actuarial Liability (AAL) is the Individual Entry Age Normal Cost Method. The UAAL, under this method, is the AAL over the Actuarial Value of Assets. The total actuarially determined employer contribution is the sum of the employer portion of the Normal Cost (Total Normal Cost less expected member contributions) plus an amount to amortize the UAAL according to the Amortization Method plus an amount to reimbursement the previous year's administrative expense.

Asset Values

Two asset values are used in this report. A description of each and a brief explanation of where they are used follows:

- **Market Value**

  The market value of assets is the value of investments if they were to be sold on the date valued. The market value of assets is used to develop the actuarial value of assets.

- **Actuarial Value**

  The actuarial value of the assets in the Employers' Reserve Fund is equal to the market value of assets. This Fund is not available to pay the benefits for ERS members, so it is excluded from the allocation of the actuarial value of assets to the various funds and groups and the resulting calculations of actuarially determined employer contributions . The actuarial value of assets for the remaining funds is a smoothed value of assets (see Table 5). The difference between (1) the expected return on the market value of assets at the beginning of the year, based on the investment return assumption and the net non-investment cash flows, and (2) the actual return on the market value of assets is smoothed equally over five years. As a result, there are five components of excess/shortfall returns to be smoothed each year.

Amortization Method

The System's UAAL is amortized on a level-dollar basis using what is known as a "layered" approach. Under this approach, changes to the System's UAAL each year are amortized using individual amortization schedules over various periods, which are selected based on the nature of the change. The current amortization policies, which were adopted by the Board at its February 24, 2023 meeting and subsequently adjusted to reflect the changes under 2023 Wisconsin Act 12, include:

- The total projected January 1, 2024 UAAL balance, as calculated in the *second* January 1, 2023 actuarial valuation, is being amortized as a level-dollar amount over a closed 30-year period (29 years remaining as of the January 1, 2024 actuarial valuation) in accordance with 2023 Wisconsin Act 12.
- Future increases in the Systems' UAAL resulting from experience losses will be amortized over a closed 10-year period.
- Future decreases in the System's UAAL resulting from experience gains will be amortized over either a closed 10-year period or the remainder of the 30-year period beginning on January 1, 2024, whichever is longer.

- If the UAAL is negative, all prior bases will be eliminated, and the participating employers will be required to contribute their share of the annual normal cost and administrative expenses. If the UAAL becomes positive again, it will be amortized over a closed 10-year period.
- Changes to the UAAL arising from changes to plan provisions will be amortized over various periods, depending on the nature of the change and which participants are affected.
- Changes to the UAAL arising from contributions which are above or below the actuarially determined employer contribution will be amortized over a closed 5-year period.

Contribution Lag

2023 Wisconsin Act 12 repealed the System's stable employer contribution funding policy. As a result, participating employers are now required to contribute the Actuarially Determined Employer Contribution amount as determined in each annual actuarial valuation report. In order to more easily administer the revised funding policy, the Board, upon the recommendation of their actuary, adopted a one-year contribution lag so that results of the current valuation report will set the required contribution amount for employers during the following Plan Year. This policy was first effective with the *second* 2023 actuarial valuation report.

Demographic assumptions are based on the experience investigation prepared as of December 31, 2021 and adopted by the Board of Trustees on September 28, 2022 for use beginning with the January 1, 2023 actuarial valuation. The set of economic assumptions was adopted by the Board of Trustees on February 27, 2023, for use in the January 1, 2023 actuarial valuation. The next experience study is scheduled to be performed for inclusion with the January 1, 2028 actuarial valuation. However, due the passage of 2023 Wisconsin Act 12 on June 20, 2023, the investment return assumption cannot be greater than the rate used by the Wisconsin Retirement System, which has currently set their investment return assumption at 6.80% for active employees.

Investment Return Assumption: 6.80% per annum (net of investment expenses), compounded annually.

Inflation: 2.50% per annum.

Cost-of-Living Adjustments (COLAs): For retirees whose COLA is defined as the lesser of 3.00% and CPI-U, the assumed COLA is 2.50% per annum.

Payroll Growth for UAAL amortization: None. UAAL amortization payments are developed on a level dollar basis.

Illustrative Rates of Salary Increase:

	Salary Increases*	
Service	General Employees	Firemen and Policemen
1	6.25%	18.00%
5	5.75	7.00
10	5.00	3.20
15	4.25	3.20
20	4.25	3.10
25	4.25	3.10
30	4.00	3.10
35	3.00	3.10
40	3.00	3.00

* Includes general wage increase assumption of 3.00%.

Annual increases of 2.50% per annum is assumed for Policemen, Firemen and General Employees on duty disability. The increases for duty disabled Firemen and Policemen affect both current duty disability benefits and future service retirement or extended life conversion benefits. The increases for General Employees affect only service retirement conversion benefits.

Mortality Assumptions:

a) Active Members — For General employees, Pub-2010 Below Median General Employee Mortality Table with a one-year age setback for males and a two-year age set forward for females, projected generationally using SOA Scale MP-2021.

For Policemen and Firemen, Pub-2010 Median Public Safety Employee Mortality Table with a one-year age set forward for males and females, projected generationally using SOA Scale MP-2021.

b) Healthy Retirees — For General employees, Pub-2010 Below Median General Retiree Mortality Table with a one-year age setback for males and a two-year age set forward for females, projected generationally using SOA Scale MP-2021.

For Policemen and Firemen, Pub-2010 Median Public Safety Retiree Mortality Table with a one-year age set forward for males and females, projected generationally using SOA Scale MP-2021.

c) Beneficiaries — For General employees, Pub-2010 Below Median Contingent Survivors Mortality Table with a one-year age setback for males and a two-year age set forward for females, projected generationally using SOA Scale MP-2021.

For Policemen and Firemen, Pub-2010 Median Contingent Survivors Mortality Table with a one-year age set forward for males and females, projected generationally using SOA Scale MP-2021.

d) Disabled Retirees — For General employees, Pub-2010 Non-Safety Disabled Retiree Mortality Table with a one-year age setback for males and a two-year age set forward for females, projected generationally using SOA Scale MP-2021.

For Policemen and Firemen, Pub-2010 Safety Disabled Retiree Mortality Table with a one-year age set forward for males and females, projected generationally using SOA Scale MP-2021.

Illustrative Rates of Termination:

	General Employees		Policemen	Firemen
Service	Male	Female		
1	15.00%	17.00%	4.00%	2.35%
5	9.00	10.50	2.50	1.75
10	4.50	6.75	1.25	1.00
15	4.00	4.00	0.85	0.50
20	3.00	2.75	0.85	0.50
25	1.00	2.50	0.00	0.00
30	0.00	0.00	0.00	0.00

All terminations are assumed to be voluntary.

Members who terminate vested are assumed to take a refund if it is more valuable than their deferred benefit. Regular interest credited on contribution account balances is assumed to be 4.0%.

Rates of Early and Normal Retirement:

General Employees

	Early Retirement		Normal Retirement			
	Tier 1	Tier 2	Tier 1		Tier 2	
Age	All	All	Males	Females	Males	Females
55	2%	2%	40%	32%		
56	2	2	20	25		
57	2	2	25	25		
58	2	2	25	25		
59	4	2	25	25		
60		2	25	20	40%	32%
61		2	25	20	25	20
62		2	25	25	25	25
63		2	25	20	25	20
64		4	25	20	25	20
65			27	27	27	27
66			20	27	20	27
67			27	27	27	27
68			27	30	27	30
69			27	30	27	30
70			100	100	100	100

Policemen and Firemen

Age	Firemen	Policemen	Age	Firemen	Policemen
42		40%	53	22%	40%
43		40	54	22	40
44		40	55	30	40
45		40	56	30	40
46		40	57	30	40
47		40	58	30	25
48		40	59	40	25
49	22%	40	60	40	25
50	22	40	61	50	25
51	22	40	62	50	50
52	22	40	63	100	100

Inactive vested members are assumed to begin receiving benefit payments at their minimum service retirement age, which is age 60 for Tier 1 General Employees, age 65 for Tier 2 General Employees and age 57 for Policemen and Firemen.

Illustrative Rates of Disability:

	Disability Rates		
Age	General Employees	Firemen	Policemen
20	0.040%	0.250%	0.024%
25	0.040	0.250	0.024
30	0.040	0.250	0.096
35	0.040	0.254	0.148
40	0.041	0.302	0.180
45	0.049	0.486	0.192
50	0.082	0.898	0.196
55	0.167	1.580	0.200
60	0.333	0.000	0.000
65	0.600	0.000	0.000

Elected officials are assumed to become disabled at the same rate as General Employees.

Duty Disabilities:

		Percentage of Duty Disabilities Assumed		
Employee Group	Percentage of Disabilities Incurred in the Performance of Duty	Eligible For The 90% Benefit	Under The Heart & Lung Law	Assumption Adopted January 1
General Employees	20.0%	N/A	N/A	2023
Police other than MPA	20.0%	0.0%	N/A	2023
MPA enrolled on or before 4/18/2005	60.0%	0.0%	N/A	2023
MPA enrolled after 4/18/2005	60.0%	0.0%	N/A	2023
Fire other than MPFFA	20.0%	0.0%	0.0%	2023
MPFFA enrolled on or before 10/3/2005	75.0%	0.0%	0.0%	2023
MPFFA enrolled after 10/3/2005	75.0%	0.0%	0.0%	2023

Upon reaching their service conversion date, 100% of Policemen and Firemen who become duty disabled are assumed to convert to a service retirement benefit.

Marriage Assumption and Duty Disability Child Allotments:

It is assumed that female spouses are three years younger than males. In absence of evidence to the contrary, it is assumed that 85% of General Employees and 95% of Policemen and Firemen are married, with dependent children, described by the following table:

Member's Age at Death or Disability	Number of Dependent Children	Age of Youngest Child
20	0.0	-
25	1.5	1
30	2.5	2
35	2.5	5
40	2.5	8
45	2.0	11
50	1.5	14
55	1.0	15
60 and Over	0.0	-

The percentage of retiring employees assumed to elect option 3, the subsidized 50% option, is 25% for males and 15% for females. The percentage of General Employees assumed electing the 100% PSO option before retirement is 40% for males and 15% for females. For Firemen and Policemen, 95% are assumed to elect the 100% PSO option before retirement.

Duty Deaths:

The following percentages of deaths in active service are assumed to incur in the performance of duty:

General Employees: 5%
Police & Fire: 10%. In addition, amongst Firemen, 25% of duty deaths are assumed to occur under the Heart and Lung Law.

Imputed Military Service:

The following percentages of eligible members are assumed to earn 1 year of imputed military service credit:

General Employees: 10%
Police: 13%
Fire: 13%

These percentages are based on troop strength statistics from the Department of Defense website. (Adopted 1/1/2003)

Seasonal Service Credit: The following percentages of eligible members are assumed to receive one year of seasonable service credit:

Member's Union or Bargaining Group	Percentage with Seasonal Service	Assumption Adopted January 1
District Council 48, AFSCME	27.09%	2005
Fire Equipment Dispatchers Local 494, IBEW	0.00%	2006
Electrical Group Local 494, IBEW	31.00%	2006
Machine Shop Local 494, IBEW	12.00%	2005
Bridge Operators Local 195, IBEW	28.57%	2005
Joint 129/48 Local 139, IOUE & DC48	100.00%	2005
Machinists Local 510, IAM	5.00%	2005
Sanitation Local 61, LIUNA	98.06%	2005
TEAM (Techs, Eng, Archs of Milw)	5.00%	2005
MBCTC (Bricklayers, Carpenters, Cement Masons, Painters, Iron Workers)	10.00%	2005
Police Sworn Management, Police Civilian Management, Managers, Elected Officials (except mayor)	3.13%	2005
Non-represented in the Police Department and General City non-represented	5.00%	2005

<u>**Miscellaneous**</u>

Future Service Accrual: Active members are assumed to accrue a full year of service in each future year (adopted 1/1/2023).

Annualized Compensation: For active members, their prior year reported compensation amount is annualized based on their Future Service Accrual and further increased by a leap year adjustment factor of 1.0034 (26.089285 ÷ 26).

Deemed Inactives: Active members who worked less than 100 hours in the prior year, but who have not officially terminated employment are treated as Inactives. These members are not assumed to earn additional service credit in future years.

Decrement Timing: All withdrawals, deaths, disabilities, and retirements are assumed to occur mid-year.

Liability for Inactive Members: The data provided for inactive members does not contain all the elements to calculate the member's deferred benefit. The deferred benefit amounts for these members are estimated using the member's life-to-date earnings and assumed salary increases. For terminated members who are missing a termination date on their record, it is assumed that they terminated at age 35. The actuary is collecting data so that future members' deferred benefits can be estimated.

Administrative Expenses: Based on the most recent fiscal year end.

Normal Cost: Normal cost rate reflects the impact of new entrants during the year. Due to 2023 Wisconsin Act 12, there are no new entrants effective January 1, 2024.

Changes Since Prior Valuation: None.

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Note that the first definitions given are the "official" definitions of the term. For some terms there is a second definition, in italics, which is the unofficial definition.

Actuarial Accrued Liability (AAL): The portion of the Present Value of Projected Benefits (PVFB) allocated to past service. Also difference between (i) the actuarial present value of future benefits, and (ii) the present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability." *The amount of money that should be in the fund. The funding target.*

Actuarial Assumptions: Estimates of future plan experience with respect to rates of mortality, disability, retirement, investment income and salary increases. Demographic ("people") assumptions (rates of mortality, separation, and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic ("money") assumptions (salary increases and investment income) consist of an underlying rate appropriate in an inflation- free environment plus a provision for a long-term average rate of inflation. *Estimates of future events used to project what we know now- current member data, assets, and benefit provisions – into an estimate of future benefits.*

Actuarial Cost Method: A mathematical budgeting procedure for allocating the dollar amount of the Present Value of Projected Benefits (PVFB) between the normal costs to be paid in the future and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Methods: The collective term for the Actuarial Cost Method, the Amortization Payment for UAAL Method, and the Asset Valuation Method used to develop the actuarially determined employer contributions for the Retirement System. *The funding policy*.

Actuarial Equivalent: Benefits whose actuarial present values are equal.

Actuarial Present Value: The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarial Value of Assets (AVA): A smoothed value of assets which is used to limit actuarially determined employer contributions volatility. Also known as the funding value of assets. *Smoothed value of assets.*

Amortization Payment for UAAL: Payment of the unfunded actuarial accrued liability by means of periodic contributions of interest and principal, as opposed to a lump sum payment. The components of the amortization payment for UAAL includes:

- Amortization Period Length – Generally amortization periods of up to 15 to 25 years (and certainly not longer than 30). Similar to a mortgage, the shorter the amortization period, the higher the payment and the faster the UAAL is paid off.

- Amortization payment increases – Future payments can be level dollar, like a mortgage, or as a level percent of pay. Most Retirement Systems amortize UAAL as a level percent of pay which when combined with the employer normal cost that is developed as a level percent of pay can result in contributions that are easier to budget.

- Amortization type – An amortization schedule can be closed or open. A closed amortization schedule is similar to a mortgage – at the end of the amortization period the UAAL is designed to be paid off. An open amortization period is similar to refinancing the UAAL year after year.

- Amortization schedule – UAAL can be amortized over a single amortization period, or it can be amortized over a schedule.

The amortization payment for UAAL can be thought of as the UAAL mortgage payment.

Asset Valuation Method: The components of how the actuarial value of assets is to be developed. CMERS uses a five-year smoothing of asset gains and losses, which is the most commonly used method.

Experience Gain (Loss): A measure of the difference between actual experience and experience anticipated by a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used. *The experience Gain (Loss) represents how much the actuary missed the mark in a given year.*

Funded Ratio: The percent of the actuarial accrued liabilities covered by the actuarial value of assets. Also known as the funded status. *The ratio of how much money you actually have in the fund to the amount you should have in the fund.*

Normal Cost: The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." An amortization payment toward the unfunded actuarial accrued liability is paid in addition to the normal cost to arrive at the total contribution in a given year. *The cost of benefits accruing during the year*.

Present Value of Future Normal Cost (PVFNC): The portion of the Present Value of Projected Benefits (PVFB) allocated to future service. *The value in today's dollars of the amount of contribution to be made in the future for benefits accruing for members in the Retirement System as of the valuation date.*

Present Value of Future Benefits (PVFB): The projected future benefit payments of the plan are discounted into today's dollars using an assumed rate of investment return assumption to determine the Present Value of Future Benefits (PVFB) of the Retirement System. The PVFB is the discounted value of the projected benefits promised to all members as of a valuation date, including future pay and service for members which has not yet been earned. *If the Retirement System held assets equal to the PVFB and all the assumptions were realized, there would be sufficient funds to pay off all the benefits to be paid in the future for members in the Retirement System as of the valuation date.*

Reserve Account: An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability (UAAL): The difference between the actuarial accrued liability (AAL) and actuarial value of assets (AVA). The UAAL is sometimes referred to as "unfunded accrued liability." *Funding shortfall, or prefunded amount if negative.*

Valuation Date: The date that the actuarial valuation calculations are performed as of. *Also known as the "snapshot date".*

Board Report - May 2024 **Retirements**

Retirement Type	Retirement SubType	Last Name	First Name	Retirement Date	Option	Department
Regular	Deferred	GONZALEZ	HERIBERTO	2/2/2016	MAX	DPW - INFRASTRUCTURE
Regular	Deferred	SCOTT	GRACE	12/3/2021	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Service	BARKI	PIRAKYAA	1/15/2022	MAX	CITY OF MILWAUKEE
Regular	Service	ZIAREK	DAVID	9/29/2022	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Deferred	TAYLOR	TERRY	1/6/2023	MAX	CITY OF MILWAUKEE
Regular	Service	HULEY	LAURA	2/4/2023	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Deferred	CABALLERO	MIGUEL	9/29/2023	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Service	SMITH	SAM	10/14/2023	MAX	DCD - MGMT & SPECIAL PROJECTS
Regular	Service	DAUGHTRY	CHARLETTA	10/20/2023	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Deferred	BANKS	GERALD	3/26/2024	MAX	CITY OF MILWAUKEE
Regular	Service	KRAHN	SCOTT	4/6/2024	100	CITY OF MILWAUKEE
Regular	Deferred	PERRY	ROSALIND	4/8/2024	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Deferred	SHERIFI	IQMET	4/9/2024	MAX	CITY OF MILWAUKEE
Regular	Deferred	SPANG	GINA	4/11/2024	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Service	WIRTH	CINDY	4/12/2024	MAX	EMERGENCY COMMUNICATIONS
Regular	Early	STOVALL	TIMOTHY	4/13/2024	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Service	SEYMER-TABASKA	SHANNON	4/13/2024	MAX	MILWAUKEE POLICE DEPARTMENT
Regular	Service	PAVLICA	STOJA	4/15/2024	50	MILWAUKEE PUBLIC SCHOOLS
Regular	Service	BORKOWSKI	MARK	4/16/2024	MAX	COMMON COUNCIL - CITY CLERK
Regular	Service	HARRIS	PRINCE	4/16/2024	50	FIRE - FIREFIGHTING
Regular	Service	MURPHY	MICHAEL	4/16/2024	100	CITY OF MILWAUKEE
Regular	Service	SPENCER	TEARMAN	4/16/2024	MAX	CITY ATTORNEY
Regular	Service	ROMANOWSKI	JAMES	4/19/2024	100	MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
Regular	Deferred	JENKINS	ROOSEVELT	4/20/2024	75	MPD - ADMINISTRATION
Regular	Service	ZAGAR	JEFFREY	4/20/2024	MAX	DEPT OF NEIGHBORHOOD SRVCS
Regular	Deferred	BALDWIN	LAWANDA	4/21/2024	75	MILWAUKEE PUBLIC SCHOOLS
Regular	Deferred	KONINGS	BRENDA	4/22/2024	100	HEALTH DEPARTMENT
Regular	Service	SIEBEN	DENNIS	4/24/2024	50	FIRE - FIREFIGHTING
Regular	Service	FINKLEY	WINFRID	4/27/2024	MAX	MILWAUKEE POLICE DEPARTMENT
Regular	Service	LIPINSKI	EILEEN	4/27/2024	MAX	COMMON COUNCIL - CITY CLERK
Regular	Service	LOPEZ	MICHAEL	4/27/2024	100	MILWAUKEE POLICE DEPARTMENT
Regular	Service	LORENZANA	LYDIA	4/27/2024	50	EMERGENCY COMMUNICATIONS
Regular	Service	NAGLER	EUGENE	4/27/2024	100	MILWAUKEE POLICE DEPARTMENT
Regular	Early	BROWN	ANTOINE	4/29/2024	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Service	CHARLES	CURT	4/29/2024	100	FIRE - FIREFIGHTING
Regular	Service	MINDT	GREGORY	4/29/2024	100	FIRE - FIREFIGHTING
Regular	Service	ABDULLAH	IBRAHEEM	4/30/2024	50	FIRE - FIREFIGHTING
Regular	Service	LAURILA	DAVID	4/30/2024	100	MILWAUKEE POLICE DEPARTMENT
Regular	Service	GENSKOW	LINDA	5/1/2024	MAX	MILWAUKEE POLICE DEPARTMENT
Regular	Service	LETENDRE	MARY	5/1/2024	50	DCD - PUBLIC HOUSING

Board Report - May 2024 **Deaths**

Type	Last Name	First Name	Death Date	Payment Date		Amount
Ordinary Death	DARBY	GERARD	2/12/2023	5/31/2024	$	20,634.89
Ordinary Death	WILSON	DENNIS	1/21/2024	5/31/2024	$	18,903.07
Retiree Death-Termination	ARCHER	DOROTHY	4/25/2024	5/31/2024	$	232.97
Retiree Death-Termination	ARTZ	MILDRED	3/28/2024	5/31/2024	$	319.76
Retiree Death-Termination	BROWN	ERIC	2/11/2024	5/31/2024	$	26,101.32
Retiree Death-Termination	GRABOWSKI	JEFFREY	1/15/2024	5/31/2024	$	655.56
Retiree Death-Termination	HENZL	EDWARD	2/23/2021	5/31/2024	$	595.26
Retiree Death-Termination	HOWARD	LOYCE	4/23/2024	5/31/2024	$	3,103.16
Retiree Death-Termination	JACOBSON	GLENN	11/29/2023	5/31/2024	$	253.73
Retiree Death-Termination	KESTING	ANN	9/13/2023	5/31/2024	$	1,148.95
Retiree Death-Termination	METZGER	KENNETH	3/26/2024	5/31/2024	$	2,661.06
Retiree Death-Termination	PRZYBYLSKI	JOHN	9/14/2023	5/31/2024	$	219.73
Retiree Death-Termination	SCHWAIGER	KAROL	1/28/2024	5/31/2024	$	1,904.21
Retiree Death-Termination	STREHLOW	NEAL	1/25/2024	5/31/2024	$	612.28
Retiree Death-Termination	WATKINS	JERRY	2/22/2024	5/31/2024	$	247.53
Retiree Death-Termination	WOJTAL	BARBARA	4/5/2024	5/31/2024	$	205.98
Retiree Death-Termination	WOLFF	DONALD	3/20/2024	5/31/2024	$	2,015.75
Retiree Death-Termination	ZALESKI	CLARICE	3/29/2024	5/31/2024	$	819.25
Surv Death-Termination	FRODERMANN	MARY	3/4/2023	5/31/2024	$	455.42
Surv Death-Termination	KONCZAL	GERALDINE	4/4/2024	5/31/2024	$	118.12
Surv Death-Termination	MEYER	BARBARA	3/21/2024	5/31/2024	$	1,888.44
Surv Death-Termination	SCHWAIGER	KAROL	1/28/2024	5/31/2024	$	940.20
Surv Death-Termination	SPENCER	VERONICA	2/20/2024	5/31/2024	$	1,258.90
Surv Death-Termination	WACHNIAK	VIRGINIA	3/9/2024	5/31/2024	$	705.30
				TOTAL	**$**	**86,000.84**
Retiree Death-Cont Opt	BURNETTE	LUCY	4/23/2024	5/1/2024		
Retiree Death-Cont Opt	DAVIS	JANICE	4/4/2024	5/1/2024		
Retiree Death-Cont Opt	FIELDHACK	JOHN	5/4/2024	5/1/2024		
Retiree Death-Cont Opt	FRIES	ALBERT	5/16/2024	5/1/2024		
Retiree Death-Cont Opt	GSCHWIND	RANDOLF	5/11/2024	5/1/2024		
Retiree Death-Cont Opt	IVANCIC	DANIEL	5/6/2024	5/1/2024		
Retiree Death-Cont Opt	JONES	JETTIE	4/15/2024	5/1/2024		
Retiree Death-Cont Opt	KALTENBACH	ROBERT	5/2/2024	5/1/2024		

Type	Last Name	First Name	Death Date	Payment Date	Amount
Retiree Death-Cont Opt	KLUCK	GEORGE	4/30/2024	5/1/2024	
Retiree Death-Cont Opt	LUDWIG	NEIL	5/12/2024	5/1/2024	
Retiree Death-Cont Opt	MEYERS	MICHAEL	4/27/2024	5/1/2024	
Retiree Death-Cont Opt	PATRYKUS	WAYNE	4/26/2024	5/1/2024	
Retiree Death-Cont Opt	SCHMECHEL	JOHN	4/10/2024	5/1/2024	
Retiree Death-Cont Opt	SLACK	DENNIS	5/12/2024	5/1/2024	
Retiree Death-Cont Opt	TERIACA	RAYMOND	5/5/2024	5/1/2024	
Retiree Death-Cont Opt	ZELLMER	RONALD	4/13/2024	5/1/2024	

Board Report - May 2024 **Withdrawals**

Type	Last Name	First Name	Payment Date		Amount
Administrative Withdrawal	KLIMERS	WESLEY	5/31/2024	$	2,373.65
Administrative Withdrawal	RIVERA	JENNIFER	5/31/2024	$	687.38
Administrative Withdrawal	STORY	RACHEL	5/31/2024	$	1,077.50
Full Refund	BERG	BRYAN	5/31/2024	$	841.50
Full Refund	CAMPBELL	STEPHANIE	5/31/2024	$	4,391.19
Full Refund	CARR	NEOSHA	5/31/2024	$	3,656.42
Full Refund	FARMER	SHEKEYA	5/31/2024	$	4,595.24
Full Refund	HAWKINS	RAJSHAUN	5/31/2024	$	5,477.27
Full Refund	HOPKINS	SABRINA	5/31/2024	$	8,648.56
Full Refund	JONES	SHAQUISHA	5/31/2024	$	415.12
Full Refund	MCGEE	MICHAELA	5/31/2024	$	2,067.38
Full Refund	PATE	DEVANIA	5/31/2024	$	468.68
Full Refund	QAASIM	TYTRICE	5/31/2024	$	6,626.63
Full Refund	ROBINSON	CHANTELL	5/31/2024	$	7,314.51
Full Refund	SAUNDERS	JASON	5/31/2024	$	2,740.47
Full Refund	ZAK	VALERIE	5/31/2024	$	20,569.56
Member Only Refund	BUCK	MERCEDES	5/31/2024	$	3,970.75
Member Only Refund	CHISTI	REMESIS	5/31/2024	$	2,229.73
Member Only Refund	HAYES	AUDREY	5/31/2024	$	920.82
Member Only Refund	HEWINGS	SAVANNA	5/31/2024	$	2,767.94
Member Only Refund	JACKSON	CHRISTOPHER	5/31/2024	$	1,604.95
Member Only Refund	LOWTHER	APRIL	5/31/2024	$	7,761.95
Member Only Refund	MARIN	MERARI	5/31/2024	$	533.81
Member Only Refund	METCALFE	CALVINA	5/31/2024	$	1,691.19
Member Only Refund	NASH	JERRY	5/31/2024	$	384.82
Member Only Refund	ORTIZ DE JESUS	ANITXA	5/31/2024	$	1,129.13
Member Only Refund	ROGERS	QIANA	5/31/2024	$	2,001.26
Member Only Refund	SHAREEF	MARIAH	5/31/2024	$	2,938.70
Member Only Refund	SPREWER	DOYLE	5/31/2024	$	20.48
Member Only Refund	VAN METER	DANIELA	5/31/2024	$	6,640.47
			TOTAL	**$**	**106,547.06**

Conference Requests – June 2024 Board Meeting

Erich Sauer, Keith Dickerson	UBS & AQR Due Diligence; additional meeting with Morgan Stanley
Sponsor:	UBS, AQR, Morgan Stanley
Location:	New York, NY
Date(s):	August 13-14, 2024
Estimated Cost:	$1,250.00 per person
Aaron Shew	Prologis Conference
Sponsor:	Prologis
Location:	San Francisco, CA and Napa, CA
Date(s):	September 16-18, 2024
Estimated Cost:	$1,500.00
Erich Sauer, Tim Heling	UBS Due Diligence; additional meetings with Blair, MFS, Abbott, DFA, BlackRock
Sponsor:	UBS
Location:	London, UK
Date(s):	October 5-9, 2024
Estimated Cost:	$3,250.00 per person
David Silber, Aaron Shew	2024 Roundtable for Consultants and Institutional Investors
Sponsor:	Institutional Investor
Location:	Chicago, IL
Date(s):	October 7-10, 2024
Estimated Cost:	$1,500.00 per person

EMPLOYES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE

AT LARGE ACTIVE MEMBER ELECTION

TO ELECT ONE ACTIVE MEMBER TO THE ANNUITY AND PENSION BOARD OF THE EMPLOYES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE

FOR TERM COMMENCING JANUARY 1, 2025 AND EXPIRING DECEMBER 31, 2028.

TERM OF MOLLY KING EXPIRES DECEMBER 31, 2024

RULES AND REGULATIONS FOR THE AT LARGE ACTIVE MEMBER ELECTION
November 1, 2024

Nomination papers shall be available on www.cmers.com or at the office of the Election Commission, Room 501 of City Hall, on August 2, 2024 and must be filed before 3:30 p.m. August 30, 2024. Nomination papers shall be required of all candidates. Each candidate must have at least 100 and no more than 150 signatures of Active members of the system. Active members can not have signed the nomination paper of any other candidate for the same office at this election. To be eligible for nomination and election, candidates must be defined members. Positions on the ballot shall be determined by lot, and such drawing shall take place in the office of the Election Commission at 10:00 a.m. September 3, 2024. Attendance of candidates is optional.

The election shall be held on November 1, 2024. In the event there are more than two candidates and one candidate receives one more than half the number of the legal votes cast at the election, that person receiving said vote shall be declared elected to the office. In the event of failure of any one candidate to receive one more than half the number of the legal votes cast, then the two candidates having the highest number of votes shall have their names placed on the ballot for the run-off election to be held December 6, 2024. In the event that only one eligible candidate files, no election shall take place and the candidate shall be declared elected to the office.

The election shall be conducted by mail. Instruction sheet, ballot and return envelope shall be furnished to each eligible Active member of the system at least one week before each election. **Members who do not receive a ballot should contact the Employes' Retirement System at 789 N. Water St., Suite 300, Milwaukee, WI 53202 or by telephone at 414-286-3557 or 1-800-815-8418 to obtain a ballot.** Members shall be required to mark the ballot and enclose such ballot in the return envelope. **For the sole purpose of verifying eligible voters, members are required to PRINT their names, and either their pension numbers, person ID numbers or payroll numbers on the outside of the mailing envelope.**

ENVELOPES WITHOUT A MEMBER'S NAME, AND EITHER A PENSION NUMBER, PERSON ID NUMBER OR PAYROLL NUMBER SHALL BE DECLARED ILLEGAL AND DISQUALIFIED, AND SHALL BE EXCLUDED FROM THE ELECTION.

Ballots shall be returned in the official envelope via U.S. mail or interdepartmental mail addressed to the City of Milwaukee Election Commission, Room 501.

PLEASE MAKE EVERY EFFORT TO VOTE.

Ballots must be received by the Election Commission, at the ERS office, or be in the Post Office Box no later than 9:00 a.m. the day of the election and results will be tabulated at 789 N. Water St. Any interested person may observe the entire procedure.

ANNUITY AND PENSION BOARD

Bulletin No. 198
June 2024

Bernard J. Allen
Executive Director

VI.

MEDICAL REPORTS

Please be advised that the Annuity and Pension Board may vote to convene in closed session on the following item (VI.A.), as provided in Section 19.85(1)(f), Wisconsin State Statutes, for considering financial, medical, social or personal histories or disciplinary data of specific persons, preliminary consideration of specific personnel problems or the investigation of charges against specific persons except where par. (b) applies which, if discussed in public, would be likely to have a substantial adverse effect upon the reputation of any person referred to in such histories or data, or involved in such problems or investigations.

A. All Duty & Ordinary Disability Applications & Re-examinations (June).

MERITS	CITY OF MILWAUKEE EMPLOYES' RETIREMENT SYSTEM	Page Number: 1 OF 1
	Medical Panel Approvals Report	DATE RAN : 06/11/2024
Approved by Executive Director	Pension Board Meeting Date 06/25/2024	TIME RAN : 11:37

Case Number	Name	Title	Employer	Case Type	Case Sub-Type	DOCTOR DECISION City	Union	Third	Disability Date	Comments
524	LOMEN, MAURYA	FIRE FIGHTER	FIRE	DD 75%	Re-Examination	Approved	Approved		02/01/2021	
832	UNDERWOOD, CHRISTOPHER	FIRE LIEUTENANT	FIRE	DD 75%	Re-Examination	Approved	Approved		04/01/2024	
1268	ALLEN, JERRY	HEAVY EQUIPMENT OPERATOR	MFD	DD 75%	Re-Examination	Approved	Approved		01/01/2024	
114	REPACI, THOMAS	FIRE FIGHTER	MILWAUKEE FIRE DEPT	DD 75%	Re-Examination	Approved	Approved		06/30/2002	

Number of Cases: 4

This report includes Fire duty disabilities with an application date prior to July 29, 2016; Police MPA duty disabilities with an application date prior to June 19, 2016; and Police MPSO duty disabilities with an application date prior to January 1, 2016.

MERITS	CITY OF MILWAUKEE EMPLOYES' RETIREMENT SYSTEM	Page Number:	1 OF 1
	Medical Council Approvals Report	DATE RAN :	06/10/2024
	Board Meeting: 06/25/2024	TIME RAN :	08:06

Name	Title	Employer	CaseType	Case Sub-Type	Disability Date	Medical Council Meeting Date	In Person Exam Waiver
ANDRYSCZYK, DAREN	DRIVER/WORKER	DPW	Duty Disability 75%	Re-Examination	06/27/2006	06/07/2024	
DAVIS, HERBERT	POLICE OFFICER	MILWAUKEE POLICE DEPARTME	Duty Disability 75%	Application	03/22/2024	06/07/2024	
STAINBACK, JACK	FIREFIGHTER	MILWAUKEE FIRE DEPARTMENT	Ordinary Disability	Re-Examination	05/07/2022	06/07/2024	
YOUNGBLOOD, JAMES	HEAVY EQUIPMENT OPERATOR	MFD	Duty Disability 75%	Re-Examination	11/01/2020	06/07/2024	

Number of Cases: 4

This report includes all GC disabilities; all ordinary disabilities; Fire duty disabilities with an application date on/after July 29, 2016; Police MPA duty disabilities with an application date on/after June 19, 2016; and Police MPSO duty disabilities with an application date on/after January 1, 2016.

VII.

UNFINISHED BUSINESS

A. Pending Legal Opinions and Service Requests Report.
B. Pending Legislation Report.
C. Executive Director’s Report – Inventory of ERS Projects.

MILWAUKEE ERS Employes' Retirement System

June 25, 2024 Board Meeting

PENDING LEGAL OPINIONS AND SERVICE REQUESTS REPORT

PART 1. LEGAL OPINIONS - OFFICE OF CITY ATTORNEY

04/11/24 **Pension Eligibility Pursuant to 2023 Wisconsin Act 12**
Whether an active general city employee resigns from current employment and accepts a non-certified MPS position would still be considered an active member of the ERS and continue to receive service credit for new position, or must the employee be enrolled into the Wisconsin Retirement System in accordance with the language of Act 12.
06/25/24 On Pension Board Agenda.

PART 2. LEGAL OPINIONS - OUTSIDE LEGAL COUNSEL

None.

PART 3. SERVICE REQUESTS - OFFICE OF CITY ATTORNEY

04/03/24 **UBS Hedge Fund Solutions Second Amendment**
City Attorney's Office requested to review and negotiate a second amendment to the investment contract.
04/17/24 City Attorney completed their review of the proposed second amendment.
06/06.24 Second amendment approved by Investment Committee.
06/25/24 On Pension Board Agenda.

04/23/24 **IT Fiber Internet Services**
ERS has requested the City Attorney's Office to draft and negotiate a contract (or an amendment to current Master Services Agreement) with present vendor, Lumen (f/k/a CenturyLink) for IT fiber services.

05/23/24 **Remote Office Lease Agreement**
Request for City Attorney's Office to assist staff with negotiating either a new lease or an amended agreement as it relates to ERS' Remote Office location.

PART 4. SERVICE REQUESTS - OUTSIDE LEGAL COUNSEL

None.

June 25, 2024 Board Meeting

PENDING LEGISLATION REPORT

PART 1. PENDING CHARTER ORDINANCES FOR COMMON COUNCIL ACTION

None.

PART 2. PENDING CHANGES TO THE RULES & REGULATIONS

None.

PART 3. PENDING LEGISLATIVE COMMITTEE REFERRALS

Pension Contribution Offset

12/13/16 ERS requested legal guidance on whether the 5.8% pension contribution offset for public safety employees pursuant to recent labor contract settlements or interest arbitration, is includable as "salary" for adjusting duty disability retirement allowance.

02/16/17 City Attorney issued a legal opinion advising that since members receiving a duty disability retirement allowance have not paid the member contributions, they are not entitled to the 5.8% pension contribution offset.

02/27/17 Opinion referred to Legislative Committee for consideration on whether the pension contribution offset received by general city and protective service members should be included in the calculation of the Conversion to Service Retirement and Extended Life retirement allowances.

07/31/17 Committee recommended this matter be held pending resolution of litigation.

PART 4. PENDING STATE LEGISLATION

None.

Employes' Retirement System – Executive Director's Report

June 2024

I. Personnel Update

A. ERS has no vacancies.

II. Member Services

A. New retirees on payroll in May - 41; 32 are currently anticipated for the June payroll.
B. Retiree/Employee deaths entered in April - 37.
C. There was a Retirement Workshop for the Milwaukee Police Department on 5/10/24 and 48 attended.
D. The next Retirement Workshop for General City is scheduled for 6/7/24.
E. Below is a breakdown of to-date ERS benefits payouts/active/deferred counts:

Category	Count
Annuitants	
Death - Duty	24
Death - Ordinary	100
Disability - Duty	357
Disability - Ordinary	563
Retirement	12,751
Separation	38
Total Annuitants	**13,833**
Active	**11,084**
Deferred	**3,188**
Total Population	**28,105**

III. Financial Services

A. The 2023 Annual Comprehensive Financial Report (ACFR) is still being reviewed by the Wisconsin Legislative Audit Bureau (LAB). We are still on track to have the audit completed and ACFR approved by the A&O Committee and Board in July 2024.
B. CMERS received the Government Finance Officer Association's Certificate of Achievement for Excellence in Financial Reporting for our 2022 ACFR. We also plan to submit our 2023 ACFR for consideration of the award. A special thanks to Robin Hayes as she is responsible for preparing the ACFR's.

IV. Information Services

A. Struts Upgrade and Modernize MERITS Website in progress.
B. Upgrade FileNet P8 to IBM CloudPak4BA in progress.
C. Upgrade WebSphere Application Server in progress.
D. IT Vulnerability Audit in progress.
E. Third Party Review of Network Architecture Firmware Upgrade in progress.
F. IP Address Review and Cleanup 2023 in progress.
G. DNS Review and Cleanup 2023 in progress.
H. AD Review and Cleanup 2023 in progress.
I. Firewall Review and Cleanup 2023 in progress.

J. MS Windows Desktop and Laptop OS Upgrade in progress.
K. Upgrade WUG in progress.
L. Upgrade CentOS Systems to Red Hat Enterprise Linux 9 in progress.
M. Upgrade Video Conferencing System in progress.
N. Tracker Upgrade completed.
O. Change Auditor Upgrade completed.
P. Altiris/Symantec IT Management Suite Upgrade completed.
Q. Backup Exec Upgrade completed.
R. Network Infrastructure Firmware Upgrade completed.
S. Storage Area Network Firmware Upgrade completed.

V. Administration

A. Representatives of CliftonLarsenAllen (CLA) are scheduled to present several operational/internal audit reports at the June 18, 2024 A&O Committee Meeting, including their assessment of ERS internal controls for the following functional areas of plan administration:
- Accounting and Finance
- Benefit Administration
- Benefit Calculation
- Entity Level Controls & Governance
- HR and Payroll

CLA will also present the findings of its 2023 Cyber Security Assessment in closed session pursuant to Section 19.85 (1)(d), Wisconsin Statutes, to consider "strategy for crime detection and prevention" because staff has been advised by CLA that any public discussion of cyber security protocol details and/or disclosure to any outside entity, given today's extreme threat environment, presents unacceptable security risks to ERS data security, would violate ERS IT security policies and internal controls and therefore also be inconsistent with fiduciary duty requirements pursuant to state law for administration of trusts.

B. ERS staff reviewed the actuarial valuation prepared by Cavanaugh Macdonald and requested several clarifications and provided other comments in connection with finalizing the valuation report as of January 1, 2024. Larry Langer and Aaron Chochon of that firm are scheduled to present the results of the valuation at the June 25, 2024 Annuity & Pension Board meeting.

C. ERS continues to receive inquiries from former city and participating agency employees regarding their potential contractual and property rights upon re-hire to continued participation in ERS because they are uncertain/unhappy about Act 12 statutory provisions prohibiting continued active ERS participation. Issues raised by these inquiries have been referred to the City Attorney's Office and a formal opinion on the matter is expected to be issued in time for discussion at the June 25, 2024 Annuity & Pension Board meeting.

Basic Website Metrics

	2023								2024				
	May	**June**	**July**	**Aug.**	**Sep.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**Mar.**	**Apr.**	**May**
Visits	5,137	4,907	5,735	5,601	5,341	5,626	5,370	5,023	5,918	6,216	5,417	5,847	**4,813**
Users	3,589	3,380	3,663	3,667	3,490	3,758	3,923	3,525	4,121	4,119	3,860	4,019	**3,407**
Page Views	12,927	12,220	13,694	13,930	12,747	14,150	13,570	12,238	14,925	15,831	12,712	13,809	**11,573**
Ave. Visit	1:33	1:40	1:32	2:24	1:31	1:35	1:29	1:30	1:35	1:11	1:23	1:34	**1:23**

VIII.

INFORMATIONAL

Please be advised that the Annuity and Pension Board may vote to convene in closed session on the following item (VIII.A.), as provided in Section 19.85(1)(g), Wisconsin State Statutes, to confer with legal counsel concerning strategy to be adopted by the body with respect to litigation in which it is or is likely to become involved. The Board may then vote to reconvene in open session following the closed session.

A. Pending Litigation Report.
B. Conferences.
C. Class Action Income 2024.
D. Minutes of the Investment Committee Meeting Held June 6, 2024.
E. Report on Bills.
F. Deployment of Assets.
G. Securities Lending Revenue and Budget Report.
H. Preliminary Performance Report and Asset Allocation.

June 25, 2024 Board Meeting

PENDING LITIGATION REPORT

Part 1. ERS Litigation through the City Attorney

MPSO/Local 215, et al. v City of Milwaukee, et al; Case Nos. 2019AP001319; 2018CV001274

MPSO and Local 215 filed suit on behalf of certain duty disability retirees against the City of Milwaukee and the Employes' Retirement System alleging the defendants violated the collective bargaining agreements as it relates to the payment of the 5.8% pension offset.

See prior Reports for case history

- **07/08/24** Motion hearing for Defendants' motion to enforce summary judgment and motion to terminate stay order, and Plaintiffs' motion to compel discovery.

MPA and Kurt Lacina v. City of Milwaukee, et al; Case Nos. 2023AP000301; and 2022CV001965

Kurt Lacina alleges his DDRA was wrongfully offset by a worker's compensation permanent partial disability award by defendants.

See prior Reports for case history

- 10/18/23 Appellants' Reply Brief filed. Case awaiting assignment to appellate panel.

Frank Vrtochnick, et al v. City of Milwaukee, et al; Case No. 2023CV003007

Plaintiff alleges the City and the ERS breached the Milwaukee Police Association 2013-2016 collective bargaining agreement and Chapter 36 of the Milwaukee City Charter as it pertains to the inclusion of the 5.8% pension offset in the member's "base salary" for purposes of calculating the duty disability retirement allowance. The plaintiff seeks to have this current litigation classified as a Class Action to include all other similarly-situated employees hired prior to October 3, 2011 and represented by the Milwaukee Police Association.

See prior Reports for case history

- 02/07/24 Status conference held; Briefing schedule placed on the record. Case adjourned to May 22, 2024 at 1:30 pm to hear Defendants' Motion to Dismiss.
- 07/02/24 Defendants' Motion to Dismiss rescheduled from May 22, 2024 to July 2, 2024 at 9:00 am.

Benjean Lara v. City of Milwaukee, et al; Case No. 2023CV007107
Member filed Petition for Certiorari Review of Pension Board's denial of disability (duty and ordinary) retirement benefits.
See prior Reports for case history
- 03/29/24 Respondent's Brief in Opposition to Petition for Writ of Certiorari filed.
- 04/22/24 Petitioner's Reply Brief filed with court.

John Klein et al. v. City of Milwaukee et al.; Case Nos. 2022AP001401; and 2021CV004632
Plaintiffs allege the City of Milwaukee and the Employes' Retirement System improperly determined eligibility for certain retirement benefits provided for under the terms of the Global Pension Settlement and as codified in Chapter 36 of the Milwaukee City Charter.
See prior Reports for case history
- 04/23/24 Appellate Court affirms Circuit Court's decision.
- **05/23/24** Timeline for plaintiffs to file petition for review with the Supreme Court of Wisconsin expired.

Part 2. ERS Administrative Appeal Hearings through the City Attorney

Jason Rodriguez; Administrative Case No. 1443
- Hearing stayed pending outcome of Appellant's state workers compensation (WC) appeal hearing. First WC appeal hearing held May 10, 2022. Second WC appeal hearing pending scheduling.

Part 3. Notice of Claim filed with ERS

Kurt Lacina v City of Milwaukee and Employes' Retirement System and Annuity and Pension Board
Claimant alleges that duty disability retirees receiving a 90% benefit are only subject to the re-examination requirements prior to reaching their conversion date.
- **06/05/24** ERS served with Notice of Circumstances and Claim.
- **06/13/24** Letter to City Attorney's Office sent. New claim reported to fiduciary carriers.

Part 4. ERS Litigation through Outside Legal Counsel

None.

Client Conferences 2024

Board Meeting: June 25, 2024

DATE(S)	CONFERENCE(S) / LOCATION(S)	SPONSOR(S)
September 17 – 18, 2024	2024 USLF Annual Meeting San Francisco, CA	ProLogis
September 24 – 26, 2024 10:30 am – 1:30 pm	“Callan College” Introduction to Investments Virtual	Callan Associates
October 23, 2024 8:00 am – 10:30 am	2024 October Workshop Chicago, IL	Callan Associates

Trustee Conferences 2024

Board Meeting: June 25, 2024

DATE(S)	CONFERENCE(S) / LOCATION(S)	SPONSOR(S)
July 22 – 23, 2024	Alternatives Forum - ALTSCHI Chicago, IL	Markets Group
July 30 – 31, 2024	Certificate of Achievement in Public Plan Policy (CAPPP): Pensions Part I Boston, MA	International Foundation of Employee Benefit Plans
August 1 – 2, 2024	Certificate of Achievement in Public Plan Policy (CAPPP): Pensions Part II Boston, MA	International Foundation of Employee Benefit Plans
August 18 – 20, 2024	Public Pension Funding Forum Boston, MA	NCPERS
September 9 – 11, 2024	CII Fall 2024 Conference Brooklyn, NY	Council of Institutional Investors
September 16 - 17, 2024	Investment Basics Nashville, TN	International Foundation of Employee Benefit Plans
September 17, 2024	10th Annual Great Plains Institutional Forum Minneapolis, MN	Markets Group
September 24, 2024	2024 2024 Fixed Income & Credit Conference Chicago, IL	Pensions & Investments
October 8 – 9, 2024	2024 Roundtable for Consultants and Institutional Investors Chicago, IL	Institutional Investor
October 16 – 17, 2024	Pension Bridge Alternatives 2024 New York, NY	with.Intelligence
October 26 – 27, 2024	NCPERS Accredited Fiduciary (NAF) Program & Program for Advanced Trustee Studies (PATS) Palm Springs, CA	NCPERS
October 27 – 30, 2024	Public Safety Conference Palm Springs, CA	NCPERS

Trustee Conferences 2024

Board Meeting: June 25, 2024

DATE(S)	CONFERENCE(S) / LOCATION(S)	SPONSOR(S)
November 9 – 10, 2024	Certificate of Achievement in Public Plan Policy (CAPPP): Pensions Part II San Diego, CA	International Foundation of Employee Benefit Plans
November 13 – 14, 2024	2024 Public Funds Conference Sacramento, CA	Pensions & Investments

Upcoming Due Diligence Meetings

Date	Manager(s)	Team
June 25, 2024	Aptitude (NY)	David & Keith
July 23-25, 2024	MFS & Loomis Sayles, with additional Prologis meeting	Erich & Aaron
August 13-14, 2024	UBS (NY) & AQR, with additional Morgan Stanley meeting	Erich & Keith
September 17-18, 2024	Aptitude (Seattle), with additional Principal meeting	David & Keith
October 5-9, 2024	UBS (London) with multiple additional manager meetings	Erich & Tim Heling

Class Action Income 2024 YTD

Asset Description	Date(s)		Amount
Arthrocare Corp.	1/5/2024	$	28,400
Teva Pharmaceutical	1/8/2024	$	1,273
Countrywide Financial	1/30/2024	$	82
Bank of America	2/7/2024	$	14,750
Corrections Corp. of America	2/16/2024	$	362
Petroleo Brasileiro SA	2/27/2024	$	81,460
Oracle Corp.	5/10/2024	$	212
Amedisys, Inc.	5/30/2024	$	166
Total Class Action Income Received in 2024 YTD		**$**	**126,706**

EMPLOYES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
ANNUITY AND PENSION BOARD

Minutes of the Investment Committee Meeting
held June 6, 2024 via teleconference

The meeting was called to order at 9:00 a.m.

Committee Members Present:	Matthew Bell Bill Christianson Deborah Ford Timothy Heling Thomas Klusman, Chair Rudy Konrad Nik Kovac
Committee Members Not Present:	Molly King
ERS Staff Present:	Jerry Allen, Executive Director David Silber, Chief Investment Officer Erich Sauer, Deputy Chief Investment Officer Keith Dickerson, Pension Investment Analyst – Sr. Aaron Shew, Pension Investment Analyst – II. Thomas Courtright, Pension Investment Analyst – II. Dan Gopalan, Chief Financial Officer Jan Wills, Board Stenographer

Others present: Bo Abesamis, Munir Iman, Mike Joecken, Callan; Travis Gresham, Patrick McClain, City Attorney's Office; Lauren Albanese, Financial Investment News; Carolyn Stittleburg, Legislative Audit Bureau; Terry Siddiqui, DS Consulting, Inc.; three members of the public called into the meeting.

Approval of UBS Hedge Fund Solutions and CMERS Low Beta LLC Contract Amendment. As a matter of information, Committee members received a memo from Mr. Sauer, a Merger of UBS Hedge Fund Solutions LLC with and into UBS Asset Management (Americas) letter from UBS Hedge Fund Solutions LLC, and a Second Amended and Restated Investment Management Agreement.

Mr. Sauer said this contract amendment is related to a change to UBS' corporate structure that they underwent recently. He noted when investment managers do a change like this, Staff does an amendment to reflect it. Mr. Sauer said there are a number of guideline changes that show up as redline changes but those had already been approved by the Investment Committee in past meetings. He said the last amended and restated agreement was done in 2016. Mr. Sauer said UBS has just taken the opportunity to reflect all of those guideline changes in this restated agreement, but are already in effect, and the only change being asked to approve is the way the corporate structure is organized. He added that there is no change to the Investment team or the process or the strategy that UBS is managing for CMERS as it is just an organizational issue. He said Mr. Gresham had looked at this and he commented that it is restructuring and what is occurring currently and that it is an organizational change.

It was moved by Mr. Bell, seconded by Mr. Heling, and unanimously carried, to approve the Approval of UBS Hedge Fund Solutions and CMERS Low Beta LLC Contract Amendment.

The Chair took the meeting out of order to item IV. Approval of Action Regarding Stock Loan Settlement.

Mr. Klusman advised that the Investment Committee may vote to convene in closed session on the following item (IV.), as provided in Section 19.85(1)(g), Wisconsin State Statutes, to confer with legal counsel concerning strategy to be adopted by the body with respect to litigation in which it is or is likely to become involved. The Investment Committee may then vote to reconvene in open session following the closed session.

Approval of Action Regarding Stock Loan Settlement.
It was moved by Ms. Ford and seconded by Mr. Christianson to convene in closed session. The motion carried by the following roll call vote: AYES: Ms. Ford; Messrs. Bell, Christianson, Heling, Klusman, Konrad, and Kovac. NOES: None.

The Committee convened in closed session at 9:04 a.m.

The Committee reconvened in open session at 9:46 a.m.

It was moved by Mr. Konrad for the Staff to file a claim in the Litigation that was discussed, and to pay the fee necessary to gather the pertinent information in a timely manner, seconded by Ms. Ford, and unanimously carried, to approve the Approval of Action Regarding Stock Loan Settlement.

The Chair returned the meeting to order at item II. Callan Real Estate Presentation.

As a matter of information, Committee members received from Callan the Real Estate Performance Review. Mr. Iman provided a Market Overview to the Committee and discussed the topics of Real Estate Market Dynamics; U.S. Real Assets Performance as of March 31, 2024; Record Debt Maturities on the Horizon; Re-pricing expected to continue against a backdrop of reasonably healthy fundamentals, ex-office; U.S. Private Real Estate Market Trends, And Alternatives Roll On. . .; Long Term Investors Don’t Need to Call the Bottom; and Real Estate Market Conditions.

Mr. Iman also presented a Portfolio Summary on the topics of Real Estate Objectives and Purpose; Real Estate Portfolio Summary, Portfolio Repositioning is Nearly Complete; Portfolio is Diversified by Property Type; Portfolio Returns Are Above Benchmark; and Returns by Style.

Mr. Iman provided Conclusions and Recommendations and noted the portfolio continues to perform well relative to the benchmark on a net basis over the short-, medium-, and long-term. He said Core continues to drive performance, while the Non-core portfolio has not been accretive to total returns over the long term. Mr. Iman noted the overweight to Industrial continues to be beneficial to performance and Industrial fundamentals are still relatively strong. He said the portfolio is being rebalanced with the addition of a new Core fund. Mr. Iman concluded this will increase investment in alternative sectors (self-storage, senior housing, life sciences, medical office, student housing), reduce the industrial overweight, and reduce Morgan Stanley Prime's manager concentration in the portfolio. His recommendations are to monitor the J.P. Morgan Strategic Property Fund development and pace of redemption payment through 2024 (taking action on the fee credit program), and continuing to fund a new manager in 2024 (voting on a proposed strategy expansion).

Mr. Klusman advised that the Investment Committee may vote to convene in closed session on the following item (II.) as provided in Section 19.85(1)(e), Wisconsin State Statutes, to deliberate or negotiate the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session. The Investment Committee may then vote to reconvene in open session following the closed session.

Callan Real Estate Presentation.
It was moved by Mr. Bell and seconded by Mr. Christianson to convene in closed session. The motion carried by the following roll call vote: AYES: Ms. Ford; Messrs. Bell, Christianson, Heling, Klusman, Konrad, and Kovac. NOES: None.

The Committee convened in closed session at 10:04 a.m.

The Committee reconvened in open session at 10:22 a.m.

Approval of Harrison Street Core Property Fund Data Center Allocation Proposal. As a matter of information, Committee members received from Callan a memo regarding the Harrison Street Core Property Fund Data Center Allocation Proposal. Mr. Iman said the Harrison Street Core Property Fund Strategy selected last year focuses on demographic tailwinds in the U.S., life sciences, housing, self-storage, medical office, and senior housing. He said Harrison Street had reached out to investors to request an approval to invest in data centers and each of the existing sectors are allowed to invest up to 40%. Harrison Street is requesting to add up to 20% exposure to data centers to change their governing documents. Mr. Iman said the Fund will target purchasing and acquiring new data centers, meaning the likes of Meta, Amazon, and Apple. He said the structure of the leases is 10-15 years, and they have triple-net structuring, meaning the tenant is required to pay for any expenses in capital costs that protect the Fund from unforeseen expenditures that may impact income. Mr. Iman said the allocation will be in long-leased assets. He said Harrison Street has invested over $4 billion in 31 data centers since 2017. Mr. Iman said a lot of the risk has been taken off the table by investing in the structure of the leases, and Callan believes this is consistent with the strategy of investing in demographic tailwinds and further balancing long-leased exposure. Mr. Silber said Staff is supportive, Callan states that Harrison Street has experience investing in data centers, and this addition to the portfolio is in the spirit of the mandate and an exposure that CMERS is not getting from other managers. Discussion ensued.

It was moved by Ms. Ford, seconded by Mr. Christianson, and unanimously carried, to approve the Approval of Harrison Street Core Property Fund Data Center Allocation Proposal.

The Chair called for a break at 10:29 a.m.

The Chair resumed the meeting at 10:35 a.m.

Brandes Investment Partners Due Diligence Report. As a matter of information, Committee members received from Messrs. Sauer and Courtright a memo regarding their Brandes Due Diligence Meetings: February 26, 2024 (Onsite). Mr. Courtright noted he and Mr. Sauer conducted the due diligence meeting at Brandes' headquarters. He said Brandes is the ERS' International Equity Large Cap Value Manager, one of the longer ERS mandates since January 1998. Mr. Courtright said as of March 31, 2024, it is a $339 mandate and the largest single strategy allocation within ERS' Public Equity asset class. He presented a few highlights and said Brandes has enjoyed an uptick in consultant search activity in recent months and quarters. He said Brandes' assets under management have increased $5 billion to $23.6 billion and the International Equity strategy continues to be the flagship for Brandes and was up $2 billion dollars to $8 billion dollars. Mr. Courtright noted a CEO transition became effective on May 1, 2024. He said Oliver Murray, a 22-year veteran, became the new CEO, replacing Brent Woods who took an oversight role as President of the firm's general partner, but will retain his role on the International Large Cap Investment Committee. Mr. Courtright added that Charles Brandes retired from the firm in 2018 and the firm continues to make payments to Mr. Brandes in accordance with the 10-year buyout plan initiated in 2018. He concluded that the value style of investment which Brandes is a part of continues to be favorable in recent quarters and in the last year. He said Brandes' return performance has been very positive and outperformed in the one-year, three-year, five-year, and 10-year periods, as well as since inception. Mr. Courtright noted Brandes' philosophy remains in place, there is a disciplined Graham and Dodd process, and their investment team members are stable.

Chief Investment Officer Report. Mr. Silber highlighted slides from the CMERS 1st Quarter 2024 Performance Update, including Fund Overview, Public Equity, and the Recent Performance Update. He noted as of yesterday, the Fund had a 3.4% year-to-date return, net of fees. He said the Fund's return in May is estimated to be 2.3%, which would represent slight outperformance compared to the benchmark. He said they do not have final May reports from some of the Private Equity managers, a Real Estate manager, and the Hedge Fund of Funds managers. Mr. Silber noted the 3.4% return is underperforming the benchmark year-to-date as a result of how Private Equity is benchmarked against the stock market benchmark and Public Equity style bias. He said the Fund's year-to-date reported underperformance is likely to grow in June because the Fund's 1st quarter Private Equity statements are unlikely to keep up with the very strong U.S. stock market returns from Q1 2024, which is the 1 quarter-lag benchmark the Fund compares its Private Equity allocation to. Mr. Silber stated they are meeting or exceeding the Fund's benchmark and current discount rate over the 5, 7, 10, and 15-year time periods shown. Mr. Silber said CMERS has a very diversified portfolio, and that this diversification within the Public Equity allocation has not helped in the last 18 months given the performance of the Magnificent 7. Mr. Silber said those stocks are in the CMERS portfolio, but CMERS is more diversified and has less of the Magnificent 7 stocks than the average investor and the benchmark it measures its performance against. He said CMERS has great returns in Public Equity and is outperforming over the medium- and long-term periods, but is not keeping up with a benchmark like the S&P 500. Mr. Silber also stated that, as interest rates and inflation have increased in recent years, the Fund has taken steps to lower the expected volatility of the Fund's future returns by better diversifying the Fund's asset allocation. In a time period like the past 18 months, when stocks are up a lot, this diversification means that the Fund's returns might be lower than some of its peers who have a higher allocation to stocks. He said Staff is proud of the overall Fund return and outperformance over the medium and long-term time periods, and believes the Fund's emphasis on diversification will position it well going forward. Discussion ensued.

Informational.

CMERS 1st Quarter 2024 Performance Update. As a matter of information, Committee members received from Staff the CMERS 1st Quarter 2024 Performance Update.

Callan 4th Quarter 2023 Performance Report. As a matter of information, Committee members received from Callan the Callan 4th Quarter 2023 Performance Report.

Callan 1st Quarter 2024 Performance Report. As a matter of information, Committee members received from Callan the Callan **1st** Quarter 2024 Performance Report.

Mr. Klusman accepted the Informational Reports and placed them on file.

It was moved by Mr. Heling and seconded by Mr. Christianson to adjourn the meeting.

There being no further business, Mr. Klusman adjourned the meeting at 11:08 a.m.

Bernard J. Allen
Secretary and Executive Director

NOTE: All proceedings of the Annuity and Pension Board Meetings and related Committee Meetings are recorded. All recordings and material mentioned herein are on file in the office of the Employes' Retirement System, 789 N. Water Street, Suite 300.)

Fiscal Year	City of Milwaukee	*As of:* 2024-05-31
2024	Departmental	
Department	Appropriation Budget Balances	
Employes' Retirement System		

	Budget	2024-3	2024-4	2024-5	Year to Date Expended	Life to Date Commitments	Remaining Budget
Regular Departmental Appropriations:							
Employee Salaries & Wages	5,002,345.00	-	-	-	-	-	5,002,345.00
Base Pay-Salary & Wage	-	478,458.42	344,187.61	362,206.18	1,771,010.82	-	(1,771,010.82)
Overtime Premium	-	-	17.86	-	130.13	-	(130.13)
Other Worked Compensation	-	-	294.00	10,287.05	10,581.05	-	(10,581.05)
Time Paid Not Worked	-	80,714.21	36,373.12	43,483.08	303,573.89	-	(303,573.89)
Employee Salaries & Wages	$ 5,002,345.00	559,172.63	380,872.59	415,976.31	$ 2,085,295.89	$ -	$ 2,917,049.11
Fringe Benefits Applied	2,251,055.00	-	-	-	-	-	2,251,055.00
Fringe Benefits Applied	-	251,429.93	180,870.60	190,339.37	930,666.26	-	(930,666.26)
Applied Employee Benefits	$ 2,251,055.00	251,429.93	180,870.60	190,339.37	$ 930,666.26	$ -	$ 1,320,388.74
Operating Expenditures	16,305,400.00	-	-	-	-	-	16,305,400.00
Office Supplies	-	123.32	596.60	1,424.05	3,462.99	-	(3,462.99)
Printed Forms	-	625.55	-	-	625.55	-	(625.55)
Magazines,Subscription	-	3,257.62	150.20	350.58	4,710.29	-	(4,710.29)
Postal and Mailing Services	-	13,567.05	14,473.89	22,804.96	63,195.19	-	(63,195.19)
Electricity	-	3,331.16	3,387.15	2,551.82	13,109.75	-	(13,109.75)
Other Operating Supply	-	601.92	-	-	2,821.57	-	(2,821.57)
Building Rental	-	39,288.27	40,525.36	-	208,287.08	-	(208,287.08)
Printing & Dupl Machine Rental	-	4,056.58	2,081.83	1,223.61	8,488.31	-	(8,488.31)
Consulting	-	48,145.48	41,754.90	46,254.90	200,626.11	-	(200,626.11)
Medical,Surgical & Lab	-	12,813.17	24,408.71	8,778.87	81,816.10	-	(81,816.10)
Administrative Charges	-	47,576.80	53,833.61	64,057.89	233,065.73	-	(233,065.73)
Other Professional Services	-	460,628.42	458,180.31	1,619,573.83	1,878,847.50	-	(1,878,847.50)
Systems Support	-	71,590.00	48,233.00	49,074.00	196,862.00	-	(196,862.00)
IT Infrastructure	-	7,362.00	-	-	13,532.00	-	(13,532.00)
Infrastructure	-	-	537.81	537.81	1,075.62	-	(1,075.62)
Telephone, Communications	-	9,976.28	2,910.58	13,783.70	36,637.55	-	(36,637.55)
Bldgs-Machinery & Equip Repair	-	-	3,148.58	-	3,148.58	-	(3,148.58)
Travel & Subsistence	-	851.19	5,089.70	4,643.08	18,224.21	-	(18,224.21)
Printing Services	-	223.83	2,368.44	-	3,432.97	-	(3,432.97)
Insurance-Non Health	-	-	-	-	11,569.00	-	(11,569.00)
Other Misc Services	-	2,194.71	826.21	803.14	18,155.90	-	(18,155.90)
Operating Expenditures	$ 16,305,400.00	726,213.35	702,506.88	1,835,862.24	$ 3,001,694.00	$ -	$ 13,303,706.00
All Equipment	713,000.00	-	-	-	-	-	713,000.00
Computer Server & Components	-	-	-	-	47,569.14	-	(47,569.14)
Total Equipment	$ 713,000.00	-	-	-	$ 47,569.14	$ -	$ 665,430.86
Total Regular Class	$ 24,271,800.00	1,536,815.91	1,264,250.07	2,442,177.92	$ 6,065,225.29	$ -	$ 18,206,574.71
Other Departmental Appropriations:							
Pol Pension Lump-Sum Sup Cont	2,000.00	2,000.00	-	-	2,000.00	-	-
PABF Payroll	12,000.00	1,000.00	500.00	-	2,500.00	-	9,500.00
Group Life Insurance Premium	4,200,000.00	338,945.41	337,745.11	335,356.26	1,708,632.20	-	2,491,367.80
Retiree's Benefit Adjustment	25,000.00	2,578.33	934.35	130.55	5,110.45	-	19,889.55
Other Classes	$ 4,239,000.00	344,523.74	339,179.46	335,486.81	$ 1,718,242.65	$ -	$ 2,520,757.35
Total Dept Appropriations	$ 28,510,800.00	1,881,339.65	1,603,429.53	2,777,664.73	$ 7,783,467.94	$ -	$ 20,727,332.06

Manager Mix Report

Account Name/ Account Number	Cash/ % of acount	Short Term/ % of acount	Equity/ % of acount	Fixed/ % of acount	R.E. and Other/ % of acount	Pendings/ % of acount	Total Market Value/ % of consolidation
MILWAUKEE-CASH ACCOUNT	0.00	79,602,403.48	0.00	0.00	0.00	0.00	79,602,403.48
2605491	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	1.33%
MILWAUKEE-THE NORTHERN TRS	0.00	0.00	209,192,671.80	0.00	0.00	0.00	209,192,671.80
2605496	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	3.49%
MILWAUKEE-ERS EXPENSE FUND	0.00	533,210.80	0.00	0.00	0.00	0.00	533,210.80
2605504	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.01%
MILWAUKEE-PABF BENEFIT PAYMENT	0.00	2,711.03	0.00	0.00	0.00	0.00	2,711.03
2610128	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MILWAUKEE-DFA INTERNATIONAL	0.00	0.00	172,891,168.40	0.00	0.00	0.00	172,891,168.40
2619838	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	2.89%
MILWAUKEE-EARNEST -SL	0.00	5,575,003.72	162,214,072.40	0.00	0.00	0.00	167,789,076.10
2630942	0.00%	3.32%	96.68%	0.00%	0.00%	0.00%	2.80%
MILWAUKEE - UBS A&Q	0.00	0.00	0.00	0.00	259,794,328.10	0.00	259,794,328.10
2637239	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	4.34%
MILWAUKEE-DFA	0.00	0.00	189,599,754.70	0.00	0.00	0.00	189,599,754.70
2637848	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	3.17%
MILWAUKEE-BAIRD	0.00	28,696,164.19	0.00	59,739,719.98	0.00	-1,960,699.78	86,475,184.39
2674604	0.00%	33.18%	0.00%	69.08%	0.00%	-2.27%	1.44%
MILWAUKEE - BLACKROCK R1000V	0.00	0.00	207,500,050.50	0.00	0.00	0.00	207,500,050.50
4472746	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	3.46%
MILWAUKEE-LOOMIS SAYLE	12,535,972.70	0.00	8,693,311.08	480,971,486.40	-42,696,515.62	-2,558,116.17	456,946,138.40
CME01	2.74%	0.00%	1.90%	105.26%	-9.34%	-0.56%	7.63%
MILWAUKEE-BRANDES INT'L EQUITY	3,714,903.09	0.00	333,297,226.90	0.00	2,305,323.33	-1,683,699.07	337,633,754.20
CME03	1.10%	0.00%	98.72%	0.00%	0.68%	-0.50%	5.64%
MILWAUKEE-REAMS	119,665,786.80	0.00	0.00	825,202,359.40	0.00	-227,809,135.80	717,059,010.40
CME04	16.69%	0.00%	0.00%	115.08%	0.00%	-31.77%	11.97%
MILWAUKEE-BLAIR	4,731,290.27	0.00	228,434,307.90	0.00	1,040,136.56	199,327.29	234,405,062.00
CME05	2.02%	0.00%	97.45%	0.00%	0.44%	0.09%	3.91%
MILWAUKEE-MFS	3,995,261.59	0.00	198,490,190.40	0.00	467,493.53	-563,695.89	202,389,249.60
CME12	1.97%	0.00%	98.07%	0.00%	0.23%	-0.28%	3.38%

Manager Mix Report

Account Name/ Account Number	Cash/ % of acount	Short Term/ % of acount	Equity/ % of acount	Fixed/ % of acount	R.E. and Other/ % of acount	Pendings/ % of acount	Total Market Value/ % of consolidation
MILWAUKEE-POLEN	0.00	7,655,845.70	110,994,742.00	0.00	0.00	-26,096.74	118,624,490.90
2644553	0.00%	6.45%	93.57%	0.00%	0.00%	-0.02%	1.98%
MILWAUKEE - PRINCIPAL DRA -SL	0.00	0.00	181,232,840.60	0.00	0.00	0.00	181,232,840.60
2677436	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	3.03%
MILWAUKEE-BLACKROCK GLOBAL-SL	0.00	0.00	257,440,151.00	0.00	0.00	9,400,000.00	266,840,151.00
2683493	0.00%	0.00%	96.48%	0.00%	0.00%	3.52%	4.45%
MILWAUKEE - HARRISON STREET	0.00	0.00	0.00	0.00	12,500,000.00	0.00	12,500,000.00
4423196	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.21%
MILWAUKEE- AQR-SL	0.00	0.00	115,223,693.00	0.00	0.00	0.00	115,223,693.00
4468331	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	1.92%
MILWAUKEE-APTITUDE / 4479682	0.00	0.00	0.00	0.00	192,014,655.40	0.00	192,014,655.40
4479682	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	3.21%
MILWAUKEE - DFA US LCV	472,232.30	0.00	151,143,019.90	0.00	0.00	24,220.52	151,639,472.70
CME15	0.31%	0.00%	99.67%	0.00%	0.00%	0.02%	2.53%
MILWAUKEE-REAL ESTATE	0.00	0.00	0.00	0.00	449,719,167.38	-970,091.53	448,749,075.88
MULTIPLE	0.00%	0.00%	0.00%	0.00%	100.22%	-0.22%	7.49%
MILWAUKEE-PRIVATE EQUITY	0.00	0.00	0.00	0.00	774,743,365.00	0.00	774,743,365.00
MULTIPLE	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	12.93%
MILWAUKEE - BLACKROCK US G-SL	0.00	0.00	0.00	406,377,609.70	0.00	0.00	406,377,609.70
MULTIPLE	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	6.78%

Manager Mix Report

Account Name/ Account Number	Cash/ % of acount	Short Term/ % of acount	Equity/ % of acount	Fixed/ % of acount	R.E. and Other/ % of acount	Pendings/ % of acount	Total Market Value/ % of consolidation
Total for consolidation	**145,115,446.75**	**122,065,338.92**	**2,526,347,200.58**	**1,772,291,175.48**	**1,649,887,953.68**	**-225,947,987.17**	**5,989,759,128.08**
% for consolidation	**2.42%**	**2.04%**	**42.18%**	**29.59%**	**27.55%**	**-3.77%**	**100.00%**

Employes' Retirement System
Securities Lending Income and Expenses: 2024
As of MAY 30, 2024

Date	Income From Lending	Amounts Expended: Fees	Amounts Expended: Administrative Transfers	Balance
Balance 12-31-23				**$852,821.09**
Quarter 1 Totals	$497,937.30	$97,968.54	$853,000.00	$399,789.85
04/03/24	$1,685.67	$0.00	$0.00	$401,475.52
04/15/24	$100,520.69	$20,098.36	$0.00	$481,897.85
05/03/24	$1,946.51	$0.00	$0.00	$483,844.36
05/15/24	$58,933.65	$11,780.15	$0.00	$530,997.86
Current Totals	**$661,023.82**	**$129,847.05**	**$853,000.00**	**$530,997.86**

Note: Expenses for Board Travel/Education, Computer Equipment, Publications and Consulting are now paid from the Operations/Management account

MERS PERFORMANCE ESTIMATES
May 31, 2024

Account	2023 Return	1st Quarter 2024	Apr 2024	May 2024	YTD Thru 5/31/24
Northern Trust S&P 500 Index	26.30%	10.55%	-4.08%	4.96%	11.29%
S&P 500	26.29%	10.56%	-4.08%	4.96%	11.30%
Difference	0.01%	-0.01%	0.00%	0.00%	-0.01%
BlackRock Russell 1000 Value Index	11.51%	8.99%	-4.27%	3.17%	7.64%
Russell 1000 Value	11.46%	8.99%	-4.27%	3.17%	7.64%
Difference	0.05%	0.00%	0.00%	0.00%	0.00%
DFA US Large Cap Value	12.49%	11.56%	-4.37%	2.58%	9.44%
Russell 1000 Value	11.46%	8.99%	-4.27%	3.17%	7.64%
Difference	1.03%	2.58%	-0.10%	-0.59%	1.80%
Polen	38.59%	7.73%	-5.51%	0.18%	1.97%
S&P 500	26.29%	10.56%	-4.08%	4.96%	11.30%
Difference	12.30%	-2.83%	-1.43%	-4.78%	-9.33%
Earnest	17.75%	8.17%	-5.93%	1.56%	3.34%
Russell MidCap	17.23%	8.60%	-5.40%	2.85%	5.66%
Difference	0.52%	-0.43%	-0.53%	-1.29%	-2.32%
CastleArk	10.67%	8.75%	[redacted]	[redacted]	8.75%
Russell 2000 Growth	18.66%	2.17%	[redacted]	[redacted]	2.17%
Difference	-7.99%	6.58%	[redacted]	[redacted]	6.58%
DFA US Small Cap Value	21.83%	3.61%	-5.94%	5.44%	2.76%
Russell 2000 Value	14.65%	2.90%	-6.37%	4.68%	0.85%
Difference	7.18%	0.71%	0.43%	0.77%	1.91%
Brandes	31.52%	5.27%	-1.04%	4.37%	8.72%
MSCI EAFE	18.24%	5.78%	-2.56%	3.87%	7.07%
Difference	13.29%	-0.52%	1.52%	0.49%	1.65%
William Blair	15.90%	6.83%	-4.65%	2.89%	4.80%
MSCI ACWI ex US	16.21%	4.81%	-1.72%	3.00%	6.10%
Difference	-0.31%	2.02%	-2.94%	-0.11%	-1.30%
DFA Int'l Small Cap Value	17.56%	5.32%	-1.16%	6.11%	10.46%
MSCI EAFE Small Cap	13.16%	2.40%	-2.97%	4.33%	3.66%
Difference	4.40%	2.92%	1.81%	1.78%	6.80%
AQR	17.92%	6.14%	0.46%	1.51%	8.23%
MSCI EM	9.83%	2.37%	0.45%	0.56%	3.41%
Difference	8.09%	3.77%	0.01%	0.94%	4.82%
BlackRock Global Alpha Tilts	23.33%	9.12%	-3.48%	5.04%	10.62%
MSCI ACWI	22.20%	8.20%	-3.30%	4.06%	8.88%
Difference	1.13%	0.92%	-0.18%	0.98%	1.74%
MFS	21.34%	6.48%	-3.88%	3.95%	6.40%
MSCI ACWI	22.20%	8.20%	-3.30%	4.06%	8.88%
Difference	-0.87%	-1.72%	-0.58%	-0.11%	-2.48%
BlackRock Gov't Bond Index	4.26%	-0.90%	-2.24%	1.45%	-1.71%
Bloomberg Gov't Bond	4.09%	-0.93%	-2.30%	1.45%	-1.81%
Difference	0.17%	0.04%	0.06%	0.00%	0.10%
Reams	6.76%	-0.63%	-2.77%	1.92%	-1.53%
Bloomberg US Aggregate	5.53%	-0.78%	-2.53%	1.70%	-1.64%
Difference	1.23%	0.14%	-0.24%	0.23%	0.11%
Loomis Sayles	8.53%	0.63%	-2.39%	1.89%	0.08%
Bloomberg US Aggregate	5.53%	-0.78%	-2.53%	1.70%	-1.64%
Difference	3.00%	1.41%	0.13%	0.19%	1.72%
UBS	6.80%	2.57%	0.37%	0.33%	3.29%
SOFR + 4%	9.02%	2.31%	0.78%	0.76%	3.89%
Difference	-2.21%	0.27%	-0.41%	-0.43%	-0.60%
Aptitude	5.24%	4.80%	0.00%	0.67%	5.51%
SOFR + 4%	9.02%	2.31%	0.78%	0.76%	3.89%
Difference	-3.78%	2.50%	-0.78%	-0.10%	1.62%
Principal	3.31%	1.68%	-1.79%	3.36%	3.21%
Blended Benchmark	4.31%	0.67%	-1.53%	3.62%	2.72%
Difference	-1.00%	1.01%	-0.26%	-0.26%	0.49%
Baird	5.46%	0.96%	-0.01%	0.65%	1.60%
Bloomberg Govt/Credit 1-3 Year	4.61%	0.42%	-0.33%	0.73%	0.81%
Difference	0.85%	0.54%	0.32%	-0.08%	0.79%
Total MERS	**9.98%**	**2.83%**	**-2.08%**	**2.39%**	**3.09%**

The calculation for the Fund's total rate of return is based on the Modified Dietz method. Although periodic cash flows (i.e., contributions, redemptions) are not time weighted, they are accounted for in the Fund's total rate of return. Therefore, this estimated rate of return may vary slightly from the rate of return reported by the custodian.

The returns shown are gross of fees (except Total MERS, DFA International Small Cap Value, William Blair International Growth, AQR, Principal, UBS, and Aptitude)

CastleArk performance runs through February 14, 2024.

ACTUAL ALLOCATIONS

May 31, 2024

		Target		Market Value	Allocation
EQUITY					
Public Equity					
Domestic					
Passive Large Cap Equity	Northern Trust (S&P 500)	3.45%	$	209,192,672	3.54%
	BlackRock (Russell 1000 Value)	3.45%	$	207,500,050	3.51%
	Sub-Total Passive Large Cap Equity	6.90%	$	416,692,722	7.05%
Active Large Cap Equity	Polen (S&P 500)	1.94%	$	118,624,491	2.01%
	DFA (Russell 1000 Value)	2.46%	$	151,639,473	2.57%
	Sub-Total Active Large Cap Equity	4.40%	$	270,263,964	4.57%
Active Mid/Small Cap Equity	Earnest Partners (Russell MidCap)	3.20%	$	167,789,076	2.84%
	DFA (Russell 2000 Value)	3.05%	$	189,599,755	3.21%
	Sub-Total Active Mid/Small Cap Equity	6.24%	$	357,388,831	6.05%
Total Domestic		17.55%	$	1,044,345,517	17.67%
International					
Active International Equity	Brandes (MSCI EAFE)	5.14%	$	337,633,754	5.71%
	William Blair (MSCI ACWI ex US)	3.91%	$	234,405,062	3.97%
	DFA (MSCI EAFE Small Cap)	2.84%	$	172,891,168	2.93%
	AQR (MSCI EM)	1.76%	$	115,223,693	1.95%
Total International		13.65%	$	860,153,678	14.56%
Global					
Active Global Equity	BlackRock (MSCI ACWI)	4.29%	$	266,840,151	4.52%
	MFS (MSCI ACWI)	3.51%	$	202,389,250	3.42%
Total Global		7.80%	$	469,229,401	7.94%
Total Public Equity		**39.00%**	**$**	**2,373,728,595**	**40.17%**
Private Equity					
	Abbott Capital (Russell 3000 Quarter Lag + 2%)	4.20%	$	310,402,901	5.25%
	Mesirow (Russell 3000 Quarter Lag + 2%)	4.20%	$	293,290,421	4.96%
	Neuberger Berman (Russell 3000 Quarter Lag + 2%)	1.80%	$	69,926,623	1.18%
	Apogem (Russell 3000 Quarter Lag + 2%)	1.80%	$	105,144,444	1.78%
Total Private Equity		**12.00%**	**$**	**778,764,389**	**13.18%**
TOTAL EQUITY (Public Equity + Private Equity)		**51.00%**	**$**	**3,152,492,984**	**53.35%**
FIXED INCOME & ABSOLUTE RETURN					
Fixed Income					
Cash		1.00%	$	80,138,325	1.36%
Passive Fixed Income	BlackRock (Bloomberg US Government)	7.22%	$	406,377,610	6.88%
Active Fixed Income	Reams (Bloomberg US Aggregate)	12.83%	$	717,019,173	12.13%
	Loomis Sayles (Bloomberg US Aggregate)	7.95%	$	456,946,138	7.73%
	Sub-Total Active Fixed Income	20.78%	$	1,173,965,311	19.87%
Total Fixed Income		**29.00%**	**$**	**1,660,481,246**	**28.10%**
Absolute Return					
	Aptitude (SOFR + 4%)	3.00%	$	193,297,610	3.27%
	UBS (SOFR + 4%)	4.00%	$	260,651,660	4.41%
Total Absolute Return		**7.00%**	**$**	**453,949,270**	**7.68%**
TOTAL FIXED INCOME & ABSOLUTE RETURN		**36.00%**	**$**	**2,114,430,516**	**35.78%**
REAL ASSETS					
Private Real Estate - Core	JP Morgan (NFI-ODCE)	2.50%	$	108,310,126	1.83%
	Morgan Stanley (NFI-ODCE)	2.70%	$	144,358,834	2.44%
	LaSalle (NFI-ODCE)	2.30%	$	105,165,918	1.78%
	Prologis (NFI-ODCE)	1.30%	$	80,862,796	1.37%
	Harrison Street (NFI-ODCE)	0.90%	$	12,500,000	0.21%
	Sub-Total Private Real Estate - Core	9.70%	$	451,197,675	7.64%
Private Real Estate - Non-Core	Non-Core Real Estate (NFI-ODCE)	0.00%	$	10,051,239	0.17%
Public Real Assets	Principal (Blended Benchmark)	3.30%	$	181,232,841	3.07%
TOTAL REAL ASSETS		**13.00%**	**$**	**642,481,754**	**10.87%**
TOTAL ERS			**$**	**5,909,405,255**	**100.00%**

Total City Reserve Fund	**R. W. Baird**	**86,475,184**

PROJECTED TARGET ALLOCATIONS

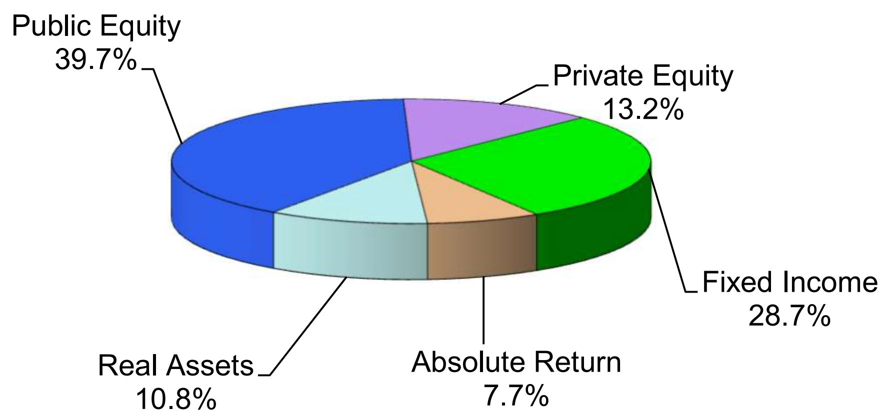
Jun 17, 2024

			Target		Market Value	Allocation
EQUITY						
Public Equity						
Domestic						
	Passive Large Cap Equity	Northern Trust (S&P 500)	3.45%	$	217,136,431	3.67%
		BlackRock (Russell 1000 Value)	3.45%	$	204,526,027	3.45%
		Sub-Total Passive Large Cap Equity	6.90%	$	421,662,457	7.12%
	Active Large Cap Equity	Polen (S&P 500)	1.94%	$	122,657,196	2.07%
		DFA (Russell 1000 Value)	2.46%	$	148,080,609	2.50%
		Sub-Total Active Large Cap Equity	4.40%	$	270,737,805	4.57%
	Active Mid/Small Cap Equity	Earnest Partners (Russell MidCap)	3.20%	$	166,749,529	2.82%
		DFA (Russell 2000 Value)	3.05%	$	181,577,926	3.07%
		Sub-Total Active Mid/Small Cap Equity	6.24%	$	348,327,455	5.88%
Total Domestic			17.55%	$	1,040,727,717	17.58%
International						
	Active International Equity	Brandes (MSCI EAFE)	5.14%	$	326,929,416	5.52%
		William Blair (MSCI ACWI ex US)	3.91%	$	233,856,109	3.95%
		DFA (MSCI EAFE Small Cap)	2.84%	$	166,102,441	2.81%
		AQR (MSCI EM)	1.76%	$	114,035,415	1.93%
Total International			13.65%	$	840,923,381	14.20%
Global						
	Active Global Equity	BlackRock (MSCI ACWI)	4.29%	$	264,076,252	4.46%
		MFS (MSCI ACWI)	3.51%	$	206,613,838	3.49%
Total Global			7.80%	$	470,690,090	7.95%
Total Public Equity			**39.00%**	**$**	**2,352,341,188**	**39.73%**
Private Equity						
		Abbott Capital (Russell 3000 Quarter Lag + 2%)	4.20%	$	311,822,901	5.27%
		Mesirow (Russell 3000 Quarter Lag + 2%)	4.20%	$	293,290,421	4.95%
		Neuberger Berman (Russell 3000 Quarter Lag + 2%)	1.80%	$	69,491,870	1.17%
		Apogem (Russell 3000 Quarter Lag + 2%)	1.80%	$	105,144,444	1.78%
Total Private Equity			**12.00%**	**$**	**779,749,636**	**13.17%**
TOTAL EQUITY (Public Equity + Private Equity)			**51.00%**	**$**	**3,132,090,824**	**52.90%**
FIXED INCOME & ABSOLUTE RETURN						
Fixed Income						
	Cash		1.00%	$	94,208,461	1.59%
	Passive Fixed Income	BlackRock (Bloomberg US Government)	7.22%	$	412,000,010	6.96%
	Active Fixed Income	Reams (Bloomberg US Aggregate)	12.83%	$	728,560,047	12.30%
		Loomis Sayles (Bloomberg US Aggregate)	7.95%	$	461,995,650	7.80%
		Sub-Total Active Fixed Income	20.78%	$	1,190,555,697	20.11%
Total Fixed Income			**29.00%**	**$**	**1,696,764,168**	**28.66%**
Absolute Return						
		Aptitude (SOFR + 4%)	3.00%	$	193,297,610	3.26%
		UBS (SOFR + 4%)	4.00%	$	260,651,660	4.40%
Total Absolute Return			**7.00%**	**$**	**453,949,270**	**7.67%**
TOTAL FIXED INCOME & ABSOLUTE RETURN			**36.00%**	**$**	**2,150,713,438**	**36.32%**
REAL ASSETS						
	Private Real Estate - Core	JP Morgan (NFI-ODCE)	2.50%	$	108,310,126	1.83%
		Morgan Stanley (NFI-ODCE)	2.70%	$	144,358,834	2.44%
		LaSalle (NFI-ODCE)	2.30%	$	105,165,918	1.78%
		Prologis (NFI-ODCE)	1.30%	$	80,862,796	1.37%
		Harrison Street (NFI-ODCE)	0.90%	$	12,500,000	0.21%
		Sub-Total Private Real Estate - Core	9.70%	$	451,197,675	7.62%
	Private Real Estate - Non-Core	Non-Core Real Estate (NFI-ODCE)	0.00%	$	10,048,747	0.17%
	Public Real Assets	Principal (Blended Benchmark)	3.30%	$	177,009,194	2.99%
TOTAL REAL ASSETS			**13.00%**	**$**	**638,255,615**	**10.78%**
TOTAL ERS				**$**	**5,921,059,877**	**100.00%**

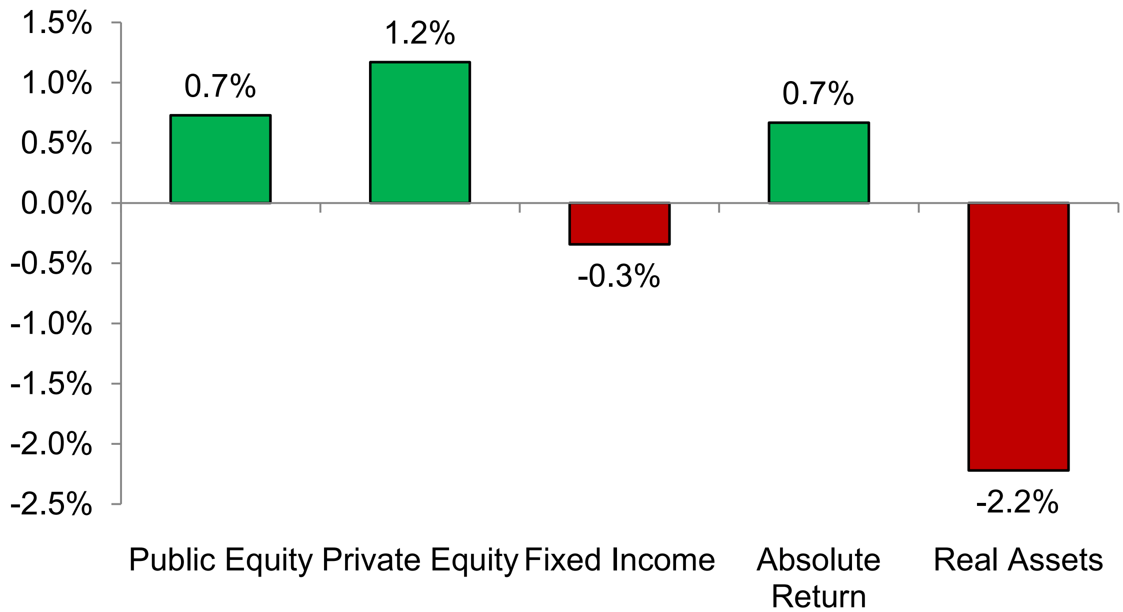
Total City Reserve Fund	**R. W. Baird**	**86,781,553**

PROJECTED VERSUS POLICY ALLOCATIONS

Asset Mix Using Projected Balances



Asset Allocation vs. Current Policy Benchmark



YTD Market Value Change

December 31, 2023 Market Value including City Reserve & PABF Accounts			$ 5,797,273,012
Monthly Cash Outflows thru	June 17, 2024		
Retiree Payroll Expense		$ (196,215,813)	
PABF Payroll Expense		$ (4,000)	
Expenses Paid		$ (6,363,343)	
GPS Benefit Payments		$ (3,112,215)	
Sub-Total Monthly Cash Outflows			$ (205,695,370)
Monthly Cash Inflows thru	June 17, 2024		
Contributions		$ 222,122,735	
PABF Contribution		$ 4,500	
Sub-Total Monthly Contributions			$ 222,127,235
Capital Market Gain/(Loss)			$ 194,136,554
Value including City Reserve & PABF Accounts as of	June 17, 2024		$ 6,007,841,431
Less City Reserve Account[1]			$ 86,781,553
Less PABF Fund[2]			$ 2,718
Net Projected ERS Fund Value as of	June 17, 2024		$ 5,921,057,159

1 The City Reserve Account balance equals the market value currently held in the Baird account.

2 PABF Fund balance equals the market value currently held in the PABF account.

6/18/2024

2024 ESTIMATED MONTHLY CASH FLOWS
Revised 6/18/2024
(in 000's)

	12/31/2023	1/31/2024	2/29/2024	3/31/2024	4/30/2024	5/31/2024	6/30/2024	7/31/2024	8/31/2024	9/30/2024	10/31/2024	11/30/2024
Beginning Cash Account Balance												
Townsend Cash Account	-	-	-	-	-	-						
Cash Contribution Account	-	-	-	-	-	-						
Milwaukee Cash Account	46,059	179,092	167,742	134,564	88,675	79,198						
Total Cash Available	46,059	179,092	167,742	134,564	88,675	79,198						
Less: Estimated Cash Needs for non-Investment Outflows	39,500	39,500	39,500	39,500	39,500	39,500						
Cash Available for Other Outflows	6,559	139,592	128,242	95,064	49,175	39,698						

For Monthly Cash Outflows of:	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Nov-2024	Dec-2024	Total 2024
Retiree Payroll Expense	(40,300)	(39,713)	(39,957)	(39,552)	(39,807)	(40,444)	(40,543)	(40,642)	(40,741)	(40,840)	(40,940)	(41,040)	(484,519)
Normal Retirement Payroll	(39,242)	(38,947)	(39,410)	(39,270)	(39,346)	(39,444)	(39,543)	(39,642)	(39,741)	(39,840)	(39,940)	(40,040)	(474,407)
Retiree Lump Sum Payments	(1,058)	(765)	(546)	(282)	(460)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(10,112)
Real Estate Capital Calls	-	-	(23)	(12,500)	-	(20)	-	-	-	-	-	-	(12,543)
Private Equity Capital Calls	(2,149)	(3,464)	(6,173)	(14,033)	(614)	(3,634)	-	-	-	-	-	-	(30,067)
Expenses Paid through City	(2,023)	(2,156)	(1,198)	-	(986)	(2,923)	(2,023)	(2,023)	(2,023)	(2,023)	(2,023)	(2,023)	(21,424)
PABF Payroll	(1)	(3)	(1)	(1)	-	-	-	-	-	-	-	-	(4)
Sub-Total Monthly Cash Outflows	**(44,472)**	**(45,336)**	**(47,351)**	**(66,085)**	**(41,406)**	**(47,022)**	**(42,566)**	**(42,665)**	**(42,764)**	**(42,863)**	**(42,963)**	**(43,063)**	**(548,557)**
For Monthly Cash Inflows:													
Sponsoring Agency and Employee Contribution	2,710	2,721	2,049	3,675	2,708	2,715	2,722	4,093	2,736	2,742	2,749	2,756	34,377
Real Estate Distributions	1,920	-	92	4,428	-	-	-	-	-	-	-	-	6,441
Private Equity Distributions	904	3,891	11,310	1,935	2,547	1,261	-	-	-	-	-	-	21,848
Miscellaneous Income	163	950	790	755	573	95	95	95	95	95	95	95	3,896
Security Lending Transfer	853	-	-	-	-	-	-	-	-	-	-	-	853
City and Agency Required Contribution	205,954	987	-	-	-	-	-	-	-	-	-	-	206,941
PABF Inflow	-	1	-	3.0	1	-	-	-	-	-	-	-	5
Sub-Total Monthly Cash Inflows	**212,505**	**8,551**	**14,242**	**10,796**	**5,829**	**4,071**	**2,817**	**4,188**	**2,831**	**2,837**	**2,844**	**2,851**	**274,361**
Net Monthly Cash Inflows/(Outflows) Before Withdrawals	168,033	(36,785)	(33,110)	(55,290)	(35,577)	(42,951)	(39,749)	(38,477)	(39,934)	(40,026)	(40,119)	(40,212)	(274,196)
Net Monthly Cash Surplus (Need)	**174,592**	**102,807**	**95,132**	**39,775**	**13,598**	**(3,254)**	**(39,749)**	**(38,477)**	**(39,934)**	**(40,026)**	**(40,119)**	**(40,212)**	**184,134**

Monthly Cash Withdrawals (Additions)	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Nov-2024	Dec-2024	Total 2024
AQR					4,100	4,000							
BlackRock Global Alpha Tilts			9,400		9,400								
BlackRock Russell 1000 Value Index													
BlackRock US Government Bond Index	(54,000)												
Brandes					12,400								
CastleArk													
Dimensional Fund Advisors US Large Cap													
Dimensional Fund Advisors International					6,200								
Dimensional Fund Advisors US Small Cap													
Earnest													
Loomis Sayles													
MFS					7,500								
Northern Trust S&P 500 Index			7,400										
Polen			4,500										
Principal													
Reams													
Transition Account		25,435	33	0									
UBS A&Q	19,000												
Goldman/Aptitude			(12,000)										
William Blair													
Sub-Total Monthly Cash Withdrawals	**(35,000)**	**25,435**	**9,333**	**0**	**39,600**	**4,000**							

Estimated Month-End Cash Balance	Jan-2024	Feb-2024	Mar-2024	Apr-2024	May-2024	Jun-2024	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Nov-2024	Dec-2024
Cash Available	139,592	128,242	104,464	39,775	53,198	746						
Estimated Cash Needs for non-Investment Outflows	39,500	39,500	39,500	39,500	39,500	39,500						
Total Cash Estimated on Hand For Next Month	179,092	167,742	143,964	79,275	92,698	40,246						