

**REGULAR MEETING OF THE ANNUITY AND PENSION BOARD  
EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE  
789 N. WATER ST. (Employees' Retirement System)  
THURSDAY, JUNE 30, 2022 – 9:00 A.M.**

*Special Notice: Due to the COVID-19 pandemic, 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](http://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 24, 2022.
- B. Special Meeting Held June 9, 2022.

**II. Chief Investment Officer Report.**

**III. Investment Committee Report.**

- A. Approval of UBS Hedge Fund Solutions Guideline Change.
- B. Approval of Recommendation regarding investment in Bryanston Retail Opportunity Fund, L.P.
- C. Approval of Real Estate Investment Policy Statement Update.
- D. Approval of Statement of Investment Policy Update.

**IV. Administration & Operations Committee Report.**

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

**V. New Business.**

- A. Presentation by Pat Beckham and Larry Langer of Cavanaugh Macdonald and Acceptance of 2022 Actuarial Valuation Report.
- B. Retirements, Death Claims, and Refunds (May).

- C. Conference Requests – June 2022 Board Meeting.
- D. Approval of At Large Member Election Bulletin No. 197.
- VI. Medical Reports.
  - 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.
  - A. Pending Litigation Report.
  - B. Conferences.
  - C. Class Action Income 2022 YTD.
  - D. Minutes of the Investment Committee Meeting Held June 9, 2022.
  - E. Minutes of the A&O Committee Meeting Held June 16, 2022.
  - F. Report on Bills.
  - G. Deployment of Assets.
  - H. Securities Lending Revenue and Budget Report.
  - I. Preliminary Performance Report and Asset Allocation.

## MEETING REMINDERS

### **ADMINISTRATION & OPERATIONS COMMITTEE MEETING**

**WEDNESDAY, JULY 20, 2022 – 9:00 A.M.**

789 N. WATER ST.

### **REGULAR MEETING OF THE ANNUITY AND PENSION BOARD**

**WEDNESDAY, JULY 27, 2022 – 9:00 A.M.**

789 N. WATER ST.

## REGULAR MEETING

I.

APPROVAL OF MINUTES

- A. Regular Meeting Held May 24, 2022.
- B. Special Meeting Held June 9, 2022.

**EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE  
ANNUITY AND PENSION BOARD**

Minutes of the Regular Meeting  
held May 24, 2022 via teleconference during COVID-19

The meeting was called to order at 9:03 a.m.

Board Members Present:           Matthew Bell, Chair  
  Deborah Ford  
  Tom Klusman  
  Rudolph Konrad  
  Nik Kovac

Board Members Not Present:   James Campbell (excused)  
  Molly King (excused)  
  Aycha Sawa (arrived at 9:06 a.m.)

Retirement System Staff Present:   Jerry Allen, Executive Director  
  Melody Johnson, Deputy Director  
  Daniel Gopalan, Chief Financial Officer  
  David Silber, Chief Investment Officer  
  Erich Sauer, Deputy Chief Investment Officer  
  Thomas Courtright, Pension Investment Analyst  
  Jan Wills, Board Stenographer

Others Present: Patrick McClain, City Attorney's Office; Terry Siddiqui, DS Consulting, Inc., nine members of the public called in to the meeting.

**Regular Meeting.**

**Approval of Minutes.**

**Regular Meeting Held April 27, 2022.** It was moved by Mr. Konrad, seconded by Ms. Ford, and unanimously carried, to approve the Minutes of the Regular Meeting Held April 27, 2022.

**Chief Investment Officer Report.** As a matter of information, Board members received the May 24, 2022 Performance Update. Mr. Sauer noted the Fund as of April 30, 2022, had a value of \$5.92 billion. He said the April Fund return of -3.2%, gross of fees, outperformed the benchmark by approximately 1.2%. He noted interest rates rose in April, which caused bond prices, as well as growth stocks, to fall. He said the main drivers for the month were real estate as strong quarterly reports came in from Prologis and LaSalle, which added 49 basis points to the Fund's relative returns. Mr. Sauer said UBS also had a strong month in April and added 19 basis points to the Fund's returns and the Fund's US Large Cap Value Bias added 16 basis points. He said the Fund outperformed the benchmark in all time periods shown. He commented the Fund return, through May 23<sup>rd</sup>, was down -0.9% month-to-date, which brought the Fund return down to -4.5% year to date and the Fund value to \$5.87 billion. He noted nine out of 15 active mandates are

outperforming year to date. Mr. Sauer stated the Public Equity, Fixed Income, and Absolute Return asset classes, along with the Total Fund, are outperforming their respective benchmarks year to date. Mr. Sauer said the Fund, through May 23, had seen a year-to-date change in the value of its investments of -\$279.0 million, paid benefits & expenses of \$155.1 million, and received contributions of \$85.8 million. He added that \$21 million of withdrawals for benefit payments would come from the US Government Bond Index and \$8 million from Principal.

Ms. Sawa arrived at 9:06 a.m.

Mr. Silber noted the Investment Committee Meeting is set for June 9. He said the expected agenda items will come from Callan who will provide a Real Estate update and continue a Public Equity Structure Review. He said the Investment Team is also in touch with the City Attorney's office and external counsel regarding the contract with the selected Hedge Fund of Funds Manager, which is contingent upon due diligence and contract negotiations. Mr. Silber noted the Hedge Fund of Funds Manager's contract would be on the agenda if it is ready. He also noted that performance reports and guideline items would be on the agenda.

### **New Business.**

**Retirements, Death Claims, and Refunds (April).** Mr. Allen presented the following activity for the month of April 2022.

Active Death Benefits reported	\$0.00
Deferred Death	\$25,031.35
Deferred Death-Member Only Refund	\$0.00
Ordinary Death Benefits reported	\$0.00
Retired Death Benefits reported	\$10,656.04
Survivor Death – Termination Benefits reported	\$12,494.59
Refund of Member Contributions paid	\$202,245.39

It was moved by Mr. Klusman, seconded by Mr. Konrad, and unanimously carried, to approve the Retirements, Death Claims, and Refunds (April 2022).

**Conference Requests – May 2022 Board Meeting.** Staff presented the Conference Requests this month.

Thomas Courtright	Neuberger Berman 2022 LP Annual Meeting
Sponsor:	Neuberger Berman
Location:	New York, NY
Date:	June 22-23, 2022
Estimated Cost:	\$1,500.00

It was moved by Ms. Sawa, seconded by Ms. Ford, and unanimously carried, to approve the Conference Requests – May 2022 Board Meeting.

Mr. Bell 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)(c), for considering employment, promotion, compensation or performance evaluation data of any public employee over which the governmental body has jurisdiction or exercises responsibility. The Board may then vote to reconvene in open session following the closed session.

**ERS Executive Staff Compensation.** It was moved by Mr. Klusman and seconded by Mr. Kovac to convene in closed session. The motion prevailed by the following roll call vote: AYES: Mses. Ford, Sawa; Messrs. Klusman, Konrad, Kovac, and Bell. NOES: None.

The Board convened in closed session at 9:15 a.m.

The Board reconvened in open session at 9:41 a.m.

### **Medical Reports.**

**All Duty & Ordinary Disability Applications & Re-examinations (April).** Staff presented certifications (April 2022) of the Fire and Police Medical Panel Physicians and the Medical Council relative to Duty & Ordinary Disability Retirement benefits as follows:

<u>Police – Application – Ordinary</u>	<u>Recommendation</u>
Telly Kemos Effective 12/06/2021	Approval
<u>Police – Re-examinations – Duty</u>	<u>Recommendation</u>
Robert Henry	Approval
Michael Pendergast	Approval
<u>Fire – Application – Extended Life</u>	<u>Recommendation</u>
Charles Kazik Effective 12/22/2021	Approval
<u>Fire – Re-examinations – Duty</u>	<u>Recommendation</u>
Brett Michalowski	Approval
Walter Price	Approval
<u>GC – Application – Duty</u>	<u>Recommendation</u>
Gregory Fenning Effective 10/08/2021	Approval

GC – Application – OrdinaryRecommendation

Matthew Wytch  
Effective 10/05/2021

Approval

GC – Re-examinations – OrdinaryRecommendation

Jeffrey Granberry  
Kathy Wilder

Approval  
Approval

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

**Unfinished Business.**

**Pending and Legal Opinions and Service Requests Report.** As a matter of information, Board members received the Pending Legal Opinions and Service Requests Report. Mr. McClain noted the single pending legal opinion is in draft form and will be ready in the next month. He said there are no new updates for the other legal issues. Discussion ensued.

**Pending Legislation Report.** As a matter of information, Board members received the Pending Legislation Report. Staff said there were no new updates on the Legislation Report.

**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. Discussion ensued.

**Informational.**

The following is a list of informational items:

Mr. Bell 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.

- 1) Pending Litigation Report.
- 2) Conferences.
- 3) Class Action Income 2022 YTD.
- 4) Adjusted Quarterly Cost Basis of Equity.
- 5) Minutes of the Investment Committee Meeting Held April 14, 2022.
- 6) Minutes of the A&O Committee Held April 20, 2002.

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.

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

Mr. Bell adjourned the meeting at 9:56 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 Employees' Retirement System, 789 N. Water Street, Suite 300.)

**EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE  
ANNUITY AND PENSION BOARD**

Minutes of the Special Meeting  
held June 09, 2022 via teleconference during COVID-19

The meeting was called to order at 9:09 a.m.

Board Members Present:           Matthew Bell, Chair  
  James Campbell  
  Deborah Ford  
  Molly King  
  Tom Klusman  
  Nik Kovac  
  Aycha Sawa

Board Members Not Present:     Rudolph Konrad (excused)

Retirement System Staff Present:   Jerry Allen, Executive Director  
  Dan Gopalan, Chief Financial Officer  
  David Silber, Chief Investment Officer  
  Erich Sauer, Deputy Chief Investment Officer  
  Gust Petropoulos, Deputy Director - Disability  
  Jan Wills, Board Stenographer

Others Present: John Jackson, Callan Associates; Terry Siddiqui, DS Consulting, Inc.; three members of the public called in.

**Special Meeting**

Mr. Bell 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)(c), for considering employment, promotion, compensation or performance evaluation data of any public employe over which the governmental body has jurisdiction or exercises responsibility. The Board may then vote to reconvene in open session following the closed session.

**Approval of Initial Salary for Pension Investment Analyst – Sr. Finalist Candidate.**

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

The meeting convened in closed session at 9:10 a.m.

The meeting re-convened in open session at 9:31 a.m.

It was moved by Ms. King, seconded by Mr. Klusman, and unanimously carried, to approve the Approval of Initial Salary for Pension Investment Analyst – Sr. Finalist Candidate, which will be at the pay range for the wage rate for a non-resident.

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

There being no further business, Mr. Bell adjourned the meeting at 9:33 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 Employees' Retirement System, 789 N. Water Street, Suite 300.)

II.

CHIEF INVESTMENT OFFICER REPORT

# Milwaukee Employees' Retirement System - June 30, 2022

## Fund as of May 31, 2022

\*Fund value of \$5.95b.

\*Fund return of 1.1% in May, gross of fees, outperformed by approximately 0.9%.

\*Primary Relative Perf. Drivers:

Manager Selection

Private Equity 44 bp

DFA Mandates 20 bp

Brandes 12 bp

Style Bias 16 bp

Primarily US Value

\*Fund has outperformed benchmark in all time periods shown.

## June Update (6/23/22 estimates)

\*Fund return -4.8% MTD

\*Fund return -7.3% YTD

\*Fund value \$5.67b

\*9 out of 15 active mandates outperforming YTD.

\*Public Equity, Fixed Income, and Absolute Return asset classes, along with Total Fund, outperforming their respective benchmarks YTD.

\*Investment Change: - \$444.7m

\*Benefits & Expenses: 195.8m

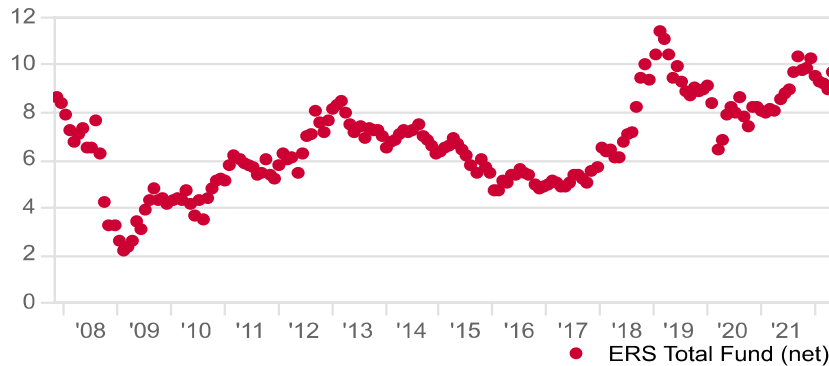
\*Contributions: 89.3m

Monthly Withdrawals:

To be discussed at meeting

## Total Fund - 10-Year Rolling Returns

11/28/1997 to 5/31/2022



## Return Data

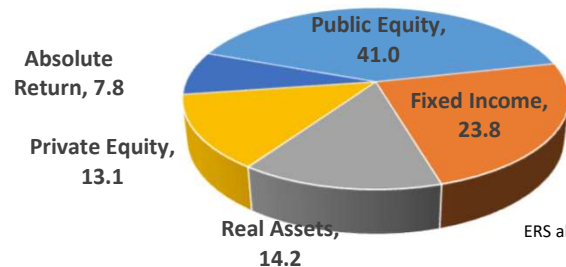
Source Data: Monthly Return

	1 Month	YTD	1 Year	5 Year	10 Year	15 Year	20 Year
Total Fund (net)	1.1	-2.6	5.8	9.0	9.7	6.2	7.5
ERS Benchmark	0.2	-6.0	-0.2	7.8	8.9	6.0	7.0

## Total Fund - 20-Year Risk & Return Data

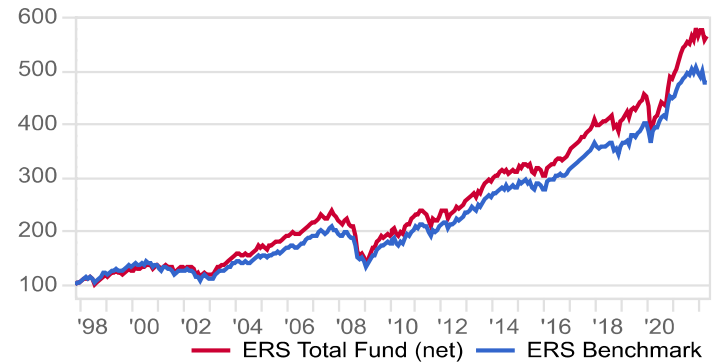
	Return	Std Dev	Tracking Error	Info Ratio (arith)	Sharpe Ratio	Alpha	Beta
Total Fund (net)	7.5	10.4	2.5	0.2	0.6	-0.1	1.1
ERS Benchmark	7.0	9.2	--	--	0.6	0.0	1.0

## ERS Allocation as of May 31, 2022



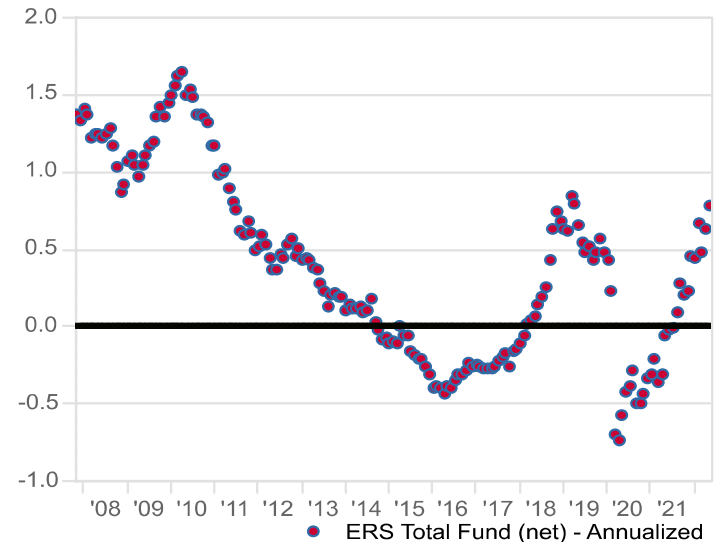
## Growth of \$100 - Total Fund & ERS Benchmark

11/28/1997 to 5/31/2022

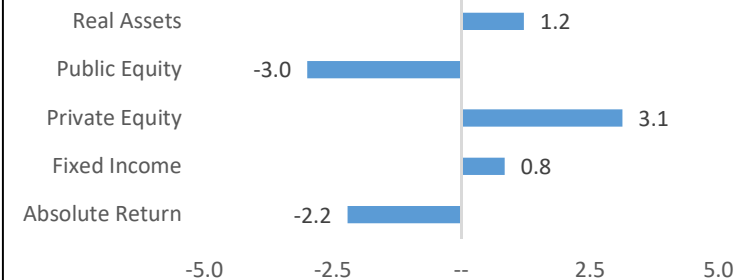


## Total Fund - 10-Year Rolling Excess Returns

11/28/1997 to 5/31/2022



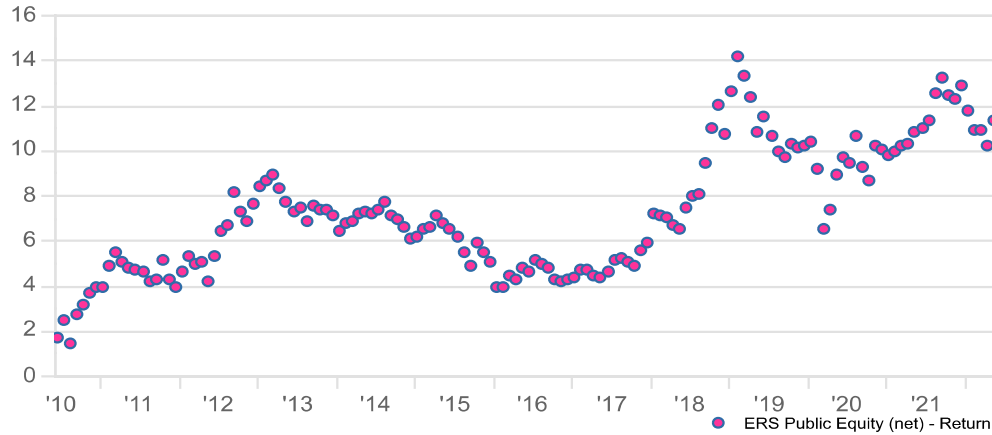
## Asset Allocation vs Policy as of May 31, 2022



# Milwaukee Employees' Retirement System - June 30, 2022

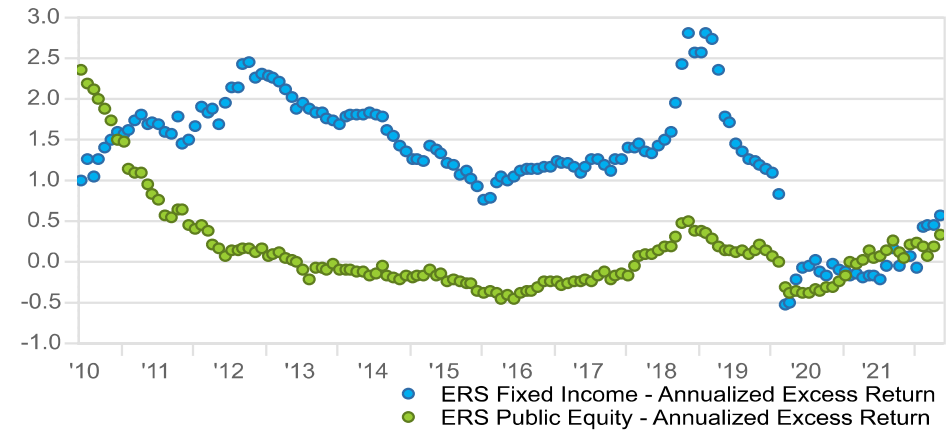
## Public Equity - 10-Year Rolling Returns

06/30/2000 to 5/31/2022



## Asset Class - 10-Year Rolling Excess Returns

06/30/2000 to 5/31/2022



## Return Data

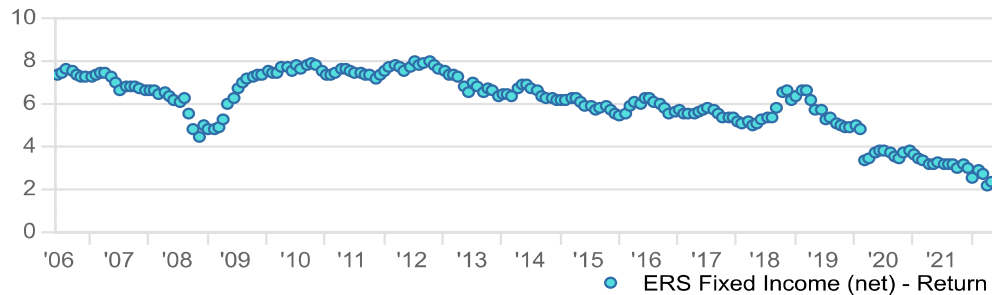
	1 Month	YTD	1 Year	5 Year	10 Year	15 Year	20 Year
Public Equity	1.1	-11.3	-6.9	9.7	11.7	6.3	8.0
Public Equity (net)	1.1	-11.4	-7.2	9.3	11.3	6.0	7.7
Public Equity Benchmark	0.1	-12.9	-7.5	8.8	10.9	6.0	7.4
MSCI ACWI IMI NR USD	0.1	-12.9	-7.5	8.8	10.2	5.5	7.6

## Risk Adjusted Returns (6/30/14 - 5/31/22)

	Return	Std Dev	Sharpe Ratio	Max Drawdown
Public Equity (net)	8.1	14.8	0.5	-25.3
Fixed Income (net)	1.7	6.0	0.2	-12.6
Absolute Return (net)	5.5	10.4	0.5	-27.1

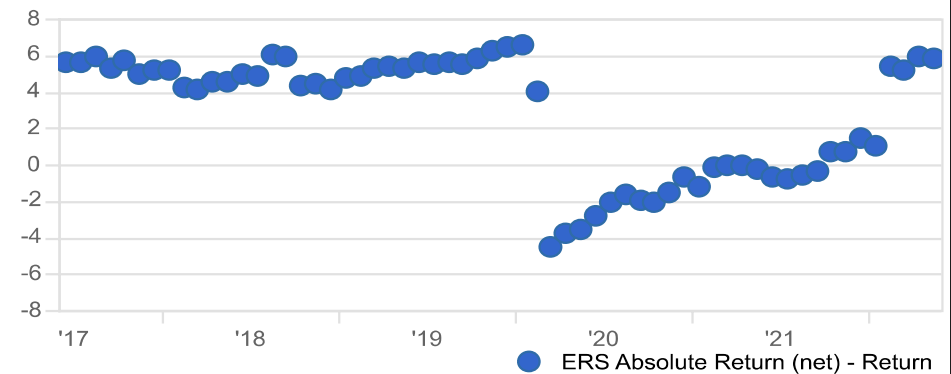
## Fixed Income - 10-Year Rolling Returns

06/28/1996 to 5/31/2022



## Absolute Return - 3-Year Rolling Returns

06/30/2014 to 5/31/2022



## Return Data

	1 Month	YTD	1 Year	5 Year	10 Year	15 Year	20 Year
Fixed Income	0.6	-3.4	-2.5	1.5	2.4	4.3	5.0
Fixed Income (net)	0.6	-3.4	-2.6	1.4	2.3	4.2	4.9
Bbg US Govt Bond TR USD	0.6	-8.9	-8.2	1.2	1.7	3.4	3.7

## Return Data

	1 Month	YTD	1 Year	3 Year	5 Year	7 Year
Absolute Return (net)	0.1	19.6	25.0	5.8	5.3	5.1
90-Day T-Bill + 3%	0.3	1.5	3.3	3.6	4.1	3.9

### III.

#### INVESTMENT COMMITTEE REPORT

- A. Approval of UBS Hedge Fund Solutions Guideline Change.
- B. Approval of Recommendation regarding investment in Bryanston Retail Opportunity Fund, L.P.
- C. Approval of Real Estate Investment Policy Statement Update.
- D. Approval of Statement of Investment Policy Update.

# Memorandum

**To:** CMERS Investment Committee

**From:** Erich Sauer, CFA, CAIA

**Date:** June 9, 2022

**Re:** UBS Guideline update

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Attached you will find a request from UBS to modify the guidelines of the custom fund-of-one they manage for CMERS. The guideline modification gives UBS the ability to invest up to 5% of assets into strategies that are categorized as “direct trading”.

This guideline change will enable UBS to change the way they implement co-investments in our fund. Currently, co-investments are allowed, but they are single line-items that are always implemented by an external manager. Our fund may have as few as one or two of these co-investments at any given time.

UBS would prefer to implement our co-investments through a pooled vehicle called the UBS direct opportunities fund. This is a more diversified way to implement co-investments, as it typically contains ten or more different investments at any given time. While all the ideas still come from external managers, to make implementation as efficient as possible, UBS sometimes directly implements the positions in this fund. That is the reason for the guideline change request to allow direct trading.

ERS staff and Callan are comfortable with this guideline change. Implementing co-investments through a more diversified approach should present a risk/return profile that is more aligned with the objectives of CMERS’ custom fund, compared to the specific risk that could be involved with only one or two co-investments. The fact that all the ideas are still coming from external managers, and UBS is only implementing them through the direct trades, makes us comfortable with allowing the direct trading.

ERS Staff and Callan are comfortable with this guideline change and recommend approval.



**CMERS Low Beta LLC**  
725 Bridge St. W. Suite 101  
Waterloo, Ontario  
Canada, N2V 2H1

June [•], 2022

Re: **CMERS Low Beta LLC (the "Fund")**

Dear Investor:

The Management Board of the Fund is writing to inform you of the distribution of a supplement to the Confidential Memorandum dated December 2014 (the "Supplement") regarding certain changes to the Fund described below. Capitalized terms used but not defined herein have the meanings set forth in the Confidential Memorandum.

Beginning [\_\_\_\_], 2022, the Investment Manager will allocate a portion of the Fund's assets to one or more Portfolio Funds or special purpose vehicles for which the Investment Manager acts as Submanager and implements a direct trading strategy. The Investment Manager may pursue a number of different categories of trades as a Submanager, including with respect to the categories described in the Supplement, although there can be no certainty that any particular category of trade will be effected at any particular time or that the Investment Manager will, or will not, effect multiple trades in several categories essentially simultaneously; provided, however, that the Investment Manager will limit the Fund's co-investment exposure (through Investment Manager direct trading) to not more than 5% of the NAV of the Fund at the time of any investment to obtain such exposure.

The Investment Manager will not receive any additional compensation with respect to the Fund's investments in Portfolio Funds or special purpose vehicles for which the Investment Manager implements a direct trading strategy (*i.e.*, the Investment Manager will not be separately compensated as a Submanager), although such Portfolio Funds and special purpose vehicles will have their own operating costs, including, from time to time, fees to third parties in connection with the sourcing of trading ideas.

Additionally, beginning [\_\_\_\_], 2022, the Fund will bear the compensation of any affiliated subadvisors retained by the Investment Manager to source, implement, subadvise, and/or manage direct trades made on behalf of the Fund, whether through a Portfolio Fund or special purpose vehicle or taken directly by the Fund.

The Investment Manager's authority to implement direct trading strategies and compensate affiliated subadvisors on behalf of the Fund is qualified by the information set forth in the Supplement and, in the event of a conflict between the information contained in the Confidential Memorandum and the Supplement, the terms contained in the Supplement will control.

The Supplement contains a description of a number of the categories of direct trading strategies and updates to certain conflicts of interest in relation to the direct trading strategies associated with an investment in the Fund.

We have enclosed the Supplement for your review. For the records of the Fund, please indicate your acknowledgment to the terms reflected in the Supplement by countersigning the enclosed copy of this letter and returning it to the Fund, via e-mail to the Administrator at [investorserviceshalifax@mfsadmin.com](mailto:investorserviceshalifax@mfsadmin.com) and copy Edward Burman on the email ([edward.burman@ubs.com](mailto:edward.burman@ubs.com)). Please contact your UBS representative if you have any questions regarding this letter or the Supplement.

Very truly yours,

**CMERS Low Beta LLC**

By: \_\_\_\_\_  
Name:  
Title: Management Board Member

AGREED AND ACKNOWLEDGED BY:

**City of Milwaukee Employees' Retirement System**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

AMENDMENT NO. 2 TO  
AMENDED AND RESTATED INVESTMENT MANAGEMENT AGREEMENT  
CMERS LOW BETA LLC and UBS HEDGE FUND SOLUTIONS LLC

This Amendment ("**Amendment**") is made as of this [•] day of ~~March~~June 2022 by and between CMERS Low Beta LLC (the "**Fund**") and UBS Hedge Fund Solutions LLC (the "**Investment Manager**").

WHEREAS, the Fund and the Investment Manager entered into an Amended and Restated Investment Management Agreement effective as of July 31, 2016 relating to the provision of discretionary investment management services by the Investment Manager to and for the benefit of the Fund (the "**Agreement**");

WHEREAS, the Fund and the Investment Manager entered into an Amendment No. 1 to the Agreement effective as of July 1, 2017 to amend Appendix A to the Agreement; and

WHEREAS, the Fund and the Investment Manager now wish to enter into this Amendment No. 2 to the Agreement to amend Appendix A to the Agreement as set forth below.

NOW THEREFORE, in consideration of the mutual promises and understandings set forth herein and other good and valuable consideration the sufficiency of which is hereby acknowledged, the Fund and the Investment Manager agree as follows:

1. Appendix A "Investment Program" to the Agreement is hereby deleted in its entirety and replaced with the Exhibit hereto.
2. Effective Date. This Amendment shall be effective as of ~~April 1~~, [\_\_\_\_], 2022.
3. Confirmation of the Agreement. Except as amended hereby, the Agreement shall remain in full force and effect.
4. Counterparts. This Amendment may be executed in one or more counterparts, each of which shall, however, together constitute one and the same document.

[Signatures follow]

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto as of the day and year first above written.

For and on behalf of

**CMERS LOW BETA LLC**

\_\_\_\_\_  
Name:

Title

\_\_\_\_\_  
Name:

Title

For and on behalf of

**UBS HEDGE FUND SOLUTIONS LLC**

\_\_\_\_\_  
Name:

Title

\_\_\_\_\_  
Name:

Title

## EXHIBIT

### APPENDIX A (Amended)

#### 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 Objectives represent initial objectives 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 the following 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%)
- Credit / Income (0-50%)
  - Credit 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%)
- Trading: (0-40%)
- Other: (0-10%)
- Direct Trading: (0-~~20~~5%)

The Fund is also permitted to invest in Multi-Strategy Submanagers, 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 Portfolio Funds allocate capital opportunistically among strategies believed to offer a suitable risk-adjusted return profile going forward. Applicable guidelines for multi-strategy Submanagers will be monitored on a look-through basis to the underlying strategies and will count toward the specified limits above.

**Please refer to the Memorandum for detailed descriptions of the foregoing and additional strategies. 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 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 LLC. 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 will 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 will be allocated to Portfolio Funds with stated liquidity terms (with penalties) that allow for redemption within 1 year from the date of investment (including as of the anniversary date or the next periodic redemption date following termination of a 1 year hard lock-up period).
- 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. Approximately 10% of the net asset value of the Fund may be invested in Portfolio Funds that 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% limitation.
- 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.

The liquidity considerations assume a willingness by the Fund to pay a redemption fee or penalty of up to 5% to accelerate liquidity.

Redemption notice periods will not be taken into consideration for purposes of the foregoing liquidity considerations, but generally will not exceed 90 days.

From time to time, a Submanager 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 in the discretion of the Investment Manager; provided, however, that the Investment Manager will limit the Fund's co-investment exposure (through Investment Manager direct trading) 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.

**REAL ESTATE INVESTMENT POLICY STATEMENT**

**June~~December~~ 2022~~19~~**

**THE EMPLOYEES' RETIREMENT  
SYSTEM OF THE CITY OF MILWAUKEE**

789 N. Water Street, 3<sup>rd</sup> Floor  
Milwaukee, WI 53202  
(414) 286-3557



## **I. PURPOSE**

The purpose of this statement of Real Estate Investment Policy is to formalize the City of Milwaukee Employees' Retirement System's ("CMERS") investment objectives, policies, and procedures with respect to the real estate asset class. This statement is an extension of the CMERS overall Statement of Investment Policy.

## **II. INVESTMENT OBJECTIVE AND CONSIDERATIONS**

### **A. Purpose of Real Estate Allocation**

CMERS allocates a portion of its total assets to real estate for the following benefits:

1. Enhance the diversification of the CMERS overall investment portfolio due to real estate's low correlation with stocks and bonds;
2. Provide high current income and a rate of return that falls between stocks and bonds;
3. Lower the volatility of the total investment portfolio considering real estate returns have historically exhibited lower volatility than other public equity asset classes; and
4. Provide a hedge against unanticipated inflation.

### **B. Major Considerations**

Major considerations impacting the structure of the real estate portfolio include:

1. Liquidity
2. Staffing
3. Investment decision-making process
4. Diversification

### **C. Asset Allocation**

CMERS has a current target allocation of 13% to Real Assets and 9.1% to Private Real Estate. CMERS Statement of Investment Policy permits a minimum allocation to Real Assets, defined as Private Real Estate and Public Diversified Real Assets, of 10% and a maximum allocation to Real Assets of 16%. approved a long-term asset allocation of 7.7% of total CMERS assets for investment in equity and equity-oriented real estate investment. To facilitate maintaining the target allocation of 7.7%, CMERS will target a range 5% to 10%.

### **D. Return Objectives**

CMERS seeks to achieve total net returns equivalent to the net returns of the NCREIF Fund Index Open-End Diversified Core Equity Index Value-Weighted Net ("NFI-ODCE" or "ODCE") as a minimum return for the total real estate portfolio over rolling five-year periods.

## **III. Portfolio Composition**

CMERS's real estate allocation will be 100% invested in Core and Core plus strategies.

The portfolio will primarily be invested in Core strategies, with Core Plus used as a complement. Investment in Non-Core strategies will not be pursued. Non-Core funds that are currently in the portfolio will be liquidated by the managers at their discretion and according to the provisions established in the documents governing each fund.

Core/Core Plus and Non-Core strategies are defined as follows:

	<b>Strategy</b>	<b>Leverage</b>
<b>Core/Core Plus</b>	<p>Existing, operational assets that are substantially leased (greater than 80%) that are core quality properties located in major markets.</p> <p>Core strategies are typically concentrated in the four main property types: office, apartment, retail and industrial, but may include mixed-use properties, self-storage, and hotels.</p> <p>Core Plus strategies may have greater exposure to property types beyond the four main property types, including mixed-use, self-storage, hotels, senior housing, and student housing.</p> <p>Total return derived from income and appreciation, with income accounting for at least 60% of the total return.</p>	<p>Core strategies generally have leverage of less than 35%.</p> <p>Core Plus strategies may have higher leverage, up to 50%, but typically 35-40%.</p>
<b>Non-Core Value-Add</b>	<p>Institutional quality properties located in major and secondary markets with improvement needs or opportunities to add value through asset management initiatives.</p> <p>Includes office, apartment, retail, industrial, as well as more specialized property types such as mixed-use properties, hotels, senior housing, self-storage and student housing, among others.</p> <p>Return balanced between appreciation and income, with some initial income that grows over time as value-add strategy is implemented.</p>	<p>May include the use of leverage up to 65%</p>
<b>Non-Core Opportunistic</b>	<p>Properties, property portfolios or real estate companies offering recapitalization, turnaround, development, market arbitrage opportunities or other specialized approaches.</p> <p>Return primarily derived from appreciation.</p>	<p>Leverage is utilized and often is not limited</p>

#### **IV. PERMISSIBLE INVESTMENTS**

##### **A. Investment Types**

To achieve the benefits of investing in real estate, investments for CMERS will consist of equity and equity-oriented ownership in commercial real estate.

##### **B. Investment Structures**

This Policy authorizes the use of investment structures that provide legal protections to CMERS commensurate with the investment opportunity subject to legal review. Investments in real estate will be made through collective investment vehicles.

Collective investment vehicles, also known as commingled funds, are generally categorized into two sub-structures: Open-end and Closed-end. Open-end commingled funds are infinite life vehicles which provide periodic liquidity by allowing the investor to contribute capital contributions or redeem capital, typically on a quarterly basis. Closed-end funds are finite life vehicles where the timing of capital contribution and distributions are at the discretion of the manager.

Investment will be made exclusively using open-end funds.

CMERS will not purchase individual properties directly.

#### **V. RISK MANAGEMENT**

The primary risks associated with equity real estate investments are investment manager risk, vintage year risk, concentration risk (manager, property type, and geographic), leverage, loss of principal and liquidity risks. The following are risk management strategies:

##### **A. Portfolio Composition**

Focusing investment in Core/Core Plus open-end funds is a primary mechanism to manage liquidity risk, leverage and loss of principal.

##### **B. Diversification**

###### **1. Manager Diversification**

Diversification by manager will be used to limit manager concentration risk. To control manager exposure, the allocation to a single real estate manager is limited to no more than 35% of the real estate portfolio. Generally, the upper limit will only be considered for managers with substantial assets under management. Lower amounts will be appropriate for managers with single product lines and small assets under management.

Manager concentration will be calculated by aggregating the total real estate assets invested by CMERS across all real estate strategies managed by the manager.

## **2. Vehicle Diversification**

To mitigate the impact of the failure of a single investment vehicle on total real estate performance, CMERS will limit its investment in any single open-end fund to 35% of the total real estate portfolio.

## **3. Property Type and Location Diversification**

The portfolio will be broadly diversified by property type and by location. Diversification is expected to track, but not match, the diversification of the ODCE benchmark across the major property sectors (office, retail, industrial, apartments, and other) and regions (East, South, West, Midwest). The portfolio will be invested primarily in the U.S.; however up to 5% of the portfolio may be invested outside the U.S.

Each individual manager will determine the diversification of its portfolio. Most have targets relative to the ODCE benchmark weightings.

To achieve a broadly diversified portfolio, CMERS will have a preference for funds that are diversified by property type and location; however, single-sector funds may be considered.

## **4. Vintage Year Diversification**

CMERS recognizes that real estate is cyclical and will pace its investment into the market across vintage years to the extent new allocations are made.

### **C. Liquidity Profile**

Funds with a concentrated investor base will be avoided because they potentially reduce CMERS's ability to exercise its governance rights and/or limit liquidity.

Similarly, for liquidity management, CMERS's investment in any single commingled fund may not exceed 20% of the total net asset value of the open-end fund.

### **D. Leverage Limitations**

CMERS will target portfolio-wide leverage of ~~25%~~ 25% of CMERS's aggregate real estate portfolio, with a maximum of 35%. CMERS will control the overall leverage amounts by investing in Funds with leverage profiles consistent with this Policy objective.

At the underlying investment vehicle level, leverage will be limited to the levels set within the investment vehicle's governing documents.

In the event that the portfolio-level and/or the style-level leverage constraint is breached due to a contraction in market values, Staff and Consultant will notify the Board and make a recommendation for action or exception.

#### E. Currency

Investments are expected to be made primarily in vehicles which invest in real estate in the U.S. Although non-U.S. investments are expected to be limited, CMERS accepts the currency risks inherent in the geographic exposures of the investment vehicles. Real estate managers may or may not hedge currency risk at the vehicle-level, but currency will not be hedged at the CMERS real estate portfolio level. Where possible, CMERS will make investments and receive distributions in U.S. dollars.

### VI. Summary of Policy Targets and Limits

Policy Parameter	Policy Guidelines
Allocation to Real Estate	Target of <del>97.1%</del> 7% of total plan assets; <del>range of 5%-10%</del>
<u>Real Assets Range</u>	<u>10% - 16%, includes both Private Real Estate and Public Diversified Real Assets</u>
Permissible Investments	Equity and equity-like investments in commercial real estate
Investment Vehicle <ul style="list-style-type: none"> <li>Open-end Funds</li> </ul>	Open-end funds exclusively for any new allocations Legacy Non-Core closed-end funds are in wind down
Investment Styles <ul style="list-style-type: none"> <li>Core/Core Plus Private</li> <li>Non-Core Private</li> </ul>	100%; Focus on Core No new investments; 0% long term target Legacy Non-Core portfolio is in wind down
Manager Exposure	Maximum of 35% to a manager
Single Investment Exposure	Maximum of 35% of the real estate allocation to a single open-end fund
Property Types <ul style="list-style-type: none"> <li>Office</li> <li>Industrial</li> <li>Retail</li> <li>Apartment</li> <li>Other</li> </ul>	The portfolio will be broadly diversified and measured against ODCE property type weightings. Focus will be on the four main property types (office, retail, industrial, apartments) <u>and other (which can include but not limited to life sciences, self-storage, etc.)</u>
Locations <ul style="list-style-type: none"> <li>East</li> <li>South</li> <li>West</li> <li>Midwest</li> </ul>	The portfolio will be broadly diversified and measured against ODCE regional weightings

• Non-U.S.	Non-U.S. – Up to 5% of the portfolio
Leverage	Maximum of 35% for the real estate portfolio; Target of 25% Core ≤ 35% Core Plus ≤ 50% Legacy Non-Core Funds will have leverage according to the levels allowed in their respective governing documents

## **VII. Benchmark**

Each investment will be benchmarked against the NCREIF Fund Index Open-End Diversified Core Equity Index Value Weighted (“NFI-ODCE” or “ODCE”), Net of Fees. Peer Groups may also be used to evaluate performance.

## **VIII. Valuation**

Investments will be valued by the underlying investment managers using the methodology approved with the selection of the particular investment. Managers are expected to conform to the real estate information standards promulgated by NCREIF.

## **IX. Program Management**

The Board, Staff, and Consultant’s roles will be consistent with those described in the Statement of Investment Policy.

## **X. Compliance With Policy**

Until the Non-Core portfolio is fully liquidated, the portfolio will have areas of non-compliance. The Core portfolio will be managed to comply with the Policy. New investments and strategic decisions shall be in compliance with the Policy.

**REAL ESTATE INVESTMENT POLICY STATEMENT**  
**June 2022**

**THE EMPLOYEES' RETIREMENT  
SYSTEM OF THE CITY OF MILWAUKEE**  
789 N. Water Street, 3<sup>rd</sup> Floor  
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## **VI. Summary of Policy Targets and Limits**

<b>Policy Parameter</b>	<b>Policy Guidelines</b>
Allocation to Real Estate	Target of 9.1% of total plan assets
Real Assets Range	10% - 16%, includes both Private Real Estate and Public Diversified Real Assets
Permissible Investments	Equity and equity-like investments in commercial real estate
Investment Vehicle <ul style="list-style-type: none"><li>• Open-end Funds</li></ul>	Open-end funds exclusively for any new allocations Legacy Non-Core closed-end funds are in wind down
Investment Styles <ul style="list-style-type: none"><li>• Core/Core Plus Private</li><li>• Non-Core Private</li></ul>	100%; Focus on Core No new investments; 0% long term target Legacy Non-Core portfolio is in wind down
Manager Exposure	Maximum of 35% to a manager
Single Investment Exposure	Maximum of 35% of the real estate allocation to a single open-end fund
Property Types <ul style="list-style-type: none"><li>• Office</li><li>• Industrial</li><li>• Retail</li><li>• Apartment</li><li>• Other</li></ul>	The portfolio will be broadly diversified and measured against ODCE property type weightings. Focus will be on the four main property types (office, retail, industrial, apartments) and other (which can include but not limited to life sciences, self-storage, etc.)
Locations <ul style="list-style-type: none"><li>• East</li><li>• South</li><li>• West</li><li>• Midwest</li><li>• Non-U.S.</li></ul>	The portfolio will be broadly diversified and measured against ODCE regional weightings  Non-U.S. – Up to 5% of the portfolio
Leverage	Maximum of 35% for the real estate portfolio; Target of 25% Core ≤ 35% Core Plus ≤ 50% Legacy Non-Core Funds will have leverage according to the levels allowed in their respective governing documents

**VII. Benchmark**

Each investment will be benchmarked against the NCREIF Fund Index Open-End Diversified Core Equity Index Value Weighted (“NFI-ODCE” or “ODCE”), Net of Fees. Peer Groups may also be used to evaluate performance.

**VIII. Valuation**

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**IX. Program Management**

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**X. Compliance With Policy**

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**STATEMENT OF INVESTMENT POLICY**

Updated ~~June~~December 2022~~1~~

**THE EMPLOYEES' RETIREMENT  
SYSTEM OF THE CITY OF MILWAUKEE**

789 N. Water Street, 3<sup>rd</sup> Floor  
Milwaukee, WI 53202  
(414) 286-3557

Individual manager guidelines are updated upon Annuity and Pension Board Approval

## TARGET ALLOCATIONS

The Board has determined that the following asset allocation policy is appropriate for the Fund. This allocation policy will be reviewed periodically and may be modified, if appropriate, in light of changes in the structure or goals of the Fund. The following asset allocation policy reflects interim Maximum and Minimum ranges for the Fixed Income and Absolute Return allocations, respectively, that were approved by the Board at its September 2021 meeting. For Real Assets, the target weights below reflect what Callan used in its 2020 ALM Study.

<b><u>Public Equity</u></b>	<b><u>Target</u></b>	<b><u>Minimum</u></b>	<b><u>Maximum</u></b>
Domestic Equity			
Passive Large Cap	8.0%		
Active Large Cap	5.2%		
Active Mid/Small Cap	6.8%		
Total Domestic Equity	<b>20.0%</b>	<b>16.0%</b>	<b>24.0%</b>
Total International Equity	<b>16.0%</b>	<b>13.0%</b>	<b>19.0%</b>
Total Global Equity	<b>8.0%</b>	<b>4.0%</b>	<b>12.0%</b>
<b>Total Public Equity</b>	<b>44%</b>	<b>39%</b>	<b>49%</b>
<b><u>Fixed Income</u></b>			
Cash	1%	0%	2.0%
Passive Fixed Income	5.5%		
Core Opportunistic Fixed Income	16.5%		
<b>Total Fixed Income</b>	<b>23%</b>	<b>20%</b>	<b>30%</b>
<b><u>Real Assets</u></b>			
Private Real Estate	<b>9.1%</b>	<b>5.0%</b>	<b>10.0%</b>
Public Diversified Real Assets	<b>3.9%</b>	<b>1.9%</b>	<b>5.9%</b>
<b>Total Real Assets</b>	<b>13%</b>	<b>10%</b>	<b>16%</b>
<b><u>Private Equity</u></b>	<b>10%</b>	<b>7%</b>	<b>15%</b>
<b><u>Absolute Return</u></b>	<b>10%</b>	<b>6%</b>	<b>15%</b>
<b><u>Total</u></b>	<b><u>100%</u></b>		

<b>Fund:</b>	<b>CMERS Low Beta LLC</b>
<b>Managing Member:</b>	<b>UBS Hedge Fund Solutions LLC</b>
<b>Role:</b>	<b>Hedge Fund of Funds Strategy</b>

### **Investment Objectives**

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 USD.

<b>Time Horizon</b>	<b>Performance Standard</b>
	<u><b>Index</b></u>
Less than one market cycle (rolling 3-year periods).	
One market cycle (rolling 5-year periods).	Exceed (after fees) the Secured Overnight Financing Rate (SOFR) by 400 basis points.

### **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 commonalities 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.

#### Investments in Portfolio Funds Managed by Affiliates of the Investment Manager

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. In the event such investments are implemented, 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).

### 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% 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% limitation.
- An investor gate can cause a position to fall into multiple liquidity buckets. For example, a 1/8<sup>th</sup> 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.

### 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.

**STATEMENT OF INVESTMENT POLICY**  
**Updated June 2022**

**THE EMPLOYEES' RETIREMENT  
SYSTEM OF THE CITY OF MILWAUKEE**  
789 N. Water Street, 3<sup>rd</sup> Floor  
Milwaukee, WI 53202  
(414) 286-3557

Individual manager guidelines are updated upon Annuity and Pension Board Approval

## TARGET ALLOCATIONS

The Board has determined that the following asset allocation policy is appropriate for the Fund. This allocation policy will be reviewed periodically and may be modified, if appropriate, in light of changes in the structure or goals of the Fund. The following asset allocation policy reflects interim Maximum and Minimum ranges for the Fixed Income and Absolute Return allocations, respectively, that were approved by the Board at its September 2021 meeting. For Real Assets, the target weights below reflect what Callan used in its 2020 ALM Study.

<b><u>Public Equity</u></b>	<b><u>Target</u></b>	<b><u>Minimum</u></b>	<b><u>Maximum</u></b>
Domestic Equity			
Passive Large Cap	8.0%		
Active Large Cap	5.2%		
Active Mid/Small Cap	6.8%		
Total Domestic Equity	<b>20.0%</b>	<b>16.0%</b>	<b>24.0%</b>
Total International Equity	<b>16.0%</b>	<b>13.0%</b>	<b>19.0%</b>
Total Global Equity	<b>8.0%</b>	<b>4.0%</b>	<b>12.0%</b>
<b>Total Public Equity</b>	<b>44%</b>	<b>39%</b>	<b>49%</b>
<b><u>Fixed Income</u></b>			
Cash	1%	0%	2.0%
Passive Fixed Income	5.5%		
Core Opportunistic Fixed Income	16.5%		
<b>Total Fixed Income</b>	<b>23%</b>	<b>20%</b>	<b>30%</b>
<b><u>Real Assets</u></b>			
Private Real Estate	<b>9.1%</b>		
Public Diversified Real Assets	<b>3.9%</b>	<b>1.9%</b>	<b>5.9%</b>
<b>Total Real Assets</b>	<b>13%</b>	<b>10%</b>	<b>16%</b>
<b><u>Private Equity</u></b>	<b>10%</b>	<b>7%</b>	<b>15%</b>
<b><u>Absolute Return</u></b>	<b>10%</b>	<b>6%</b>	<b>15%</b>
<b><u>Total</u></b>	<b><u>100%</u></b>		

<b>Fund:</b>	<b>CMERS Low Beta LLC</b>
<b>Managing Member:</b>	<b>UBS Hedge Fund Solutions LLC</b>
<b>Role:</b>	<b>Hedge Fund of Funds Strategy</b>

### **Investment Objectives**

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 USD.

<b>Time Horizon</b>	<b>Performance Standard</b>
	<u><b>Index</b></u>
Less than one market cycle (rolling 3-year periods).	
One market cycle (rolling 5-year periods).	Exceed (after fees) the Secured Overnight Financing Rate (SOFR) by 400 basis points.

### **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.

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IV.

ADMINISTRATION & OPERATIONS COMMITTEE REPORT

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

# **Employees' Retirement System of the City of Milwaukee**

## **Administration & Operations Committee Audit Charter May 2022**

### **Purpose**

The purpose of this Administration and Operations (A&O) Committee Audit Charter dated May 2022 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.

# Employees' Retirement System of the City of Milwaukee

## Internal Audit Charter May 2022

### Purpose

The purpose of this Internal Audit Charter dated May 2022, 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 **Employees' 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 2022, 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

V.

NEW BUSINESS

- A. Presentation by Pat Beckham and Larry Langer of Cavanaugh Macdonald and Acceptance of 2022 Actuarial Valuation Report.
- B. Retirements, Death Claims, and Refunds (May).
- C. Conference Requests – June 2022 Board Meeting.
- D. Approval of At Large Member Election Bulletin No. 197.



**Cavanaugh Macdonald**  
CONSULTING, LLC

*The experience and dedication you deserve*

# **City of Milwaukee Employees' Retirement System Results of the January 1, 2022 Actuarial Valuation**

**Presented by Cavanaugh Macdonald Consulting  
June 30, 2022**



# 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 employer contribution rate required to fund the System on an actuarial basis and compare that rate to the Stable Contribution Policy;
- disclose certain asset and liability measures, including the funded ratio;
- 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

### Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



### Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections

- 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.

## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections



# Stable Contribution Policy

## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections

- Adopted by the Common Council on April 30, 2013. Contribution rate set for each group: Policemen, Firemen, and General Employees of the Combined Fund, and is applicable for the subsequent five-year period following the Experience Study performed by the actuary.
- The current actuarial contribution rates under the Stable Employer Contribution Policy in effect for calendar years 2018 through 2022 are:
  - General Employees: 7.48%
  - Policemen: 25.22%
  - Firemen: 26.83%.
- January 1, 2022 results are used to monitor the impact of the Stable Employer Contribution Policy on the System's funding and anticipate possible adjustments when the rate is reset for calendar years 2023 through 2027.

# Events During 2021 Which Impacted the January 1, 2022 Actuarial Valuation Results

## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections

- **Investment experience:** There was favorable investment experience on the market value of assets during calendar year 2021. This favorable experience, combined with the recognition of deferred asset gains, resulted in a return on the actuarial value of assets of 11.76%, which is above the assumed rate of return of 7.50%. This resulted in an actuarial gain on assets.
- **Liability experience:** net liability experience during 2021 was a small actuarial gain of \$13 million, primarily due to salary increases that were lower than expected.
- **Actual contributions:** contributions under the Stable Contribution Policy rate were \$90.3 million lower than the actuarially determined employer contribution rate. The actuarially determined employer contribution is higher than the Stable Contribution primarily due to the reduction in the investment return assumption in the January 1, 2019 valuation which was “off cycle” from the regular experience review.
- **Active membership:** the active membership declined by 4.5% and covered payroll decreased by 1.2% from the prior valuation. The UAAL contribution rate assumes an increase of 2.0% each year. When covered payroll decreases instead of increases as assumed, it results in a higher UAAL contribution rate.
- **GPS consenters:** since the January 1, 2021 valuation, eight 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, \$2.8 million of assets has been transferred from the non-consenter funds in which these members previously participated to the Combined Fund.

# Membership Data



## Inputs

Membership Data

Asset Data

Benefit Provisions

Assumptions

Funding Methodology



## Results

Actuarial Value of Assets

Actuarial Accrued Liability

UAAL/Funded Ratio

Net Actuarial Gain or Loss

Employer Contributions

Projections

	January 1, 2022	January 1, 2021	% Change
<b>1. Membership Data</b>			
<b>a. Active Members</b>			
(i) Count			
- General Employees	7,768	8,135	(4.5%)
- Policemen	1,631	1,735	(6.0%)
- Firemen	<u>695</u>	<u>697</u>	(0.3%)
- Total	10,094	10,567	(4.5%)
(ii) Total Estimated Payroll			
- General Employees	\$369,306,000	\$371,863,000	(0.7%)
- Policemen	148,844,000	154,607,000	(3.7%)
- Firemen	<u>61,201,000</u>	<u>59,899,000</u>	2.2%
- Total	\$579,351,000	\$586,369,000	(1.2%)
<b>b. Retirees, Beneficiaries and Disabled Members</b>			
(i) Number	13,758	13,647	0.8%
(ii) Total Annual Benefits	\$434,381,000	\$417,668,000	4.0%
(iii) Average Annual Benefit	\$31,573	\$30,605	3.2%

In total, the ERS active membership count declined this past year, decreasing by 4.5%. Payroll also decreased by 1.2%, which is lower than the assumed 2.0% increase. Smaller payroll results in lower contributions and decreased funding under the stable contribution policy.

# Membership Data

## Inputs

Membership Data

Asset Data

Benefit Provisions

Assumptions

Funding Methodology



## Results

Actuarial Value of Assets

Actuarial Accrued Liability

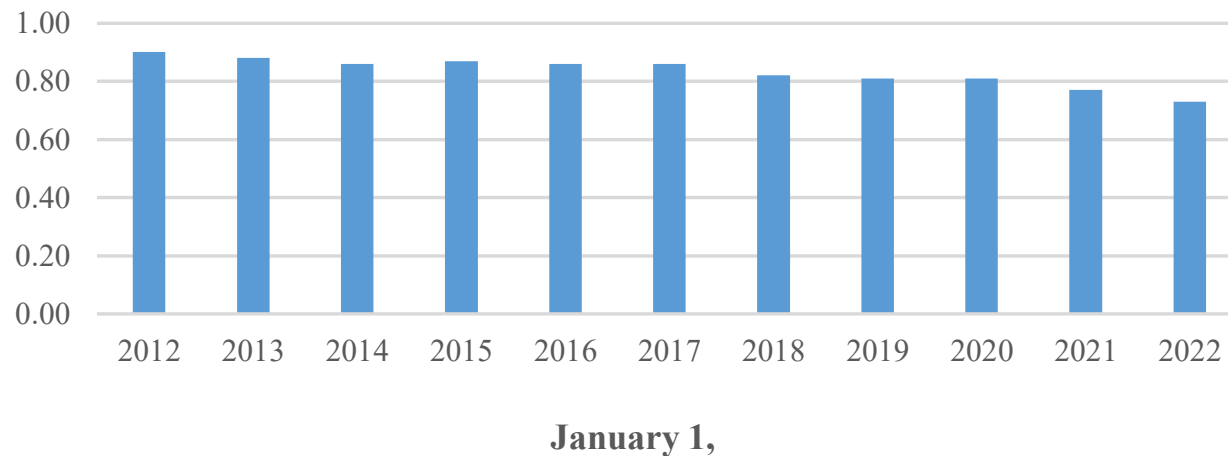
UAAL/Funded Ratio

Net Actuarial Gain or Loss

Employer Contributions

Projections

## Number of Active Members per Benefit Recipients



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Active	10,767	10,714	10,675	10,964	10,982	11,083	10,845	10,851	10,974	10,567	10,094
In-Pay	11,937	12,109	12,468	12,580	12,746	12,872	13,181	13,355	13,543	13,636	13,747
Act/In-Pay	0.90	0.88	0.86	0.87	0.86	0.86	0.82	0.81	0.81	0.77	0.73

Beginning with the 2011 valuation, CMERS had more benefit recipients than active members. In a mature retirement plan, this is to be expected. Funding on an actuarial basis helps take financial pressure off the sponsoring entity. Since 2011, CMERS has experienced a 10% reduction in active headcount. This creates pressure on the contribution rate due to lower covered payroll.

# Asset Data



## Inputs

Membership Data

Asset Data

Benefit Provisions

Assumptions

Funding Methodology



## Results

Actuarial Value of Assets

Actuarial Accrued Liability

UAAL/Funded Ratio

Net Actuarial Gain or Loss

Employer Contributions

Projections

1. Market Value of Assets as of January 1, 2021	\$ 5,649,734
2. Contributions During Year	
a. Member	\$ 31,444
b. Employer	91,177
c. Total	\$ 122,621
3. Disbursements During Year	
a. Monthly Annuities	\$ 441,092
b. Refunds	4,164
c. Administrative Expenses	6,733
d. Total	\$ 451,989
4. Investment Return (net of Investment Expenses)	\$ 1,110,990
5. Market Value of Assets as of December 31, 2021 (1) + (2c) - (3d) + (4)	\$ 6,431,356
6. Rate of Return, as Reported by Northern Trust (ERS' Custodian)	18.89%

Investment experience during 2021 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 99% of the assets are in the Combined Fund.

# Benefit Provisions

## Inputs

Membership Data

Asset Data

Benefit Provisions

Assumptions

Funding Methodology



## Results

Actuarial Value of Assets

Actuarial Accrued Liability

UAAL/Funded Ratio

Net Actuarial Gain or Loss

Employer Contributions

Projections

## General

- Tier I – Enrolled in Plan prior to January 1, 2014
  - Service Retirement:
    - Age 55 and 30 years of creditable service
    - Age 60
  - Member contributions: 5.5%
  - Pension Multiplier: 2.0%
- Tier II – Enrolled in Plan on or after January 1, 2014
  - Service Retirement:
    - Age 60 and 30 years of creditable service
    - Age 65
  - Member contributions: 4.0%
  - Pension Multiplier: 1.6%

## Police

- Tier I – Enrolled in Plan prior to December 20, 2015
  - Service Retirement:
    - 25 years of fire or police creditable service (at any age)
    - Age 57
  - Member contributions: 7.0%
  - Pension Multiplier: 2.5%
- Tier II – Enrolled in Plan on or after December 20, 2015
  - Service Retirement:
    - Age 50 and 25 years of creditable service
    - Age 57
  - Member contributions: 7.0%
  - Pension Multiplier: 2.5%

## Fire

- Tier I – Enrolled in Plan prior to July 30, 2016
  - Service Retirement:
    - Age 49 and 22 years of fire or police creditable service
    - Age 57
  - Member contributions: 7.0%
  - Pension Multiplier: 2.5%
- Tier II – Enrolled in Plan on or after July 30, 2016
  - Service Retirement:
    - Age 52 and 25 years of creditable service
    - Age 57
  - Member contributions: 7.0%
  - Pension Multiplier: 2.5%

The Milwaukee Employees' Retirement System (ERS) was created by Chapter 36 of the City Charter. We summarize the provisions in Appendix B of our report. Above we summarize differences in Tier Provisions.

# Assumptions



## Inputs

Membership Data  
Asset Data

Benefit Provisions

Assumptions

Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections

- **Demographic (future events that relate to people)**
  - Retirement
  - Termination
  - Disability
  - Death
    - Note that new public sector mortality tables were published in 2019
    - We plan on implementing with the next experience study
- **Economic (future events that relate to money)**
  - Investment Return - 7.50% per year
  - Price Inflation - 2.50%
  - UAAL Payment Increase - 2.00%
  - Salary increase rate (net of inflation) varies with age

Other than the 7.50% investment return assumption, the current assumptions were adopted for use with the January 1, 2018 actuarial valuation based upon recommendations by the previous actuary. The 7.50% assumption was recommended by CMC and adopted by the Board at its April, 2019 meeting.

The next experience review will be completed in time for implementation with the January 1, 2023 actuarial valuation.



# Funding Methodology

## Inputs

Membership Data

Asset Data

Benefit Provisions

Assumptions

Funding Methodology



## Results

Actuarial Value of Assets

Actuarial Accrued Liability

UAAL/Funded Ratio

Net Actuarial Gain or Loss

Employer Contributions

Projections

- The Objectives of the Stable Contribution Policy include
- Achieve stable and predictable contribution levels over the period between experience reviews that maintains the actuarial integrity of the ERS.
  - Comply with Actuarial Standards of Practice.
  - Budget annually for the normal cost; this was achieved by eliminating the Full Funding Limit.
  - Make progress on reducing unfunded liability at least as fast as the Prior Contribution Requirement at the median; said another way, the Stable Employer Contribution Policy is at least actuarially equivalent to the Prior Contribution Requirement over the period from 2018 through 2022.
  - Maintain asset coverage greater than or equal to the retired lives liabilities.
  - No changes to member contributions.

The following reading discusses elements of reasonable funding policies. The Stable Contribution Policy was designed with these elements in mind.

<https://www.gfoa.org/materials/core-elements-of-a-funding-policy>



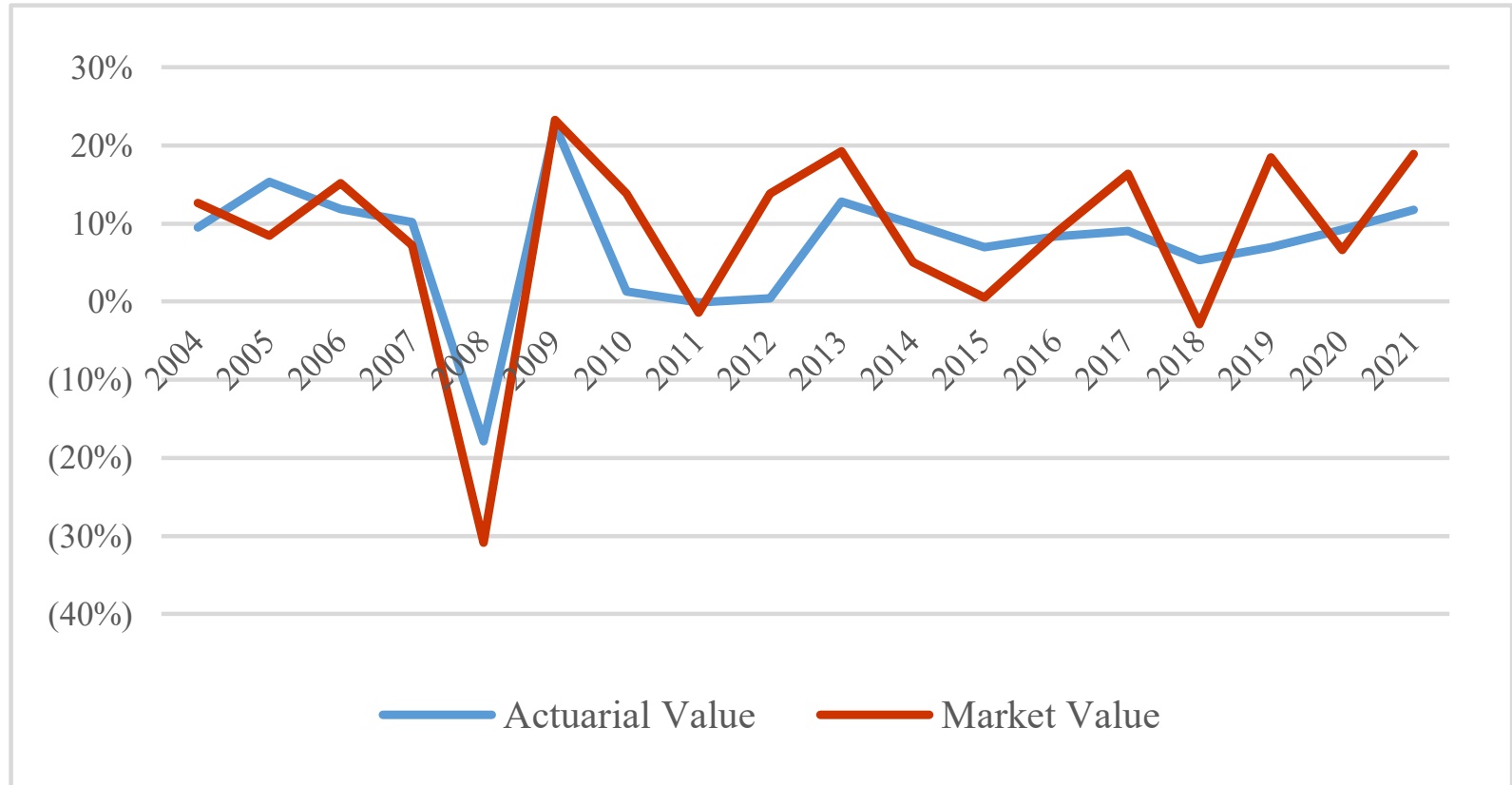
# Historical Asset Returns

## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology

## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections



Returns on an actuarial basis are smoother than on a market basis, which results in contribution stability when the stable contribution policy is set. 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.

# Actuarial Value of Assets

(\$ in Thousands)



## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections

1. Actuarial Value of Assets as of January 1, 2021	\$ 5,440,867
2. Contributions During Year	
a. Member	\$ 31,444
b. Employer	91,177
c. Total	\$ 122,621
3. Disbursements During Year	
a. Monthly Annuities	\$ 441,092
b. Refunds	4,164
c. Administrative Expenses	6,733
d. Total	\$ 451,989
4. Investment Return (net of Investment Expenses)	\$ 623,487
5. Actuarial Value of Assets as of December 31, 2021 (1) + (2c) - (3d) + (4)	\$ 5,734,986
6. Estimated Rate of Return	11.76%

Returns during 2021 were above the 7.50% 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 99% of the assets are in the Combined Fund.

# Actuarial Accrued Liability

## Inputs

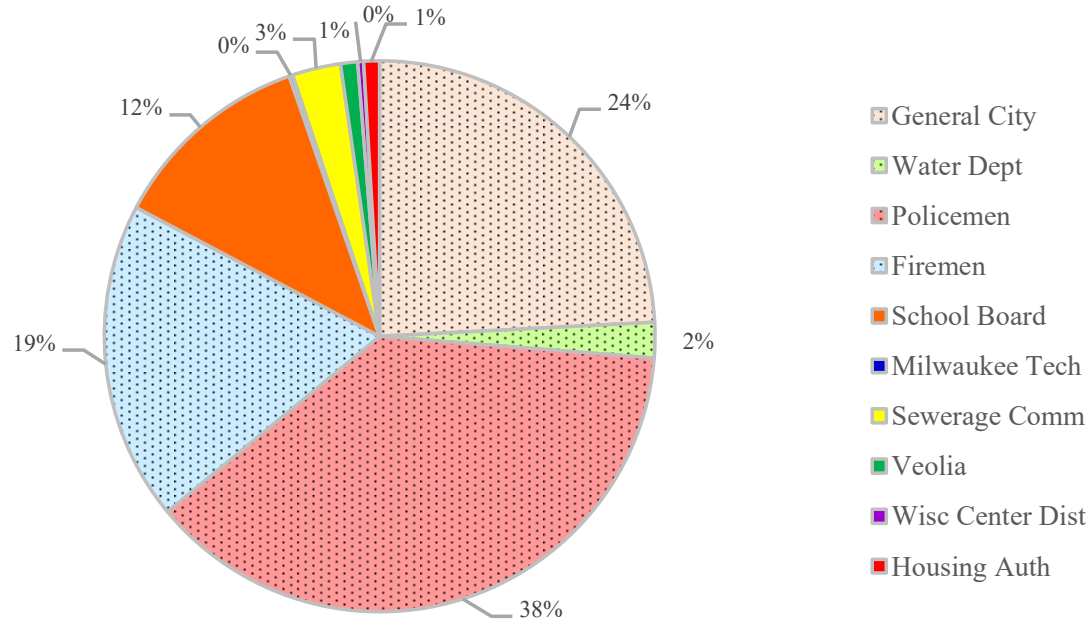
Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
**Actuarial Accrued Liability**  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections

**Actuarial Accrued Liability by Group**



The actuarial accrued liability (AAL) is the amount of money that should be in the fund to cover benefits allocated to service accrued to date. As of the valuation date, the AAL is \$6.9 billion.

The “shaded” area indicates AAL for the city of Milwaukee.

Just over 75% of the total is attributable to members in payment status.

# Unfunded Actuarial Accrued Liability

## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
**UAAL/Funded Ratio**  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections

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	\$ 6,864,666	\$ 5,673,797	\$ 6,367,898	\$ 1,190,869	\$ 496,768	82.7%	92.8%
2. Employers' Reserve Fund	0	42,081	42,081	(42,081)	(42,081)	N/A	N/A
3. Retirement Fund	4,841	11,969	13,433	(7,128)	(8,592)	247.2%	277.5%
4. General Employees' Duty Disability Fund	11	109	122	(98)	(111)	990.9%	1109.1%
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	6,409	6,475	7,267	(66)	(858)	101.0%	113.4%
8. Securities Lending Fund	0	555	555	(555)	(555)	N/A	N/A
9. Total All Funds	\$ 6,875,927	\$ 5,734,986	\$ 6,431,356	\$ 1,140,941	\$ 444,571	83.4%	93.5%

The unfunded actuarial accrued liability is the difference between the AAL and the actuarial assets of the fund. These metrics are also shown on a market value basis for informational purposes.

# Reconciliation of Unfunded Actuarial Accrued Liability



## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections

Combined Fund		(\$ in millions)
Unfunded Actuarial Accrued Liability (UAAL) as of 01/01/2021	\$	1,343.1
- Expected Change in UAAL		(8.4)
- Actual Contributions Versus Actuarial Contributions		90.3
- Investment Experience		(229.3)
- Demographic Experience		(13.2)
- Other Experience		8.4
Unfunded Actuarial Accrued Liability (UAAL) as of 01/01/2022	\$	1,190.9

The table above shows the reconciliation of the unfunded actuarial accrued liability for the Combined Fund only.

# Reconciliation of the Funded Ratio



## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
**UAAL/Funded Ratio**  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections

	<b>Funded Ratio Based On</b>	
	<b>Actuarial Value of Assets</b>	<b>Market Value of Assets</b>
January 1, 2021 Funded Ratio	80.7%	83.8%
- Expected Change	(0.1%)	0.1%
- Actual Contributions Versus Actuarial Contributions	(0.7%)	(0.7%)
- Investment Experience	3.3%	10.2%
- Demographic Experience	0.2%	0.1%
- Other Experience	<u>0.0%</u>	<u>0.0%</u>
- Total change	2.7%	9.7%
January 1, 2022 Funded Ratio	83.4%	93.5%

Note the difference in the impact of the "Investment Experience". The Market Value column includes the full impact of actual returns while the Actuarial Value Column includes the impact of smoothed returns (experience reflected through the valuation date).

# Historical Funded Ratio

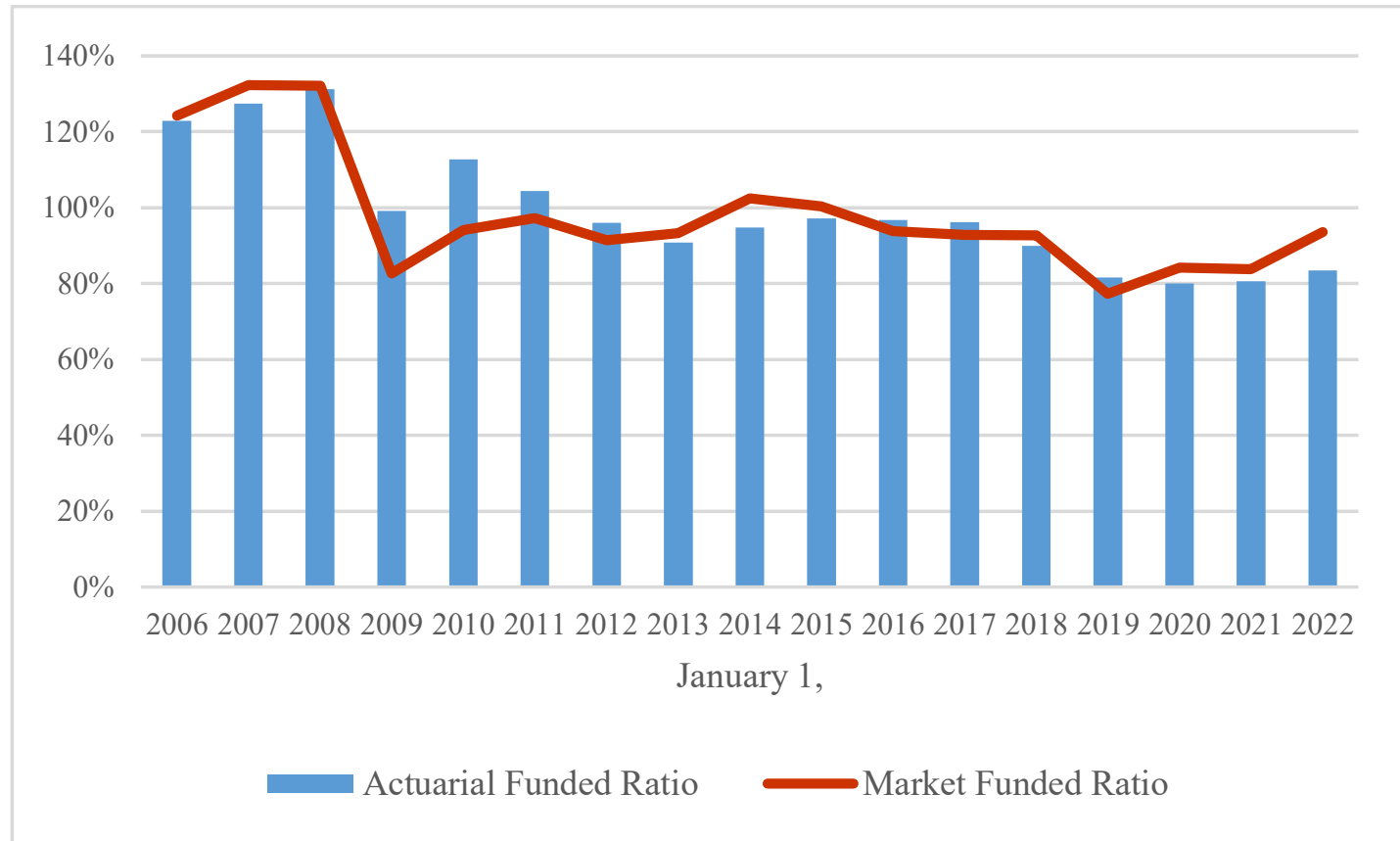
## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
**UAAL/Funded Ratio**  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections



The funded ratio in the 2022 valuation increased on both a market value basis and an actuarial value basis, largely due to favorable investment experience during the prior year.

# Employer Normal Cost Rate

## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
**Employer Contributions**  
Projections

	General			
	Employees	Police men	Fire men	Total
1. Retirement Benefits	\$21,331	\$32,755	\$11,324	\$65,410
2. Withdrawal Benefits	11,517	2,767	1,373	15,657
3. Disability Benefits	1,364	2,466	4,461	8,291
4. Death Benefits	652	221	102	975
5. Total Normal Cost	\$34,864	\$38,209	\$17,260	\$90,333
6. Projected Payroll	\$369,306	\$148,844	\$61,201	\$579,351
7. Normal Cost Rate	9.44%	25.67%	28.20%	15.59%
8. Member Contribution Rate	(4.76%)	(7.00%)	(7.00%)	(5.57%)
9. Employer Normal Cost Rate	4.68%	18.67%	21.20%	10.02%

The normal cost is the cost of benefits accruing during the current year. Member contributions offset the normal cost to determine the employer normal cost. If CMERS were fully funded, the actuarial contribution rate would be equal to the employer normal cost rate.



# Actuarially Determined Employer Contribution

(Combined Fund only as of January 1, 2022)

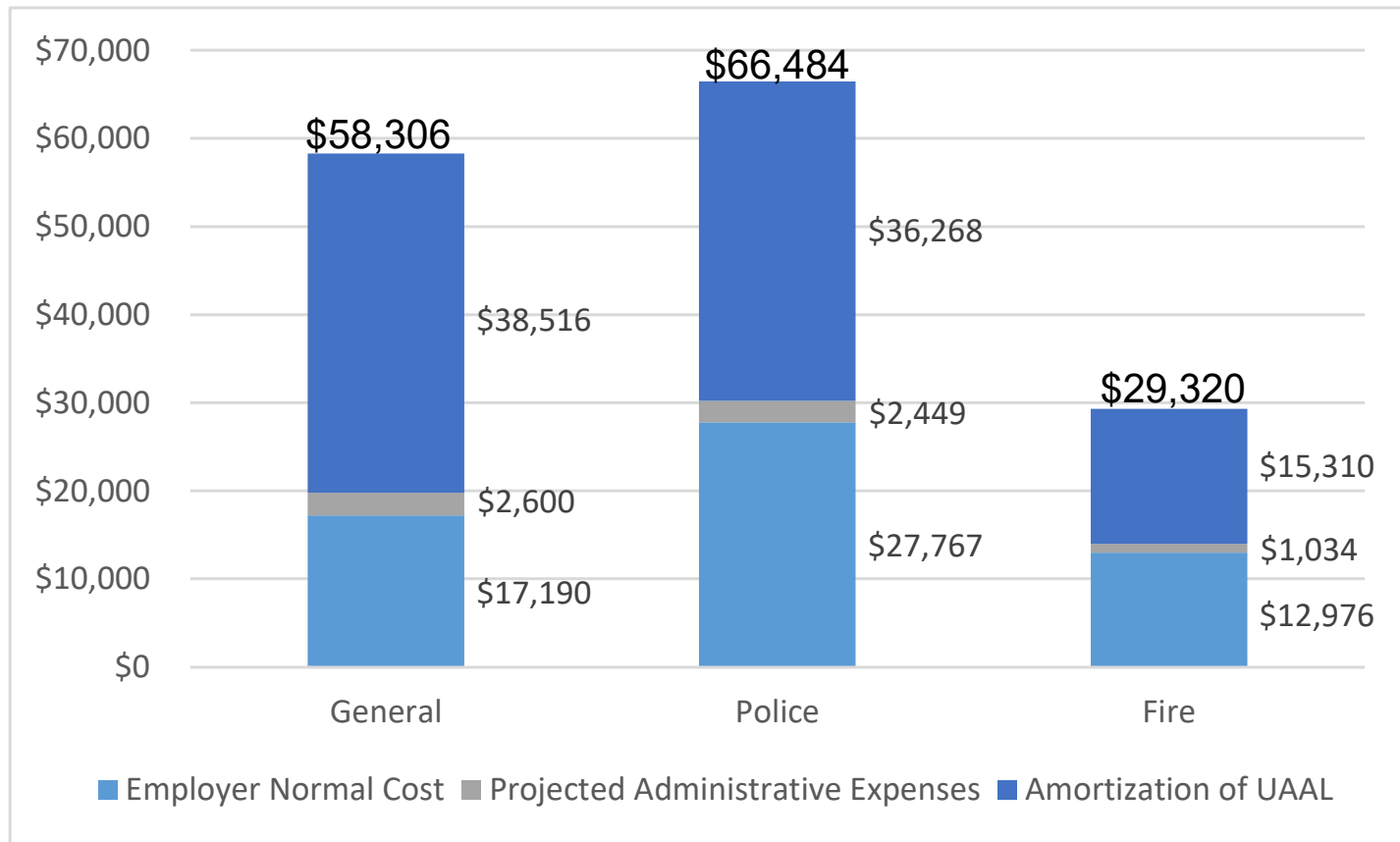
## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
**Employer Contributions**  
Projections



The normal cost is just part of the actuarially determined contribution. The amortization of the unfunded actuarial accrued liability (UAAL) is a major component of the actuarial determined contribution.

# Reconciliation of the Actuarially Determined Employer Rate (Combined Fund only)



## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
**Net Actuarial Gain or Loss**  
Employer Contributions  
Projections

Combined Fund	Rate
Actuarial Determined Employer Rate as of 01/01/2021	28.73%
- Change in Employer Normal Cost Rate	(0.16%)
- Actual Contributions Versus Actuarial Contributions	1.47%
- Investment Experience	(3.73%)
- Demographic Experience	(0.21%)
- Payroll Growth Rate Lower than Expected	0.48%
- Other Experience	0.10%
Actuarial Determined Employer Rate as of 01/01/2022	26.68%

The Actuarial Determined Employer Rate has decreased by 2.05% of pay since the prior valuation. The largest factor was due to favorable investment experience during the year.

# Employer Contributions

## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
**Employer Contributions**  
Projections

As part of Cavanaugh Macdonald Consulting's transition as the System's new retained actuary in 2019, a high level review of the actuarial assumptions used in the 2018 valuation was performed. In our professional judgment, a reduction to the investment return assumption was necessary in order to comply with applicable actuarial standards of practice. Our recommendation to lower the investment return assumption from 8.00% in calendar years 2018 through 2022 and 8.25% thereafter to 7.50% for all years was adopted by the Board and reflected in the January 1, 2019 valuation. This resulted in a significant increase in the actuarially determined contribution rate.

The employer contribution rates, which are reset every five years under Stable Contribution Policy, had just been reset in 2018 in concurrence with the completion of the experience study and subsequent adoption of a new set of assumptions. The timing of the reduction to the investment return assumption in the January 1, 2019 valuation was "off cycle" from the regular experience study. As a result, the Stable Contribution Policy rate was \$90.3 million lower than the actuarially determined contribution for 2021.

# Employer Contributions

(Combined Fund only as of January 1, 2022)



## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
**Employer Contributions**  
Projections

Group	Employer Rate Based On:		
	Stable Contribution Policy	Actuarial Determined Rate	Market-Based Actuarial Determined Rate
General	7.48%	15.86%	8.28%
Policemen	25.22%	44.70%	27.07%
Firemen	26.83%	47.91%	29.82%

As a result of the events mentioned earlier, there is a significant difference between the actuarially determined employer contribution rate and the stable contribution policy rate as shown above.

# Employer Contributions

## (Stable Contribution Policy vs Actuarial Rate)

### Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



### Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
**Employer Contributions**  
Projections

	1/1/2022	1/1/2021	1/1/2020	1/1/2019	1/1/2018
<u>General:</u>					
a. Actuarial Determined Rate	15.86%	17.22%	16.47%	15.57%	7.46%
b. Stable Contribution Policy	7.48%	7.48%	7.48%	7.48%	7.48%
c. Difference	8.38%	9.74%	8.99%	8.09%	(0.02%)
<u>Policemen:</u>					
a. Actuarial Determined Rate	44.70%	47.47%	46.63%	41.31%	25.13%
b. Stable Contribution Policy	25.22%	25.22%	25.22%	25.22%	25.22%
c. Difference	19.48%	22.25%	21.41%	16.09%	(0.09%)
<u>Firemen:</u>					
a. Actuarial Determined Rate	47.91%	51.44%	52.25%	48.71%	26.74%
b. Stable Contribution Policy	26.83%	26.83%	26.83%	26.83%	26.83%
c. Difference	21.08%	24.61%	25.42%	21.88%	(0.09%)

As a result of the events mentioned earlier, there is a significant difference between the actuarially determined employer contribution rate and the stable contribution policy rate. The difference had been increasing until it declined this past year.

# Employer Contributions

## As of January 31, 2023

### Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



### Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
**Employer Contributions**  
Projections

Fund	General			Total
	Employees	Policemen	Firemen	
Combined Fund	\$ 29,747,730	\$ 40,565,027	\$ 17,758,427	\$ 88,071,184
Retirement Fund	0	0	0	0
Duty Disability Fund	0	0	0	0
Heart & Lung Fund	N/A	N/A	0	0
Combined Retirement & Disability Fund	34,000	16,000	0	50,000
Total Contribution	\$ 29,781,730	\$ 40,581,027	\$ 17,758,427	\$ 88,121,184
Covered Compensation	\$ 369,306,000	\$ 148,844,000	\$ 61,201,000	\$ 579,351,000
Total Contribution as a Percentage of Covered Compensation	8.06%	27.26%	29.02%	15.21%

Almost all of the contributions to ERS are for the Combined Fund. Note that as deferred investment gains are reflected in future valuations, the actuarial determined employer contributions will decrease absent unfavorable experience.

# Employer Contributions

(Combined Fund only as of January 1, 2022)

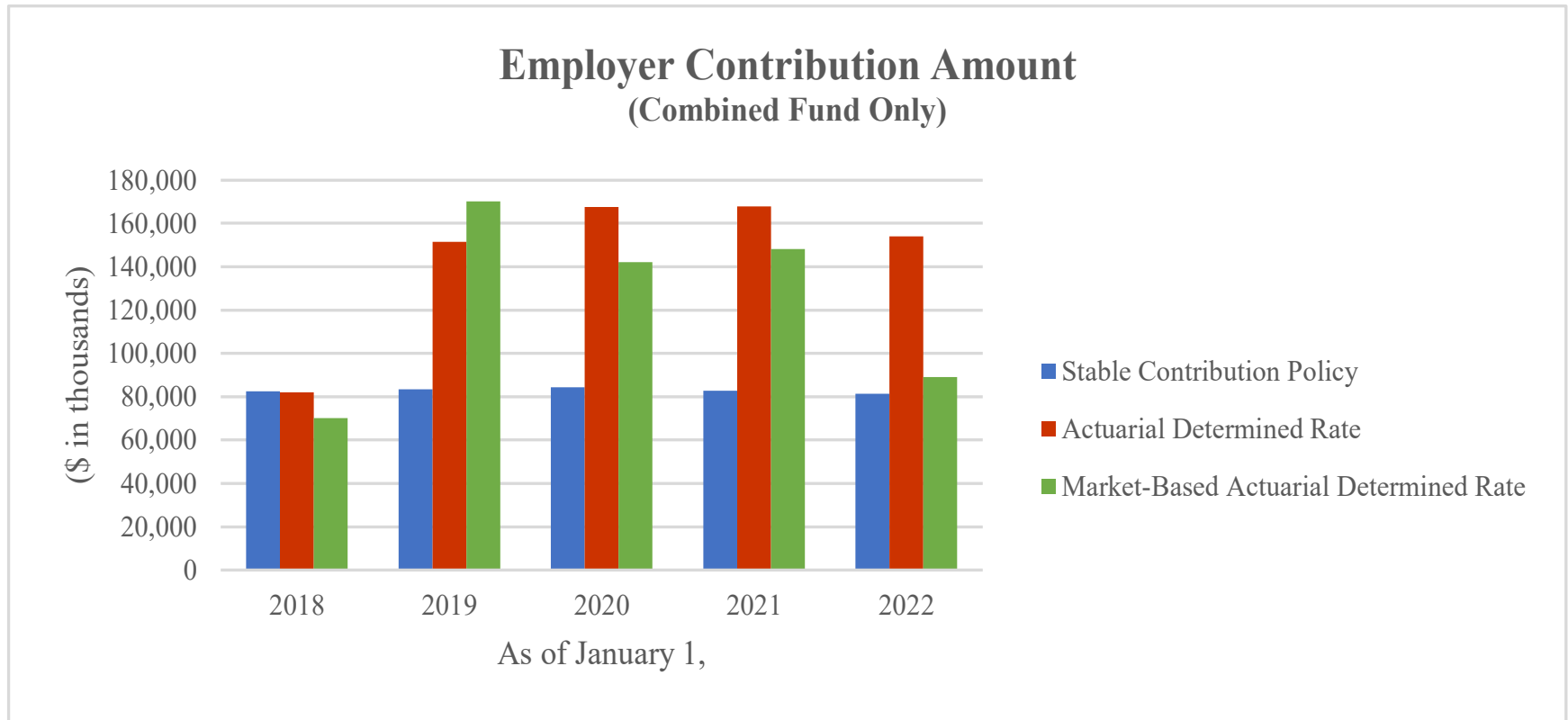
## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
**Employer Contributions**  
Projections



Given the difference between the actuarially determined employer contributions and the stable contribution policy contributions it would be prudent for participating employers to start preparing now for higher contributions when the Stable Contribution Policy is reset for calendar year 2023.

# Projections (Assuming All Assumptions Are Met)

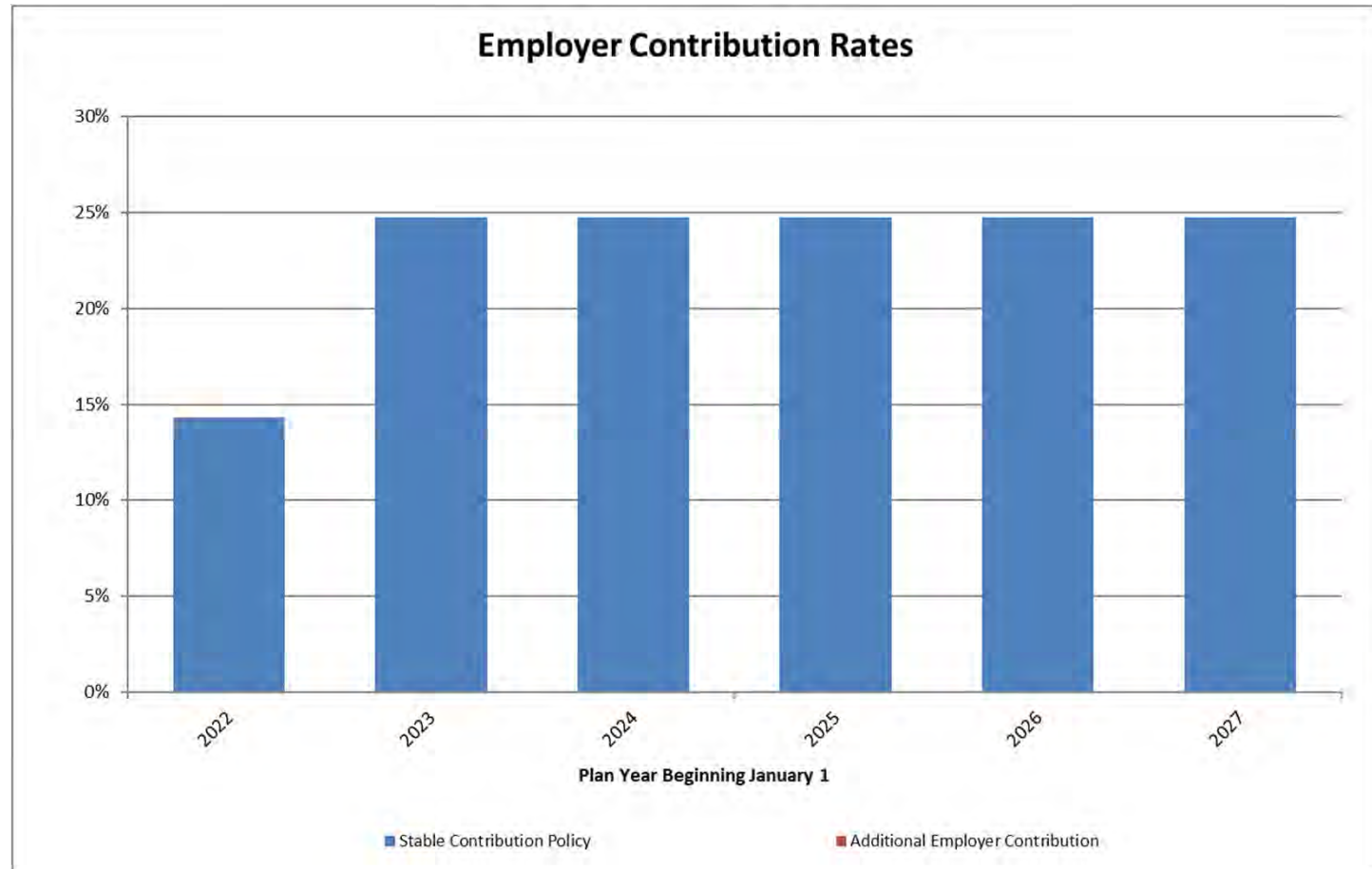
## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
Employer Contributions  
**Projections**



Given the significant difference between the projected 2023 actuarially determined contribution and the stable contribution policy in this valuation, the City and participating agencies should give serious consideration to increasing contributions and planning for a major increase in the contribution rate when it is reset in 2023.



# Projections (Assuming All Assumptions Are Met)

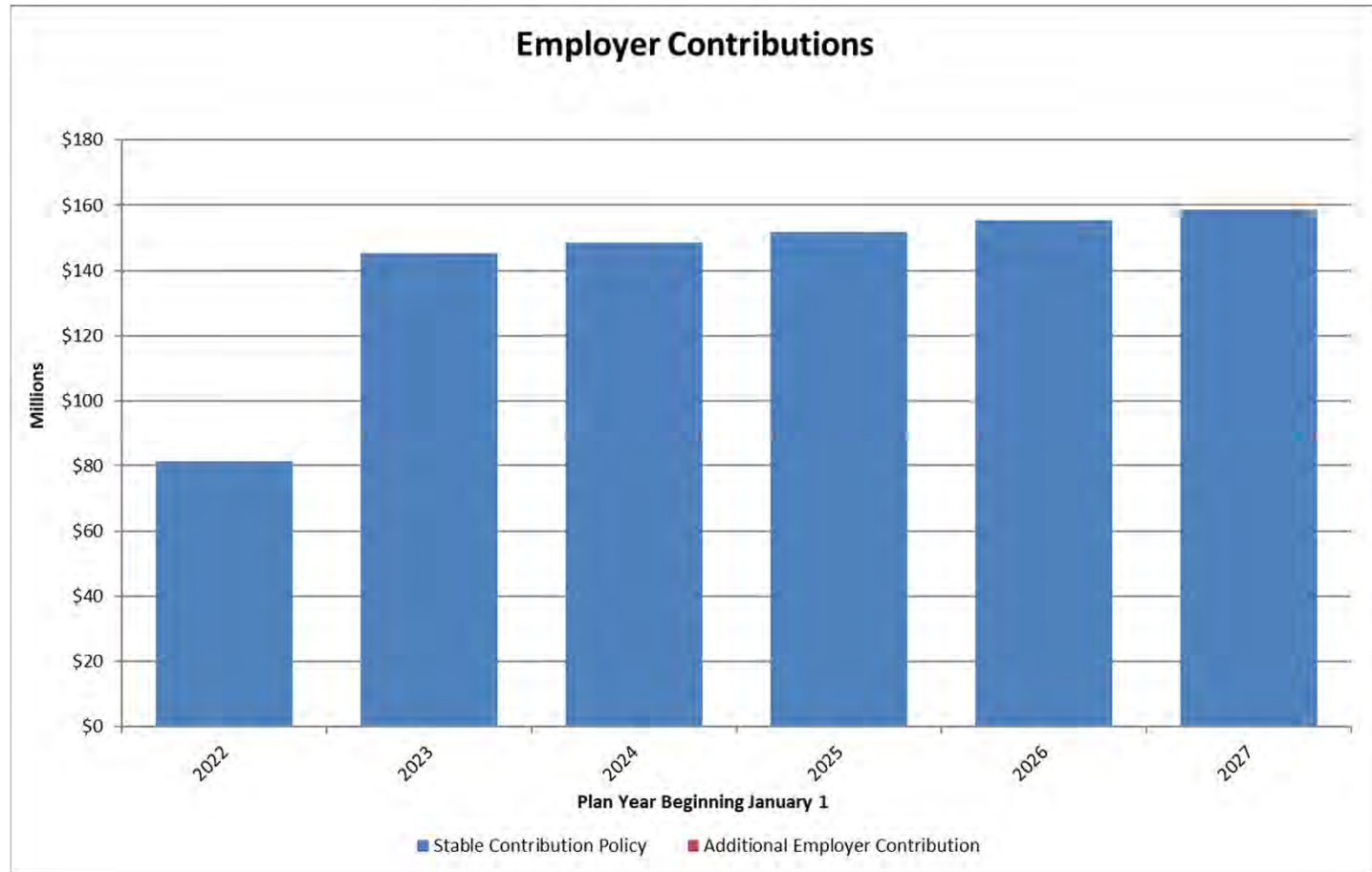
## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
**Employer Contributions**  
**Projections**



This graphs shows the projected dollar amount of aggregate employer contributions in the future, if all actuarial assumptions are met.

# Sensitivity Analysis (Alternate Investment Returns for 2022)

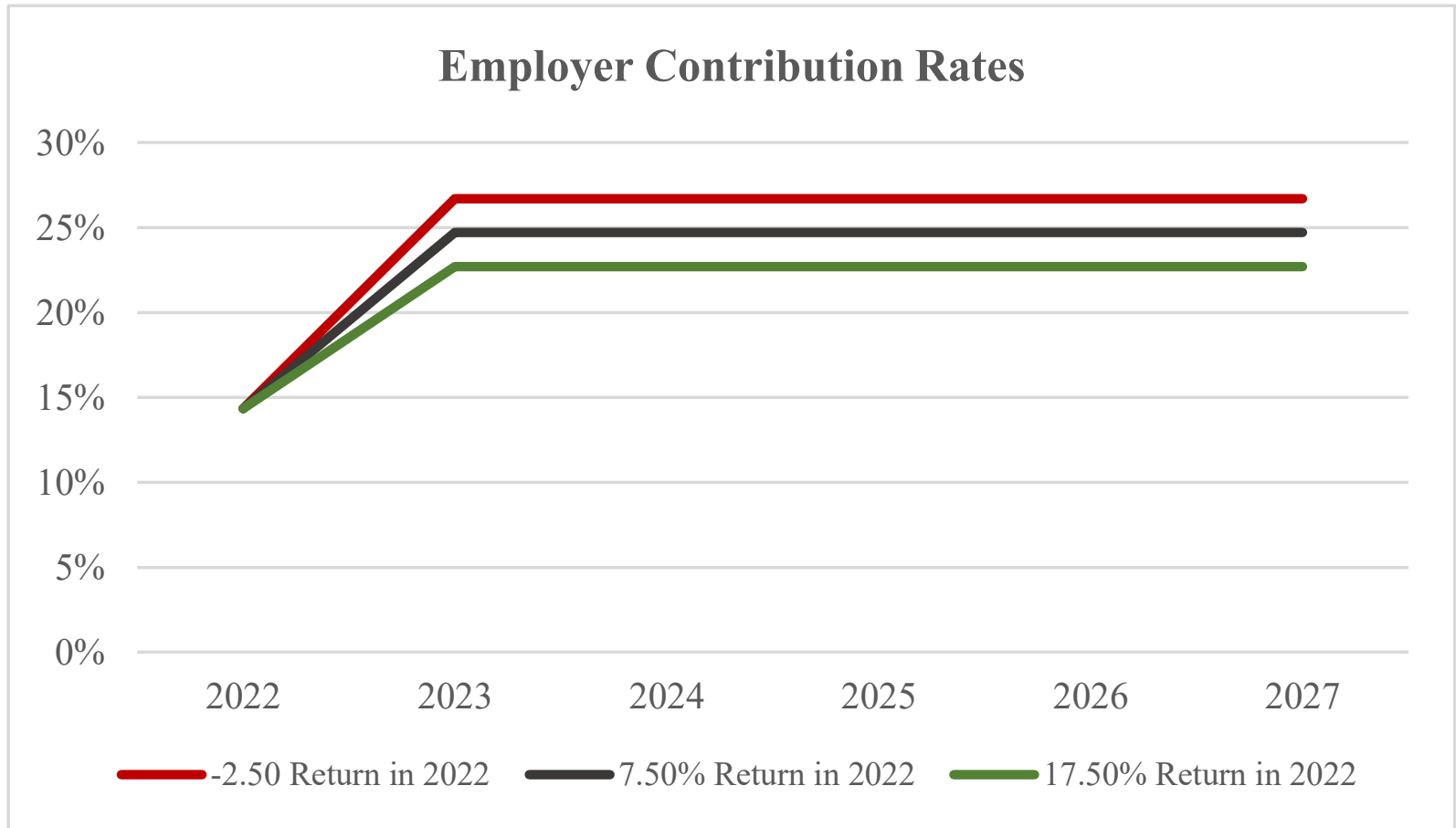
## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
Employer Contributions  
Projections



This graph shows the projected employer contribution rates under the Stable Contribution Policy, resulting from different investment returns during 2022 (returns for 2023+ are assumed to be 7.50%).

# Sensitivity Analysis (Alternate Investment Returns for 2022)

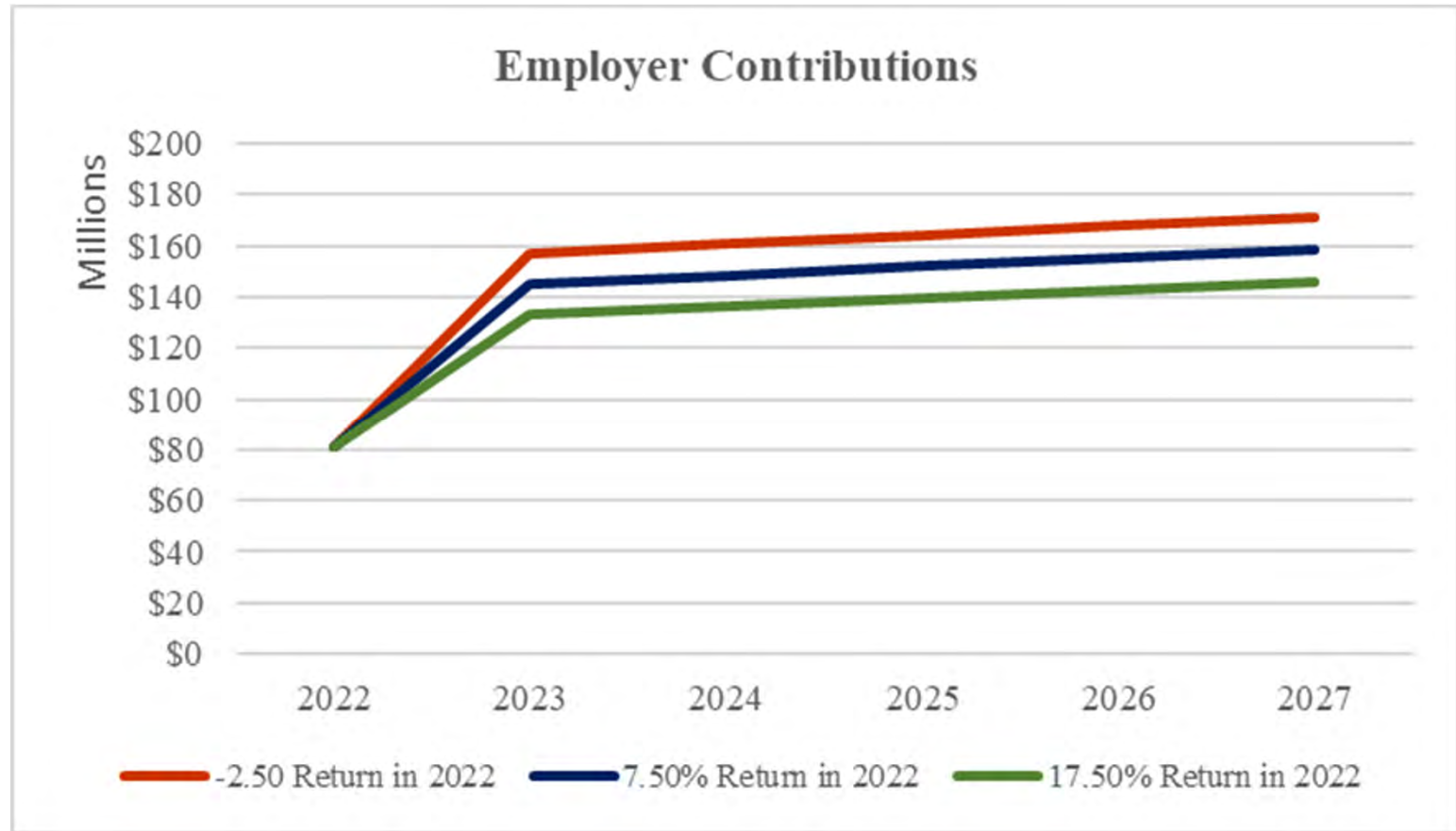
## Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

Actuarial Value of Assets  
Actuarial Accrued Liability  
UAAL/Funded Ratio  
Net Actuarial Gain or Loss  
**Employer Contributions**  
Projections



This graph shows the projected dollar amount of aggregate employer contributions in the future under alternate investment return scenarios for 2022. Investment returns for 2023+ are assumed to be 7.50% in all scenarios.

# Certification



In order to prepare these results, we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results. 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. Because of limited scope, Cavanaugh Macdonald performed no analysis of the potential range of such future differences, except for some limited analysis in financial projections or required disclosure information. Results prior to January 1, 2019 were provided by the prior consulting actuary.

We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Larry Langer, ASA, EA, FCA, MAAA  
Principal and Consulting Actuary

Patrice A. Beckham, FSA, EA, FCA, MAAA  
Principal and Consulting Actuary

# Appendix

Funding Term	GASB Term	Definitions
Normal Cost	Service Cost	The cost of benefits accruing during the year
Actuarial Accrued Liability (AAL)	Total Pension Liability (TPL)	The amount of money you should have in the fund
Actuarial Value of Assets (AVA)	Fiduciary Net Position	The amount of assets you have in the fund for contribution and expense purposes
Unfunded Actuarial Accrued Liability (UAAL)	Net Pension Liability	The amount of pension debt. The AAL less the AVA.
Funded Ratio	Funded Ratio	How many cents you have to cover each dollar of pension debt. The AVA divided by the AAL.
Employer Contribution	Pension Expense	The amount paid into the fund during the year. When done actuarially, it is the normal cost less member contributions plus expenses and a payment to the UAAL.

While these terms are somewhat analogous, GASB results are not appropriate for funding policy purposes. In addition, the terms above are for pension purposes; similar terms do exist for OPEB purposes.



Cavanaugh Macdonald  
CONSULTING, LLC

*The experience and dedication you deserve*

# Employees' Retirement System of the City of Milwaukee

Actuarial Valuation Report  
Prepared as of January 1, 2022

May 26, 2022







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# Cavanaugh Macdonald

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May 26, 2022

Annuity and Pension Board  
Employees' 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 an actuarial valuation of the Employees' Retirement System of the City of Milwaukee (referred to as "ERS" or "System") as of January 1, 2022. The report has been prepared in accordance with Section 36-15-15 of the Milwaukee City Charter (MCC). The major findings of the valuation are contained in this report, which reflects the benefit and funding provisions in place on January 1, 2022. The benefit provisions, actuarial assumptions and actuarial methods remain unchanged from the prior valuation.

The valuation was based on the actuarial assumptions and methods adopted by the Annuity and Pension Board, as specified by the Charter. An amendment to the MCC was adopted by the Common Council on April 30, 2013 to establish the Stable Employer Contribution Policy. Under that Policy, an actuarial contribution rate is separately calculated for three groups: Policemen, Firemen, and General Employees of the Combined Fund, and is applicable for the subsequent five-year period. These rates are established every five years following the Experience Study, performed by the actuary. The actuarial determined employer contribution rates under the Stable Contribution Policy for Policemen, Firemen, and General Employees are 25.22%, 26.83% and 7.48% of covered payroll, respectively, through December 31, 2022.

The primary purposes of the valuation report are to determine the actuarial contribution rate, to describe the current financial condition of ERS, and to analyze changes in such condition. 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 (CMC) to review any statement you wish to make on the results contained in this report. CMC 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 CMC 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. Sometimes assumptions are made to interpret membership data that is imperfect. The valuation is also based on benefit and contribution provisions as presented 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 described, 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, CMC 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 an actuarial contribution rate. 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.

We note that as we prepare this report, the world is still recovering from the Covid-19 pandemic. We have considered all available information, but do not believe there is sufficient data yet to warrant the modification of any of our assumptions at this time. We will continue to monitor the situation and advise the Board in the future of any adjustments we believe would be appropriate.



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,

A handwritten signature in blue ink, appearing to be 'LL' with a stylized flourish.

Larry Langer, ASA, EA, FCA, MAAA  
Principal and Consulting Actuary

A handwritten signature in blue ink, reading 'Patrice Beckham' in a cursive script.

Patrice A. Beckham, FSA, EA, FCA, MAAA  
Principal and Consulting Actuary





## SECTION I: EXECUTIVE SUMMARY

---

### Introduction and Background

The law governing the Employees' 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-fourth annual actuarial valuation of the ERS as of January 1, 2022. The primary purposes of performing a valuation are to:

- estimate the liabilities for future benefits expected to be paid by the System;
- determine the employer contribution rate required to fund the System on an actuarial basis and compare that rate to the Stable Contribution Policy;
- 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.

### Stable Contribution Policy

An amendment to the MCC was adopted by the Common Council on April 30, 2013 to establish the Stable Employer Contribution Policy. Under that Policy, an actuarial contribution rate is separately calculated for three groups: Policemen, Firemen, and General Employees of the Combined Fund, and is applicable for the subsequent five-year period. The Policy is designed to:

- (a) Fully fund all current costs for active members, determined under the funding method, which is irrespective of the funded status of the System. The result is that the Employer Normal Cost is always funded; and
- (b) Liquidate the unfunded actuarial accrued liability (UAAL), if any, over the amortization period adopted by the Board and based on methodology specified in the MCC. Effective with the January 1, 2019 actuarial valuation, the Board adopted a 25-year closed period to amortize the UAAL as of January 1, 2019. At each subsequent valuation date, any changes to the UAAL arising from actual experience that is different than assumed are amortized over a fixed 15-year period and any changes to the UAAL arising from changes in benefit provisions, actuarial assumptions or actuarial methods are amortized over a fixed 25-year period.

These rates are established every five years following the completion of the Experience Study performed by the actuary. The actuary establishes these contribution rates based on the most recent actuarial assumptions adopted by the Annuity and Pension Board of the ERS and the actuarial methods specified in the Charter. The rates are established in conformity with applicable Actuarial Standards of Practice and result in a funded status at the end of the five years that is at least actuarially equivalent to the expected funded status if contributions were based on the recalculation of the employer contribution rates annually under the same assumptions and methods. The current contribution rates under the Stable Employer Contribution Policy for calendar years 2018 through 2022 are:

- General Employees: 7.48%
- Policemen: 25.22%
- Firemen: 26.83%.

The results of the January 1, 2022 actuarial valuation are among the information used to monitor the impact of the Stable Employer Contribution Policy on the System's funding and anticipate possible adjustments when the rate is reset in 2023.



## SECTION I: EXECUTIVE SUMMARY

---

### Events Impacting the January 1, 2022 Valuation:

- **Investment Experience:** There was favorable investment experience on the market value of assets during calendar year 2021. This favorable experience, combined with the recognition of deferred asset gains, resulted in a return on the actuarial value of assets of 11.76%, which is above the assumed rate of return of 7.50%. This resulted in an actuarial gain on assets.
- **Liability Experience:** Liability gains (losses) result from actual experience that is more (less) favorable than anticipated based on the actuarial assumptions. Overall, there was favorable experience during 2021 for the System's liabilities, as expressed by a smaller actuarial accrued liability than expected. The largest source of favorable experience was lower salary increases than assumed during 2021.
- As part of Cavanaugh Macdonald Consulting's transition as the System's new retained actuary in 2019, a review of the actuarial assumptions used in the 2018 valuation was performed. In our professional judgment, a reduction to the investment return assumption was necessary in order to comply with applicable actuarial standards of practice. Our recommendation to lower the investment return assumption from 8.00% in calendar years 2018 through 2022 and 8.25% thereafter to 7.50% for all years was adopted by the Board and reflected in the January 1, 2019 valuation. This resulted in a significant increase in the actuarially determined contribution rate. The employer contribution rates, which are reset every five years under Stable Contribution Policy, had just been reset in 2018 in concurrence with the completion of the experience study and subsequent adoption of a new set of assumptions. The timing of the reduction to the investment return assumption in the January 1, 2019 valuation was "off cycle" from the regular experience study. As a result, the Stable Contribution Policy rate was much lower than the actuarially determined contribution rate for 2021 which impacted the System's funded ratio.
- In total, the size of the active membership declined from 10,567 to 10,094 (4.5%) during 2021, which also impacted the total covered payroll which declined by 1.2%. The actuarial assumption reflects an expectation that covered payroll will increase 2.0% per year. As a result, the dollar amount of the unfunded actuarial accrued liability payments increases by 2.0% each year. To the extent actual increases in the covered payroll do not occur as expected, it results in a higher unfunded actuarial accrued liability contribution rate.
- 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, 2021 valuation, eight 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.

### Fiscal Impact of Events

**Actual Rate of Return for 2021:** There was favorable investment experience on the market value of assets during calendar year 2021. This favorable experience, combined with the recognition of deferred asset gains, resulted in a return on the actuarial value of assets of 11.76%, which is above the assumed rate of return of 7.50%. As a result, the unfunded actuarial accrued liability decreased by \$229.3 million, the funded ratio increased by 3.3% and the actuarial employer contribution rate decreased by 3.73% of pay for



## SECTION I: EXECUTIVE SUMMARY

the Combined Fund. Due to the favorable investment experience on the market value of assets during 2021, the net deferred investment gain of \$209 million in last year's valuation has increased to \$696 million in the current valuation. Absent offsetting unfavorable experience in the future, this experience will increase the funded ratio and decrease the actuarial contribution rate as it flows through the asset smoothing method.

**Liability Experience:** 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 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 experience for the System during 2021 was a small actuarial gain of \$13 million. The most significant source of the net favorable liability experience during 2021 was smaller salary increases than anticipated by the actuarial assumptions.

**Stable Contribution Rate Policy:** As discussed earlier, largely due to lowering the investment return assumption in the 2019 valuation, there was a significant difference between the stable policy contribution rate and the actuarial determined employer contribution rate for 2021 for all three membership groups. This difference resulted in employer contributions that were \$90.3 million less than the actuarially determined employer contribution. As a result, the unfunded actuarial accrued liability did not decline as scheduled in the amortization table (see Table 11).

**Decline in Covered Payroll during 2021:** Covered payroll in the current valuation decreased by 1.2% from the covered payroll in the January 1, 2021 valuation. The UAAL contribution rate is developed with an assumed increase of 2.0% in covered payroll each year. When the covered payroll does not increase, as assumed, it results in a higher unfunded actuarial accrued liability contribution rate.

**GPS Consenters during 2021:** There were eight individuals who elected to participate in the Combined Fund during 2021. 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.

A summary of the changes to the unfunded actuarial accrued liability for the Combined Fund only from the January 1, 2021 valuation to the January 1, 2022 valuation is shown in the table below:

Combined Fund	(\$ in millions)
Unfunded Actuarial Accrued Liability (UAAL) as of 01/01/2021	\$ 1,343.1
- Expected Change in UAAL	(8.4)
- Actual Contributions Versus Actuarial Contributions	90.3
- Investment Experience	(229.3)
- Demographic Experience	(13.2)
- Other Experience	8.4
Unfunded Actuarial Accrued Liability (UAAL) as of 01/01/2022	\$ 1,190.9





## SECTION I: EXECUTIVE SUMMARY

Due to the Stable Employer Contribution Policy, these events and the resulting increase in the unfunded actuarial accrued liability had no impact on the employer contribution rates for the 2022 plan year. However, their impact is reflected in the actuarially determined employer contribution rate for the Combined Fund as shown in the following table.

Combined Fund	Rate
Actuarial Determined Employer Rate as of 01/01/2021	28.73%
- Change in Employer Normal Cost Rate	(0.16%)
- Actual Contributions Versus Actuarial Contributions	1.47%
- Investment Experience	(3.73%)
- Demographic Experience	(0.21%)
- Payroll Growth Rate Lower than Expected	0.48%
- Other Experience	0.10%
Actuarial Determined Employer Rate as of 01/01/2022	26.68%

As a result of the decrease in the actuarially determined employer contribution rate in the 2022 valuation, the shortfall between the actuarially determined contribution and the Stable Contribution Policy has decreased. A summary of the employer contribution rates for all three groups is shown in the table below.

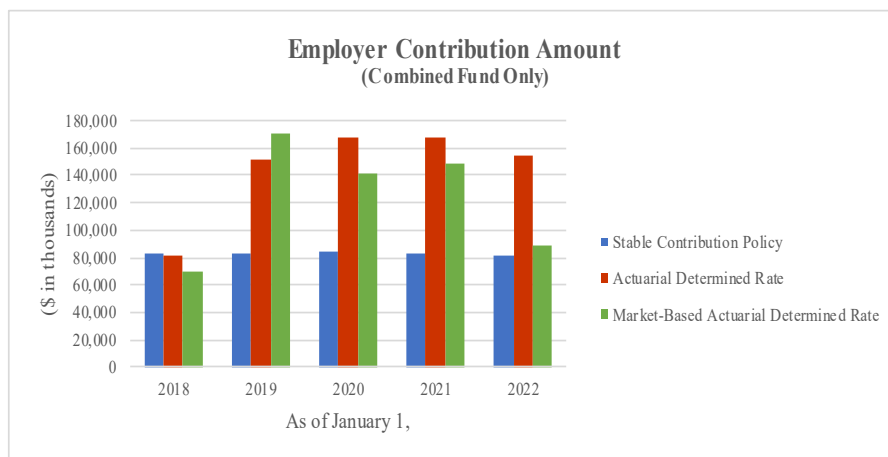
	1/1/2022	1/1/2021	1/1/2020	1/1/2019	1/1/2018
<u>General:</u>					
a. Actuarial Determined Rate	15.86%	17.22%	16.47%	15.57%	7.46%
b. Stable Contribution Policy	7.48%	7.48%	7.48%	7.48%	7.48%
c. Difference	8.38%	9.74%	8.99%	8.09%	(0.02%)
<u>Policemen:</u>					
a. Actuarial Determined Rate	44.70%	47.47%	46.63%	41.31%	25.13%
b. Stable Contribution Policy	25.22%	25.22%	25.22%	25.22%	25.22%
c. Difference	19.48%	22.25%	21.41%	16.09%	(0.09%)
<u>Firemen:</u>					
a. Actuarial Determined Rate	47.91%	51.44%	52.25%	48.71%	26.74%
b. Stable Contribution Policy	26.83%	26.83%	26.83%	26.83%	26.83%
c. Difference	21.08%	24.61%	25.42%	21.88%	(0.09%)

Under the Stable Contribution Policy, the employer contribution rate is reset every five years following the completion of the Experience Study and adoption of updated actuarial assumptions. The employer contribution rate was most recently set for calendar years 2018 through 2022, based on the actuarially determined contribution in the 2018 valuation. However, because of the significant reduction in the investment return assumption in the 2019 valuation (moving from 8.24% to 7.50%), the actuarially determined employer contribution rate was much higher than the Stable Contribution Policy rate in the 2021 valuation. That contribution shortfall (actuarially determined contribution less stable contribution policy amount) increased the unfunded actuarial accrued liability.



## SECTION I: EXECUTIVE SUMMARY

The difference between the actuarially determined employer contribution rate and the Stable Contribution Policy rate decreased in the 2022 valuation, primarily due to favorable investment experience. The Stable Contribution Policy amount is expected to continue to be significantly less than the actuarially determined contribution amount until 2023, when the Stable Contribution Policy rate will be reset for another five years. The following graph illustrates the difference between the Stable Contribution Policy amounts and the actuarially determined contribution amounts over the past five years.



Although the recognition of the deferred investment experience is expected to reduce the actuarial contribution rate, the impact is more than offset by the shortfall in contributions from the Stable Contribution Policy. As a result, a significant increase is expected when the Stable Contribution Policy rate is reset in 2023.

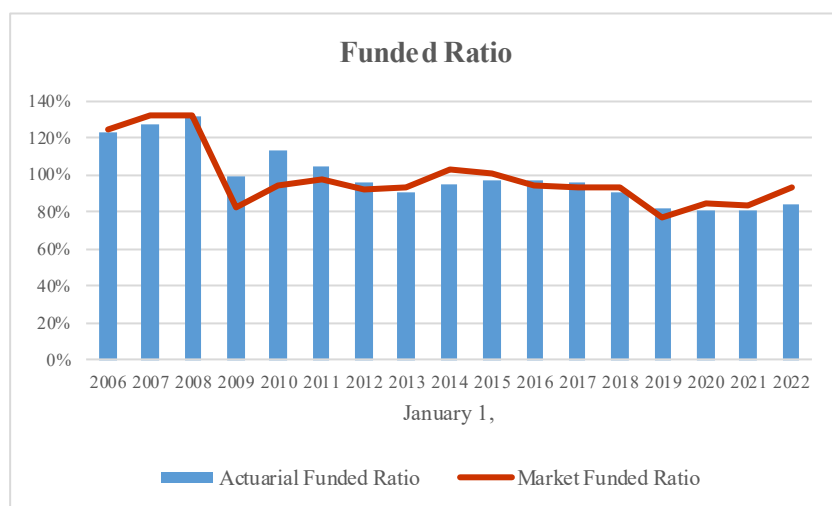
**Given the magnitude of the difference between the actuarially determined employer contributions and the stable contribution policy contributions, we strongly encourage the City and other participating agencies to start preparing now for much higher contributions when the Stable Contribution Policy is reset for calendar year 2023. The City contributed an additional \$8.0 million during 2021 to the Reserve Fund, which when added to the initial balance of \$34.2 million and \$0.1 million in investment losses increased the balance to \$42.1 million. The Reserve Fund represents advance contributions, above the stable contribution policy, which can be used by employers to meet future contribution levels, if needed.**

### Funded Ratio

As was discussed earlier, the funded ratio (actuarial assets divided by actuarial liability) in the 2022 valuation was positively impacted by actual experience during 2021 that was favorable for both the System's actuarial assets and liabilities. The funded ratio increased from 80.7% in the 2021 valuation to 83.4% in the 2022 valuation. The funded ratio on a market value basis also improved, increasing from 83.8% in the prior valuation to 93.5% in the current valuation. The following graph shows the historical funded ratio using both the market value and actuarial value of assets.



## SECTION I: EXECUTIVE SUMMARY



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 number of factors impact the funded ratio from year to year. The major drivers of the change in the funded ratio from the January 1, 2021 valuation to the January 1, 2022 valuation are shown in the following table on both an actuarial value and market value basis.

	Funded Ratio Based On	
	Actuarial Value of Assets	Market Value of Assets
January 1, 2021 Funded Ratio	80.7%	83.8%
- Expected Change	(0.1%)	0.1%
- Actual Contributions Versus Actuarial Contributions	(0.7%)	(0.7%)
- Investment Experience	3.3%	10.2%
- Demographic Experience	0.2%	0.1%
- Other Experience	<u>0.0%</u>	<u>0.0%</u>
- Total change	2.7%	9.7%
January 1, 2022 Funded Ratio	83.4%	93.5%



## SECTION I: EXECUTIVE SUMMARY

### Summary of Key Valuation Results

This report, prepared as of January 1, 2022, presents the results of the eighty-fourth annual valuation of the System. The principal results of the valuation, reflecting the Stable Contribution Funding Policy and contribution amounts as of January 31, 2023, are summarized below:

Fund	General Employees	Policemen	Firemen	Total
Combined Fund	\$ 29,747,730	\$ 40,565,027	\$ 17,758,427	\$ 88,071,184
Retirement Fund	0	0	0	0
Duty Disability Fund	0	0	0	0
Heart & Lung Fund	N/A	N/A	0	0
Combined Retirement & Disability Fund	34,000	16,000	0	50,000
Total Contribution	\$ 29,781,730	\$ 40,581,027	\$ 17,758,427	\$ 88,121,184
Covered Compensation	\$ 369,306,000	\$ 148,844,000	\$ 61,201,000	\$ 579,351,000
Total Contribution as a Percentage of Covered Compensation	8.06%	27.26%	29.02%	15.21%

### Key Takeaways

- Due to the favorable investment experience during 2021, the net deferred investment gain (market value of assets greater than actuarial value) of \$209 million in last year's valuation has increased to \$696 million in the current valuation. Absent offsetting unfavorable experience in the future, this experience will increase the funded ratio and decrease the actuarial contribution rate as it flows through the asset smoothing method. While this will have a positive impact on future valuation results, other actuarial experience may be unfavorable and offset the impact of the deferred investment gains.
- The shortfall between the actuarially determined contribution and the stable contribution policy for 2021 resulted in an increase in the unfunded actuarial accrued liability of \$90.3 million, which was then amortized over 15 years. This increased the UAAL contribution in the current valuation by 1.47%. A similar pattern is expected to occur until the employer contribution rate is reset in 2023.
- **Given the significant difference between the actuarially determined employer contribution and the stable contribution policy in this valuation, the City and participating agencies should give serious consideration to increasing contributions and planning for a major increase in the contribution rate when it is reset in 2023.**



## SECTION I: EXECUTIVE SUMMARY

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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 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 January 1, 2021 and January 1, 2022 valuations.



## SECTION I: EXECUTIVE SUMMARY

### Summary of Principal Results

	January 1, 2022	January 1, 2021	% Change
<b>1. Membership Data</b>			
<b>a. Active Members</b>			
(i) Count			
- General Employees	7,768	8,135	(4.5%)
- Policemen	1,631	1,735	(6.0%)
- Firemen	<u>695</u>	<u>697</u>	(0.3%)
- Total	10,094	10,567	(4.5%)
(ii) Total Estimated Payroll			
- General Employees	\$369,306,000	\$371,863,000	(0.7%)
- Policemen	148,844,000	154,607,000	(3.7%)
- Firemen	<u>61,201,000</u>	<u>59,899,000</u>	2.2%
- Total	\$579,351,000	\$586,369,000	(1.2%)
<b>b. Retirees, Beneficiaries and Disabled Members</b>			
(i) Number	13,758	13,647	0.8%
(ii) Total Annual Benefits	\$434,381,000	\$417,668,000	4.0%
(iii) Average Annual Benefit	\$31,573	\$30,605	3.2%
<b>2. Assets and Liabilities</b>			
<b>a. Asset Values (includes contributions receivable)</b>			
(i) Actuarial Value of Assets (AVA)	\$5,734,986,000	\$5,440,867,000	5.4%
(ii) Market Value of Assets (MVA)	\$6,431,356,000	\$5,649,734,000	13.8%
<b>b. Actuarial Accrued Liability (AAL)</b>	\$6,875,927,000	\$6,745,299,000	1.9%
<b>c. Funded Status</b>			
(i) Unfunded AAL (Based on AVA)	\$1,140,941,000	\$1,304,432,000	(12.5%)
(ii) Funded Ratio (Based on AVA)	83.41%	80.66%	3.4%
(iii) Unfunded AAL (Based on MVA)	\$444,571,000	\$1,095,565,000	(59.4%)
(iv) Funded Ratio (Based on MVA)	93.53%	83.76%	11.7%
<b>3. Employer Contribution Rates (Combined Fund)</b>			
<b>a. General Employees</b>			
(i) Stable Contribution Policy Rate	7.48%	7.48%	0.0%
(ii) Actuarial Determined Rate	15.86%	17.22%	(7.9%)
(iii) Market-Based Actuarial Determined Rate	8.28%	14.98%	(44.7%)
<b>b. Policemen</b>			
(i) Stable Contribution Policy Rate	25.22%	25.22%	0.0%
(ii) Actuarial Determined Rate	44.70%	47.47%	(5.8%)
(iii) Market-Based Actuarial Determined Rate	27.07%	42.28%	(36.0%)
<b>c. Firemen</b>			
(i) Stable Contribution Policy Rate	26.83%	26.83%	0.0%
(ii) Actuarial Determined Rate	47.91%	51.44%	(6.9%)
(iii) Market-Based Actuarial Determined Rate	29.82%	46.02%	(35.2%)
<b>4. Total Employer Contribution (All Funds)</b>	Due 01/31/2023	Due 01/31/2022	
(i) Annual Cost	\$88,121,000	\$89,651,000	(1.7%)
(ii) As a % of Covered Payroll	15.21%	15.29%	(0.5%)



## **SECTION I: EXECUTIVE SUMMARY**

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## SECTION II: SCOPE OF THE REPORT

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This report presents the actuarial valuation of the Employees' Retirement System of the City of Milwaukee as of January 1, 2022. This valuation was prepared at the request of the System's Pension and Annuity Board. The report is based on the plan provisions, actuarial assumptions and actuarial methods in effect as of January 1, 2022.

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. Section V discloses the obligations (liabilities) of the System and Section VI includes the calculation of contributions for the current fiscal 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 contribution rates.
- Appendix D      A glossary of actuarial terms.





## SECTION II: SCOPE OF THE REPORT

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### SECTION III: MEMBER DATA SUMMARY

**TABLE 1**

**Member Counts by Vested Status**

Number of Members	1/1/2022			1/1/2021
	Vested	Non-Vested	Total	Total
<b>Active</b>				
- General Employees	5,216	2,552	7,768	8,135
- Policemen	1,364	267	1,631	1,735
- Firemen	<u>525</u>	<u>170</u>	<u>695</u>	<u>697</u>
- <b>Total Active Members</b>	<b>7,105</b>	<b>2,989</b>	<b>10,094</b>	<b>10,567</b>
<b>Inactive</b>				
- Deferred Retirees			3,363	3,188
- Refunds Payable			<u>2,149</u>	<u>1,796</u>
- <b>Total Inactive Members</b>			<b>5,512</b>	<b>4,984</b>
<b>Benefit Recipients</b>				
- Combined Fund				
General Employees			9,717	9,695
Policemen			2,615	2,539
Firemen			<u>1,415</u>	<u>1,402</u>
- Combined Fund Subtotal			13,747	13,636
- Retirement Fund			11	11
- Duty Disability Funds				
General Employees			0	0
Policemen			0	0
Firemen			<u>0</u>	<u>0</u>
- Duty Disability Funds Subtotal			0	0
- Firemen's Heart & Lung Fund			<u>0</u>	<u>0</u>
- <b>Total Benefit Recipients</b>			<b>13,758</b>	<b>13,647</b>
<b>Total Membership</b>			<b>29,364</b>	<b>29,198</b>

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



### SECTION III: MEMBER DATA SUMMARY

**TABLE 2**

**Member Counts by Consent Status**

1/1/2022 Membership			
Number of Members	Consenters	Others	Total
<b>Active</b>			
- General Employees	7,729	39	7,768
- Policemen	1,630	1	1,631
- Firemen	<u>695</u>	<u>0</u>	<u>695</u>
- <b>Total Active Members</b>	<b>10,054</b>	<b>40</b>	<b>10,094</b>
<b>Inactive</b>			
- Deferred Retirees	3,168	195	3,363
- Refunds Due	<u>2,148</u>	<u>1</u>	<u>2,149</u>
- <b>Total Inactive Members</b>	<b>5,316</b>	<b>196</b>	<b>5,512</b>
<b>Benefit Recipients</b>			
- Combined Fund	13,747	NA	13,747
- Retirement Fund	NA	11	11
- Duty Disability Funds			
General Employees	0	0	0
Policemen	0	0	0
Firemen	<u>0</u>	<u>0</u>	<u>0</u>
- Duty Disability Funds Subtotal	0	0	0
- Firemen's Heart & Lung Fund	<u>0</u>	<u>0</u>	<u>0</u>
- <b>Total Benefit Recipients</b>	<b>13,747</b>	<b>11</b>	<b>13,758</b>
<b>Total Membership</b>	<b>29,117</b>	<b>247</b>	<b>29,364</b>

- 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.



### SECTION III: MEMBER DATA SUMMARY

**TABLE 3**  
**Member Data Summary**

	1/1/2022	1/1/2021
<b>Projected Annual Earnings</b>		
- General Employees	\$ 369,306,000	\$ 371,863,000
- Policemen	148,844,000	154,607,000
- Firemen	<u>61,201,000</u>	<u>59,899,000</u>
- <b>Total Projected Annual Earnings</b>	<b>\$ 579,351,000</b>	<b>\$ 586,369,000</b>
<b>Average Projected Earnings</b>		
- General Employees	\$ 47,542	\$ 45,711
- Policemen	\$ 91,259	\$ 89,111
- Firemen	\$ 88,059	\$ 85,938
<b>Annual Benefit Payments Currently Being Made</b>		
- Combined Fund	\$ 434,137,398	\$ 417,456,609
- Retirement Fund	\$ 243,510	\$ 211,239
- Duty Disability Funds		
General Employees	\$ 0	\$ 0
Policemen	0	0
Firemen	<u>0</u>	<u>0</u>
- Duty Disability Funds Subtotal	\$ 0	\$ 0
- Firemen's Heart & Lung Fund	\$ 0	\$ 0
- <b>Total Benefit Payments</b>	<b>\$ 434,380,908</b>	<b>\$ 417,667,848</b>

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.



### **SECTION III: MEMBER DATA SUMMARY**

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## SECTION IV: ASSET DATA

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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, 2022. 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 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, 2021 to January 1, 2022.

### **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 (AVA) as of the valuation date.



## SECTION IV: ASSET DATA

**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, 2021	\$ 5,597,607	\$ 11,143	\$ 5,849	\$ 100	\$ 34,196	\$ 839	\$ 5,649,734
2. Contributions During Year							
a. Member	\$ 31,435	\$ 8	\$ 1	\$ 0	\$ 0	\$ 0	\$ 31,444
b. Employer	82,960	0	217	0	8,000	0	91,177
c. Total	\$ 114,395	\$ 8	\$ 218	\$ 0	\$ 8,000	\$ 0	\$ 122,621
3. Disbursements During Year							
a. Monthly Annuities	\$ 441,005	\$ 54	\$ 33	\$ 0	\$ 0	\$ 0	\$ 441,092
b. Refunds	4,116	36	12	0	0	0	4,164
c. Administrative Expenses	5,935	0	0	0	0	798	6,733
d. Total	\$ 451,056	\$ 90	\$ 45	\$ 0	\$ 0	\$ 798	\$ 451,989
4. Investment Return (net of Investment Expenses)	\$ 1,106,952	\$ 2,372	\$ 1,245	\$ 22	\$ (115)	\$ 514	\$ 1,110,990
5. Market Value of Assets as of December 31, 2021 (1) + (2c) - (3d) + (4)	\$ 6,367,898	\$ 13,433	\$ 7,267	\$ 122	\$ 42,081	\$ 555	\$ 6,431,356
6. Rate of Return, as Reported by Northern Trust (ERS' Custodian)							18.89%



## SECTION IV: ASSET DATA

**TABLE 5**  
**Actuarial Value of Assets**  
(Dollars in thousands)

1. Preliminary Actuarial Value as of January 1, 2021	\$ 5,439,598
2. Market Value January 1, 2021 (Unaudited)	\$ 5,649,734
3. Market Value January 1, 2022 (Unaudited)	\$ 6,431,356
4. Contributions	
a. Member	\$ 31,444
b. Employer	91,177
c. Total	\$ 122,621
5. Benefit Payments and Administrative Expenses	\$ 451,989
6. Actual Market Return, Net of Investment Expenses	\$ 1,110,990
7. Expected Market Return Based on 7.50%	\$ 411,602
8. Excess of Actual over Expected Return	
a. 2021	\$ 699,388
b. 2020	4,009
c. 2019	532,533
d. 2018	(580,714)
e. 2017	\$ 387,130
9. Excess Recognized in the Current Valuation	
a. 2021	\$ 139,878
b. 2020	802
c. 2019	106,507
d. 2018	(116,143)
e. 2017	77,426
f. Total	\$ 208,470
10. Preliminary Value as of January 1, 2022 (1) + (4c) - (5) + (7) + (9f)	\$ 5,730,302
11. Ratio of Preliminary Value to Market Value (10)/(3)	89.10%
12. Balance in Employers' Reserve Fund and Securities Lending Fund	\$ 42,636
13. Market Value Excluding Employers' Reserve Fund and Securities Lending Fund (3) - (12)	\$ 6,388,720
14. Actuarial Value as of January 1, 2022 (11) * (13) + (12)	\$ 5,734,986
15. Estimated Rate of Return	11.76%





## SECTION IV: ASSET DATA

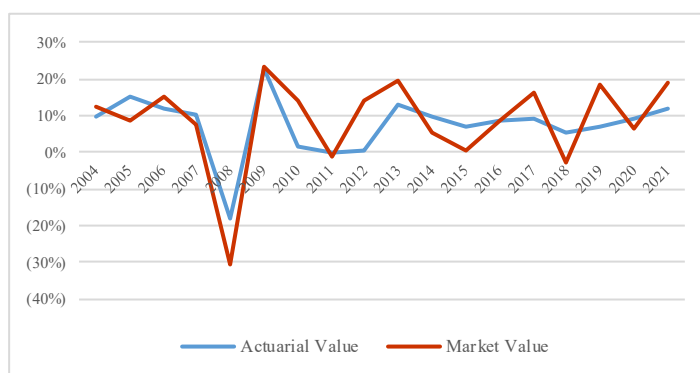
**TABLE 6**  
**Historical Asset Returns**

Beginning with the January 1, 2019 valuation, the investment return assumption is 7.50%. The table below provides a history of the rate of return on the actuarial value and market value of assets. 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%
Average*	7.10%	7.74%
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.





## SECTION IV: ASSET DATA

**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	\$ 6,367,898	\$ 5,673,797
2. Employers' Reserve Fund	\$ 42,081	\$ 42,081
3. Retirement Fund	\$ 13,433	\$ 11,969
4. General Employees' Duty Disability Fund	\$ 122	\$ 109
5. Fire & Police Duty Disability Fund	\$ 0	\$ 0
6. Firemen's Heart & Lung Fund	\$ 0	\$ 0
7. Combined Retirement & Disability Fund	\$ 7,267	\$ 6,475
8. Securities Lending Fund	\$ 555	\$ 555
9. Total All Funds	\$ 6,431,356	\$ 5,734,986

Note: Values shown include January 31, 2022 contributions receivable.



## SECTION IV: ASSET DATA

**TABLE 8**  
**Allocations Between Non-Consenters Who Consented to GPS During 2021 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, 2021 valuation, eight 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 2021 was calculated as of January 1, 2021. 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.

Fund	Allocation of 1/1/2021 Market Value of Assets in Funds for Non-Consenters in Proportion to 1/1/2021 Actuarial Accrued Liability			Allocation of 1/31/2022 Employer Contribution to Funds for Non-Consenters in Proportion to 1/1/2021 Covered Compensation		
	Consenters in 2021	Others	Total (Audited)	Consenters in 2021	Others	Total
1. Retirement Fund	\$ 2,199	\$ 8,944	\$ 11,143	\$ 0	\$ 0	\$ 0
2. General Employees' Duty Disability Fund	12	88	100	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	591	5,258	5,849	21	196	217
6. Total Funds for Non-Consenters	\$ 2,802	\$ 14,290	\$ 17,092	\$ 21	\$ 196	\$ 217

Notes: (i) January 1, 2021 assets allocated to members who consented to Global Settlement during 2021 are transferred to the Combined Fund as of January 1, 2021.

(ii) January 31, 2022 Employer Contributions allocated to members who consented to Global Settlement during 2021 are credited to the Combined Fund instead of to the funds for non-consenters.



## SECTION V: SYSTEM LIABILITIES

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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, 2022. In this section, the discussion will focus on the commitments (future benefit payments) of the System, which are referred to as its liabilities.

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.

All liabilities reflect the benefit provisions in place as of January 1, 2022.

### **Actuarial Accrued Liability**

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." 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.

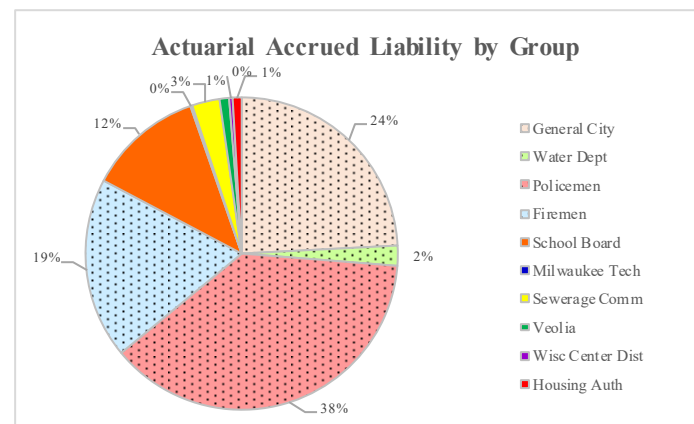


## SECTION V: SYSTEM LIABILITIES

**TABLE 9**  
**Actuarial Accrued Liability by Agency**  
(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	424,113	42,192	259,919	0	46,005	5,861	8,555	19,422	931,326	359,270	2,096,663
b. Withdrawal Benefits	32,661	3,337	20,625	0	4,252	6	779	1,226	40,726	22,919	126,531
c. Disability Benefits	10,957	1,197	6,596	0	1,298	28	259	438	28,859	57,485	107,117
d. Death Benefits	5,478	651	3,313	0	644	60	137	245	6,110	3,071	19,709
Total	473,209	47,377	290,453	0	52,199	5,955	9,730	21,331	1,007,021	442,745	2,350,020
2. Present Value of Future Normal Costs	110,694	12,131	76,787	0	12,512	356	3,071	4,466	370,260	174,322	764,599
3. Actuarial Accrued Liability (AAL) for Active Members (1) - (2)	362,515	35,246	213,666	0	39,687	5,599	6,659	16,865	636,761	268,423	1,585,421
4. Present Value of Future Benefits for Inactive Members											
- Members with Deferred Benefits	57,291	4,042	49,116	0	3,570	374	1,821	3,152	52,287	8,871	180,524
- Members with Refunds Payable	1,405	97	2,046	0	40	0	35	30	201	10	3,864
- Retirees, Beneficiaries and Disabled Members	1,241,904	103,337	555,738	14,851	151,742	62,755	15,199	44,019	1,906,325	1,010,248	5,106,118
Total	1,300,600	107,476	606,900	14,851	155,352	63,129	17,055	47,201	1,958,813	1,019,129	5,290,506
5. Total Actuarial Accrued Liability (3) + (4)	1,663,115	142,722	820,566	14,851	195,039	68,728	23,714	64,066	2,595,574	1,287,552	6,875,927

\* Includes Elected Officials and Redevelopment Authority





## SECTION V: SYSTEM LIABILITIES

**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	\$ 6,864,666	\$ 5,673,797	\$ 6,367,898	\$ 1,190,869	\$ 496,768	82.7%	92.8%
2. Employers' Reserve Fund	0	42,081	42,081	(42,081)	(42,081)	N/A	N/A
3. Retirement Fund	4,841	11,969	13,433	(7,128)	(8,592)	247.2%	277.5%
4. General Employees' Duty Disability Fund	11	109	122	(98)	(111)	990.9%	1109.1%
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	6,409	6,475	7,267	(66)	(858)	101.0%	113.4%
8. Securities Lending Fund	0	555	555	(555)	(555)	N/A	N/A
9. Total All Funds	\$ 6,875,927	\$ 5,734,986	\$ 6,431,356	\$ 1,140,941	\$ 444,571	83.4%	93.5%



## SECTION V: SYSTEM LIABILITIES

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**TABLE 11**

**Reconciliation of Unfunded Actuarial Accrued Liability**

The table below provides a reconciliation of the unfunded actuarial accrued liability in the prior valuation to the current valuation for the Combined Fund.

Combined Fund	(\$ in thousands)
Unfunded Actuarial Accrued Liability (UAAL) as of 01/01/2021	\$ 1,343,102
- Expected Change in UAAL	(8,441)
- Actual Contributions Versus Actuarial Contributions	90,307
- Investment Experience	(229,274)
- Demographic Experience	(13,178)
- Other Experience	8,353
Unfunded Actuarial Accrued Liability (UAAL) as of 01/01/2022	\$ 1,190,869



## SECTION V: SYSTEM LIABILITIES

**TABLE 12**

**Actuarial Balance Sheet  
As of January 1, 2022**

The valuation balance sheet shows the assets and liabilities of ERS (in total, all groups 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	\$	5,734,986,000
Unfunded Actuarial Accrued Liability		1,140,941,000
Present Value of Future Normal Costs	\$	<u>764,599,000</u>
Total Assets	\$	7,640,526,000

LIABILITIES

Present Value of Future Benefits		
Active members		
Retirement	\$	2,096,663,000
Withdrawal		126,531,000
Disability		107,117,000
Death		<u>19,709,000</u>
Total	\$	2,350,020,000
Inactive members		184,388,000
Retirees, disabilities and beneficiaries		<u>5,106,118,000</u>
Total Liabilities	\$	7,640,526,000



**SECTION V: SYSTEM LIABILITIES****TABLE 13****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, 2022.

**Liabilities**

1. Actuarial Accrued Liability as of January 1, 2021	\$6,745,299,000
2. Normal Cost for Plan Year Ending December 31, 2021	92,637,000
3. Benefit Payments During December 31, 2021	(445,256,000)
4. Interest on (1), (2) and (3) at 7.50%	496,450,000
5. Expected Actuarial Accrued Liability as of January 1, 2022	<u>\$6,889,130,000</u>
6. Actuarial Accrued Liability as of January 1, 2022	\$6,875,927,000

**Assets**

7. Actuarial Value of Assets as of January 1, 2021	\$5,440,867,000
8. Contributions for Plan Year Ending December 31, 2021	122,621,000
9. Benefit Payments and Administrative Expenses During December 31, 2021	(451,989,000)
10. Interest on (7), (8) and (9) at 7.50%	395,937,000
11. Expected Actuarial Value of Assets as of January 1, 2022	<u>\$5,507,436,000</u>
12. Actuarial Value of Assets as of January 1, 2022	\$5,734,986,000

**Gain / (Loss)**

13. Liability Gain/(Loss) (5) - (6)	\$13,203,000
14. Asset Gain/(Loss) (12) - (11)	\$227,550,000
15. Total Gain/(Loss) (13) + (14)	\$240,753,000



## SECTION V: SYSTEM LIABILITIES

**TABLE 14**

**Expected Benefit Payments**

<b>Year End</b>	<b>Current Inactives</b>	<b>Current Actives</b>	<b>Total</b>
2022	\$438,803,000	\$15,716,000	\$454,519,000
2023	441,296,000	25,913,000	467,209,000
2024	442,501,000	37,200,000	479,701,000
2025	443,399,000	48,037,000	491,436,000
2026	444,303,000	59,479,000	503,782,000
2027	444,496,000	71,938,000	516,434,000
2028	444,064,000	85,759,000	529,823,000
2029	443,474,000	100,065,000	543,539,000
2030	441,695,000	114,118,000	555,813,000
2031	439,475,000	128,768,000	568,243,000
2032	436,282,000	144,076,000	580,358,000
2033	432,628,000	160,487,000	593,115,000
2034	427,618,000	177,167,000	604,785,000
2035	422,101,000	192,969,000	615,070,000
2036	415,828,000	208,689,000	624,517,000
2037	409,008,000	224,308,000	633,316,000
2038	401,007,000	239,505,000	640,512,000
2039	392,236,000	254,706,000	646,942,000
2040	382,634,000	269,828,000	652,462,000
2041	372,088,000	284,524,000	656,612,000

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.



## SECTION V: SYSTEM LIABILITIES

**TABLE 15**

**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	Covered Payroll	UAAL as a Percentage of Covered Payroll
2008	\$ 5,192,000	\$ 3,958,061	\$ 0	131.2%	\$ 532,412	0.0%
2009	4,076,297	4,113,089	36,792	99.1%	536,558	6.9%
2010	4,814,402	4,269,324	0	112.8%	553,846	0.0%
2011	4,641,425	4,447,548	0	104.4%	538,218	0.0%
2012	4,404,635	4,587,915	183,280	96.0%	525,181	34.9%
2013	4,259,889	4,689,814	429,925	90.8%	523,738	82.1%
2014	4,580,729	4,831,689	250,960	94.8%	521,651	48.1%
2015	4,797,437	4,935,482	138,045	97.2%	529,939	26.0%
2016	4,899,155	5,065,141	165,986	96.7%	535,802	31.0%
2017	5,055,700	5,259,300	203,600	96.1%	583,950	34.9%
2018	5,233,486	5,819,762	586,276	89.9%	577,118	101.6%
2019	5,219,184	6,400,901	1,181,717	81.5%	581,663	203.2%
2020	5,285,205	6,597,457	1,312,252	80.1%	596,386	220.0%
2021	5,440,867	6,745,299	1,304,432	80.7%	586,369	222.5%
2022	5,734,986	6,875,927	1,140,941	83.4%	579,351	196.9%

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



## SECTION VI: SYSTEM CONTRIBUTIONS

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An amendment to the Milwaukee City Charter was adopted by the Common Council on April 30, 2013 to establish the Stable Employer Contribution Policy. Under that Policy, an actuarial contribution rate is separately calculated for three groups: Policemen, Fireman, and General Employees of the Combined Fund, and is applicable for the subsequent five-year period. The Policy is designed to:

- (a) Fully fund all current employer normal costs for active members, determined under the current funding method, which is irrespective of the funded status of the System. The result is that the Employer Normal Cost is always funded; and
- (b) Liquidate the unfunded actuarial accrued liability (UAAL), if any, over the amortization period adopted by the Board and based on methodology specified in the MCC. Effective with the January 1, 2019 actuarial valuation, the Board adopted a 25-year closed period to amortize the existing UAAL. At each subsequent valuation date, any changes to the UAAL arising from actual experience that is different than assumed will be amortized over a fixed 15-year period and any changes to the UAAL arising from changes in assumptions will be amortized over a fixed 25-year period.

These rates are established every five years following the Experience Study, performed by the actuary. The actuary establishes these rates based on the actuarial assumptions adopted by the Annuity and Pension Board of the ERS and the actuarial methods specified in the Charter. The rates are established in conformity with applicable Actuarial Standards of Practice and result in a funded status at the end of the five years that is at least actuarially equivalent to the expected funded status if contributions were based on the redevelopment of the employer contribution rates annually under the same assumptions and methods. The current stable contribution rates apply for calendar years 2018 through 2022.

The actuarially determined employer contribution consists of the employer portion of the normal cost, an allocation for administrative expense and a payment on the unfunded actuarial accrued liability. The employer normal cost is the employer's portion of the cost of benefits for active members, allocated to the current year, after reducing for the member contributions. The unfunded actuarial accrued liability payment is the contribution made in order to pay off the unfunded actuarial accrued liability over the scheduled amortization period.

Amortization methods determine the payment schedule for the unfunded actuarial accrued liability. ERS adopted a 25-year closed amortization period for the unfunded actuarial accrued liability as of January 1, 2019. A new amortization base will be created each year, based on the prior year's experience, and amortized over a closed 15-year period. Changes in the UAAL due to assumption changes, method changes or plan provision changes will be amortized over a closed 25-year period.

The exhibits in this Section show the calculation of the actuarially determined employer contribution for the current valuation. As discussed above, although the actuarial contribution rate is determined in the valuation, the actual employer contributions to ERS are derived from the Employer Stable Contribution Policy, set out in the Milwaukee City Charter.



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 16**

**Normal Cost by Group**

Total – All Funds  
(Dollars in thousands)

	General Employees	Policemen	Firemen	Total
1. Retirement Benefits	\$21,331	\$32,755	\$11,324	\$65,410
2. Withdrawal Benefits	11,517	2,767	1,373	15,657
3. Disability Benefits	1,364	2,466	4,461	8,291
4. Death Benefits	652	221	102	975
5. Total Normal Cost	\$34,864	\$38,209	\$17,260	\$90,333
6. Projected Payroll	\$369,306	\$148,844	\$61,201	\$579,351
7. Normal Cost Rate	9.44%	25.67%	28.20%	15.59%
8. Member Contribution Rate	(4.76%)	(7.00%)	(7.00%)	(5.57%)
9. Employer Normal Cost Rate	4.68%	18.67%	21.20%	10.02%



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 17A**

### **Amortization of Unfunded Actuarial Accrued Liability (UAAL)**

**Combined Fund**  
(Dollars in thousands)

The tables below provide the calculation of the new amortization base and the amortization schedule for the current year's valuation for the Combined Fund.

Calculation as of:	1/1/2022	1/1/2021
(a) Unfunded Actuarial Accrued Liability	\$ 1,190,869	\$ 1,343,102
(b) Prior Years' Outstanding Bases	\$ 1,334,661	\$ 1,341,288
(c) New Amortization Base: (a) - (b)	\$ (143,792)	\$ 1,814
(d) New Amortization Payment	\$ (13,495)	\$ 170

Amortization Base	Date Established	Original Amount	Outstanding Balance as of January 1, 2022	Remaining Amortization Period	Annual Payment*
2019 Initial UAAL Base	1/1/2019	\$ 1,204,699	\$ 1,198,147	22	\$ 89,481
2020 Experience Base	1/1/2020	142,702	134,747	13	13,934
2021 Experience Base	1/1/2021	1,814	1,767	14	174
2022 Experience Base	1/1/2022	(143,792)	(143,792)	15	(13,495)
<b>Total</b>			<b>\$ 1,190,869</b>		<b>\$ 90,094</b>

\* Reflects beginning of year timing.



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 17B**

### **Amortization of the Unfunded Actuarial Accrued Liability (UAAL)**

#### **Retirement Fund** (Dollars in thousands)

The tables below provide the calculation of the new amortization base and the amortization schedule for the current year's valuation for the Retirement Fund.

<b>Calculation as of:</b>	<b>1/1/2022</b>	<b>1/1/2021</b>
(a) Unfunded Actuarial Accrued Liability	\$ (7,128)	\$ (5,002)
(b) Prior Years' Outstanding Bases	\$ (5,027)	\$ (5,688)
(c) New Amortization Base: (a) - (b)	\$ (2,101)	\$ 686
(d) New Amortization Payment	\$ (197)	\$ 64

<b>Amortization Base</b>	<b>Date Established</b>	<b>Original Amount</b>	<b>Outstanding Balance as of January 1, 2022</b>	<b>Remaining Amortization Period</b>	<b>Annual Payment*</b>
2019 Initial UAAL Base	1/1/2019	\$ (6,764)	\$ (6,727)	22	\$ (502)
2020 Experience Base	1/1/2020	1,091	1,031	13	107
2021 Experience Base	1/1/2021	686	669	14	66
2022 Experience Base	1/1/2022	(2,101)	(2,101)	15	(197)
<b>Total</b>			<b>\$ (7,128)</b>		<b>\$ (526)</b>

\* Reflects beginning of year timing.



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 17C**

### **Amortization of the Unfunded Actuarial Accrued Liability (UAAL)**

#### **General Employees Duty Disability Fund** (Dollars in thousands)

The tables below provide the calculation of the new amortization base and the amortization schedule for the current year's valuation for the General Employees Duty Disability Fund.

<b>Calculation as of:</b>	<b>1/1/2022</b>	<b>1/1/2021</b>
(a) Unfunded Actuarial Accrued Liability	\$ (98)	\$ (81)
(b) Prior Years' Outstanding Bases	\$ (80)	\$ (81)
(c) New Amortization Base: (a) - (b)	\$ (18)	\$ 0
(d) New Amortization Payment	\$ (2)	\$ 0

<b>Amortization Base</b>	<b>Date Established</b>	<b>Original Amount</b>	<b>Outstanding Balance as of January 1, 2022</b>	<b>Remaining Amortization Period</b>	<b>Annual Payment*</b>
2019 Initial UAAL Base	1/1/2019	\$ (93)	\$ (90)	22	\$ (7)
2020 Experience Base	1/1/2020	10	10	13	1
2021 Experience Base	1/1/2021	0	0	14	0
2022 Experience Base	1/1/2022	(18)	(18)	15	(2)
<b>Total</b>			<b>\$ (98)</b>		<b>\$ (8)</b>

\* Reflects beginning of year timing.





## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 17D**

### **Amortization of the Unfunded Actuarial Accrued Liability (UAAL)**

#### **Combined Retirement & Disability Fund** (Dollars in thousands)

The tables below provide the calculation of the new amortization base and the amortization schedule for the current year's valuation for the Combined Retirement & Disability Fund.

<b>Calculation as of:</b>	<b>1/1/2022</b>	<b>1/1/2021</b>
(a) Unfunded Actuarial Accrued Liability	\$ (66)	\$ 1,448
(b) Prior Years' Outstanding Bases	\$ 1,449	\$ 2,105
(c) New Amortization Base: (a) - (b)	\$ (1,515)	\$ (657)
(d) New Amortization Payment	\$ (142)	\$ (62)

<b>Amortization Base</b>	<b>Date Established</b>	<b>Original Amount</b>	<b>Outstanding Balance as of January 1, 2022</b>	<b>Remaining Amortization Period</b>	<b>Annual Payment*</b>
2019 Initial UAAL Base	1/1/2019	\$ 1,836	\$ 1,825	22	\$ 136
2020 Experience Base	1/1/2020	280	264	13	27
2021 Experience Base	1/1/2021	(657)	(640)	14	(63)
2022 Experience Base	1/1/2022	(1,515)	(1,515)	15	(142)
<b>Total</b>			<b>\$ (66)</b>		<b>\$ (42)</b>

\* Reflects beginning of year timing.



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 18**

**Comparison of Stable Contribution Policy to the Actuarial Determined Rate for Combined Fund**  
(Dollars in thousands)

	General Employees	Police	Fire	Total
1. Active Members	\$ 7,729	\$ 1,630	\$ 695	\$ 10,054
2. Covered Compensation	\$ 367,728	\$ 148,724	\$ 61,201	\$ 577,653
3. Normal Cost				
a. Total	\$ 34,685	\$ 38,178	\$ 17,260	\$ 90,123
b. Estimated Member Contributions	17,495	10,411	4,284	32,190
c. Employer Normal Cost (a) - (b), not less than zero	\$ 17,190	\$ 27,767	\$ 12,976	\$ 57,933
4. Projected Administrative Expenses	\$ 2,600	\$ 2,449	\$ 1,034	\$ 6,083
5. Active Actuarial Accrued Liability	\$ 675,264	\$ 635,856	\$ 268,423	\$ 1,579,543
6. Assets				
a. Actuarial Value	\$ 166,161	\$ 156,463	\$ 66,050	\$ 388,674
b. Market Value (Net of Inactive Liabilities)	\$ 462,892	\$ 435,879	\$ 184,004	\$ 1,082,775
7. Unfunded Actuarial Accrued Liability				
a. Actuarial Value	\$ 509,103	\$ 479,393	\$ 202,373	\$ 1,190,869
b. Market Value (5) - (6)	\$ 212,372	\$ 199,977	\$ 84,419	\$ 496,768
8. Amortization of UAAL				
a. Actuarial Value	\$ 38,516	\$ 36,268	\$ 15,310	\$ 90,094
b. Market Value	\$ 10,667	\$ 10,044	\$ 4,240	\$ 24,951
9. Annual Contribution Payable January 1, 2022				
a. Actuarial Value	\$ 58,306	\$ 66,484	\$ 29,320	\$ 154,110
b. Market Value (3c) + (4) + (8)	\$ 30,457	\$ 40,260	\$ 18,250	\$ 88,967
10. Employer Rate as of January 1, 2022 based on				
a. Stable Contribution Policy Rate	7.48%	25.22%	26.83%	14.35%
b. Actuarial Determined Rate	15.86%	44.70%	47.91%	26.68%
c. Market-Based Actuarial Determined Rate	8.28%	27.07%	29.82%	15.40%



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 19**

### Allocation of 2022 Contribution to Agencies for Combined Fund

Group	Active Members	Covered Compensation	Employer Rate**	Dollar Amount Payable***								
				Jan 1, 2022	June 1, 2022	July 1, 2022	Aug 1, 2022	Sept 1, 2022	Oct 1, 2022	Nov 1, 2022	Dec 1, 2022	Jan 31, 2023
General City*	3,112	\$177,898,040	7.48%	\$13,306,773	\$13,713,857	\$13,796,756	\$13,880,156	\$13,964,060	\$14,048,472	\$14,133,394	\$14,218,829	\$14,391,252
Water Department	328	18,947,273	7.48%	1,417,256	1,460,613	1,469,442	1,478,325	1,487,261	1,496,251	1,505,296	1,514,395	1,532,759
School Board****	3,844	136,366,235	7.48%	10,200,194	10,512,241	10,575,787	10,639,717	10,704,033	10,768,738	10,833,834	10,899,324	11,031,493
Milwaukee Technical College	0	0	7.48%	0	0	0	0	0	0	0	0	0
Sewerage Commission	229	20,811,504	7.48%	1,556,700	1,604,323	1,614,021	1,623,778	1,633,594	1,643,469	1,653,404	1,663,399	1,683,570
Veolia	11	940,467	7.48%	70,347	72,499	72,937	73,378	73,822	74,268	74,717	75,169	76,081
Wisconsin Center District	92	5,516,035	7.48%	412,599	425,221	427,791	430,377	432,979	435,596	438,229	440,878	446,224
Housing Authority	113	7,248,189	7.48%	542,165	558,751	562,129	565,527	568,946	572,385	575,845	579,326	586,351
Policemen	1,630	148,723,931	25.22%	37,508,175	38,655,633	38,889,303	39,124,386	39,360,890	39,598,823	39,838,195	40,079,014	40,565,027
Firemen	<u>695</u>	<u>61,200,923</u>	26.83%	<u>16,420,208</u>	<u>16,922,539</u>	<u>17,024,834</u>	<u>17,127,748</u>	<u>17,231,284</u>	<u>17,335,446</u>	<u>17,440,237</u>	<u>17,545,662</u>	<u>17,758,427</u>
Total	10,054	\$577,652,597		\$81,434,417	\$83,925,677	\$84,433,000	\$84,943,392	\$85,456,869	\$85,973,448	\$86,493,151	\$87,015,996	\$88,071,184

\* Includes Elected Officials and Redevelopment Authority

\*\* Rates apply to Covered Compensation as of the beginning of the year, then credited with interest to payable date.

\*\*\* Actual contribution requirement will be adjusted for the actual payment date of the contribution.

\*\*\*\* Breakdown of contributions for MPS by normal cost and past service portion as follow:

Payable at:	Jan 1, 2022	June 1, 2022	July 1, 2022	Aug 1, 2022	Sept 1, 2022	Oct 1, 2022	Nov 1, 2022	Dec 1, 2022	Jan 31, 2023
Normal Cost	6,012,472	6,196,407	6,233,864	6,271,547	6,309,458	6,347,598	6,385,969	6,424,572	6,502,479
Past Service Portion	<u>4,187,722</u>	<u>4,315,834</u>	<u>4,341,923</u>	<u>4,368,170</u>	<u>4,394,575</u>	<u>4,421,140</u>	<u>4,447,865</u>	<u>4,474,752</u>	<u>4,529,014</u>
Total	10,200,194	10,512,241	10,575,787	10,639,717	10,704,033	10,768,738	10,833,834	10,899,324	11,031,493



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 20**

### Allocation of 2023 Contribution to Agencies for Combined Fund

Group	Estimated Active Members	Estimated Covered Compensation	Employer Rate**	Dollar Amount Payable***								
				Jan 1, 2023	June 1, 2023	July 1, 2023	Aug 1, 2023	Sept 1, 2023	Oct 1, 2023	Nov 1, 2023	Dec 1, 2023	Jan 31, 2024
General City*	3,112	\$181,456,001	7.48%	\$13,572,909	\$13,988,134	\$14,072,691	\$14,157,759	\$14,243,342	\$14,329,442	\$14,416,062	\$14,503,206	\$14,679,077
Water Department	328	19,326,218	7.48%	1,445,601	1,489,825	1,498,831	1,507,891	1,517,006	1,526,176	1,535,402	1,544,683	1,563,414
School Board*****	3,844	139,093,560	7.48%	10,404,198	10,722,486	10,787,303	10,852,511	10,918,114	10,984,113	11,050,511	11,117,310	11,252,123
Milwaukee Technical College	0	0	7.48%	0	0	0	0	0	0	0	0	0
Sewerage Commission	229	21,227,734	7.48%	1,587,835	1,636,410	1,646,302	1,656,254	1,666,266	1,676,338	1,686,471	1,696,666	1,717,240
Veolia	11	959,276	7.48%	71,754	73,949	74,396	74,846	75,298	75,753	76,211	76,672	77,602
Wisconsin Center District	92	5,626,356	7.48%	420,851	433,726	436,348	438,986	441,640	444,310	446,996	449,698	455,151
Housing Authority	113	7,393,153	7.48%	553,008	569,926	573,371	576,837	580,324	583,832	587,361	590,912	598,078
Policemen	1,630	151,698,410	25.22%	38,258,339	39,428,747	39,667,091	39,906,875	40,148,109	40,390,801	40,634,960	40,880,595	41,376,329
Firemen	<u>695</u>	<u>62,424,941</u>	26.83%	<u>16,748,612</u>	<u>17,260,989</u>	<u>17,365,330</u>	<u>17,470,302</u>	<u>17,575,909</u>	<u>17,682,154</u>	<u>17,789,041</u>	<u>17,896,574</u>	<u>18,113,595</u>
Total	10,054	\$589,205,649		\$83,063,107	\$85,604,192	\$86,121,663	\$86,642,261	\$87,166,008	\$87,692,919	\$88,223,015	\$88,756,316	\$89,832,609

\* Includes Elected Officials and Redevelopment Authority

\*\* Rates apply to Covered Compensation as of the beginning of the year, then credited with interest to payable date.

\*\*\* Actual contribution requirement will be adjusted for the actual payment date of the contribution.

\*\*\*\*\* The amounts shown above are estimates of the employer contribution requirements due by January 31, 2024. The actual employer contribution requirements due by January 31, 2024 will be based on the results of the January 1, 2023 actuarial valuation, which is scheduled to be approved at the June 2023 Board meeting.

To the extent that an employer wishes to contribute before the report is approved, the amounts above can serve as a guide. To the extent that the amount contributed is less than the final contribution requirements, the employer will be billed for the remainder, which is to be paid by the end of the year. To the extent that the amount already contributed is more than the required contribution, the employer will receive a credit, with interest, to the contribution for next year.

\*\*\*\*\* Breakdown of contributions for MPS by normal cost and past service portion as follow:

Payable at:	Jan 1, 2023	June 1, 2023	July 1, 2023	Aug 1, 2023	Sept 1, 2023	Oct 1, 2023	Nov 1, 2023	Dec 1, 2023	Jan 31, 2024
Normal Cost	6,132,721	6,320,335	6,358,541	6,396,978	6,435,647	6,474,550	6,513,688	6,553,063	6,632,528
Past Service Portion	<u>4,271,477</u>	<u>4,402,151</u>	<u>4,428,762</u>	<u>4,455,533</u>	<u>4,482,467</u>	<u>4,509,563</u>	<u>4,536,823</u>	<u>4,564,247</u>	<u>4,619,595</u>
Total	10,404,198	10,722,486	10,787,303	10,852,511	10,918,114	10,984,113	11,050,511	11,117,310	11,252,123



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 21**

**Determination of Employer Contribution to Retirement Fund**  
(Dollars in thousands)

	General Employees	Policemen	Firemen	Total
1. Active Members	11	0	0	11
2. Covered Compensation	\$ 341	\$ 0	\$ 0	\$ 341
3. Normal Cost				
a. Total	\$ 48	\$ 0	\$ 0	\$ 48
b. Estimated Member Contributions	19	0	0	19
c. Employer Normal Cost (a) - (b), not less than zero	\$ 29	\$ 0	\$ 0	\$ 29
4. Projected Administrative Expenses	\$ 0	\$ 0	\$ 0	\$ 0
5. Active Actuarial Accrued Liability	\$ 1,337	\$ 0	\$ 0	\$ 1,337
6. Assets				
a. Actuarial Value	\$ 8,465	\$ 0	\$ 0	\$ 8,465
b. Market Value (Net of Inactive Liabilities)	\$ 9,929	\$ 0	\$ 0	\$ 9,929
7. Unfunded Actuarial Accrued Liability				
a. Actuarial Value	\$ (7,128)	\$ 0	\$ 0	\$ (7,128)
b. Market Value (5) - (6)	\$ (8,592)	\$ 0	\$ 0	\$ (8,592)
8. Amortization of UAAL				
a. Actuarial Value	\$ (526)	\$ 0	\$ 0	\$ (526)
b. Market Value	\$ (663)	\$ 0	\$ 0	\$ (663)
9. Annual Contribution Payable January 31, 2023				
a. Actuarial Value	\$ 0	\$ 0	\$ 0	\$ 0
b. Market Value (3c) + (4) + (8), with interest to 01/31/2023	\$ 0	\$ 0	\$ 0	\$ 0



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 22**

**Determination of Employer Contribution to Duty Disability Fund**  
(Dollars in thousands)

	General Employees	Policemen	Firemen	Total
1. Active Members	11	0	0	11
2. Covered Compensation	\$ 341	\$ 0	\$ 0	\$ 341
3. Normal Cost				
a. Total	\$ 0	\$ 0	\$ 0	\$ 0
b. Estimated Member Contributions	0	0	0	0
c. Employer Normal Cost	\$ 0	\$ 0	\$ 0	\$ 0
(a) - (b), not less than zero				
4. Projected Administrative Expenses	\$ 0	\$ 0	\$ 0	\$ 0
5. Active Actuarial Accrued Liability	\$ 11	\$ 0	\$ 0	\$ 11
6. Actuarial Value of Assets	\$ 109	\$ 0	\$ 0	\$ 109
7. Unfunded Actuarial Accrued Liability (5) - (6)	\$ (98)	\$ 0	\$ 0	\$ (98)
8. Amortization of UAAL	\$ (8)	\$ 0	\$ 0	\$ (8)
9. Annual Contribution Payable January 31, 2023 (3c) + (4) + (8), with interest to 01/31/2023	\$ 0	\$ 0	\$ 0	\$ 0



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 23**

**Determination of Employer Contribution to Heart and Lung Fund**  
(Dollars in thousands)

	Amount
1. Active Members	0
2. Covered Compensation	\$ 0
3. Normal Cost	
a. Total	\$ 0
b. Estimated Member Contributions	0
c. Employer Normal Cost	\$ 0
(a) - (b), not less than zero	
4. Projected Administrative Expenses	\$ 0
5. Active Actuarial Accrued Liability	\$ 0
6. Actuarial Value of Assets	\$ 0
7. Unfunded Actuarial Accrued Liability (5) - (6)	\$ 0
8. Full Funding Limit (3) + (4) + (7), not less than zero, with interest to 01/31/2023	\$ 0
9. Annual Contribution Payable January 31, 2023	\$ 0



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 24**

**Allocation of 2022 Contribution to Agencies for the Retirement, Duty Disability and Heart & Lung Funds**

Group	Active Members	Covered Compensation	Fund			January 31, 2023	
			Retirement	Duty Disability	Heart & Lung	Total Due	% of Pay
General City	2	\$50,991	\$0	\$0	\$0	\$0	0.00%
Water Department	0	0	0	0	0	0	0.00%
School Board	9	290,376	0	0	0	0	0.00%
Milwaukee Technical College	0	0	0	0	0	0	0.00%
Sewerage Commission	0	0	0	0	0	0	0.00%
Veolia	0	0	0	0	0	0	0.00%
Wisconsin Center District	0	0	0	0	0	0	0.00%
Housing Authority	0	0	0	0	0	0	0.00%
Policemen	0	0	0	0	0	0	0.00%
Firemen	0	0	0	0	0	0	0.00%
Total	11	\$341,367	\$0	\$0	\$0	\$0	0.00%

Note: Redevelopment Authority members are included in the General City group.





## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 25**

**Determination of Employer Contribution to Combined Retirement and Disability Fund**  
(Dollars in thousands)

	General Employees	Policemen	Firemen	Total
1. Active Members	28	1	0	29
2. Covered Compensation	\$ 1,237	\$ 120	\$ 0	\$ 1,357
3. Normal Cost				
a. Total	\$ 131	\$ 31	\$ 0	\$ 162
b. Estimated Member Contributions	66	8	0	74
c. Employer Normal Cost (a) - (b), not less than zero	\$ 65	\$ 23	\$ 0	\$ 88
4. Projected Administrative Expenses	\$ 0	\$ 0	\$ 0	\$ 0
5. Active Actuarial Accrued Liability	\$ 3,624	\$ 906	\$ 0	\$ 4,530
6. Assets				
a. Actuarial Value	\$ 3,677	\$ 919	\$ 0	\$ 4,596
b. Market Value (Net of Inactive Liabilities)	\$ 4,310	\$ 1,078	\$ 0	\$ 5,388
7. Unfunded Actuarial Accrued Liability				
a. Actuarial Value	\$ (53)	\$ (13)	\$ 0	\$ (66)
b. Market Value (5) - (6)	\$ (686)	\$ (172)	\$ 0	\$ (858)
8. Amortization of UAAL				
a. Actuarial Value	\$ (34)	\$ (8)	\$ 0	\$ (42)
b. Market Value	\$ (93)	\$ (23)	\$ 0	\$ (116)
9. Annual Contribution Payable January 31, 2023				
a. Actuarial Value	\$ 34	\$ 16	\$ 0	\$ 50
b. Market Value (3c) + (4) + (8), with interest to 01/31/2023	\$ 0	\$ 0	\$ 0	\$ 0



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 26**

**Allocation of 2022 Contribution to Employee Groups for Combined Retirement and Disability Fund**

Group	Active Members	Covered Compensation	Fund		January 31, 2023	
			Combined Retirement & Disability	Heart & Lung	Total Due	% of Pay
General City	7	\$414,599	\$11,395	\$0	\$11,395	2.75%
Water Department	0	0	0	0	0	0.00%
School Board*	18	703,427	19,333	0	19,333	2.75%
Milwaukee Technical College	0	0	0	0	0	0.00%
Sewerage Commission	0	0	0	0	0	0.00%
Veolia	0	0	0	0	0	0.00%
Wisconsin Center District	1	3,707	102	0	102	2.75%
Housing Authority	2	115,331	3,170	0	3,170	2.75%
Policemen	1	119,774	16,000	0	16,000	13.36%
Firemen	0	0	0	0	0	0.00%
Total	29	\$1,356,838	\$50,000	\$0	\$50,000	3.69%

Note: Redevelopment Authority members are included in the General City group.

\* Breakdown of contributions for MPS by normal cost and past service portion are as follows:

Payable at:	January 31, 2023
Normal Cost	41,047
Past Service Portion	-21,714
Total	19,333



## SECTION VI: SYSTEM CONTRIBUTIONS

**TABLE 27**

### **Contribution Requirements for FY 2022 by Group and Fund**

Amounts shown are calculated as of January 31, 2023. Actual contribution requirements will be adjusted for the actual payment date of the contribution.

<b>Fund</b>	<b>General Employees</b>	<b>Policemen</b>	<b>Firemen</b>	<b>Total</b>
Combined Fund	\$ 29,747,730	\$ 40,565,027	\$ 17,758,427	\$ 88,071,184
Retirement Fund	0	0	0	0
Duty Disability Fund	0	0	0	0
Heart & Lung Fund	N/A	N/A	0	0
Combined Retirement & Disability Fund	34,000	16,000	0	50,000
<b>Total Contribution</b>	<b>\$ 29,781,730</b>	<b>\$ 40,581,027</b>	<b>\$ 17,758,427</b>	<b>\$ 88,121,184</b>
Covered Compensation	\$ 369,306,000	\$ 148,844,000	\$ 61,201,000	\$ 579,351,000
Total Contribution as a Percentage of Covered Compensation	8.06%	27.26%	29.02%	15.21%

Note: Reflects the Stable Contribution Policy for the Combined Fund.

## SECTION VII: RISK CONSIDERATIONS

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 Employees' Retirement System of the City of Milwaukee (System).

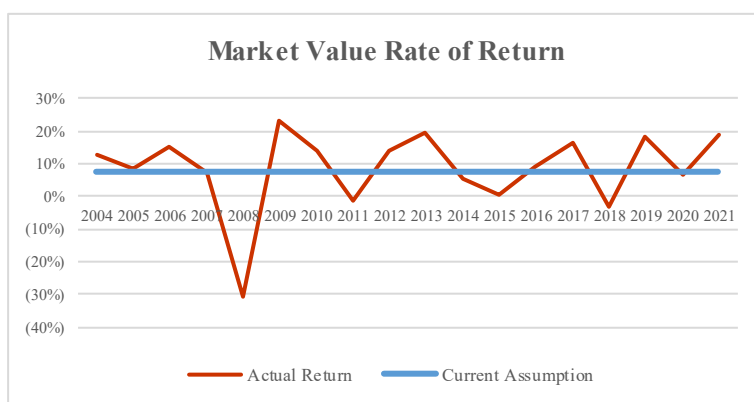
While actuarial assumptions allow for a projection of how future contributions and investment returns will meet the cash flow needs for future benefit payments, actual experience will not unfold exactly as anticipated by the assumptions. In this section, we discuss some of the risk factors that can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates.

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.

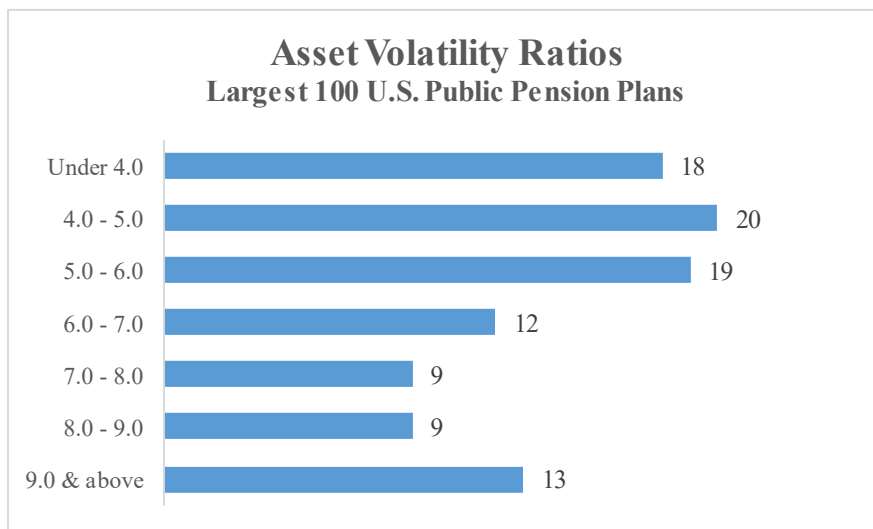
The most significant risk factor for most plans is investment return because of the volatility of the returns and the size of plan assets compared to payroll (see Table 28). A perusal of historical rates over 10-20 years reveals that the actual return each year is rarely close to the average return for 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 18 years.





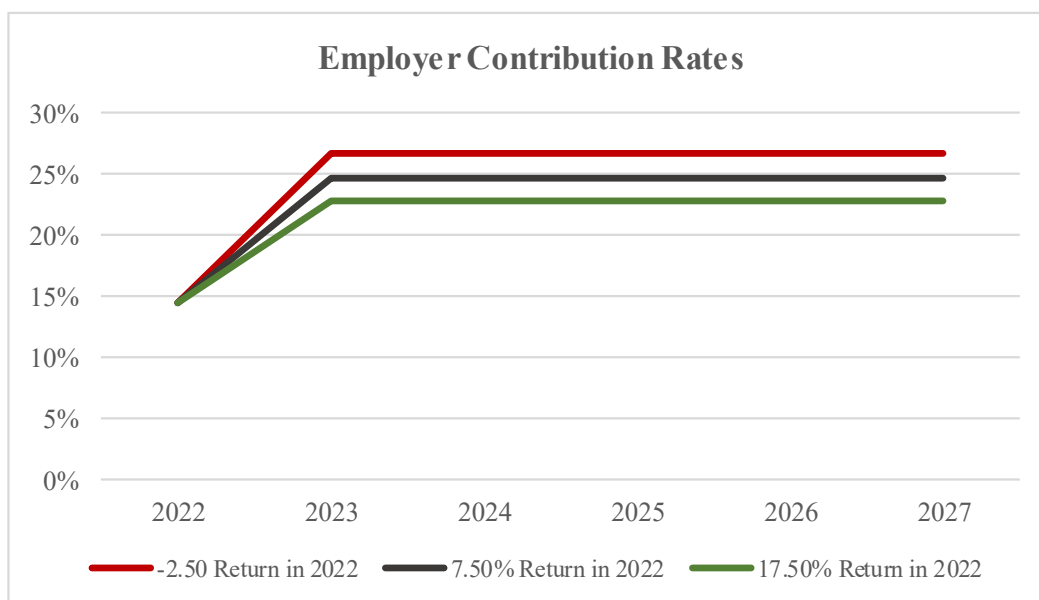
## SECTION VII: RISK CONSIDERATIONS

The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the System. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions because of the magnitude of the increase. In the January 1, 2022 valuation, the asset volatility ratio was 11.10. Due to ERS' maturity, the asset volatility ratio is higher than the ratio for most large public plans, as shown in the following chart.



Note: Reflects most recent available data, compiled by the Center for Retirement Research at Boston College.

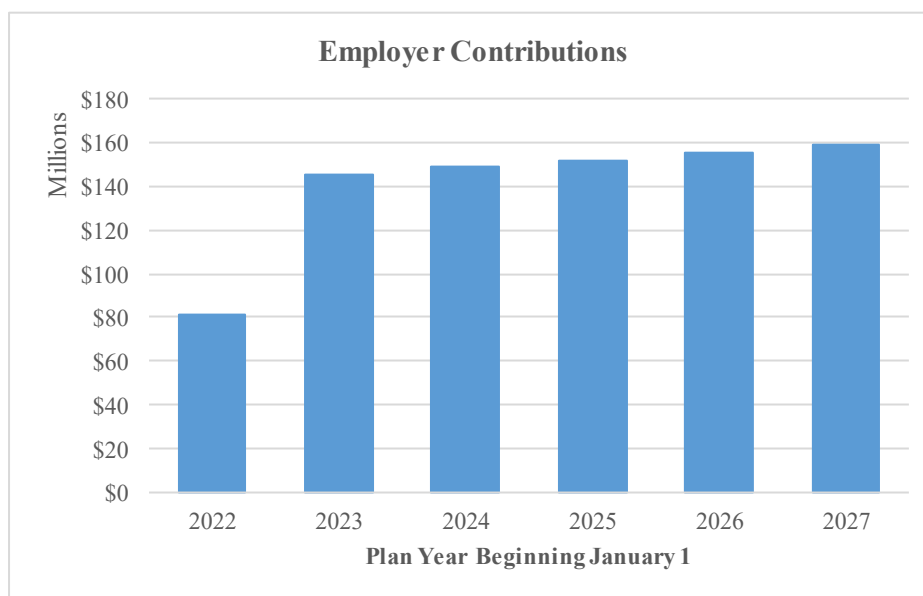
This metric means the same investment experience would move the actuarially determined contribution more significantly for CMERS as compared to most other public plans. For example, a return that is 10% lower than assumed (or -2.50%) equates to an actuarial loss of about \$643 million, or 111% of payroll. Given the asset volatility ratio and the amortization period of 15 years for actuarial gains and losses, an increase of 10.80% in the contribution rate, about \$63 million, over the next 15 years would be required to compensate for an investment return that is 10% below the assumed rate of return.





## SECTION VII: RISK CONSIDERATIONS

The Stable Contribution Policy was designed to create stability in the actual employer contribution rates by avoiding annual adjustments that are the result of actuarial experience different than anticipated by the actuarial assumptions over the stable “five-year” period. The stable contribution rate is usually set after the regular Experience Study is performed every five years and is set at a rate that results in the System being at the same funded ratio as if the projected actuarial contribution rates were made. However, if changes to the actuarial assumptions are made “off cycle” or a significant decline in the financial markets were to occur without a subsequent rebound, it could create a situation where the actual contributions to the System under the Stable Contribution Policy are much lower than the actuarially determined amounts. If this were to occur, as happened in 2019, the System’s funded status could be negatively impacted for a number of years. The difference between the actuarial contribution rate and the stable contribution policy rate each year results in an increase in the unfunded actuarial accrued liability and a corresponding increase in the UAAL contribution rate and actuarial contribution rate. If this persists for a period of years, it can result in a large adjustment to the contribution rate under the Stable Contribution Policy when the reset occurs. The following graph illustrates the estimate increase in the employer contribution rate in 2023:



Although we would expect this to happen infrequently, it could be problematic if the employers’ resources are limited and such contribution increases cannot be managed.

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.



## SECTION VII: RISK CONSIDERATIONS

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Finally, the unfunded actuarial accrued liability is amortized as a level percentage of payroll. The underlying assumption used in developing the payment schedule assumes an increasing payroll over time which is dependent on a stable employment level, i.e., active member count remains the same. When payroll does not grow as expected, the UAAL contribution rate will be higher than expected even if the dollar amount of the payment is the same as scheduled. The assumption for the anticipated increase in covered payroll has been declining and is currently 2.0%. A lower assumed growth in the covered payroll reduces this risk for the System's funding.

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.



## SECTION VII: RISK CONSIDERATIONS

**TABLE 28**

**Historical Asset Volatility Ratios**  
(Dollars in thousands)

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the System is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the System. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses by increasing contributions. In the January 1, 2022 valuation, the asset volatility ratio was 11.10. Therefore, underperforming the investment return assumption by 10.00% (i.e., earn -2.50% for one year) is equivalent to about \$643 million, or 111% of payroll, and would ultimately result in a 10.80% increase to the ADC, or about \$63 million.

ERS is a very mature system as is evident by the fact this is the eighty-fourth valuation of the System. Therefore, this metric has held fairly stable over this entire period where often the trend is an increasing AVR as the System becomes more mature and its funding improves (assets grow more rapidly than covered payroll). However, favorable investment experience and a declining active membership over the last few years has caused the AVR to increase recently.

<b>Actuarial Valuation Date</b>	<b>Market Value of Assets</b>	<b>Covered Payroll</b>	<b>Asset Volatility Ratio</b>	<b>Increase in ADC with a Return 10% Lower than Assumed*</b>
1/1/2010	\$4,020,640	\$553,846	7.26	7.06%
1/1/2011	4,322,384	538,218	8.03	7.81%
1/1/2012	4,197,264	525,181	7.99	7.77%
1/1/2013	4,375,197	523,738	8.35	8.13%
1/1/2014	4,949,534	521,651	9.49	9.23%
1/1/2015	4,953,150	529,939	9.35	9.10%
1/1/2016	4,752,308	535,802	8.87	8.63%
1/1/2017	4,886,669	583,950	8.37	8.14%
1/1/2018	5,396,527	577,118	9.35	9.10%
1/1/2019	4,950,881	581,663	8.51	8.28%
1/1/2020	5,557,077	596,386	9.32	9.07%
1/1/2021	5,649,734	586,369	9.64	9.38%
1/1/2022	6,431,356	579,351	11.10	10.80%

\* The impact on the Actuarial Determined Contribution (ADC) reflects a 15-year amortization of the actuarial gain/loss and no asset smoothing.





## SECTION VII: RISK CONSIDERATIONS

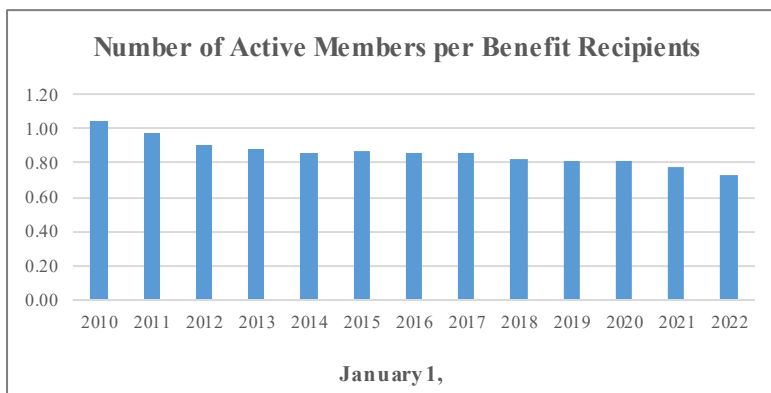
**TABLE 29**

### **RATIO OF ACTIVE TO RETIREE COUNT**

The payment on the unfunded actuarial accrued liability is calculated anticipating covered payroll increases each year in the future. To the extent actual payroll does not meet the assumed rate of increase (currently 2.0%), a higher rate of pay is necessary to collect the same dollar amount of payment on the unfunded actuarial accrued liability. A reduction in the number of active members usually restricts the growth of covered payroll. ERS has experienced about a 13% decline in the active membership over the past 12 years which can create more volatility (risk) on the contributions to fund the System.

<b>Valuation Date January 1</b>	<b>Active Count</b>	<b>In-Pay Count</b>	<b>Active/ In-Pay</b>
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

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.





## SECTION VII: RISK CONSIDERATIONS

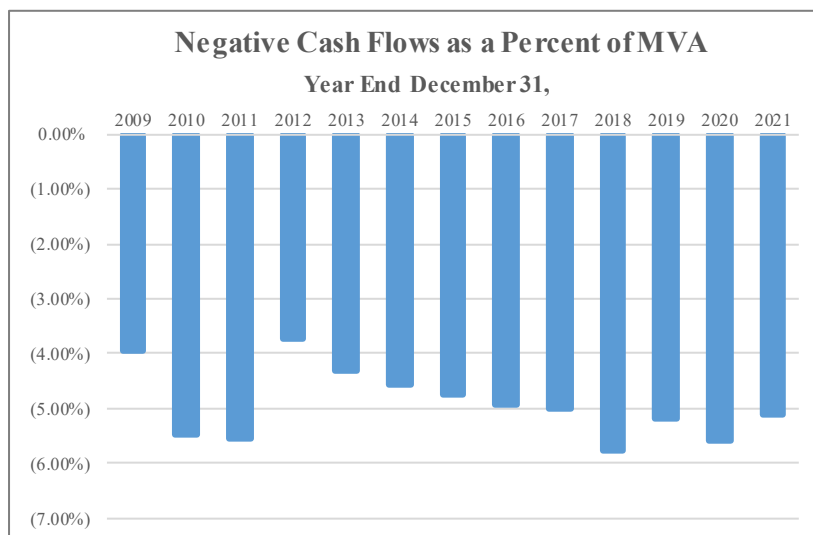
**TABLE 30**

### **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 percent of the market value of assets, the greater the risk to the System's funding.

<b>Year End</b>	<b>Market Value of Assets (MVA)</b>	<b>Contributions</b>	<b>Benefit Payments and Expenses</b>	<b>Net Cash Flow</b>	<b>Net Cash Flow as a Percent of MVA</b>
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%)





## SECTION VII: RISK CONSIDERATIONS

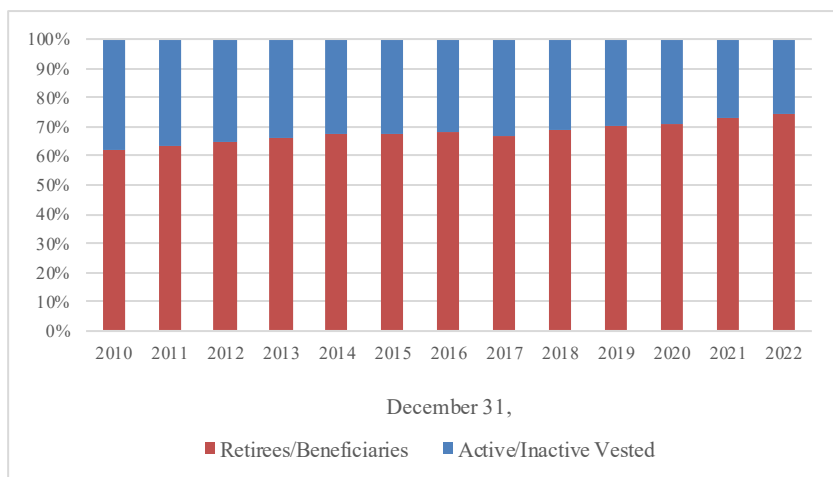
TABLE 31

### LIABILITY MATURITY MEASUREMENTS

(Dollars in thousands)

Most public sector retirement systems have been in operation for many years. As a result, they have aging plan populations, and in some cases declining active populations, resulting in an increasing ratio of retirees to active members and a growing percentage of retiree liability. With more of the total liability residing with retirees, investment volatility has a greater impact on the funding of the system since it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread the cost.

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%





## SECTION VII: RISK CONSIDERATIONS

**TABLE 32**

**Comparison of Valuation Results for the Combined Fund Under Alternate Investment Return Assumptions**  
(Dollars in thousands)

This exhibit compares the key January 1, 2022 valuation results for the Combined Fund under five (5) different investment return assumptions to illustrate the impact of different assumptions on the funding of the System. Note that only the investment return assumption is changed, as identified in the heading below. All other assumptions are unchanged for purposes of this analysis.

<b>Investment Return Assumption</b>	<b>6.50%</b>	<b>7.00%</b>	<b>7.50%</b>	<b>8.00%</b>	<b>8.50%</b>
<b>Contributions</b>					
- Total Normal Cost	\$112,871	\$100,641	\$90,123	\$81,043	\$73,185
- Member Contributions	(32,190)	(32,190)	(32,190)	(32,190)	(32,190)
- Employer Normal Cost	\$80,681	\$68,451	\$57,933	\$48,853	\$40,995
- Projected Administrative Expenses	\$6,083	\$6,083	\$6,083	\$6,083	\$6,083
- Unfunded Actuarial Accrued Liability	\$135,422	\$112,648	\$90,094	\$67,730	\$45,534
<b>Total Employer Contribution</b>	<b>\$222,186</b>	<b>\$187,182</b>	<b>\$154,110</b>	<b>\$122,666</b>	<b>\$92,612</b>
<b>Actuarial Determined Employer Rate</b>	<b>38.46%</b>	<b>32.40%</b>	<b>26.68%</b>	<b>21.24%</b>	<b>16.03%</b>
<b>Actuarial Value of Assets</b>	<b>\$5,673,797</b>	<b>\$5,673,797</b>	<b>\$5,673,797</b>	<b>\$5,673,797</b>	<b>\$5,673,797</b>
<b>Actuarial Accrued Liability</b>	<b>7,679,982</b>	<b>7,253,004</b>	<b>6,864,666</b>	<b>6,510,645</b>	<b>6,187,127</b>
<b>Unfunded Actuarial Accrued Liability</b>	<b>\$2,006,185</b>	<b>\$1,579,207</b>	<b>\$1,190,869</b>	<b>\$836,848</b>	<b>\$513,330</b>
<b>Funded Ratio</b>	<b>73.9%</b>	<b>78.2%</b>	<b>82.7%</b>	<b>87.1%</b>	<b>91.7%</b>

Note: All other assumptions are unchanged for purposes of this sensitivity analysis.



## SECTION VII: RISK CONSIDERATIONS

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## APPENDIX A: MEMBERSHIP DATA

### MEMBER DATA RECONCILIATION

January 1, 2021 to January 1, 2022

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.

	Active Members	Refund Payable	Deferred Vested	Benefit Recipients			Total
				Disabled Members	Retirees	Beneficiaries	
Participants as of January 1, 2021	10,567	1,796	3,188	532	11,034	2,081	29,198
New Participants	943	131	44	0	0	158	1,276
Return to Work	62	(32)	(30)	0	0	0	0
Terminations							
- Refunded	(169)	(235)	(54)	0	0	0	(458)
- Refund Payable	(494)	494	0	0	0	0	0
- Deferred Vested	(414)	0	414	0	0	0	0
Service Retirements							
- Annuity	(370)	0	(168)	0	538	0	0
- Lump Sum	(7)	0	(14)	0	0	0	(21)
Disabilities							
- Duty-Related	0	0	(1)	1	0	0	0
- Non Duty-Related	(4)	0	(1)	5	0	0	0
Deaths	(20)	(2)	(18)	(18)	(381)	(185)	(624)
Benefit Payments Stopped	0	0	0	0	0	(7)	(7)
Reached Service Retirement Conversion Age*	0	0	0	(28)	28	0	0
Data Adjustments	0	(3)	3	1	(1)	0	0
Participants as of January 1, 2022	10,094	2,149	3,363	493	11,218	2,047	29,364

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, 2022.

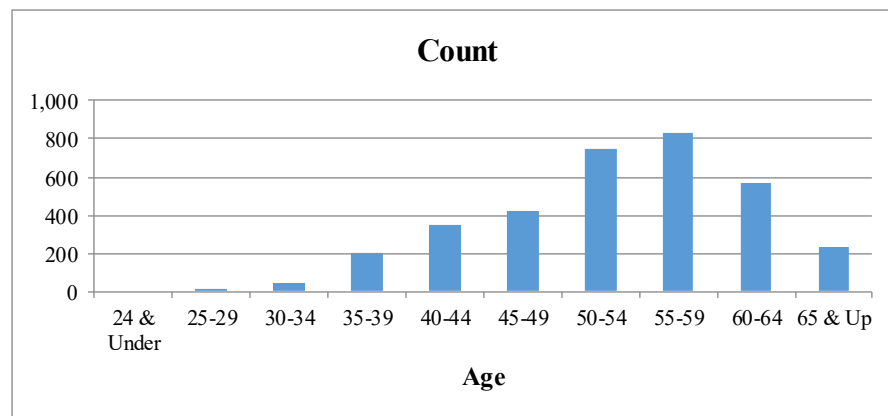
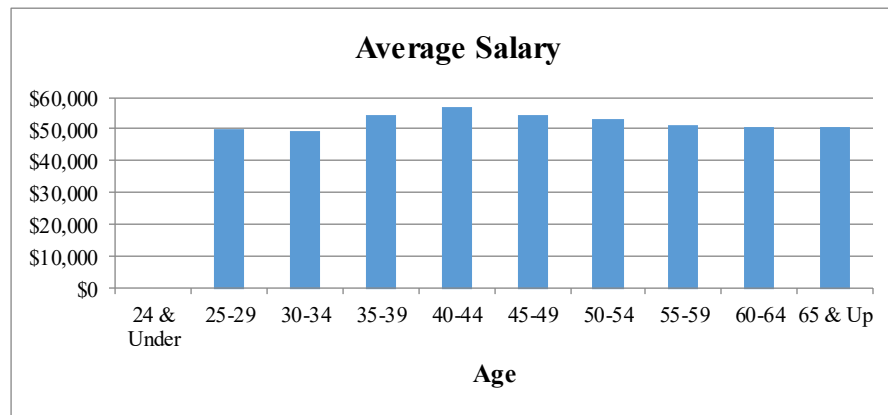


## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF ACTIVE MEMBERS as of January 1, 2022

#### General Employees – Tier 1

<u>Age</u>	<u>Count</u>			<u>Reported FY 2021 Earnings</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
24 & Under	0	0	0	\$ 0	\$ 0	\$ 0
25-29	3	0	3	149,120	0	149,120
30-34	22	27	49	1,228,021	1,202,620	2,430,641
35-39	104	101	205	6,492,183	4,662,388	11,154,571
40-44	160	185	345	9,935,875	9,614,310	19,550,185
45-49	203	223	426	13,090,091	9,995,962	23,086,053
50-54	367	385	752	22,621,848	17,465,443	40,087,291
55-59	388	440	828	23,338,683	19,175,329	42,514,012
60-64	257	308	565	16,103,124	12,468,190	28,571,314
65 & Up	<u>105</u>	<u>133</u>	<u>238</u>	<u>6,617,578</u>	<u>5,406,889</u>	<u>12,024,467</u>
Total	1,609	1,802	3,411	\$ 99,576,523	\$ 79,991,131	\$ 179,567,654



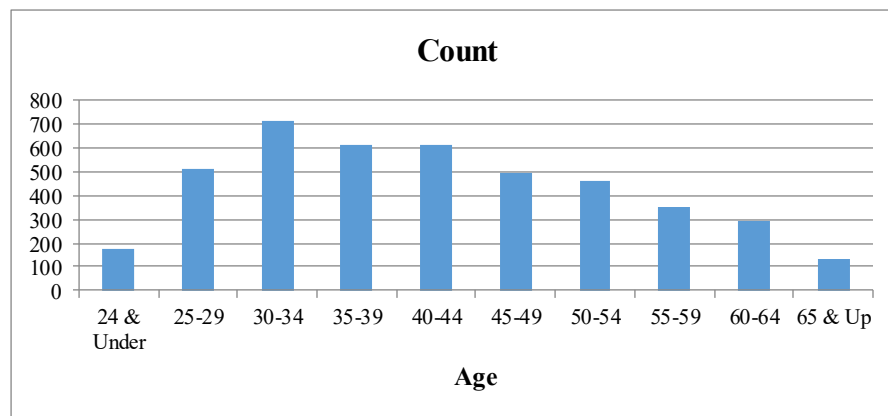
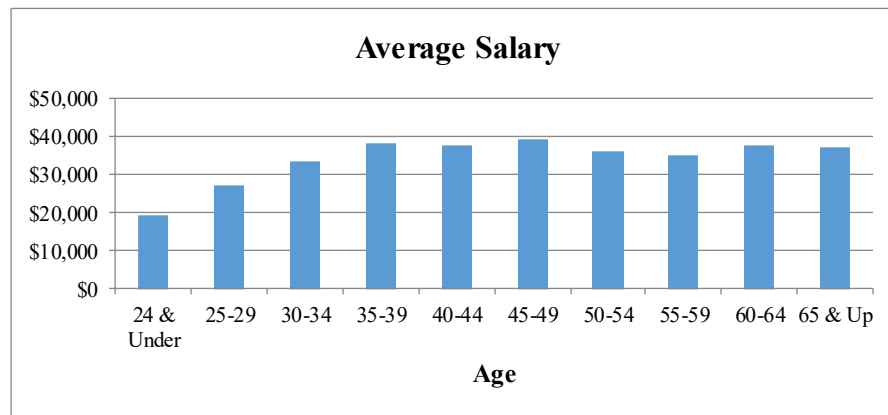


## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF ACTIVE MEMBERS as of January 1, 2022

#### General Employees – Tier 2

<u>Age</u>	<u>Count</u>			<u>Reported FY 2021 Earnings</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
24 & Under	83	95	178	\$ 1,746,606	\$ 1,661,666	\$ 3,408,272
25-29	205	305	510	5,920,626	7,796,226	13,716,852
30-34	272	436	708	10,925,662	12,495,861	23,421,523
35-39	239	375	614	10,693,227	12,612,525	23,305,752
40-44	246	369	615	11,275,707	11,893,213	23,168,920
45-49	198	298	496	9,013,156	10,296,424	19,309,580
50-54	209	254	463	8,970,711	7,620,127	16,590,838
55-59	146	204	350	6,007,573	6,251,168	12,258,741
60-64	147	143	290	6,480,990	4,378,727	10,859,717
65 & Up	<u>60</u>	<u>73</u>	<u>133</u>	<u>2,798,432</u>	<u>2,134,284</u>	<u>4,932,716</u>
Total	1,805	2,552	4,357	\$ 73,832,690	\$ 77,140,221	\$ 150,972,911





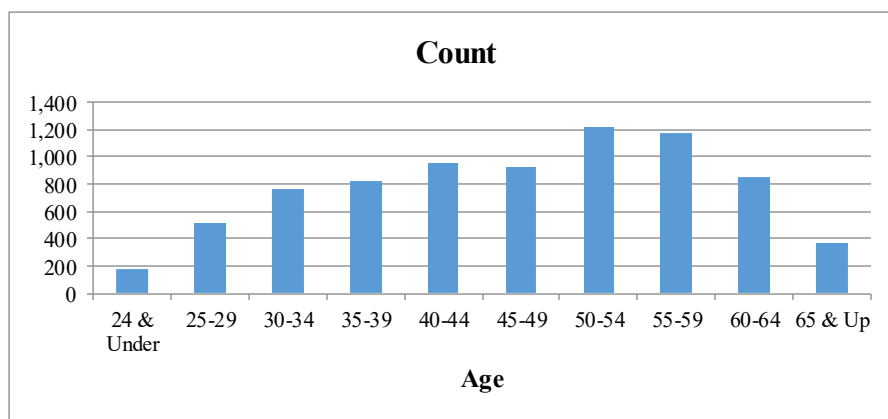
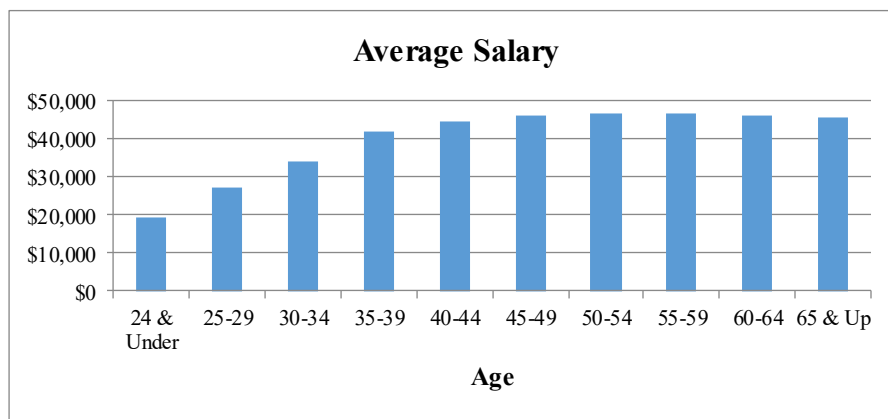


## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF ACTIVE MEMBERS as of January 1, 2022

#### General Employees – Total

Age	Count			Reported FY 2021 Earnings		
	Male	Female	Total	Male	Female	Total
24 & Under	83	95	178	\$ 1,746,606	\$ 1,661,666	\$ 3,408,272
25-29	208	305	513	6,069,746	7,796,226	13,865,972
30-34	294	463	757	12,153,683	13,698,481	25,852,164
35-39	343	476	819	17,185,410	17,274,913	34,460,323
40-44	406	554	960	21,211,582	21,507,523	42,719,105
45-49	401	521	922	22,103,247	20,292,386	42,395,633
50-54	576	639	1,215	31,592,559	25,085,570	56,678,129
55-59	534	644	1,178	29,346,256	25,426,497	54,772,753
60-64	404	451	855	22,584,114	16,846,917	39,431,031
65 & Up	<u>165</u>	<u>206</u>	<u>371</u>	<u>9,416,010</u>	<u>7,541,173</u>	<u>16,957,183</u>
Total	3,414	4,354	7,768	\$ 173,409,213	\$ 157,131,352	\$ 330,540,565



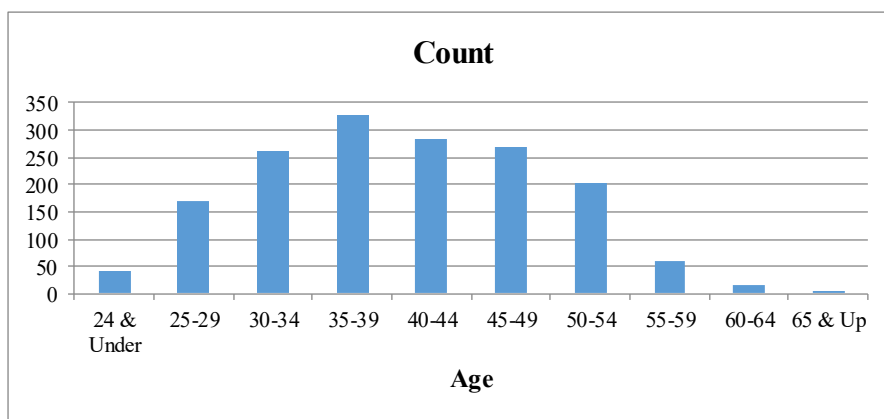


## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF ACTIVE MEMBERS as of January 1, 2022

#### Policemen

Age	Count			Reported FY 2021 Earnings		
	Male	Female	Total	Male	Female	Total
24 & Under	33	9	42	\$ 1,318,539	\$ 230,608	\$ 1,549,147
25-29	141	30	171	10,406,032	2,058,586	12,464,618
30-34	225	35	260	17,205,997	2,679,971	19,885,968
35-39	278	50	328	23,074,914	4,284,388	27,359,302
40-44	228	57	285	20,136,389	4,938,414	25,074,803
45-49	229	39	268	20,503,896	3,545,445	24,049,341
50-54	169	33	202	15,128,665	3,014,617	18,143,282
55-59	49	10	59	4,294,665	970,594	5,265,259
60-64	13	2	15	1,148,723	187,375	1,336,098
65 & Up	<u>1</u>	<u>0</u>	<u>1</u>	<u>84,403</u>	<u>0</u>	<u>84,403</u>
Total	1,366	265	1,631	\$ 113,302,223	\$ 21,909,998	\$ 135,212,221



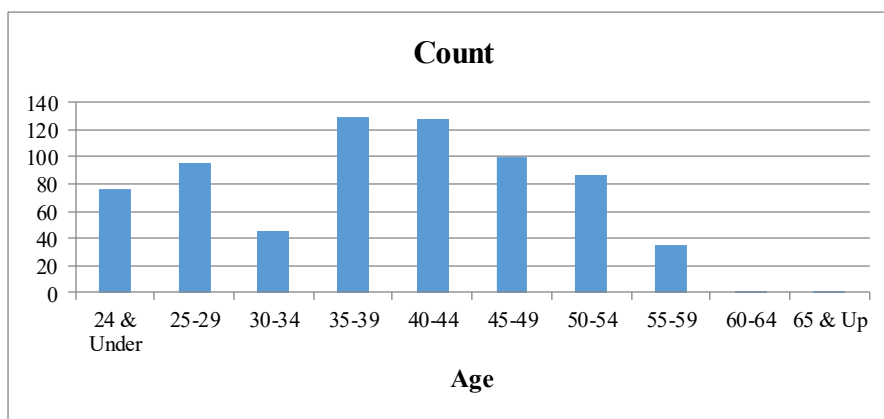
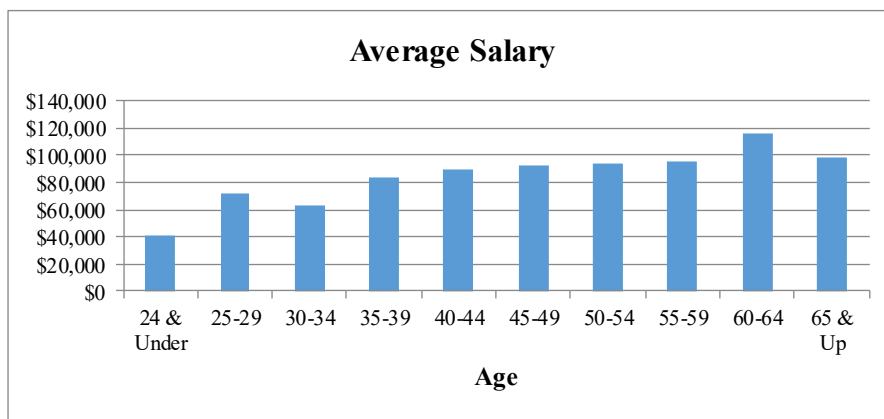


## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF ACTIVE MEMBERS as of January 1, 2022

#### Firemen

Age	Count			Reported FY 2021 Earnings		
	Male	Female	Total	Male	Female	Total
24 & Under	60	16	76	\$ 2,497,428	\$ 627,304	\$ 3,124,732
25-29	85	10	95	6,076,862	712,374	6,789,236
30-34	39	6	45	2,453,530	407,975	2,861,505
35-39	124	5	129	10,515,417	287,313	10,802,730
40-44	124	3	127	11,087,886	265,022	11,352,908
45-49	97	2	99	8,909,952	179,055	9,089,007
50-54	86	1	87	8,002,819	124,198	8,127,017
55-59	34	1	35	3,231,846	97,207	3,329,053
60-64	1	0	1	116,048	0	116,048
65 & Up	<u>1</u>	<u>0</u>	<u>1</u>	<u>97,827</u>	<u>0</u>	<u>97,827</u>
Total	651	44	695	\$ 52,989,615	\$ 2,700,448	\$ 55,690,063





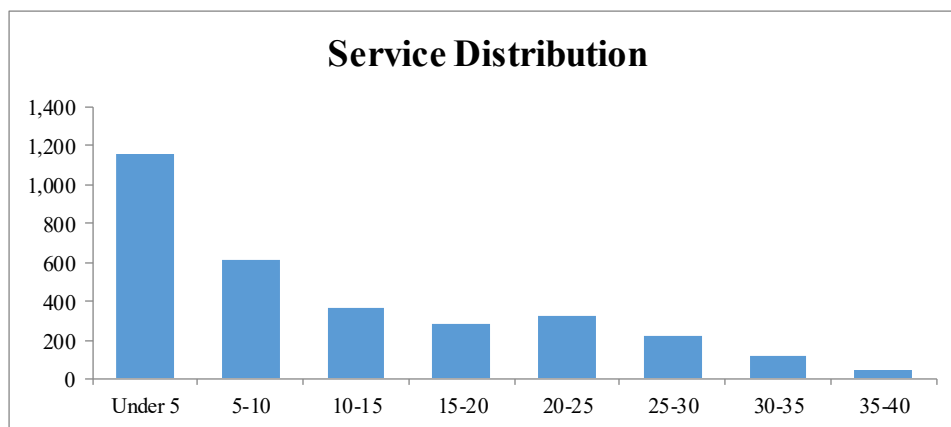
## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### General City\*

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	46	0	0	0	0	0	0	0	46
25-29	149	11	0	0	0	0	0	0	160
30-34	200	62	9	0	0	0	0	0	271
35-39	175	110	53	20	0	0	0	0	358
40-44	150	119	62	60	21	1	0	0	413
45-49	142	81	54	41	65	14	0	0	397
50-54	122	93	75	63	103	64	22	1	543
55-59	84	62	56	51	77	92	39	11	472
60-64	59	63	35	30	40	43	36	21	327
65 & Up	27	13	18	18	14	11	18	15	134
Total	1,154	614	362	283	320	225	115	48	3,121

\* Includes Elected Officials, General Employees of the City of Milwaukee, and Redevelopment Authority



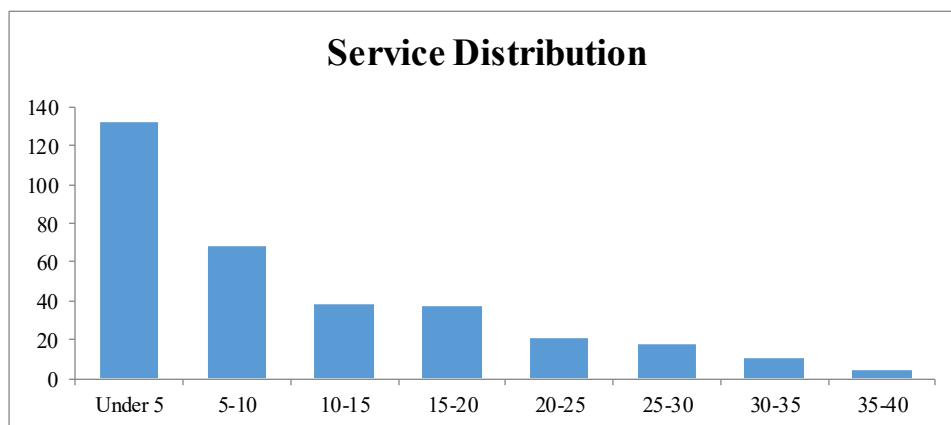


## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### Water Department

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	2	0	0	0	0	0	0	0	2
25-29	16	1	0	0	0	0	0	0	17
30-34	29	9	0	0	0	0	0	0	38
35-39	22	11	3	2	0	0	0	0	38
40-44	20	11	8	8	2	0	0	0	49
45-49	23	11	4	8	7	0	0	0	53
50-54	10	11	9	7	5	7	3	0	52
55-59	7	8	8	10	5	7	3	0	48
60-64	3	5	6	0	1	4	3	4	26
65 & Up	0	1	0	2	1	0	1	0	5
Total	132	68	38	37	21	18	10	4	328



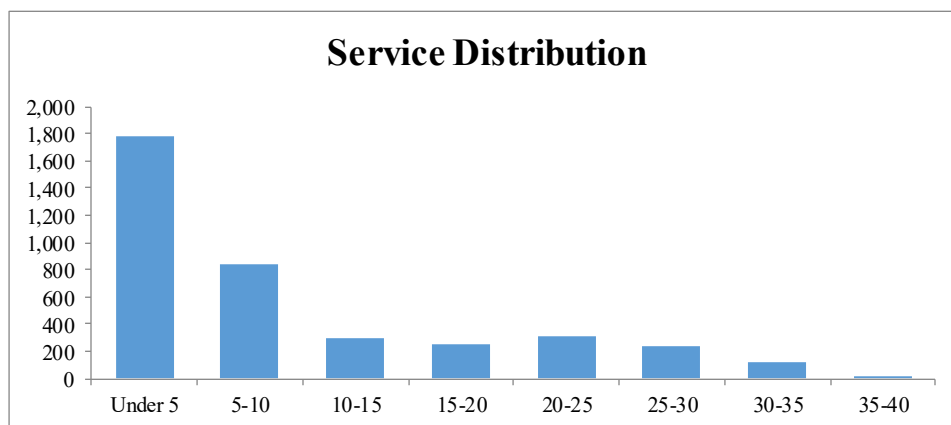


## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### School Board

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	123	0	0	0	0	0	0	0	123
25-29	282	22	0	0	0	0	0	0	304
30-34	319	84	3	0	0	0	0	0	406
35-39	230	117	26	2	0	0	0	0	375
40-44	227	122	41	26	15	2	0	0	433
45-49	159	125	44	32	38	14	0	0	412
50-54	169	122	59	69	78	47	20	0	564
55-59	138	96	69	64	87	92	48	2	596
60-64	95	106	43	39	69	60	41	10	463
65 & Up	45	53	16	25	25	16	10	5	195
Total	1,787	847	301	257	312	231	119	17	3,871



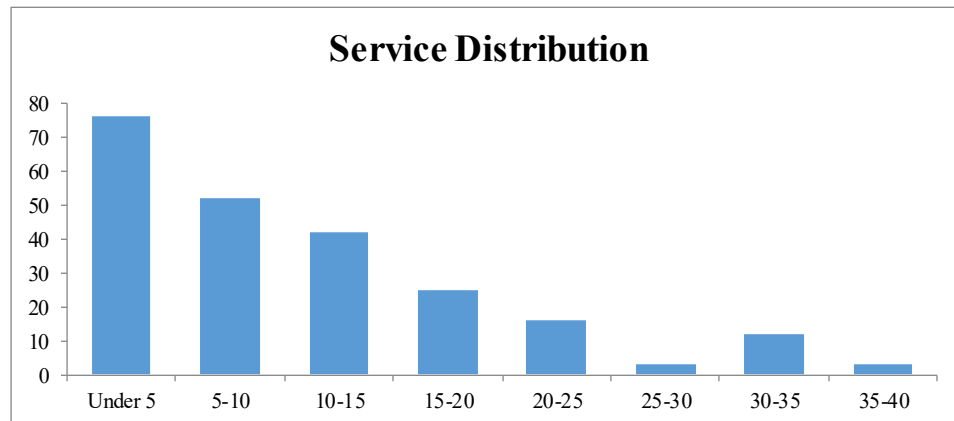


## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### Sewerage Commission

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	4	0	0	0	0	0	0	0	4
25-29	15	1	0	0	0	0	0	0	16
30-34	17	12	0	0	0	0	0	0	29
35-39	11	14	11	0	0	0	0	0	36
40-44	9	9	8	3	0	0	0	0	29
45-49	10	6	12	6	2	0	0	0	36
50-54	7	1	5	5	5	0	1	0	24
55-59	2	3	4	4	2	2	6	1	24
60-64	0	3	1	5	4	1	4	0	18
65 & Up	1	3	1	2	3	0	1	2	13
Total	76	52	42	25	16	3	12	3	229



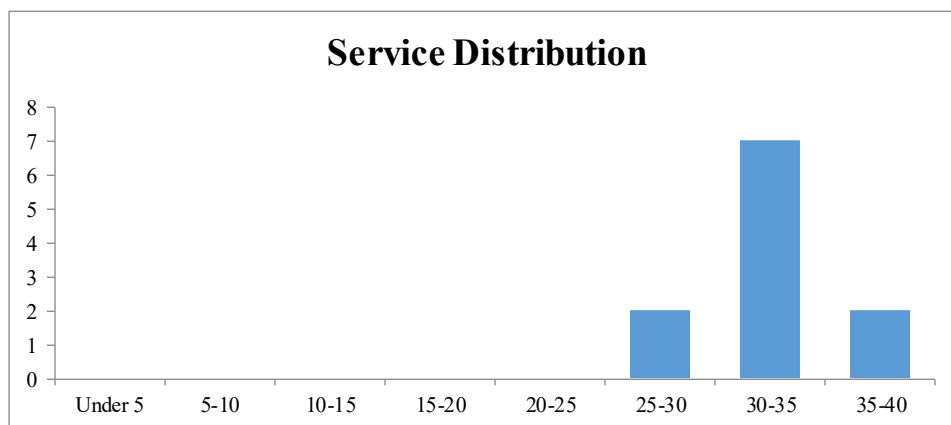


## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### Veolia

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
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	1	0	0	1
55-59	0	0	0	0	0	1	3	0	4
60-64	0	0	0	0	0	0	2	0	2
65 & Up	0	0	0	0	0	0	2	2	4
Total	0	0	0	0	0	2	7	2	11





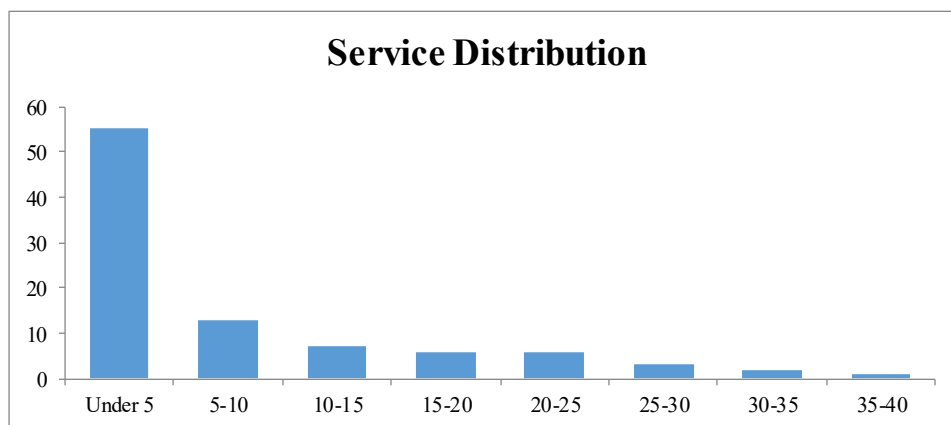


## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### Wisconsin District Center

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	3	0	0	0	0	0	0	0	3
25-29	9	1	0	0	0	0	0	0	10
30-34	6	2	1	0	0	0	0	0	9
35-39	5	0	1	0	0	0	0	0	6
40-44	8	1	1	2	2	0	0	0	14
45-49	5	4	1	1	0	0	0	0	11
50-54	3	1	1	0	1	2	0	0	8
55-59	4	1	0	1	2	1	1	0	10
60-64	4	2	0	1	1	0	1	0	9
65 & Up	8	1	2	1	0	0	0	1	13
Total	55	13	7	6	6	3	2	1	93



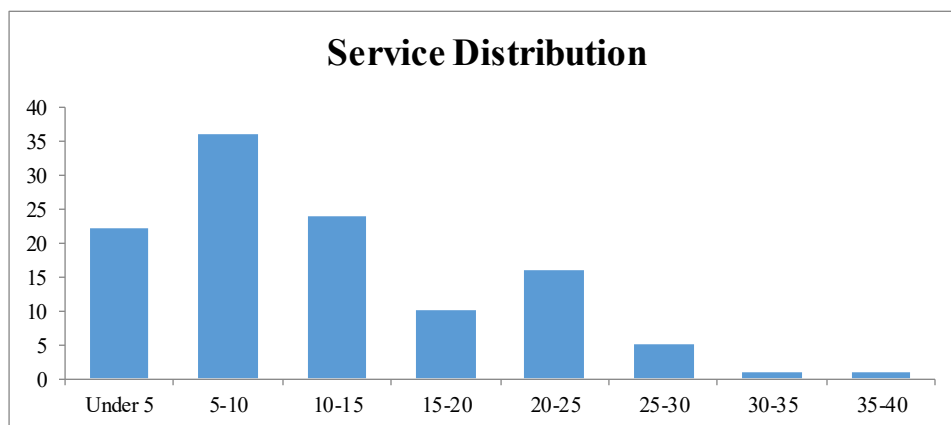


## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### Housing Authority

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	0	0	0	0	0	0	0	0	0
25-29	4	2	0	0	0	0	0	0	6
30-34	1	3	0	0	0	0	0	0	4
35-39	0	3	3	0	0	0	0	0	6
40-44	9	8	4	1	0	0	0	0	22
45-49	4	5	3	0	1	0	0	0	13
50-54	2	8	3	3	6	0	1	0	23
55-59	2	2	7	3	5	4	0	1	24
60-64	0	4	2	1	2	1	0	0	10
65 & Up	0	1	2	2	2	0	0	0	7
Total	22	36	24	10	16	5	1	1	115



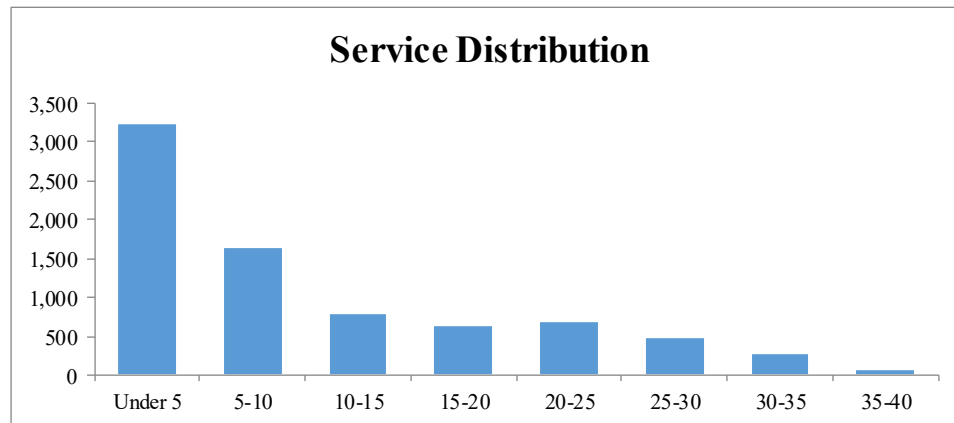


## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### General Employees – Total

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	178	0	0	0	0	0	0	0	178
25-29	475	38	0	0	0	0	0	0	513
30-34	572	172	13	0	0	0	0	0	757
35-39	443	255	97	24	0	0	0	0	819
40-44	423	270	124	100	40	3	0	0	960
45-49	343	232	118	88	113	28	0	0	922
50-54	313	236	152	147	198	121	47	1	1,215
55-59	237	172	144	133	178	199	100	15	1,178
60-64	161	183	87	76	117	109	87	35	855
65 & Up	81	72	39	50	45	27	32	25	371
Total	3,226	1,630	774	618	691	487	266	76	7,768



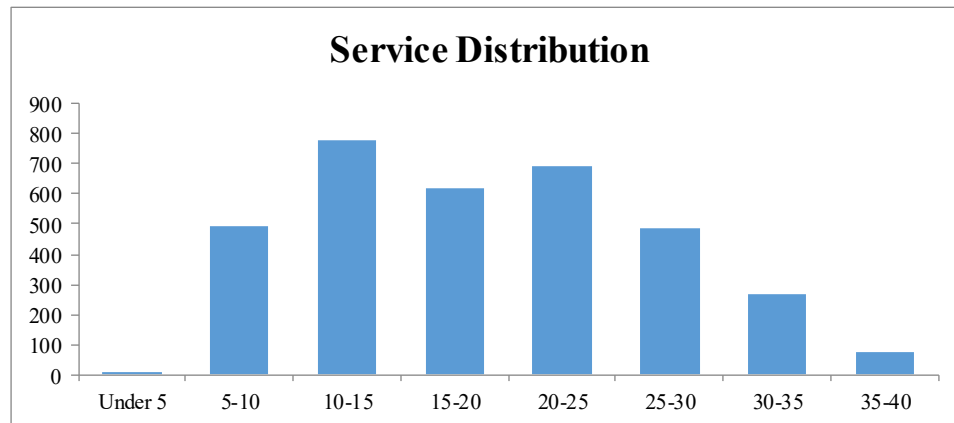


## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### General Employees – Tier 1

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	0	0	0	0	0	0	0	0	0
25-29	0	3	0	0	0	0	0	0	3
30-34	2	34	13	0	0	0	0	0	49
35-39	2	82	97	24	0	0	0	0	205
40-44	0	78	124	100	40	3	0	0	345
45-49	3	76	118	88	113	28	0	0	426
50-54	1	85	152	147	198	121	47	1	752
55-59	1	58	144	133	178	199	100	15	828
60-64	0	54	87	76	117	109	87	35	565
65 & Up	0	20	39	50	45	27	32	25	238
Total	9	490	774	618	691	487	266	76	3,411



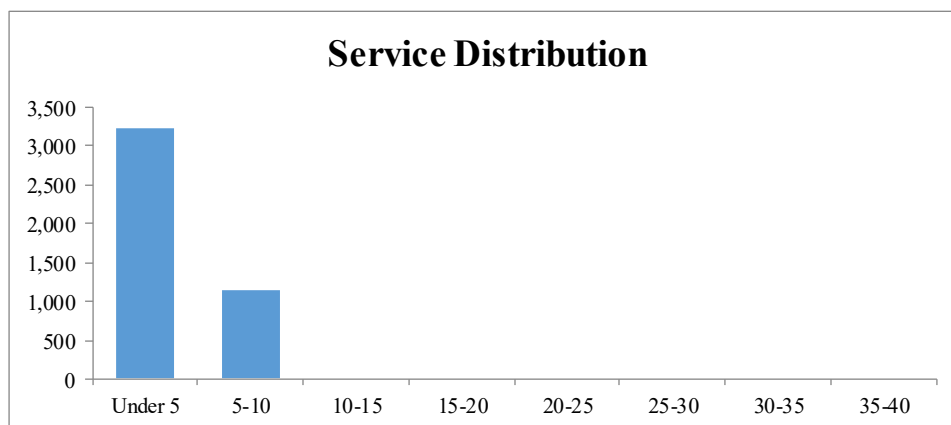


## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### General Employees – Tier 2

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	178	0	0	0	0	0	0	0	178
25-29	475	35	0	0	0	0	0	0	510
30-34	570	138	0	0	0	0	0	0	708
35-39	441	173	0	0	0	0	0	0	614
40-44	423	192	0	0	0	0	0	0	615
45-49	340	156	0	0	0	0	0	0	496
50-54	312	151	0	0	0	0	0	0	463
55-59	236	114	0	0	0	0	0	0	350
60-64	161	129	0	0	0	0	0	0	290
65 & Up	81	52	0	0	0	0	0	0	133
Total	3,217	1,140	0	0	0	0	0	0	4,357



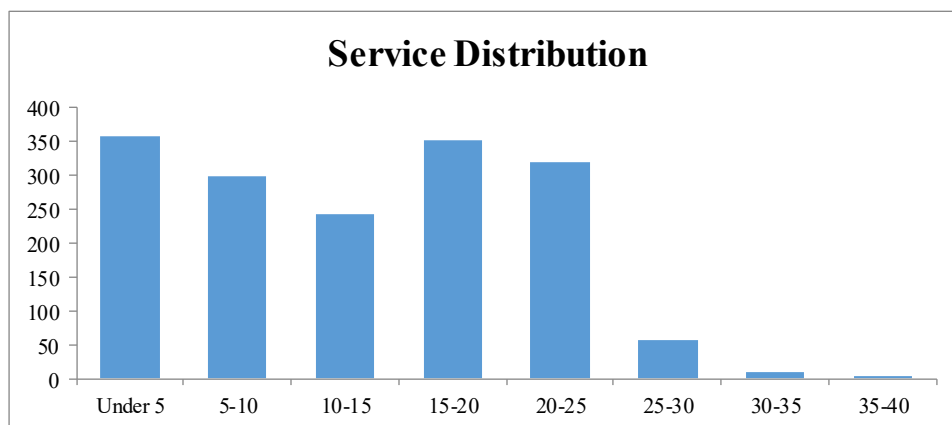


## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### Policemen

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	42	0	0	0	0	0	0	0	42
25-29	112	57	2	0	0	0	0	0	171
30-34	109	84	58	9	0	0	0	0	260
35-39	51	107	92	65	13	0	0	0	328
40-44	26	34	52	106	67	0	0	0	285
45-49	13	10	26	100	104	14	1	0	268
50-54	2	4	10	49	104	30	3	0	202
55-59	1	2	1	19	25	8	3	0	59
60-64	0	0	1	1	6	4	2	1	15
65 & Up	0	0	0	1	0	0	0	0	1
Total	356	298	242	350	319	56	9	1	1,631



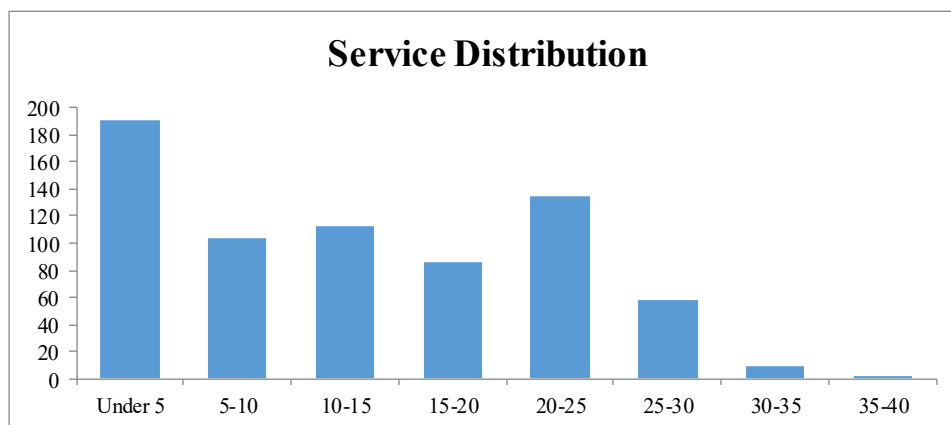


## APPENDIX A: MEMBERSHIP DATA

### DISTRIBUTION OF ACTIVE MEMBERS as of January 1, 2022

#### Firemen

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	76	0	0	0	0	0	0	0	76
25-29	52	43	0	0	0	0	0	0	95
30-34	32	8	4	1	0	0	0	0	45
35-39	19	26	37	38	9	0	0	0	129
40-44	6	21	39	11	42	8	0	0	127
45-49	3	5	19	19	37	16	0	0	99
50-54	2	1	12	10	36	25	1	0	87
55-59	0	0	1	6	10	9	9	0	35
60-64	0	0	0	0	0	0	0	1	1
65 & Up	0	0	0	1	0	0	0	0	1
Total	190	104	112	86	134	58	10	1	695



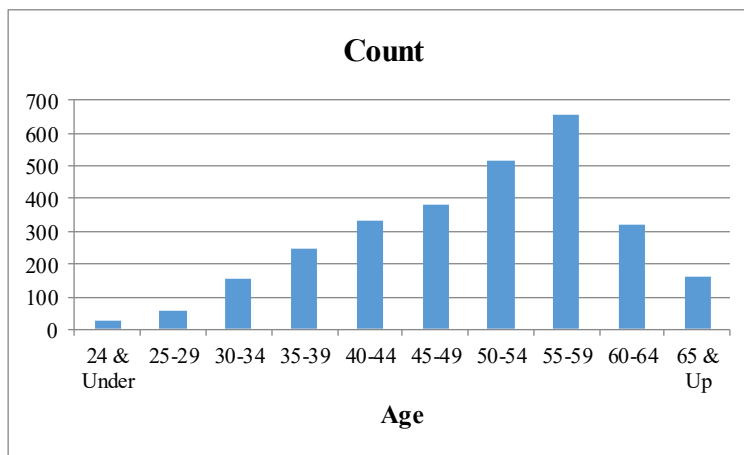
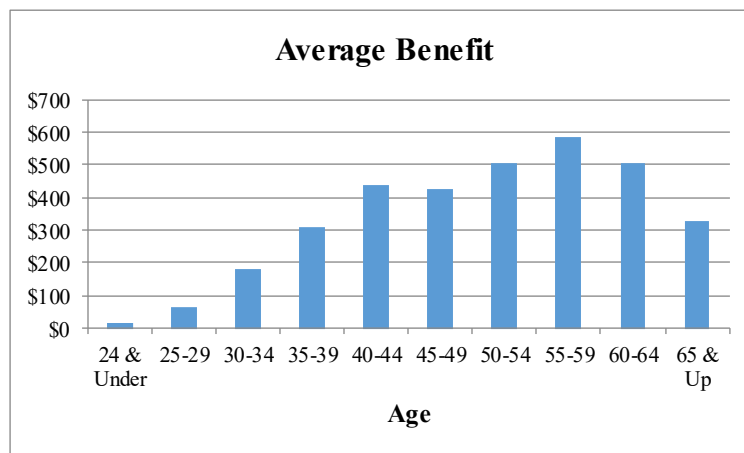


## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF INACTIVE VESTED MEMBERS as of January 1, 2022

#### General Employees

Age	Count			Estimated Monthly Benefits		
	Male	Female	Total	Male	Female	Total
24 & Under	10	17	27	\$ 194	\$ 171	\$ 365
25-29	22	37	59	1,035	2,764	3,799
30-34	65	88	153	14,710	12,613	27,323
35-39	81	166	247	29,083	47,018	76,101
40-44	125	206	331	58,212	86,546	144,758
45-49	165	218	383	76,008	86,718	162,726
50-54	196	319	515	118,996	139,924	258,920
55-59	265	392	657	197,436	187,990	385,426
60-64	126	194	320	81,949	78,653	160,602
65 & Up	<u>69</u>	<u>95</u>	<u>164</u>	<u>32,695</u>	<u>20,894</u>	<u>53,589</u>
Total	1,124	1,732	2,856	\$ 610,318	\$ 663,291	\$ 1,273,609





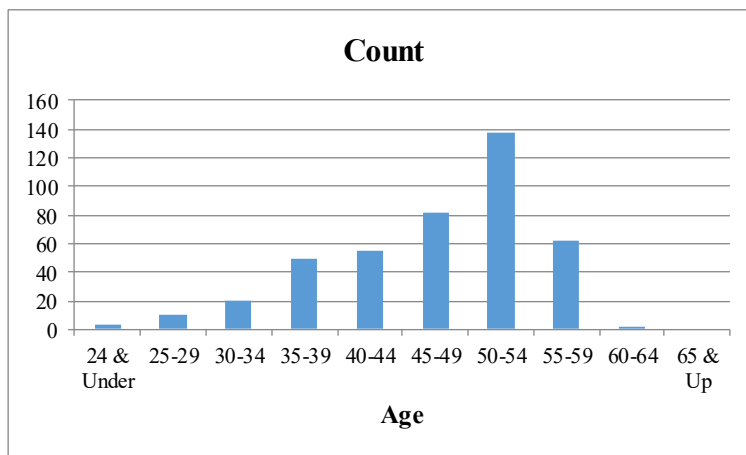
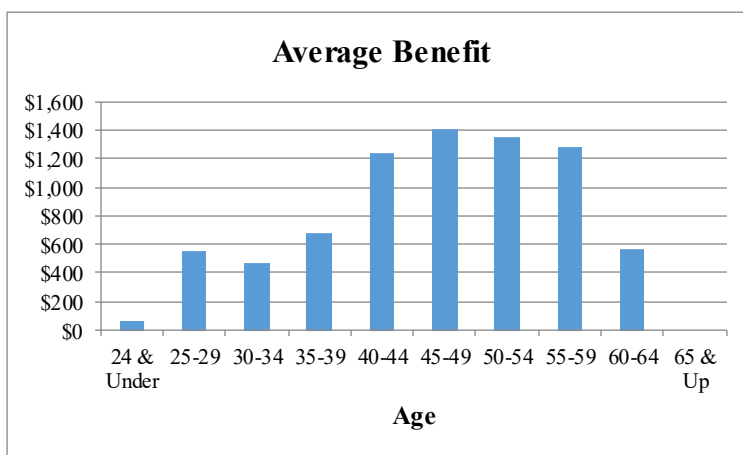


## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF INACTIVE VESTED MEMBERS as of January 1, 2022

#### Policemen

Age	Count			Estimated Monthly Benefits		
	Male	Female	Total	Male	Female	Total
24 & Under	3	1	4	\$ 270	\$ 1	\$ 271
25-29	8	3	11	4,073	2,045	6,118
30-34	14	6	20	7,120	2,303	9,423
35-39	39	11	50	28,002	5,606	33,608
40-44	39	16	55	49,546	18,887	68,433
45-49	59	22	81	99,057	15,080	114,137
50-54	103	35	138	149,799	36,822	186,621
55-59	50	12	62	59,622	19,297	78,919
60-64	1	0	1	564	0	564
65 & Up	0	0	0	0	0	0
Total	316	106	422	\$ 398,053	\$ 100,041	\$ 498,094



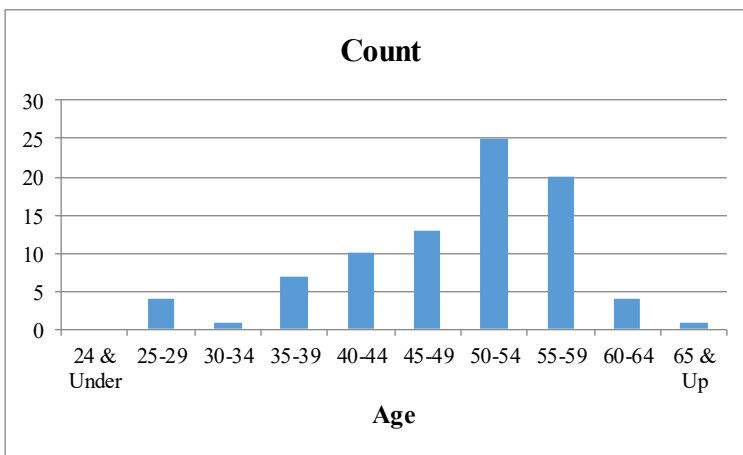
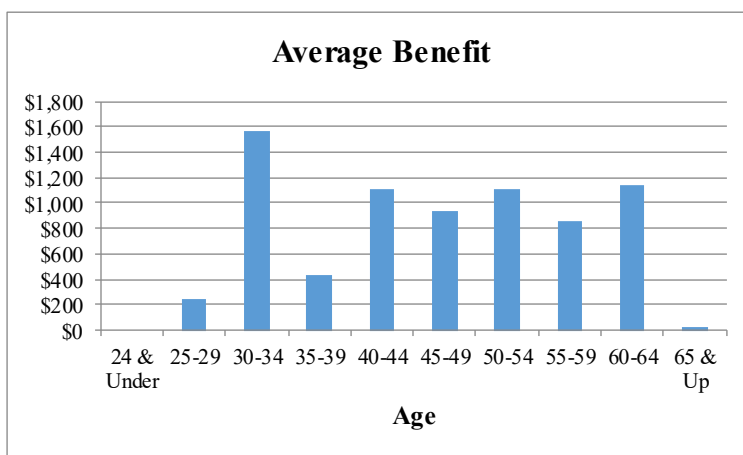


## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF INACTIVE VESTED MEMBERS as of January 1, 2022

#### Firemen

Age	Count			Estimated Monthly Benefits		
	Male	Female	Total	Male	Female	Total
24 & Under	0	0	0	\$ 0	\$ 0	\$ 0
25-29	4	0	4	971	0	971
30-34	1	0	1	1,568	0	1,568
35-39	6	1	7	2,984	9	2,993
40-44	10	0	10	11,136	0	11,136
45-49	13	0	13	12,257	0	12,257
50-54	22	3	25	26,166	1,509	27,675
55-59	20	0	20	17,127	0	17,127
60-64	4	0	4	4,588	0	4,588
65 & Up	<u>1</u>	<u>0</u>	<u>1</u>	<u>25</u>	<u>0</u>	<u>25</u>
Total	81	4	85	\$ 76,822	\$ 1,518	\$ 78,340





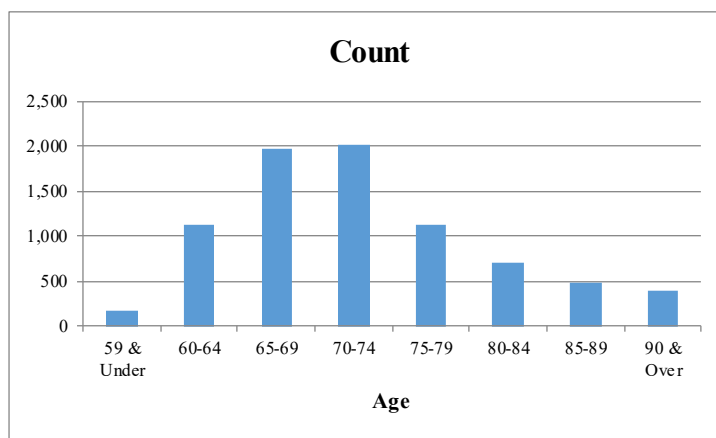
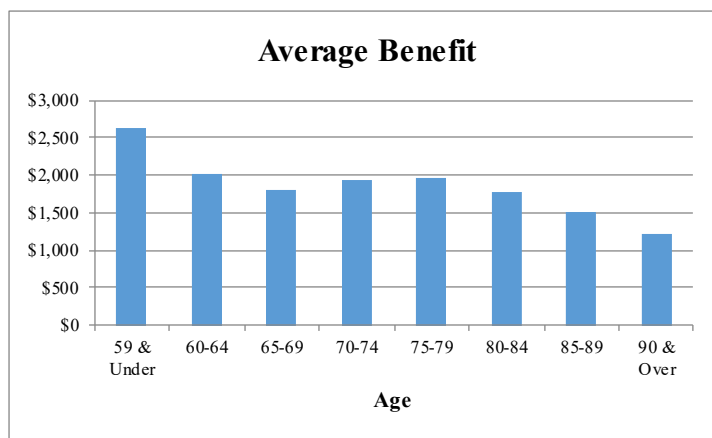
## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF RETIRED MEMBERS as of January 1, 2022

#### General Employees

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	73	104	177	\$ 202,783	\$ 264,345	\$ 467,128
60-64	546	592	1,138	1,290,402	998,776	2,289,178
65-69	936	1,031	1,967	2,135,431	1,414,955	3,550,386
70-74	1,035	989	2,024	2,485,797	1,423,166	3,908,963
75-79	577	553	1,130	1,452,747	754,887	2,207,634
80-84	319	398	717	830,875	441,665	1,272,540
85-89	195	284	479	479,175	246,100	725,275
90 & Over	<u>142</u>	<u>250</u>	<u>392</u>	<u>306,503</u>	<u>173,402</u>	<u>479,905</u>
Total	3,823	4,201	8,024	\$ 9,183,713	\$ 5,717,296	\$ 14,901,009

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





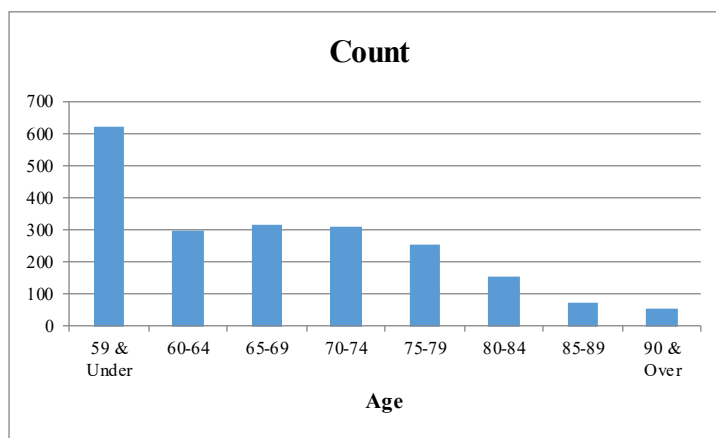
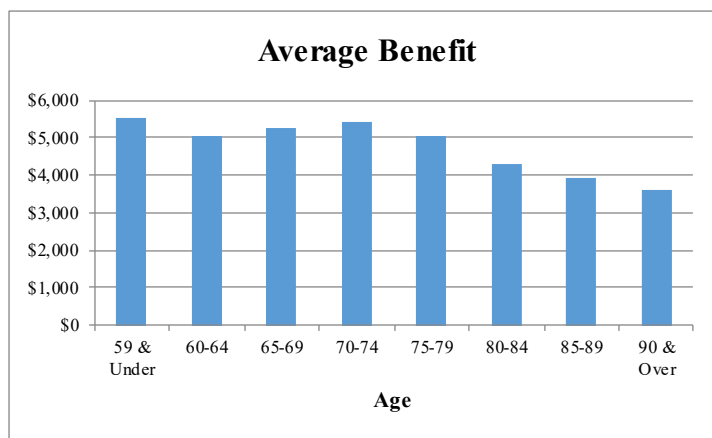
## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF RETIRED MEMBERS as of January 1, 2022

#### Policemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	504	116	620	\$ 2,784,962	\$ 649,236	\$ 3,434,198
60-64	244	54	298	1,236,875	268,160	1,505,035
65-69	269	44	313	1,406,555	231,966	1,638,521
70-74	284	23	307	1,549,876	113,837	1,663,713
75-79	246	8	254	1,243,327	34,075	1,277,402
80-84	154	1	155	660,526	3,870	664,396
85-89	74	0	74	288,891	0	288,891
90 & Over	<u>51</u>	<u>2</u>	<u>53</u>	<u>187,076</u>	<u>4,969</u>	<u>192,045</u>
Total	1,826	248	2,074	\$ 9,358,088	\$ 1,306,113	\$ 10,664,201

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





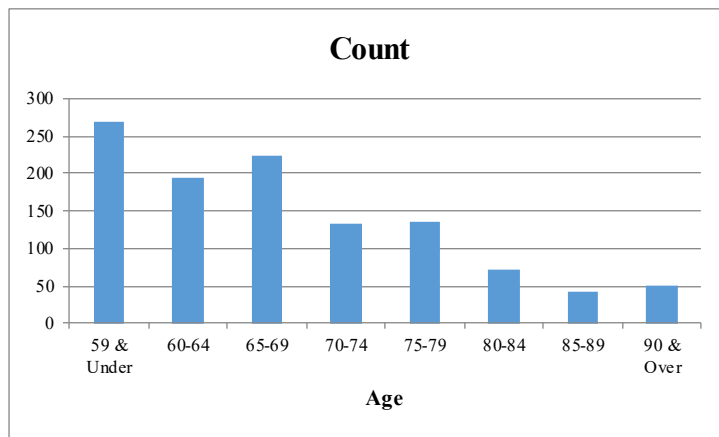
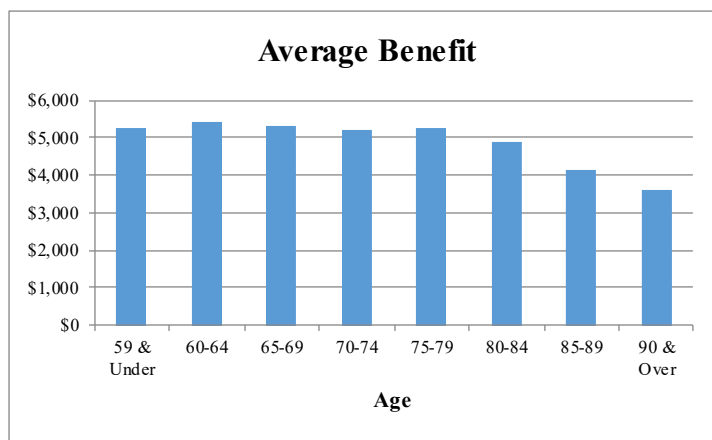
## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF RETIRED MEMBERS as of January 1, 2022

#### Firemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	248	21	269	\$ 1,310,067	\$ 107,112	\$ 1,417,179
60-64	180	15	195	978,317	81,169	1,059,486
65-69	215	8	223	1,153,743	32,001	1,185,744
70-74	128	5	133	671,948	18,741	690,689
75-79	136	0	136	714,389	0	714,389
80-84	72	0	72	349,826	0	349,826
85-89	42	0	42	173,919	0	173,919
90 & Over	<u>49</u>	<u>1</u>	<u>50</u>	<u>175,599</u>	<u>4,083</u>	<u>179,682</u>
Total	1,070	50	1,120	\$ 5,527,808	\$ 243,106	\$ 5,770,914

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





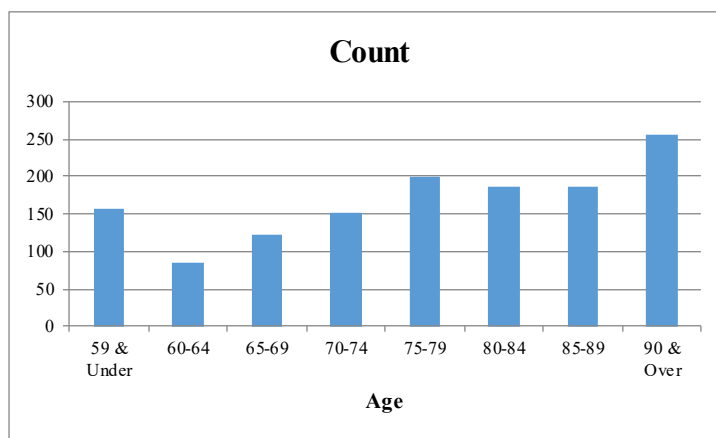
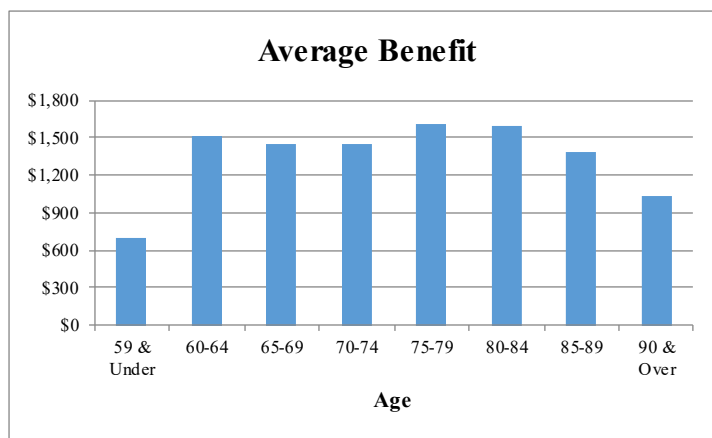
## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF BENEFICIARIES as of January 1, 2022

#### General Employees

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	64	94	158	\$ 34,610	\$ 75,290	\$ 109,900
60-64	18	67	85	16,019	112,440	128,459
65-69	24	99	123	24,891	153,633	178,524
70-74	29	122	151	23,857	195,201	219,058
75-79	30	170	200	24,352	298,102	322,454
80-84	16	170	186	12,384	283,927	296,311
85-89	15	172	187	10,445	249,852	260,297
90 & Over	<u>36</u>	<u>220</u>	<u>256</u>	<u>19,036</u>	<u>246,135</u>	<u>265,171</u>
Total	232	1,114	1,346	\$ 165,594	\$ 1,614,580	\$ 1,780,174

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





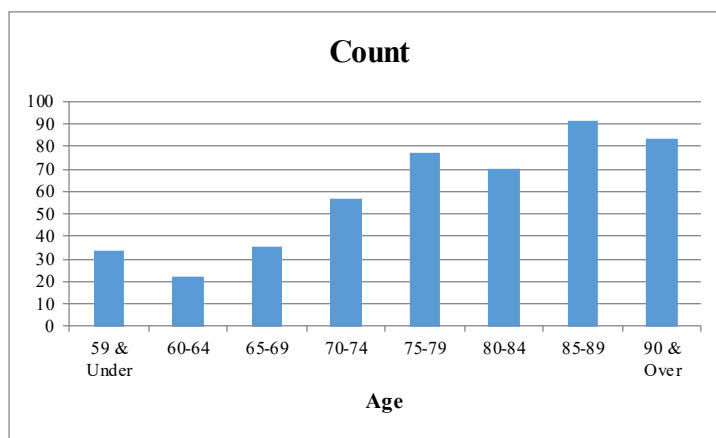
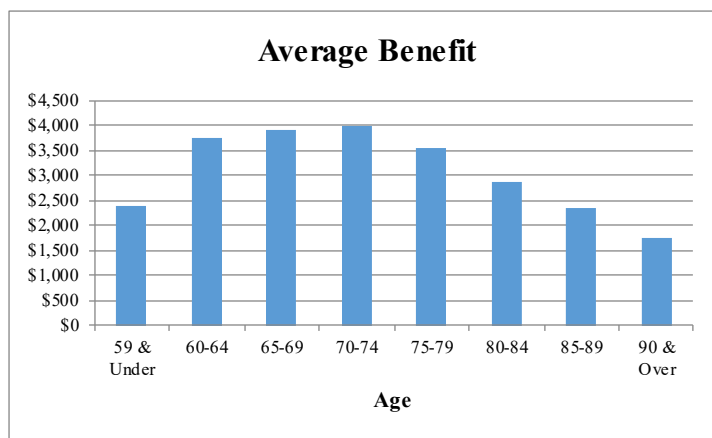
## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF BENEFICIARIES as of January 1, 2022

#### Policemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	6	28	34	\$ 7,078	\$ 74,644	\$ 81,722
60-64	1	21	22	300	81,824	82,124
65-69	3	32	35	6,194	130,545	136,739
70-74	2	55	57	4,611	222,977	227,588
75-79	2	75	77	5,201	267,412	272,613
80-84	0	70	70	0	201,053	201,053
85-89	1	90	91	265	214,728	214,993
90 & Over	<u>1</u>	<u>82</u>	<u>83</u>	<u>1,098</u>	<u>145,041</u>	<u>146,139</u>
Total	16	453	469	\$ 24,747	\$ 1,338,224	\$ 1,362,971

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





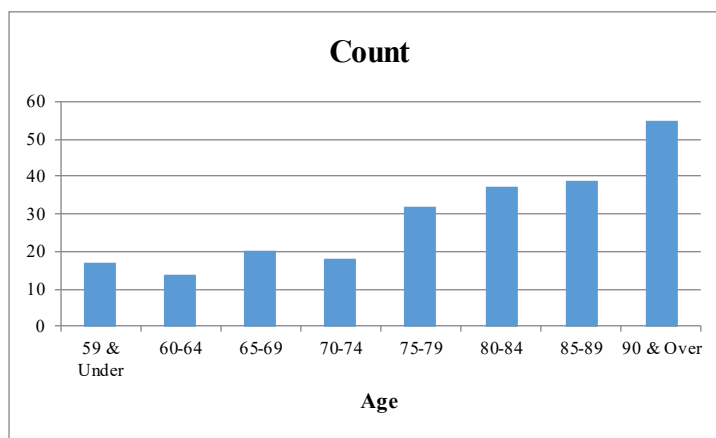
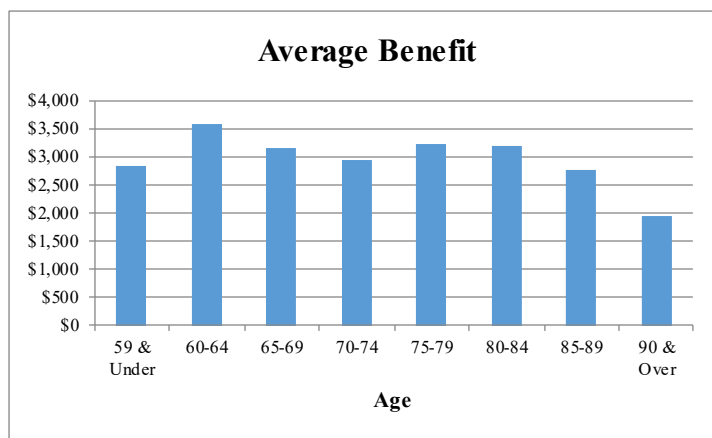
## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF BENEFICIARIES as of January 1, 2022

#### Firemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	5	12	17	\$ 6,656	\$ 41,749	\$ 48,405
60-64	1	13	14	1,995	48,251	50,246
65-69	1	19	20	125	62,770	62,895
70-74	0	18	18	0	53,009	53,009
75-79	0	32	32	0	103,108	103,108
80-84	0	37	37	0	117,198	117,198
85-89	0	39	39	0	107,771	107,771
90 & Over	<u>0</u>	<u>55</u>	<u>55</u>	<u>0</u>	<u>107,403</u>	<u>107,403</u>
Total	7	225	232	\$ 8,776	\$ 641,259	\$ 650,035

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.







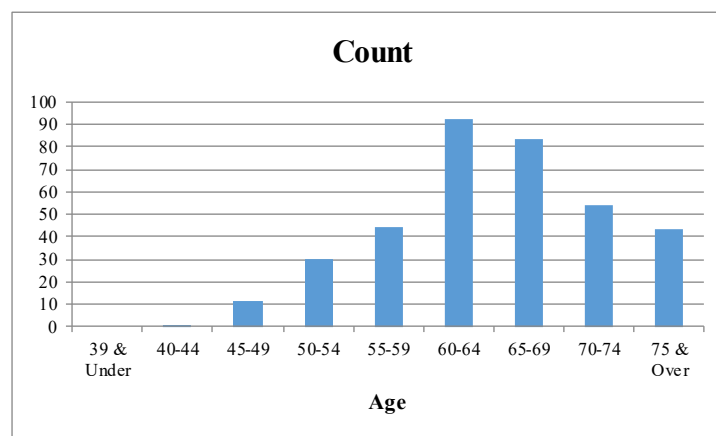
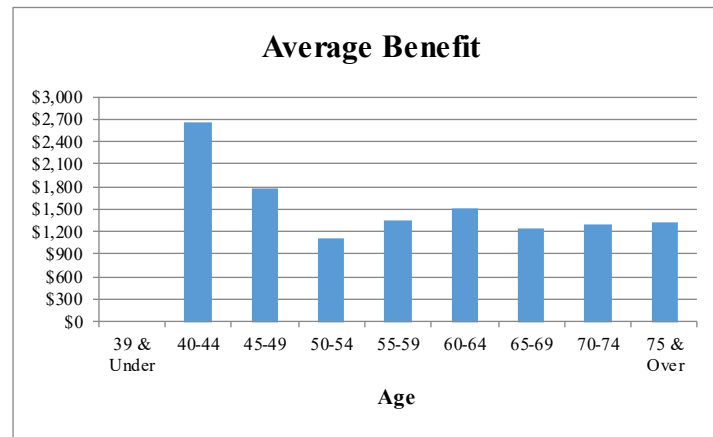
## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF DISABLED MEMBERS as of January 1, 2022

#### General Employees

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
39 & Under	0	0	0	\$ 0	\$ 0	\$ 0
40-44	1	0	1	2,644	0	2,644
45-49	6	5	11	9,580	9,811	19,391
50-54	10	20	30	12,918	20,420	33,338
55-59	22	22	44	37,427	22,329	59,756
60-64	47	45	92	94,715	44,760	139,475
65-69	38	45	83	57,480	46,348	103,828
70-74	27	27	54	38,574	31,231	69,805
75 & Over	<u>24</u>	<u>19</u>	<u>43</u>	<u>41,652</u>	<u>15,113</u>	<u>56,765</u>
Total	175	183	358	\$ 294,990	\$ 190,012	\$ 485,002

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





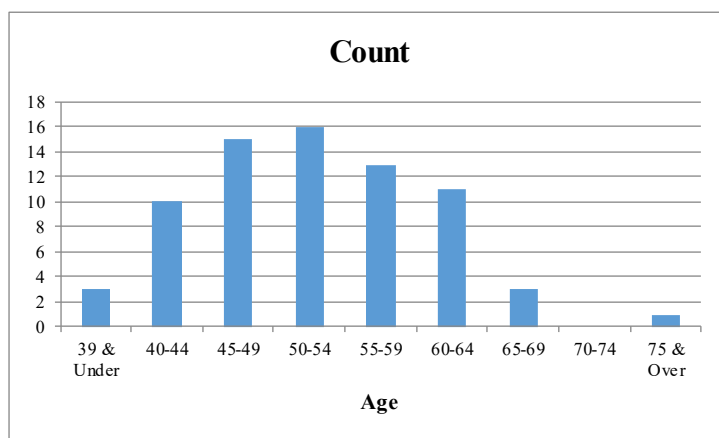
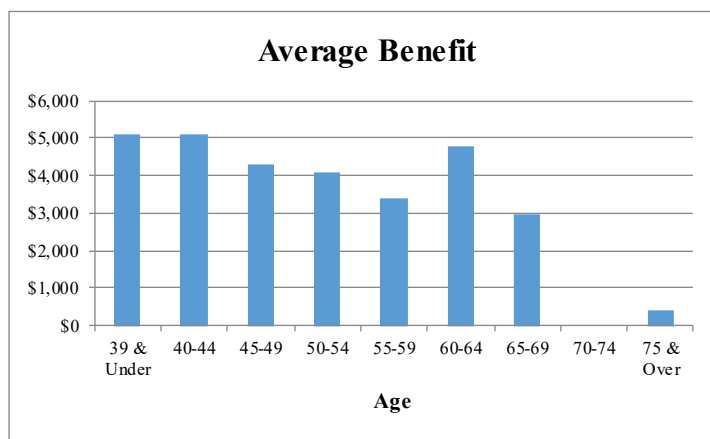
## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF DISABLED MEMBERS as of January 1, 2022

#### Policemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
39 & Under	3	0	3	\$ 15,244	\$ 0	\$ 15,244
40-44	7	3	10	35,032	15,847	50,879
45-49	11	4	15	48,638	15,895	64,533
50-54	7	9	16	25,681	39,685	65,366
55-59	8	5	13	21,215	23,147	44,362
60-64	5	6	11	26,775	25,794	52,569
65-69	3	0	3	8,882	0	8,882
70-74	0	0	0	0	0	0
75 & Over	<u>1</u>	<u>0</u>	<u>1</u>	<u>424</u>	<u>0</u>	<u>424</u>
Total	45	27	72	\$ 181,891	\$ 120,368	\$ 302,259

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





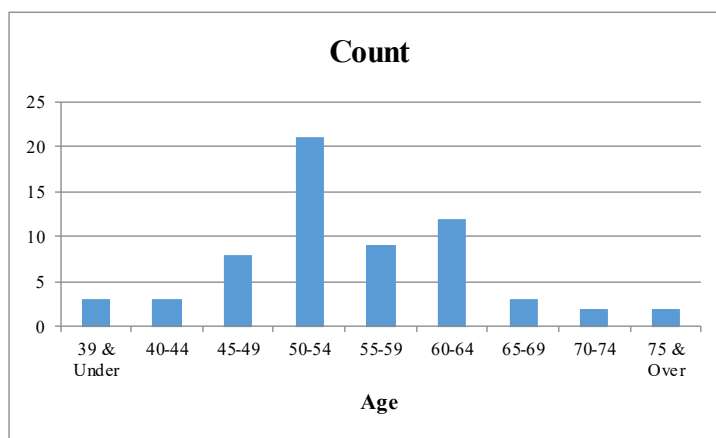
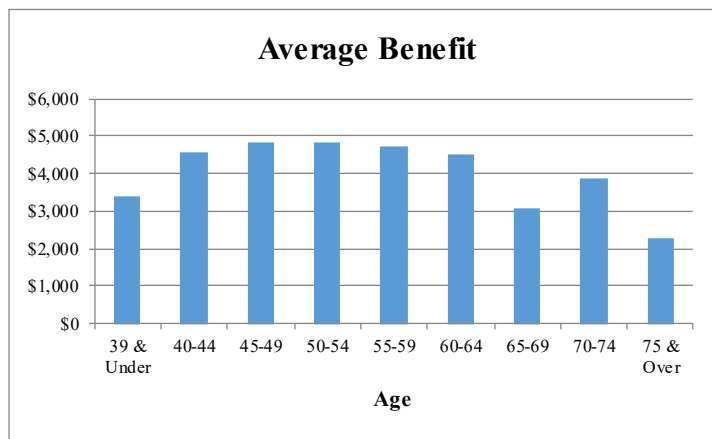
## APPENDIX A: MEMBERSHIP DATA

### SUMMARY OF DISABLED MEMBERS as of January 1, 2022

#### Firemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
39 & Under	3	0	3	\$ 10,108	\$ 0	\$ 10,108
40-44	3	0	3	13,697	0	13,697
45-49	8	0	8	38,464	0	38,464
50-54	20	1	21	96,232	5,012	101,244
55-59	8	1	9	37,450	5,041	42,491
60-64	7	5	12	35,394	18,961	54,355
65-69	2	1	3	6,046	3,160	9,206
70-74	2	0	2	7,760	0	7,760
75 & Over	<u>2</u>	<u>0</u>	<u>2</u>	<u>4,519</u>	<u>0</u>	<u>4,519</u>
Total	55	8	63	\$ 249,670	\$ 32,174	\$ 281,844

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **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. New Employees are automatically members as a condition of employment. Membership is optional for elected officials. 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.

#### **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.



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **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.



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **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.



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **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.



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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- 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.





## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **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.



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### **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



## APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

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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



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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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.



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **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 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.



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **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- Elected Officials	7.0%  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.





## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **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,



## APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

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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.





## APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

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### Timing and Amount of Increase

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.)

### Funds Charged

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

### Eligible Group

- 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.



## APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

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### 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.



## APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

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- 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.



## APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

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- 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

### Eligible Group

- 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.
- General Employees receiving a duty disability retirement allowance who convert to service retirement on or after January 1, 1993.
- 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.

### Timing and Amount of Increase

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.)

### Funds Charged

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

### Eligible Group

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:



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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- 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



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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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.



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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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.





## APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

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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.





## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **Funds Charged**

The 5% lump sum bonus and the 8.6% lump sum bonus are paid from the Combined Fund.

### **Benefits Not Valued**

None.



## APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

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### 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 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.

If the Actuarial Value of Assets exceeds the sum of the AAL and the Employer portion of the Normal Cost, there is no Employer contribution required for that year.

### 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 and the Securities Lending Fund is equal to the market value of assets. These Funds are not available to pay the benefits for ERS members so they are excluded from the allocation of the actuarial value of assets to the various funds and groups and the resulting calculations of employer contributions. The actuarial value of assets for the remaining funds is a smoothed value of assets (see Table 7). The difference between (1) the expected return on the actuarial 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.

The preliminary actuarial value for the current valuation is the preliminary actuarial value from the prior year plus non-investment cash flows (contributions less benefits and refunds) plus the expected return on the market value of assets at the applicable assumed investment return and the current year's recognition of each of the prior five year's excess/shortfall returns.

### Amortization Method

Closed layered amortization method with amortization payments for each base increasing by 2.00% per year. The outstanding balance of the unfunded actuarial accrued liability (UAAL) as of January 1, 2019 is amortized over a fixed 25-year period. At each subsequent valuation date, any changes to the UAAL arising from actuarial gains or losses will be amortized over a fixed 15-year period and any changes to the UAAL arising from changes in assumptions, methods, or plan provisions will be amortized over a fixed 25-year period.



## APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Assumptions are based on the experience investigation prepared as of December 31, 2016 and adopted by the Board of Trustees on October 23, 2017 for use beginning with the January 1, 2018 actuarial valuation. The investment return assumption of 7.50% was adopted by the Board of Trustees on April 29, 2019, for use in the January 1, 2019 actuarial valuation.

**Investment Return Assumption:** 7.50% per annum (net of investment expenses), compounded annually.

**Inflation:** 2.50% per annum.

**Cost of Living Adjustments (COLA):** 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:** UAAL amortization payments increase at 2.00% per annum.

### Illustrative Rates of Salary Increase:

Age	Salary Increases	
	General Employees	Firemen and Policemen
25	4.93%	9.47%
30	3.79	7.72
35	3.78	5.78
40	2.89	4.68
45	2.50	4.28
50	2.50	4.08
55	2.50	4.00
60	2.50	4.00
65	2.50	4.00

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.

**Deaths After Retirement:** For regular retirees and survivors, the RP-2014 Healthy Annuitant Mortality Table, using 111% of rates for males and 110% of rates for females, projected generationally using Scale MP-2016, was used. For duty and ordinary disability retirees, the RP-2014 Disability Mortality Table, using 102% of rates for males and 98% of rates for females, projected generationally using Scale MP-2016, was used.

**Deaths Prior to Retirement:** For death in active service, the RP-2014 Non-annuitant Mortality Table projected generationally with Scale MP-2016 was used.

**Mortality Projection:** All mortality rates are projected using generational improvement with Scale MP-2016.



## APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

### Illustrative Rates of Termination:

Age	<u>Less than 5 Years of Service</u>		<u>At least 5 Years of Service</u>	
	Males	Females	Males	Females
<b><u>General Employees</u></b>				
20	17.62%	24.05%	13.00%	14.30%
25	15.93	24.12	12.68	14.30
30	11.31	16.77	6.92	8.45
35	10.66	15.60	7.19	7.27
40	8.78	10.40	4.51	8.45
45	9.10	9.23	2.99	4.67
50	8.32	8.58	2.38	3.38
55	6.83	7.80	1.99	3.64
60	-	-	-	-
<b><u>Firemen and Policemen</u></b>				
20	6.15%	5.55%	-	-
25	2.33	4.65	1.34%	2.33%
30	2.75	7.38	1.13	3.34
35	3.38	6.63	1.10	1.88
40	4.40	4.40	0.90	0.97
45	5.40	4.40	1.08	1.53
50	8.80	4.40	4.05	6.70
55	10.00	4.40	-	-
60	-	-	-	-

All terminations are assumed to be involuntary.

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%.



## APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

### Illustrative Rates of Early and Normal Retirement:

Age	Early Retirement	Normal Retirement				
	General Employees	General Employees		Firemen	Policemen	
		Males	Females	All	Not in Combined Fund	In Combined Fund
42						10%
43						25
44						25
45						25
46						32
47						32
48				10%		32
49				13		25
50				13		25
51				13	44%	25
52				18	44	25
53				18	24	25
54		35%	26%	20	24	25
55	4%	45	26	25	24	25
56	4	30	17	25	40	25
57	4	27	15	30	35	25
58	4	27	20	35	35	25
59	4	22	20	35	35	25
60	4	19	19	35	35	25
61	4	19	20	50	35	25
62	4	28	25	50	50	50
63	4	20	18	100	100	100
64	4	20	18	100	100	100
65		30	25	100	100	100
66		30	30	100	100	100
67		18	20	100	100	100
68		18	20	100	100	100
69		18	20	100	100	100
70		100	100	100	100	100



## APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

### Illustrative Rates of Disability:

Age	Disability Rates		
	General Employees	Firemen	Policemen
20	0.050%	0.064%	0.030%
25	0.050	0.136	0.030
30	0.060	0.280	0.100
35	0.077	0.760	0.187
40	0.131	0.960	0.231
45	0.162	0.960	0.231
50	0.256	1.080	0.210
55	0.527	1.080	0.210
60	0.077	1.080	0.210
65	0.200	1.080	0.210

Elected officials are assumed to become disabled at the same rate as General Employees.

### Duty Disabilities:

Employee Group	Percentage of Disabilities Incurred in the Performance of Duty	Percentage of Duty Disabilities Assumed Eligible For The 90% Benefit	Under The Heart & Lung Law	Assumption Adopted January 1
General Employees	10.0%	N/A	N/A	2018
Police other than MPA	70.0%	5.0%	N/A	2018
MPA enrolled on or before 4/18/2005	70.0%	5.0%	N/A	2018
MPA enrolled after 4/18/2005	62.5%	7.5%	N/A	2008
Fire other than MPFFA	90.0%	5.0%	15.0%	2008
MPFFA enrolled on or before 10/3/2005	90.0%	5.0%	15.0%	2008
MPFFA enrolled after 10/3/2005	81.2%	6.9%	20.8%	2008

Upon reaching their service conversion date, 100% of Policemen and Firemen who become duty disabled are assumed to convert to a service retirement benefit.



## APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

### 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)



## APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

**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

### Miscellaneous

**Future Service Accrual:** For members active on the valuation date, credited service in each future year is assumed to be the greater of credited service earned in the year prior to the valuation, or the average of the three highest years of service credit out of the five years that preceded the valuation date. New hires are assumed to accrue a full year of service in each future year (adopted 1/1/2007).

**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 ( $26.089285 \div 26$ ).

**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.





## APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

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**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

**Changes Since Prior Valuation:** None.



## APPENDIX D: GLOSSARY OF TERMS

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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 contribution requirements 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 contribution 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.



## APPENDIX D: GLOSSARY OF TERMS

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- **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”.*

Retirement Type	Retirement SubType	Last Name	First Name	Retirement Date	Option	Department
Regular	Deferred	HENDRICKS	SHEREE	11/20/2015	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Deferred	QUINN	PATRICIA	4/30/2017	MAX	GENERAL CITY
Regular	Deferred	ROBERTS	PAUL	1/22/2018	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Deferred	NAPIERALA	LORI	8/28/2020	MAX	WISCONSIN CENTER DISTRICT
Regular	Deferred	DAUER	TAMARA	1/20/2022	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Service	BAILEY	BARBARA	3/5/2022	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Involuntary Separation	KNIGHT	RAY	4/1/2022	MAX	MILWAUKEE FIRE DEPARTMENT
Regular	Service	JOHNSON	MICHAEL	4/7/2022	100	MILWAUKEE PUBLIC SCHOOLS
Regular	Deferred	CVIKEL	LINDA	4/8/2022	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Deferred	RAAB	DALE	4/8/2022	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Service	DIETZ	ROBERT	4/9/2022	MAX	DPW-WATER-BUSINESS
Regular	Service	WASHINGTON	PETER	4/9/2022	MAX	FIRE - SUPPORT SERVICES
Regular	Service	WINDSOR	DAVID	4/9/2022	MAX	PARKING
Regular	Deferred	LENNERT	LARRY	4/10/2022	100	MMSD
Regular	Deferred	CABALLERO	LORI	4/15/2022	MAX	MILWAUKEE POLICE DEPARTMENT
Regular	Deferred	ROBINSON	SUSAN	4/15/2022	MAX	HEALTH DEPARTMENT
Regular	Service	VINCENT	BRIAN	4/19/2022	MAX	DEPT OF NEIGHBORHOOD SRVCS
Regular	Service	PLEIER	ANNAMARIE	4/20/2022	50	FIRE - SUPPORT SERVICES
Regular	Service	JANACEK	JERRY	4/21/2022	50	DPW-INFRASTRUCTURE-ST/BRIDGES
Regular	Deferred	WILLINGHAM	SANDRA	4/22/2022	MAX	HEALTH-CONSUMER PROTECTION
Regular	Service	TILLMAN	CARL	4/25/2022	MAX	DPW-OPS-FLEET SERVICES
Regular	Service	BALKOWSKI	NANCY	4/30/2022	100	FIRE - SUPPORT SERVICES
Regular	Service	HUGHES	THOMAS	4/30/2022	MAX	DPW-INFRASTRUCTURE-ELECTRICAL
Regular	Service	MICHALSKI	KAREN	4/30/2022	MAX	HEALTH-PUBLIC HEALTH SERVICES
Regular	Service	ROUNDY	PATRICIA	4/30/2022	MAX	PARKING
Regular	Service	TIMM	ANDREW	4/30/2022	50	FIRE - SUPPORT SERVICES
Regular	Service	YACCARINO	DENNIS	4/30/2022	100	DOA-BUDGET AND POLICY DIVISION
Regular	Deferred	AWARTANI	ABDEL RAHIM	5/1/2022	100	DPW - INFRASTRUCTURE
Regular	Deferred	BELL	APRIL	5/1/2022	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Deferred	BROWNE	ROBERT	5/1/2022	100	MILWAUKEE PUBLIC SCHOOLS
Regular	Service	FIELDS	HARRIET	5/1/2022	MAX	MILWAUKEE PUBLIC SCHOOLS
Regular	Service	RESTERHOUSE	RICKY	5/1/2022	100	VEOLIA ENVIRONNEMENT
Regular	Service	ROUFUS	STEVEN	5/1/2022	100	MILWAUKEE POLICE DEPARTMENT

## Board Report - May 2022

## Deaths

Type	Last Name	First Name	Death Date	Payment Date	Amount
Deferred Death	PARKER	JOHNNY	1/19/2021	5/31/2022	\$ 24,057.11
Deferred Death-Member Only Refund	SINTHASOMPHONE	JASON	10/4/2018	5/31/2022	\$ 1,391.55
Retiree Death-Termination	ATHY	E. LOUISE	12/14/2021	5/31/2022	\$ 1,625.02
Retiree Death-Termination	BERENDT	GORDON	11/29/2021	5/31/2022	\$ 3,494.44
Retiree Death-Termination	COOK	DONALD	2/23/2022	5/31/2022	\$ 1,466.83
Retiree Death-Termination	FARDY	NANCY	4/15/2022	5/31/2022	\$ 1,067.48
Retiree Death-Termination	HARTINGER	BERTRAN	3/25/2022	5/31/2022	\$ 1,218.67
Retiree Death-Termination	HERTIG	JOYCE	2/26/2022	5/31/2022	\$ 366.85
Retiree Death-Termination	JOHNSON	BRIAN	3/24/2022	5/31/2022	\$ 949.22
Retiree Death-Termination	KUNKEL	JANET	3/22/2022	5/31/2022	\$ 536.70
Retiree Death-Termination	KUTZ	DONALD	4/4/2022	5/31/2022	\$ 526.30
Retiree Death-Termination	MERRYFIELD	BARRY	3/24/2022	5/31/2022	\$ 1,402.10
Retiree Death-Termination	QUALLS	LESSIE	3/25/2022	5/31/2022	\$ 487.96
Retiree Death-Termination	STUDENEC	MARTIN	2/16/2022	5/31/2022	\$ 3,076.65
Retiree Death-Termination	VALENTINE	JEAN	1/15/2022	5/31/2022	\$ 1,895.10
Retiree Death-Termination	VELLA	PETER	4/18/2022	5/31/2022	\$ 1,625.26
Retiree Death-Termination	WAGNER	DARLENE	5/24/2021	5/31/2022	\$ 2,354.38
Retiree Death-Termination	WASSENBERG	DEAN	2/24/2022	5/31/2022	\$ 1,316.83
Retiree Death-Termination	WENSIERSKI	JOHN	4/14/2022	5/31/2022	\$ 1,281.15
Retiree Death-Termination	ZELLMER	DOUGLAS	3/25/2022	5/31/2022	\$ 5,036.37
Surv Death-Termination	DOWNER	CASSIE	1/21/2022	5/31/2022	\$ 333.34
Surv Death-Termination	HARTINGER	BERTRAN	3/25/2022	5/31/2022	\$ 748.08
Surv Death-Termination	KASPRZAK	DIANA	4/26/2022	5/31/2022	\$ 1,139.46
Surv Death-Termination	KUTZ	DONALD	4/4/2022	5/31/2022	\$ 221.26
Surv Death-Termination	LILJEQUIST	KATHLEEN	2/5/2022	5/31/2022	\$ 520.31
Surv Death-Termination	MEHRING	JANE	4/19/2022	5/31/2022	\$ 1,484.09
Surv Death-Termination	STEUBER	BARBARA	3/23/2022	5/31/2022	\$ 1,924.12
Surv Death-Termination	WOJNOWSKI	DOROTHY	3/30/2022	5/31/2022	\$ 1,992.60
<b>TOTAL</b>					<b>\$ 63,539.23</b>

Type	Last Name	First Name	Death Date	Payment Date	Amount
Retiree Death-Cont Opt	BIALK	JEFFREY	4/24/2022	5/1/2022	
Retiree Death-Cont Opt	BUDNIK	RICHARD	5/12/2022	5/1/2022	
Retiree Death-Cont Opt	GOHLKE	JEFFREY	5/3/2022	5/1/2022	
Retiree Death-Cont Opt	JANKOWSKI	JOHN	5/16/2022	5/1/2022	
Retiree Death-Cont Opt	OLSON	RONALD	4/20/2022	5/1/2022	
Retiree Death-Cont Opt	OSSE	MARLENE	12/10/2020	5/1/2022	
Retiree Death-Cont Opt	SIMMONS	WILLIE	4/20/2022	5/1/2022	
Retiree Death-Cont Opt	WAGNER	THOMAS	5/5/2022	5/1/2022	
Retiree Death-Cont Opt	WOLSLAGER	GERALD	5/18/2022	5/1/2022	
Retiree Death-Cont Opt	ZENTGRAF	JOHN	4/25/2022	5/1/2022	

## Board Report - May 2022

## Withdrawals

Type	Last Name	First Name	Payment Date	Amount
Administrative Withdrawal	BAYLOR	ELOUISE	5/31/2022 \$	143.27
Administrative Withdrawal	COOK	KATRINA	5/31/2022 \$	275.11
Administrative Withdrawal	COPPAGE	ANDREA	5/31/2022 \$	2,088.15
Administrative Withdrawal	MALDONADO	EDWIN	5/31/2022 \$	63.90
Administrative Withdrawal	WALKER	GARY	5/31/2022 \$	1,116.38
Full Refund	ALLEN	LAQUITA	5/31/2022 \$	3,835.85
Full Refund	ARENDT	JOHN	5/31/2022 \$	3,408.29
Full Refund	AYALA	ARACELIS	5/31/2022 \$	10,800.05
Full Refund	BOUNDS	SHONTELL	5/31/2022 \$	4,596.61
Full Refund	CARTER	PATRICIA	5/31/2022 \$	4,166.18
Full Refund	COLEMAN	DEMOND	5/31/2022 \$	3,105.99
Full Refund	DAVIS	LATUNJA	5/31/2022 \$	8,229.25
Full Refund	GILHUBER	MICHAEL	5/31/2022 \$	8,001.09
Full Refund	HAMPTON	MIASHIA	5/31/2022 \$	9,342.35
Full Refund	HANNAH	SHERRIE	5/31/2022 \$	4,052.72
Full Refund	HICKS	MARVIN	5/31/2022 \$	9,491.82
Full Refund	MCCLERN	THOMAS	5/31/2022 \$	24,627.41
Full Refund	QUILES	VICTOR	5/31/2022 \$	6,407.32
Full Refund	ROEMING	CHERYL	5/31/2022 \$	8,084.83
Full Refund	ROUT	LYNETTE	5/31/2022 \$	15,324.98
Full Refund	SADOWSKI	TIMOTHY	5/31/2022 \$	16,420.02
Full Refund	SEYMER	TODD	5/31/2022 \$	20,886.54
Full Refund	STALLINGS	NAVATA	5/31/2022 \$	21,555.51
Full Refund	SZYMBORSKI	PAUL	5/31/2022 \$	69,401.34
Full Refund	TILLMAN	ELAN	5/31/2022 \$	4,923.06
Full Refund	TORRES	JEITZA	5/31/2022 \$	5,377.62
Full Refund	WIELAND	JODIE	5/31/2022 \$	4,802.42
Member Only Refund	CLARK	CARMA	5/31/2022 \$	597.43
Member Only Refund	CLAYTON	KEYANDRE	5/31/2022 \$	3,427.25
Member Only Refund	COOPER	LEIGHTON	5/31/2022 \$	2,993.51
Member Only Refund	DAVIS	KAYLA	5/31/2022 \$	1,561.98
Member Only Refund	DRUCH	REBECCA	5/31/2022 \$	588.00
Member Only Refund	FEY	BARRY	5/31/2022 \$	5,001.53

Type	Last Name	First Name	Payment Date	Amount
Member Only Refund	GENTRY	DEANDRE	5/31/2022 \$	878.19
Member Only Refund	GOMEZ-RODRIGUEZ	FRANCHESKA	5/31/2022 \$	1,852.66
Member Only Refund	HARRIS	KIM	5/31/2022 \$	1,192.34
Member Only Refund	HAYNES	MONIQUE	5/31/2022 \$	2,682.33
Member Only Refund	HICKS	COURTNEY	5/31/2022 \$	1,687.16
Member Only Refund	JACKSON	SABRINA	5/31/2022 \$	1,138.89
Member Only Refund	JONES	ANNETTE	5/31/2022 \$	1,701.37
Member Only Refund	JUNIOR	NIJAH	5/31/2022 \$	1,872.14
Member Only Refund	LEWIS	MOSES	5/31/2022 \$	3,532.22
Member Only Refund	LINTON	TERRESA	5/31/2022 \$	756.23
Member Only Refund	LUMPKINS	DOMINIQUE	5/31/2022 \$	1,509.41
Member Only Refund	LUMPKINS	JIRETHA	5/31/2022 \$	410.41
Member Only Refund	MADISON	RANDALL	5/31/2022 \$	308.25
Member Only Refund	MAYES	JOHNNY	5/31/2022 \$	1,481.18
Member Only Refund	PIRAINO	JOHN	5/31/2022 \$	5,907.83
Member Only Refund	ROBINSON	CASSANDRA	5/31/2022 \$	8,814.57
Member Only Refund	SCHUNK	JASON	5/31/2022 \$	7,380.54
Member Only Refund	SELF	NATHAN	5/31/2022 \$	2,367.43
Member Only Refund	SMITH	HAYNIE	5/31/2022 \$	1,737.54
Member Only Refund	STURKEY	LAKESHA	5/31/2022 \$	440.06
Member Only Refund	WEGNER	SUDHA	5/31/2022 \$	60.18
Member Only Refund	WILL	KYLE	5/31/2022 \$	482.07
Member Only Refund	WILLIAMS	SHAMEKIA	5/31/2022 \$	1,140.09
<b>TOTAL \$</b>				<b>334,030.85</b>



## **Conference Requests – June 2022 Board Meeting**

Erich Sauer,  
Thomas Courtright

Sponsor:

Location:

Date:

Estimated Cost:

William Blair Due Diligence

William Blair

Chicago, IL

August 23, 2022

\$250.00 total

EMPLOYES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE

AT LARGE 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, 2023 AND  
EXPIRING DECEMBER 31, 2026.

TERM OF JAMES CAMPBELL EXPIRES DECEMBER 31, 2022

**RULES AND REGULATIONS FOR THE SPECIAL AT LARGE MEMBER ELECTION**  
**November 4, 2022**

Nomination papers shall be available on [www.cmers.com](http://www.cmers.com) or at the office of the Election Commission, Room 501 of City Hall, on August 1, 2022 and must be filed before 3:30 p.m. August 26, 2022. 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. August 30, 2022. Attendance of candidates is optional.

**The election shall be held on November 4, 2022.** 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 9, 2022. 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 Employees' 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

## VI.

### MEDICAL REPORTS

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

MERITS	CITY OF MILWAUKEE EMPLOYEES' RETIREMENT SYSTEM	Page Number: 1 OF 1
	Medical Panel Approvals Report	DATE RAN : 06/17/2022
Approved by Executive Director	Pension Board Meeting Date 06/30/2022	TIME RAN : 12:14

DOCTOR DECISION

<u>Case Number</u>	<u>Name</u>	<u>Title</u>	<u>Employer</u>	<u>Case Type</u>	<u>Case Sub-Type</u>	<u>City</u>	<u>Union</u>	<u>Third</u>	<u>Disability Date</u>	<u>Comments</u>
539	BEAMON, JEFFERY	HEAVY EQUIPMENT OPERATOR	FIRE	DD 75%	Re-Examination	Approved	Approved		05/20/2007	Exempt from Re-Exam
549	BEKERIS, DENISE	FIRE FIGHTER	FIRE	DD 75%	Re-Examination	Approved	Approved		03/01/2018	Exempt from Re-Exam
1189	KRONBERG, JAMES	FIRE FIGHTER	FIRE	DD 75%	Re-Examination	Approved	Approved		01/27/2015	Exempt from Re-Exam
1012	NEWMAN, TIMOTHY	HEO	FIRE	DD 75%	Re-Examination	Approved	Approved		06/26/2012	
1251	BRESETTE, ROBERT	FIRE LIEUTENANT	MFD	DD 75%	Re-Examination	Approved	Approved		04/01/2020	
711	ARCE, ALEJANDRO	POLICE OFFICER	MILWAUKEE POLICE DEPT	DD 75%	Re-Examination	Approved	Approved		02/26/2009	
553	JULY, ANGELA	POLICE OFFICER	POLICE	DD 75%	Re-Examination	Approved	Approved		08/21/2001	
1132	KUNISCH, GRAHAM	POLICE OFFICER	POLICE	DD 90%	Re-Examination	Approved	Approved		03/17/2014	

Number of Cases: 8

*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.*

<u>Name</u>	<u>Title</u>	<u>Employer</u>	<u>CaseType</u>	<u>Case Sub-Type</u>	<u>Disability Date</u>	<u>Medical Council Meeting Date</u>
GONZALEZ, HENRY	EQUIPMENT MECHANIC I	DPW - SEWERS	Ordinary Disability	Re-Examination	11/22/2015	06/03/2022
GRIMES, SAHAGIAN	SANITATION YARD ATTENDANT	DPW-OPERATIONS	Duty Disability 75%	Re-Examination	01/10/2020	06/03/2022
JASSO, MICHAEL	FIREFIGHTER	MFD	Ordinary Disability	Re-Examination	04/25/2018	06/03/2022
KAMINSKY, JOSEPH	URBAN FORESTRY SPECIALIST	DPW-FORESTRY	Ordinary Disability	Application	01/07/2022	06/03/2022
THIEDE, GAIL	POLICE RECORDS SPECIALIST	CITY OF MILWAUKEE - MPD	Ordinary Disability	Application	03/31/2022	06/03/2022
TURNER-YOUNG, SHARON	FOOD SERVICE ASST	MPS	Ordinary Disability	Re-Examination	10/09/2016	06/03/2022
WHITFIELD, YORON	POLICE OFFICER	POLICE	Ordinary Disability	Re-Examination	04/27/2012	06/03/2022

Number of Cases:

7

*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.*

MERITS	CITY OF MILWAUKEE EMPLOYEES' RETIREMENT SYSTEM 1	Page Number:	1 OF 1
	Medical Council Denials Report	DATE RAN :	06/06/2022
	Board Meeting: 06/30/2022	TIME RAN :	11:40

<u>Case Number</u>	<u>Name</u>	<u>Title</u>	<u>Employer</u>	<u>CaseType</u>	<u>Case Sub-Type</u>	<u>Disability Date</u>	<u>Medical Council Meeting Date</u>
1512	GREENE, ALBERT	CUSTODIAL WORKER II	MPD	OD	Application	11/16/2021	06/03/2022
1511	GREENE, ALBERT	CUSTODIAL WORKER II	MILWAUKEE POLICE DEPARTME	DD 75%	Application	11/16/2021	06/03/2022
1520	KAMINSKY, JOSEPH	URBAN FORESTRY SPECIALIST	DPW-FORESTRY	DD 75%	Application	01/07/2022	06/03/2022

Number of Cases: 3

*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.



## June 30, 2022 Board Meeting

### **PENDING LEGAL OPINIONS AND SERVICE REQUESTS REPORT**

#### **PART 1. LEGAL OPINIONS - OFFICE OF CITY ATTORNEY**

**01/28/22 Same Sex Spouse Retirees**

The Employees' Retirement System received an inquiry from a retiree as it relates to a post-retirement election of a same gender spouse survivor where state law was found to unconstitutionally prohibit same gender marriages previous to the retirement of the retiree.

#### **PART 2. LEGAL OPINIONS - OUTSIDE LEGAL COUNSEL**

None.

#### **PART 3. SERVICE REQUESTS - OFFICE OF CITY ATTORNEY**

**12/16/21 Contract for Banking Services**

ERS staff requests assistance of legal counsel in drafting and negotiating a contract for banking services with vendor.

**01/14/22 Contract for Office Space**

ERS staff requests the services of the City Attorney's in the negotiation and drafting of a contract for office space.

**03/01/22 Annuity & Pension Board Direct Hires**

The City Attorney's Office is asked to revise the Inter-Governmental Cooperation Agreement between the ERS/APB and City of Milwaukee that would authorize the Board to directly hire employees who are not subject to the City's Salary Ordinance.

#### **PART 4. SERVICE REQUESTS - OUTSIDE LEGAL COUNSEL**

**02/14/22 Hedge Fund Investment Manager**

ERS Investment staff requests legal counsel to assist with the negotiation and drafting of an investment manager agreement with a newly-selected hedge fund manager.  
03/11/22 Matter referred to Reinhart Boerner Van Deuren S.C. by City Attorney's Office.





## June 30, 2022 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.

## Employees' Retirement System – Executive Director's Report

June 2022

- I. Personnel Update
  - A. ERS is working with DER to fill the following positions: Records Technician II and Benefit Services Coordinator.
- II. Member Services
  - A. New retirees on payroll in May - 35; 62 are currently anticipated for the June payroll.
  - B. Retiree deaths in May – 24.
  - C. There was a Retirement Workshop for Police on 5/13/22 and 12 attended and a Retirement Workshop for Fire on 5/20/22 and 3 attended. There was a New Employee Orientation for DPW on 6/7/22 and 20 attended.
  - D. Below is a breakdown of to-date ERS benefits payouts/active/deferred counts:

Category	Count
<b>Annuitants</b>	
Death - Duty	27
Death - Ordinary	93
Disability - Duty	385
Disability - Ordinary	587
Retirement	12,652
Separation	36
<b>Total Annuitants</b>	<b>13,780</b>
<b>Active</b>	<b>10,676</b>
<b>Deferred</b>	<b>3,079</b>
<b>Total Population</b>	<b>27,535</b>

- III. Financial Services
  - A. The 1/1/22 Actuarial Valuation Report will be presented by our actuaries from Cavanaugh MacDonald at the June Board meeting.
  - B. The 2021 Annual Comprehensive Financial Report (ACFR) is still being reviewed by Baker Tilly in preparation for their presentation at the July A&O Committee meeting.
  - C. **CMERS received the Government Finance Officer Association's Certificate of Achievement for Excellence in Financial Reporting** for our 2020 ACFR. We also plan to submit our 2021 ACFR for consideration of the award.
  - D. The outside earnings offsets will start in July for members who have submitted their tax returns and are due to have their benefit payments offset. In addition, any non-responders will have their benefit payment suspended in July until they submit the required paperwork.
  - E. Staff continues to work on recalculating benefits for the contracts with MPA, Local 215 and MPSO. We plan to have the MPA service retirements recalculated and retro payments issued as part of the June 30<sup>th</sup> payroll. We plan to recalculate and pay the Local 215 and MPSO duty disability recipients by 7/31/22 and will have the Local 215 and MPSO service retirements recalculated and paid by 9/30/22 at the latest.

#### IV. Information Services

- A. Struts Upgrade and Modernize MERITS Website in progress.
- B. IP Address Review and Cleanup – 2021 in progress.
- C. DNS Review and Cleanup – 2021 in progress.
- D. AD Review and Cleanup – 2021 in progress.
- E. Firewall Review and Cleanup – 2021 in progress.
- F. Backup Exec Upgrade in progress.
- G. FileNet P8-WebSphere Application Server Upgrade in progress.
- H. Altiris/Symantec IT Management Suite Upgrade in progress.
- I. SQL SentryOne Upgrade completed.
- J. SQL LiteSpeed Upgrade completed.
- K. Network Infrastructure Upgrade completed.

#### V. Administration

- A. A copy of the draft January 1, 2022 actuarial valuation prepared by CMERS independent actuary, Cavanaugh MacDonald, was sent to Trustees for review last **month, no revisions were made in the draft before the Board for approval at today's** meeting.

Table 20 on page 39 of the valuation report, projects the Stable Contribution for the City proper, excluding city agencies is \$68,579,860, as of January 1, 2023, if pre-paid at that time rather than when due and payable on January 31, 2024. This amount is based on the current Stable Contribution percentage of pay set for the period 2018-2022 and will be revised by the actuary following the five-year experience study and reset of the Stable Contribution Policy for the period 2023-2027.

The experience study presentation by the actuary will begin at a special Board meeting on August 24<sup>th</sup> with a discussion about proposed revisions to CMERS economic assumptions (e.g. the expected long-term return on assets, inflation, pay escalation, etc.). Presentation of the proposed revisions to demographic assumption (e.g. mortality, retirement age, employment turn-over, etc.) will follow at the **September Board meeting. Following the Board's approval of the results of the** experience study, the actuary will reset the Stable Contribution beginning for 2023 through 2027 per MCC-36.

# Basic Website Metrics

	2021								2022				
	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Visits	4,842	4,479	4,188	4,592	4,678	5,442	5,180	4,728	5,053	4,698	5,107	4,872	<b>4,212</b>
Users	3,816	3,440	3,203	3,566	3,533	4,015	3,813	3,667	3,810	3,551	3,375	3,751	<b>3,147</b>
Page Views	13,287	11,539	11,411	11,868	12,240	16,046	13,712	12,305	13,532	12,267	13,227	12,458	<b>11,258</b>
Pages/ Visit	2.74	2.58	2.72	2.58	2.62	2.95	2.65	2.60	2.68	2.61	2.59	2.56	<b>2.67</b>
Ave. Visit	2:07	2:07	2:10	2:10	2:23	2:35	2:10	2:09	2:18	2:10	2:10	2:14	<b>2:29</b>

## VIII.

### INFORMATIONAL

- A. Pending Litigation Report.
- B. Conferences.
- C. Class Action Income 2022 YTD.
- D. Minutes of the Investment Committee Meeting Held June 9, 2022.
- E. Minutes of the A&O Committee Meeting Held June 16, 2022.
- F. Report on Bills.
- G. Deployment of Assets.
- H. Securities Lending Revenue and Budget Report.
- I. Preliminary Performance Report and Asset Allocation.



## June 30, 2022 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 have filed suit on behalf of certain duty disability retirees against the City of Milwaukee and the Employees' 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\*\***

- **05/18/22** Petition for Review granted by WI Supreme Court. Petitioner's Brief due 06/17/22; ERS Response Brief due 07/07/22; Petitioner's Reply Brief due 07/17/22.
- **05/26/22** Hearing held on MPSO's Motion for Attorney Fees. Court will issue its decision based on arguments and briefs of counsel.

##### **Faith Wooden v. City of Milwaukee, et al; Case No. 2022CV001119**

Widow of a deceased public safety employee filed a Petition for Certiorari Review of the Annuity & Pension Board's Decision denying the petitioner's Application for Accidental Death Benefits.

**\*\*See prior Reports for case history\*\***

- **04/26/22** Administrative Record filed. Awaiting Scheduling Conference.

##### **MPA and Kurt Lacina v. City of Milwaukee, et al; Case No. 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\*\***

- **05/06/22** Scheduling Conference rescheduled to June 16, 2022.

## **Part 2. ERS Administrative Appeal Hearings through the City Attorney**

### **Jason Rodriguez; Administrative Case No. 1443**

Status: Hearing stayed pending outcome of Appellant's state workers compensation (WC) appeal hearing. First WC appeal hearing held May 10, 2022. Second WC appeal date pending.

### **Sandrah Crawford; Administrative Case No. 1457**

Status: Status Conference scheduled for June 16, 2022.

## **Part 3. Notice of Claim filed with ERS**

None.

## **Part 4. ERS Litigation through Outside Legal Counsel**

None.

# Client Conferences 2022

**Board Meeting: June 30, 2022**

DATE(S)	CONFERENCE(S) / LOCATION(S)	SPONSOR(S)
August 24 – 25, 2022 10:30 am – 1:30pm	“Callan College” on Alternative Investments Virtual	Callan Associates
September 12, 2022	Baird Advisors’ 22 <sup>nd</sup> Annual Institutional Investors Conference Kohler, WI	Robert W. Baird
September 20 – 21, 2022	2022 USLF Annual Investor Meeting Miami, FL	ProLogis
September 20 – 22, 2022 10:30 am – 1:30 pm	“Callan College” Introduction to Investments Virtual	Callan Associates
November 8, 2022	Abbott Capital Management Advisory Board Meetings New York, New York	Abbott Capital



# Trustee Conferences 2022

**Board Meeting: June 30, 2022**

DATE(S)			
July 20 – 21, 2022 2:00 pm – 4:00 pm	Redefining Fixed Income Virtual	Institutional Investor	
July 21, 2022	ALTSCHI Chicago, IL	Markets Group	
August 9, 2022	Global Real Assets Investment Forum Austin, TX	Institutional Investor	
August 21 – 23, 2022	Public Pension Funding Forum Los Angeles, CA	NCPERS	
August 23, 2022	Private Equity Chicago Forum Chicago, IL	Markets Group	
August 30, 2022	IREI : Live – A Global Look at Multifamily Virtual	Institutional Real Estate, Inc.	
September 13, 2022	8 <sup>th</sup> Annual Great Plains Institutional Forum Minneapolis, MN	Markets Group	
September 14, 2022	6 <sup>th</sup> Annual Midwest Institutional Real Estate Investor Forum Chicago, IL	Markets Group	
September 21 – 23, 2022	CII Fall 2022 Conference Boston, MA	Council of Institutional Investors	
September 23 – 24, 2022	Certificate Series – Investment Basics Washington DC	International Foundation of Employee Benefit Plans	
October 22 – 23, 2022	Certificate of Achievement in Public Plan Policy (CAPPP®): Pension Part II Las Vegas, NV	International Foundation of Employee Benefit Plans	
October 22 – 23, 2022	NCPERS Accredited Fiduciary (NAF) Program Nashville, TN	NCPERS	
October 23 – 26, 2022	2022 Public Safety Conference Nashville, TN	NCPERS	
November 29, 2022	IREI : Live – Topic of the Day: ESG Virtual	Institutional Real Estate, Inc.	

# Upcoming Due Diligence Meetings

Date	Manager(s)	Team
August 23, 2022	William Blair (with potential meeting with JP Morgan) (Chicago, IL)	Erich and Tom
August or September, 2022	AQR, UBS, Morgan Stanley (New York, NY and Greenwich, CT)	Erich
September 2022	DFA and Brandes (Santa Monica and San Diego, CA)	David

## Class Action Income 2022 YTD

Asset Description	Date(s)	Amount
Foreign Exchange Benchmark Rates Antitrust Litigation	1/18/2022 \$	4,007
First Solar	2/4/2022 \$	14,395
Foreign Exchange Benchmark Rates Antitrust Litigation	2/28/2022 \$	150
LIBOR-Based Securities Litigation	2/28/2022 \$	871
AAC Holdings, Inc.	3/22/2022 \$	79
Equifax, Inc.	4/22/2022 \$	624
Royal Bank of Scotland	5/16/2022 \$	84,200
GTT Communications, Inc.	5/27/2022 \$	6,946
<b>Total Class Action Income Received in 2022 YTD</b>	<b>\$</b>	<b>111,273</b>

**EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE  
ANNUITY AND PENSION BOARD**

Minutes of the Investment Committee Meeting  
held June 09, 2022 via teleconference during COVID-19

The meeting was called to order at 9:34 a.m.

Committee Members Present:       Matthew Bell  
   James Campbell  
   Deborah Ford  
   Molly King  
   Thomas Klusman, Chair  
   Nik Kovac  
   Aycha Sawa

Committee Members Not Present:   Rudy Konrad, excused

ERS Staff Present:                   Jerry Allen, Executive Director  
   David Silber, Chief Investment Officer  
   Erich Sauer, Deputy Chief Investment Officer  
   Thomas Courtright, Pension Investment Analyst  
   Gust Petropoulos, Deputy Director - Disability  
   Jan Wills, Board Stenographer

Others Present: Sally Haskins, Munir Iman, John Jackson, Callan; Terry Siddiqui, DS Consulting, Inc.; three members of the public called in.

**Approval of UBS Hedge Fund Solutions Guideline Change.** As a matter of information, Committee members received from Mr. Sauer a UBS Guideline Update Memorandum where UBS requested to modify the guidelines for the hedge fund-of-one they manage for CMERS. He noted UBS is requesting to invest up to five percent of assets into strategies that are categorized as “direct trading.” Mr. Sauer said they want to implement co-investments in a more diversified way and UBS wants to put a fund of co-investments into portfolios. He commented that the reason for the guideline change is that within this co-investment fund, UBS does direct trading, so rather than an investment manager implementing the trades for the co-investment, UBS itself implements the trades. Mr. Sauer said Staff had discussions with Callan and UBS and the key takeaway is that the investment ideas are still coming from external managers, and UBS is just doing the trades. He said Staff feels comfortable with UBS doing this and the more diversified approach to co-investments is a better way to do it. He said Staff and Callan are in favor of the guideline change and they recommend that this guideline change be approved.

It was moved by Mr. Campbell, seconded by Ms. King, and unanimously carried, to approve the Approval of UBS Hedge Fund Solutions Guideline Change.

**Callan Real Estate Presentation.** As a matter of information, Committee members received from Callan a Real Estate Performance Review booklet. Ms. Haskins and Mr. Iman gave a presentation on a Market Review and discussed the U.S. Private Real Estate Market Trends. They also provided

a Portfolio Summary and discussed Real Estate Objectives and Purpose, Real Estate Portfolio Summary, Significant Progress Made in Repositioning the Portfolio, Real Estate Portfolio Diversification, Portfolio Returns Above Benchmark in Recent Periods, Returns by Style, First Quarter 2022 Core Fund Portfolio Allocation, and Conclusions & Recommendations. Mr. Silber added that Callan's recommending a fifth Core real estate manager to be added so CMERS can reduce its allocation to Industrial and be cognizant of manager concentration. He said Callan will create a manager search profile that will be discussed at the September Investment Committee meeting.

Mr. Klusman advised that the Investment Committee may vote to convene in closed session on the following items (II. and III.) 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.

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

The Committee convened in closed session at 10:01 a.m.

Mr. Campbell left the meeting at 10:10 a.m.

The Committee reconvened in open session at 10:20 a.m.

**Approval of Recommendation regarding investment in Bryanston Retail Opportunity Fund, L.P.** It was moved by Ms. Ford, seconded by Mr. Bell, and unanimously carried, to approve the Approval of Recommendation regarding investment in Bryanston Retail Opportunity Fund, L.P.

**Approval of Real Estate Investment Policy Statement Update.** As a matter of information, Committee members received a redlined and updated copy of the June 2022 Real Estate Investment Policy Statement. Mr. Silber noted the guidelines have a maximum allocation exposure to Private Real Estate of 10%. He said Callan's presentation showed the Fund's Private Real Estate allocation was under 10% as of December 31, 2021, but Mr. Silber commented that with market movements and continued good returns in Private Real Estate since the beginning of the year, the Fund is now projected to be over a 10% allocation. Mr. Silber said Callan and Staff want to propose a new approach to the minimum and maximum range to Private Real Estate. He said Private Real Estate makes up 70% of the Fund's Real Assets allocation and there is already a Real Assets minimum range of 10% to a maximum of 16%. Mr. Silber said Private Real Estate is illiquid, lags, and that going forward it makes sense to solely use the total Real Assets range and to no longer use a Private Real Estate minimum and maximum range. He noted the target in the Real Estate Investment Policy Statement would change from 7.7% to 9.1% to match the 9.1% already being used in the Fund's benchmark within the Fund's Statement of Investment Policy. He said the guidelines were not changed earlier as 2% was set aside for infrastructure, of which implementation was subsequently paused by the Committee.

It was moved by Mr. Bell, seconded by Mr. Kovac, and unanimously carried, to approve the Approval of Real Estate Investment Policy Statement Update.

**Approval of Statement of Investment Policy Update.** As a matter of information, Committee members received a redlined and updated copy of the June 2022 Statement of Investment Policy Update. Mr. Silber noted the Private Real Estate minimum and maximum ranges were eliminated to be consistent with the Real Estate Investment Policy Statement previously discussed. He also commented that Direct Trading within the UBS guideline was changed to reflect a range of 0-5% as previously discussed.

It was moved by Mr. Bell, seconded by Ms. Ford, and unanimously carried, to approve the Approval of Statement of Investment Policy Update.

**Chief Investment Officer Report.** Mr. Silber noted that the Public Equity Structure – Phase 2 will be presented at the September Investment meeting. Mr. Silber commented that the Hedge Fund of Funds contract negotiations are ongoing. Mr. Silber added that the Fund value as of June 8 is estimated to be \$5.93 billion. He said the May estimate is 0.9% and the May benchmark is 0.2%. He said the December 31, 2021 Private Equity statements are coming in now from a few more managers, and those are likely to impact the final performance reported by the custodian for the month of May. Mr. Silber said if Private Equity and Real Estate are excluded, the Fund is in line with the benchmark for the first week in June. He said the Fund's return year-to-date is estimated to be -3% and the benchmark return is -5.6% year to date, through June 8. Discussion ensued.

#### **Informational.**

**1<sup>st</sup> Quarter 2022 Performance Report.** As a matter of information, Committee members received the 1<sup>st</sup> Quarter 2022 Performance Report dated June 9, 2022.

**Callan 1<sup>st</sup> Quarter 2022 Performance Report.** As a matter of information, Committee members received from Callan the 1st Quarter 2022 Performance Report for CMERS dated March 31, 2022.

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

There being no further business, Mr. Klusman adjourned the meeting at 10:45 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 Employees' Retirement System, 789 N. Water Street, Suite 300.)

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

Minutes of the Administration and Operations Committee Meeting  
held June 16, 2022 via teleconference during COVID-19

The meeting was called to order at 9:00 a.m.

Committee Members Present:        Tom Klusman  
  Aycha Sawa, Chair

Committee Members Not Present:   Molly King (arrived at 9:08 a.m.)

ERS Staff Present:                    Bernard Allen, Executive Director  
  Melody Johnson, Deputy Director  
  Jeff Shober, Chief Technology Officer  
  Daniel Gopalan, Chief Financial Officer  
  David Silber, Chief Investment Officer  
  Erich Sauer, Deputy Chief Investment Officer  
  Mary Turk, Business Operations Analyst  
  Jan Wills, Board Stenographer

Others Present: Terry Siddiqui, DS Consulting Partners, Inc., one member of the public called in to the meeting.

**Update on RFP for Banking Services.** As a matter of information, Committee members received a memo from Ms. Turk regarding an “RFP for Banking Services.” Ms. Turk noted the contract with Wells Fargo expires at the end of 2022. She said the contract with Wells Fargo is for the checking account as the bank does the member payments. Ms. Turk said four banks, including Wells Fargo, responded to an RFP. She said they are currently in the process of scoring the proposals and the summary of the results will be presented to the Committee at the July A&O meeting. Ms. Turk said the Committee would then be able to make a decision next month.

**Approval of A&O Committee Audit Charter and Internal Audit Charter.** As a matter of information, Committee members received both the “Administration & Operations Committee Audit Charter” and the “Internal Audit Charter,” both dated May 2022. Mr. Gopalan noted the only changes every year are to update the current year in each document. Ms. Sawa asked, if at the July meeting, there would be a review and approval of the audited financials. Mr. Allen confirmed that Baker Tilly would be providing a review at the July meeting. Ms. Sawa also noticed on the same Administration & Operations Committee Audit Charter that the correct language for the City Comptroller’s hotline should read “City Comptroller’s Fraud Hotline” instead of “City Comptroller’s Audit Division-Audit Hotline.” Staff said the document would be corrected. Ms. Sawa also asked in the signature section on the “Internal Audit Charter” if CliftonLarsonAllen (CLA) needed to provide a signature since it is outsourced to them. Discussion ensued. Staff said a line could be added for their signature. Ms. Sawa requested a copy of CLA’s professional standards.

Ms. King arrived at the meeting at 9:08 a.m.

It was moved by Ms. King and seconded by Mr. Klusman to approve the Approval of Administration & Operations Committee Audit Charter and Internal Audit Charter, pending CliftonLarsonAllen (CLA) signing off on the Charter. The motion prevailed by the following roll call vote: AYES: Mses. King, Sawa; Mr. Klusman, NOES: None.

**IT Projects Portfolio.** As a matter of information, Committee members received the “IT Projects and Ticket Statistics” as well as the “Portfolio as of June 9, 2022.” Mr. Shober provided an update on various IT projects in progress as well as completed projects.

**Organizational/Personnel Update.** As a matter of information, Committee members received the “Organizational/Personnel Update” dated June 16, 2022. Ms. Johnson provided an update and noted the Pension Investment Analyst – Sr. position has been filled and the person hired will be starting August 1, 2022. She said the Office Assistant III position has also been filled via an internal promotion and the employee was previously a Records Technician. Discussion ensued.

It was moved by Mr. Klusman, seconded by Ms. King, and unanimously carried, to adjourn the meeting.

There being no further business, Ms. Sawa adjourned the meeting at 9:25 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 Employees’ Retirement System, 789 N. Water Street, Suite 300.)



<b>Fiscal Year</b> <b>2022</b>	<b>City of Milwaukee</b>					<b>As of: 2022-06-30</b>			
<b>Department</b> <b>Employees' Retirement System</b>	<b>Departmental</b>								
	<b>Appropriation Budget Balances</b>								
	<b>Budget</b>	<b>2022-3</b>	<b>2022-4</b>	<b>2022-5</b>	<b>2022-6</b>	<b>Year to Date Expended</b>	<b>Life to Date Commitments</b>	<b>Remaining Budget</b>	
<i>Regular Departmental Appropriations:</i>									
Employee Salaries & Wages	3,583,222.00	-	-	-	-	-	-	3,583,222.00	
Base Pay-Salary & Wage	-	236,138.18	333,165.38	238,468.38	-	1,221,102.64	-	(1,221,102.64)	
Overtime Premium	-	42.97	202.37	219.27	-	963.14	-	(963.14)	
Other Worked Compensation	-	-	4,355.94	-	-	4,840.37	-	(4,840.37)	
Time Paid Not Worked	-	17,848.60	50,025.93	27,381.68	-	204,274.27	-	(204,274.27)	
Employee Salaries & Wages	\$ 3,583,222.00	254,029.75	387,749.62	266,069.33	-	\$ 1,431,180.42	\$ -	\$ 2,152,041.58	
Fringe Benefits Applied	1,648,282.00	-	-	-	-	-	-	1,648,282.00	
Fringe Benefits Applied	-	121,823.67	171,880.03	63,267.09	-	570,208.13	-	(570,208.13)	
Applied Employee Benefits	\$ 1,648,282.00	121,823.67	171,880.03	63,267.09	-	\$ 570,208.13	\$ -	\$ 1,078,073.87	
Operating Expenditures	15,558,400.00	-	-	-	-	-	-	15,558,400.00	
Office Supplies	-	(478.35)	790.13	88.98	-	511.02	-	(511.02)	
Magazines,Subscription	-	(276.53)	454.52	-	-	218.52	-	(218.52)	
Postal and Mailing Services	-	9,490.48	19,367.28	18,871.42	-	57,382.44	-	(57,382.44)	
Electricity	-	-	2,274.45	2,444.10	-	4,718.55	-	(4,718.55)	
Films & Other Educational Item	-	-	7,653.31	-	-	7,653.31	-	(7,653.31)	
Other Operating Supply	-	-	6,903.27	-	-	6,903.27	-	(6,903.27)	
Building Rental	-	31,567.83	31,269.28	31,461.78	-	187,529.17	-	(187,529.17)	
Printing & Dupl Machine Rental	-	2,379.75	1,978.64	2,900.89	-	11,173.70	-	(11,173.70)	
Consulting	-	43,852.05	15,750.00	60,249.99	-	100,901.65	-	(100,901.65)	
Medical,Surgical & Lab	-	9,569.56	6,875.87	10,366.12	-	30,059.69	-	(30,059.69)	
Administrative Charges	-	33,433.32	50,822.20	78,964.45	-	225,869.36	-	(225,869.36)	
Other Professional Services	-	397,073.43	194,709.96	672,039.12	661,433.14	1,712,577.86	-	(1,712,577.86)	
Systems Support	-	22,057.00	61,890.50	49,718.00	-	182,042.50	-	(182,042.50)	
IT Infrastructure	-	-	46,303.16	5,686.40	-	103,889.56	-	(103,889.56)	
Infrastructure	-	-	48,700.17	-	-	49,203.13	-	(49,203.13)	
Telephone, Communications	-	4,793.15	9,329.26	5,041.95	290.29	24,122.87	-	(24,122.87)	
Bldgs-Machinery & Equip Repair	-	-	-	3,616.25	-	3,616.25	-	(3,616.25)	
Travel & Subsistence	-	(218.97)	8,725.16	6,563.79	-	12,748.78	-	(12,748.78)	
Equipment Repair (Parts & Labo	-	-	-	92.00	-	92.00	-	(92.00)	
Printing Services	-	35.66	1,085.88	107.41	-	1,228.95	-	(1,228.95)	
Insurance-Non Health	-	-	-	-	-	12,724.00	-	(12,724.00)	
Other Misc Services	-	12,420.79	4,850.03	338.97	-	19,315.60	-	(19,315.60)	
Operating Expenditures	\$ 15,558,400.00	565,699.17	519,733.07	948,551.62	661,723.43	\$ 2,754,482.18	\$ -	\$ 12,803,917.82	
All Equipment	873,000.00	-	-	-	-	-	-	873,000.00	
Total Equipment	\$ 873,000.00	-	-	-	-	\$ -	\$ -	\$ 873,000.00	
Total Regular Class	\$ 21,662,904.00	941,552.59	1,079,362.72	1,277,888.04	661,723.43	\$ 4,755,870.73	\$ -	\$ 16,907,033.27	
<i>Other Departmental Appropriations:</i>									
Pol Pension Lump-Sum Sup Cont	10,000.00	-	-	-	-	10,000.00	-	-	
PABF Payroll	55,000.00	4,077.01	1,560.77	3,077.01	-	17,870.02	-	37,129.98	
Group Life Insurance Premium	4,560,000.00	373,340.13	364,990.11	373,899.58	-	1,892,118.62	-	2,667,881.38	
Retiree's Benefit Adjustment	32,000.00	1,889.92	5,191.49	1,898.96	-	12,975.50	-	19,024.50	
Other Classes	\$ 4,657,000.00	379,307.06	371,742.37	378,875.55	-	\$ 1,932,964.14	\$ -	\$ 2,724,035.86	
Total Dept Appropriations	\$ 26,319,904.00	1,320,859.65	1,451,105.09	1,656,763.59	661,723.43	\$ 6,688,834.87	\$ -	\$ 19,631,069.13	

# Monthly Board Report

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## Manager Mix Report

Account Name/ Account Number	Cash/ % of account	Short Term/ % of account	Equity/ % of account	Fixed/ % of account	R.E. and Other/ % of account	Pendings/ % of account	Total Market Value/ % of consolidation
MILWAUKEE-TOWNSEND CASH 2602846	0.00 0.00%	1,644,367.01 100.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	1,644,367.01 0.03%
MILWAUKEE-CASH ACCOUNT 2605491	0.00 0.00%	35,530,731.05 100.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	35,530,731.05 0.59%
MILWAUKEE-THE NORTHERN TRS 2605496	0.00 0.00%	0.00 0.00%	303,695,023.20 100.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	303,695,023.20 5.04%
MILWAUKEE-ERS EXPENSE FUND 2605504	0.00 0.00%	357,320.95 100.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	357,320.95 0.01%
MILWAUKEE-PABF BENEFIT PAYMENT 2610128	0.00 0.00%	2,235.04 100.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	2,235.04 0.00%
MILWAUKEE-DFA INTERNATIONAL 2619838	0.00 0.00%	0.00 0.00%	179,869,993.80 100.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	179,869,993.80 2.99%
MILWAUKEE-EARNEST -SL 2630942	0.00 0.00%	2,149,963.42 1.90%	111,197,805.40 98.10%	0.00 0.00%	0.00 0.00%	0.00 0.00%	113,347,768.80 1.88%
MILWAUKEE - UBS A&Q 2637239	0.00 0.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	463,282,151.30 100.00%	0.00 0.00%	463,282,151.30 7.69%
MILWAUKEE-DFA 2637848	0.00 0.00%	0.00 0.00%	194,767,169.00 100.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	194,767,169.00 3.23%
MILWAUKEE-BAIRD 2674604	0.00 0.00%	23,941,826.24 29.62%	0.00 0.00%	59,379,010.87 73.45%	0.00 0.00%	-2,482,601.22 -3.07%	80,838,235.89 1.34%
MILWAUKEE-CASTLEARK 2697782	0.00 0.00%	377,319.70 0.46%	81,518,657.70 99.48%	0.00 0.00%	0.00 0.00%	47,171.02 0.06%	81,943,148.42 1.36%
MILWAUKEE - BLACKROCK R1000V 4472746	0.00 0.00%	0.00 0.00%	154,976,539.90 100.00%	0.00 0.00%	0.00 0.00%	0.00 0.00%	154,976,539.90 2.57%
MILWAUKEE-LOOMIS SAYLE CME01	6,138,164.60 1.40%	0.00 0.00%	14,134,019.99 3.23%	417,172,499.60 95.43%	0.00 0.00%	-305,170.40 -0.07%	437,139,513.80 7.26%
MILWAUKEE-BRANDES INT'L EQUITY CME03	10,603,506.34 2.96%	0.00 0.00%	347,316,128.30 96.86%	0.00 0.00%	1,551,890.07 0.43%	-895,641.90 -0.25%	358,575,882.80 5.95%
MILWAUKEE-REAMS CME04	77,787,407.60 13.51%	0.00 0.00%	0.00 0.00%	579,345,510.60 100.64%	4,715,117.53 0.82%	-86,192,460.13 -14.97%	575,655,575.60 9.56%

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## Manager Mix Report

Account Name/ Account Number	Cash/ % of account	Short Term/ % of account	Equity/ % of account	Fixed/ % of account	R.E. and Other/ % of account	Pendings/ % of account	Total Market Value/ % of consolidation
MILWAUKEE-BLAIR	5,355,185.85	0.00	227,162,818.30	0.00	785,278.58	-77,430.02	233,225,852.70
CME05	2.30%	0.00%	97.40%	0.00%	0.34%	-0.03%	3.87%
MILWAUKEE-MFS	2,567,319.00	0.00	174,075,539.60	0.00	393,236.90	0.00	177,036,095.50
CME12	1.45%	0.00%	98.33%	0.00%	0.22%	0.00%	2.94%
MILWAUKEE-POLEN	0.00	4,112,784.89	125,974,481.30	0.00	0.00	510,990.24	130,598,256.40
2644553	0.00%	3.15%	96.46%	0.00%	0.00%	0.39%	2.17%
MILWAUKEE - PRINCIPAL DRA -SL	0.00	0.00	243,571,659.30	0.00	0.00	0.00	243,571,659.30
2677436	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	4.05%
MILWAUKEE-BLACKROCK GLOBAL-SL	0.00	0.00	268,706,721.30	0.00	0.00	0.00	268,706,721.30
2683493	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	4.46%
MILWAUKEE- AQR-SL	0.00	0.00	86,545,264.00	0.00	0.00	0.00	86,545,264.00
4468331	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	1.44%
MILWAUKEE- NEUBERGER SOF V-SL	0.00	0.00	0.00	0.00	7,028,145.00	0.00	7,028,145.00
4479679	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.12%
MILWAUKEE - ABBOTT 2022-SL	0.00	0.00	0.00	0.00	1,225,000.00	0.00	1,225,000.00
4479680	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.02%
MILWAUKEE - DFA US LCV	533,213.40	0.00	157,140,158.30	0.00	0.00	12,541.35	157,685,913.10
CME15	0.34%	0.00%	99.65%	0.00%	0.00%	0.01%	2.62%
MILWAUKEE-REAL ESTATE	0.00	0.00	0.00	0.00	603,792,083.86	-809,785.75	602,982,298.06
MULTIPLE	0.00%	0.00%	0.00%	0.00%	100.13%	-0.13%	10.01%
MILWAUKEE - BLACKROCK US G-SL	0.00	1,710.84	0.00	369,311,251.60	0.00	0.00	369,312,962.50
MULTIPLE	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	6.13%
MILWAUKEE-PRIVATE EQUITY	0.00	0.00	0.00	0.00	761,961,949.00	0.00	761,961,949.00
MULTIPLE	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	12.65%

# Monthly Board Report

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## Manager Mix Report

Account Name/ Account Number	Cash/ % of account	Short Term/ % of account	Equity/ % of account	Fixed/ % of account	R.E. and Other/ % of account	Pendings/ % of account	Total Market Value/ % of consolidation
Total for consolidation	102,984,796.79	68,118,259.14	2,670,651,979.39	1,425,208,272.67	1,844,734,852.24	-90,192,386.81	6,021,505,773.42
% for consolidation	1.71%	1.13%	44.35%	23.67%	30.64%	-1.50%	100.00%

Please note that this report has been prepared using best available data. This report may also contain information provided by third parties, derived by third parties or derived from third party data and/or data that may have been categorized or otherwise reported based upon client direction - Northern Trust assumes no responsibility for the accuracy, timeliness or completeness of any such information. Northern Trust assumes no responsibility for the consequences of investment decisions made in reliance on information contained in this report. If you have questions regarding third party data or direction as it relates to this report, please contact your Northern Trust relationship team.

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**Employees' Retirement System**  
**Securities Lending Income and Expenses: 2022**  
**As of May 31, 2022**

Date	Income From Lending	Amounts Expended		Balance
		Fees	Administrative Transfers	
<b>Balance 12-31-21</b>				<b>\$552,798.88</b>
<b>Quarter 1 Totals</b>	\$205,746.26	\$41,117.46	\$553,000.00	\$164,427.68
04/05/22	\$27.10	\$0.00	\$0.00	\$164,454.78
04/15/22	\$97,645.66	\$19,521.99	\$0.00	\$242,578.45
05/02/22	\$0.00	\$0.00	\$242,578.45	(\$0.00)
05/04/22	\$58.69	\$0.00	\$0.00	\$58.69
05/05/22	\$0.00	\$0.00	\$58.69	(\$0.00)
05/16/22	\$143,133.34	\$28,621.16	\$0.00	\$114,512.18
05/17/22	\$0.00	\$0.00	\$114,512.18	(\$0.00)
	\$0.00	\$0.00	\$0.00	(\$0.00)
	\$0.00	\$0.00	\$0.00	(\$0.00)
<b>Current Totals</b>	<b>\$446,611.05</b>	<b>\$89,260.61</b>	<b>\$910,149.32</b>	<b>\$0.00</b>

Note: Expenses for Board Travel/Education, Computer Equipment, Publications and Consulting are now paid from the Operations/Management account

**MERS PERFORMANCE ESTIMATES**  
**May 31, 2022**

Account	2021 Return	1st Quarter 2022	Apr 2022	May 2022	YTD Thru 5/31/22
<b>Northern Trust S&amp;P 500 Index</b>	28.69%	-4.58%	-8.72%	0.19%	-12.74%
S&P 500	<u>28.71%</u>	<u>-4.60%</u>	<u>-8.72%</u>	<u>0.18%</u>	<u>-12.76%</u>
Difference	-0.01%	0.02%	0.00%	0.01%	0.02%
<b>BlackRock Russell 1000 Value Index</b>	25.18%	-0.76%	-5.64%	1.94%	-4.54%
Russell 1000 Value	<u>25.16%</u>	<u>-0.74%</u>	<u>-5.64%</u>	<u>1.94%</u>	<u>-4.52%</u>
Difference	0.02%	-0.02%	0.00%	0.00%	-0.02%
<b>DFA US Large Cap Value</b>	27.52%	0.32%	-5.83%	4.25%	-1.51%
Russell 1000 Value	<u>25.16%</u>	<u>-0.74%</u>	<u>-5.64%</u>	<u>1.94%</u>	<u>-4.52%</u>
Difference	2.36%	1.06%	-0.19%	2.31%	3.01%
<b>Polen</b>	24.84%	-13.76%	-13.49%	-2.38%	-27.17%
S&P 500	<u>28.71%</u>	<u>-4.60%</u>	<u>-8.72%</u>	<u>0.18%</u>	<u>-12.76%</u>
Difference	-3.86%	-9.16%	-4.77%	-2.56%	-14.41%
<b>Earnest</b>	26.09%	-5.49%	-6.65%	3.43%	-8.75%
Russell MidCap	<u>22.58%</u>	<u>-5.68%</u>	<u>-7.70%</u>	<u>0.08%</u>	<u>-12.87%</u>
Difference	3.50%	0.19%	1.05%	3.35%	4.12%
<b>CastleArk</b>	12.30%	-15.30%	-10.20%	-3.82%	-26.84%
Russell 2000 Growth	<u>2.83%</u>	<u>-12.63%</u>	<u>-12.27%</u>	<u>-1.89%</u>	<u>-24.79%</u>
Difference	9.46%	-2.67%	2.07%	-1.93%	-2.05%
<b>DFA US Small Cap Value</b>	40.61%	1.02%	-5.49%	4.05%	-0.66%
Russell 2000 Value	<u>28.27%</u>	<u>-2.40%</u>	<u>-7.76%</u>	<u>1.92%</u>	<u>-8.25%</u>
Difference	12.34%	3.42%	2.27%	2.13%	7.59%
<b>Brandes</b>	14.37%	-2.65%	-4.36%	2.80%	-4.29%
MSCI EAFE	<u>11.26%</u>	<u>-5.91%</u>	<u>-6.47%</u>	<u>0.75%</u>	<u>-11.34%</u>
Difference	3.10%	3.26%	2.11%	2.05%	7.05%
<b>William Blair</b>	12.75%	-14.84%	-9.25%	-1.99%	-24.25%
MSCI ACWI ex US	<u>8.29%</u>	<u>-5.33%</u>	<u>-6.22%</u>	<u>0.82%</u>	<u>-10.49%</u>
Difference	4.46%	-9.51%	-3.03%	-2.81%	-13.76%
<b>DFA Int'l Small Cap Value</b>	15.90%	-2.58%	-4.95%	1.82%	-5.72%
MSCI EAFE Small Cap	<u>10.10%</u>	<u>-8.53%</u>	<u>-6.86%</u>	<u>-0.72%</u>	<u>-15.42%</u>
Difference	5.80%	5.95%	1.91%	2.54%	9.70%
<b>AQR</b>	0.24%	-3.66%	-5.40%	0.36%	-8.53%
MSCI EM	<u>-2.54%</u>	<u>-6.97%</u>	<u>-5.56%</u>	<u>0.44%</u>	<u>-11.76%</u>
Difference	2.78%	3.31%	0.16%	-0.08%	3.23%
<b>BlackRock Global Alpha Tilts</b>	18.72%	-5.28%	-8.17%	1.25%	-11.93%
MSCI ACWI	<u>18.54%</u>	<u>-5.36%</u>	<u>-8.00%</u>	<u>0.12%</u>	<u>-12.83%</u>
Difference	0.18%	0.08%	-0.17%	1.13%	0.90%
<b>MFS</b>	19.56%	-7.40%	-7.24%	-0.14%	-14.22%
MSCI ACWI	<u>18.54%</u>	<u>-5.36%</u>	<u>-8.00%</u>	<u>0.12%</u>	<u>-12.83%</u>
Difference	1.02%	-2.04%	0.76%	-0.26%	-1.39%
<b>BlackRock Gov't Bond Index</b>		-5.42%	-3.04%	0.19%	-8.12%
Bloomberg Gov't Bond		<u>-5.53%</u>	<u>-3.05%</u>	<u>0.19%</u>	<u>-8.23%</u>
Difference		0.11%	0.01%	0.00%	0.11%
<b>Reams</b>	-1.22%	-5.52%	-3.87%	0.79%	-8.45%
Bloomberg US Aggregate	<u>-1.54%</u>	<u>-5.93%</u>	<u>-3.79%</u>	<u>0.64%</u>	<u>-8.92%</u>
Difference	0.32%	0.41%	-0.08%	0.15%	0.47%
<b>Loomis Sayles</b>	2.14%	-5.74%	-3.71%	0.63%	-8.67%
Bloomberg US Aggregate	<u>-1.54%</u>	<u>-5.93%</u>	<u>-3.79%</u>	<u>0.64%</u>	<u>-8.92%</u>
Difference	3.69%	0.19%	0.08%	-0.01%	0.25%
<b>UBS</b>	8.12%	1.46%	2.98%	0.11%	4.59%
SOFR + 4% *	<u>4.27%</u>	<u>0.45%</u>	<u>0.33%</u>	<u>0.33%</u>	<u>1.11%</u>
Difference	3.86%	1.01%	2.65%	-0.22%	3.48%
<b>Principal</b>	17.58%	5.82%	-2.55%	1.31%	4.48%
Blended Benchmark	<u>15.87%</u>	<u>6.84%</u>	<u>-2.71%</u>	<u>0.76%</u>	<u>4.74%</u>
Difference	1.72%	-1.02%	0.16%	0.55%	-0.26%
<b>Baird</b>	-0.20%	-1.70%	-0.42%	0.37%	-1.75%
Bloomberg Govt/Credit 1-3 Year	<u>-0.47%</u>	<u>-2.49%</u>	<u>-0.54%</u>	<u>0.61%</u>	<u>-2.42%</u>
Difference	0.27%	0.79%	0.12%	-0.24%	0.67%
<b>Total MERS</b>	<b>18.89%</b>	<b>-0.46%</b>	<b>-3.22%</b>	<b>1.13%</b>	<b>-2.57%</b>

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, and UBS)

\* The benchmark for UBS is SOFR + 4% as of March 1, 2022. Prior to March 1, 2022, the benchmark was One Year LIBOR + 4%.

# ACTUAL ALLOCATIONS

May 31, 2022

		Target	Market Value	Allocation
<b>EQUITY</b>				
<b>Public Equity</b>				
Domestic				
Passive Large Cap Equity	Northern Trust (S&P 500)	5.40%	\$ 303,695,023	5.10%
	BlackRock (Russell 1000 Value)	2.60%	\$ 154,976,540	2.60%
	Sub-Total Passive Large Cap Equity	8.00%	\$ 458,671,563	7.70%
Active Large Cap Equity	Polen (S&P 500)	2.60%	\$ 130,598,256	2.19%
	DFA (Russell 1000 Value)	2.60%	\$ 157,685,913	2.65%
	Sub-Total Active Large Cap Equity	5.20%	\$ 288,284,169	4.84%
Active Mid/Small Cap Equity	Earnest Partners (Russell MidCap)	2.00%	\$ 113,347,769	1.90%
	CastleArk (Russell 2000 Growth)	1.60%	\$ 81,943,148	1.38%
	DFA (Russell 2000 Value)	3.20%	\$ 194,767,169	3.27%
	Sub-Total Active Mid/Small Cap Equity	6.80%	\$ 390,058,086	6.55%
Total Domestic		20.00%	\$ 1,137,013,819	19.10%
International				
Active International Equity	Brandes (MSCI EAFE)	6.40%	\$ 358,575,883	6.02%
	William Blair (MSCI ACWI ex US)	4.80%	\$ 233,225,853	3.92%
	DFA (MSCI EAFE Small Cap)	3.20%	\$ 179,869,994	3.02%
	AQR (MSCI EM)	1.60%	\$ 86,545,264	1.45%
Total International		16.00%	\$ 858,216,993	14.42%
Global				
Active Global Equity	BlackRock (MSCI ACWI)	4.80%	\$ 268,706,721	4.51%
	MFS (MSCI ACWI)	3.20%	\$ 177,036,096	2.97%
Total Global		8.00%	\$ 445,742,817	7.49%
<b>Total Public Equity</b>		<b>44.00%</b>	<b>\$ 2,440,973,629</b>	<b>41.00%</b>
<b>Private Equity</b>				
	Abbott Capital (Russell 3000 Quarter Lag + 2%)	3.50%	\$ 363,059,726	6.10%
	Mesirow (Russell 3000 Quarter Lag + 2%)	3.50%	\$ 309,335,925	5.20%
	Neuberger Berman (Russell 3000 Quarter Lag + 2%)	1.50%	\$ 34,290,721	0.58%
	Private Advisors (Russell 3000 Quarter Lag + 2%)	1.50%	\$ 75,416,417	1.27%
<b>Total Private Equity</b>		<b>10.00%</b>	<b>\$ 782,102,789</b>	<b>13.14%</b>
<b>TOTAL EQUITY (Public Equity + Private Equity)</b>		<b>54.00%</b>	<b>\$ 3,223,076,418</b>	<b>54.14%</b>
<b>FIXED INCOME &amp; ABSOLUTE RETURN</b>				
<b>Fixed Income</b>				
Cash				
		1.00%	\$ 37,534,654	0.63%
Passive Fixed Income	BlackRock (Bloomberg US Government)	7.92%	\$ 369,312,962	6.20%
	Reams (Bloomberg US Aggregate)	7.04%	\$ 575,655,576	9.67%
	Loomis Sayles (Bloomberg US Aggregate)	7.04%	\$ 437,139,514	7.34%
Sub-Total Active Fixed Income		14.08%	\$ 1,012,795,089	17.01%
<b>Total Fixed Income</b>		<b>23.00%</b>	<b>\$ 1,419,642,706</b>	<b>23.85%</b>
<b>Absolute Return</b>				
	Hedge Fund of Funds Manager	3.00%	\$ -	0.00%
	UBS (SOFR + 4%)	7.00%	\$ 463,804,381	7.79%
<b>Total Absolute Return</b>		<b>10.00%</b>	<b>\$ 463,804,381</b>	<b>7.79%</b>
<b>TOTAL FIXED INCOME &amp; ABSOLUTE RETURN</b>		<b>33.00%</b>	<b>\$ 1,883,447,087</b>	<b>31.64%</b>
<b>REAL ASSETS</b>				
Private Real Estate - Core	JP Morgan (NFI-ODCE)	3.03%	\$ 148,658,900	2.50%
	Morgan Stanley (NFI-ODCE)	3.03%	\$ 181,552,950	3.05%
	LaSalle (NFI-ODCE)	1.52%	\$ 109,474,694	1.84%
	Prologis (NFI-ODCE)	1.52%	\$ 139,800,750	2.35%
	Sub-Total Private Real Estate - Core	9.10%	\$ 579,487,294	9.73%
Private Real Estate - Non-Core	Non-Core Real Estate (NFI-ODCE)	0.00%	\$ 23,495,004	0.39%
Public Real Assets	Principal (Blended Benchmark)	3.90%	\$ 243,571,659	4.09%
<b>TOTAL REAL ASSETS</b>		<b>13.00%</b>	<b>\$ 846,553,957</b>	<b>14.22%</b>
<b>TOTAL ERS</b>			<b>\$ 5,953,077,463</b>	<b>100.00%</b>
<b>Total City Reserve Fund</b>			<b>R. W. Baird</b>	<b>80,838,236</b>

# PROJECTED TARGET ALLOCATIONS

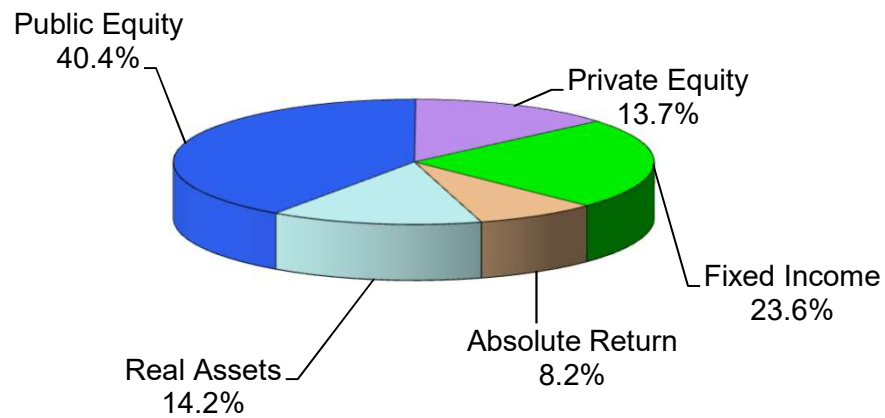
Jun 22, 2022

		Target	Market Value	Allocation
<b>EQUITY</b>				
<b>Public Equity</b>				
Domestic				
Passive Large Cap Equity	Northern Trust (S&P 500)	5.40%	\$ 276,664,676	4.89%
	BlackRock (Russell 1000 Value)	2.60%	\$ 140,536,053	2.48%
	Sub-Total Passive Large Cap Equity	8.00%	\$ 417,200,729	7.37%
Active Large Cap Equity	Polen (S&P 500)	2.60%	\$ 140,308,737	2.48%
	DFA (Russell 1000 Value)	2.60%	\$ 140,101,078	2.48%
	Sub-Total Active Large Cap Equity	5.20%	\$ 280,409,815	4.95%
Active Mid/Small Cap Equity	Earnest Partners (Russell MidCap)	2.00%	\$ 101,898,770	1.80%
	CastleArk (Russell 2000 Growth)	1.60%	\$ 75,034,926	1.33%
	DFA (Russell 2000 Value)	3.20%	\$ 173,125,489	3.06%
	Sub-Total Active Mid/Small Cap Equity	6.80%	\$ 350,059,185	6.18%
Total Domestic		20.00%	\$ 1,047,669,729	18.51%
International				
Active International Equity	Brandes (MSCI EAFE)	6.40%	\$ 328,702,894	5.81%
	William Blair (MSCI ACWI ex US)	4.80%	\$ 246,101,302	4.35%
	DFA (MSCI EAFE Small Cap)	3.20%	\$ 162,731,017	2.87%
	AQR (MSCI EM)	1.60%	\$ 79,979,345	1.41%
Total International		16.00%	\$ 817,514,558	14.44%
Global				
Active Global Equity	BlackRock (MSCI ACWI)	4.80%	\$ 245,543,592	4.34%
	MFS (MSCI ACWI)	3.20%	\$ 173,561,592	3.07%
Total Global		8.00%	\$ 419,105,184	7.40%
<b>Total Public Equity</b>		<b>44.00%</b>	<b>\$ 2,284,289,471</b>	<b>40.35%</b>
<b>Private Equity</b>				
	Abbott Capital (Russell 3000 Quarter Lag + 2%)	3.50%	\$ 363,059,726	6.41%
	Mesirow (Russell 3000 Quarter Lag + 2%)	3.50%	\$ 297,908,721	5.26%
	Neuberger Berman (Russell 3000 Quarter Lag + 2%)	1.50%	\$ 36,303,088	0.64%
	Private Advisors (Russell 3000 Quarter Lag + 2%)	1.50%	\$ 75,416,417	1.33%
<b>Total Private Equity</b>		<b>10.00%</b>	<b>\$ 772,687,952</b>	<b>13.65%</b>
<b>TOTAL EQUITY (Public Equity + Private Equity)</b>		<b>54.00%</b>	<b>\$ 3,056,977,423</b>	<b>54.00%</b>
<b>FIXED INCOME &amp; ABSOLUTE RETURN</b>				
<b>Fixed Income</b>				
Cash		1.00%	\$ 4,847,042	0.09%
Passive Fixed Income	BlackRock (Bloomberg US Government)	5.50%	\$ 363,265,850	6.42%
	Reams (Bloomberg US Aggregate)	9.90%	\$ 547,534,247	9.67%
Active Fixed Income	Loomis Sayles (Bloomberg US Aggregate)	6.60%	\$ 421,120,198	7.44%
	Sub-Total Active Fixed Income	16.50%	\$ 968,654,445	17.11%
<b>Total Fixed Income</b>		<b>23.00%</b>	<b>\$ 1,336,767,337</b>	<b>23.62%</b>
<b>Absolute Return</b>				
	Hedge Fund of Funds Manager	3.00%	\$ -	0.00%
	UBS (SOFR + 4%)	7.00%	\$ 463,804,381	8.19%
<b>Total Absolute Return</b>		<b>10.00%</b>	<b>\$ 463,804,381</b>	<b>8.19%</b>
<b>TOTAL FIXED INCOME &amp; ABSOLUTE RETURN</b>		<b>33.00%</b>	<b>\$ 1,800,571,718</b>	<b>31.81%</b>
<b>REAL ASSETS</b>				
Private Real Estate - Core	JP Morgan (NFI-ODCE)	3.03%	\$ 148,658,900	2.63%
	Morgan Stanley (NFI-ODCE)	3.03%	\$ 181,552,950	3.21%
	LaSalle (NFI-ODCE)	1.52%	\$ 109,474,694	1.93%
	Prologis (NFI-ODCE)	1.52%	\$ 139,800,750	2.47%
	Sub-Total Private Real Estate - Core	9.10%	\$ 579,487,294	10.24%
Private Real Estate - Non-Core	Non-Core Real Estate (NFI-ODCE)	0.00%	\$ 23,123,469	0.41%
Public Real Assets	Principal (Blended Benchmark)	3.90%	\$ 200,420,858	3.54%
<b>TOTAL REAL ASSETS</b>		<b>13.00%</b>	<b>\$ 803,031,621</b>	<b>14.19%</b>
<b>TOTAL ERS</b>			<b>\$ 5,660,580,762</b>	<b>100.00%</b>
<b>Total City Reserve Fund</b>			<b>R. W. Baird</b>	<b>80,338,509</b>

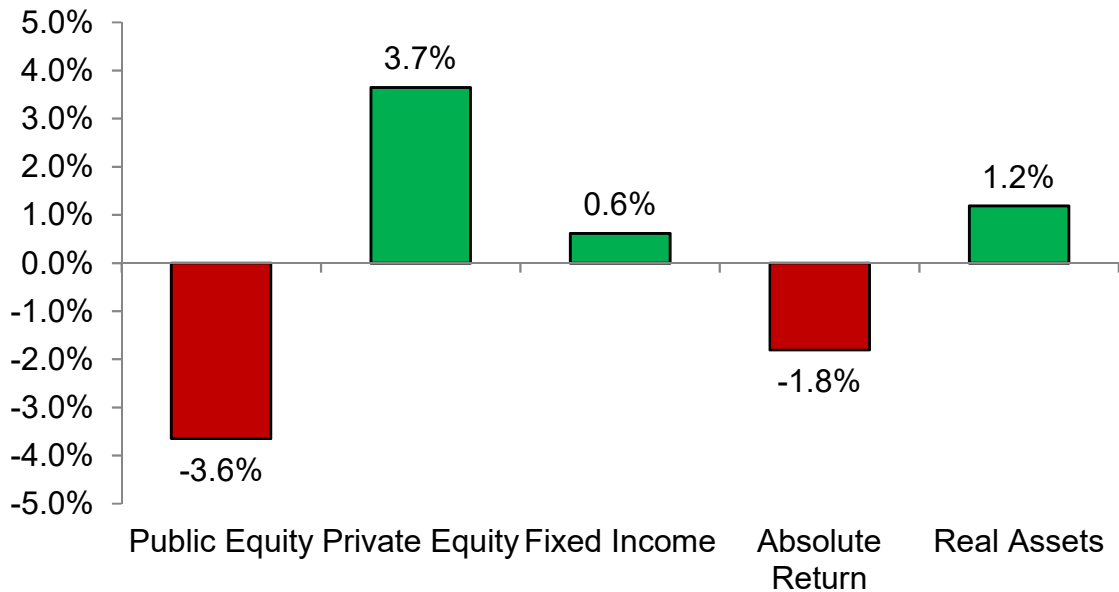


# PROJECTED VERSUS POLICY ALLOCATIONS

## Asset Mix Using Projected Balances



## Asset Allocation vs. Current Policy Benchmark



## YTD Market Value Change

December 31, 2021 Market Value including City Reserve & PABF Accounts			\$ 6,260,134,748
Monthly Cash Outflows thru	<u>June 22, 2022</u>		
Retiree Payroll Expense		\$ (185,043,134)	
PABF Payroll Expense		\$ (30,386)	
Expenses Paid		\$ (7,159,842)	
GPS Benefit Payments		\$ (3,555,688)	
Sub-Total Monthly Cash Outflows			\$ (195,789,050)
Monthly Cash Inflows thru	<u>June 22, 2022</u>		
Contributions		\$ 88,251,940	
PABF Contribution		\$ 34,964	
Sub-Total Monthly Contributions			\$ 88,286,904
City Reserve Fund Contribution			\$ 40,000,000
Capital Market Gain/(Loss)			<u>\$ (451,713,331)</u>
Value including City Reserve & PABF Accounts as of	<u>June 22, 2022</u>		<u>\$ 5,740,919,271</u>
Less City Reserve Account <sup>1</sup>			\$ 80,338,509
Less PABF Fund <sup>2</sup>			\$ 2,236
Net Projected ERS Fund Value as of	<u>June 22, 2022</u>		<u><u>\$ 5,660,578,526</u></u>

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.