

City of Bradford, Pennsylvania

Request for Proposal (RFP)

Investment Management Services

For the Defined Benefit Pension Plans of the Police, Fire, and Non-Uniformed
Employees

RFP No.: 2025-IM-01

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City of Bradford, Pennsylvania

Request for Proposal (RFP)

Investment Management Services for Defined Benefit Pension Plans Police, Fire, and Non-Uniformed Employee Plans

RFP No.: 2025-IM-01

Issue Date: August 13, 2025

1. Introduction & Background

The City of Bradford, Pennsylvania (“the City”) is requesting proposals from qualified firms to provide professional investment management services for its three defined benefit pension plans:

- Police Defined Benefit Pension Plan
- Firefighters Defined Benefit Pension Plan
- Non-Uniformed Defined Benefit Pension Plan

Each plan is governed by its respective board of trustees and complies with Pennsylvania Act 205. The city is seeking a firm to serve as fiduciary and discretionary investment manager to support the long-term sustainability and performance of its retirement plans.

2. Scope of Services

The selected investment management firm will be expected to:

- Provide discretionary investment management for each plan's assets in accordance with adopted Investment Policy Statements (IPS)
- Develop and implement investment strategies consistent with actuarial assumptions, risk tolerance, and funding goals
- Rebalance portfolios to maintain strategic allocation targets
- Conduct quarterly performance evaluations and reporting to each pension board
- Participate in board meetings and assist with investment education
- Ensure compliance with Act 205, all applicable SEC and FINRA regulations, and municipal fiduciary standards
- Coordinate with the City’s actuary, solicitor, and auditor as needed

Optional (if requested):

- Serve as custodian or sub-custodian of plan assets
- Provide ESG-integrated investment strategies if requested

3. Plan Profile & Assets (Approximate as of FY 2024)

Pension Fund	Estimated Assets	Active/Retired Members
Police	\$9,746,954.09	20 active/26 retired
Fire	\$11,774,561.29	20 active/26 retired
Non-Uniformed	\$11,443,331.82	36 active/44 retired
Total Assets Under Management	\$32,964,847.208	

4. Minimum Qualifications

Respondents must:

- Be a registered investment advisor under the Investment Advisers Act of 1940
- Have a minimum of ten (10) years of experience managing public sector defined benefit plans
- Carry fiduciary liability insurance with a minimum of \$2 million coverage
- Provide a minimum of three municipal pension references
- Be able to attend quarterly meetings in person or virtually as requested

5. Proposal Submission Requirements

Firms must submit the following:

- Cover Letter expressing interest
- Firm Overview and Organizational Structure
- Description of Investment Philosophy and Process
- Proposed Investment Strategy for Each Plan
- Fee Structure (including all-inclusive basis, flat fees, basis points, and performance incentives)
- Biographies of Key Personnel Assigned
- Sample Quarterly Investment Report
- List of Comparable Municipal Clients
- Documentation of Insurance and SEC registration

6. Evaluation Criteria

Submissions will be evaluated based on:

- Relevant Experience with Public Pensions (20%)
- Investment Approach and Risk Management (20%)
- Performance History (15%)
- Fees and Cost Efficiency (15%)
- Personnel Qualifications (10%)
- Reporting, Communication & Client Service (10%)
- References and Reputation (10%)

7. Submission Deadline & Contact

All proposals must be received no later than:

September 09/15/2025 at 4pm

Submit via sealed envelope or email (PDF format) to:

City of Bradford

Attn: City Administrator

24 Kennedy St.

Bradford, PA 16701

Email: e.taylor@bradfordpa.com

Phone: 814.362.3884

8. Terms & Conditions

- The City reserves the right to reject any or all proposals
- The City is not responsible for any costs incurred in responding to this RFP
- All materials submitted become public records under Pennsylvania's Right-to-Know Law unless exempt

Appendices

- A. Investment Policy Statements (Police, Fire, Non-Uniformed)
- B. Actuarial Valuations (Latest Available)
- C. Most Recent Quarterly Investment Reports

APPENDIX A

STATEMENT OF INVESTMENT POLICY

FOR

CITY OF BRADORD POLICE PENSION PLAN

FEBRUARY 2005

FOREWARD:

The Trustees of the City of Bradford Police Pension Plan ("the Trustees") have established this Statement of Investment Policy to:

- express the Trustees' expectations, objectives, guidelines and underlying philosophy concerning investments to be made by the investment manager(s) for the City of Bradford Police Pension Plan ("the Plan");
- establish criteria to monitor and evaluate the level of risk, diversification and performance of the investment manager(s); and
- comply with the prudence, due diligence, and other applicable fiduciary requirements of the Employee Retirement Income Security Act of 1974 ("ERISA"), as amended, and other laws, rules and regulations applicable to the Trustees and the Plan.

These guidelines will be revised, updated and modified as appropriate on a periodic basis to reflect such factors as changes in the investment environment, manager performance, Trustee expectations, and participant objectives and demographics. This document and its revisions will be made available to all selected Investment Managers and they should be measured by their compliance with its intent.

GENERAL PLAN MANAGEMENT STRUCTURE:

The Trustees have established this structure with the understanding that the asset allocation decision is recognized as the most important investment decision made in pursuit of the Plan's investment objectives. This document and its revisions will be made available to all selected Investment Managers and they should be measured by their compliance with its intent.

INVESTMENT OBJECTIVES:

Time Horizon & Risk Tolerance

The purpose of the Plan is to pursue growth of capital adequate to preserve the long-term earning power of the Plan's assets. The investment guidelines are based upon a long-term investment horizon so that interim fluctuations should be viewed with appropriate perspective. Similarly, the Plan's strategic asset allocation is based on this long-term perspective. The Trustees recognize the difficulty of achieving the Plan's investment objectives in light of the uncertainties and complexities of contemporary investment markets. The Trustees further recognize that risk (i.e., the uncertainty of future events), volatility (i.e., the potential for variability of asset values) and the possibility of loss in purchasing power (due to inflation) are present to varying degrees in all types of investment vehicles. The Plan's prospects for the future, its current financial condition and several other factors suggest collectively that the Plan can tolerate some interim fluctuations in market value and rates of return in order to achieve long-term objectives. However, high level risk, high volatility and low quality rated securities are to be avoided.

Investment Objectives (by priority)

1. The primary objective is the pursuit of long-term capital growth, with a goal of meeting the long-term needs of the Plan.
2. The secondary objective is to preserve capital and dampen the year-to-year volatility of the value of the Plan to avoid severe and sustained declines that could greatly impact the availability of funds for participants.

The first objective recognizes that the greatest risk to portfolios with a long-term orientation is reinvestment rate risk. There is therefore an implicit instruction to match maturity of the portfolio's assets with the long-term liabilities of the Plan. By definition, this means that under most conditions the majority of this portfolio will be invested in long-term assets (i.e., stocks and long-term bonds). While protection against reinvestment rate risk necessitates some volatility, the Trustees do not desire a high risk, high volatility approach which produces large gains as well as large losses. Thus, the second objective reflects a secondary concern for capital risk and is intended to keep periods of negative returns to a minimum.

INVESTMENT GUIDELINES:

Types of Assets

Investments are limited to holdings which would be permitted under the prudent man rule as set forth in ERISA. In order to accomplish the investment goals, the Trustees believe that the investments of the Plan must be diversified to provide investment manager(s) the flexibility to invest in various types of assets. The following types of assets are among those approved for investment:

Equity Investments

TYPES:

- Common Stocks
- Preferred Stocks
- Convertible Securities (including Debentures)
- Stock Mutual Funds

DIVERSIFICATION:

The equity portfolio should be well-diversified to avoid undue exposure to any single economic section, industry group or individual security. No more than 7% of total Plan assets at market at time of purchase shall be invested in the securities of any one issuer. No more than 20% of the total Plan assets at market at time of purchase shall be invested in any one industry. Investments in any corporation shall not exceed 5% of the outstanding shares of the corporation.

ALLOCATION LIMITS:

Equity investments are expected to comprise no more than 70% and no less than 30% of the total market value of the Plan at the time of purchase after a period of initial positioning for the portfolio. Equities of corporations headquartered outside the U.S., and mutual funds with the primary objective of investing in such foreign equities, are expected to represent no more than 30% of total market value of the Plan at the time of purchase.

Fixed Income/Cash Investments

TYPES:

- U.S. Government and Agency Securities (Bills, Notes and Bonds)
- Commercial Paper
- Certificates of Deposit
- Corporate Bonds
- Master Notes
- Insurance Company Contracts
- Mortgages
- Bond Mutual Funds
- Money Market Funds

DIVERSIFICATION:

No limitations are placed on investments in U.S. Government guaranteed obligations (including any fully guaranteed Federal Agency obligations). Investments in any one issuer (excluding direct or indirect obligations of the U.S. Government) shall not exceed 10% of total Plan assets. Fixed income holdings by the Plan should not represent more than 5% of a total particular issue.

ALLOCATION LIMITS:

Fixed income and cash equivalent investments are expected to comprise no less than 30% and no more than 70% of the total market value of the Plan at the time of purchase. Securities rated below investment grade by at least one major ratings agency are expected to represent no more than 10% of the total market value of the Plan at time of purchase. Commercial paper assets must be rated A-1 or P-1 by Standard & Poor's and Moody's respectively. Any idle cash not invested by the investment managers shall be invested daily through an automatic sweep provided through the custodian. The investment manager may not purchase short-term financial instruments considered to contain speculative characteristics (uncertainty of principal and/or interest).

Total Plan Guidelines

The following types of assets or transactions are expressly prohibited (unless approved by the Trustees):

- Commodities and Futures
- Tax Exempt Securities
- Warrants
- Eurobonds
- Naked Option Transactions

- Margin Purchase of Securities
- Short Sales of Securities
- Volatile derivatives such as those possessing elements of leverage, having risk characteristics beyond that of the underlying collateral, or with a potential duration greater than ten years.
- Transactions prohibited under ERISA

Summary of Allocation Limits (at time of purchase):

	<u>Maximum</u>	<u>Minimum</u>
Total Stocks	70%	30%
International Stocks	30%	0%
Fixed Income	70%	30%

PERFORMANCE MEASUREMENT OF INVESTMENT OBJECTIVES:

- A. The Trustees hire and review investment managers based on an evaluation of their investment philosophies and long-term performance. Investment managers must adhere to their stated investment philosophies and goals.
- B. Investment performance results of the Plan as a whole, and the investment manager(s) individually, shall be monitored and evaluated in accordance with the following:
 - Total Plan performance will be compared to a comprehensive universe of investment managers over a stock market cycle. Since full stock market participation at all times represents a level of risk and volatility not acceptable to this portfolio, the Plan will not be compared directly to the stock market, but market comparisons may be made on a risk-adjusted basis.
- C. It is expected that, to the extent allowed by the restrictions listed above, the investment managers will at all times manage the portfolio with the aim of meeting the above guidelines. The purpose of the investment management style is not to beat the market, but to use it when it suits the objectives of the portfolio.
- D. The investment managers must advise the Trustees, in writing, of any material changes in the investment manager's organization, decision making structure, ownership, investment style, key personnel or any other significant change affecting the manager's relationship with the Plan along with a statement as to the anticipated impact on the investment manager's ability to provide the same style and type of money management on a continuing basis.

RESPONSIBILITIES:

ERISA has enumerated broad fiduciary responsibilities to retirement plans for which trustees and investment professionals are held accountable. This section will assign several of these fiduciary, as well as other non-fiduciary, duties and responsibilities to the Plan's Trustees and Managers. This list does not eliminate any of the parties from other fiduciary duties and responsibilities as determined by ERISA and other applicable laws.

Investment Manager Responsibilities:

The duties and responsibilities of the Plan's investment manager(s) will include:

- communicating with and reporting to the Trustees on a regular basis;
- voting proxies for investments under the management of the investment manager;
- preparing reports, at least quarterly, on the investment risk and performance of Plan assets;
- notifying the Trustees of any issue that may materially impact the investment of the Plan's assets (e.g., change of ownership, key investment professionals, investment philosophy and/or process);
- investing the Plan's assets with the care, skill, prudence and diligence that a prudent investment professional would exercise in the investment of those assets;
- developing, reviewing and revising Plan investment policies as necessary;
- establishing and adjusting the asset allocation of the Plan's assets within the parameters outlined in the Statement of Investment Policy; and
- meeting as requested with the Trustees, at least annually, to discuss investment strategy and review past performance.

Trustee Responsibilities:

The duties and responsibilities of the Trustees will include:

- evaluating manager and fund investment risk and performance;
- reviewing and approving Plan investment policies; and
- monitoring, appointing and discharging investment managers as necessary.

ACKNOWLEDGEMENT:

Police
As a co-fiduciary to the City of Bradford Pension Plan under ERISA (i.e., as defined in Section 3(38)), we acknowledge and accept the foregoing Investment Policy Statement.

3-8-05
Date

Michael Pignatelli

03-08-05
Date

Katherine Hoff

STATEMENT OF INVESTMENT POLICY

FOR

CITY OF BRADFORD FIRE PENSION PLAN

FEBRUARY 2005

FOREWARD:

The Trustees of the City of Bradford Fire Pension Plan ("the Trustees") have established this Statement of Investment Policy to:

- express the Trustees' expectations, objectives, guidelines and underlying philosophy concerning investments to be made by the investment manager(s) for the City of Bradford Fire Pension Plan ("the Plan");
- establish criteria to monitor and evaluate the level of risk, diversification and performance of the investment manager(s); and
- comply with the prudence, due diligence, and other applicable fiduciary requirements of the Employee Retirement Income Security Act of 1974 ("ERISA"), as amended, and other laws, rules and regulations applicable to the Trustees and the Plan.

These guidelines will be revised, updated and modified as appropriate on a periodic basis to reflect such factors as changes in the investment environment, manager performance, Trustee expectations, and participant objectives and demographics. This document and its revisions will be made available to all selected Investment Managers and they should be measured by their compliance with its intent.

GENERAL PLAN MANAGEMENT STRUCTURE:

The Trustees have established this structure with the understanding that the asset allocation decision is recognized as the most important investment decision made in pursuit of the Plan's investment objectives. This document and its revisions will be made available to all selected Investment Managers and they should be measured by their compliance with its intent.

INVESTMENT OBJECTIVES:

Time Horizon & Risk Tolerance

The purpose of the Plan is to pursue growth of capital adequate to preserve the long-term earning power of the Plan's assets. The investment guidelines are based upon a long-term investment horizon so that interim fluctuations should be viewed with appropriate perspective. Similarly, the Plan's strategic asset allocation is based on this long-term perspective. The Trustees recognize the difficulty of achieving the Plan's investment objectives in light of the uncertainties and complexities of contemporary investment markets. The Trustees further recognize that risk (i.e., the uncertainty of future events), volatility (i.e., the potential for variability of asset values) and the possibility of loss in purchasing power (due to inflation) are present to varying degrees in all types of investment vehicles. The Plan's prospects for the future, its current financial condition and several other factors suggest collectively that the Plan can tolerate some interim fluctuations in market value and rates of return in order to achieve long-term objectives. However, high level risk, high volatility and low quality rated securities are to be avoided.

Investment Objectives (by priority)

1. The primary objective is the pursuit of long-term capital growth, with a goal of meeting the long-term needs of the Plan.
2. The secondary objective is to preserve capital and dampen the year-to-year volatility of the value of the Plan to avoid severe and sustained declines that could greatly impact the availability of funds for participants.

The first objective recognizes that the greatest risk to portfolios with a long-term orientation is reinvestment rate risk. There is therefore an implicit instruction to match maturity of the portfolio's assets with the long-term liabilities of the Plan. By definition, this means that under most conditions the majority of this portfolio will be invested in long-term assets (i.e., stocks and long-term bonds). While protection against reinvestment rate risk necessitates some volatility, the Trustees do not desire a high risk, high volatility approach which produces large gains as well as large losses. Thus, the second objective reflects a secondary concern for capital risk and is intended to keep periods of negative returns to a minimum.

INVESTMENT GUIDELINES:

Types of Assets

Investments are limited to holdings which would be permitted under the prudent man rule as set forth in ERISA. In order to accomplish the investment goals, the Trustees believe that the investments of the Plan must be diversified to provide investment manager(s) the flexibility to invest in various types of assets. The following types of assets are among those approved for investment:

Equity Investments

TYPES:

- Common Stocks
- Preferred Stocks
- Convertible Securities (including Debentures)
- Stock Mutual Funds

DIVERSIFICATION:

The equity portfolio should be well-diversified to avoid undue exposure to any single economic section, industry group or individual security. No more than 7% of total Plan assets at market at time of purchase shall be invested in the securities of any one issuer. No more than 20% of the total Plan assets at market at time of purchase shall be invested in any one industry. Investments in any corporation shall not exceed 5% of the outstanding shares of the corporation.

ALLOCATION LIMITS:

Equity investments are expected to comprise no more than 70% and no less than 30% of the total market value of the Plan at the time of purchase after a period of initial positioning for the portfolio. Equities of corporations headquartered outside the U.S., and mutual funds with the primary objective of investing in such foreign equities, are expected to represent no more than 30% of total market value of the Plan at the time of purchase.

Fixed Income/Cash Investments

TYPES:

- U.S. Government and Agency Securities (Bills, Notes and Bonds)
- Commercial Paper
- Certificates of Deposit
- Corporate Bonds
- Master Notes
- Insurance Company Contracts
- Mortgages
- Bond Mutual Funds
- Money Market Funds

DIVERSIFICATION:

No limitations are placed on investments in U.S. Government guaranteed obligations (including any fully guaranteed Federal Agency obligations). Investments in any one issuer (excluding direct or indirect obligations of the U.S. Government) shall not exceed 10% of total Plan assets. Fixed income holdings by the Plan should not represent more than 5% of a total particular issue.

ALLOCATION LIMITS:

Fixed income and cash equivalent investments are expected to comprise no less than 30% and no more than 70% of the total market value of the Plan at the time of purchase. Securities rated below investment grade by at least one major ratings agency are expected to represent no more than 10% of the total market value of the Plan at time of purchase. Commercial paper assets must be rated A-1 or P-1 by Standard & Poor's and Moody's respectively. Any idle cash not invested by the investment managers shall be invested daily through an automatic sweep provided through the custodian. The investment manager may not purchase short-term financial instruments considered to contain speculative characteristics (uncertainty of principal and/or interest).

Total Plan Guidelines

The following types of assets or transactions are expressly prohibited (unless approved by the Trustees):

- Commodities and Futures
- Tax Exempt Securities
- Warrants
- Eurobonds
- Naked Option Transactions

- Margin Purchase of Securities
- Short Sales of Securities
- Volatile derivatives such as those possessing elements of leverage, having risk characteristics beyond that of the underlying collateral, or with a potential duration greater than ten years.
- Transactions prohibited under ERISA

Summary of Allocation Limits (at time of purchase):

	<u>Maximum</u>	<u>Minimum</u>
Total Stocks	70%	30%
International Stocks	30%	0%
Fixed Income	70%	30%

PERFORMANCE MEASUREMENT OF INVESTMENT OBJECTIVES:

- A. The Trustees hire and review investment managers based on an evaluation of their investment philosophies and long-term performance. Investment managers must adhere to their stated investment philosophies and goals.
- B. Investment performance results of the Plan as a whole, and the investment manager(s) individually, shall be monitored and evaluated in accordance with the following:
 - Total Plan performance will be compared to a comprehensive universe of investment managers over a stock market cycle. Since full stock market participation at all times represents a level of risk and volatility not acceptable to this portfolio, the Plan will not be compared directly to the stock market, but market comparisons may be made on a risk-adjusted basis.
- C. It is expected that, to the extent allowed by the restrictions listed above, the investment managers will at all times manage the portfolio with the aim of meeting the above guidelines. The purpose of the investment management style is not to beat the market, but to use it when it suits the objectives of the portfolio.
- D. The investment managers must advise the Trustees, in writing, of any material changes in the investment manager's organization, decision making structure, ownership, investment style, key personnel or any other significant change affecting the manager's relationship with the Plan along with a statement as to the anticipated impact on the investment manager's ability to provide the same style and type of money management on a continuing basis.

RESPONSIBILITIES:

ERISA has enumerated broad fiduciary responsibilities to retirement plans for which trustees and investment professionals are held accountable. This section will assign several of these fiduciary, as well as other non-fiduciary, duties and responsibilities to the Plan's Trustees and Managers. This list does not eliminate any of the parties from other fiduciary duties and responsibilities as determined by ERISA and other applicable laws.

Investment Manager Responsibilities:

The duties and responsibilities of the Plan's investment manager(s) will include:

- communicating with and reporting to the Trustees on a regular basis;
- voting proxies for investments under the management of the investment manager;
- preparing reports, at least quarterly, on the investment risk and performance of Plan assets;
- notifying the Trustees of any issue that may materially impact the investment of the Plan's assets (e.g., change of ownership, key investment professionals, investment philosophy and/or process);
- investing the Plan's assets with the care, skill, prudence and diligence that a prudent investment professional would exercise in the investment of those assets;
- developing, reviewing and revising Plan investment policies as necessary;
- establishing and adjusting the asset allocation of the Plan's assets within the parameters outlined in the Statement of Investment Policy; and
- meeting as requested with the Trustees, at least annually, to discuss investment strategy and review past performance.

Trustee Responsibilities:

The duties and responsibilities of the Trustees will include:

- evaluating manager and fund investment risk and performance;
- reviewing and approving Plan investment policies; and
- monitoring, appointing and discharging investment managers as necessary.

ACKNOWLEDGEMENT:

Fire

As a co-fiduciary to the City of Bradford Pension Plan under ERISA (i.e., as defined in Section 3(38)), we acknowledge and accept the foregoing Investment Policy Statement.

3-8-05
Date

Michael Bognani

3-8-05
Date

Katherine Graff

STATEMENT OF INVESTMENT POLICY

FOR

CITY OF BRADFORD NON-UNIFORMED PENSION PLAN

FEBRUARY 2005

FOREWARD:

City of Bradford

The Trustees of the Non-Uniformed Employees Pension Plan ("the Trustees") have established this Statement of Investment Policy to:

- express the Trustees' expectations, objectives, guidelines and underlying philosophy concerning investments to be made by the investment manager(s) for the City of Bradford Pension Plan ("the Plan");
Non-Uniformed Employees
- establish criteria to monitor and evaluate the level of risk, diversification and performance of the investment manager(s); and
- comply with the prudence, due diligence, and other applicable fiduciary requirements of the Employee Retirement Income Security Act of 1974 ("ERISA"), as amended, and other laws, rules and regulations applicable to the Trustees and the Plan.

These guidelines will be revised, updated and modified as appropriate on a periodic basis to reflect such factors as changes in the investment environment, manager performance, Trustee expectations, and participant objectives and demographics. This document and its revisions will be made available to all selected Investment Managers and they should be measured by their compliance with its intent.

GENERAL PLAN MANAGEMENT STRUCTURE:

The Trustees have established this structure with the understanding that the asset allocation decision is recognized as the most important investment decision made in pursuit of the Plan's investment objectives. This document and its revisions will be made available to all selected Investment Managers and they should be measured by their compliance with its intent.

INVESTMENT OBJECTIVES:

Time Horizon & Risk Tolerance

The purpose of the Plan is to pursue growth of capital adequate to preserve the long-term earning power of the Plan's assets. The investment guidelines are based upon a long-term investment horizon so that interim fluctuations should be viewed with appropriate perspective. Similarly, the Plan's strategic asset allocation is based on this long-term perspective. The Trustees recognize the difficulty of achieving the Plan's investment objectives in light of the uncertainties and complexities of contemporary investment markets. The Trustees further recognize that risk (i.e., the uncertainty of future events), volatility (i.e., the potential for variability of asset values) and the possibility of loss in purchasing power (due to inflation) are present to varying degrees in all types of investment vehicles. The Plan's prospects for the future, its current financial condition and several other factors suggest collectively that the Plan can tolerate some interim fluctuations in market value and rates of return in order to achieve long-term objectives. However, high level risk, high volatility and low quality rated securities are to be avoided.

Investment Objectives (by priority)

1. The primary objective is the pursuit of long-term capital growth, with a goal of meeting the long-term needs of the Plan.
2. The secondary objective is to preserve capital and dampen the year-to-year volatility of the value of the Plan to avoid severe and sustained declines that could greatly impact the availability of funds for participants.

The first objective recognizes that the greatest risk to portfolios with a long-term orientation is reinvestment rate risk. There is therefore an implicit instruction to match maturity of the portfolio's assets with the long-term liabilities of the Plan. By definition, this means that under most conditions the majority of this portfolio will be invested in long-term assets (i.e., stocks and long-term bonds). While protection against reinvestment rate risk necessitates some volatility, the Trustees do not desire a high risk, high volatility approach which produces large gains as well as large losses. Thus, the second objective reflects a secondary concern for capital risk and is intended to keep periods of negative returns to a minimum.

INVESTMENT GUIDELINES:

Types of Assets

Investments are limited to holdings which would be permitted under the prudent man rule as set forth in ERISA. In order to accomplish the investment goals, the Trustees believe that the investments of the Plan must be diversified to provide investment manager(s) the flexibility to invest in various types of assets. The following types of assets are among those approved for investment:

Equity Investments

TYPES:

- Common Stocks
- Preferred Stocks
- Convertible Securities (including Debentures)
- Stock Mutual Funds

DIVERSIFICATION:

The equity portfolio should be well-diversified to avoid undue exposure to any single economic section, industry group or individual security. No more than 7% of total Plan assets at market at time of purchase shall be invested in the securities of any one issuer. No more than 20% of the total Plan assets at market at time of purchase shall be invested in any one industry. Investments in any corporation shall not exceed 5% of the outstanding shares of the corporation.

ALLOCATION LIMITS:

Equity investments are expected to comprise no more than 80% and no less than 30% of the total market value of the Plan at the time of purchase after a period of initial positioning for the portfolio. Equities of corporations headquartered outside the U.S., and mutual funds with the primary objective of investing in such foreign equities, are expected to represent no more than 30% of total market value of the Plan at the time of purchase.

Fixed Income/Cash Investments

TYPES:

- U.S. Government and Agency Securities (Bills, Notes and Bonds)
- Commercial Paper
- Certificates of Deposit
- Corporate Bonds
- Master Notes
- Insurance Company Contracts
- Mortgages
- Bond Mutual Funds
- Money Market Funds

DIVERSIFICATION:

No limitations are placed on investments in U.S. Government guaranteed obligations (including any fully guaranteed Federal Agency obligations). Investments in any one issuer (excluding direct or indirect obligations of the U.S. Government) shall not exceed 10% of total Plan assets. Fixed income holdings by the Plan should not represent more than 5% of a total particular issue.

ALLOCATION LIMITS:

Fixed income and cash equivalent investments are expected to comprise no less than 20% and no more than 70% of the total market value of the Plan at the time of purchase. Securities rated below investment grade by at least one major ratings agency are expected to represent no more than 10% of the total market value of the Plan at time of purchase. Commercial paper assets must be rated A-1 or P-1 by Standard & Poor's and Moody's respectively. Any idle cash not invested by the investment managers shall be invested daily through an automatic sweep provided through the custodian. The investment manager may not purchase short-term financial instruments considered to contain speculative characteristics (uncertainty of principal and/or interest).

Total Plan Guidelines

The following types of assets or transactions are expressly prohibited (unless approved by the Trustees):

- Commodities and Futures
- Tax Exempt Securities
- Warrants
- Eurobonds
- Naked Option Transactions

- Margin Purchase of Securities
- Short Sales of Securities
- Volatile derivatives such as those possessing elements of leverage, having risk characteristics beyond that of the underlying collateral, or with a potential duration greater than ten years.
- Transactions prohibited under ERISA

Summary of Allocation Limits (at time of purchase):

	<u>Maximum</u>	<u>Minimum</u>
Total Stocks	80%	30%
International Stocks	30%	0%
Fixed Income	70%	20%

PERFORMANCE MEASUREMENT OF INVESTMENT OBJECTIVES:

- A. The Trustees hire and review investment managers based on an evaluation of their investment philosophies and long-term performance. Investment managers must adhere to their stated investment philosophies and goals.
- B. Investment performance results of the Plan as a whole, and the investment manager(s) individually, shall be monitored and evaluated in accordance with the following:
 - Total Plan performance will be compared to a comprehensive universe of investment managers over a stock market cycle. Since full stock market participation at all times represents a level of risk and volatility not acceptable to this portfolio, the Plan will not be compared directly to the stock market, but market comparisons may be made on a risk-adjusted basis.
- C. It is expected that, to the extent allowed by the restrictions listed above, the investment managers will at all times manage the portfolio with the aim of meeting the above guidelines. The purpose of the investment management style is not to beat the market, but to use it when it suits the objectives of the portfolio.
- D. The investment managers must advise the Trustees, in writing, of any material changes in the investment manager's organization, decision making structure, ownership, investment style, key personnel or any other significant change affecting the manager's relationship with the Plan along with a statement as to the anticipated impact on the investment manager's ability to provide the same style and type of money management on a continuing basis.

RESPONSIBILITIES:

ERISA has enumerated broad fiduciary responsibilities to retirement plans for which trustees and investment professionals are held accountable. This section will assign several of these fiduciary, as well as other non-fiduciary, duties and responsibilities to the Plan's Trustees and Managers. This list does not eliminate any of the parties from other fiduciary duties and responsibilities as determined by ERISA and other applicable laws.

Investment Manager Responsibilities:

The duties and responsibilities of the Plan's investment manager(s) will include:

- communicating with and reporting to the Trustees on a regular basis;
- voting proxies for investments under the management of the investment manager;
- preparing reports, at least quarterly, on the investment risk and performance of Plan assets;
- notifying the Trustees of any issue that may materially impact the investment of the Plan's assets (e.g., change of ownership, key investment professionals, investment philosophy and/or process);
- investing the Plan's assets with the care, skill, prudence and diligence that a prudent investment professional would exercise in the investment of those assets;
- developing, reviewing and revising Plan investment policies as necessary;
- establishing and adjusting the asset allocation of the Plan's assets within the parameters outlined in the Statement of Investment Policy; and
- meeting as requested with the Trustees, at least annually, to discuss investment strategy and review past performance.

Trustee Responsibilities:

The duties and responsibilities of the Trustees will include:

- evaluating manager and fund investment risk and performance;
- reviewing and approving Plan investment policies; and
- monitoring, appointing and discharging investment managers as necessary.

ACKNOWLEDGEMENT:

City of Bradford

As a co-fiduciary to the Non-Uniformed Emp Pension Plan under ERISA (i.e., as defined in Section 3(38)), we acknowledge and accept the foregoing Investment Policy Statement.

3-8-05
Date

Michele Buigrani

3-8-05
Date

Katherine Hoff

APPENDIX B



**City of Bradford Police
Pension Plan**
Actuarial Valuation Report
January 1, 2023

This report is issued for use by the City of Bradford and by other professional advisors to the Plan. The information contained in the report may not be provided to other parties without the consent of Acrisure or the City of Bradford.



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Actuarial Certification

As Plan Actuary, I valued the plan based on my best understanding of the provisions in the documents listed in the Plan Provisions section of this report. I meet the Qualification Standards of the American Academy of Actuaries to render this actuarial opinion. As we are not permitted to render legal opinions, we urge you to review our summary to ascertain that the provisions are correctly interpreted. You should consult with your solicitor if there is any doubt as to how a particular item should be interpreted.

This report is prepared in accordance with Act 205. The actuarial exhibits were prepared by the approved actuary as certified below. The assumptions were jointly selected by the actuary and the governing body of the City of Bradford. The assumptions used are individually reasonable, reasonably related to the experience of the plan and to reasonable expectations and represent the best available joint estimate of the actuary and the governing body of the municipal pension plan of anticipated experience under the plan.

The following assumptions were changed since the last valuation and the impact of the changes on Unfunded Accrued Liability (UAL) are shown below:

- The mortality improvement projection scale was updated to MP-2021. The accrued liability increased \$10,420.
- Valuation programming for chiefs receiving longevity was fixed. The accrued liability increased \$5,902.

This actuarial valuation involves estimates of the value of amounts and assumptions about the probability of events far into the future. The actuarial determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

This report should be used for budgeting of your 2024 and 2025 pension costs. The responsibility of budgeting an amount and then depositing that amount lies with the City of Bradford. The budgeting process was required to be completed by September 30, 2023 for the 2024 budget.

Certified by

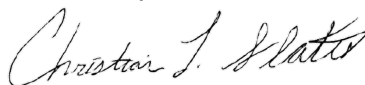


Frank Canonico, EA,MAAA

February 20, 2024

Date

Assisted by



Christian L. Slates, ASA

February 20, 2024

Date

Summary of Key Results

	<u>Prior Valuation</u>	<u>Current Valuation</u>
Valuation Date	1/01/2021	1/01/2023
Demographic Statistics:		
Average Age (Actives)	38.9	36.1
Average Past Service	11.3	8.6
Assumed Average Future Service	16.3	19.1
Average Age (Inactives in Pay Status)	67.3	66.5
Average Monthly Benefit	1,832	2,030
Participant Counts:		
Actives	19	19
Terminated Vested	3	2
Disabled	3	3
Normal Retirees	16	19
Deferred Retirement Option Plan (DROP) Retirees	0	0
Surviving Spouse	2	3
Surviving Child	0	0
Total	43	46
Payroll:		
Plan Salary	1,181,459	1,210,696
Average	62,182	63,721
W-2 Payroll for Previous Plan Year (Annualized)	1,244,715	1,292,853
Assets		
Market Value of Assets	9,814,532	8,408,373
Actuarial Value of Assets	8,877,269	9,583,488
Present Value of Benefits (Total Service)	10,931,689	12,013,736
Normal Cost		
Dollars	165,197	176,574
Actuarial Accrued Liability (Past Service)		
Total	8,863,925	9,546,874
Actuarial Unfunded Liability (Advance Funding)	(13,344)	(36,614)
Plan Funding Ratio	100%	100%
MMO Components		
Normal Cost as % of Annualized W-2	13.27%	13.66%
Average Expenses as a % of Annualized W-2	5.68%	6.29%
Amortization of Unfunded Liability	0	0
Advance Funding Credit	1,334	3,661

Changes Since Last Valuation

Plan Changes

None

Method Changes

- Valuation programming for chiefs receiving longevity was fixed.

Assumption Changes

The assumptions have been reviewed, and the following changes made:

- The mortality improvement projection scale was updated to MP-2021.

Actuarial Exhibits

Allocation of Assets

The following displays the value of plan assets by major categories.

	<u>2021</u>	<u>2022</u>
Assets:		
Cash & Cash Equivalents:	\$ 0	\$ 0
Accrued Interest and Dividends Receivable:	0	0
Receivables (Specify):		
Employee Contributions:	0	0
Employer Contributions:	148,626	159,550
State Aid:	0	0
Other:	0	0
Investment at Market Value (Specify):		
Money Markets & Other Cash Investments:	213,547	330,565
Mutual Funds	2,571,075	1,988,320
Stocks and Other Equities:	5,297,918	3,374,463
Bonds and Other Fixed Income:	2,573,676	2,823,437
Other Assets (Specify):		
Participation Value adjustment under Act 205:	(314,803)	(267,962)
Insurance Contract/Group Annuity:	0	0
Insurance/Annuity Cash Surrender Value (Individual Policies):	0	0
Total Fund Assets:	\$ 10,490,039	\$ 8,408,373
Current Liabilities:		
Accounts Payable and		
Accrued Administrative Expenses:	\$ 0	\$ 0
Benefits Payable:	0	0
Other:	0	0
Total Current Liabilities:	\$ 0	\$ 0
Net Assets Available for Benefits (Market Value) as of Valuation Date:	\$10,490,039	\$ 8,408,373

Reconciliation of Assets and Gain/(Loss)

	<u>2021</u>	<u>2022</u>
Reconciliation of Market Value of Assets		
Market Value at Beginning of Year:	\$ 9,814,532	\$ 10,490,039
Receipts		
Member Contributions	51,076	81,756
Total Municipal Contributions		
State Aid Portion	191,506	40,906
Local Portion	10,886	146,164
Interest Earnings / Dividend Income	119,248	163,698
Realized/Unrealized Capital Gains/(Losses)	904,409	(1,825,659)
Other Revenues or Credits	<u>(973)</u>	<u>231</u>
Total Receipts	1,276,152	(1,392,904)
Disbursements		
Benefit Payments (Lump Sum)	0	0
Benefit Payments (Monthly)	502,130	607,629
Annuity Purchases (Lump Sum)	0	0
Insurance Premiums	0	0
Refund of Member Contributions	15,193	1,772
Lump Sum DROP Account Payments	0	0
Actuarial Costs	15,525	7,600
Investment Costs	66,506	70,170
Other Expenses or Debits	<u>1,291</u>	<u>1,591</u>
Total Disbursements	600,645	688,762
Market Value at End of Year:	\$ 10,490,039	\$ 8,408,373
Development of Investment Gain/(Loss)		
Market Value of Assets at Beginning of Year:	\$ 9,814,532	\$ 10,490,039
Employee and Employer Contributions	253,468	268,826
Benefit Payments	(517,323)	(609,401)
Administrative Expenses	(83,322)	(79,361)
Expected Interest at 7.35%	<u>560,338</u>	<u>740,709</u>
Expected Market Value of Assets at End of Year:	\$ 10,027,693	\$ 10,810,812
Market Value at End of Year:	\$ 10,490,039	\$ 8,408,373
Expected Market Value of Assets at End of Year:	<u>\$ 10,027,693</u>	<u>\$ 10,810,812</u>
Investment Gain or (Loss):	\$ 462,346	\$ (2,402,439)

Development of Actuarial Value of Assets

Market Value of Assets as of January 1, 2023: \$ 8,408,373

Deferred Gains and (Losses)

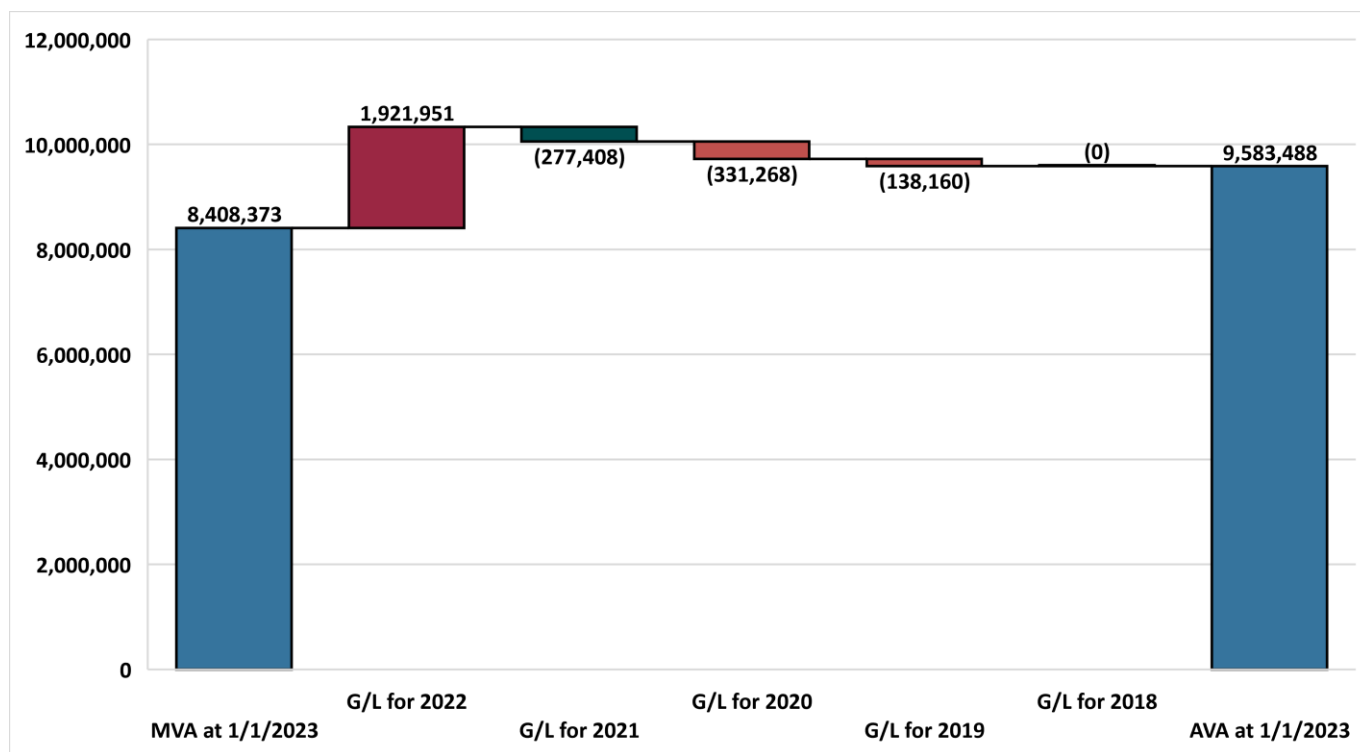
Plan Year Ending	Investment Gain/(Loss)	Percent Deferred	Gain/(Loss) Deferred
12/31/2022	\$(2,402,439)	80%	\$ 1,921,951
12/31/2021	462,346	60%	(277,408)
12/31/2020	828,169	40%	(331,268)
12/31/2019	690,801	20%	(138,160)
12/31/2018	(574,187)	0%	0
Total			\$ 1,175,115

Preliminary Actuarial Value of Plan Assets, January 1, 2023 \$ 9,583,488

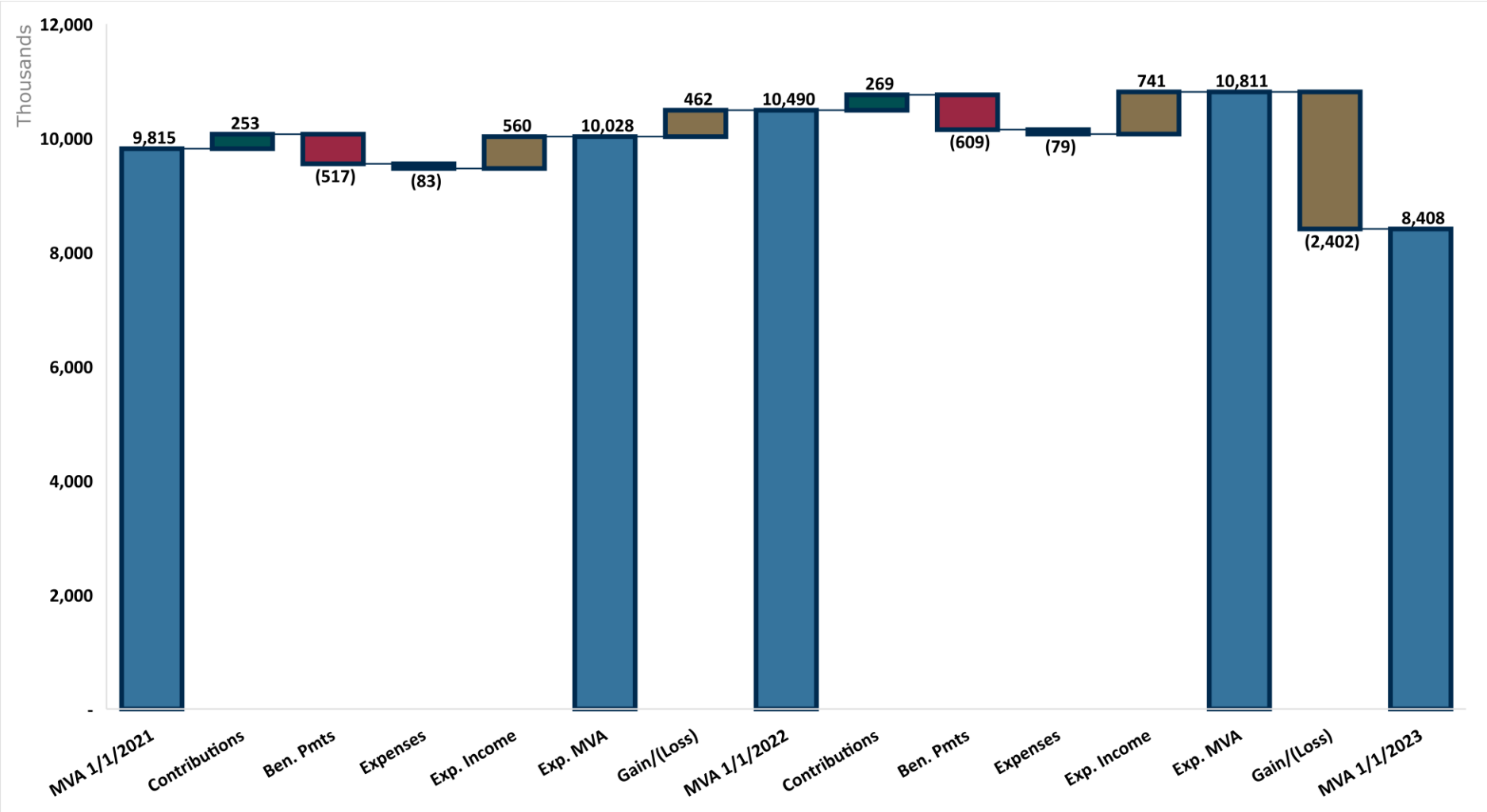
80% of Market Value of Assets: \$ 6,726,698

120% of Market Value of Assets: \$ 10,090,048

Actuarial Value of Plan Assets, January 1, 2023 **\$ 9,583,488**
(not less than 80% and no more than 120% of Market Value)



Reconciliation of Assets Summary



Actuarial Accrued Liabilities

	<u>Prior Valuation</u>	<u>Current Valuation</u>
Interest Rate	7.35%	7.35%
Actuarial Present Value of Future Benefits		
Active		
Termination	\$ 0	\$ 0
Disablement	0	0
Death	0	0
Refund of Employee Contributions:	0	0
Retirement	5,012,823	4,772,739
Other:	0	0
Total Active	\$ 5,012,823	\$ 4,772,739
In-Payment		
Retired	\$ 4,111,303	\$ 5,447,625
Disabled	561,138	546,963
Surviving Spouse	364,965	682,225
Estimated DROP Participant	0	0
Other:	0	0
Terminated Vested	881,460	564,184
Total In-Active Liability	\$ 5,918,866	\$ 7,240,997
Total Liabilities	\$ 10,931,689	\$ 12,013,736
Actuarial Present Value of Future Normal Cost:		\$ 2,466,862
Actuarial Accrued Liability:		\$ 9,546,874
Estimated Accumulated Contributions to January 1, 2023 without Interest:		\$ 434,169

Actuarial Gain or Loss

	<u>2021</u>	<u>2022</u>
Unfunded Amount at Beginning of the Year	\$ (13,344)	\$ (12,893)
Normal Cost Plus Expenses	248,519	246,205
Total Contributions Made	253,468	268,826
Interest on Above	153,180	19,293
Contribution Gain/(Loss)	(147,780)	3,812
Expected Unfunded Liability at End of Year Prior to Benefit Modifications or Assumption Changes	(12,893)	(12,409)
Additional Liability due to		
Benefit Modification for Actives		0
Benefit Modifications for Retired		0
Assumption/Method Changes		16,322
Total		16,322
Expected Unfunded Amount at End of the Year		\$ 3,913
Actual Unfunded Amount at End of the Year		
Actuarial Accrued Liability		\$ 9,546,874
Actuarial Value of Assets		9,583,488
Unfunded Actuarial Accrued Liability		\$ (36,614)
Actuarial (Gain) or Loss		\$ (40,527)
(difference between actual and expected unfunded amounts)		
Components of Total Actuarial (gain) or loss:		
Asset (Gain) or Loss		(349,109)
Liability (Gain) or Loss		153,752
Contribution (Gain) or Loss		154,830
Actuarial (Gain) or Loss established January 1, 2023:		0

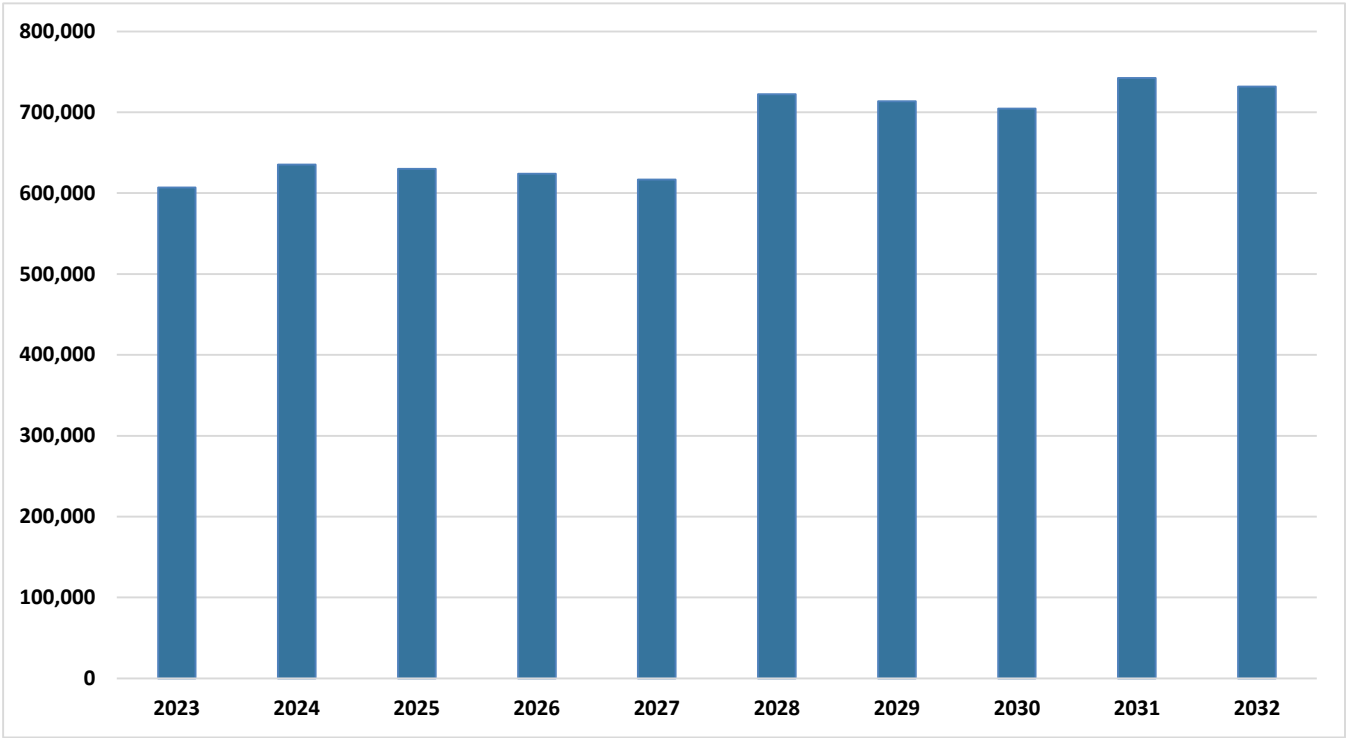
Amortization of Unfunded Actuarial Accrued Liability

Each layer (or base) of Unfunded Liability is established as a result of actual experience differing from the actuarial assumptions, changes in pension plan benefits, or actuarial cost methods.

N/A – No Unfunded Accrued Liability

Projected Benefit Payments

Plan Year	Projected Benefit Payments
2023	\$ 606,900
2024	635,300
2025	629,900
2026	623,800
2027	616,900
2028	722,400
2029	713,800
2030	704,500
2031	742,200
2032	731,700



Appendices

Plan Provisions

The following is a summary of the major provisions of the plan as of January 1, 2023. Refer to the plan document for a more complete description of the most recent plan provisions.

Post-1987 Hires

Amendments or Ordinances: There are no longer any pre-1988 hires governed by the current CBA.

Eligibility Requirements: Full-time, contributing member of the Police Department of the City of Bradford (Section 2.01).

Normal: Age 50 with 20 years of service (Section 1.24)

Early: N/A

Vesting: 12 years of service (Section 8.01)

Retirement Benefit Formula: 50% of final monthly pay (or five-year average pay if higher), plus a service increment for each full year after 20 years, but prior to age 65, equal to 1/40th of the regular pension (not to exceed \$500/month) (Section 4.01 and 2008 CBA). The \$500 increment applies for retirements on or after January 1, 2010 except that officers hired after January 1, 2020 are eligible only for service increments up to \$100/month.

Military Service: Up to 5 years of non-intervening military service upon payment by the participant of an amount equal to that which he would have paid had he been a member during the period for which he desires credit plus an Employer contribution (Section 1.32).

Death Benefit:

Pre-Retirement: Single: Refund of member contributions, without interest (Section 7.01).

Married: Up to 10 Years of Service: 25% of compensation, payable immediately (Section 6.03a).

Married: After 10 Years of Service: 50% of compensation, payable immediately (Section 6.03a).

Post-Retirement: 50% of the pension the retired member (100% for disabled member) was receiving payable to the legal spouse or surviving children under age 18 of retired or disabled member (Section 7.03).

Plan Provisions (continued)

Disability Benefit:

Service Related:	Normal Retirement Benefit payable immediately (Section 6.03c).
Non-Service Related:	Up to 10 Years of Service: 25% of compensation, payable immediately (Section 6.03a). After 10 Years of Service: 50% of compensation, payable immediately (Section 6.03a).

Post Retirement Adjustment: Certain retirees received a special post-retirement adjustment under Act 64 of 2002 effective after June 30, 2002.

Other Benefits:

Termination:	Up to 12 Years of Service: Refund of contributions, without interest (Section 8.03). After 12 Years of Service: 50% of final rate of monthly pay at termination times a percentage. The percentage is equal to actual years of service at termination divided by years of service the participant would have had if he had worked until normal retirement. The benefit is payable at normal retirement (Section 8.01).
--------------	---

Employee Contribution: 4% of Compensation plus 1.0% of Compensation (widow's benefit) plus 0.5% of Compensation up to \$60 and \$12 if hired after January 1, 2020 (Section 3.02a).

Interest Rate on Member

Contribution: 0%

Compensation: Salary and any Pick-Up contributions made by the Plan but excludes overtime, court pay and any other remuneration (Section 1.13)

Pre-1988 Hires

Amendments or Ordinances: There are no longer any pre-1988 hires governed by the current CBA. Please refer to plan documents and actuarial reports prior to January 1, 2021 for more details on active plan provisions for pre-1988 hires.

Actuarial Methods and Assumptions

As of January 1, 2023

Cost Method: The actuarial accrued liability and normal cost under the Entry Age Normal actuarial cost method are used to determine your contribution level. This cost method is required for use by Act 205. Under this method, the normal cost percentage is determined separately for each active participant as the level percent of expected career earnings required to fund expected plan benefits. The participant's actuarial accrued liability is the difference between the present value of all future plan benefits expected to be paid on his behalf and the present value of his future normal costs. This actuarial accrued liability represents the amount of assets that would theoretically be on hand at the valuation date if the current plan provisions and assumptions had always been in effect, historical experience conformed exactly to assumptions, and the participant's individual normal cost had been contributed each year.

Actuarial accrued liability active participants is determined as the actuarial present value of the benefits expected to be paid; no normal cost is determined for these participants

The normal cost and actuarial accrued liability for the plan are the sum of the individual normal costs (plus expenses expected to be paid from the trust during the plan year) and accrued liabilities.

Asset Valuation Method In-determining the preliminary actuarial value of assets, the preceding year's market value of assets is increased by contributions and expected interest at the valuation rate and reduced by benefit payments and expenses. This preliminary value of assets is then compared to the market value of trust assets and 20% of the difference is recognized in year 1, 40% in year 2, 60% in year 3 and 80% in year 4 to produce the final actuarial value of assets. If the resulting actuarial value of assets is outside a corridor of 80% to 120% of the market value, an adjustment is made to maintain the actuarial value of assets at the appropriate corridor limit.

Economic Assumptions

Interest Rate: 7.35% per annum.

Salary Increase*: Base rates – 2.5% for 2023 and 4.00% thereafter
Rank differentials and other additional pay - 0%.

* Contractual increases in base rates, rank differentials, and other pay in the 2020-2023 Collective Bargaining Agreement, as well parity, are reflected.

Expenses: Average of prior two years.

Inflation: 2.50% per annum.

Actuarial Methods and Assumptions (continued)

Demographic Assumptions

Retirement Age:	Later of Age 55 and 20 or January 1, 2024
Turnover:	None assumed
Mortality:	Pre-retirement: None assumed. Post-retirement: PubS-2010(B) Healthy Retiree Amount-Weighted, Below-Median for Public Safety Officers. Pub – 2010(B) Contingent Survivor Total Dataset table for spouses. Post-disablement: PubS-2010 Disabled Retiree Amount-Weighted for Public Safety Officers. Pub – 2010(B) Contingent Survivor Total Dataset table for spouses. Projection Scale: MP-2021
Disability:	None assumed
Marital Characteristics:	80% assumed married, female spouse assumed to be four years younger than male participant
Other:	None

Financial and Census Data

Assets and census data were provided by the City of Bradford as of January 1, 2023 and are assumed to be correct.

Actuarial Methods and Assumptions (continued)

Models Used: Actuarial Standard of Practice (ASOP) No. 56, Modeling, requires commentary by the actuary on the use of any model that has a significant impact on our work, including the intended purpose of the model, material limitations or known weaknesses of the model, and the extent of reliance on models developed by others. This standard is effective for work performed on or after October 1, 2020.

Acrisure uses a third-party actuarial software package for pension valuation work. This software package is used worldwide by many actuarial and investment firms. The software models future benefit cash flows, present values, and attribution to various periods, based on deterministic or stochastic assumption sets and benefit parameters provided by the user. The model is highly flexible and also supports comparisons between periods, maintenance of plan specific participant databases, and preparation of reports under various accounting and regulatory structures.

In the absence of adequate review, the model's complexity and flexibility could lead to unintentional results. However, the model contains robust tools to test and verify the reasonableness of results. Our internal technical review utilizes these tools. We have reviewed the model's documentation and have relied on the expertise of the software vendor for the underlying structure, methodology, and extensive supporting calculations. We have not performed a substantial audit of the model or its structure beyond typical use in preparing results, as this is typically not done by plan actuaries. However, we expect that the very deep market of qualified users for this same model ensures that no materially significant issues can or will persist.

In order to determine or assess reasonableness of the return assumption for the plan target portfolio, Acrisure has used the model and method described under Actuarial Standard of Practice No. 27. This type of model determines an expected investment return assumption based on externally provided investment class arithmetic returns, variances and correlations.

In using the model, we have relied on investment manager or investment manager survey return, variance, and correlation assumptions. The nominal value of these assumptions generally determines the output of the model. In certain instances, investment manager or survey information may not align perfectly by class. To the extent necessary, we have made a reasonable effort to allocate segments of the target portfolio as closely as possible within the available investment manager or survey classes provided.

Justification for Significant Assumptions

Mortality	The base tables and improvement scale assumptions were selected by considering a study of demographic experience exclusive to public-sector employees published by the Society of Actuaries in 2019. Selection of the Above-Median table resulted from an analysis of the distribution of pay and benefits for plan participants.
Retirement and Termination	The assumption was set considering various factors including: plan design, post-retirement benefit availability, and retirement and turnover experience.
General Inflation Rate	The inflation rate was selected after a review of the long term expectations contained in the most recent Medicare and OASDI Trustee reports as of the measurement date, the historical spread between the CPI and the GDP deflator, and spreads between long term government bonds with and without inflation protection, rounded to the nearest 25 basis points.
Funding Interest Rates	This assumption is set based upon expectations of the Fund manager for both the current and long-term expectations of return on plan investments based upon the current asset allocation.
Administrative Expenses	Average of prior two years.
Salary Scale	The assumption was selected based upon a study of recent plan experience and adjusted for actual rates in the current collective bargaining agreement.
401(a)(17) Compensation Limit Increase Rate	The assumption was selected to be consistent with the assumed general inflation rate.
Percent Married	This assumption has been set with guidance from the client and general research. Specific data regarding percent married is not maintained as part of the valuation process, and is thus not available
Spouse Age Difference	This assumption is based on guidance provided by general research. The assumption is monitored against the actual age difference in current inactive data, and assumed to be reasonable unless or until inactive data shows a significant difference versus the assumption

Assessment and Disclosure of Risk for Actuarial Standard of Practice No. 51

Assessment and Disclosure of Risk

Sponsors of defined benefit plans are subjected to various risks related to their plans. In general, most plan sponsors view risk, generally speaking, as the potential for future plan outcomes to differ widely from expected. Differences are inevitable and generate experience gains (or losses) at the next valuation date causing the MMO to decrease (or increase) over a fixed number of years to make up for the difference.

Risk management focus is almost exclusively on those outcomes that are unfavorable. Because of this, our assessment focuses on the negative consequences that certain risks may present to you, as plan sponsor. It is important to note that although negative outcomes are generally the focus of risk analysis, there is also the possibility that outcomes will be more positive than expected, and may present both opportunities and obstacles for a sponsor to be in a better position to mitigate risk in the future. For example, following a period of better than expected investment returns a municipality might be able to invest in less risky assets (opportunity). On the other hand, its bargaining unit could be asking for (and getting) a benefit improvement and/or a reduction in member contributions (obstacle).

We have addressed the following in this section of the report:

- Identification and definition of significant risks applicable to you, as plan sponsor
- An assessment of the risks most likely to trigger negative outcomes
- Identification of other less significant risks considered
- A discussion of plan maturity and how it may affect your view of risk

Please note that the risks discussed in this report are in the context of cash contribution requirements (i.e., MMO) applicable to you, as plan sponsor. Less than favorable outcomes may also have negative consequences for financial statements (GASB 68 disclosures), affecting your credit rating and ability to borrow money or trigger mandatory remedies as a Distress Level 2 or higher municipality, resulting in additional administrative expense to prepare a plan for administrative improvement or to create a new benefit structure for new hires. We are available to discuss how these risks may affect your financial statements or any other disclosure requirements or to provide additional analysis regarding any of the information discussed in this section of the report.

Identification and Definition of Significant Risks

Investment Risk: Investment risk is the chance that investment income will differ widely from expected. From the perspective of a plan sponsor, the significant risk is that actual return will be lower than expected, resulting in increased contributions to make up for shortfalls in investment returns. Generally, the higher the expected return that a sponsor seeks, the greater the volatility in returns will be and thus the higher the risk to the sponsor that unfavorable experience may occur.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Contribution Risk: Contribution risk is the possibility that actual future contributions will differ widely from expected contributions. In general, other risk items described below contribute to contribution risk, as well as the potential that plan sponsors may not be able to make contributions when necessary due to adverse economic conditions or to the availability of state aid, if eligible.

Municipalities which do not contribute the full MMO could receive an "Order to Comply" from the Municipal Pension Reporting Program (MPRP) within the Department of the Auditor General's Office of Budget and Financial Management if the shortfall meets the criteria to be a "critical funding deficiency."

Because other items contribute to this risk, no individual analysis is provided for contribution risk, though we are available to provide projections of future contribution levels under various scenarios, if there is a specific outcome that you must avoid.

Asset/Liability Mismatch Risk: Asset/liability mismatch occurs when plan liabilities and plan assets do not move in tandem with market changes. For example, a private pension plan will have liabilities that are based loosely on the corporate bond market, but may have assets that are heavily weighted in equities. If equities experience little or no return, but corporate bond rates decline, the deficit in plan funding will increase. Public pension plan liabilities, on the other hand, are based on a long-term expected return on plan assets assumption, dependent only on asset allocation without adjustment for risk or changes in interest rates, and so will not likely move in tandem with plan assets, in the short term.

Interest Rate Risk: Potentially negative outcomes may occur if market interest rates differ from expected. Specifically, decreasing rates lower the plan's ability to achieve returns in the long run from fixed income assets. The significance of this risk is magnified, in the short term, if a public plan sponsor which is permitted to do so (e.g., an Authority or Third Class Optional Charter City) settles a significant portion of plan liabilities via lump sum payments to participants or de-risks a portion of the liabilities through the purchase of non-participating annuities.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Risks Most Likely to Trigger Negative Outcomes:

Investment Risk: The consequence of less than favorable returns over a long-term basis is simply that those lost returns must instead be made up by future contributions. The investment allocation of the Plan is approximately 65% equities and 35% fixed income. For plans that do not dedicate assets to liabilities and which have a more aggressive equity allocation (generally over 60%), the extra volatility in year-to-year MMO levels may negatively impact cash flow planning. Higher contribution requirements after unfavorable returns may coincide with other cash flow pressures on the municipality.

While an analysis of potential future return outcomes, including stress testing and sensitivity analysis, can be provided, we don't believe the fund size would justify the expense. We would advise that, as plan sponsor, you monitor your general tolerance for risk in asset returns vs. potential returns that taking on such risk provides.

Asset/Liability Mismatch Risk: When a plan's asset allocation is *not* dedicated to specific liabilities, there is a potential for asset/liability mismatch risk. Some asset/liability mismatch risk may be cyclical. For example, decreasing corporate bond yields with or without concurrent poor equity experience can reverse in the long run. In the short term, the risk to you, as a plan sponsor, is the unfavorable circumstance of selling assets to pay current benefits to participants when those assets are at a low point. Because of the cyclical nature of this type of risk, the impact may not be as significant if you intend to maintain the plan for the long term. If you anticipate settling liabilities in the short term, either by offering lump sum payments to participants or settling retiree liabilities with an annuity purchase, it would be advisable to improve the coordination of assets and liabilities in regard to their reaction to changing markets. As with investment risk, the cost of preparing a numerical analysis must be weighed against the size of the plan. Let us know if you are interested in additional analysis. We would be happy to discuss strategies for you to manage this type of risk.

Interest Rate Risk: Interest rate risk may decrease the long-term asset return profile for the plan and may increase cash contributions required, in the near term. In a case in which you may wish to settle plan liabilities through lump sums or non-participating annuity purchases, lower interest rates will generally increase the cost of settlement. Interest rate risk can be mitigated to some extent by dedicating assets to liabilities so that assets and liabilities move in tandem over the long-run. However, dedication generally lowers expected future returns and funded deficits will still increase a smaller amount in a declining interest rate environment. That is, you will expect to make additional contributions on average in return for less risk. If you have no immediate intention to settle plan liabilities, the impact of interest rate risk may be no more than accelerating contribution requirements.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Other Less Significant Risks or Risks That Are Difficult to Quantify

Inflation Risk: Inflation risk occurs in final average pay (FAP) plans and in plans that provide automatic cost-of-living adjustments (COLA) to retirees when actual future inflation is higher than expected. Since wages are generally tied to inflation FAP plans will be paying out higher pensions when inflation is higher than expected. Similarly, COLAs may be higher than expected or accelerated in the case in which there is a lifetime cap on COLAs.

Mortality Risk: Mortality risk is the risk that pension plan participants live longer or not as long (life insurance plans) than expected. For smaller plans, this risk can be substantial over the long term; in the short term, the impact is less than the more significant risks mentioned in the prior section. This risk can be mitigated by settling plan liabilities through payment of lump sums or the purchase of non-participating annuities, if economic conditions are favorable.

Legislative Risk: Legislative risk is the chance that changes in law or regulatory guidance will force an unfavorable outcome for you, as plan sponsor. Examples of this type of risk are unexpected revisions to state aid rules (if eligible) or significant changes in funding requirements under Act 205. *These types of risks are difficult to quantify;* but, at the time of this report, we do not expect any significant changes in the near future.

Arbitration Risk: Arbitration risk in collectively bargained pension plans, similar in some ways to Legislative Risk, is the chance that arbitration awards/decisions will force an unfavorable outcome for you, as plan sponsor. Most often they are in the direct form of pension benefit enhancements and/or reductions in employee contributions but could be indirect in the form of wage increases, when the pension formula is pay-related.

Demographic/Participant Risks Other than Mortality: Demographic risks other than mortality are risks that participant behavior will differ widely from expected. This can include participants electing to commence benefits earlier than expected or in a different form than expected. It can be a significant risk in pension plans in which the municipality fully subsidizes the cost of a survivor pension provided to a spouse after the retiree death, regardless of the age difference; and to an even greater extent when the entitlement to a survivor pension belongs to the spouse as of the retiree's *date of death*. If a municipality had no prior knowledge of a late-in-life marriage of a retiree, who is now deceased, then the funding liability due to the surviving spouse is completely unexpected and not provided for in prior actuarial valuations.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Plan Maturity Measures

Plan maturity refers to the composition of your plan by age. A recently established plan with no retirees is considered to be an immature plan. A very mature plan is one whose liability is primarily on behalf of participants who are in pay status. We generally consider a plan that has liabilities greater than 50% attributable to participants in pay status as a mature plan.

The risk to a plan sponsor increases as a plan becomes more mature. Simply put, a sponsor’s revenue source may or may not grow, but as a plan becomes more mature, its potential impact will grow without regard to the supporting revenue generating activities. More mature plans – particularly those with a low funded ratio – are more likely to have issues because of heavy cash flow out of the plan. Mature plans generally have negative cash flows and rely on investment return to keep the fund from declining; and hence are more susceptible to volatility in the market. The Net Cash Flow as a percentage of Plan Assets (NCF %) is a measure of the investment return needed to keep the fund from declining over a particular period. For example, an NCF % = -6% means the fund needed at least +6% investment return over the period to keep from declining.

As of the date of this report, the Accrued Liability is comprised of approximately 70% inactive liability and the Net Cash Flow % is -7.82%. These ratios are provided for the current and last four (4) valuation dates below.

The moderately high ratio emphasizes the importance of risk consideration for you, the plan sponsor.

As of January 1,	Accrued Liability In Pay % of Total	Net Cash Flow % of Assets ¹	Plan Funded Ratio
2023	70%	-7.82%	100%
2021	57%	27.96%	100%
2019	60%	-0.75%	73%
2017	67%	-5.14%	68%
2015	55%	-5.93%	68%

¹ Over two-year PA municipal pension cycle.



**City of Bradford Firemen's
Pension Plan**
Actuarial Valuation Report
January 1, 2023

This report is issued for use by the City of Bradford and by other professional advisors to the Plan. The information contained in the report may not be provided to other parties without the consent of Acrisure or the City of Bradford.



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Actuarial Certification

As Plan Actuary, I valued the plan based on my best understanding of the provisions in the documents listed in the Plan Provisions section of this report. I meet the Qualification Standards of the American Academy of Actuaries to render this actuarial opinion. As we are not permitted to render legal opinions, we urge you to review our summary to ascertain that the provisions are correctly interpreted. You should consult with your solicitor if there is any doubt as to how a particular item should be interpreted.

This report is prepared in accordance with Act 205. The actuarial exhibits were prepared by the approved actuary as certified below. The assumptions were jointly selected by the actuary and the governing body of the City of Bradford. The assumptions used are individually reasonable, reasonably related to the experience of the plan and to reasonable expectations and represent the best available joint estimate of the actuary and the governing body of the municipal pension plan of anticipated experience under the plan.

The following assumptions were changed since the last valuation and the impact of the changes on Unfunded Accrued Liability (UAL) are shown below:

- The mortality improvement projection scale was updated to MP-2021. The accrued liability increased \$16,593.

This actuarial valuation involves estimates of the value of amounts and assumptions about the probability of events far into the future. The actuarial determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

This report should be used for budgeting of your 2024 and 2025 pension costs. The responsibility of budgeting an amount and then depositing that amount lies with the City of Bradford. The budgeting process was required to be completed by September 30, 2023 for the 2024 budget.

Certified by



Frank Canonico, EA,MAAA

February 20, 2024

Date

Assisted by



Christian L. Slates, ASA

February 20, 2024

Date

Summary of Key Results

	Prior Valuation	Current Valuation
Valuation Date	1/01/2021	1/01/2023
Demographic Statistics:		
Average Age (Actives)	41.1	41.8
Average Past Service	11.1	12.4
Assumed Average Future Service	14.2	13.3
Average Age (Inactives in Pay Status)	71.6	71.9
Average Monthly Benefit	2,122	2,203 ¹
Participant Counts:		
Actives	20	20
Terminated Vested	1	1
Disabled	5	5
Normal Retirees	11	9
Deferred Retirement Option Plan (DROP) Retirees	0	0
Surviving Spouse	7	9
Surviving Child	0	0
Total	44	44
Payroll:		
Plan Salary	1,212,666	1,296,733
Average	60,633	64,837
W-2 Payroll for Previous Plan Year (Annualized)	1,172,658	1,317,618
Assets		
Market Value of Assets	11,466,139	10,005,418
Actuarial Value of Assets	10,306,886	11,412,502
Present Value of Benefits (Total Service)	12,854,814	13,244,216
Normal Cost		
Dollars	232,957	239,066
Actuarial Accrued Liability (Past Service)		
Total	10,284,626	10,795,538
Actuarial Unfunded Liability (Advance Funding)	(22,260)	(616,964)
Plan Funding Ratio	100%	106%
MMO Components		
Normal Cost as % of Annualized W-2	19.87%	18.14%
Average Expenses as a % of Annualized W-2	6.76%	7.28%
Amortization of Unfunded Liability	0	0
Advance Funding Credit	2,226	61,696

¹ Does not include temporary make-up payments to one retiree.

Changes Since Last Valuation

Plan Changes

None

Method Changes

None

Assumption Changes

The assumptions have been reviewed, and the following change made:

- The mortality improvement projection scale was updated to MP-2021.

Actuarial Exhibits

Allocation of Assets

The following displays the value of plan assets by major categories.

	<u>2021</u>	<u>2022</u>
Assets:		
Cash & Cash Equivalents:	\$ 0	\$ 0
Accrued Interest and Dividends Receivable:	0	0
Receivables (Specify):		
Employee Contributions:	0	0
Employer Contributions:	105,261	109,997
State Aid:	0	0
Other:	0	0
Investment at Market Value (Specify):		
Money Markets & Other Cash Investments:	300,699	634,768
Mutual Funds	3,100,333	2,405,444
Stocks and Other Equities:	6,172,784	3,948,628
Bonds and Other Fixed Income:	2,926,964	3,175,230
Other Assets (Specify):		
Participation Value adjustment under Act 205:	(281,020)	(268,649)
Insurance Contract/Group Annuity:	0	0
Insurance/Annuity Cash Surrender Value (Individual Policies):	0	0
Total Fund Assets:	\$ 12,325,021	\$ 10,005,418
Current Liabilities:		
Accounts Payable and		
Accrued Administrative Expenses:	\$ 0	\$ 0
Benefits Payable:	0	0
Other:	0	0
Total Current Liabilities:	\$ 0	\$ 0
Net Assets Available for Benefits (Market Value) as of Valuation Date:	\$12,325,021	\$10,005,418

Reconciliation of Assets and Gain/(Loss)

	<u>2021</u>	<u>2022</u>
Reconciliation of Market Value of Assets		
Market Value at Beginning of Year:	\$ 11,466,139	\$ 12,325,021
Receipts		
Member Contributions	57,753	71,102
Total Municipal Contributions		
State Aid Portion	282,241	0
Local Portion	7,614	302,401
Interest Earnings / Dividend Income	140,907	196,374
Realized/Unrealized Capital Gains/(Losses)	1,068,680	(2,190,090)
Other Revenues or Credits	<u>(1,150)</u>	<u>277</u>
Total Receipts	1,556,045	(1,619,936)
Disbursements		
Benefit Payments (Lump Sum)	0	0
Benefit Payments (Monthly)	596,381	608,717
Annuity Purchases (Lump Sum)	0	0
Insurance Premiums	0	0
Refund of Member Contributions	0	0
Lump Sum DROP Account Payments	0	0
Actuarial Costs	20,125	5,200
Investment Costs	78,586	84,177
Other Expenses or Debits	<u>2,071</u>	<u>1,573</u>
Total Disbursements	697,163	699,667
Market Value at End of Year:	\$ 12,325,021	\$ 10,005,418
Development of Investment Gain/(Loss)		
Market Value of Assets at Beginning of Year:	\$ 11,466,139	\$ 12,325,021
Employee and Employer Contributions	347,608	373,503
Benefit Payments	(596,381)	(608,717)
Administrative Expenses	(100,782)	(90,950)
Expected Interest at 7.35%	<u>693,908</u>	<u>877,457</u>
Expected Market Value of Assets at End of Year:	\$ 11,810,492	\$ 12,876,314
Market Value at End of Year:	\$ 12,325,021	\$ 10,005,418
Expected Market Value of Assets at End of Year:	<u>\$ 11,810,492</u>	<u>\$ 12,876,314</u>
Investment Gain or (Loss):	\$ 514,529	\$ (2,870,896)

Development of Actuarial Value of Assets

Market Value of Assets as of January 1, 2023:

\$ 10,005,418

Deferred Gains and (Losses)

Plan Year Ending	Investment Gain/(Loss)	Percent Deferred	Gain/(Loss) Deferred
12/31/2022	\$(2,870,896)	80%	\$ 2,296,717
12/31/2021	514,529	60%	(308,717)
12/31/2020	1,033,597	40%	(413,439)
12/31/2019	837,387	20%	(167,477)
12/31/2018	(701,315)	0%	0
Total			\$ 1,407,084

Preliminary Actuarial Value of Plan Assets, January 1, 2023

\$ 11,412,502

80% of Market Value of Assets:

\$ 8,004,334

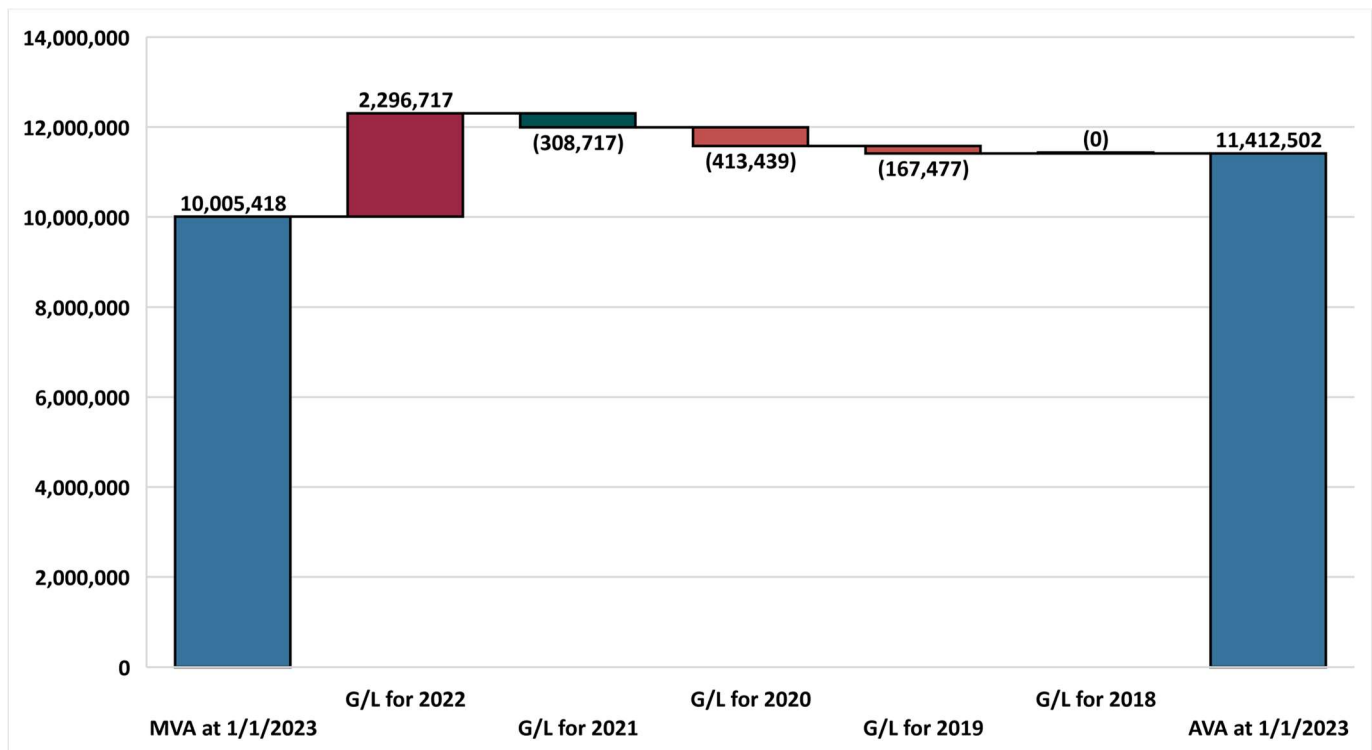
120% of Market Value of Assets:

\$ 12,006,502

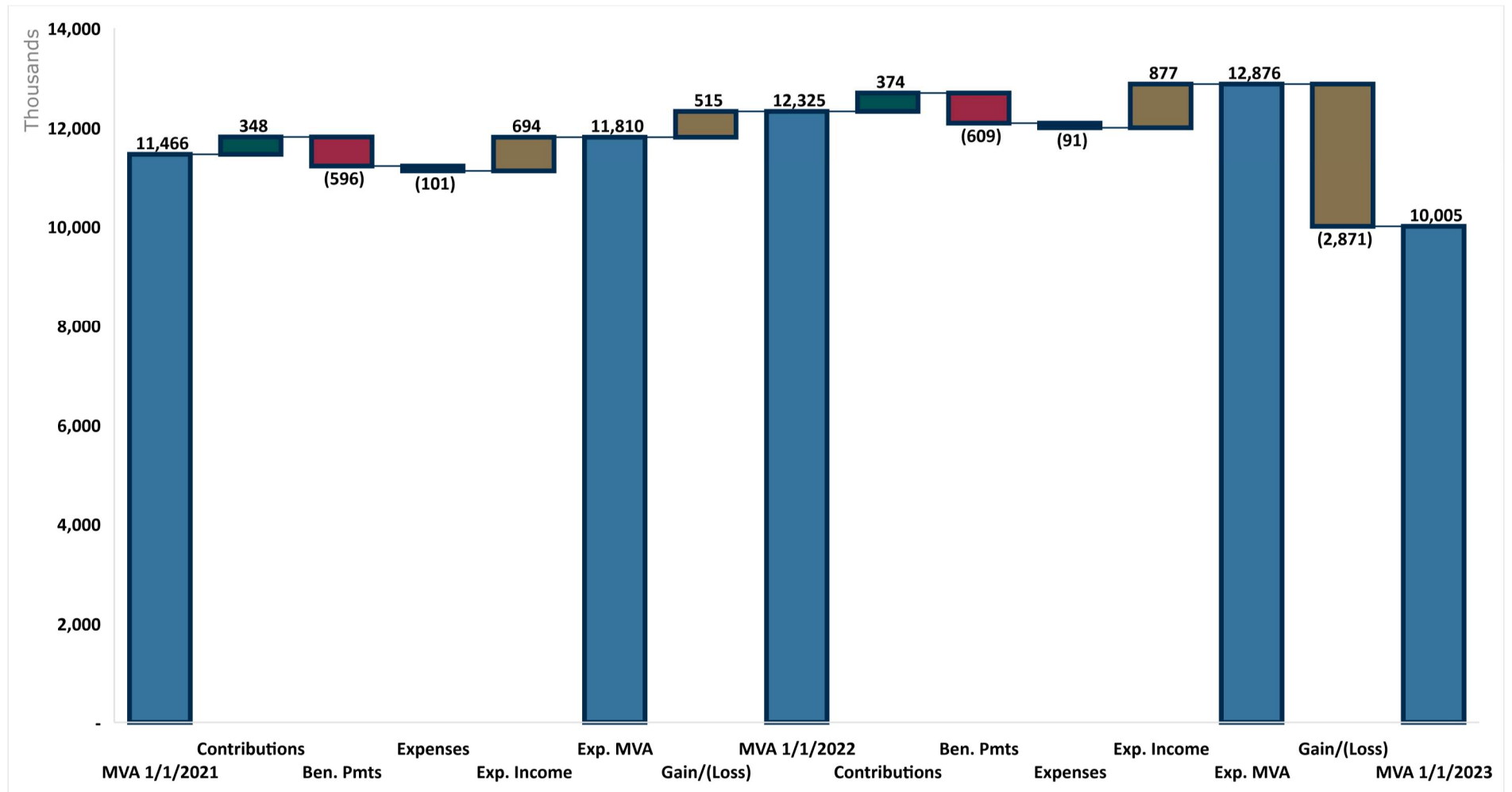
Actuarial Value of Plan Assets, January 1, 2023

\$11,412,502

(not less than 80% and no more than 120% of Market Value)



Reconciliation of Assets Summary



Actuarial Accrued Liabilities

	<u>Prior Valuation</u>	<u>Current Valuation</u>
Interest Rate	7.35%	7.35%
Actuarial Present Value of Future Benefits		
Active		
Termination	\$ 0	\$ -
Disablement	0	-
Death	0	-
Refund of Employee Contributions:	0	-
Retirement	6,044,661	6,639,883
Other:	0	-
Total Active	\$ 6,044,661	\$ 6,639,883
In-Payment		
Retired	\$ 3,906,297	\$ 2,938,183
Disabled	1,225,761	1,281,369
Surviving Spouse	1,443,943	2,114,816
Estimated DROP Participant	0	-
Other:	0	-
Terminated Vested	234,152	269,965
Total In-Active Liability	\$ 6,810,153	\$ 6,604,333
Total Liabilities	\$ 12,854,814	\$ 13,244,216
Actuarial Present Value of Future Normal Cost:		\$ 2,448,678
Actuarial Accrued Liability:		\$ 10,795,538
Estimated Accumulated Contributions to January 1, 2023 without Interest:		\$ 631,464

Actuarial Gain or Loss

	<u>2021</u>	<u>2022</u>
Unfunded Amount at Beginning of the Year	\$ (22,260)	\$ (21,506)
Normal Cost Plus Expenses	333,739	333,226
Total Contributions Made	347,608	373,503
Interest on Above	142,422	22,289
Contribution Gain/(Loss)	(127,799)	18,797
Expected Unfunded Liability at End of Year Prior to Benefit Modifications or Assumption Changes	(21,506)	(20,697)
Additional Liability due to		
Benefit Modification for Actives		0
Benefit Modifications for Retired		0
Assumption/Method Changes		16,593
Total		16,593
Expected Unfunded Amount at End of the Year		\$ (4,104)
Actual Unfunded Amount at End of the Year		
Actuarial Accrued Liability		\$ 10,795,538
Actuarial Value of Assets		11,412,502
Unfunded Actuarial Accrued Liability		\$ (616,964)
Actuarial (Gain) or Loss		\$ (612,860)
(difference between actual and expected unfunded amounts)		
Components of Total Actuarial (gain) or loss:		
Asset (Gain) or Loss		(424,460)
Liability (Gain) or Loss		(306,795)
Contribution (Gain) or Loss		118,395
Actuarial (Gain) or Loss established January 1, 2023:		0

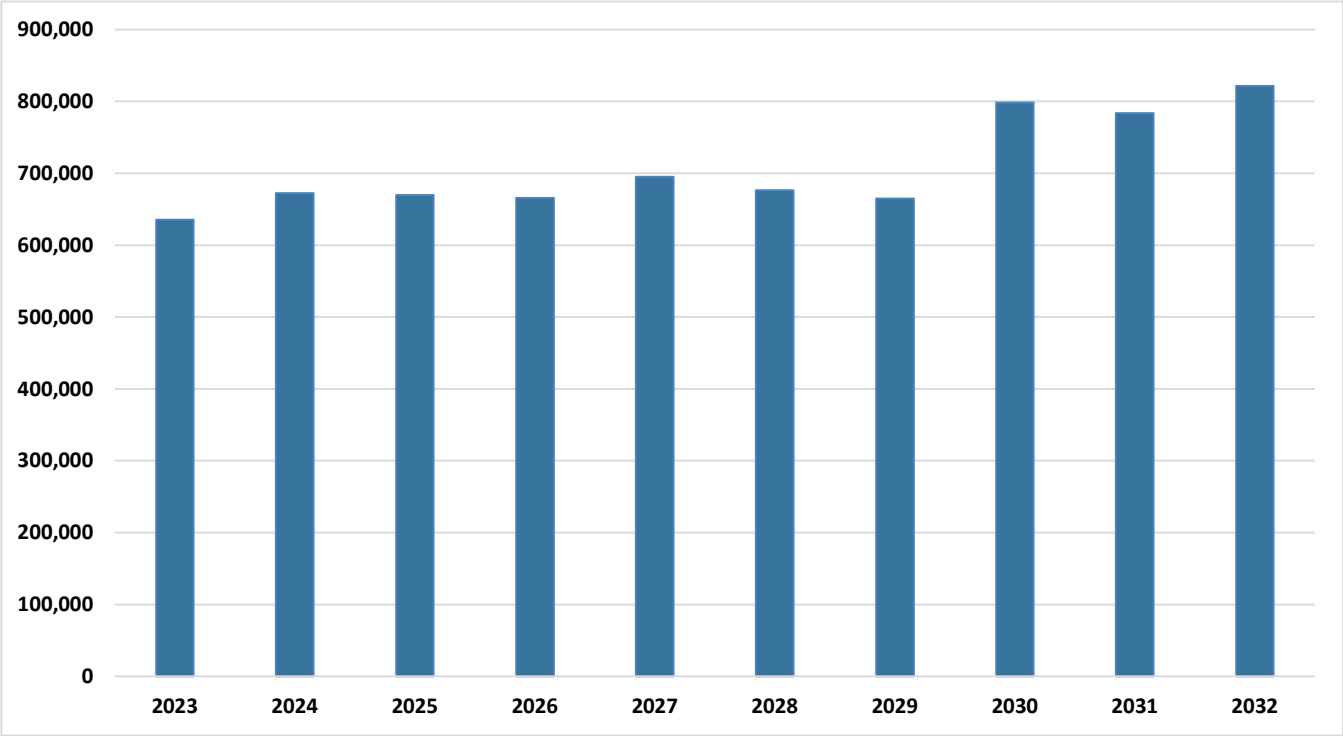
Amortization of Unfunded Actuarial Accrued Liability

Each layer (or base) of Unfunded Liability is established as a result of actual experience differing from the actuarial assumptions, changes in pension plan benefits, or actuarial cost methods.

N/A – No Unfunded Accrued Liability

Projected Benefit Payments

Plan Year	Projected Benefit Payments
2023	\$ 635,000
2024	672,100
2025	669,500
2026	665,200
2027	694,700
2028	676,400
2029	664,400
2030	798,000
2031	783,600
2032	821,700



Appendices

Plan Provisions

The following is a summary of the major provisions of the plan as of January 1, 2023. Refer to the plan document for a more complete description of the most recent plan provisions.

Post-1987 Hires

Recent Amendments:	The 2022-2024 contract eliminated the automatic COLA and reduced the maximum service increment to \$100/mo. for firefighters hired after 2021.
Eligibility Requirements:	Full-time members of the Fire Department of the City of Bradford (Section 1.16 & 2.01)
Normal:	Age 50 with 20 years of service (Section 1.24)
Early:	N/A
Vesting:	12 years of service (Section 8.01)
Retirement Benefit Formula:	50% of final monthly pay (or five-year average pay if higher) plus a service increment for each full year after 20 years, but prior to age 65, equal to 1/40th of the regular pension (not to exceed \$500/month if hired before 2022 and \$100/month otherwise) (Section 4.01)
Military Service:	Up to 5 years on non-intervening military service upon payment by the participant of an amount equal to that which he would have paid had he been a member during the period for which he desires credit plus an Employer contribution plus interest. (Ordinance 3165.5 of 1998)
Death Benefit:	Legal spouse of retired or disabled member or an eligible member who is killed in service; minor children if there is no eligible spouse. Benefit amount equals 100% of the pension the member was receiving or would have received if eligible. Beneficiary will receive no less than a return of the member's contributions including Pick-Up contributions. (Sections 7.01, 7.02, 7.03)
Disability Benefit:	
Service Related:	Disablement prior to age 50: 50% of the normal retirement benefit after 10 years and an additional 5% per year thereafter to a maximum of 100%, commencing immediately. Refund of contributions with less than 10 years. (Section 6.03)
Non-Service Related:	Same as Service Related.

Plan Provisions (continued)

Post-1987 Hires

Post Retirement Adjustment: For retirements on or after January 1, 1994 of firefighters hired before 2022, a cost of living allowance is granted to participants after the attainment of age 62. The cost of living allowance is equal to the change in CPI for the year subject to a 3% maximum per year and further subject to an overall lifetime COLA of 30%. (Section 6.07)

Act 64 of 2002 ad hoc adjustments less any offsets for those eligible retirees.

Other Benefits:

Termination:

Less than 12 Years: Refund of contributions without interest. Greater than or equal to 12 Years: A percentage of the normal retirement pension determined as follows: Actual years of service at termination divided by the years of service the employee would have if he continued working until normal retirement date. The benefit is payable at normal retirement date. (Section 8.01)

Employee Contribution:

4% of compensation plus 1.0% of compensation (widow's benefit) plus 0.5% of compensation up to \$60 per year for service increment. (Section 3.02)

Interest Rate on Member Contribution:

0%

Compensation:

Salary and any Pick-Up contributions made by the Plan but excludes overtime, court pay and any other remuneration (Section 1.13)

Pre-1988 Hires

Amendments or Ordinances: There are no longer any pre-1988 hires governed by the current CBA. Please refer to plan documents and actuarial reports prior to January 1, 2021 for more details on active plan provisions for pre-1988 hires.

Actuarial Methods and Assumptions

As of January 1, 2023

Cost Method: The actuarial accrued liability and normal cost under the Entry Age Normal actuarial cost method are used to determine your contribution level. This cost method is required for use by Act 205. Under this method, the normal cost percentage is determined separately for each active participant as the level percent of expected career earnings required to fund expected plan benefits. The participant's actuarial accrued liability is the difference between the present value of all future plan benefits expected to be paid on his behalf and the present value of his future normal costs. This actuarial accrued liability represents the amount of assets that would theoretically be on hand at the valuation date if the current plan provisions and assumptions had always been in effect, historical experience conformed exactly to assumptions, and the participant's individual normal cost had been contributed each year.

Actuarial accrued liability active participants is determined as the actuarial present value of the benefits expected to be paid; no normal cost is determined for these participants

The normal cost and actuarial accrued liability for the plan are the sum of the individual normal costs (plus expenses expected to be paid from the trust during the plan year) and accrued liabilities.

Asset Valuation Method In-determining the preliminary actuarial value of assets, the preceding year's market value of assets is increased by contributions and expected interest at the valuation rate and reduced by benefit payments and expenses. This preliminary value of assets is then compared to the market value of trust assets and 20% of the difference is recognized in year 1, 40% in year 2, 60% in year 3 and 80% in year 4 to produce the final actuarial value of assets. If the resulting actuarial value of assets is outside a corridor of 80% to 120% of the market value, an adjustment is made to maintain the actuarial value of assets at the appropriate corridor limit.

Economic Assumptions

Interest Rate: 7.35% per annum.

Salary Increase*: Base rates – 4.00%
Rank differentials and other additional pay (e.g. paramedic) – 2.50%.

* Contractual increases in base rates, rank differentials, and other pay in the 2022-2024 Collective Bargaining Agreement as well as both pre/post 2016 parities, are reflected.

Expenses: Average of prior two years.

Inflation: 2.50% per annum.

Actuarial Methods and Assumptions (continued)

Demographic Assumptions

Retirement Age:	Later of Age 55 and 20 or January 1, 2024
Turnover:	None assumed
Mortality:	Pre-retirement: None assumed. Post-retirement: PubS-2010(B) Healthy Retiree Amount-Weighted, Below-Median for Public Safety Officers. Pub – 2010(B) Contingent Survivor Total Dataset table for spouses. Post-disablement: PubS-2010 Disabled Retiree Amount-Weighted for Public Safety Officers. Pub – 2010(B) Contingent Survivor Total Dataset table for spouses. Projection Scale: MP-2021
Disability:	None assumed
Marital Characteristics:	80% assumed married, female spouse assumed to be four years younger than male participant
Other:	CPI change for COLA assumed to be 2.50% per year

Financial and Census Data

Assets and census data were provided by the City of Bradford as of January 1, 2023 and are assumed to be correct.

Actuarial Methods and Assumptions (continued)

Models Used: Actuarial Standard of Practice (ASOP) No. 56, Modeling, requires commentary by the actuary on the use of any model that has a significant impact on our work, including the intended purpose of the model, material limitations or known weaknesses of the model, and the extent of reliance on models developed by others. This standard is effective for work performed on or after October 1, 2020.

Acrisure uses a third-party actuarial software package for pension valuation work. This software package is used worldwide by many actuarial and investment firms. The software models future benefit cash flows, present values, and attribution to various periods, based on deterministic or stochastic assumption sets and benefit parameters provided by the user. The model is highly flexible and also supports comparisons between periods, maintenance of plan specific participant databases, and preparation of reports under various accounting and regulatory structures.

In the absence of adequate review, the model's complexity and flexibility could lead to unintentional results. However, the model contains robust tools to test and verify the reasonableness of results. Our internal technical review utilizes these tools. We have reviewed the model's documentation and have relied on the expertise of the software vendor for the underlying structure, methodology, and extensive supporting calculations. We have not performed a substantial audit of the model or its structure beyond typical use in preparing results, as this is typically not done by plan actuaries. However, we expect that the very deep market of qualified users for this same model ensures that no materially significant issues can or will persist.

In order to determine or assess reasonableness of the return assumption for the plan target portfolio, Acrisure has used the model and method described under Actuarial Standard of Practice No. 27. This type of model determines an expected investment return assumption based on externally provided investment class arithmetic returns, variances and correlations.

In using the model, we have relied on investment manager or investment manager survey return, variance, and correlation assumptions. The nominal value of these assumptions generally determines the output of the model. In certain instances, investment manager or survey information may not align perfectly by class. To the extent necessary, we have made a reasonable effort to allocate segments of the target portfolio as closely as possible within the available investment manager or survey classes provided.

Justification for Significant Assumptions

Mortality	The base tables and improvement scale assumptions were selected by considering a study of demographic experience exclusive to public-sector employees published by the Society of Actuaries in 2019. Selection of the Above-Median table resulted from an analysis of the distribution of pay and benefits for plan participants.
Retirement and Termination	The assumption was set considering various factors including: plan design, post-retirement benefit availability, and retirement and turnover experience.
General Inflation Rate	The inflation rate was selected after a review of the long term expectations contained in the most recent Medicare and OASDI Trustee reports as of the measurement date, the historical spread between the CPI and the GDP deflator, and spreads between long term government bonds with and without inflation protection, rounded to the nearest 25 basis points.
Funding Interest Rates	This assumption is set based upon expectations of the Fund manager for both the current and long-term expectations of return on plan investments based upon the current asset allocation.
Administrative Expenses	Average of prior two years.
Salary Scale	The assumption was selected based upon a study of recent plan experience and adjusted for actual rates in the current collective bargaining agreement.
401(a)(17) Compensation Limit Increase Rate	The assumption was selected to be consistent with the assumed general inflation rate.
Percent Married	This assumption has been set with guidance from the client and general research. Specific data regarding percent married is not maintained as part of the valuation process, and is thus not available
Spouse Age Difference	This assumption is based on guidance provided by general research. The assumption is monitored against the actual age difference in current inactive data, and assumed to be reasonable unless or until inactive data shows a significant difference versus the assumption

Assessment and Disclosure of Risk for Actuarial Standard of Practice No. 51

Assessment and Disclosure of Risk

Sponsors of defined benefit plans are subjected to various risks related to their plans. In general, most plan sponsors view risk, generally speaking, as the potential for future plan outcomes to differ widely from expected. Differences are inevitable and generate experience gains (or losses) at the next valuation date causing the MMO to decrease (or increase) over a fixed number of years to make up for the difference.

Risk management focus is almost exclusively on those outcomes that are unfavorable. Because of this, our assessment focuses on the negative consequences that certain risks may present to you, as plan sponsor. It is important to note that although negative outcomes are generally the focus of risk analysis, there is also the possibility that outcomes will be more positive than expected, and may present both opportunities and obstacles for a sponsor to be in a better position to mitigate risk in the future. For example, following a period of better than expected investment returns a municipality might be able to invest in less risky assets (opportunity). On the other hand, its bargaining unit could be asking for (and getting) a benefit improvement and/or a reduction in member contributions (obstacle).

We have addressed the following in this section of the report:

- Identification and definition of significant risks applicable to you, as plan sponsor
- An assessment of the risks most likely to trigger negative outcomes
- Identification of other less significant risks considered
- A discussion of plan maturity and how it may affect your view of risk

Please note that the risks discussed in this report are in the context of cash contribution requirements (i.e., MMO) applicable to you, as plan sponsor. Less than favorable outcomes may also have negative consequences for financial statements (GASB 68 disclosures), affecting your credit rating and ability to borrow money or trigger mandatory remedies as a Distress Level 2 or higher municipality, resulting in additional administrative expense to prepare a plan for administrative improvement or to create a new benefit structure for new hires. We are available to discuss how these risks may affect your financial statements or any other disclosure requirements or to provide additional analysis regarding any of the information discussed in this section of the report.

Identification and Definition of Significant Risks

Investment Risk: Investment risk is the chance that investment income will differ widely from expected. From the perspective of a plan sponsor, the significant risk is that actual return will be lower than expected, resulting in increased contributions to make up for shortfalls in investment returns. Generally, the higher the expected return that a sponsor seeks, the greater the volatility in returns will be and thus the higher the risk to the sponsor that unfavorable experience may occur.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Contribution Risk: Contribution risk is the possibility that actual future contributions will differ widely from expected contributions. In general, other risk items described below contribute to contribution risk, as well as the potential that plan sponsors may not be able to make contributions when necessary due to adverse economic conditions or to the availability of state aid, if eligible.

Municipalities which do not contribute the full MMO could receive an "Order to Comply" from the Municipal Pension Reporting Program (MPRP) within the Department of the Auditor General's Office of Budget and Financial Management if the shortfall meets the criteria to be a "critical funding deficiency."

Because other items contribute to this risk, no individual analysis is provided for contribution risk, though we are available to provide projections of future contribution levels under various scenarios, if there is a specific outcome that you must avoid.

Asset/Liability Mismatch Risk: Asset/liability mismatch occurs when plan liabilities and plan assets do not move in tandem with market changes. For example, a private pension plan will have liabilities that are based loosely on the corporate bond market, but may have assets that are heavily weighted in equities. If equities experience little or no return, but corporate bond rates decline, the deficit in plan funding will increase. Public pension plan liabilities, on the other hand, are based on a long-term expected return on plan assets assumption, dependent only on asset allocation without adjustment for risk or changes in interest rates, and so will not likely move in tandem with plan assets, in the short term.

Interest Rate Risk: Potentially negative outcomes may occur if market interest rates differ from expected. Specifically, decreasing rates lower the plan's ability to achieve returns in the long run from fixed income assets. The significance of this risk is magnified, in the short term, if a public plan sponsor which is permitted to do so (e.g., an Authority or Third Class Optional Charter City) settles a significant portion of plan liabilities via lump sum payments to participants or de-risks a portion of the liabilities through the purchase of non-participating annuities.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Risks Most Likely to Trigger Negative Outcomes:

Investment Risk: The consequence of less than favorable returns over a long-term basis is simply that those lost returns must instead be made up by future contributions. The investment allocation of the Plan is approximately 65% equities and 35% fixed income. For plans that do not dedicate assets to liabilities and which have a more aggressive equity allocation (generally over 60%), the extra volatility in year-to-year MMO levels may negatively impact cash flow planning. Higher contribution requirements after unfavorable returns may coincide with other cash flow pressures on the municipality.

While an analysis of potential future return outcomes, including stress testing and sensitivity analysis, can be provided, we don't believe the fund size would justify the expense. We would advise that, as plan sponsor, you monitor your general tolerance for risk in asset returns vs. potential returns that taking on such risk provides.

Asset/Liability Mismatch Risk: When a plan's asset allocation is *not* dedicated to specific liabilities, there is a potential for asset/liability mismatch risk. Some asset/liability mismatch risk may be cyclical. For example, decreasing corporate bond yields with or without concurrent poor equity experience can reverse in the long run. In the short term, the risk to you, as a plan sponsor, is the unfavorable circumstance of selling assets to pay current benefits to participants when those assets are at a low point. Because of the cyclical nature of this type of risk, the impact may not be as significant if you intend to maintain the plan for the long term. If you anticipate settling liabilities in the short term, either by offering lump sum payments to participants or settling retiree liabilities with an annuity purchase, it would be advisable to improve the coordination of assets and liabilities in regard to their reaction to changing markets. As with investment risk, the cost of preparing a numerical analysis must be weighed against the size of the plan. Let us know if you are interested in additional analysis. We would be happy to discuss strategies for you to manage this type of risk.

Interest Rate Risk: Interest rate risk may decrease the long-term asset return profile for the plan and may increase cash contributions required, in the near term. In a case in which you may wish to settle plan liabilities through lump sums or non-participating annuity purchases, lower interest rates will generally increase the cost of settlement. Interest rate risk can be mitigated to some extent by dedicating assets to liabilities so that assets and liabilities move in tandem over the long-run. However, dedication generally lowers expected future returns and funded deficits will still increase a smaller amount in a declining interest rate environment. That is, you will expect to make additional contributions on average in return for less risk. If you have no immediate intention to settle plan liabilities, the impact of interest rate risk may be no more than accelerating contribution requirements.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Other Less Significant Risks or Risks That Are Difficult to Quantify

Inflation Risk: Inflation risk occurs in final average pay (FAP) plans and in plans that provide automatic cost-of-living adjustments (COLA) to retirees when actual future inflation is higher than expected. Since wages are generally tied to inflation FAP plans will be paying out higher pensions when inflation is higher than expected. Similarly, COLAs may be higher than expected or accelerated in the case in which there is a lifetime cap on COLAs.

Mortality Risk: Mortality risk is the risk that pension plan participants live longer or not as long (life insurance plans) than expected. For smaller plans, this risk can be substantial over the long term; in the short term, the impact is less than the more significant risks mentioned in the prior section. This risk can be mitigated by settling plan liabilities through payment of lump sums or the purchase of non-participating annuities, if economic conditions are favorable.

Legislative Risk: Legislative risk is the chance that changes in law or regulatory guidance will force an unfavorable outcome for you, as plan sponsor. Examples of this type of risk are unexpected revisions to state aid rules (if eligible) or significant changes in funding requirements under Act 205. *These types of risks are difficult to quantify;* but, at the time of this report, we do not expect any significant changes in the near future.

Arbitration Risk: Arbitration risk in collectively bargained pension plans, similar in some ways to Legislative Risk, is the chance that arbitration awards/decisions will force an unfavorable outcome for you, as plan sponsor. Most often they are in the direct form of pension benefit enhancements and/or reductions in employee contributions but could be indirect in the form of wage increases, when the pension formula is pay-related.

Demographic/Participant Risks Other than Mortality: Demographic risks other than mortality are risks that participant behavior will differ widely from expected. This can include participants electing to commence benefits earlier than expected or in a different form than expected. It can be a significant risk in pension plans in which the municipality fully subsidizes the cost of a survivor pension provided to a spouse after the retiree death, regardless of the age difference; and to an even greater extent when the entitlement to a survivor pension belongs to the spouse as of the retiree's *date of death*. If a municipality had no prior knowledge of a late-in-life marriage of a retiree, who is now deceased, then the funding liability due to the surviving spouse is completely unexpected and not provided for in prior actuarial valuations.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Plan Maturity Measures

Plan maturity refers to the composition of your plan by age. A recently established plan with no retirees is considered to be an immature plan. A very mature plan is one whose liability is primarily on behalf of participants who are in pay status. We generally consider a plan that has liabilities greater than 50% attributable to participants in pay status as a mature plan.

The risk to a plan sponsor increases as a plan becomes more mature. Simply put, a sponsor’s revenue source may or may not grow, but as a plan becomes more mature, its potential impact will grow without regard to the supporting revenue generating activities. More mature plans – particularly those with a low funded ratio – are more likely to have issues because of heavy cash flow out of the plan. Mature plans generally have negative cash flows and rely on investment return to keep the fund from declining; and hence are more susceptible to volatility in the market. The Net Cash Flow as a percentage of Plan Assets (NCF %) is a measure of the investment return needed to keep the fund from declining over a particular period. For example, an NCF % = -6% means the fund needed at least +6% investment return over the period to keep from declining.

As of the date of this report, the Accrued Liability is comprised of approximately 59% inactive liability and the Net Cash Flow % is -5.89%. These ratios are provided for the current and last four (4) valuation dates below.

The moderately high ratio emphasizes the importance of risk consideration for you, the plan sponsor.

As of January 1,	Accrued Liability In Pay % of Total	Net Cash Flow % of Assets ²	Plan Funded Ratio
2023	59%	-5.89%	106%
2021	64%	20.18%	100%
2019	72%	-2.64%	75%
2017	76%	-7.19%	73%
2015	76%	-8.28%	70%

² Over two-year PA municipal pension cycle.



**City of Bradford
Non-Uniformed
Employees Pension Fund**

Actuarial Valuation Report
January 1, 2023

This report is issued for use by the City of Bradford and by other professional advisors to the Plan. The information contained in the report may not be provided to other parties without the consent of Acrisure or the City of Bradford.



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[Acrisure.com/mid-atlantic](https://www.acrisure.com/mid-atlantic)

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Actuarial Certification

As Plan Actuary, I valued the plan based on my best understanding of the provisions in the documents listed in the Plan Provisions section of this report. I meet the Qualification Standards of the American Academy of Actuaries to render this actuarial opinion. As we are not permitted to render legal opinions, we urge you to review our summary to ascertain that the provisions are correctly interpreted. You should consult with your solicitor if there is any doubt as to how a particular item should be interpreted.

This report is prepared in accordance with Act 205. The actuarial exhibits were prepared by the approved actuary as certified below. The assumptions were jointly selected by the actuary and the governing body of the City of Bradford. The assumptions used are individually reasonable, reasonably related to the experience of the plan and to reasonable expectations and represent the best available joint estimate of the actuary and the governing body of the municipal pension plan of anticipated experience under the plan.

The following assumptions were changed since the last valuation and the impact of the changes on Unfunded Accrued Liability (UAL) are shown below:

- The mortality improvement projection scale was updated to MP-2021 and the disability incidence assumption was changed to the same as used by PMRS. The combined accrued liability decrease is \$50,030.

This actuarial valuation involves estimates of the value of amounts and assumptions about the probability of events far into the future. The actuarial determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

This report should be used for budgeting of your 2024 and 2025 pension costs. The responsibility of budgeting an amount and then depositing that amount lies with the City of Bradford. The budgeting process was required to be completed by September 30, 2023 for the 2024 budget.

Certified by



Frank Canonico, EA,MAAA

February 20, 2024

Date

Assisted by



Christian L. Slates, ASA

February 20, 2024

Date

Summary of Key Results

	<u>Prior Valuation</u>	<u>Current Valuation</u>
Valuation Date	1/01/2021	1/01/2023
Demographic Statistics:		
Average Age (Actives)	48.3	49.3
Average Past Service	9.2	9.0
Assumed Average Future Service	17.6	16.7
Average Age (Inactives in Pay Status)	72.4	72.5
Average Monthly Benefit	1,776	1,745
Participant Counts:		
Actives	46	47
Terminated Vested	6	4
Disabled	7	6
Normal Retirees	29	29
Deferred Retirement Option Plan (DROP) Retirees	0	0
Surviving Spouse	9	9
Surviving Child	0	0
Total	97	95
Payroll:		
Plan Salary	1,759,401	1,930,624
Average	38,248	41,077
W-2 Payroll for Previous Plan Year (Annualized)	1,584,958	1,844,182
Assets		
Market Value of Assets	13,956,974	11,390,762
Actuarial Value of Assets	12,654,513	13,009,524
Present Value of Benefits (Total Service)	13,811,236	13,504,268
Normal Cost		
Dollars	142,579	164,087
Actuarial Accrued Liability (Past Service)		
Total	12,629,672	12,188,717
Actuarial Unfunded Liability (Advance Funding)	(24,841)	(820,807)
Plan Funding Ratio	100%	107%
MMO Components		
Normal Cost as % of Annualized W-2	9.00%	8.90%
Average Expenses as a % of Annualized W-2	5.79%	6.06%
Amortization of Unfunded Liability	0	0
Advance Funding Credit	2,484	82,081

Changes Since Last Valuation

Plan Changes

None

Method Changes

None

Assumption Changes

The assumptions have been reviewed, and the following changes made:

- The mortality improvement projection scale was updated to MP-2021 and the disability incidence assumption was changed to the same as used by PMRS.

Actuarial Exhibits

Allocation of Assets

The following displays the value of plan assets by major categories.

	<u>2021</u>	<u>2022</u>
Assets:		
Cash & Cash Equivalents:	\$ 0	\$ 0
Accrued Interest and Dividends Receivable:	0	0
Receivables (Specify):		
Employee Contributions:	0	0
Employer Contributions:	0	0
State Aid:	0	0
Other:	0	0
Investment at Market Value (Specify):		
Money Markets & Other Cash Investments:	280,248	439,441
Mutual Funds	3,521,170	2,737,906
Stocks and Other Equities:	6,975,425	4,395,935
Bonds and Other Fixed Income:	3,170,114	3,280,870
Other Assets (Specify):		
Participation Value adjustment under Act 205:	595,824	536,610
Insurance Contract/Group Annuity:	0	0
Insurance/Annuity Cash Surrender Value (Individual Policies):	0	0
Total Fund Assets:	\$ 14,542,781	\$ 11,390,762
Current Liabilities:		
Accounts Payable and		
Accrued Administrative Expenses:	\$ 0	\$ 0
Benefits Payable:	0	0
Other:	0	0
Total Current Liabilities:	\$ 0	\$ 0
Net Assets Available for Benefits (Market Value) as of Valuation Date:	\$14,542,781	\$11,390,762

Reconciliation of Assets and Gain/(Loss)

	<u>2021</u>	<u>2022</u>
Reconciliation of Market Value of Assets		
Market Value at Beginning of Year:	\$ 13,956,974	\$ 14,542,781
Receipts		
Member Contributions	84,345	104,689
Total Municipal Contributions		
State Aid Portion	130,711	65,413
Local Portion	28,620	83,086
Interest Earnings / Dividend Income	167,694	226,049
Realized/Unrealized Capital Gains/(Losses)	1,271,838	(2,521,043)
Other Revenues or Credits	<u>(1,368)</u>	<u>318</u>
Total Receipts	1,681,840	(2,041,488)
Disbursements		
Benefit Payments (Lump Sum)	0	0
Benefit Payments (Monthly)	934,894	925,164
Annuity Purchases (Lump Sum)	0	0
Insurance Premiums	0	0
Refund of Member Contributions	44,737	78,216
Lump Sum DROP Account Payments	0	0
Actuarial Costs	20,875	5,550
Investment Costs	93,526	96,897
Other Expenses or Debits	<u>2,001</u>	<u>4,704</u>
Total Disbursements	1,096,033	1,110,531
Market Value at End of Year:	\$ 14,542,781	\$ 11,390,762
Development of Investment Gain/(Loss)		
Market Value of Assets at Beginning of Year:	\$ 13,956,974	\$ 14,542,781
Employee and Employer Contributions	243,676	253,188
Benefit Payments	(979,631)	(1,003,380)
Administrative Expenses	(116,402)	(107,151)
Expected Interest at 7.35%	<u>793,284</u>	<u>1,033,522</u>
Expected Market Value of Assets at End of Year:	\$ 13,897,901	\$ 14,718,960
Market Value at End of Year:	\$ 14,542,781	\$ 11,390,762
Expected Market Value of Assets at End of Year:	<u>\$ 13,897,901</u>	<u>\$ 14,718,960</u>
Investment Gain or (Loss):	\$ 644,880	\$ (3,328,198)

Development of Actuarial Value of Assets

Market Value of Assets as of January 1, 2023: \$ 11,390,762

Deferred Gains and (Losses)

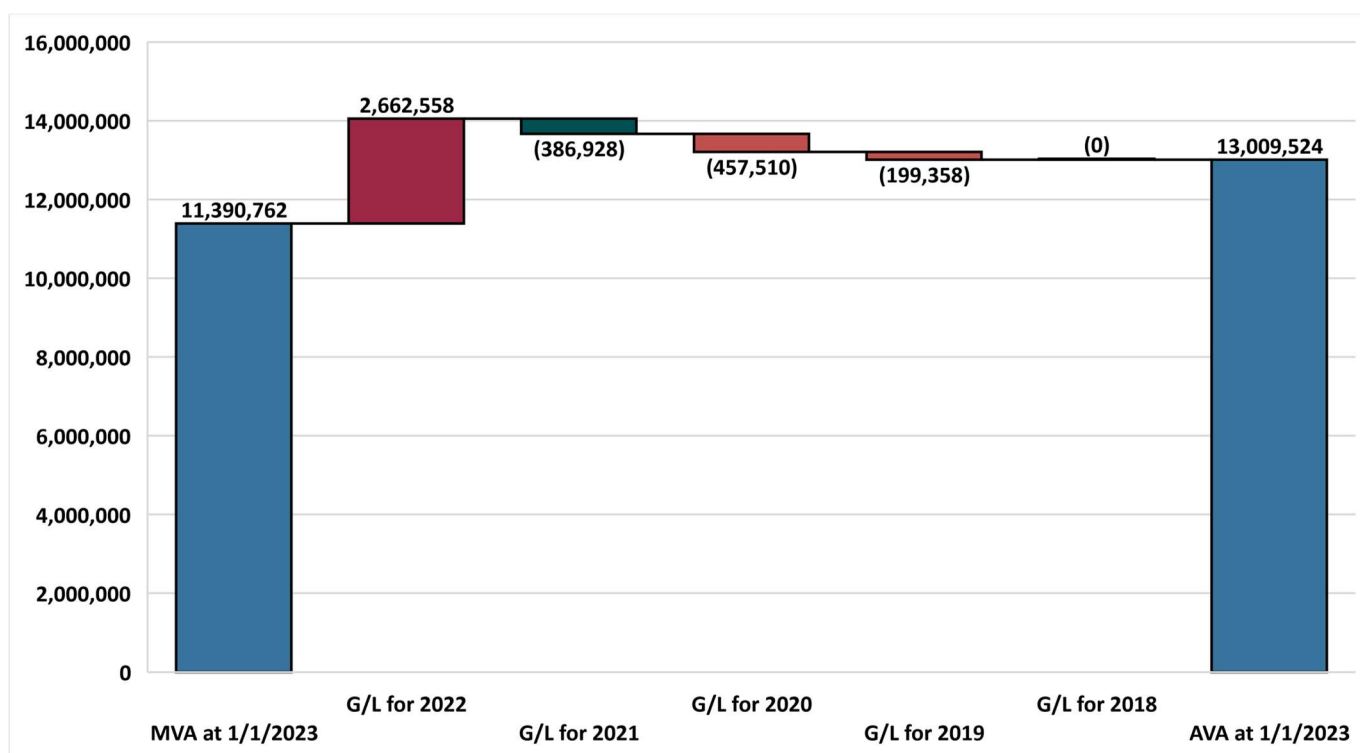
Plan Year Ending	Investment Gain/(Loss)	Percent Deferred	Gain/(Loss) Deferred
12/31/2022	\$ (3,328,198)	80%	\$ 2,662,558
12/31/2021	644,880	60%	(386,928)
12/31/2020	1,143,776	40%	(457,510)
12/31/2019	996,788	20%	(199,358)
12/31/2018	(850,366)	0%	0
Total			\$ 1,618,762

Preliminary Actuarial Value of Plan Assets, January 1, 2023 \$ 13,009,524

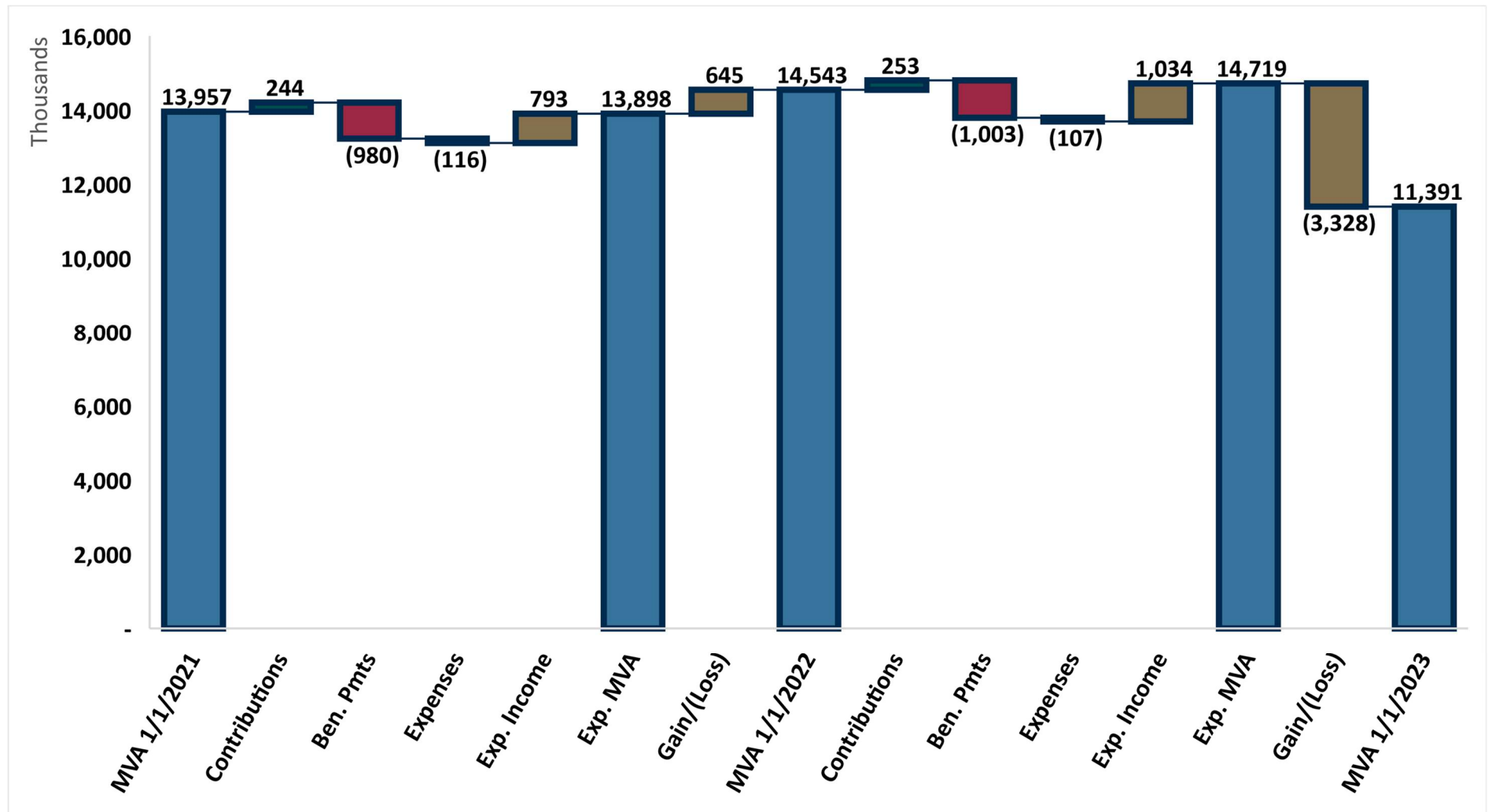
80% of Market Value of Assets: \$ 9,112,610

120% of Market Value of Assets: \$ 13,668,914

Actuarial Value of Plan Assets, January 1, 2023 **\$13,009,524**
(not less than 80% and no more than 120% of Market Value)



Reconciliation of Assets Summary



Actuarial Accrued Liabilities

	<u>Prior Valuation</u>	<u>Current Valuation</u>
Interest Rate	7.35%	7.35%
Actuarial Present Value of Future Benefits		
Active		
Termination	\$ 373,781	\$ 413,585
Disablement	340,786	58,797
Death	30,183	35,766
Refund of Employee Contributions:	0	0
Retirement	2,899,863	3,669,942
Other:	0	0
Total Active	\$ 3,644,613	\$ 4,178,090
In-Payment		
Retired	\$ 7,418,657	\$ 7,181,103
Disabled	1,114,602	938,668
Surviving Spouse	893,667	893,135
Estimated DROP Participant	0	0
Other:	0	0
Terminated Vested	739,697	313,272
Total In-Active Liability	\$ 10,166,623	\$ 9,326,178
Total Liabilities	\$ 13,811,236	\$ 13,504,268
 Actuarial Present Value of Future Normal Cost:		\$ 1,315,551
Actuarial Accrued Liability:		\$ 12,188,717
 Estimated Accumulated Contributions to January 1, 2023 without Interest:		\$ 745,780

Actuarial Gain or Loss

	<u>2021</u>	<u>2022</u>
Unfunded Amount at Beginning of the Year	\$ (24,841)	\$ (24,000)
Normal Cost Plus Expenses	258,981	244,684
Total Contributions Made	243,676	253,188
Interest on Above	205,105	6,447
Contribution Gain/(Loss)	(219,569)	2,960
Expected Unfunded Liability at End of Year Prior to Benefit Modifications or Assumption Changes	(24,000)	(23,097)
Additional Liability due to		
Benefit Modification for Actives		0
Benefit Modifications for Retired		0
Assumption/Method Changes		(50,030)
Total		(50,030)
Expected Unfunded Amount at End of the Year		\$ (73,127)
Actual Unfunded Amount at End of the Year		
Actuarial Accrued Liability		\$ 12,188,717
Actuarial Value of Assets		13,009,524
Unfunded Actuarial Accrued Liability		\$ (820,807)
Actuarial (Gain) or Loss		\$ (747,680)
(difference between actual and expected unfunded amounts)		
Components of Total Actuarial (gain) or loss:		
Asset (Gain) or Loss		(483,802)
Liability (Gain) or Loss		(496,625)
Contribution (Gain) or Loss		232,747
Actuarial (Gain) or Loss established January 1, 2023:		0

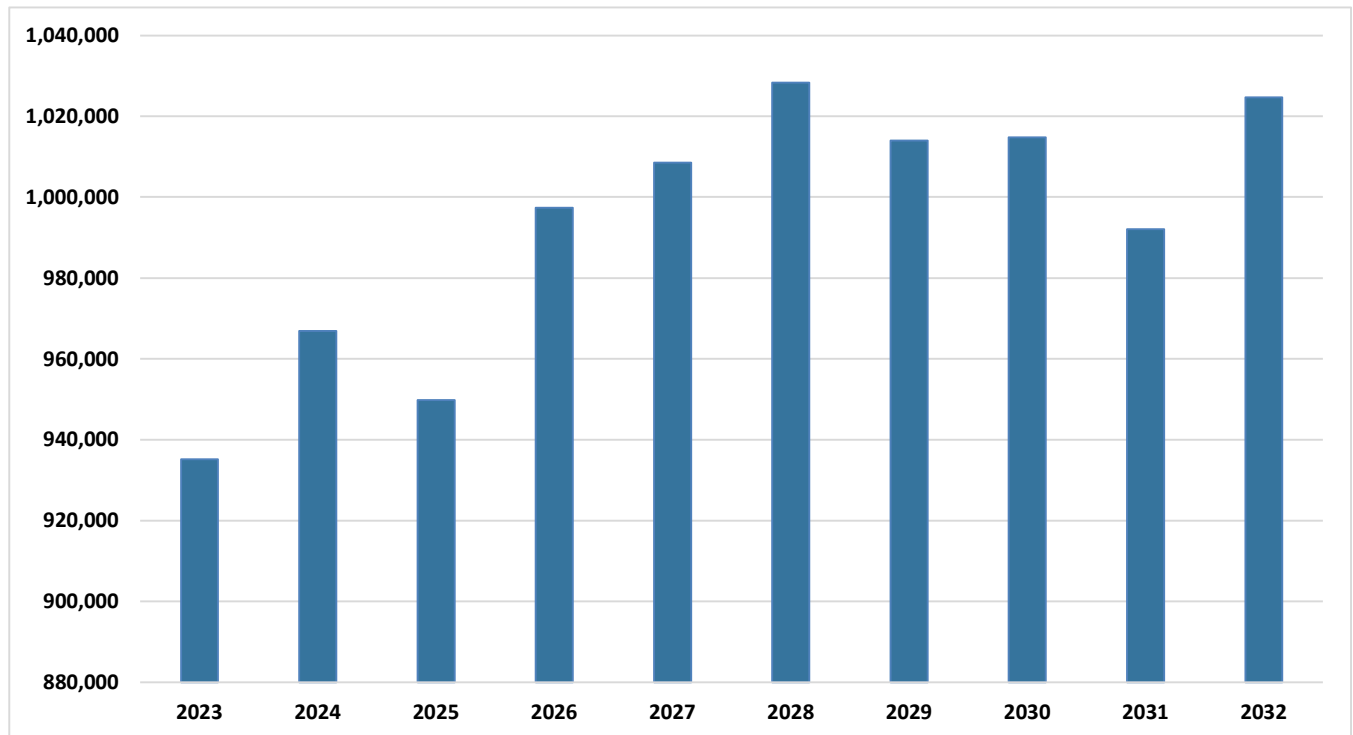
Amortization of Unfunded Actuarial Accrued Liability

Each layer (or base) of Unfunded Liability is established as a result of actual experience differing from the actuarial assumptions, changes in pension plan benefits, or actuarial cost methods.

N/A – No Unfunded Accrued Liability

Projected Benefit Payments

<u>Plan Year</u>	<u>Projected Benefit Payments</u>
2023	\$ 935,200
2024	966,900
2025	949,800
2026	997,400
2027	1,008,500
2028	1,028,300
2029	1,014,000
2030	1,014,800
2031	992,100
2032	1,024,700



Appendices

Plan Provisions

The following is a summary of the major provisions of the plan as of January 1, 2023. Refer to the plan document for a more complete description of the most recent plan provisions.

Post-1987 Hires

Amendments or Ordinances:	Plan Document for City of Bradford Non-Uniformed Employees' Pension Plan as Amended and Restated Effective January 1, 2023
Eligibility Requirements:	Any full-time non-uniformed employee of the City of Bradford who completes an hour of service and was hired on or after January 1, 1988 (Sections 1.16, 1.23 & 2.01)
Normal:	Age 60 with 20 years of service (Section 1.22)
Early:	N/A
Vesting:	Fewer than 12 years: 100% vested in employee contributions only; 12 or more years: 100% entitled to Vested Benefit. (Section 8.01)
Normal Retirement Benefit:	a. 50% of highest five-year average pay, minus b. 40% of primary insurance amount (Social Security). Participants may elect to contribute 5% and eliminate the Social Security offset (Section 4.01).
Early Retirement Benefit:	N/A
Death Benefit:	
Pre-Retirement:	Refund of member contributions. 50% surviving spouse pension if employee has reached normal retirement or is killed in service. (Section 4.02)
Post-Retirement:	50% of the pension the retired member was receiving, paid for life unless remarries. (Sections 4.02 & 7.03)
Disability Benefit:	
Service Related:	Eligibility: 10 Years. Must be permanently and totally disabled. Amount: Full pension at time of disability. The amount payable shall be reduced to the extent other benefits are paid including benefits paid under workmen's compensation. Social Security offset is not applied. (Section 5.03)
Non-Service Related:	Same as Service Related.

Plan Provisions (continued)

Post Retirement Adjustment: None

Other Benefits:

Vested Benefit: Fewer than 12 years: Refund of contributions without interest;
More than 12 years: 50% of final five year average salary times a fraction. The fraction is the number of years of service at termination divided by the number of potential years of service at normal retirement. The benefit is payable at normal retirement date. May elect to receive accumulated contributions without interest in lieu of this benefit (Section 8.01).

Involuntary Termination: If after twenty (20) years of Service a Participant is dismissed, voluntarily retired, or is in any manner deprived of his or her position or employment, before attaining the age of sixty (60), upon continuing a monthly payment to the fund equal to the last amount due and paid monthly while in active service, such Participant shall be entitled to the benefit described in Section 4.01 upon reaching age sixty (60).

Employee Contribution: 3.5% of compensation up to the Social Security Wage Base plus 5% of the excess (Section 3.02)

Interest Rate on Member

Contributions: 0%

Compensation: Monthly rate of remuneration with respect to personal services as an Employee including salary (net of commissions received on taxes collected), Pick-Up contributions, overtime but excluding court pay and other remunerations (Section 1.13).

Pre-1988 Hires

Amendments or Ordinances: There are no longer any pre-1988 hires governed by the current CBA. Please refer to plan documents and actuarial reports prior to January 1, 2021 for more details on active plan provisions for pre-1988 hires.

Actuarial Methods and Assumptions

As of January 1, 2023

Cost Method: The actuarial accrued liability and normal cost under the Entry Age Normal actuarial cost method are used to determine your contribution level. This cost method is required for use by Act 205. Under this method, the normal cost percentage is determined separately for each active participant as the level percent of expected career earnings required to fund expected plan benefits. The participant's actuarial accrued liability is the difference between the present value of all future plan benefits expected to be paid on his behalf and the present value of his future normal costs. This actuarial accrued liability represents the amount of assets that would theoretically be on hand at the valuation date if the current plan provisions and assumptions had always been in effect, historical experience conformed exactly to assumptions, and the participant's individual normal cost had been contributed each year.

Actuarial accrued liability active participants is determined as the actuarial present value of the benefits expected to be paid; no normal cost is determined for these participants

The normal cost and actuarial accrued liability for the plan are the sum of the individual normal costs (plus expenses expected to be paid from the trust during the plan year) and accrued liabilities.

Asset Valuation Method In-determining the preliminary actuarial value of assets, the preceding year's market value of assets is increased by contributions and expected interest at the valuation rate and reduced by benefit payments and expenses. This preliminary value of assets is then compared to the market value of trust assets and 20% of the difference is recognized in year 1, 40% in year 2, 60% in year 3 and 80% in year 4 to produce the final actuarial value of assets. If the resulting actuarial value of assets is outside a corridor of 80% to 120% of the market value, an adjustment is made to maintain the actuarial value of assets at the appropriate corridor limit.

Economic Assumptions

Interest Rate:	7.35% per annum.
Salary Increase:	2023-2024: 2.5% for City/OECD, 2.68% for AFSCME, and 2.85% for Teamsters. 4.00% per annum thereafter for all groups.
Expenses:	Average of prior two years.
Inflation:	2.50% per annum.

Actuarial Methods and Assumptions (continued)

Demographic Assumptions

Retirement Age:	Later of Age 63 and 20 or January 1, 2024
Turnover:	65% of the Society of Actuaries 2003 Pension Plan "Small Plan Service Table".
Mortality:	Pre-retirement: PubG-2010(B) Employee Amount Weighted, Below-Median for General Employees. Post-retirement: PubG-2010(B) Healthy Retiree Amount Weighted, Below-Median for General Employees. Pub-2010(B) Contingent Survivor table for spouses. Post-disablement: PubG-2010 Disabled Retiree Amount-Weighted for General Employees. Pub-2010(B) Contingent Survivor table for spouses. Projection Scale: MP-2021
Disability:	The PMRS specific table effective January 1, 2021, using the 2017 CalPERS Public Miscellaneous Group disability rate table for Males with a reduction of 50%.
Marital Characteristics:	80% assumed married, female spouse assumed to be two years younger than male participant
Other:	None

Financial and Census Data

Assets and census data were provided by the City of Bradford as of January 1, 2023 and are assumed to be correct.

Actuarial Methods and Assumptions (continued)

Models Used: Actuarial Standard of Practice (ASOP) No. 56, Modeling, requires commentary by the actuary on the use of any model that has a significant impact on our work, including the intended purpose of the model, material limitations or known weaknesses of the model, and the extent of reliance on models developed by others. This standard is effective for work performed on or after October 1, 2020.

Acrisure uses a third-party actuarial software package for pension valuation work. This software package is used worldwide by many actuarial and investment firms. The software models future benefit cash flows, present values, and attribution to various periods, based on deterministic or stochastic assumption sets and benefit parameters provided by the user. The model is highly flexible and also supports comparisons between periods, maintenance of plan specific participant databases, and preparation of reports under various accounting and regulatory structures.

In the absence of adequate review, the model's complexity and flexibility could lead to unintentional results. However, the model contains robust tools to test and verify the reasonableness of results. Our internal technical review utilizes these tools. We have reviewed the model's documentation and have relied on the expertise of the software vendor for the underlying structure, methodology, and extensive supporting calculations. We have not performed a substantial audit of the model or its structure beyond typical use in preparing results, as this is typically not done by plan actuaries. However, we expect that the very deep market of qualified users for this same model ensures that no materially significant issues can or will persist.

In order to determine or assess reasonableness of the return assumption for the plan target portfolio, Acrisure has used the model and method described under Actuarial Standard of Practice No. 27. This type of model determines an expected investment return assumption based on externally provided investment class arithmetic returns, variances and correlations.

In using the model, we have relied on investment manager or investment manager survey return, variance, and correlation assumptions. The nominal value of these assumptions generally determines the output of the model. In certain instances, investment manager or survey information may not align perfectly by class. To the extent necessary, we have made a reasonable effort to allocate segments of the target portfolio as closely as possible within the available investment manager or survey classes provided.

Justification for Significant Assumptions

Mortality	The base tables and improvement scale assumptions were selected by considering a study of demographic experience exclusive to public-sector employees published by the Society of Actuaries in 2019. Selection of the Above-Median table resulted from an analysis of the distribution of pay and benefits for plan participants.
Retirement	The assumption was set considering various factors including: plan design, post-retirement benefit availability, and retirement experience between 2008 and 2016.
Termination	The assumption used a published table adjusted by a factor to reflect plan sponsor expectations and plan experience between 2008 and 2017.
General Inflation Rate	The inflation rate was selected after a review of the long term expectations contained in the most recent Medicare and OASDI Trustee reports as of the measurement date, the historical spread between the CPI and the GDP deflator, and spreads between long term government bonds with and without inflation protection, rounded to the nearest 25 basis points.
Funding Interest Rates	This assumption is set based upon expectations of the Fund manager for both the current and long-term expectations of return on plan investments based upon the current asset allocation.
Administrative Expenses	Average of prior two years.
Salary Scale	The assumption was selected based upon a study of recent plan experience and adjusted for actual rates in the current collective bargaining agreement.
401(a)(17) Compensation Limit Increase Rate	The assumption was selected to be consistent with the assumed general inflation rate.
Percent Married	This assumption has been set with guidance from the client and general research. Specific data regarding percent married is not maintained as part of the valuation process, and is thus not available
Spouse Age Difference	This assumption is based on guidance provided by general research. The assumption is monitored against the actual age difference in current inactive data, and assumed to be reasonable unless or until inactive data shows a significant difference versus the assumption

Assessment and Disclosure of Risk for Actuarial Standard of Practice No. 51

Assessment and Disclosure of Risk

Sponsors of defined benefit plans are subjected to various risks related to their plans. In general, most plan sponsors view risk, generally speaking, as the potential for future plan outcomes to differ widely from expected. Differences are inevitable and generate experience gains (or losses) at the next valuation date causing the MMO to decrease (or increase) over a fixed number of years to make up for the difference.

Risk management focus is almost exclusively on those outcomes that are unfavorable. Because of this, our assessment focuses on the negative consequences that certain risks may present to you, as plan sponsor. It is important to note that although negative outcomes are generally the focus of risk analysis, there is also the possibility that outcomes will be more positive than expected, and may present both opportunities and obstacles for a sponsor to be in a better position to mitigate risk in the future. For example, following a period of better than expected investment returns a municipality might be able to invest in less risky assets (opportunity). On the other hand, its bargaining unit could be asking for (and getting) a benefit improvement and/or a reduction in member contributions (obstacle).

We have addressed the following in this section of the report:

- Identification and definition of significant risks applicable to you, as plan sponsor
- An assessment of the risks most likely to trigger negative outcomes
- Identification of other less significant risks considered
- A discussion of plan maturity and how it may affect your view of risk

Please note that the risks discussed in this report are in the context of cash contribution requirements (i.e., MMO) applicable to you, as plan sponsor. Less than favorable outcomes may also have negative consequences for financial statements (GASB 68 disclosures), affecting your credit rating and ability to borrow money or trigger mandatory remedies as a Distress Level 2 or higher municipality, resulting in additional administrative expense to prepare a plan for administrative improvement or to create a new benefit structure for new hires. We are available to discuss how these risks may affect your financial statements or any other disclosure requirements or to provide additional analysis regarding any of the information discussed in this section of the report.

Identification and Definition of Significant Risks

Investment Risk: Investment risk is the chance that investment income will differ widely from expected. From the perspective of a plan sponsor, the significant risk is that actual return will be lower than expected, resulting in increased contributions to make up for shortfalls in investment returns. Generally, the higher the expected return that a sponsor seeks, the greater the volatility in returns will be and thus the higher the risk to the sponsor that unfavorable experience may occur.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Contribution Risk: Contribution risk is the possibility that actual future contributions will differ widely from expected contributions. In general, other risk items described below contribute to contribution risk, as well as the potential that plan sponsors may not be able to make contributions when necessary due to adverse economic conditions or to the availability of state aid, if eligible.

Municipalities which do not contribute the full MMO could receive an "Order to Comply" from the Municipal Pension Reporting Program (MPRP) within the Department of the Auditor General's Office of Budget and Financial Management if the shortfall meets the criteria to be a "critical funding deficiency."

Because other items contribute to this risk, no individual analysis is provided for contribution risk, though we are available to provide projections of future contribution levels under various scenarios, if there is a specific outcome that you must avoid.

Asset/Liability Mismatch Risk: Asset/liability mismatch occurs when plan liabilities and plan assets do not move in tandem with market changes. For example, a private pension plan will have liabilities that are based loosely on the corporate bond market, but may have assets that are heavily weighted in equities. If equities experience little or no return, but corporate bond rates decline, the deficit in plan funding will increase. Public pension plan liabilities, on the other hand, are based on a long-term expected return on plan assets assumption, dependent only on asset allocation without adjustment for risk or changes in interest rates, and so will not likely move in tandem with plan assets, in the short term.

Interest Rate Risk: Potentially negative outcomes may occur if market interest rates differ from expected. Specifically, decreasing rates lower the plan's ability to achieve returns in the long run from fixed income assets. The significance of this risk is magnified, in the short term, if a public plan sponsor which is permitted to do so (e.g., an Authority or Third Class Optional Charter City) settles a significant portion of plan liabilities via lump sum payments to participants or de-risks a portion of the liabilities through the purchase of non-participating annuities.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Risks Most Likely to Trigger Negative Outcomes:

Investment Risk: The consequence of less than favorable returns over a long-term basis is simply that those lost returns must instead be made up by future contributions. The investment allocation of the Plan is approximately 65% equities and 35% fixed income. For plans that do not dedicate assets to liabilities and which have a more aggressive equity allocation (generally over 60%), the extra volatility in year-to-year MMO levels may negatively impact cash flow planning. Higher contribution requirements after unfavorable returns may coincide with other cash flow pressures on the municipality.

While an analysis of potential future return outcomes, including stress testing and sensitivity analysis, can be provided, we don't believe the fund size would justify the expense. We would advise that, as plan sponsor, you monitor your general tolerance for risk in asset returns vs. potential returns that taking on such risk provides.

Asset/Liability Mismatch Risk: When a plan's asset allocation is *not* dedicated to specific liabilities, there is a potential for asset/liability mismatch risk. Some asset/liability mismatch risk may be cyclical. For example, decreasing corporate bond yields with or without concurrent poor equity experience can reverse in the long run. In the short term, the risk to you, as a plan sponsor, is the unfavorable circumstance of selling assets to pay current benefits to participants when those assets are at a low point. Because of the cyclical nature of this type of risk, the impact may not be as significant if you intend to maintain the plan for the long term. If you anticipate settling liabilities in the short term, either by offering lump sum payments to participants or settling retiree liabilities with an annuity purchase, it would be advisable to improve the coordination of assets and liabilities in regard to their reaction to changing markets. As with investment risk, the cost of preparing a numerical analysis must be weighed against the size of the plan. Let us know if you are interested in additional analysis. We would be happy to discuss strategies for you to manage this type of risk.

Interest Rate Risk: Interest rate risk may decrease the long-term asset return profile for the plan and may increase cash contributions required, in the near term. In a case in which you may wish to settle plan liabilities through lump sums or non-participating annuity purchases, lower interest rates will generally increase the cost of settlement. Interest rate risk can be mitigated to some extent by dedicating assets to liabilities so that assets and liabilities move in tandem over the long-run. However, dedication generally lowers expected future returns and funded deficits will still increase a smaller amount in a declining interest rate environment. That is, you will expect to make additional contributions on average in return for less risk. If you have no immediate intention to settle plan liabilities, the impact of interest rate risk may be no more than accelerating contribution requirements.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Other Less Significant Risks or Risks That Are Difficult to Quantify

Inflation Risk: Inflation risk occurs in final average pay (FAP) plans and in plans that provide automatic cost-of-living adjustments (COLA) to retirees when actual future inflation is higher than expected. Since wages are generally tied to inflation FAP plans will be paying out higher pensions when inflation is higher than expected. Similarly, COLAs may be higher than expected or accelerated in the case in which there is a lifetime cap on COLAs.

Mortality Risk: Mortality risk is the risk that pension plan participants live longer or not as long (life insurance plans) than expected. For smaller plans, this risk can be substantial over the long term; in the short term, the impact is less than the more significant risks mentioned in the prior section. This risk can be mitigated by settling plan liabilities through payment of lump sums or the purchase of non-participating annuities, if economic conditions are favorable.

Legislative Risk: Legislative risk is the chance that changes in law or regulatory guidance will force an unfavorable outcome for you, as plan sponsor. Examples of this type of risk are unexpected revisions to state aid rules (if eligible) or significant changes in funding requirements under Act 205. *These types of risks are difficult to quantify;* but, at the time of this report, we do not expect any significant changes in the near future.

Arbitration Risk: Arbitration risk in collectively bargained pension plans, similar in some ways to Legislative Risk, is the chance that arbitration awards/decisions will force an unfavorable outcome for you, as plan sponsor. Most often they are in the direct form of pension benefit enhancements and/or reductions in employee contributions but could be indirect in the form of wage increases, when the pension formula is pay-related.

Demographic/Participant Risks Other than Mortality: Demographic risks other than mortality are risks that participant behavior will differ widely from expected. This can include participants electing to commence benefits earlier than expected or in a different form than expected. It can be a significant risk in pension plans in which the municipality fully subsidizes the cost of a survivor pension provided to a spouse after the retiree death, regardless of the age difference; and to an even greater extent when the entitlement to a survivor pension belongs to the spouse as of the retiree's *date of death*. If a municipality had no prior knowledge of a late-in-life marriage of a retiree, who is now deceased, then the funding liability due to the surviving spouse is completely unexpected and not provided for in prior actuarial valuations.

Assessment and Disclosure of Risk for ASOP No. 51 (continued)

Plan Maturity Measures

Plan maturity refers to the composition of your plan by age. A recently established plan with no retirees is considered to be an immature plan. A very mature plan is one whose liability is primarily on behalf of participants who are in pay status. We generally consider a plan that has liabilities greater than 50% attributable to participants in pay status as a mature plan.

The risk to a plan sponsor increases as a plan becomes more mature. Simply put, a sponsor’s revenue source may or may not grow, but as a plan becomes more mature, its potential impact will grow without regard to the supporting revenue generating activities. More mature plans – particularly those with a low funded ratio – are more likely to have issues because of heavy cash flow out of the plan. Mature plans generally have negative cash flows and rely on investment return to keep the fund from declining; and hence are more susceptible to volatility in the market. The Net Cash Flow as a percentage of Plan Assets (NCF %) is a measure of the investment return needed to keep the fund from declining over a particular period. For example, an NCF % = -6% means the fund needed at least +6% investment return over the period to keep from declining.

As of the date of this report, the Accrued Liability is comprised of approximately 74% inactive liability and the Net Cash Flow % is -12.25%. These ratios are provided for the current and last four (4) valuation dates below.

The moderately high ratio emphasizes the importance of risk consideration for you, the plan sponsor.

As of January 1,	Accrued Liability In Pay % of Total	Net Cash Flow % of Assets ¹	Plan Funded Ratio
2023	74%	-12.25%	107%
2021	75%	25.18%	100%
2019	53%	-4.71%	70%
2017	53%	-7.21%	68%
2015	54%	-10.05%	70%

¹ Over two-year PA municipal pension cycle.

APPENDIX C



Performance Report

For the Period Ending

June 30, 2025



Client Overview

Your Manning & Napier
Relationship Team

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Separately Managed
Accounts

\$33,749,468

CITY OF BRADFORD FIRE PENSION FUND JS0021	\$12,076,063
CITY OF BRADFORD NON-UNIFORMED EMPLOYEES PENSION FUND JS0022	\$11,683,443
CITY OF BRADFORD POLICE PENSION FUND JS0020	\$9,989,962

Market values include accrued income.



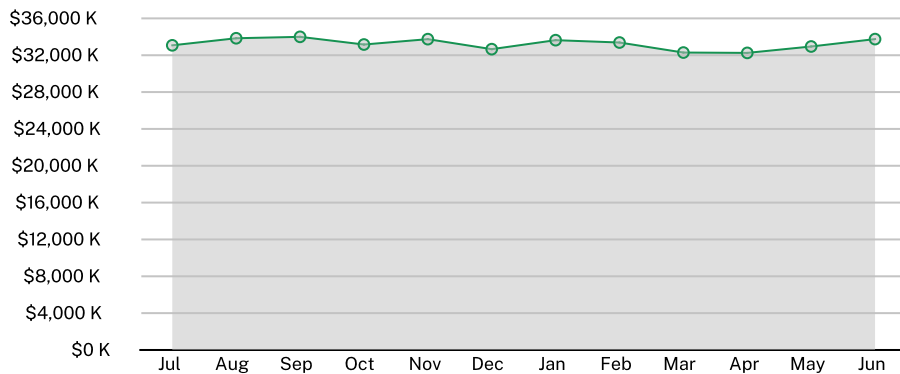
Performance Overview

Separately Managed Accounts

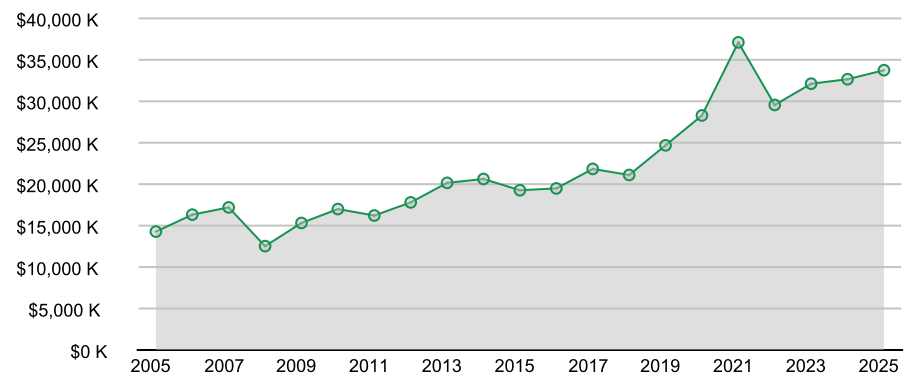
Account Returns

Account	Strategy	Inception	Market Value	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Inception
CITY OF BRADFORD FIRE PENSION FUND JS0021	LONG-TERM GROWTH OBJECTIVE	04/08/2005	\$12,076,063	6.01%	6.56%	10.05%	8.51%	6.88%	7.12%	7.44%
CITY OF BRADFORD NON-UNIFORMED EMPLOYEES PENSION FUND JS0022	LONG-TERM GROWTH OBJECTIVE	04/08/2005	\$11,683,443	6.10%	6.44%	10.02%	8.64%	7.06%	7.25%	7.25%
CITY OF BRADFORD POLICE PENSION FUND JS0020	LONG-TERM GROWTH OBJECTIVE	04/08/2005	\$9,989,962	6.04%	6.60%	10.17%	8.70%	6.99%	7.21%	7.52%

Aggregate Value Prior 12 Months



Aggregate Value Since Inception



Graphs of aggregate values exclude Advised, Client Managed, and Segregated Income accounts.

Performance for periods greater than one year is annualized. Market values and returns include accrued income. Unless otherwise indicated, Separately Managed Account performance is shown gross of fees and mutual fund performance is shown net of fees.



CITY OF BRADFORD FIRE PENSION FUND - JS0021

Performance Summary

Individual Account**Market Value**

	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Inception
							4/8/2005
Beginning Market Value	11,493,817	11,592,687	11,428,157	10,411,052	8,618,777	6,813,415	4,216,330
Net Cash Flow	-99,942	-261,792	-473,493	-1,042,966	145,501	-736,925	-2,353,487
Change in Investment Value	682,189	745,168	1,121,400	2,707,977	3,311,785	5,999,573	10,213,219
Ending Market Value	12,076,063	12,076,063	12,076,063	12,076,063	12,076,063	12,076,063	12,076,063

Net Cash Flow represents the sum of contributions, withdrawals, and management fees paid during the applicable time period.

Individual Account**Performance**

	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Inception
							4/8/2005
Gross of Fees	6.01%	6.56%	10.05%	8.51%	6.88%	7.12%	7.44%
40/15/45 MSCI USA IMI/MSCI ACWXU/BB Agg	6.70%	6.77%	11.43%	10.70%	7.44%	6.90%	6.64%*

*Benchmark returns are annualized using monthly returns based on account's inception date.

Market values and returns include accrued income. Performance for periods greater than one year is annualized. Past performance does not guarantee future results. For accounts opened after 01/01/1987 and invested in a Multi-Asset Class, Core Equity or Disciplined Value strategy at the account's inception, inception performance for the benchmark may be included from the first day of the month in which the account inceptioned.



CITY OF BRADFORD FIRE PENSION FUND - JS0021

Holdings Summary

Individual Account

Account Holdings*

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Equities								
Materials								
AIR LIQUIDE	AIQUY	Strategic Profile	4,147.000	\$154,662.01	\$41.12	\$170,516.35	1.32%	1.41%
WEST FRASER TIMBER LTD	WFG	Hurdle Rate	943.000	\$77,880.98	\$73.30	\$69,121.90	1.75%	0.57%
SHERWIN WILLIAMS CO	SHW	Strategic Profile	169.000	\$54,953.79	\$343.36	\$58,027.84	0.92%	0.48%
Industrials								
BAE SYS PLC	BAESY	Strategic Profile	595.000	\$24,101.25	\$103.41	\$61,527.17	1.62%	0.51%
CANADIAN NATL RY CO	CNI	Strategic Profile	613.000	\$74,048.17	\$104.04	\$63,776.52	2.50%	0.53%
DEUTSCHE POST AG	DHLGY	Bankable Deal	3,736.000	\$150,271.79	\$46.03	\$171,956.87	3.17%	1.43%
SOCIEDAD QUIMICA MINERA DE C	SQM	Hurdle Rate	2,568.000	\$96,971.41	\$35.27	\$90,573.36	-	0.75%
CSX CORP	CSX	Strategic Profile	1,936.000	\$63,010.63	\$32.63	\$63,171.68	1.59%	0.52%
HEICO CORP NEW	HEI A	Strategic Profile	439.000	\$88,235.26	\$258.75	\$113,591.25	0.09%	0.94%
L3HARRIS TECHNOLOGIES INC COM	LHX	Strategic Profile	805.000	\$167,030.93	\$250.84	\$201,926.20	1.91%	1.67%
NORFOLK SOUTHERN CORP	NSC	Strategic Profile	247.000	\$62,618.56	\$255.97	\$63,224.59	2.11%	0.52%
ROLLINS INC	ROL	Strategic Profile	1,128.000	\$58,878.43	\$56.42	\$63,641.76	1.17%	0.53%
TRANSUNION	TRU	Strategic Profile	1,378.000	\$123,461.54	\$88.00	\$121,264.00	0.52%	1.01%
UNION PAC CORP	UNP	Strategic Profile	241.000	\$49,605.14	\$230.08	\$55,449.28	2.33%	0.46%
Consumer Discretionary								
FERRARI N V COM	RACE	Strategic Profile	273.000	\$113,321.18	\$490.74	\$133,972.02	0.69%	1.11%
HERMES INTL SCA	HESAY	Strategic Profile	695.000	\$169,051.19	\$269.87	\$187,557.57	0.43%	1.56%
MERCADOLIBRE INC	MELI	Strategic Profile	23.000	\$32,109.90	\$2,613.63	\$60,113.49	-	0.50%
PERSIMMON	PSMMY	Hurdle Rate	2,418.000	\$77,946.90	\$35.52	\$85,887.36	4.13%	0.71%
TAYLOR WIMPEY PLC	TWODY	Hurdle Rate	5,419.000	\$82,605.64	\$16.27	\$88,183.39	6.68%	0.73%
AMAZON COM INC	AMZN	Strategic Profile	1,100.000	\$140,079.35	\$219.39	\$241,329.00	-	2.00%
CHIPOTLE MEXICAN GRILL INC	CMG	Strategic Profile	2,342.000	\$116,823.05	\$56.15	\$131,503.30	-	1.09%
Consumer Staples								
COCA COLA CO	KO	Strategic Profile	2,703.000	\$144,253.94	\$70.75	\$191,237.25	2.88%	1.59%

*Tax reporting requirements are not reflected and the data presented may not be accurate for tax purposes.



CITY OF BRADFORD FIRE PENSION FUND - JS0021

Holdings Summary

Individual Account

Account Holdings*

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Equities								
Health Care								
ASTRAZENECA PLC	AZN	Strategic Profile	1,587.000	\$113,273.85	\$69.88	\$110,899.56	2.18%	0.92%
LONZA GROUP AG	LZAGY	Strategic Profile	847.000	\$51,660.93	\$70.98	\$60,120.06	0.15%	0.50%
ROCHE HLDG LTD SPONSORED ADR	RHHBY	Bankable Deal	3,475.000	\$110,903.52	\$40.58	\$141,008.55	2.15%	1.17%
INTUITIVE SURGICAL INC	ISRG	Strategic Profile	231.000	\$70,132.76	\$543.41	\$125,527.71	-	1.04%
THERMO FISHER SCIENTIFIC INC COM	TMO	Strategic Profile	293.000	\$147,739.22	\$405.46	\$118,799.78	0.42%	0.99%
UNITEDHEALTH GROUP INC	UNH	Bankable Deal	565.000	\$170,485.86	\$311.97	\$176,263.05	2.83%	1.46%
VERTEX PHARMACEUTICALS INC	VRTX	Strategic Profile	227.000	\$71,358.83	\$445.20	\$101,060.40	-	0.84%
ZOETIS INC	ZTS	Strategic Profile	353.000	\$58,960.80	\$155.95	\$55,050.35	1.28%	0.46%
Financials								
DEUTSCHE BOERSE ADR	DBOEY	Strategic Profile	1,970.000	\$38,424.18	\$32.50	\$64,032.88	0.80%	0.53%
HDFC BANK LTD	HDB	Strategic Profile	1,576.000	\$86,915.88	\$76.67	\$120,831.92	0.86%	1.00%
NU HLDGS LTD	NU	Strategic Profile	4,649.000	\$58,099.42	\$13.72	\$63,784.28	-	0.53%
BLACKROCK INC COM	BLK	Strategic Profile	91.000	\$82,430.87	\$1,049.25	\$95,481.75	1.99%	0.79%
FISERV INC	FI	Strategic Profile	740.000	\$118,219.73	\$172.41	\$127,583.40	-	1.06%
INTERCONTINENTAL EXCHANGE INC COM	ICE	Strategic Profile	369.000	\$37,359.95	\$183.47	\$67,700.43	1.05%	0.56%
J P MORGAN CHASE AND CO	JPM	Strategic Profile	219.000	\$60,509.88	\$289.91	\$63,490.29	1.93%	0.53%
MASTERCARD INCORPORATED CL A	MA	Strategic Profile	407.000	\$75,110.36	\$561.94	\$228,709.58	0.54%	1.90%
MOODYS CORP	MCO	Strategic Profile	251.000	\$75,783.15	\$501.59	\$125,899.09	0.75%	1.04%
NASDAQ STOCK MARKET INC	NDAQ	Strategic Profile	827.000	\$60,749.98	\$89.42	\$73,950.34	1.21%	0.61%
S AND P GLOBAL INC	SPGI	Strategic Profile	177.000	\$64,008.95	\$527.29	\$93,330.33	0.73%	0.77%
VISA INC	V	Strategic Profile	434.000	\$62,529.52	\$355.05	\$154,091.70	0.66%	1.28%
Information Technology								
ATLASSIAN CORPORATION CL A	TEAM	Strategic Profile	268.000	\$58,240.03	\$203.09	\$54,428.12	-	0.45%
HALMA PLC	HALMY	Strategic Profile	779.000	\$53,371.06	\$87.70	\$68,320.64	0.59%	0.57%
INFINEON TECHNOLOGIES AG	IFNNY	Strategic Profile	2,315.000	\$86,850.69	\$42.39	\$98,142.11	0.58%	0.81%

*Tax reporting requirements are not reflected and the data presented may not be accurate for tax purposes.



CITY OF BRADFORD FIRE PENSION FUND - JS0021

Holdings Summary

Individual Account**Account Holdings***

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Equities								
Information Technology								
TAIWAN SEMICONDUCTOR MFG LTD	TSM	Strategic Profile	605.000	\$69,539.56	\$226.49	\$137,026.45	1.00%	1.14%
AMPHENOL CORP NEW	APH	Strategic Profile	876.000	\$55,950.57	\$98.75	\$86,505.00	0.67%	0.72%
CADENCE DESIGN SYSTEM INC	CDNS	Strategic Profile	751.000	\$202,628.52	\$308.15	\$231,420.65	-	1.92%
CLEARWATER ANALYTICS HLDGS I	CWAN	Strategic Profile	2,550.000	\$61,581.24	\$21.93	\$55,921.50	-	0.46%
MICROSOFT CORP	MSFT	Strategic Profile	704.000	\$266,204.44	\$497.41	\$350,176.64	0.67%	2.90%
NVIDIA CORP	NVDA	Strategic Profile	885.000	\$101,830.85	\$157.99	\$139,821.15	0.03%	1.16%
SALESFORCE INC COM	CRM	Strategic Profile	225.000	\$58,675.40	\$272.69	\$61,355.25	0.61%	0.51%
SERVICENOW INC	NOW	Strategic Profile	114.000	\$86,809.03	\$1,028.08	\$117,201.12	-	0.97%
SYNOPSYS INC	SNPS	Strategic Profile	108.000	\$58,892.48	\$512.68	\$55,369.44	-	0.46%
WORKDAY INC	WDAY	Strategic Profile	489.000	\$113,972.00	\$240.00	\$117,360.00	-	0.97%
Communication Services								
ALPHABET INC CAP STK CL A	GOOGL	Strategic Profile	1,472.000	\$151,924.34	\$176.23	\$259,410.56	0.46%	2.15%
META PLATFORMS INC CL A	META	Strategic Profile	308.000	\$109,354.08	\$738.09	\$227,331.72	0.28%	1.88%
Real Estate								
CBRE GROUP INC	CBRE	Hurdle Rate	930.000	\$119,415.07	\$140.12	\$130,311.60	-	1.08%
EXTRA SPACE STORAGE INC	EXR	Strategic Profile	396.000	\$67,570.17	\$147.44	\$58,386.24	4.40%	0.48%
Total Equities				\$5,459,388.21		\$6,903,655.79	1.01%	57.24%
Fixed Income								
US Treasury								
UNITED STATES TREAS BDS 20500215 2.000%	912810SL3	Fixed/Cash/Other	410,000.000	\$274,663.72	\$58.72	\$240,747.90	3.41%	2.00%
UNITED STATES TREAS NTS . 20280515 2.875%	9128284N7	Fixed/Cash/Other	175,000.000	\$179,128.91	\$97.77	\$171,097.50	2.94%	1.42%
UNITED STATES TREAS NTS . 20320515 2.875%	91282CEP2	Fixed/Cash/Other	964,000.000	\$883,679.22	\$93.31	\$899,460.20	3.08%	7.46%
UNITED STATES TREAS BDS 20470515 3.000%	912810RX8	Fixed/Cash/Other	482,000.000	\$374,808.59	\$74.89	\$360,955.34	4.01%	2.99%
UNITED STATES TREAS NTS . 20300930 4.625%	91282CHZ7	Fixed/Cash/Other	397,000.000	\$405,470.52	\$103.76	\$411,935.14	4.46%	3.42%

*Tax reporting requirements are not reflected and the data presented may not be accurate for tax purposes.



CITY OF BRADFORD FIRE PENSION FUND - JS0021

Holdings Summary

Individual Account

Account Holdings*

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Fixed Income								
Other								
ISHARES TR BROAD USD HIGH	USHY	Fixed/Cash/Other	3,079.000	\$109,499.71	\$37.51	\$115,493.29	6.69%	0.96%
MANNING AND NAPIER FD INC CORE BOND W	MCBWX	Fixed/Cash/Other	296,507.947	\$2,959,447.05	\$9.26	\$2,745,663.59	4.95%	22.77%
Total Fixed Income				\$5,186,697.72		\$4,945,352.96	4.39%	41.00%
Cash								
CASH BALANCE	USD	Fixed/Cash/Other	211,631.530	\$211,631.53	\$1.00	\$211,631.53	-	1.75%
Total Cash				\$211,631.53		\$211,631.53	-	1.75%
ACCRUED INCOME						\$15,422.75		
Total Portfolio				\$10,857,717.46		\$12,076,063.03	2.38%	

*Tax reporting requirements are not reflected and the data presented may not be accurate for tax purposes.



CITY OF BRADFORD NON-UNIFORMED EMPLOYEES PENSION FUND - JS0022

Performance Summary

Individual Account

Market Value

	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Inception
							4/8/2005
Beginning Market Value	11,272,739	11,454,967	11,495,411	11,456,295	9,459,674	7,787,664	5,737,491
Net Cash Flow	-259,567	-483,921	-913,148	-2,542,227	-1,152,566	-2,480,785	-5,261,317
Change in Investment Value	670,271	712,397	1,101,180	2,769,375	3,376,335	6,376,563	11,207,269
Ending Market Value	11,683,443	11,683,443	11,683,443	11,683,443	11,683,443	11,683,443	11,683,443

Net Cash Flow represents the sum of contributions, withdrawals, and management fees paid during the applicable time period.

Individual Account

Performance

	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Inception
							4/8/2005
Gross of Fees	6.10%	6.44%	10.02%	8.64%	7.06%	7.25%	7.25%
40/15/45 MSCI USA IMI/MSCI ACWXU/BB Agg	6.70%	6.77%	11.43%	10.70%	7.44%	6.90%	6.64%*

*Benchmark returns are annualized using monthly returns based on account's inception date.

Market values and returns include accrued income. Performance for periods greater than one year is annualized. Past performance does not guarantee future results. For accounts opened after 01/01/1987 and invested in a Multi-Asset Class, Core Equity or Disciplined Value strategy at the account's inception, inception performance for the benchmark may be included from the first day of the month in which the account inceptioned.



CITY OF BRADFORD NON-UNIFORMED EMPLOYEES PENSION FUND - JS0022

Holdings Summary

Individual Account

Account Holdings*

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Equities								
Materials								
AIR LIQUIDE	AIQUY	Strategic Profile	4,024.000	\$150,056.00	\$41.12	\$165,458.83	1.32%	1.42%
WEST FRASER TIMBER LTD	WFG	Hurdle Rate	932.000	\$76,875.49	\$73.30	\$68,315.60	1.75%	0.59%
SHERWIN WILLIAMS CO	SHW	Strategic Profile	165.000	\$53,653.10	\$343.36	\$56,654.40	0.92%	0.49%
Industrials								
BAE SYS PLC	BAESY	Strategic Profile	579.000	\$23,453.15	\$103.41	\$59,872.65	1.62%	0.51%
CANADIAN NATL RY CO	CNI	Strategic Profile	602.000	\$72,343.24	\$104.04	\$62,632.08	2.50%	0.54%
DEUTSCHE POST AG	DHLGY	Bankable Deal	3,673.000	\$147,660.12	\$46.03	\$169,057.17	3.17%	1.45%
SOCIEDAD QUIMICA MINERA DE C	SQM	Hurdle Rate	2,499.000	\$94,457.17	\$35.27	\$88,139.73	-	0.76%
CSX CORP	CSX	Strategic Profile	1,903.000	\$61,598.02	\$32.63	\$62,094.89	1.59%	0.53%
HEICO CORP NEW	HEI A	Strategic Profile	429.000	\$86,263.55	\$258.75	\$111,003.75	0.09%	0.95%
L3HARRIS TECHNOLOGIES INC COM	LHX	Strategic Profile	788.000	\$163,855.32	\$250.84	\$197,661.92	1.91%	1.69%
NORFOLK SOUTHERN CORP	NSC	Strategic Profile	243.000	\$61,605.39	\$255.97	\$62,200.71	2.11%	0.53%
ROLLINS INC	ROL	Strategic Profile	1,109.000	\$57,886.69	\$56.42	\$62,569.78	1.17%	0.54%
TRANSUNION	TRU	Strategic Profile	1,379.000	\$123,554.34	\$88.00	\$121,352.00	0.52%	1.04%
UNION PAC CORP	UNP	Strategic Profile	237.000	\$48,454.08	\$230.08	\$54,528.96	2.33%	0.47%
Consumer Discretionary								
FERRARI N V COM	RACE	Strategic Profile	267.000	\$110,827.73	\$490.74	\$131,027.58	0.69%	1.12%
HERMES INTL SCA	HESAY	Strategic Profile	680.000	\$165,313.03	\$269.87	\$183,509.56	0.43%	1.57%
MERCADOLIBRE INC	MELI	Strategic Profile	22.000	\$30,713.82	\$2,613.63	\$57,499.86	-	0.49%
PERSIMMON	PSMMY	Hurdle Rate	2,339.000	\$75,260.43	\$35.52	\$83,081.28	4.13%	0.71%
TAYLOR WIMPEY PLC	TWODY	Hurdle Rate	5,243.000	\$79,829.97	\$16.27	\$85,319.34	6.68%	0.73%
AMAZON COM INC	AMZN	Strategic Profile	1,033.000	\$125,734.77	\$219.39	\$226,629.87	-	1.94%
CHIPOTLE MEXICAN GRILL INC	CMG	Strategic Profile	2,303.000	\$114,877.57	\$56.15	\$129,313.45	-	1.11%
Consumer Staples								
COCA COLA CO	KO	Strategic Profile	2,472.000	\$134,845.85	\$70.75	\$174,894.00	2.88%	1.50%

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CITY OF BRADFORD NON-UNIFORMED EMPLOYEES PENSION FUND - JS0022

Holdings Summary

Individual Account

Account Holdings*

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Equities								
Health Care								
ASTRAZENECA PLC	AZN	Strategic Profile	1,536.000	\$109,394.60	\$69.88	\$107,335.68	2.18%	0.92%
LONZA GROUP AG	LZAGY	Strategic Profile	820.000	\$49,953.22	\$70.98	\$58,203.60	0.15%	0.50%
ROCHE HLDG LTD SPONSORED ADR	RHHBY	Bankable Deal	3,515.000	\$112,179.69	\$40.58	\$142,631.67	2.15%	1.22%
INTUITIVE SURGICAL INC	ISRG	Strategic Profile	223.000	\$63,529.11	\$543.41	\$121,180.43	-	1.04%
THERMO FISHER SCIENTIFIC INC COM	TMO	Strategic Profile	284.000	\$139,304.90	\$405.46	\$115,150.64	0.42%	0.99%
UNITEDHEALTH GROUP INC	UNH	Bankable Deal	547.000	\$165,046.13	\$311.97	\$170,647.59	2.83%	1.46%
VERTEX PHARMACEUTICALS INC	VRTX	Strategic Profile	223.000	\$69,643.57	\$445.20	\$99,279.60	-	0.85%
ZOETIS INC	ZTS	Strategic Profile	343.000	\$57,289.88	\$155.95	\$53,490.85	1.28%	0.46%
Financials								
DEUTSCHE BOERSE ADR	DBOEY	Strategic Profile	1,936.000	\$37,655.86	\$32.50	\$62,927.74	0.80%	0.54%
HDFC BANK LTD	HDB	Strategic Profile	1,534.000	\$84,598.61	\$76.67	\$117,611.78	0.86%	1.01%
NU HLDGS LTD	NU	Strategic Profile	4,524.000	\$56,537.31	\$13.72	\$62,069.28	-	0.53%
BLACKROCK INC COM	BLK	Strategic Profile	88.000	\$79,510.43	\$1,049.25	\$92,334.00	1.99%	0.79%
FISERV INC	FI	Strategic Profile	720.000	\$115,023.05	\$172.41	\$124,135.20	-	1.06%
INTERCONTINENTAL EXCHANGE INC COM	ICE	Strategic Profile	369.000	\$36,815.64	\$183.47	\$67,700.43	1.05%	0.58%
J P MORGAN CHASE AND CO	JPM	Strategic Profile	212.000	\$58,575.77	\$289.91	\$61,460.92	1.93%	0.53%
MASTERCARD INCORPORATED CL A	MA	Strategic Profile	400.000	\$86,683.57	\$561.94	\$224,776.00	0.54%	1.93%
MOODYS CORP	MCO	Strategic Profile	243.000	\$71,431.49	\$501.59	\$121,886.37	0.75%	1.04%
NASDAQ STOCK MARKET INC	NDAQ	Strategic Profile	825.000	\$60,602.91	\$89.42	\$73,771.50	1.21%	0.63%
S AND P GLOBAL INC	SPGI	Strategic Profile	171.000	\$59,687.73	\$527.29	\$90,166.59	0.73%	0.77%
VISA INC	V	Strategic Profile	426.000	\$70,209.16	\$355.05	\$151,251.30	0.66%	1.30%
Information Technology								
ATLASSIAN CORPORATION CL A	TEAM	Strategic Profile	264.000	\$57,370.25	\$203.09	\$53,615.76	-	0.46%
HALMA PLC	HALMY	Strategic Profile	759.000	\$51,992.31	\$87.70	\$66,566.58	0.59%	0.57%
INFINEON TECHNOLOGIES AG	IFNNY	Strategic Profile	2,249.000	\$84,459.20	\$42.39	\$95,344.11	0.58%	0.82%

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CITY OF BRADFORD NON-UNIFORMED EMPLOYEES PENSION FUND - JS0022

Holdings Summary

Individual Account**Account Holdings***

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Equities								
Information Technology								
TAIWAN SEMICONDUCTOR MFG LTD	TSM	Strategic Profile	588.000	\$67,048.87	\$226.49	\$133,176.12	1.00%	1.14%
AMPHENOL CORP NEW	APH	Strategic Profile	858.000	\$54,801.34	\$98.75	\$84,727.50	0.67%	0.73%
CADENCE DESIGN SYSTEM INC	CDNS	Strategic Profile	731.000	\$197,420.91	\$308.15	\$225,257.65	-	1.93%
CLEARWATER ANALYTICS HLDGS I	CWAN	Strategic Profile	2,473.000	\$59,721.82	\$21.93	\$54,232.89	-	0.46%
MICROSOFT CORP	MSFT	Strategic Profile	620.000	\$236,695.24	\$497.41	\$308,394.20	0.67%	2.64%
NVIDIA CORP	NVDA	Strategic Profile	860.000	\$99,013.83	\$157.99	\$135,871.40	0.03%	1.16%
SALESFORCE INC COM	CRM	Strategic Profile	218.000	\$56,850.06	\$272.69	\$59,446.42	0.61%	0.51%
SERVICENOW INC	NOW	Strategic Profile	111.000	\$84,284.53	\$1,028.08	\$114,116.88	-	0.98%
SYNOPSYS INC	SNPS	Strategic Profile	107.000	\$58,347.20	\$512.68	\$54,856.76	-	0.47%
WORKDAY INC	WDAY	Strategic Profile	479.000	\$111,641.23	\$240.00	\$114,960.00	-	0.99%
Communication Services								
ALPHABET INC CAP STK CL A	GOOGL	Strategic Profile	1,612.000	\$179,989.17	\$176.23	\$284,082.76	0.46%	2.43%
META PLATFORMS INC CL A	META	Strategic Profile	301.000	\$105,216.07	\$738.09	\$222,165.09	0.28%	1.90%
Real Estate								
CBRE GROUP INC	CBRE	Hurdle Rate	910.000	\$116,789.47	\$140.12	\$127,509.20	-	1.09%
EXTRA SPACE STORAGE INC	EXR	Strategic Profile	389.000	\$66,375.76	\$147.44	\$57,354.16	4.40%	0.49%
Total Equities				\$5,330,808.72		\$6,722,506.06	1.01%	57.61%
Fixed Income								
US Treasury								
UNITED STATES TREAS BDS 20500215 2.000%	912810SL3	Fixed/Cash/Other	398,000.000	\$269,890.01	\$58.72	\$233,701.62	3.41%	2.00%
UNITED STATES TREAS NTS . 20270515 2.375%	912828X88	Fixed/Cash/Other	27,000.000	\$28,636.87	\$97.53	\$26,332.29	2.44%	0.23%
UNITED STATES TREAS NTS . 20280515 2.875%	9128284N7	Fixed/Cash/Other	512,000.000	\$533,870.24	\$97.77	\$500,582.40	2.94%	4.29%
UNITED STATES TREAS NTS . 20320515 2.875%	91282CEP2	Fixed/Cash/Other	688,000.000	\$630,675.63	\$93.31	\$641,938.40	3.08%	5.50%
UNITED STATES TREAS BDS 20470515 3.000%	912810RX8	Fixed/Cash/Other	468,000.000	\$363,654.69	\$74.89	\$350,471.16	4.01%	3.00%
UNITED STATES TREAS NTS . 20300930 4.625%	91282CHZ7	Fixed/Cash/Other	273,000.000	\$278,649.66	\$103.76	\$283,270.26	4.46%	2.43%

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CITY OF BRADFORD NON-UNIFORMED EMPLOYEES PENSION FUND - JS0022

Holdings Summary

Individual Account**Account Holdings***

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Fixed Income								
Other								
ISHARES TR BROAD USD HIGH	USHY	Fixed/Cash/Other	3,013.000	\$107,152.53	\$37.51	\$113,017.63	6.69%	0.97%
MANNING AND NAPIER FD INC CORE BOND W	MCBWX	Fixed/Cash/Other	288,179.082	\$2,895,174.73	\$9.26	\$2,668,538.30	4.95%	22.87%
Total Fixed Income				\$5,107,704.36		\$4,817,852.06	4.34%	41.29%
Cash								
CASH BALANCE	USD	Fixed/Cash/Other	129,055.880	\$129,055.88	\$1.00	\$129,055.88	-	1.11%
Total Cash				\$129,055.88		\$129,055.88	-	1.11%
ACCRUED INCOME						\$14,028.91		
Total Portfolio				\$10,567,568.96		\$11,683,442.91	2.37%	

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CITY OF BRADFORD POLICE PENSION FUND - JS0020

Performance Summary

Individual Account

Market Value

	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Inception
							4/8/2005
Beginning Market Value	9,524,213	9,611,608	9,486,610	8,832,686	7,169,241	5,431,218	3,547,549
Net Cash Flow	-101,556	-242,674	-435,853	-1,130,939	76,124	-419,947	-1,910,337
Change in Investment Value	567,305	621,029	939,206	2,288,216	2,744,597	4,978,692	8,352,750
Ending Market Value	9,989,962	9,989,962	9,989,962	9,989,962	9,989,962	9,989,962	9,989,962

Net Cash Flow represents the sum of contributions, withdrawals, and management fees paid during the applicable time period.

Individual Account

Performance

	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	Inception
							4/8/2005
Gross of Fees	6.04%	6.60%	10.17%	8.70%	6.99%	7.21%	7.52%
40/15/45 MSCI USA IMI/MSCI ACWXU/BB Agg	6.70%	6.77%	11.43%	10.70%	7.44%	6.90%	6.64%*

*Benchmark returns are annualized using monthly returns based on account's inception date.

Market values and returns include accrued income. Performance for periods greater than one year is annualized. Past performance does not guarantee future results. For accounts opened after 01/01/1987 and invested in a Multi-Asset Class, Core Equity or Disciplined Value strategy at the account's inception, inception performance for the benchmark may be included from the first day of the month in which the account inceptioned.



CITY OF BRADFORD POLICE PENSION FUND - JS0020

Holdings Summary

Individual Account**Account Holdings***

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Equities								
Materials								
AIR LIQUIDE	AIQUY	Strategic Profile	3,433.000	\$128,035.23	\$41.12	\$141,158.09	1.32%	1.41%
WEST FRASER TIMBER LTD	WFG	Hurdle Rate	781.000	\$64,504.50	\$73.30	\$57,247.30	1.75%	0.57%
SHERWIN WILLIAMS CO	SHW	Strategic Profile	140.000	\$45,523.84	\$343.36	\$48,070.40	0.92%	0.48%
Industrials								
BAE SYS PLC	BAESY	Strategic Profile	492.000	\$19,929.10	\$103.41	\$50,876.24	1.62%	0.51%
CANADIAN NATL RY CO	CNI	Strategic Profile	507.000	\$61,162.50	\$104.04	\$52,748.28	2.50%	0.53%
DEUTSCHE POST AG	DHLGY	Bankable Deal	3,094.000	\$124,450.82	\$46.03	\$142,407.54	3.17%	1.43%
SOCIEDAD QUIMICA MINERA DE C	SQM	Hurdle Rate	2,125.000	\$80,247.80	\$35.27	\$74,948.75	-	0.75%
CSX CORP	CSX	Strategic Profile	1,603.000	\$52,148.13	\$32.63	\$52,305.89	1.59%	0.52%
HEICO CORP NEW	HEI A	Strategic Profile	363.000	\$72,966.64	\$258.75	\$93,926.25	0.09%	0.94%
L3HARRIS TECHNOLOGIES INC COM	LHX	Strategic Profile	666.000	\$138,298.18	\$250.84	\$167,059.44	1.91%	1.67%
NORFOLK SOUTHERN CORP	NSC	Strategic Profile	204.000	\$51,717.57	\$255.97	\$52,217.88	2.11%	0.52%
ROLLINS INC	ROL	Strategic Profile	934.000	\$48,751.82	\$56.42	\$52,696.28	1.17%	0.53%
TRANSUNION	TRU	Strategic Profile	1,142.000	\$102,314.63	\$88.00	\$100,496.00	0.52%	1.01%
UNION PAC CORP	UNP	Strategic Profile	199.000	\$40,926.21	\$230.08	\$45,785.92	2.33%	0.46%
Consumer Discretionary								
FERRARI N V COM	RACE	Strategic Profile	226.000	\$93,804.26	\$490.74	\$110,907.24	0.69%	1.11%
HERMES INTL SCA	HESAY	Strategic Profile	576.000	\$140,098.84	\$269.87	\$155,443.39	0.43%	1.56%
MERCADOLIBRE INC	MELI	Strategic Profile	19.000	\$26,525.57	\$2,613.63	\$49,658.97	-	0.50%
PERSIMMON	PSMMY	Hurdle Rate	2,000.000	\$64,464.62	\$35.52	\$71,040.00	4.13%	0.71%
TAYLOR WIMPEY PLC	TWODY	Hurdle Rate	4,482.000	\$68,317.56	\$16.27	\$72,935.59	6.68%	0.73%
AMAZON COM INC	AMZN	Strategic Profile	867.000	\$105,355.85	\$219.39	\$190,211.13	-	1.91%
CHIPOTLE MEXICAN GRILL INC	CMG	Strategic Profile	1,939.000	\$96,720.52	\$56.15	\$108,874.85	-	1.09%
Consumer Staples								
COCA COLA CO	KO	Strategic Profile	2,242.000	\$122,039.31	\$70.75	\$158,621.50	2.88%	1.59%

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CITY OF BRADFORD POLICE PENSION FUND - JS0020

Holdings Summary

Individual Account

Account Holdings*

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Equities								
Health Care								
ASTRAZENECA PLC	AZN	Strategic Profile	1,314.000	\$93,814.80	\$69.88	\$91,822.32	2.18%	0.92%
LONZA GROUP AG	LZAGY	Strategic Profile	701.000	\$42,749.61	\$70.98	\$49,756.98	0.15%	0.50%
ROCHE HLDG LTD SPONSORED ADR	RHHBY	Bankable Deal	2,885.000	\$92,073.60	\$40.58	\$117,067.53	2.15%	1.17%
INTUITIVE SURGICAL INC	ISRG	Strategic Profile	191.000	\$57,814.61	\$543.41	\$103,791.31	-	1.04%
THERMO FISHER SCIENTIFIC INC COM	TMO	Strategic Profile	243.000	\$121,655.07	\$405.46	\$98,526.78	0.42%	0.99%
UNITEDHEALTH GROUP INC	UNH	Bankable Deal	468.000	\$141,215.80	\$311.97	\$146,001.96	2.83%	1.46%
VERTEX PHARMACEUTICALS INC	VRTX	Strategic Profile	188.000	\$59,151.48	\$445.20	\$83,697.60	-	0.84%
ZOETIS INC	ZTS	Strategic Profile	292.000	\$48,771.57	\$155.95	\$45,537.40	1.28%	0.46%
Financials								
DEUTSCHE BOERSE ADR	DBOEY	Strategic Profile	1,631.000	\$31,811.77	\$32.50	\$53,014.02	0.80%	0.53%
HDFC BANK LTD	HDB	Strategic Profile	1,304.000	\$71,914.50	\$76.67	\$99,977.68	0.86%	1.00%
NU HLDGS LTD	NU	Strategic Profile	3,847.000	\$48,076.68	\$13.72	\$52,780.84	-	0.53%
BLACKROCK INC COM	BLK	Strategic Profile	76.000	\$68,865.28	\$1,049.25	\$79,743.00	1.99%	0.80%
FISERV INC	FI	Strategic Profile	612.000	\$97,772.48	\$172.41	\$105,514.92	-	1.06%
INTERCONTINENTAL EXCHANGE INC COM	ICE	Strategic Profile	306.000	\$30,989.20	\$183.47	\$56,141.82	1.05%	0.56%
J P MORGAN CHASE AND CO	JPM	Strategic Profile	181.000	\$50,010.45	\$289.91	\$52,473.71	1.93%	0.53%
MASTERCARD INCORPORATED CL A	MA	Strategic Profile	337.000	\$71,746.99	\$561.94	\$189,373.78	0.54%	1.90%
MOODYS CORP	MCO	Strategic Profile	207.000	\$62,495.47	\$501.59	\$103,829.13	0.75%	1.04%
NASDAQ STOCK MARKET INC	NDAQ	Strategic Profile	685.000	\$50,319.15	\$89.42	\$61,252.70	1.21%	0.61%
S AND P GLOBAL INC	SPGI	Strategic Profile	146.000	\$53,131.23	\$527.29	\$76,984.34	0.73%	0.77%
VISA INC	V	Strategic Profile	359.000	\$54,064.83	\$355.05	\$127,462.95	0.66%	1.28%
Information Technology								
ATLASSIAN CORPORATION CL A	TEAM	Strategic Profile	222.000	\$48,243.77	\$203.09	\$45,085.98	-	0.45%
HALMA PLC	HALMY	Strategic Profile	645.000	\$44,191.68	\$87.70	\$56,568.44	0.59%	0.57%
INFINEON TECHNOLOGIES AG	IFNNY	Strategic Profile	1,916.000	\$71,893.43	\$42.39	\$81,226.90	0.58%	0.81%

*Tax reporting requirements are not reflected and the data presented may not be accurate for tax purposes.



CITY OF BRADFORD POLICE PENSION FUND - JS0020

Holdings Summary

Individual Account

Account Holdings*

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Equities								
Information Technology								
TAIWAN SEMICONDUCTOR MFG LTD	TSM	Strategic Profile	501.000	\$57,420.84	\$226.49	\$113,471.49	1.00%	1.14%
AMPHENOL CORP NEW	APH	Strategic Profile	725.000	\$46,306.32	\$98.75	\$71,593.75	0.67%	0.72%
CADENCE DESIGN SYSTEM INC	CDNS	Strategic Profile	621.000	\$167,562.72	\$308.15	\$191,361.15	-	1.92%
CLEARWATER ANALYTICS HLDGS I	CWAN	Strategic Profile	2,110.000	\$50,955.26	\$21.93	\$46,272.30	-	0.46%
MICROSOFT CORP	MSFT	Strategic Profile	583.000	\$222,097.47	\$497.41	\$289,990.03	0.67%	2.91%
NVIDIA CORP	NVDA	Strategic Profile	733.000	\$84,333.23	\$157.99	\$115,806.67	0.03%	1.16%
SALESFORCE INC COM	CRM	Strategic Profile	186.000	\$48,505.29	\$272.69	\$50,720.34	0.61%	0.51%
SERVICENOW INC	NOW	Strategic Profile	95.000	\$72,249.92	\$1,028.08	\$97,667.60	-	0.98%
SYNOPSYS INC	SNPS	Strategic Profile	90.000	\$49,077.07	\$512.68	\$46,141.20	-	0.46%
WORKDAY INC	WDAY	Strategic Profile	405.000	\$94,394.00	\$240.00	\$97,200.00	-	0.97%
Communication Services								
ALPHABET INC CAP STK CL A	GOOGL	Strategic Profile	1,248.000	\$136,553.87	\$176.23	\$219,935.04	0.46%	2.20%
META PLATFORMS INC CL A	META	Strategic Profile	255.000	\$89,836.56	\$738.09	\$188,212.95	0.28%	1.89%
Real Estate								
CBRE GROUP INC	CBRE	Hurdle Rate	769.000	\$98,746.14	\$140.12	\$107,752.28	-	1.08%
EXTRA SPACE STORAGE INC	EXR	Strategic Profile	328.000	\$55,967.46	\$147.44	\$48,360.32	4.40%	0.48%
Total Equities				\$4,535,083.10		\$5,711,754.14	1.01%	57.25%
Fixed Income								
US Treasury								
UNITED STATES TREAS BDS 20500215 2.000%	912810SL3	Fixed/Cash/Other	339,000.000	\$227,585.45	\$58.72	\$199,057.41	3.41%	2.00%
UNITED STATES TREAS NTS . 20280515 2.875%	9128284N7	Fixed/Cash/Other	144,000.000	\$152,381.34	\$97.77	\$140,788.80	2.94%	1.41%
UNITED STATES TREAS NTS . 20320515 2.875%	91282CEP2	Fixed/Cash/Other	850,000.000	\$779,177.73	\$93.31	\$793,092.50	3.08%	7.95%
UNITED STATES TREAS BDS 20470515 3.000%	912810RX8	Fixed/Cash/Other	399,000.000	\$310,253.91	\$74.89	\$298,799.13	4.01%	2.99%
UNITED STATES TREAS NTS . 20300930 4.625%	91282CHZ7	Fixed/Cash/Other	329,000.000	\$336,282.59	\$103.76	\$341,376.98	4.46%	3.42%

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Holdings Summary

Individual Account

Account Holdings*

Security Description	Security ID	Strategy	Shares or Face Value	Cost	Market Price	Market Value	Yield	Percent of Portfolio
Fixed Income								
Other								
ISHARES TR BROAD USD HIGH	USHY	Fixed/Cash/Other	2,548.000	\$90,615.54	\$37.51	\$95,575.48	6.69%	0.96%
MANNING AND NAPIER FD INC CORE BOND W	MCBWX	Fixed/Cash/Other	245,434.026	\$2,437,681.99	\$9.26	\$2,272,719.08	4.95%	22.78%
Total Fixed Income				\$4,333,978.55		\$4,141,409.38	4.38%	41.51%
Cash								
CASH BALANCE	USD	Fixed/Cash/Other	123,844.180	\$123,844.18	\$1.00	\$123,844.18	-	1.24%
Total Cash				\$123,844.18		\$123,844.18	-	1.24%
ACCRUED INCOME						\$12,954.53		
Total Portfolio				\$8,992,905.83		\$9,989,962.23	2.40%	

*Tax reporting requirements are not reflected and the data presented may not be accurate for tax purposes.



About Your Investment Performance Review

Separately Managed Accounts

Your review is designed to provide the information you need to evaluate and monitor your portfolio's progress. It includes both absolute and relative performance for active accounts. Performance is measured on a total return basis and presented inclusive of reinvested dividends and accrued income. Effective 1/1/2011, performance returns are also inclusive of accrued foreign dividend estimates sourced from Bloomberg. Gross-of-fee performance is shown after brokerage commission and reinvested income but before investment management and advisory fees. Net-of-fee performance is shown after brokerage commission, reinvested income, investment management and advisory fees, and if applicable, non-discretionary advisory fees. Effective 1/1/2016 for broker held, fee-based accounts, performance is shown also after brokerage charges (which may include commissions and other charges as contracted with your broker). Taxable equivalent yields for municipal bond portfolios will utilize the highest possible Federal tax bracket in the return assumptions. Performance for periods greater than one year is annualized. Market values and returns include accrued income. Past performance does not guarantee future results.

Elements in your review may differ slightly from your custodial statement. Your review is prepared on a "trade date" basis, reflecting holdings as of the day transactions are executed. Your custodial statements report holdings on a "settlement date" basis, which is typically one business day after the trade date. Market values in your review include accrued income, which may not be included in your custodial statement. In addition, cash flow reporting (if included) will illustrate both cash equivalents and in-kind security additions and withdrawals on a net basis. We urge you to compare the information contained in this account statement to the statement you receive from your custodian.

Please note that performance obtained from sources other than Manning & Napier Advisors, LLC may differ from those provided in your review. These differences may be due to different methods of analysis, pricing sources, or accounting procedures.

This report also does not take proper tax reporting requirements into consideration and is therefore, not accurate for tax purposes. Any discrepancy should be immediately reported to your representative.

Equity sector allocations presented illustrate sectors in which the portfolio is currently invested and are based on the Global Industry Classification Standard ("GICS"). GICS was developed by and is the exclusive property and a service mark of MSCI Inc. (MSCI) and Standard & Poor's, a division of S&P Global Inc. (S&P), and is licensed for use by Manning & Napier when referencing GICS sectors. Neither MSCI, S&P, nor any third party involved in making or compiling the GICS or any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification, nor shall any such party have any liability therefrom. Portfolio allocations and statistics presented are sourced and calculated by Archer and FactSet. Benchmark data is sourced from Archer and FactSet. For those portfolios utilizing the Manning & Napier Fund, Inc. characteristics charts may illustrate allocations based upon the individual securities within the portfolio, as well as the underlying holdings of the Fund.

Opinions and estimates offered constitute our judgment and are subject to change, as are statements of financial market trends, which are based on current market conditions. Index data and returns, portfolio characteristics, statistics, and statistical estimates obtained or derived from outside sources are based on information believed to be reliable. Manning & Napier Advisors, LLC does not guarantee the accuracy, adequacy or completeness of such information. All data is subject to revision. Should Manning & Napier become aware that information is materially not accurate, adequate, or complete, written notice shall be provided. Forecasts, estimates and certain information contained herein are based on proprietary research and are not intended to be relied upon as advice or interpreted as a recommendation, rather they are intended for illustrative purposes. Forecasts and estimates have inherent limitations. There is no guarantee that any forecast or estimate will be realized. Forecasts or estimates contained herein should not be construed as an estimate or promise of results a client portfolio may achieve.



About Your Investment Performance Review - Continued

Mutual Fund Accounts

Manning & Napier Fund, Inc. performance results, if displayed in the review, do not represent account specific performance; rather it is performance of the fund itself. These returns represent past performance and are not an indication or guarantee of future results. The investment return and principal value of an investment will fluctuate, so that an investor's shares when redeemed may be worth more or less than their original cost. Current performance may be lower or higher than the performance data quoted. Investors can obtain the most recent month-end performance or obtain a prospectus for more information about any of the Manning & Napier Fund, Inc. Series, at www.manning-napier.com or by calling (800) 466-3863.

Performance is calculated on a total return basis assuming reinvestment of dividends. Returns for periods greater than one year are annualized. Results are net of fund expense ratios. The Manning & Napier Fund, Inc. is managed by Manning & Napier Advisors, LLC. Manning & Napier Investor Services, Inc., an affiliate of Manning & Napier Advisors, LLC, is the distributor of Fund shares. Manning & Napier has contracted Rainier Investment Management, LLC, an affiliate of Manning & Napier and MNBD, to sub-advise the International Discovery Series. Manning & Napier has contracted Callodine Capital Management, LP, an affiliate of Manning & Napier and MNBD, to sub-advise the Callodine Equity Income Series.

Investment Objective

The Objective summary depicted in the review is an overview of the primary portfolio objectives. Individual portfolios are managed under the most current investment objective statement, contracts, and/or client specific restrictions or guidelines as provided. The description is not intended to alter, amend, interpret, or impact upon the agreed and written investment guidelines.

All investments involve risk. Please notify us whenever there is a significant change in your needs or financial situation as these could require change in your investment objectives. If you would like to reassess your portfolio's asset mix, investment guidelines or have any questions or concerns regarding your portfolio or the financial markets, please contact your representative. As always, we appreciate your continued confidence in our management.

Additional Portfolio Allocations

Assets Under Advisement represents account holdings that Manning & Napier provides investment advisory services on that are not held within a discretionary investment objective.

Client Managed Assets represents account holdings that are not held within a discretionary investment objective in which the client retains sole investment authority. Manning & Napier will facilitate trading of Client Managed Assets upon receipt of written direction.

Un-Reinvested Income represents accumulated portfolio income on a discretionary investment objective that is held separate from the investment portfolio for client distribution purposes.



Index Comparisons

An index is a hypothetical measure of performance of securities representative of a particular market. An index is unmanaged and its performance assumes reinvestment of dividends and does not factor in fees, expenses or taxes, which would lower performance. An index should only be used as a benchmark and compared to a portfolio with similar investment objectives. In certain cases, blended benchmarks have been illustrated to assist in your review of performance. These blended benchmarks consist of several broad and narrow based market indexes and are customized to reflect the specific asset allocation guidelines of your portfolio.

The following benchmarks may or may not be included in your report:

The **1-Year Treasury Bill Index** is comprised of securities backed by the U.S. Government with a maturity of one year. The index is a fully invested, includes reinvestment of income, and is rebalanced on a monthly basis. Index returns provided by Bloomberg.

The **Bloomberg U.S. Aggregate Bond (BAB) Index** is an unmanaged, market-value weighted index of U.S. domestic investment-grade debt issues, including government, corporate, asset-backed, and mortgage-backed securities, with maturities of one year or more. The **Bloomberg U.S. Government/Credit Bond (BGC) Index** is a market value-weighted measure of over 4,000 investment-grade corporate and government securities with maturities greater than one year. The **Bloomberg Municipal Bond (BMB) Index** covers the U.S. dollar-denominated long-term tax-exempt bond market and has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds and pre-refunded bonds. The Index measures all municipal bonds with at least one year until final maturity. The **Bloomberg Ba to B U.S. High Yield Bond (BB US HY) Index** includes US dollar-denominated, high yield, fixed-rate corporates bonds that are Ba or B rated. The **Bloomberg U.S. Credit Index** measures the investment grade, U.S. dollar-denominated, fixed-rate, taxable corporate and government-related bond markets. It is composed of the US Corporate Index and a non-corporate component that includes non-US agencies, sovereigns, supranationals and local authorities. The **Bloomberg U.S. Treasury Index** measures U.S. dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury. Subsets of these indices reflecting specific maturity ranges (i.e. 1-15 Year, 7 Year) may also be included in your report. Indices referencing Intermediate have a maturity range of 1-10 years.

BMB Index returns provided by Bloomberg, all other Bloomberg index returns provided by Intercontinental Exchange (ICE).

Returns for the **Consumer Price Index (CPI)** represent an estimate of the average price of consumer goods and services purchased by households, given the market price change for a constant basket of goods and services from one period to the next. Index returns provided by Bloomberg.

The **Dow Jones Industrial Average (DJA)** is a price-weighted average of 30 blue-chip U.S. stocks that are generally the leaders in their industry. Dividends are reinvested to reflect the actual performance of the underlying securities. Index returns provided by Bloomberg.

FTSE indices are unmanaged indices comprised of treasury securities backed by the U.S. government. Subsets of these indices reflecting specific maturity ranges (i.e. 1 Month, 2 Year) may also be included in your report. Indices referencing “BIG Bond” reflect bonds issues in the U.S. investment grade bond market. Index returns provided by Intercontinental Exchange (ICE).

The **Intercontinental Exchange (ICE) Bank of America (BoFA) U.S. Corporate & Government Index** includes all U.S. dollar denominated investment grade debt issues in the U.S. domestic market. The **ICE BoFA U.S. Municipal Bond Index** includes all U.S. dollar-denominated investment grade tax-exempt debt. The **ICE BoFA U.S. Treasury Index** includes all U.S. dollar-denominated sovereign debt publicly issued by the U.S. government in its domestic market. The **ICE BoFA U.S. Cash Pay High Yield (ICEHYCshPy) Index** includes all U.S. dollar-denominated below investment grade corporate debt securities currently in a coupon paying period. The **ICE BoFA Global Broad Market Index** tracks the performance of investment grade debt publicly issued in the major domestic and eurobond markets, including sovereign, quasi-government, corporate, securitized and collateralized securities. Subsets of these indices reflecting specific maturity ranges (i.e. 1-3 Year, 2 Year) and/or credit ratings (i.e. B-BB) may also be included in your report. Unless otherwise stated, qualifying securities must have at least one-year remaining term to maturity, at least 18 months to final maturity at the time of issuance, and a fixed coupon schedule. Index returns provided by ICE.



Index Comparisons - Continued

The **MSCI USA Investable Market Index (IMI)** is designed to measure large, mid, and small-cap representation across the U.S. market. The **MSCI World Index** is a free float-adjusted market capitalization index designed to measure large and mid-cap representation across 23 Developed Markets countries. The **MSCI ACWI (ACWI) Index** is designed to measure large and mid-cap representation across 23 Developed Markets and 24 Emerging Markets countries. The **MSCI EAFE (EAFE) Index** is a free float-adjusted market capitalization index designed to measure large and mid-cap representation across 21 Developed Markets countries (excluding the U.S. and Canada). The **MSCI USA Index** is a free float-adjusted market capitalization index designed to measure the performance of large and mid-cap segments of the U.S. market. Subsets of these indices that exclude specific countries (i.e. exUS), represent specific markets (i.e. Emerging Markets (EM)), and/or reflect specific characteristics (Value, Growth, REIT, Small Cap) may also be included in your report. Index returns are denominated in U.S. dollars, are net of withholding taxes, and assume daily reinvestment of net dividends thus accounting for any applicable dividend taxation. **ACWIXUS** and **EAFE** Index returns assume daily investment of gross dividends (which do not account for applicable dividend taxation) prior to 12/31/1998, as net returns were not available. Subsequent to 12/31/1998, the Index returns are net of withholding taxes. Index returns provided by Bloomberg. For reviews that reflect a since inception benchmark return, MSCI returns provided as a component of a blended benchmark prior to each indices' respective inception date (ACWIXUS: 12/31/1987; USA IMI and USA IMI Value: 05/31/1994; USA Growth and USA Value: 12/31/1997, and USA Small Cap: 12/29/2000) reflect the returns of the S&P 500 Index.

The **NASDAQ Composite Index** is a broad-based capitalization-weighted index of domestic and international based common type stocks listed in all three NASDAQ tiers: Global Select, Global Market and Capital Market. The NASDAQ Composite includes over 3,000 companies. Index returns provided by Bloomberg.

The **S&P 500 Index** is an unmanaged, capitalization-weighted measure comprised of 500 leading U.S. companies to gauge U.S. large cap equities. The **S&P 500 Equal Weight Index** is the equal-weight version of the S&P 500 index. The Index includes

the same constituents as the S&P 500, but each company is allocated a fixed weight of 0.2% of the Index total at each quarterly rebalance. The **S&P ADR Index** is an unmanaged, capitalization-weighted measure of non-U.S. companies within the S&P Global 1200 Index which are listed as Level I or Level II ADRs, or ordinary shares in the U.S. The **S&P Global 1200 Index** is designed to measure the performance of the global equity market and is a composite of seven headline indices provided by S&P. Subsets of these indices that represent specific characteristics, such as capitalization (i.e. Small/Mid Cap) may also be included in your report. The index accounts for the reinvestment of regular cash dividends, but not for the withholding of taxes. Index returns provided by Bloomberg.

Conservative Term Composite Benchmark: The Conservative Term Composite Benchmark is a blend of the MSCI USA Investable Market Index (IMI), MSCI ACWI ex USA Index (ACWIXUS), and Bloomberg U.S. Intermediate Aggregate Bond Index (BIAB) in the following weightings: 15% IMI, 5% ACWIXUS, and 80% BIAB through 05/31/2012; 22% IMI, 8% ACWIXUS, and 70% BIAB through 12/31/2021; and 15% IMI, 5% ACWIXUS, and 80% BIAB beginning 01/01/2022. Because the fund's asset allocation will vary over time, the composition of the fund's portfolio may not match the composition of the Conservative Term Composite Benchmark. USA IMI returns provided prior to 05/31/1994, the inception date of USA IMI, reflect the returns of the S&P 500 Index.

Target Composite Benchmarks: The Target Composite Benchmark represents the performance of the retirement target date collectives' asset classes according to their respective weightings, as adjusted over time to reflect the increasingly conservative asset allocations. The following indices are used to calculate the Target Composite Benchmarks: MSCI USA Investable Market Index (IMI), MSCI ACWI ex USA Index (ACWIXUS), and Bloomberg U.S. Aggregate Bond Index (BAB) and/or Bloomberg U.S. Intermediate Aggregate Bond Index (BIAB). Because the target date fund's asset allocation will vary over time, the composition of the target date portfolio may not match the composition of the comparative Target Composite Benchmark.

Index data referenced herein is the property of the index sponsors, their affiliates and/or third-party suppliers and has been licensed for use by Manning & Napier. The index sponsors, their affiliates and third-party suppliers accept no liability in connection with its use. Data provided is not a representation or warranty, express or implied, as to the ability of any index to accurately represent the asset class or market sector that it purports to represent and none of these parties shall have any liability for any errors, omissions, or interruptions of any index or the data included therein. For additional disclosure information, please see: <https://go.manning-napier.com/benchmark-provisions>.



Descriptions of Terms & Methodology

If you would like more information on how to read the charts and tables in this report or a description of additional indices used for comparison purposes, please contact your financial advisor.

Annualized Return: Returns for periods longer than one year are expressed as “annualized returns,” equivalent to the compounded rate of return. This is the annual increase in value of an investment, including compounding of interest and dividends; as well as price appreciation that is expressed as a percentage of the starting price.

Bond Rating: A grade given to bonds that indicates their credit quality. Private independent rating services such as Standard & Poor’s, Moody’s and Fitch provide these evaluations of a bond issuer’s financial strength, or its ability to pay a bond’s principal and interest in a timely fashion. Bond ratings may be expressed as letters ranging from ‘AAA’, which is the highest investment grade, to ‘C’ (“Junk”), which is the lowest grade. Different rating services use the same letter grades, but use various combinations of upper and lower case letters and numbers to differentiate themselves.

AAA and AA: High credit-quality investment grade

A and BBB: Medium credit-quality investment grade

BB, B, CCC, CC, C: Low credit-quality (below investment grade)

D: Bonds in default for non-payment of principal and/or interest

Convexity: A measure of the rate of change in the relationship between bond prices and bond yields that demonstrates how the duration of a bond changes as the interest rate changes. Convexity is used as a risk-management tool, and helps to measure and manage the amount of market risk to which a portfolio of bonds is exposed.

Dividend Yield: A financial ratio reflecting the portion of profits a company pays to its shareholders. Dividend Yield is calculated by dividing the expected dividend by the market value of the security.

Effective Duration: The average time it takes to collect a bond’s interest and principal repayment. It is a measure of the sensitivity of the price (the value of principal) of a fixed- income investment to a change in interest rates. Effective duration takes into account that expected cash flows will fluctuate as interest rates change. Duration is expressed as a number of years.

Emerging Markets: Emerging market countries are defined utilizing the MSCI Emerging Markets IndexSM.

Estimated Annual Income: Based upon the assets held as of the end-date of the review, an estimate of income from dividends and interest which may be received over the next twelve months. This estimate should be used for general reference purposes only, since it assumes a static portfolio (no purchases, sales or contributions or withdrawals) and utilizes independent company projections of dividend activity which are subject to change.

Forward Price to Earnings (P/E): A financial ratio comparing the price of a company’s stock to the forecasted earnings the company generates.

Key Strategies: The firm’s equity approach contains elements of value and growth investing by focusing on business and valuation fundamentals. This approach allows portfolios to move fluidly among sectors and styles, according to which areas offer the greatest opportunity under prevailing conditions.

Strategic Profile: Uncovers companies whose sustainable competitive advantages give them a favorable earnings outlook relative to valuation.

Hurdle Rate: Identifies survivors in cyclical industries that are currently depressed.

Bankable Deal: Acknowledges under-valued assets with catalysts to unlock them.

Maturity Classifications: Maturity is the length of time until the principal amount of the bond must be repaid. Fixed income securities may be classified by a maturity range. Short- Term Fixed Income represents securities with maturities less than three years. Intermediate-Term Fixed Income represents securities with maturities greater than three years, but less than ten years. Long-Term Fixed Income represents securities with maturities greater than ten years.

Market Capitalization: The market value of a company’s outstanding shares. This figure is found by taking the stock price and multiplying it by the total number of shares outstanding. Small capitalization stocks have a market capitalization less than \$5.0 billion. Mid capitalization stocks have a market capitalization of greater than \$5.0 to less than \$20 billion. Large capitalization stocks have a market capitalization of greater than \$20 billion.

Market Cycle: A period of history encompassing a full range of stock market conditions such as one market peak to the next, or one market bottom (often called a trough) to the next. By showing both positive and negative periods, a market cycle provides a representative time frame for measuring investment performance.



Descriptions of Terms & Methodology - Continued

Net Asset Value (NAV): The total value of the assets, including stocks, bonds, and/or other securities, owned by a mutual fund, less all liabilities, divided by the number of outstanding shares. This value does not include any sales charges, such as a load or 12b-1 fee. The NAV is calculated once each day after the close of the market.

Par Value: Face value of a bond.

Preferred Stocks: A class of ownership in a corporation that has a higher claim on the assets and earnings than common stock. Preferred stock generally has a dividend that must be paid out before dividends to common stockholders and the shares usually do not have voting rights. The precise details as to the structure of preferred stock is specific to each corporation. Preferred Stock will be classified as fixed income within the report.

Pre-Refunded Bond (Pre-Refund): A type of bond issued to fund another callable bond, where the issuer actually decides to exercise its right to buy its bonds back before the scheduled maturity date. The proceeds from the issue of the lower yield and/or longer maturing pre-refunding bond will usually be invested in Treasury bills (T-bills) until the scheduled call date of the original bond issue occurs.

Price to Book: A financial ratio reflecting a stock's price relative to the book value of its assets.

Price to Cash Flow: A financial ratio reflecting a stock's price relative to its operating cash flow per share.

Price to Sales: A financial ratio reflecting a stock's price relative to its revenues.

Tax-Equivalent Yield: Pre-tax yield that must be received on a taxable security to provide the holder the same after-tax yield as that earned on a tax-exempt security.

Time-Weighted Return: The investment performance of a unit of assets held continuously for the entire time period measured. This rate provides an effective standard for comparing the performance of different portfolios, in which cash flow could vary considerably. The money manager usually cannot control the timing or the amount of contributions to or withdrawals from a portfolio. Because the time-weighted rate reduces the impact of money flows, it is an appropriate means of appraising the portfolio manager's ability to make the assets of the portfolio perform.

US Treasury (Treasury): A marketable, fixed-interest U.S. government debt security.

Yield to Maturity: The yield earned on a bond from the time it is acquired until the maturity date. The calculation of YTM takes into account the current market price, par value, coupon interest rate and time to maturity.

Yield to Worst: The lowest yield possible to earn on a bond, taking into account factors such as call provisions, prepayments, and other features that may affect the bond's cash flows.