

**Worcester Retirement System
Worcester, Massachusetts
(A Component Unit of the
City of Worcester, Massachusetts)**

**Comprehensive Annual Financial Report
Fiscal Year Ended December 31, 2013**

**Worcester Retirement System
Worcester, Massachusetts
(A Component Unit of the City of Worcester, Massachusetts)**

**Comprehensive Annual Financial Report
For the Fiscal Year Ended December 31, 2013**

**Prepared by the Staff of the
Worcester Retirement System**

Table of Contents

Introductory Section:

- 2. Letter of Transmittal
- 6. Retirement Board Members
- 6. Administrative Staff
- 6. Organizational Chart
- 7. Consultants and Professional Services
- 8. Certificate of Achievement for Excellence in Financial Reporting

Financial Section:

- 10. Independent Auditors' Report
- 13. Management's Discussion & Analysis
 - Basic Financial Statements:**
 - 18. Statement of Plan Net Position
 - 19. Statement of Changes in Plan Net Position
 - 20. Notes to Financial Statements
 - Required Supplementary Information:**
 - 29. Schedule of Funding Progress
 - 29. Schedule of Employer Contributions
 - Supplementary Information:**
 - 30. Schedule of Administrative Expenses
 - 31. Schedule of Investment and Consultants' Expenses

Investment Section:

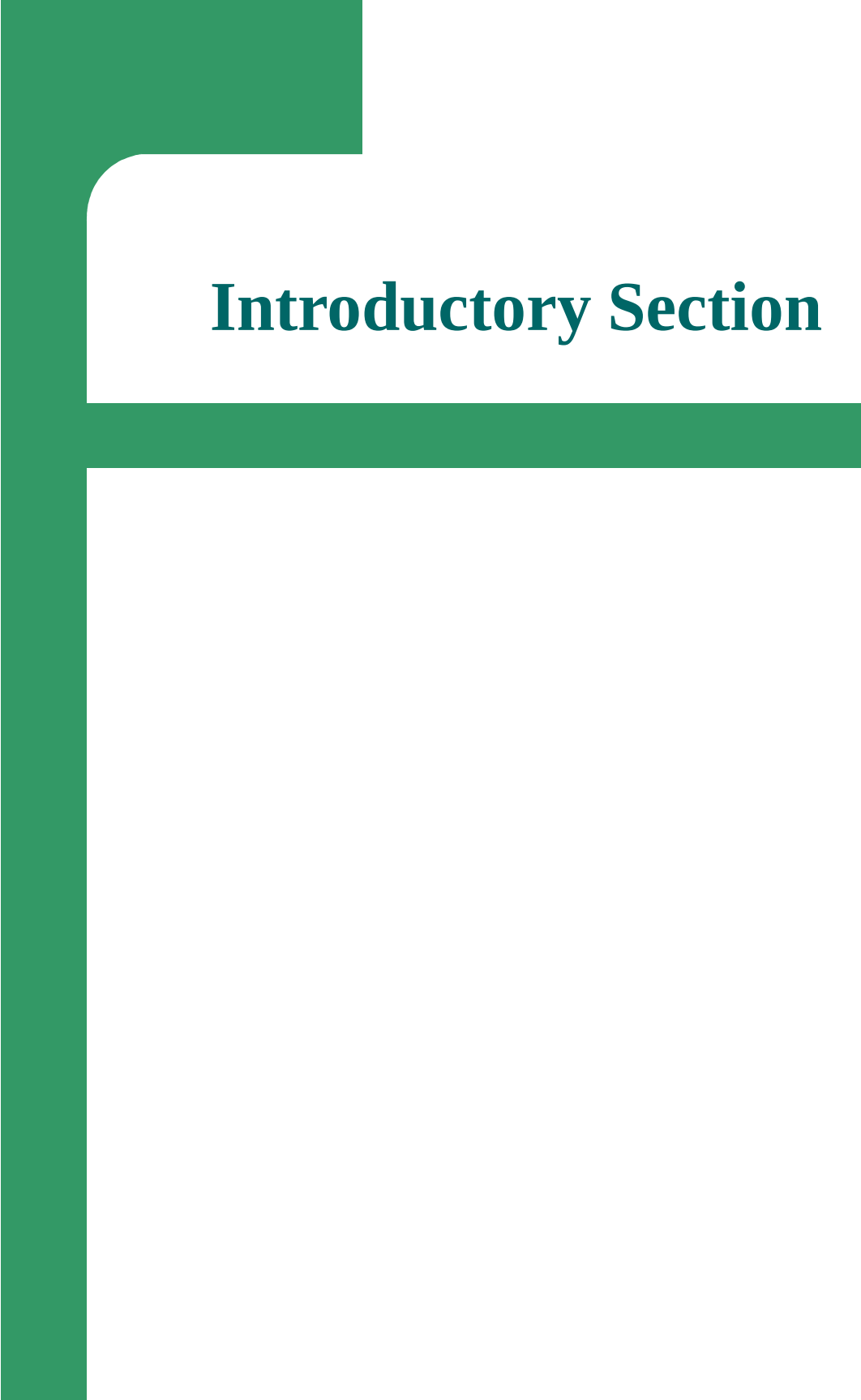
- 34. Report on Investment Activity
- 34. Outline of Investment Policies
- 42. Investment Results
- 43. Asset Allocation
- 48. Ten Largest Stock Holdings by Fair Value
- 48. Ten Largest Fixed Income Holdings by Fair Value
- 49. Schedule of Fees and Commissions
- 51. Commissions to Brokers
- 53. Investment Summary
- 54. Liquidity Profile

Actuarial Section:

- 56. Actuarial Certification Letter (Segal Consulting)
- 58. Summary of Actuarial Assumptions and Actuarial Cost Method
- 62. Schedule of Active Member Valuation Data
- 63. Schedule of Retirants and Beneficiaries added to and removed from Rolls
- 63. Solvency Test
- 63. Analysis of Financial Experience
- 64. Summary of Plan Provisions

Statistical Section:

- 71. Schedule of Additions to Plan Net Position by Source
- 71. Schedule of Deductions from Plan Net Position by Type
- 72. Schedule of Total Change in Net Position
- 72. Schedule of Benefit Expenses by Type
- 72. Schedule of Refund Expenses by Type
- 73. Schedule of Retired Members by Type of Benefit
- 73. Schedule of Average Benefit Payments (2011-2013)
- 74. Schedule of Average Benefit Payments (2004-2010)
- 74. Schedule of Participating Employers



Introductory Section

Worcester Retirement System

Room 103 City Hall Worcester Massachusetts 01608 Phone (508) 799 1062

June 23, 2014

Worcester Retirement Board
City Hall Room 103
455 Main Street
Worcester, MA 01608

Dear Members of the Board:

We are pleased to submit the Comprehensive Annual Financial Report (CAFR) of the Worcester Retirement System (WRS) for the year ended December 31, 2013. The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the WRS for its CAFR for the year ended December 31, 2012. This was the tenth consecutive year that the WRS has achieved this prestigious award. In order to be awarded a Certificate of Achievement, the WRS must publish an easily readable and efficiently organized CAFR. This report must satisfy both accounting principles generally accepted in the United States of America and applicable legal requirements. Management accepts responsibility for the contents of the report.

A Certificate of Achievement is valid for a period of one year. We believe that our current CAFR continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

GASB Statement No. 34 requires that management provide a narrative introduction, overview and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to compliment the MD&A and should be read in conjunction with it. The WRS's MD&A can be found immediately following the report of the independent auditor.

History of the WRS

The WRS became operative as of January 1, 1945. The WRS is a contributory defined benefit plan that covers eligible employees of the City of Worcester (except Worcester Public School teachers) and the Worcester Housing Authority (WHA). The WRS is administered by a five member Board consisting of the City Auditor, two representatives elected from the membership, a City Manager representative and a fifth member chosen by the other four who cannot be an employee, retiree or official of the City. One Board member is elected from the group to serve as Chairman.

Investment Results

The WRS has an Investment Policy Statement which establishes investment objectives and policies providing the framework for investments. This Policy is reviewed on an annual basis. A summary of the Investment Policy is included in the Investment Section. The System uses a custodian bank to safeguard the assets and ensure proper settlement and recording of transactions.

An integral part of the overall investment policy is the asset allocation policy. This is designed to provide an optimal mix of asset classes to both preserve principal and provide adequate funds to pay pension benefits. Both traditional assets (cash, bonds, domestic stocks, domestic fixed income and mortgages) and nontraditional assets (real estate, international stock and fixed income, venture capital, mezzanine financing, hedge funds, timber, natural resources, infrastructure and leveraged buyouts) are part of the mix. The investment market results have demonstrated the importance of a diversified asset allocation.

WRS time-weighted investment return of 12.8% for 2013 was more than both the actuarial expected rate of return and the Investment policy benchmark. Please refer to the Investment Section of this CAFR for more information on investment results.

Chapter 68 of the Acts of 2007, An Act to Reduce the Stress on Local Property Taxes Through Enhanced Pension Fund Investment, was signed into law July 25, 2007. This Act amends MGL chapter 32 section 22 and directs the Public Employee Retirement Administration Commission (PERAC) to conduct an annual analysis of all Massachusetts public pension plans. The assessment includes the investment performance and funded ratio of each system every January 1st in accordance with the established methodology and standard. Systems failing to meet the standard are mandated to transfer the systems assets to the Massachusetts Pension Reserve Investment Management (PRIM) Board. The WRS met these mandated standards for each year since 2007 and is not subject to the mandatory transfer of system assets.

Major Initiatives

Benefits

A cost of living adjustment (COLA) was granted to eligible retirees and survivors effective July 1, 2013. The 3% COLA was paid on a base of \$13,000 (maximum \$390). The WRS has granted the maximum 3% allowed by law since enactment of the legislation in 1997 in all but one year (2011-2.5%).

Signed into law on November 18, 2011, Chapter 176 of the Acts of 2011 became effective February 16, 2012 and is thought to reform and modernize the pension laws for Public employees in Massachusetts. The law creates a new benefit structure for employees hired on or after April 2, 2012. The new age factors established will increase the minimum age for retirement. Calculation of the pension will use a 5 year average and contains anti-spiking provisions for both new members and current employees.

Administration

The WRS long term Ex-Officio member and Chairman retired at the beginning of 2014. Robert V. Stearns has replaced him as the new Ex-Officio member.

Chapter 176 of the Acts of 2011 has a number of corporate governance provisions that require the WRS adhere to specific procurement procedures for investment management and related services. The Act also mandates training and financial disclosures of all Board members.

The WRS strives to provide quality service and information to active and retired members and their beneficiaries. To assist in this effort, we maintain and continually update our Internet site through the City web page, which includes our CAFR, at www.worcesterma.gov/retirement-board

Internal and Budgetary Controls

The WRS management is responsible for maintaining a system of internal controls designed to provide reasonable, but not absolute, assurance that the financial statements are fairly stated in accordance with accounting principles generally accepted in the United States of America while adequately safeguarding the assets. We believe the current internal controls accomplish this goal. The concept of reasonable assurance recognizes that the cost of internal controls should not exceed their anticipated benefits (also, the evaluation of costs and benefits requires estimates and judgments by management).

The WRS budget is presented to and approved by the Board each year. All the expenditures are reviewed by the Board at its monthly meeting.

Accounting

This report has been prepared in accordance with accounting principals generally accepted in the United States of America. The basic financial statements are presented in accordance with the principles of the Government Accounting Standards Board (GASB), including guidelines established by GASB Statements No. 25, *Financial reporting for defined benefit plans*; No. 34, *Basic Financial Statements – and Management’s Discussion and Analysis – for State and Local Governments*; No. 37, *Basic Financial Statements – and Management’s Discussion and Analysis – for State and Local Governments*; Omnibus, No. 38, *Certain Financial Statement Note Disclosures*; No. 40 *Deposit and Investment Risk Disclosures (an amendment of GASB No. 3)*; and No. 63 *Financial Reporting of Deferred Outflows of Resources, Deferred Inflows of Resources, and Net Position*.

CliftonLarsonAllen LLP, a firm of licensed certified public accountants, performed the audit for the WRS. The goal of the independent audit is to provide reasonable assurance that the financial statements for the year ended December 31, 2013 are free of material misstatements. The report of the independent auditors is included in the Financial Section of this report. CliftonLarsonAllen LLP has issued an unqualified opinion on the WRS’s basic financial statements for the year ended December 31, 2013.

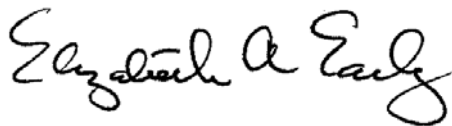
Actuarial Funding

The WRS has retained the services of The Segal Company, an independent actuarial firm, to conduct an annual actuarial valuation of the WRS. The funded ratio is one measure of the financial condition of the WRS. The funded ratio is calculated by dividing the net assets of the WRS by the projected pension liability. The projected pension liability is a measure of the present value of total pension benefits estimated to be payable in the future to both current and future retirees and/or beneficiaries. A higher funding ratio gives the members a greater degree of assurance that their pension benefits are secure. As of January 1, 2014, the funded ratio of the WRS was calculated at 65.81%, a 2.54% increase on an actuarial basis from the prior year. On a market value basis the funded ratio has increased from 65.28% to 68.94%.

Acknowledgements

We are pleased to have once again completed this report in accordance with the GFOA Certificate of Achievement guidelines. We are proud to provide an annual report to our members that is both easy to read and comprehensive. We feel it is important to provide a CAFR for our members and other interested parties to follow the progress of the WRS. The publication of this report represents the combined efforts of the WRS staff, auditor, actuary, and investment consultants. We would like to acknowledge and thank them for their hard work and collaboration.

Respectfully submitted,

A handwritten signature in black ink, reading "Elizabeth A. Early". The signature is written in a cursive, flowing style.

Elizabeth A. Early
Executive Secretary

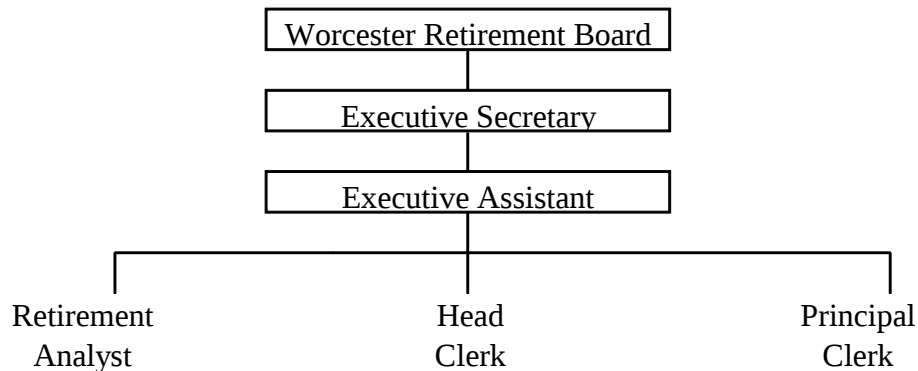
Retirement Board Members

		<u>Terms</u>
Robert V. Stearns	Ex-Officio Member	01/08/2014 - 01/07/2017
Stephen F. Wentzell	City Manager Appointee	At the discretion of the City Manager
Elizabeth A. Early	Elected Member	11/01/2013 - 10/31/2016
John F. Mahan	Elected Member	01/01/2012 - 12/31/2014
Thomas Wade	Appointed Member	01/09/2012 - 01/08/2015

Administrative Staff

Elizabeth A. Early	Executive Secretary
Judith McMillen	Executive Assistant
Donna McCaffrey	Retirement Analyst
Barbara Zecco	Head Clerk
Eileen Powers	Principal Clerk

Organizational Chart*



* Does not include investment professionals who provide services to the WRS. A list of these investment professionals is located on the following page. In addition, please refer to the Schedule of Fees and Commissions located within the Investment Section of this report starting on page 49.

CONSULTANTS AND PROFESSIONAL SERVICES

DOMESTIC EQUITY MANAGERS

Lee Munder Capital Group
Boston, MA
PENN Capital Management Co, Inc
Philadelphia, PA
State Street Global Advisors
Boston, MA

DOMESTIC FIXED MANAGERS

OPUS Investment Management, Inc.
Worcester, MA
Loomis Sayles & Company, L.P.
Boston, MA

INTERNATIONAL EQUITY MANAGERS

Acadian Asset Management
Boston, MA
Dimensional Fund Advisors
Austin, TX
Lazard Asset Management
New York, NY
State Street Global Advisors
Boston, MA

ALTERNATIVE CAPITAL INVESTMENT MANAGERS

American Securities Partners
New York, NY
Ascent Venture Management
Boston, MA
Boston Capital Ventures
Boston, MA
Boston Millennia Partners
Boston, MA
Capital International Private Equity Fund
Irvine, CA
Charlesbank Capital Partners
Boston, MA
Global Infrastructure Partners
New York, NY
Harvest Partners, LLC
New York, NY
INVESCO Private Capital, Inc.
Atlanta, GA
Newstone Capital Partners, L.P.
Los Angeles, CA
Northstar Capital, LLC
Minneapolis, MN
PIMCO Funds
New York, NY
Standard Life Investments Limited
Edinburgh, UK
The Riverside Company
New York, NY
Vitruvian Partners
London, England
White Deer Energy TE L.P.
Houston, TX

REAL ESTATE MANAGERS

AEW Capital Management, L.P.
Boston, MA
Bailard Fund Services, Inc.
Foster City, CA
Heitman Investment Management
Chicago, IL
Intercontinental Real Estate Corp.
Boston, MA
INVESCO Core Real Estate
Dallas, TX
RMK Timberland a div. of Regions Bank
Atlanta, GA
Mass PRIM
Boston, MA
Apollo Real Estate Advisors
Atlanta, GA
Hancock Timber Resource Group
Boston, MA

HEDGE FUNDS

Aetos Alternatives Management, LLC
New York, NY
Blackstone Alternative Asset Management
New York, NY
Mass PRIM
Boston, MA

LEGAL ADVISORS

The Law Offices of Michael Sacco
Southampton, MA

DISABILITY INSURANCE CONSULTANTS

Disability Management Services, Inc.
Springfield, MA

INDEPENDENT AUDITORS

CliftonLarsonAllen LLP
Burlington, MA

INVESTMENT ADVISORS

Meketa Investment Group
Westwood, MA

ACTUARIAL CONSULTANT

The Segal Company
Boston, MA

CUSTODIAN

State Street Corporation
Boston, MA

COMMISSION RECAPTURE BROKERS

BNY ConvergeX Group
New York, NY

SECURITIES LENDING

State Street Corporation
Boston, MA



Government Finance Officers Association

**Certificate of
Achievement
for Excellence
in Financial
Reporting**

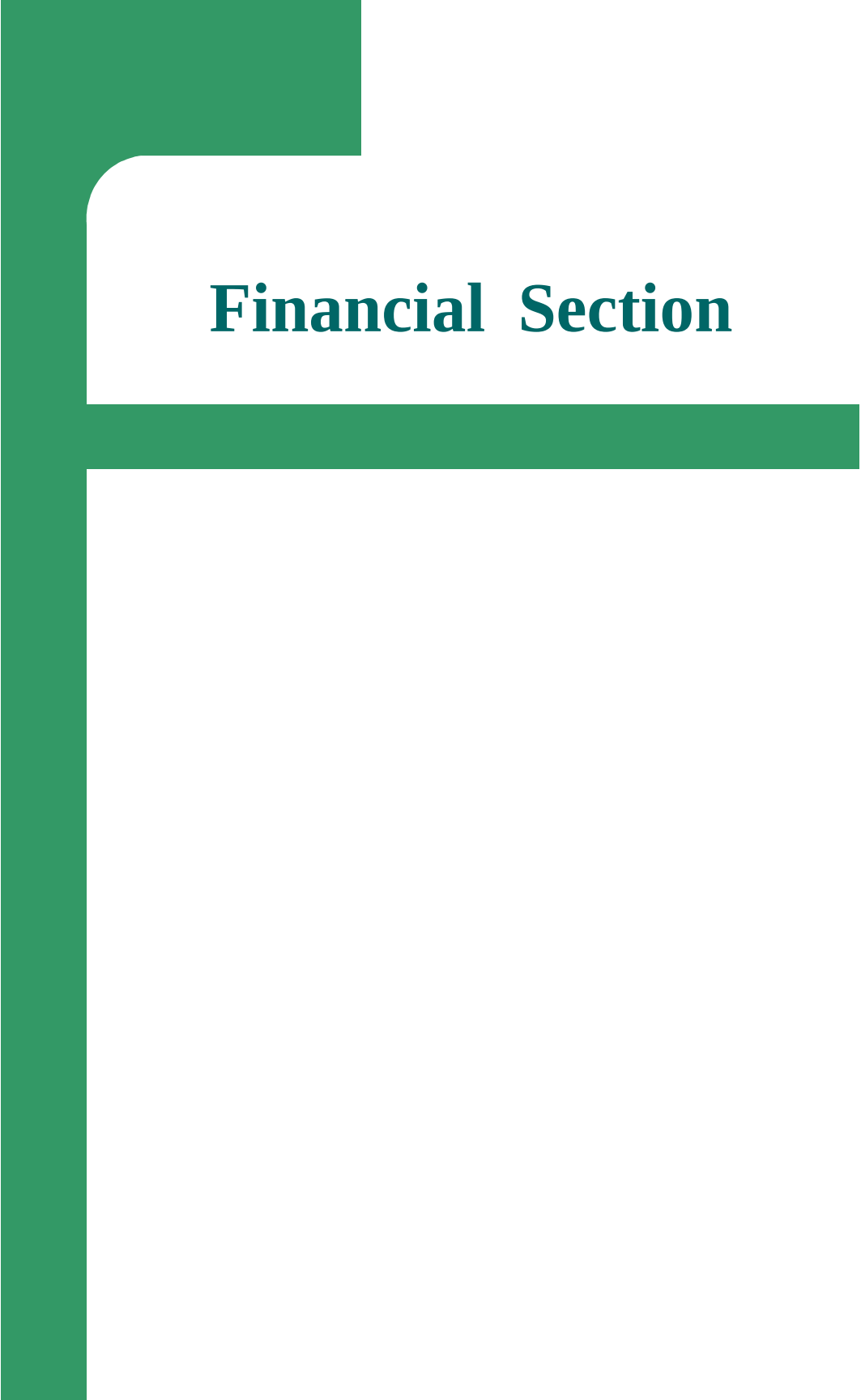
Presented to

**Worcester Retirement System
Massachusetts**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

December 31, 2012

Executive Director/CEO



Financial Section

Independent Auditors' Report

To the Honorable Retirement Board
Worcester Retirement System

We have audited the accompanying financial statements of the Worcester Retirement System (WRS), a component unit of the City of Worcester, Massachusetts, as of and for the year ended December 31, 2013, and the related notes to the financial statements, as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the WRS as of December 31, 2013, and the respective change in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis (located on pages 13 through 17) and historical pension information (located on page 29) be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

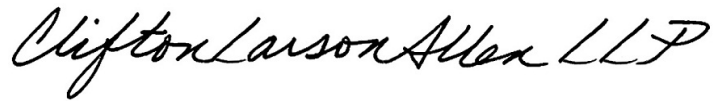
Our audit was conducted for the purpose of forming an opinion on the WRS's financial statements. The supplementary information, introductory section, investment section, actuarial section and statistical section are presented for purposes of additional analysis and are not a required part of the financial statements.

The supplementary information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory section, investment section, actuarial section and statistical section have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated June 23, 2014 on our consideration of the WRS' internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering WRS' internal control over financial reporting and compliance.

A handwritten signature in black ink that reads "CliftonLarsonAllen LLP". The signature is written in a cursive, flowing style.

CliftonLarsonAllen LLP

Boston, MA

June 23, 2014

Management's Discussion & Analysis

Our discussion and analysis of the Worcester Retirement System's (WRS) financial performance provides an overview of the WRS's financial activities for the fiscal year ended December 31, 2013. Please read it in conjunction with the transmittal letter in the Introductory Section, at the front of this report, and the financial statements that follow this discussion. The Management's Discussion and Analysis (MD&A) is intended to serve as an introduction to the WRS's financial statements, as well as to offer readers of the WRS's financial statements a narrative view and analysis of the WRS's financial activities.

Financial Highlights

The WRS's funding objective is to meet long-term benefit obligations through contributions and investment income. As of December 31, 2013, the funded ratio was 65.81% based on the actuarial value of assets at that date.

Net position increased during the year by \$77.5 million or 10.6%, because of strong investment returns. Net position is the residual of the WRS's assets in excess of the WRS's liabilities as of the statement date. The WRS's assets are held in trust to meet future benefit payments.

Total investment gains were \$93.5 million. The time weighted investment return was 12.8%, beating the actuarial benchmark of 7.75%, and consistent with the return of 13.6% in the previous year.

Overview of the Financial Statements

The financial statements are comprised of a Statement of Plan Net Position, Statement of Changes in Plan Net Position, Notes to the Financial Statements and Required Supplementary Information.

The **Statement of Plan Net Position** presents information on the WRS's assets and liabilities and the resulting net assets held in trust for pension benefits. This is calculated using the following formula: $\text{Assets} - \text{Liabilities} = \text{Net Assets held in trust for pension benefits}$. This statement reflects the WRS's investments at fair value, as well as cash, receivables and other assets and liabilities. The Statement of Plan Net Position reports the financial position of the WRS at December 31, 2013. Over time, the increase or decrease in net position serves as a useful indicator of the WRS's financial health.

The **Statement of Changes in Plan Net Position** presents information showing how the WRS's net assets held in trust for pension benefits changed during the year ended December 31, 2013. It reflects contributions by members and participating employers along with deductions for retirement benefits, refunds, withdrawals, and administrative expenses. Investment income during the period is also presented showing income from investing and securities lending activities.

Management's Discussion & Analysis

The *Notes to the Financial Statements* provide additional information that is essential for the reader to gain a full understanding of the data provided in the financial statements.

The *Required Supplementary Information* includes this MD&A and schedules of funding progress and employers' contributions.

Financial Analysis

The WRS's total assets as of December 31, 2013 were \$833.2 million and were primarily comprised of cash and cash equivalents, receivables, and investments. Total assets increased \$67.0 million, or 8.7%, from the prior year primarily due to investment gains.

Total liabilities as of December 31, 2013 were \$26.2 million and were primarily comprised of collateral held under securities lending arrangements and amounts due to the Commonwealth of Massachusetts and other systems. Total liabilities decreased by \$10.5 million.

The following tables present current and prior year data on the WRS's financial statements.

Plan Net Position

Net assets of the WRS were \$806.9 million at the close of the fiscal year, summarized as follows:

Statement of Plan Net Position

(In thousands of dollars)

Assets	2013	2012
Cash and cash equivalents	\$ 3,248	\$ 3,826
Investments	794,229	726,534
Securities lending short-term collateral investment pool	23,667	34,050
Receivables:		
Interest due and accrued	543	955
Due from Commonwealth of Massachusetts and other systems	530	511
Receivable for securities sold	10,951	210
Other	78	135
Total assets	<u>833,246</u>	<u>766,221</u>
Liabilities		
Accounts payable and accrued expenses	283	378
Due to Commonwealth of Massachusetts and other systems	2,293	2,187
Payable for securities purchased	13	139
Collateral held on securities lending transactions	<u>23,667</u>	<u>34,050</u>
Total liabilities	<u>26,256</u>	<u>36,754</u>
Net position held in trust for pension benefits	<u>\$ 806,990</u>	<u>\$ 729,467</u>

Management's Discussion & Analysis

Changes in Plan Net Position

The WRS's total net position increased by \$77.5 million during the current fiscal year and is summarized as follows:

Statement of Changes in Plan Net Position

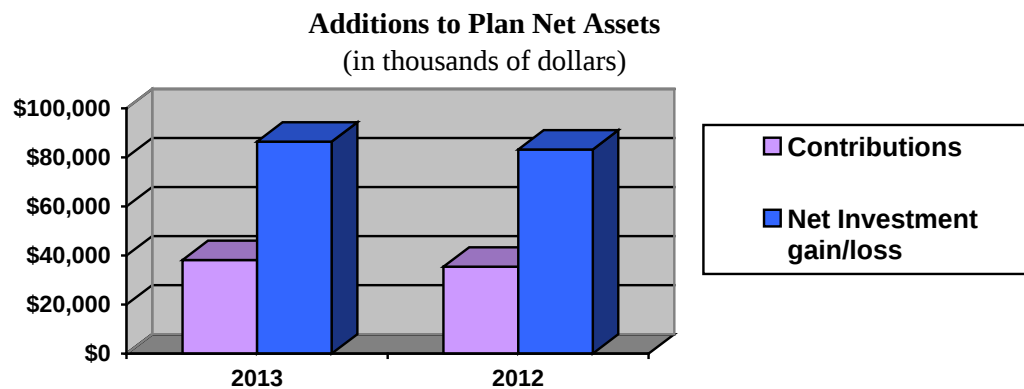
(In thousands of dollars)

	<u>2013</u>	<u>2012</u>
Additions		
Contributions:		
Employers	\$ 38,149	\$ 35,409
Plan members	16,209	15,358
Reimbursements from Commonwealth of Massachusetts	1,956	1,529
Reimbursements from other Systems	530	511
Net investment income:		
Interest and dividends	11,419	12,343
Securities lending income	118	124
Net realized and unrealized gains (losses)	86,458	83,257
Less: management fees	(4,398)	(4,425)
Less: borrower rebates & fees	<u>(59)</u>	<u>(46)</u>
 Total additions	 <u>150,382</u>	 <u>144,060</u>
 Deductions		
Benefits payments to plan members and beneficiaries	68,152	66,303
Reimbursements to other systems	2,245	2,195
Refunds and transfers of plan member accounts to other systems	1,899	1,567
Administrative expenses	<u>563</u>	<u>529</u>
 Total deductions	 <u>72,859</u>	 <u>70,594</u>
 Change in plan net position	 77,523	 73,466
 Net position held in trust for pension benefits:		
Beginning of year	<u>729,467</u>	<u>656,001</u>
 End of year	 <u><u>\$ 806,990</u></u>	 <u><u>\$ 729,467</u></u>

Management's Discussion & Analysis

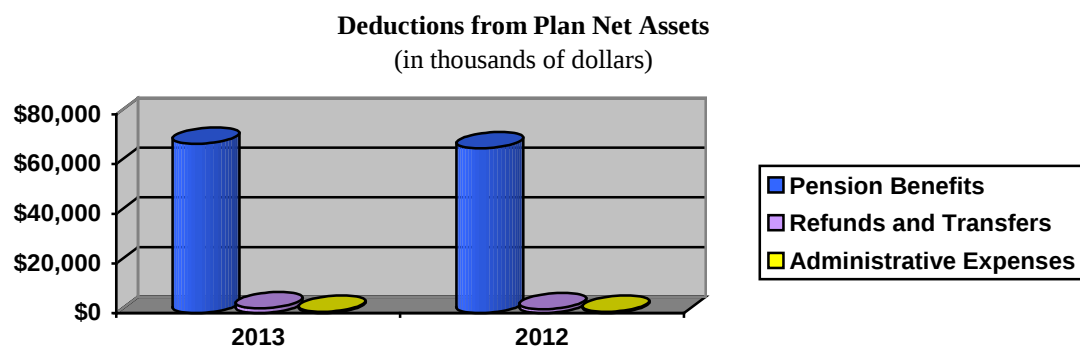
Additions to Plan Net Position

The amount needed to finance benefits is accumulated through the collection of employers' and plan members' contributions, reimbursements from the Commonwealth of Massachusetts for pre-1998 COLA's and through earnings on investments. Contributions and net investment gains for calendar year 2013 resulted in total gains to net position of \$150.3 million. Employers' contributions increased by \$2.7 million in 2013. The WRS had a net investment gain of \$93.5 million in 2013 versus a gain of \$91.3 million in 2012.



Deductions from Plan Net Position

The primary deductions of the WRS include the payment of pension benefits to participants and beneficiaries, refunds of contributions, and the costs of administering the WRS. Total deductions from net position for 2013 were \$72.9 million, which represents an increase of 3.2% over deductions of \$70.6 million in 2012. The payment of pension benefits increased by \$1.8 million, or 2.8%, over the previous year. The increase in these expenses resulted from an increase in benefit payments to newer retirees with higher average compensation and a small decrease in the number of pensioners and beneficiaries.



Management's Discussion & Analysis

Overall Financial Position of WRS

Due to a continuous improvement in the financial markets, the WRS has experienced an increase in its investment portfolio for the fiscal year ending December 31, 2013. Management believes the WRS is in a solid financial position and will be able to meet its obligations.

Contacting WRS's Financial Management

This financial report is designed to provide the Board, our membership, taxpayers, investors, and creditors with a general overview of the WRS's financial results and to demonstrate WRS's accountability for the funding it receives. If you have any questions about this report or need additional financial information, contact the Worcester Retirement System, City Hall Room 103, 455 Main Street, Worcester, Massachusetts 01608.

WORCESTER RETIREMENT SYSTEM
(A Component Unit of the City of Worcester, Massachusetts)
Statement of Plan Net Position
December 31, 2013

Assets

Cash & Cash Equivalents	\$ 3,248,260
Investments:	
Equities	17,504,617
Fixed Income	99,935,845
Pooled Equities	401,468,296
Pooled Fixed Income	40,766,997
Real Estate	106,652,773
Alternative Investments	127,900,504
Total investments	794,229,032
Securities lending short-term collateral investment pool	23,667,065
Receivables:	
Accrued interest and dividends	542,906
Due from Commonwealth of Massachusetts and other systems	529,517
Receivable for securities sold	10,951,011
Other	77,928
Total receivables	12,101,362
Total plan assets	833,245,719

Liabilities

Accounts payable and accrued expenses	282,991
Due to Commonwealth of Massachusetts and other systems	2,292,523
Payable for securities purchased	12,859
Collateral held on securities lending transactions	23,667,065
Total plan liabilities	26,255,438

Net position held in trust for pension benefits	\$ 806,990,281
--	-----------------------

The accompanying notes are an integral part of the financial statements.

WORCESTER RETIREMENT SYSTEM
(A Component Unit of the City of Worcester, Massachusetts)
Statement of Changes in Plan Net Position
Year ended December 31, 2013

Additions:

Contributions:	
Employers	\$ 38,148,683
Plan members	16,208,897
Reimbursements from Commonwealth of Massachusetts	1,955,659
Reimbursements from other systems	<u>529,517</u>
Total contributions	<u>56,842,756</u>
Investment income (loss):	
Interest and dividends	11,419,740
Securities lending income	118,403
Net realized and unrealized gains	86,457,756
Less: management fees	(4,397,686)
Less: borrower rebates and fees under securities lending program	<u>(59,113)</u>
Net investment income	<u>93,539,100</u>
Total additions	<u>150,381,856</u>

Deductions:

Benefit payments to plan members and beneficiaries	68,152,214
Reimbursements to other systems	2,245,227
Refunds and transfers of plan member accounts to other systems	1,898,740
Administrative expenses	<u>562,729</u>
Total deductions	<u>72,858,910</u>
Change in plan net position	77,522,946

Net position held in trust for pension benefits:

Beginning of year	<u>729,467,335</u>
End of year	\$ <u><u>806,990,281</u></u>

The accompanying notes are an integral part of the financial statements.

Notes to Financial Statements
December 31, 2013

1. Summary of Significant Accounting Policies

(a) Financial Reporting Entity

Because of the significance of its operational and financial relationship with the City of Worcester, Massachusetts (City), the Worcester Retirement System (WRS) is included as a blended component unit in the City's financial statements.

(b) Basis of Accounting

The accompanying financial statements are presented on the accrual basis of accounting.

(c) Revenue Recognition

Contributions are recognized as additions in the period when they become due pursuant to formal commitments, statutory or contractual requirements. Investment income is recognized when earned.

(d) Benefits and Refunds

Benefits and refunds to WRS members and beneficiaries are recognized as deductions when due and payable in accordance with the terms of the WRS.

(e) Cash and Investments

Cash is considered to be cash on hand, demand deposits and short-term investments with an original maturity of three months or less from the date of acquisition.

Investments are reported at fair value. Fair values of investments are based on quotations from a national securities exchange except for pooled funds, alternative investments and real estate investments, for which fair values are estimated as detailed below.

Pooled Funds

The fair value of shares in managed investment pools is based on unit values reported by the funds.

Alternative Investments

Alternative investments are recorded at fair value as determined in good faith by the investment firms (such as general partners of venture capital firms) after consideration of pertinent information, including current financial position and operating results, price-earnings multiples and available market prices of similar securities, the nature of securities, marketability, restrictions on disposition and other appropriation and do not necessarily represent amounts which might ultimately be realized, since such amounts depend on future circumstances and cannot reasonably be determined until individual securities are liquidated.

Real Estate

The fair value of real estate funds is based on independent third-party appraisals. The investment managers of the funds are responsible for the reported value of those investments. However, because of the inherent uncertainty of valuation, those estimated values may differ significantly from the values that would have been used had a ready market for the real estate existed, and the differences could be material.

(f) Basis of Investment Transactions

Purchases and sales of investments are recorded on the trade date. Transactions remaining unsettled as of year-end are recorded as payables for securities purchased and as a receivable for securities sold.

(g) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of additions and deductions during the reporting period. Fair values of real estate funds and venture capital funds have been estimated in the absence of readily available market values, and these estimates may be materially different than values that would have been used had a ready market existed.

(h) Administrative Expenses

Administrative expenses are financed by investment income.

2. Plan Description

(a) General

The WRS is a cost-sharing multiple-employer public employee retirement system established by the City on June 12, 1944, under Massachusetts General Laws (MGL), Chapter 32, and is regulated by the Massachusetts Public Employee Retirement Administration Commission (PERAC). The WRS is a defined benefit pension plan that covers certain eligible employees of the City and the Worcester Housing Authority.

Membership in the WRS is mandatory immediately upon the commencement of employment for all permanent full-time employees working at least 20 hours weekly, except for City school teachers, who participate in the Massachusetts Teachers' Retirement System.

Membership in the WRS was as follows at December 31, 2013:

Active employees	3,293
Pensioners and beneficiaries	2,733
Inactive employees	<u>712</u>
Total members	<u><u>6,738</u></u>
Number of participating employers	<u><u>2</u></u>

The WRS is administered by a five-person Retirement Board (the Board) consisting of the City Auditor, who serves *ex-officio*; two members who are elected by the participants in or retired from the service of the WRS; a fourth member appointed by the City Manager; and a fifth member appointed by the other members.

(b) Significant Plan Provisions and Requirements

Benefit provisions and state law establishes contribution requirements of the WRS. Members of the WRS become vested after 10 years of creditable service. Normal retirement occurs at age 65 (age 67 if hired on or after April 2, 2012), except for special situations and the City's police officers and firefighters, whose normal retirement age is 55 (age 57 if hired on or after April 2, 2012).

For employees hired prior to April 2, 2012, the annual amount of the retirement allowance is based on the member's final three-year average salary multiplied by (1) the number of years and full months of creditable service at the time of retirement and (2) a percentage based on age at retirement in accordance with a schedule provided by state law. Assuming normal retirement at age 65, this percentage is 2.5%, which is reduced for individuals who retire prior to age 65 to reflect the longer pay out period.

For employees hired on or after April 2, 2012, the annual amount of the retirement allowance is based on the member's final five-year average salary multiplied by (1) the number of years and full months of creditable service at the time of retirement and (2) a percentage based on age at retirement in accordance with a schedule provided by state law. Assuming normal retirement at age 67, this percentage is 2.5%.

Employees may elect early retirement after 20 years of service or at any time after attaining age 55 (age 60 if hired on or after April 2, 2012) with 10 years of eligible service. Plan members who become permanently and totally disabled may be eligible to receive a disability retirement allowance. The amount of benefits to be received depends on several factors, including the member's age, compensation, veteran status, years of service and whether or not the disability is work-related. In addition, certain death benefits exist for beneficiaries of employees who die in active service.

Under MGL, c.32 Section 3(8)(c), members leaving the City's employment to work for other Massachusetts governmental units requires the WRS transfers their accumulated account balances and creditable service to the retirement system of their new employer. Other such retirement systems are in turn required to make comparable transfers to the WRS for employees coming to work at the City or the Worcester Housing Authority. Per statute, the PERAC actuary shall consider length of service as well as acceptance of military service credit and salary cap provisions if applicable in calculating the liability.

3. Deposits and Investments

Deposits and investments made by the WRS are governed by the MGL c.32. The WRS has the ability to invest in equity securities, corporate bonds, annuities and other specified investments in accordance with state laws and regulations.

Deposits - Custodial Credit Risk

Custodial credit risk for deposits is the risk that, in the event of a bank failure, the WRS's deposits may not be recovered. The WRS's policy for custodial credit risk of deposits is to rely on FDIC insurance coverage for the first \$250,000 of deposits held at each financial institution. As of December 31, 2013, the WRS's bank balance of \$835,364 was not exposed to custodial credit risk.

Investments Summary

The WRS's investments at December 31, 2013 are presented below. All investments are presented by investment type, with debt securities presented by maturity.

Investment Type	Fair Value	Investment Maturities (in Years)			
		Less Than 1	1 - 5	6 - 10	More Than 10
<u>Debt Securities:</u>					
U.S. Treasuries.....	\$ 57,481,702	\$ 650,747	\$ 24,646,678	\$ 19,582,481	\$ 12,601,796
U.S. Agencies.....	13,885,724	730	2,879,876	1,583,211	9,421,907
Corporate bonds.....	15,169,656	-	7,412,501	5,272,964	2,484,191
Money market mutual funds.....	3,070,962	3,070,962	-	-	-
Securities lending short-term collateral investment pool.....	23,667,065	23,667,065	-	-	-
Other fixed income.....	54,165,760	40,766,997	695,846	-	12,702,917
Total debt securities.....	167,440,869	\$ 68,156,501	\$ 35,634,901	\$ 26,438,656	\$ 37,210,811
<u>Other Investments:</u>					
Equity securities.....	17,504,617				
Equity mutual funds.....	401,468,296				
Real estate investments.....	106,652,773				
Alternative investments.....	127,900,504				
Total other investments.....	653,526,190				
Total investments.....	\$ 820,967,059				

Investments - Interest Rate Risk of Debt Securities

Interest rate risk for debt securities is the risk that changes in interest rates of debt securities will adversely affect the fair value of an investment. The WRS's policies for interest rate risk intend that the average duration of investments remain fairly stable over time and be focused in the intermediate range. The WRS's debt security managers are not permitted to make large-scale changes in portfolio duration in an attempt to anticipate interest rate changes. However, they are permitted to shift portfolio duration within a limited range (defined by their guidelines) in an effort to enhance performance.

Investments - Custodial Credit Risk

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty, the WRS will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. The WRS's policy for custodial credit risk of investments intends that all investments are either insured and/or registered in the name of the WRS.

Investments - Credit Risk of Debt Securities

Credit risk for debt securities is the risk that an issuer or other counterparty to a debt security will not fulfill its obligations. The WRS's policies for credit risk of debt securities includes a policy of an 80%/20% split between investment grade (BBB/Baa and above) and below investment grade (BB/Ba and lower) debt securities. In monitoring credit risk, the WRS relies on credit ratings assigned by Moody's and Standard & Poor's. As of December 31, 2013, the credit quality ratings of the WRS's debt securities are summarized as follows:

Quality Ratings *	Investment Type					Fair Value
	U.S. Agencies	Corporate Bonds	Money Market Mutual Funds	Securities Lending Pool	Other Fixed Income	
AAA.....	\$ 206,604	\$ -	\$ -	\$ -	\$ 2,457,356	\$ 2,663,960
AA+.....	4,710,361	1,263,103	-	-	195,759	6,169,223
AA.....	1,140,472	472,185	-	-	-	1,612,657
AA-.....	977,609	-	-	-	-	977,609
A+.....	-	490,670	-	-	-	490,670
A.....	578,010	2,132,376	-	-	-	2,710,386
A-.....	-	1,423,002	-	-	451,041	1,874,043
BBB+.....	-	4,367,488	-	-	-	4,367,488
BBB.....	-	1,795,304	-	-	-	1,795,304
BBB-.....	-	2,727,992	-	-	-	2,727,992
BB.....	-	-	-	-	113,619	113,619
CCC.....	-	-	-	-	68,289	68,289
CC.....	-	-	-	-	175,879	175,879
D.....	-	-	-	-	4,358	4,358
Unrated.....	6,182,910	497,536	3,070,962	23,667,065	50,699,459	84,117,932
Total.....	\$ 13,795,966	\$ 15,169,656	\$ 3,070,962	\$ 23,667,065	\$ 54,165,760	\$ 109,869,409

* Per the rating scale of Standard & Poors, a national credit rating organization

Deposits and Investments – Foreign Currency Risk

Foreign currency risk is the risk that fluctuations in exchange rates will adversely affect the fair value of an investment or a deposit. The WRS's policy is to limit investments in non-U.S. dollar-denominated securities to not exceed 10% of the total market value of investments at all times. As of December 31, 2013, the WRS was not exposed to foreign currency risk.

Investments – Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the WRS's investment in a single issuer. The WRS's policy for concentration of credit risk instructs investment managers not to invest more than 5% of their portfolio at market value in a single security, or in the securities of a single issuer or its subsidiaries. U.S. Treasury, U.S. government agency, mutual fund and pooled fund investments are exempted from this restriction. As of December 31, 2013, the WRS was not exposed to concentration of credit risk.

4. Securities Lending Transactions

PERAC has issued supplemental regulations that permit the WRS to engage in securities lending transactions. These transactions are conducted by the WRS's custodian, who lends certain securities owned by the WRS to other broker-dealers and banks pursuant to a form of loan agreement. The WRS and the borrowers maintain the right to terminate all securities lending transaction on demand.

The custodian lends, at the direction of the lending agent, the WRS's securities and cash received (including both U.S. and foreign currency), U.S. government securities, sovereign debt of foreign countries, and irrevocable bank letters of credit as collateral. The custodian does not have the ability to pledge or sell collateral unless the borrower defaults. Borrowers are required to deliver cash collateral in amounts equal to not less than 105% of the market value of foreign securities on loan and 102% of the market value of domestic securities on loan (Required Collateral Level). If at any time the market value of the collateral for any loan decreases to 100% or less of the market value of the loaned securities, borrowers are required to provide additional collateral sufficient to increase the market value of the collateral to at least the Required Collateral Level.

The WRS does not impose any restrictions on the amount of securities lent on its behalf by the custodian. There were no failures by any borrowers to return loaned securities or pay distributions thereon, nor were there any losses from default of the borrowers or the custodian for the year ended December 31, 2013. The cash collateral received on each loan was invested; together with the cash collateral of other qualified tax-exempt plan lenders, in a collective investment pool. The relationship between the average maturities of the investment pool and loans was affected by the maturities of the loans made by other plans that invested cash collateral in the collective investment pool, which the WRS could not determine. At December 31, 2013, the WRS had no credit risk exposure to borrowers because the amounts the WRS owed the borrowers exceeded the amounts owed the WRS. The cash collateral held and the fair value of the securities on loan for the WRS at December 31, 2013 and 2012 was \$20,146,093 and \$23,667,065 and \$34,049,827 and \$19,097,602, respectively. Borrower rebates and fees paid to the broker were \$59,113 for the year ended December 31, 2013.

5. Funding Policy

Chapter 32 of MGL governs the contributions of plan members and the City. Depending on their employment date, active System members must contribute anywhere between 5%-9% of their gross regular compensation. Members hired after December 31, 1978 must contribute an additional 2% of regular compensation in excess of \$30,000. Employees in Group 1 hired on or after April 2, 2012 with 30 years of creditable service or greater will pay a base contribution rate of 6%. These deductions earn interest at a rate determined by PERAC that vests based upon years of service. Employers are required to pay into the WRS its share of the system-wide actuarial determined contribution that is apportioned among the employers based on annual covered payroll.

Contributions are recognized as additions in the period when they become due pursuant to formal commitments, statutory or contractual requirements. Benefits and refunds are recognized as deductions when incurred and administrative expenses are funded through investment earnings.

Except for a portion of benefits owed due to cost-of-living adjustments granted through June 30, 1998, member employers are required to contribute the remaining amounts necessary to finance benefits. Member employer contributions are determined by the annual actuarial valuation.

COLA's granted through June 30, 1998 are reimbursed by the Commonwealth of Massachusetts (the Commonwealth). COLA's granted subsequent to June 30, 1998 must be granted by the Board and are the responsibility of the WRS. COLA may be approved in excess of the Consumer Price Index but not to exceed 3% of the base retirement allowance.

A cost of living adjustment (COLA) was granted to eligible retirees and survivors effective July 1, 2013. The 3% COLA was paid on a base of \$13,000 (maximum \$390). The WRS has granted the maximum 3% allowed by law since enactment of the legislation in 1997 in all but one year (2011-2.5%).

The funded status of the WRS at January 1, 2014, the most recent actuarial valuation date, is as follows:

Actuarial Valuation Date	Actuarial Value of Plan Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio (%)	Covered Payroll	UAAL as a Percent of Covered Payroll (%)
	(a)	(b)	(b - a)	(a/b)	(c)	(b - a)/c
1/1/2014	\$ 770,334,007	1,170,625,635	400,291,628	65.81	\$ 168,856,039	237.06

The schedule of funding progress, presented as required supplementary information (RSI) following the notes to the financial statements, present multi-year trend information about whether the actuarial values of plan assets are increasing or decreasing over time relative to the AAL for benefits.

The significant methods and assumptions of the latest actuarial valuation are as follows:

Valuation Date	January 1, 2014
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level payments on the 2002 and 2010 ERI liability; payment on the remaining unfunded liability increases 4% per year, beginning with fiscal 2016 payment.
Remaining amortized period (period is closed)	4 years for the 2002 ERI liability 7 years for the 2010 ERI liability 17 years for the remaining unfunded liability 16 years is the equivalent single amortization period (ESAP)
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual and expected return on a market value basis, and is recognized over a five-year period, further adjusted, if necessary, to be within 10% of the market value.
<u>Actuarial assumptions:</u>	
Investment rate of return	7.75%
Projected salary increases	3.50% for 2014 and 2015 with an allowance for inflation of 3.00%, and 4.5% thereafter, with an allowance for inflation of 4.00% (previously, 4.50% for all years with an allowance for inflation of 3.50%)
Rate of inflation	3.5% (3.0% for 2014 and 2015)
Cost of living adjustments	3.00% of the first \$13,000 of retirement income

6. Legally Required Reserve Accounts

The balances in the WRS' legally required reserves as of December 31, 2013 are as follows:

Description	Amount	Purpose
Annuity Savings Fund	\$ 178,648,060	Active members' contribution balance
Annuity Reserve Fund	55,629,344	Retired members' contribution account
Military Service Fund	201,800	Members' contribution account while on military leave
Pension Reserve Fund	565,864,530	Amounts appropriated to fund future retirement
Pension Fund	<u>6,646,547</u>	Remaining net assets
Total	<u>\$ 806,990,281</u>	

All reserve accounts are funded at levels required by state law.

7. Implementation of GASB Pronouncements

During fiscal year 2013, the WRS implemented the following GASB pronouncements:

- Statement No. 61, *The Financial Reporting Entity: Omnibus—an amendment of GASB Statements No. 14 and No. 34*
- Statement No. 65, *Items Previously Reported as Assets and Liabilities*
- Statement No. 66, *Technical Corrections—2012—an amendment of GASB Statements No. 10 and No. 62*

The implementation of these pronouncements had no material reporting impact for the WRS.

Required Supplementary Information
December 31, 2013

The following reflects the Schedule of Funding Progress under the Entry-Age-Normal Actuarial Cost Method, which is the required method for all retirement systems governed by MGL, c.32. The WRS believes that this method of valuation more clearly reflects the actual funding status of the WRS.

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Plan Assets *	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio (%)	Covered Payroll	UAAL as a Percent of Covered Payroll (%)
	(a)	(b)	(b - a)	(a/b)	(c)	(b - a)/c
1/1/2009	\$ 631,893,995	929,569,464	297,675,469	67.98	\$ 166,050,095	179.27
1/1/2010	679,509,973	987,692,295	308,182,322	68.80	166,392,075	185.21
1/1/2011	724,997,822	1,025,075,423	300,077,601	70.73	157,720,871	190.26
1/1/2012	712,110,360	1,051,190,790	339,080,430	67.74	159,669,859	212.36
1/1/2013	706,950,694	1,117,438,564	410,487,870	63.27	166,094,906	247.14
1/1/2014	770,334,007	1,170,625,635	400,291,628	65.81	168,856,039	237.06

* The 1/1/2008 actuarial valuation valued plan assets at market value. The 1/1/2009 through 1/1/2014 actuarial valuations valued plan assets at the difference between the expected return and the actual investment return on a market value basis, recognized over a five-year period.

Schedule of Employer Contributions

Year Ended December 31	Annual Required Contributions (ARC)	Percentage of ARC Contributed (%)
2008	\$ 24,947,158	100
2009	28,505,066	100
2010	29,770,499	101
2011	32,706,347	100
2012	35,409,140	100
2013	38,148,683	100

Supplementary Information
December 31, 2013

Schedule of Administrative Expenses

The composition of administrative expenses for the year ended December 31, 2013 is as follows:

Personal services:	
Staff salaries	\$ 327,294
Board Member compensation	22,500
Insurance	<u>43,146</u>
Total personal services	<u>392,940</u>
Professional services:	
Legal expenses	58,241
Actuarial fees	29,000
Audit fees	21,000
Medical fees	<u>11,484</u>
Total professional services	<u>119,725</u>
Miscellaneous:	
Travel	6,134
Other	<u>43,930</u>
Total miscellaneous	<u>50,064</u>
Total administrative expenses	<u><u>\$ 562,729</u></u>

Schedule of Investment and Consultants' Expenses

Investment expenses
Management fees:

Domestic equity managers	\$ 269,152
Private equity capital fund managers	1,905,822
Domestic fixed income managers	322,267
International equity managers	707,224
Real estate investments managers	808,295
Consultant fees	191,250
Custodial fees	<u>193,676</u>

Total management fees	<u>4,397,686</u>
-----------------------	------------------

Securities lending fees:

Borrowers rebates	6,537
Fees	<u>52,576</u>

Total securities lending fees	<u>59,113</u>
-------------------------------	---------------

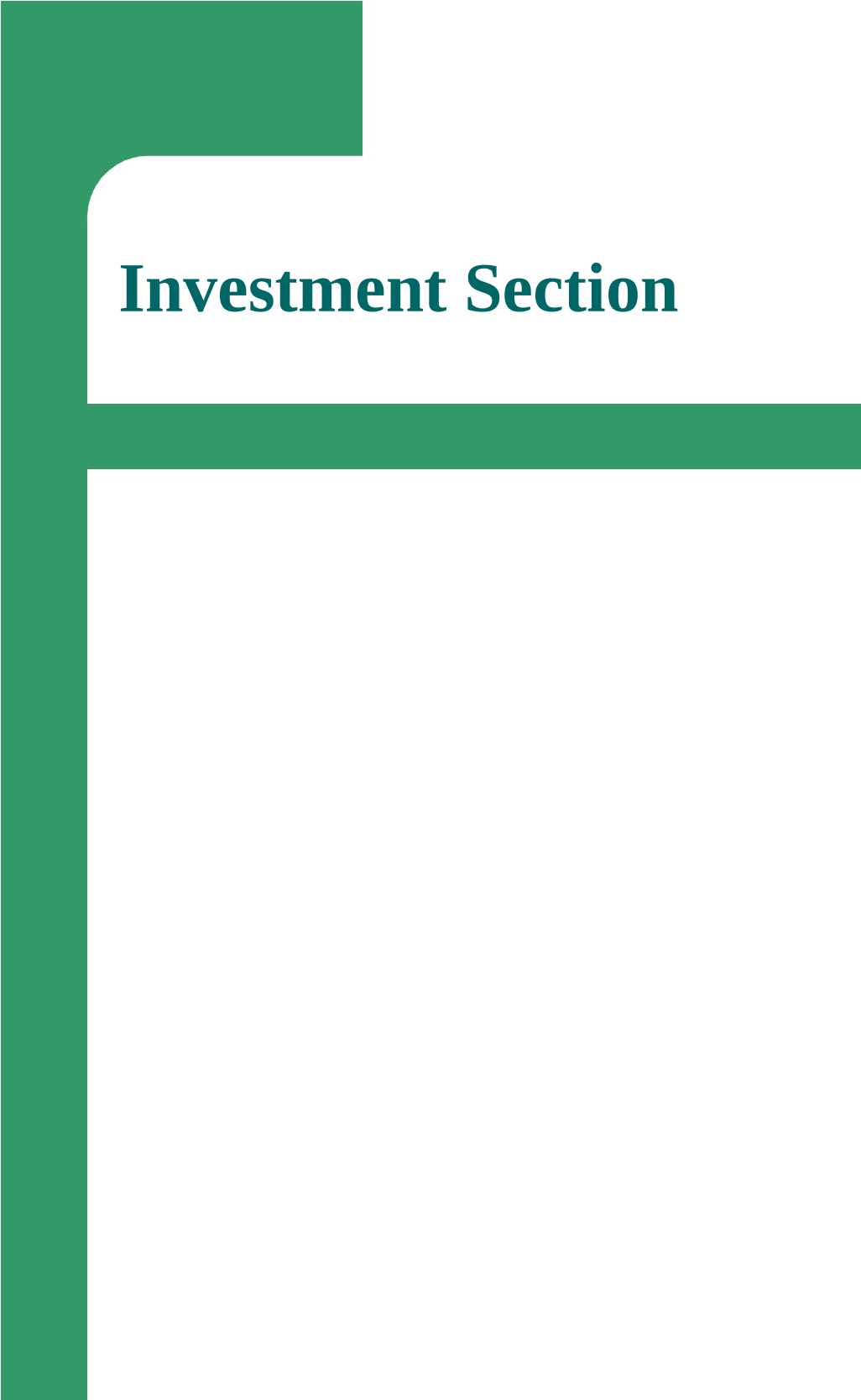
Total investment expenses	<u><u>\$ 4,456,799</u></u>
---------------------------	----------------------------

Consultant expenses:

Independent audit fees	\$ 21,000
Actuarial fees	29,000
Legal fees	58,241
Medical fees	<u>11,484</u>

Total consultant expenses	<u><u>\$ 119,725</u></u>
---------------------------	--------------------------

This page left intentionally blank.



Investment Section

REPORT ON INVESTMENT ACTIVITY

The information contained in the Investment Section of the Comprehensive Annual Financial Report (CAFR) has been prepared by Meketa Investment Group, acting as the investment consultant for the Worcester Retirement System (WRS). All investment information herein has been reconciled between the WRS, the investment managers hired by the WRS, WRS' custodian, and Meketa Investment Group. Performance for liquid, publicly-traded asset classes are presented utilizing time-weighted return calculations based upon market values. Alternative asset classes which are private and/or illiquid are presented utilizing dollar-weighted, rather than time-weighted returns.

OUTLINE OF INVESTMENT POLICIES

The purpose of this document is to set forth the goals and objectives of the WRS, and to establish guidelines for the implementation of investment strategy.

The Board of the WRS recognizes that a stable, well-articulated investment policy is crucial to the long-term success of the WRS. As such, the Board has developed this Investment Policy Statement with the following goals in mind:

- To clearly and explicitly establish the objectives and constraints that govern the investment of the WRS's assets,
- To establish a long-term target asset allocation with a high likelihood of meeting the WRS's objectives given the explicit constraints, and
- To protect the financial health of the WRS through the implementation of this stable long-term investment policy.

I. Worcester Retirement System Goals

The WRS was established to provide retirement income for the City of Worcester and WHA employees and their families. The WRS's assets are structured to provide real growth from capital gains and income, while maintaining sufficient liquidity to meet the WRS's benefit payments.

II. Investment Objectives

The investment strategy of the WRS is designed to ensure the prudent investment of funds in such a manner as to provide real growth of assets over time while protecting the value of the assets from undue volatility or risk of loss.

A. Risk Objectives

- To accept a level of market risk consistent with moderate interim volatility without sacrificing the potential for long-term real growth of assets.
- To use extensive diversification to minimize or eliminate completely exposure to company and industry-specific risks in the aggregate investment portfolio.
- To avoid extreme levels of volatility that could adversely affect WRS's portfolio.
- To limit the likelihood of investment return patterns that could negatively impact the funded status of the WRS.

B. Return objective

- Within the risk constraints outlined above, to achieve the highest real return possible.
- To achieve, over long time periods, investment returns consistent with the actuarial return on assets of 7.75%.

III. Investment Constraints

A. Legal and Regulatory

The WRS is a qualified defined benefit pension plan governed by the Massachusetts General Laws, Chapter 32 and Chapter 176 of the Acts of 2011. Investment procedures and restrictions stipulated under these regulations must be followed.

The Board intends to manage the assets of the WRS at all times in accordance with the provisions of the Public Employee Retirement Administration Commission (PERAC) and the Massachusetts General Laws, Chapter 32 and Chapter 176 of the Acts of 2011. The Board will retain legal counsel when appropriate to review contracts and provide advice with respect to applicable statutes and regulations.

B. Time Horizon

The WRS will be managed on a going-concern basis. The assets of the WRS will be invested with long-term time horizon (twenty years or more), consistent with the participant demographics and the purpose of the WRS.

C. Liquidity

The WRS exhibits a moderate need for interim liquidity. Cash outflows for benefit payments are expected to grow from approximately \$68.2 million to close to \$104.3 million over the next ten years, while cash flows are expected to rise from approximately \$56.3 million to \$77.4 million (covering normal costs and amortization payments) over the same period. This pattern results in a net negative cash flow of up to 3.3% of WRS assets, based on the WRS's year-end asset value and the actuarial assumed rate of return of 7.75% per year.

D. Tax Considerations

The WRS is a tax-exempt entity. Therefore, investments and strategies will be evaluated only on the basis of expected risks and potential returns.

IV. Risk and Return Considerations

The WRS's Board recognizes that a persistent positive relationship exists between risk and return, whether risk is described as possibility of loss or as interim volatility. The Board also recognizes that investors are rarely compensated for risks that can be eliminated through diversification. Within the risk and return parameters discussed above, the Board accepts the risks associated with investing in the capital markets (market risks), but will minimize wherever possible those risks for which the WRS is unlikely to be compensated (non-market or diversifiable risks).

V. Diversification

The WRS's Board recognizes that a primary element of risk control is diversification. Therefore, investments will be allocated across multiple classes of assets, chosen in part for their low correlation of returns. Within each asset type, investments will be distributed across many individual holdings, thus further reducing volatility. In addition, each investment manager's guidelines will specify the largest permissible investment in any one asset, and the largest permissible investment in any group of related assets.

The WRS's aggregate equity portfolio will be diversified by individual issue, capitalization, and industry (international equity portfolios will also be diversified by country). The WRS's aggregate fixed income portfolio will, at a minimum, be diversified by individual issue, by issuer, by maturity, and by industry. Residual cash will be swept by the custody bank into a short-term fixed income investment pool that is broadly diversified across individual issue and issuer. The WRS's aggregate real estate portfolio will be invested across a spectrum of geographic regions and property types.

The specific degrees of diversification within the above asset classes will be addressed in each manager's investment guidelines.

VI. Asset Allocation

The Board recognizes that the allocation of monies to various asset classes will be the major determinant of the WRS return and risk experience over time. Therefore, the WRS will allocate investments across those asset classes that, based on historical and expected returns and risks, provide the highest likelihood of meeting the WRS's investment objectives.

A. Permissible Asset Classes

Because investment in any particular asset class may or may not be consistent with the objectives of the WRS, the Board has specifically indicated those asset classes that may be utilized when investing the WRS's assets, and are summarized on the following page:

Asset Type	Asset Class	Purpose
Equity	U.S. Common Stocks	Total Return Potential
Equity	Non-U.S. Common Stocks	Total Return Potential Diversification
Equity	Private Equity	Total Return Potential Diversification
Fixed Income	Investment Grade Bonds	Return Stability Income
Fixed Income	TIPS	Return Stability Income
Fixed Income	High Yield Bonds/ Bank Loans	Total Return Potential Diversification Income
Fixed Income	Emerging Market Debt	Total Return Potential Diversification Income
Real Estate	Real Estate	Total Return Potential Diversification Income
Real Estate	Timber	Total Return Potential Diversification Income
Hedge Funds	Absolute Return Strategies	Return Stability Diversification
Infrastructure	Private Infrastructure	Total Return Potential Diversification Income
Natural Resources	Public/Private Natural Resources	Total Return Potential Diversification
Fixed Income / Equity	Global Tactical Asset Allocation	Total Return Potential Diversification
Cash	Cash Equivalents	Liquidity Return Stability

B. Expected Returns, Risks, and Correlations for Permissible Asset Classes

The risk and return behavior of the WRS will be driven primarily by the allocation of investments across asset classes. In determining the appropriate allocation, the expected return and risk behavior of each asset class and the likely interaction of various asset classes in a portfolio must be examined.

C. Long-Term Target Allocations

Based on the investment objectives and constraints of the WRS, and on the expected behavior of the permissible asset classes, the Board will specify a long-term target allocation for each class of permissible assets. These targets will be expressed as a percentage of the WRS's overall market value, surrounded by a band of permissible variation resulting from market forces.

The long-term target allocations are intended as strategic goals, not short-term imperatives. Thus, it is permissible for the overall System's asset allocation to deviate from the long-term target, as would likely occur during manager transitions, asset class restructurings, and other temporary changes in the WRS. Deviations from targets that occur due to capital market changes are discussed after the following table:

Asset Allocation Targets

	Target (%)	Range (%)
Domestic Equity	23%	18-28%
Foreign Equity¹	22%	17-27%
Investment Grade Bonds	7%	5-9%
Treasury Inflation-Protected Securities (TIPS)	6%	4-8%
High Yield Bonds / Bank Loans	5%	3-7%
Emerging Market Debt	3%	2-4%
Real Estate²	10%	8-12%
Timber	3%	2-4%
Private Equity²	8%	6-10%
Hedge Funds²	2%	1-3%
Global Tactical Asset Allocation	7%	5-9%
Infrastructure	2%	1-3%
Natural Resources	2%	1-3%
Cash³	0%	< 5%

¹ International equity assets include a 10% target to emerging market equities.

² The Retirement System is restricted by PERAC to target allocations of 10% for real estate, 10% for private equity, and 10% for hedge fund strategies. The System will make reasonable attempts to maintain those allocations, recognizing that market fluctuations and the funding requirements of alternative investments may result in short-term deviations from the targets

³ The cash target of zero defines the System's objective of keeping cash balances as low as possible, at least below 5% at all times. The Retirement Board is aware, however, that a certain cash balance is needed for the efficient operation of the System and its various portfolios.

D. Rebalancing

In general, cash flows to and from the WRS will be allocated in such a manner as to move each asset class toward its target allocation.

The Board recognizes that, periodically, market forces may move the WRS's allocations outside the target ranges. The Board also recognizes that failing to rebalance the allocations would unintentionally change the WRS's structure and risk posture. However, the Board understands that constant rebalancing would result in a significant increase in explicit and implicit trading costs to the WRS. Consequently, the Board has established a process to rebalance the allocations periodically.

On at least an annual basis, if any strategic allocation is outside the specified target range, assets will be shifted to return the strategy to the target range. The specific plan for rebalancing will identify those assets that can be shifted at the lowest possible risk and cost, if the rebalancing cannot be accomplished solely by allocating contributions and withdrawals.

E. Changes to Asset Allocation

Once established, permanent changes in the WRS's target asset allocation will take place only in response to significant changes in the objectives and constraints of the WRS, or in response to material changes in the fundamental nature or appropriateness of the asset classes themselves.

VII. Review of Investment Policy, Asset Allocation, and Performance

The Investment Policy Statement will be reviewed at least annually, and specifically upon each actuarial valuation, to ensure that the objectives and constraints remain relevant. However, the Board recognizes the need for a stable long-term policy for the WRS, and major changes to this policy statement will be made only when significant developments in the circumstances of the WRS occur. The Board will notify PERAC of any changes to this document within ten days of the effective date of those changes.

The asset allocation of the WRS will be reviewed on an on-going basis, and at least annually. When necessary, such reviews may result in a rebalancing of asset allocations. In general, the Board intends that the WRS will adhere to its long-term target allocations, and that major changes to these targets will be made rarely and only in response to significant developments in the circumstances of the WRS.

The Board will specifically evaluate the performance of the WRS relative to its objectives and to the returns available from the capital markets during the period under review. In general, the Board will utilize relative, rather than absolute, benchmarks in evaluating performance.

VIII. Trading and Proxy Voting by Investment Managers

In accordance with the fiduciary and other obligations imposed on investment managers by their agreements with the Board, all trades executed by managers must be for the exclusive benefit of the WRS's participants and beneficiaries. Managers are expected to seek best execution on all trades. This is addressed in the individual manager guidelines.

The Board recognizes that the right to vote proxies for securities held represents an asset of the WRS.

As such, the Board has specifically delegated the responsibility for voting all security proxies to the individual managers. The Board believes that the voting of proxies constitutes an investment decision by the managers, and that prudent voting of proxies is important to the overall performance of the WRS. Investment managers are expected to execute all proxy votes in a timely fashion and to provide a full written accounting of proxy votes on an annual basis.

IX. Management Structure

To diversify the WRS's assets so as to minimize the risk associated with dependence on the success of one enterprise, the Board Members have decided to employ a multi-manager team approach to investing System assets.

A consultant will be employed whose responsibilities will be to: 1) provide risk and return assumptions for various asset classes, 2) to diversify WRS so as to minimize risk, while enhancing the probability of achieving the WRS's return objectives, and 3) to evaluate the performance and compliance of investment managers.

Investment managers will be employed to utilize individual expertise within their assigned area of responsibility. Each manager will be governed by individual investment guidelines.

X. Implementation

All monies invested for the WRS after the adoption of this investment policy statement shall conform to this statement.

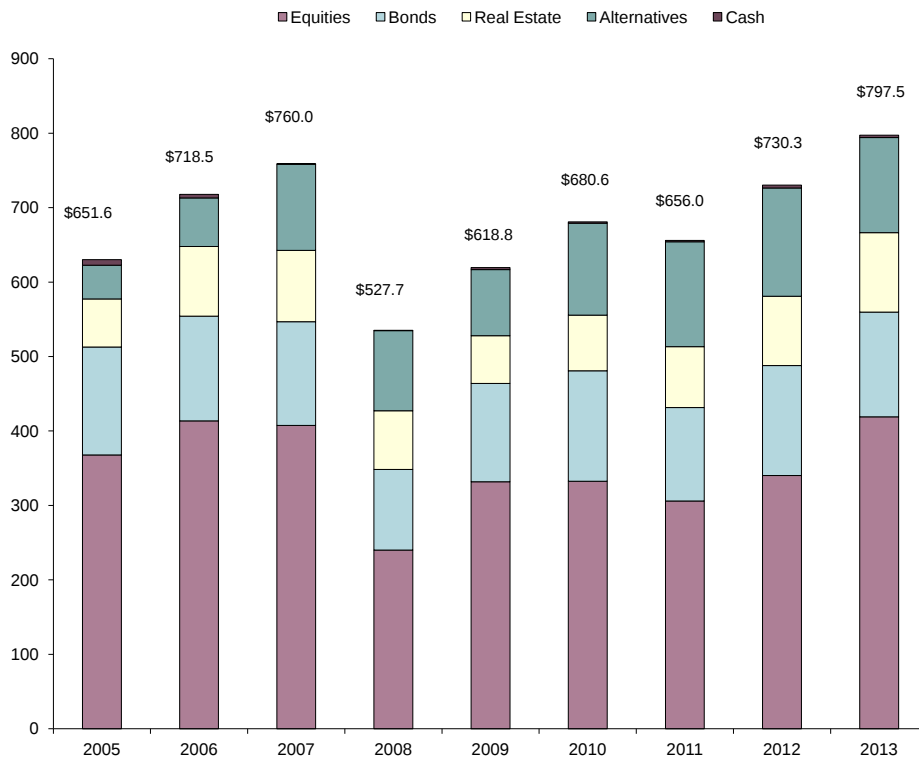
INVESTMENT RESULTS*

	4Q13	1 YR	3 YR	5 YR	10 YR	Since Inception	Inception Date
Total System	4.2	12.8	8.4	11.7	6.9	7.9	10/1/1995
CPI (inflation)	-0.5	1.5	2.1	2.1	2.4	2.3	
Total Equity	7.4	23.3	10.9	16.7	7.5	6.3	4/1/1998
Russell 3000	10.1	33.6	16.2	18.7	7.9	4.5	
MSCI ACWI Free (ex. U.S.) IMI	4.7	15.8	5.1	13.5	7.9	4.9	
Total Fixed Income	0.1	-1.3	4.7	9.5	5.9	6.3	1/1/1998
Barclays Universal	0.2	-1.3	3.8	5.4	4.9	5.6	
Total Open-End Real Estate	2.5	10.9	11.0	3.8	5.7	6.5	1/1/1999
NCREIF ODCE	3.2	14.0	13.6	3.7	7.2	7.9	
Total Absolute Return**	3.2	9.7	4.8	6.8	NA	4.8	7/1/2005
HFRI Fund of Funds Composite	3.5	8.8	2.4	4.8	3.4	3.0	
Total Global Tactical Asset Allocation	1.3	0.8	6.0	10.4	NA	3.5	8/1/2007
60% S&P 500 / 40% Barclays Aggregate	5.9	18.2	11.1	13.2	6.8	7.8	
Total Public Natural Resources	4.0	-2.4	NA	NA	NA	-7.4	5/1/2011
S&P Gbl LrgMid Cap Commod. & Res.	4.0	-2.6	-3.2	11.4	NA	-7.7	

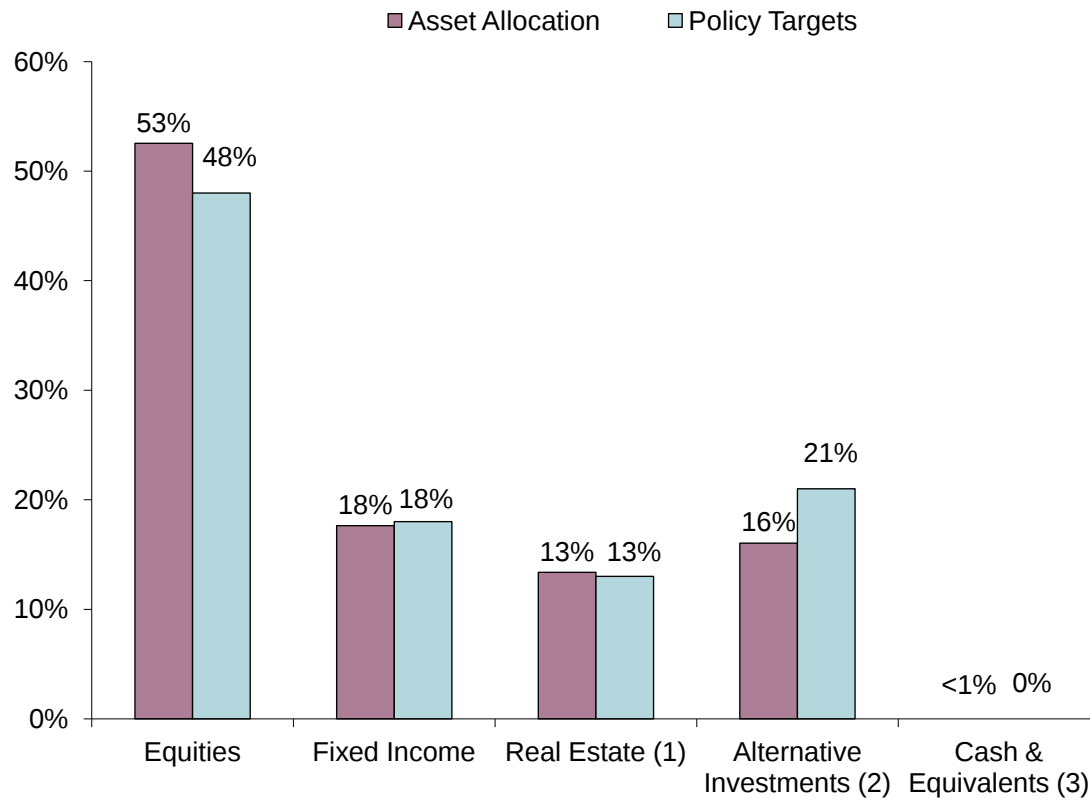
* The WRS's policy is a time weighted average of the representative asset class benchmarks.

** Other alternative investments include private equity, infrastructure, and natural resources limited partnerships that are measured by dollar-weighted, rather than time-weighted returns. For the calendar year period covered by this report, the WRS's private equity investments increased by \$2.7 million, including approximately \$5.5 million in capital called and \$5.7 million in distributions. The WRS's private infrastructure investments decreased by \$2.0 million, there was \$0.1 million in capital calls in 2013 and \$2.8 million distributed. The WRS's private natural resources investments increased by \$0.9 million, including \$2.1 million called and \$1.8 million distributed.

ASSET ALLOCATION - ASSET SIZE **(ROUNDED TO NEAREST MILLION)**



AGGREGATE ASSET ALLOCATION VS. POLICY TARGETS

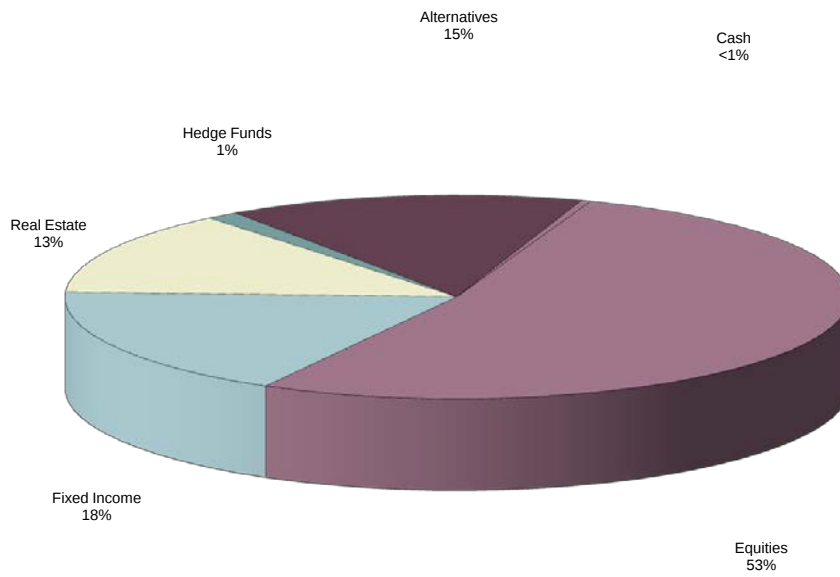


(1) The Real Estate policy target includes a strategic allocation to Timber of 3%.

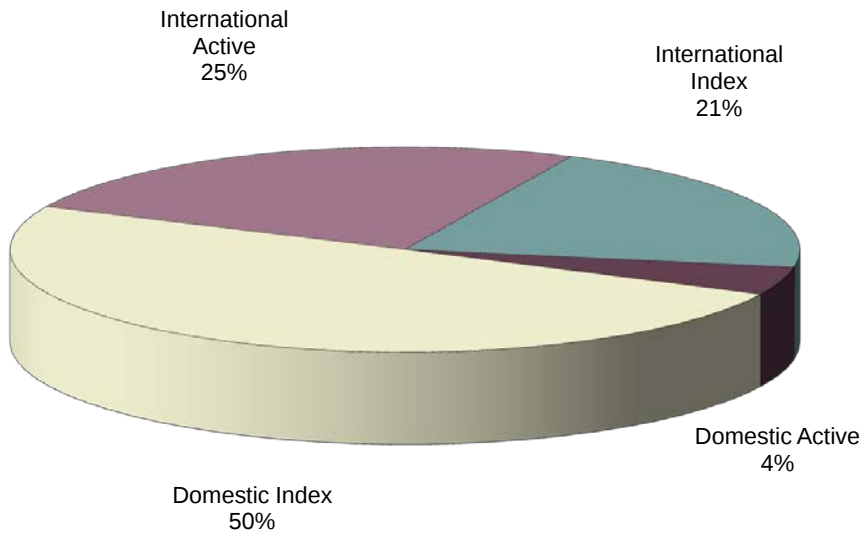
(2) The Alternative Investments allocation includes Private Equity, Absolute Return, Global Tactical Asset Allocation, Infrastructure and Natural Resources assets.

(3) Includes cash and cash held by managers within separate accounts.

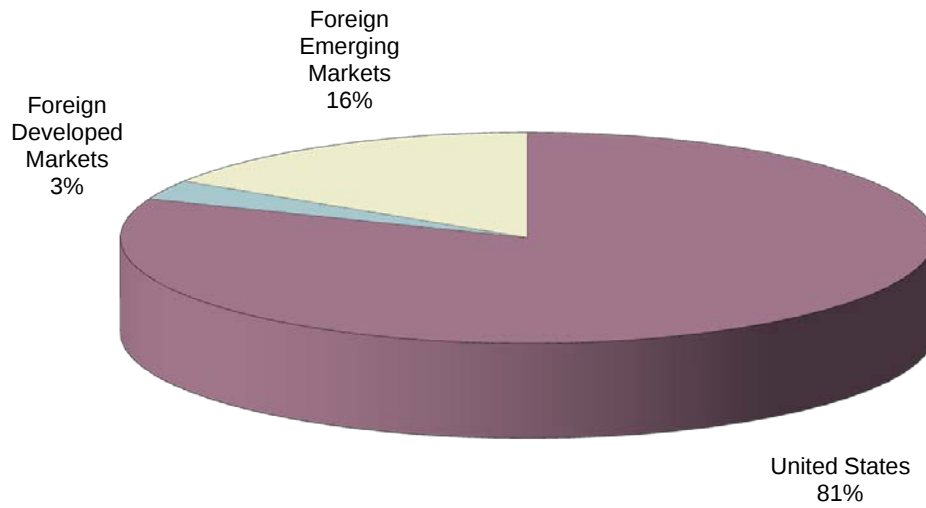
AGGREGATE ASSET ALLOCATION



EQUITY ALLOCATION



FIXED INCOME ALLOCATION



TEN LARGEST STOCK HOLDINGS BY FAIR VALUE

Company	Number of Shares	Fair Value (\$mm)	% of Total Equity	Industry
Apple	8,946	5.0	1.3%	Technology Hardware, Storage & Peripherals
Exxon Mobil	43,400	4.4	1.1%	Oil, Gas & Consumable Fuels
Google	2,669	3.0	0.8%	Internet Software & Services
Microsoft	77,285	2.9	0.7%	Software
General Electric	100,686	2.8	0.7%	Industrial Conglomerates
Samsung	1,965	2.6	0.7%	Semiconductors & Semiconductor Equipment
Johnson & Johnson	27,669	2.5	0.7%	Pharmaceuticals
Chevron	19,021	2.4	0.6%	Oil, Gas & Consumable Fuels
Procter & Gamble	26,869	2.2	0.6%	Household Products
JP Morgan Chase	37,147	2.2	0.6%	Diversified Financial Services

TEN LARGEST FIXED INCOME HOLDINGS BY FAIR VALUE

Security	Coupon (%)	Maturity Date	Number of Shares	Market Value (\$)	% of Fixed Income
Treasury Inflation Indexed	0.125	4/15/2017	2,246,901	2,309,387	1.6%
Treasury Inflation Indexed	1.125	1/15/2021	2,151,456	2,261,223	1.6%
Treasury Inflation Indexed	0.125	1/15/2023	2,337,466	2,207,620	1.6%
Treasury Inflation Indexed	0.125	7/15/2022	2,295,414	2,198,754	1.6%
Treasury Inflation Indexed	0.625	7/15/2021	2,139,960	2,172,230	1.5%
Treasury Inflation Indexed	0.125	4/15/2016	2,100,428	2,156,719	1.5%
Treasury Inflation Indexed	2.625	7/15/2017	1,870,720	2,104,261	1.5%
Treasury Inflation Indexed	0.125	1/15/2022	2,053,581	1,973,676	1.4%
Treasury Inflation Indexed	2.375	1/15/2025	1,654,199	1,901,418	1.4%
Treasury Inflation Indexed	1.25	7/15/2020	1,558,276	1,667,106	1.2%

A complete portfolio is available upon request.

SCHEDULE OF FEES & COMMISSIONS

Investment Manager Fees: December 31, 2013	
Acadian Asset Management	\$130,716
Aetos Alternatives Management	86,107
AEW Capital Management	50,000
American Securities Partners	33,747
Ascent Venture Management IV	179,730
Ascent Venture Management V	104,072
Bailard Fund Services	113,510
Blackstone Alternative Asset Management	117,470
Boston Millennia Partners II	28,124
Boston Millennia Partners III	2,820
Capital International Private Equity Fund	123,687
Charlesbank Capital Partners V	3,868
Charlesbank Capital Partners VI	33,992
Global Infrastructure Partners	129,165
Hancock Timber Resource Group	69,667
Heitman Investment Management	1,728
Intercontinental Real Estate Corp	20,934
Invesco Core Real Estate	182,875
Lazard Asset Management	453,570
Lee Munder Capital Group	77,795
Loomis Sayles & Company	234,711
Mass PRIM (Hedge Funds)	31,520
Mass PRIM (Real Estate)	220,050
Newstone Capital Partners I	17,801
Newstone Capital Partners II	70,500
Northstar Capital III	5,699
Northstar Capital IV	37,035
Northstar Capital V	74,302

(continued)

SCHEDULE OF FEES & COMMISSIONS (CONTINUED)

Investment Manager Fees: December 31, 2013	
OPUS Investment Management	47,478
OPUS Investment Management TIPS	40,079
Penn Capital Management	81,896
PIMCO Funds	319,027
RMK Balanced Timberland B	60,840
RMK Fund I	31,152
RMK Select Timberland Fund II	47,798
SSgA Daily EAFE Index	77,432
SSgA EAFE Index	36,681
SSgA Flagship Index	32,301
SSgA Global Natural Resources	8,825
SSgA Russell 1000 Growth Index	31,694
SSgA Russell 1000 Value Index	31,974
SSgA S&P Midcap Index	13,492
Standard Life Investments Limited	6,957
The Riverside Company 2003	5,872
The Riverside Company V	10,819
The Riverside Company VI	150,000
VEF Advisors II	3,494
VEF Advisors IV	6,247
Vitruvian Partners	77,609
White Deer	81,378
White Deer II	174,521
Total Investment Manager Fees	\$ 4,012,760
State Street Bank (Custodian Bank Fee)	193,676
Meketa Investment Group (Consultant Fee)	191,250
Securities Lending Rebates and Fees	59,113
Total Other Fees	\$ 444,039
Total Fees	\$ 4,456,799

(concluded)

2013 COMMISSIONS TO BROKERS

Broker Name	Total Commissions (\$)	Total Shares	\$/Share
AQUA SECURITIES LP	61.66	3,083	0.02
BARCLAYS CAPITAL LE	382.57	12,515	0.03
BB&T SECURITIES, LLC	224.76	5,619	0.04
BLOOMBERGTRADEBOOK LLC	327.61	32,761	0.01
BNY CONVERGEX LJR	10,168.00	284,161	0.04
CANACCORDGENUITY INC.	182.44	4,561	0.04
CANTOR FITZGERALD + CO.	891.6	22,290	0.04
CITATION GROUP	49.8	1,660	0.03
CITIGROUPGLOBAL MARKETS INC	206.56	4,992	0.04
COWEN ANDCOMPANY, LLC	157.36	3,934	0.04
CREDIT SUISSE SECURITIES (USA) LLC	569.7	22,436	0.03
DAVENPORT& CO. OF VIRGINIA, INC.	77.92	1,948	0.04
DEUTSCHE BANK AG NEW YORK	23.88	796	0.03
DEUTSCHE BANK SECURITIES INC	218.47	5,213	0.04
HIBERNIA SOUTHCOAST CAPITAL INC	182.56	4,564	0.04
INSTINET	6,572.70	167,655	0.04
INVESTMENT TECHNOLOGY GROUP INC.	605.09	23,173	0.03
ISI GROUPINC	66.72	1,668	0.04
J.P. MORGAN CLEARING CORP.	44.84	1,121	0.04
J.P. MORGAN SECURITIES INC.	588.26	15,157	0.04
JANNEY MONTGOMERY, SCOTT INC	168.88	4,222	0.04
JEFFERIES+ COMPANY INC	467.8	11,459	0.04
JMP SECURITIES	327.48	8,093	0.04
JOHNSON RICE + CO	105.04	2,626	0.04
JONESTRADING INSTITUTIONAL SERVICES	10,476.11	266,360	0.04
KEEFE BRUYETTE + WOODS INC	131.98	2,994	0.04
KEYBANC CAPITAL MARKETS INC	1,082.18	25,983	0.04
KNIGHT EQUITY MARKETS L.P.	1,907.04	95,192	0.02
LAZARD CAPITAL MARKETS LLC	540.8	13,520	0.04
LIQUIDNETINC	1,357.32	45,244	0.03
Longbow Securities LLC	66.4	1,660	0.04
MERRILL LYNCH PIERCE FENNER + SMITH	841.73	20,628	0.04
MKM PARTNERS LLC	224.36	5,609	0.04
MORGAN STANLEY CO INCORPORATED	1,273.27	32,216	0.04
NEEDHAM +COMPANY	149.64	3,741	0.04
OPPENHEIMER + CO. INC.	318.28	7,532	0.04
PICKERINGENERGY PARTNERS, INC	164.2	4,105	0.04
PULSE TRADING LLC	30.58	1,529	0.02

(continued)

Broker Name	Total Commissions (\$)	Total Shares	\$/Share
RAYMOND JAMES AND ASSOCIATES INC	1,411.14	40,320	0.03
RBC CAPITAL MARKETS	2,251.34	90,528	0.02
ROBERT W.BAIRD CO.INCORPORATE	411.22	8,486	0.05
ROTH CAPITAL PARTNERS LLC	24.52	613	0.04
SANDLER ONEILL + PART LP	362.77	8,763	0.04
SANFORD CBERNSTEIN CO LLC	455.31	11,639	0.04
SCOTIA CAPITAL (USA) INC	514.84	12,871	0.04
SIDOTI + COMPANY LLC	328.48	8,212	0.04
SIMMONS +COMPANY INTERNATIONAL	166.36	4,159	0.04
STATE STREET GLOBAL MARKETS, LLC	56.12	1,403	0.04
STEPHENS,INC.	400.21	9,576	0.04
STERNE AGEE & LEACH INC.	413.98	9,863	0.04
STIFEL NICOLAUS + CO INC	444.43	10,109	0.04
SUNTRUST CAPITAL MARKETS, INC.	1,060.91	30,621	0.03
THE BENCHMARK COMPANY, LLC	40.44	1,011	0.04
UBS SECURITIES LLC	370.04	10,219	0.04
WEDBUSH MORGAN SECURITIES INC	210.72	5,268	0.04
WELLS FARGO SECURITIES, LLC	664.04	15,955	0.04
WILLIAM BLAIR & COMPANY L.L.C	169.69	3,711	0.05
WUNDERLICH SECURITIES INC.	257.44	6,436	0.04

(concluded)

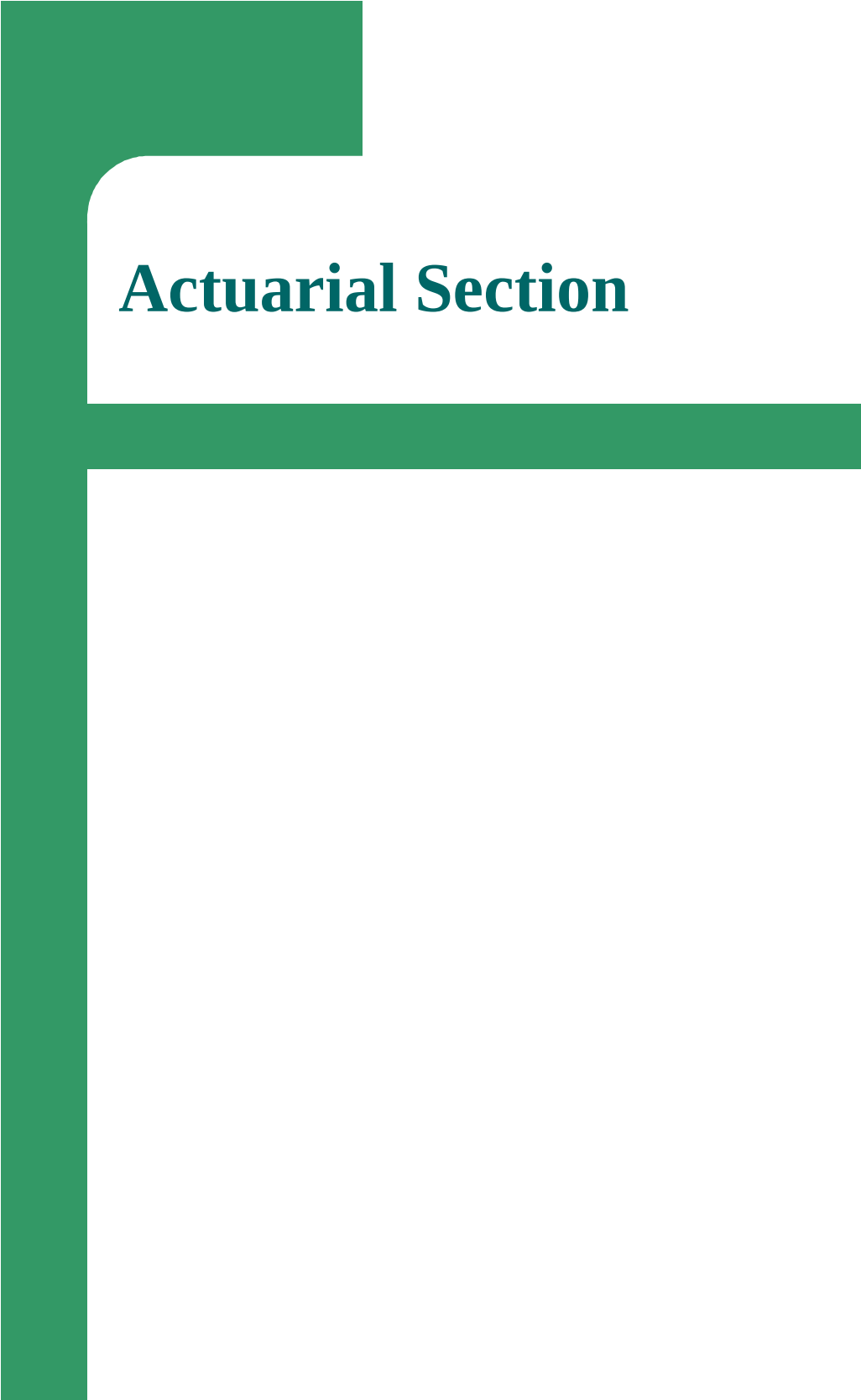
INVESTMENT SUMMARY*

	Fair Value 12/31/2013 (\$ mm)	% of Total Fair Value
Total System	797.5	100%
Total Equity Assets	419.0	53%
Equities	17.5	2%
Pooled Equities	401.5	51%
Total Fixed Income Assets	140.7	18%
Fixed Income	99.9	13%
Pooled Fixed Income	40.8	5%
Total Alternative Assets	234.6	29%
Alternative Assets	117.4	15%
Real Estate	106.7	13%
Hedge Funds	10.5	1%
Cash & Cash Equivalents	3.2	< 1%

* This table does not include the securities lending short-term collateral investment pool

LIQUIDITY PROFILE

Benefits payments totaled approximately \$68.2 million during the year and along with other payments of \$4.7 million resulted in total cash outflows of \$72.9 million in 2013. These payments were partially offset by a contribution of approximately \$38.1 million from employers and other cash receipts of \$18.7 million for a total of \$56.8 million in 2013. This resulted in a negative cash flow of approximately \$16.1 million for the fiscal year. Note that these figures do not incorporate expected income and asset gains from the WRS's investments. The WRS's portfolio is structured with a long-term expected return of 7.75%.



Actuarial Section



116 Huntington Avenue 8th Floor Boston, MA 02116-5744
T 617.424.7336 www.segalco.com

Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary
kriley@segalco.com

May 30, 2014

City of Worcester Retirement Board
City Hall, Room 103
455 Main Street
Worcester, MA 01608

Dear Board Members:

Segal Consulting has performed a January 1, 2014 actuarial valuation of the City of Worcester Retirement System. This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Retirement Board are reasonably related to the experience of and the expectations for the Plan.

As part of performing the valuation, Segal Consulting was furnished member data by the City of Worcester Retirement System's administrative staff. Although examined for general reasonableness, the data was not audited by the actuary. In addition, the administrative staff furnished financial statements that were not audited by the actuary.

The funding objective of the plan is to provide for the current cost of benefits (*i.e.*, normal cost) and to reduce the unfunded liability to zero by June 30, 2031. The normal cost is expected to remain approximately at a level percentage of payroll. The remaining liability of the 2002 ERI is amortized over a 4-year period (by June 30, 2018) with level payments. The 2010 ERI liability is amortized over a 7-year period (by June 30, 2021) with level payments. The remaining unfunded liability is amortized over a 17-year period. The fiscal 2015 appropriation of \$41,200,578 was calculated to be 8.0% greater than the fiscal 2014 appropriation. Beginning in fiscal 2016, the payment on the remaining unfunded liability is 4% greater than the prior year's payment. In the prior valuation, the System was fully funded by June 30, 2032.

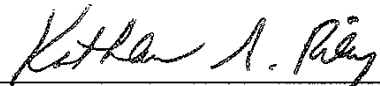
Actuarial valuations have been performed annually. This is consistent with the guidelines promulgated by PERAC and GASB. The previous valuation was performed as of January 1, 2013. The assumptions and methods used for funding purposes met the parameters set for the disclosures presented in the financial section by GASB Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans*.

Segal Consulting has prepared, and included as part of this report, all the supporting schedules for the Actuarial Section and Statistical Section of the CAFR. In addition, we have prepared the Schedules of Funding Progress and the Schedule of Employer Contributions found in the Financial Section of the CAFR.

Please let us know if you have any questions on this material.

Sincerely,

SEGAL CONSULTING

By: 

Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary

I. Summary of Actuarial Assumptions and Actuarial Cost Method

The actuarial assumptions, as set forth in the accompanying supporting schedules, were selected by the Worcester Retirement Board and actuary. Unless stated otherwise, the actuarial assumptions are based upon the actuarial valuation as of January 1, 2014, which was adopted by the Worcester Retirement System on May 15, 2014.

Mortality Rates

<i>Pre-retirement:</i>	RP-2000 Employee Mortality Table projected generationally using Scale AA from 2000
<i>Healthy Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA from 2000
<i>Disabled Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA from 2010, set forward 3 years for males

The mortality tables were determined to contain provisions appropriate to reasonably reflect future mortality improvement, based on a review of mortality experience of the System.

Termination Rates before Retirement

Age	Rate (%)			
	Mortality		Group 1 and 2	
	Male	Female	Disability	Withdrawal
20	0.03	0.02	0.01	12.00
25	0.04	0.02	0.03	8.78
30	0.04	0.03	0.04	5.55
35	0.08	0.05	0.07	3.93
40	0.11	0.07	0.13	2.31
45	0.15	0.11	0.18	1.89
50	0.21	0.17	0.24	1.46
55	0.30	0.25	0.30	0.00
60	0.49	0.39	0.35	0.00

Notes: Mortality rates do not reflect generational projection.
 55% of the disability rates shown represent accidental disability.
 20% of the accidental disabilities will die from the same cause as the disability.
 55% of the death rates shown represent accidental death.

Age	Mortality		Group 4	
	Male	Female	Disability	Withdrawal
20	0.03	0.02	0.13	2.10
25	0.04	0.02	0.25	1.88
30	0.04	0.03	0.38	1.65
35	0.08	0.05	0.38	1.11
40	0.11	0.07	0.38	0.56
45	0.15	0.11	1.25	0.28
50	0.21	0.17	1.56	0.00
55	0.30	0.25	1.50	0.00
60	0.49	0.39	1.06	0.00

Notes: Mortality rates do not reflect generational projection.
 90% of the disability rates shown represent accidental disability.
 60% of the accidental disabilities will die from the same cause as the disability.
 90% of the death rates shown represent accidental death.

Retirement Rates

Rate (%)			
Age	Groups 1 and 2	Age	Group 4
50	3.0	50	5.0
51-54	1.0	51-54	1.0
55	2.0	55	16.0
56	2.0	56	9.0
57	3.0	57	9.0
58	3.0	58	12.0
59	3.0	59	11.0
60	8.0	60	24.0
61	7.0	61	14.0
62	15.0	62	20.0
63	11.0	63	13.0
64	10.0	64	19.0
65	36.0	65	100.0
66	22.0		
67	22.0		
68	22.0		
69	25.0		
70	100.0		

Retirement Age for Inactive Vested Participants

55 for participants hired prior to April 2, 2012. For participants hired April 2, 2012 and later, 60 for Group 1, 55 for Group 2 and 50 for Group 4.

Unknown Data for Participants

Same as those exhibited by participants with similar known characteristics.

Family Composition

80% married, females three years younger than their spouses, and zero children of retired participants.

Benefit Election

All participants are assumed to elect option A.

Net Investment Return

7.75%

Salary Increases

3.50% per year for 2014 and 2015, with an allowance for inflation of 3.00%, and 4.50% per year thereafter, with an allowance for inflation of 4.00%.

Interest on Employee Contributions

3.50%

Administrative Expenses

\$575,000 for calendar year 2014, increasing 3.0% per year for 2014 and 2015 and 4.0% per year thereafter.

2013 Salary

2013 salary equal to salaries provided in the data, except for new hires where salaries were calculated from annualized contributions divided by the contribution rate(s) reported.

Total Service

Total creditable service reported in the data.

Net 3(8)(c) Liability

Estimated liability of \$15.3 million based on the average amount net 3(8)(c) benefits of the prior two years and the average demographics of retired participants.

Actuarial Value of Assets

Market value of assets as reported in the System's Annual Statement less unrecognized return in each of the last five years. Unrecognized return is equal to the difference between the actual market value return and the expected market value return and is recognized over a five-year period, further adjusted, if necessary, to be within 10% of the market value.

Actuarial Cost Method

Entry Age Normal Actuarial Cost Method. Entry Age is the age of the participant less Total Service as defined above. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary. Normal cost is determined using the plan of benefits applicable to each participant.

Recent Changes

The investment return assumption was lowered from 8.50% to 8.25% as of January 1, 2006. As of January 1, 2011, it was further lowered to 8.00%. As of January 1, 2013, it was lowered to 7.75%.

The salary increase assumption was lowered as of January 1, 2003 from 5.50% to 5.00%. As of January 1, 2011, it was further lowered to 4.75%. As of January 1, 2013, it was lowered to 4.5%. As of January 1, 2014, a select and ultimate assumption of 3.5% for 2014 and 2015 and 4.5% thereafter was used.

An asset smoothing method was first applied with the January 1, 2000 valuation and modified as of January 1, 2004. As of December 31, 2004, the actuarial value of assets was set equal to market value. As of January 1, 2009, the actuarial value of assets was changed from market value of assets to a five-year smoothing method. As of January 1, 2010, the actuarial value of assets was changed from being within 20% of the market value of assets to being within 10% of the market value of assets.

The mortality assumption for healthy participants was changed from the 1994 Group Annuity Mortality Table to the RP-2000 Combined Healthy Mortality Table projected 12 years using Scale AA as of January 1, 2012. As of January 1, 2013, the pre-retirement mortality assumption was changed to the RP-2000 Employee Mortality Table projected 20 years using Scale AA. As of January 1, 2014, the pre-retirement mortality assumption was changed to the RP-2000 Employee Mortality Table projected generationally using Scale AA from 2000.

The mortality assumption for healthy retirees was changed from the RP-2000 Combined Healthy Mortality Table projected 12 years using Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected 15 years using Scale AA as of January 1, 2013. As of January 1, 2014, the mortality assumption for non-disabled retirees was changed to the RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA from 2000.

The mortality assumption for disabled participants was changed from the 1994 Group Annuity Mortality Table set forward 10 years to the 1994 Group Annuity Mortality Table set forward 7 years, as of January 1, 2010. As of January 1, 2011, the table was changed to the 1994 Group Annuity Mortality Table set forward 5 years. As of January 1, 2012, the assumption was changed to the RP-2000 Combined Healthy Mortality Table set forward 5 years projected 12 years using Scale AA. As of January 1, 2013, the assumption was changed to the RP-2000 Healthy Annuitant Mortality Table projected 5 years using Scale AA with a 3-year set forward for males. As of January 1, 2014, the assumption was changed to the RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA form 2010 with a 3-year set forward for males.

The estimated liability for future 3(8)(c) payments was lowered from \$20.1 million based on estimated net annual benefits of \$2.4 million to \$15.7 million based on estimated net annual benefits of \$1.8 million as of January 1, 2011 and to an estimated liability of \$15.3 million based on net annual benefits of \$1.7 million as of January 1, 2012. As of January 1, 2013, it was changed to an estimated liability of \$15.0 million based on the average amount net 3(8)(c) benefits of prior two years. As of January 1, 2014, it was changed to an estimated liability of \$15.3 million based on the average amount net 3(8)(c) benefits of the prior two years and the average demographics of retired participants.

As of January 1, 2012, the annual rates of retirement and disability were changed.

The administrative expense assumption was changed from \$625,000 to \$600,000 as of January 1, 2012 and to \$575,000 as of January 1, 2013. The administrative expense assumption increases with inflation each year. As of January 1, 2014, the administrative expense assumption was reset to \$575,000.

As of January 1, 2014, the assumed retirement age for inactive vested participants was changed from age 65 to age 55 for Group 1 and 2 members hired prior to April 2, 2012. For inactive vested participants hired April 2, 2012 or later, the assumed retirement age was lowered from age 65 to age 60 for Group 1 members, from age 65 to age 55 for Group 2 members and from age 55 to age 50 for Group 4 members.

II. Schedule of Active Member Valuation Data

Schedule of Active Member Valuation Data

<u>Valuation date</u>	<u>Number</u>	<u>Projected annual payroll (\$)</u>	<u>Annual average pay (\$)</u>	<u>% Increase in average pay</u>
1/1/2009	3,352	\$ 166,050,095	\$ 49,538	4.37
1/1/2010	3,287	166,392,075	50,621	2.19
1/1/2011	3,208	157,720,871	49,165	-2.88
1/1/2012	3,178	159,669,859	50,242	2.19
1/1/2013	3,260	166,094,906	50,949	1.41
1/1/2014	3,293	168,856,039	51,277	0.64

III. Schedule of Retirants and Beneficiaries Added to and Removed from Rolls

Schedule of Retirees and Beneficiaries Added to and Removed from Rolls

Year ended	Added to Rolls		Removed from Rolls		Rolls - end of year		% Increase in annual allowances	Average annual allowances
	Number	Annual allowances ¹	Number	Annual allowances	Number	Annual allowances ¹		
2008	93	\$2,867,851	150	\$2,034,502	2,792	\$ 56,905,570	2.85	\$ 20,382
2009	97	3,476,053	115	1,643,865	2,774	59,512,448	4.58	21,454
2010	182	5,534,863	158	2,487,548	2,798	63,008,939	5.88	22,519
2011	88	2,550,597	109	1,683,482	2,776	64,470,827	2.32	23,216
2012	120	3,501,290	142	2,564,860	2,754	66,738,274	3.52	24,242
2013	112	3,510,330	133	2,262,416	2,733	69,107,130	3.55	25,286

¹ Annual allowances are shown for retirees in pay status at the end of the year.

IV. Solvency Test

Valuation Date	Actuarial Accrued Liability				Portion of Actuarial Accrued Liability Covered by Assets		
	(1)	(2)	(3)	Actuarial value of assets	(1)	(2)	(3)
	Active/Inactive member contributions	Retirees and beneficiaries	Active/Inactive members (Employer financed)				
01/01/2009	152,780,052	488,818,808	287,970,604	631,893,995	100	98	0
01/01/2010	158,217,390	524,211,594	305,263,311	679,509,973	100	99	0
01/01/2011	158,761,215	573,267,875	293,046,333	724,997,822	100	99	0
01/01/2012	165,908,395	586,490,665	298,791,730	712,110,360	100	93	0
01/01/2013	172,550,795	620,756,055	324,131,714	706,950,694	100	86	0
01/01/2014	178,648,060	649,780,235	342,197,340	770,334,007	100	91	0

V. Analysis of Financial Experience

	Year Ended December 31,				
	2013	2012	2011	2010	2009
1. Unfunded actuarial accrued liability as of January 1	\$ 410,487,870	\$ 339,080,430	\$ 300,077,601	\$ 308,182,322	\$ 297,675,469
2. Normal cost as of January 1	24,481,163	23,720,313	23,414,464	24,074,576	23,936,084
3. Employer, employee and other contributions during year	(53,519,634)	(50,129,615)	(46,308,754)	(44,157,370)	(42,695,664)
4. Interest					
(a) For whole year on (1)+(2)	33,710,099	29,024,059	25,879,365	27,411,194	26,532,953
(b) For half year on (3)	(1,875,443)	(1,812,547)	(1,674,395)	(1,645,804)	(1,591,325)
(c) Total interest	\$ 31,834,656	\$ 27,211,512	\$ 24,204,970	\$ 25,765,390	\$ 24,941,628
5. Expected unfunded actuarial liability	413,284,055	339,882,640	301,388,281	313,864,918	303,857,517
6. Actual unfunded actuarial accrued liability	400,291,628	410,487,870	339,080,430	300,077,601	308,182,322
7. (Gain) or loss for the year: (6)-(5)	\$ (12,992,427)	\$ 70,605,230	\$ 37,692,149	\$ (13,787,317)	\$ 4,324,805
8. Investment (gain) or loss	\$ (25,231,411)	\$ 43,630,333	\$ 49,817,777	\$ (9,317,263)	\$ (55,454,843)
9. (Gains) or losses from sources other than investments	(7,994,158)	(45,863)	(14,469,293)	(32,351,823)	12,290,038
10. Plan changes	-	-	5,186,817	3,879,584	-
11. Assumption changes	20,233,142	27,020,760	(2,843,152)	24,002,185	47,489,610

VI. Summary of Plan Provisions

The following summarizes the major provisions of Chapter 32 of the Massachusetts General Laws.

Plan Year

January 1 – December 31

Retirement Benefits

Employees covered by the Contributory Retirement Law are classified into one of four groups depending on job classification. Group 1 comprises most positions in state and local government. It is the general category of public employees. Group 4 comprises mainly police and firefighters. Group 2 is for other specified hazardous occupations. (Officers and inspectors of the State Police are classified as Group 3.)

For employees hired prior to April 2, 2012, the annual amount of the retirement allowance is based on the member's final three-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following table based on the age of the member at retirement:

Age Last Birthday at Date of Retirement			
Percent	Group 1	Group 2	Group 4
2.5	65 or over	60 or over	55 or over
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	--	49
1.8	58	--	48
1.7	57	--	47
1.6	56	--	46
1.5	55	--	45

A member's final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last three years of creditable service prior to retirement.

For employees hired on April 2, 2012 or later, the annual amount of the retirement allowance is based on the member's final five-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following tables based on the age and years of creditable service of the member at retirement:

For members with less than 30 years of creditable service:**Age Last Birthday at Date of Retirement**

Percent	Group 1	Group 2	Group 4
2.50	67 or over	62 or over	57 or over
2.35	66	61	56
2.20	65	60	55
2.05	64	59	54
1.90	63	58	53
1.75	62	57	52
1.60	61	56	51
1.45	60	55	50

For members with 30 years of creditable service or greater:**Age Last Birthday at Date of Retirement**

Percent	Group 1	Group 2	Group 4
2.500	67 or over	62 or over	57 or over
2.375	66	61	56
2.250	65	60	55
2.125	64	59	54
2.000	63	58	53
1.875	62	57	52
1.750	61	56	51
1.625	60	55	50

A member's final five-year average salary is defined as the greater of the highest consecutive five-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last five years of creditable service prior to retirement.

For employees who became members after January 1, 2011, regular compensation is limited to 64% of the federal limit found in 26 U.S.C. 401(a)(17). In addition, regular compensation for members who retire after April 2, 2012 will be limited to prohibit "spiking" of a member's salary to increase the retirement benefit.

For all employees, the maximum annual amount of the retirement allowance is 80 percent of the member's final three-year average salary. Any member who is a veteran also receives an additional yearly retirement allowance of \$15 per year of creditable service, not exceeding \$300. The veteran allowance is paid in addition to the 80 percent maximum.

Employee Contributions

Employees hired before January 1, 1975 contribute 5 percent of their salary; employees hired after January 1, 1975 and before December 31, 1983 contribute 7 percent; employees hired after January 1, 1984 contribute 8 percent; employees hired after July 1, 1996 contribute 9 percent.

In addition, employees hired after December 31, 1978 contribute an additional 2 percent of salary in excess of \$30,000.

Employees hired after 1983 who leave with less than five years of credited service receive no interest on their contributions, and employees who leave with five but less than ten years receive one-half the rate of regular interest otherwise payable. Commencing July 1, 2010, employees who voluntarily terminate employment, who have less than 10 years of service and request a refund, receive 3% interest on their contributions.

Employees in Group 1 hired on or after April 2, 2012 with 30 years of creditable service or greater will pay a base contribution rate of 6%.

Retirement Benefits (Superannuation)

Members of Group 1, 2 or 4 hired prior to April 2, 2012 may retire upon the attainment of age 55. For retirement at ages below 55, twenty years of creditable service is required.

Members hired prior to April 2, 2012 who terminate before age 55 with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the System).

Members of Group 1 hired April 2, 2012 or later may retire upon the attainment of age 60. Members of Group 2 or 4 hired April 2, 2012 or later may retire upon the attainment of age 55. Members of Group 4 may retire upon attainment of age 50 with ten years of creditable service.

Members hired April 2, 2012 or later who terminate before age 55 (60 for members of Group 1) with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (60 for members of Group 1) provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the System.

Ordinary Disability Benefits

A member who is unable to perform his job due to a non-occupational disability will receive a retirement allowance if he has ten or more years of creditable service and has not reached age 55. The annual amount of such allowance shall be determined as if the member retired for superannuation at age 55 (age 60 for Group 1 members hired on or after April 2, 2012), based on the amount of creditable service at the date of disability. For veterans, there is a minimum benefit of 50 percent of the member's most recent year's pay plus an annuity based on his or her own contributions.

Accidental Disability Benefit

For a job-connected disability the benefit is 72 percent of the member's most recent annual pay plus an annuity based on his own contributions, plus additional amounts for surviving children. Benefits are capped at 75 percent of annual rate of regular compensation for employees who become members after January 1, 1988.

Death Benefits

In general, the beneficiary of an employee who dies in active service will receive a refund of the employee's own contributions. Alternatively, if the employee were eligible to retire on the date of his or her death, a spouse's benefit will be paid equal to the amount the employee would have received under Option C.

The surviving spouse of a member who dies with two or more years of credited service has the option of a refund of the employee's contributions or a monthly benefit regardless of eligibility to retire, if they were married for at least one year. The allowance provided for under this option shall not be less than \$250 per month, and there are additional amounts for surviving children.

If an employee's death is job-connected, the spouse will receive 72 percent of the member's most recent annual pay in addition to a refund of the member's accumulated deductions, plus additional amounts for surviving children. However, in accordance with Section 100 of Chapter 32, the surviving spouse of a police officer, firefighter or corrections officer is killed in the line of duty will be eligible to receive an annual benefit equal to the maximum salary held by the member at the time of death, and will be eligible for pay increases that would have been awarded to the officer if they were still living.

Upon the death of a job-connected disability retiree who retired prior to November 7, 1996 and could not elect an Option C benefit, a surviving spouse will receive an allowance of \$9,000 per year if the member dies for a reason unrelated to cause of disability.

"Heart and Lung Law" and Cancer Presumption

Any case of hypertension or heart disease resulting in total or partial disability or death to a uniformed fireman or permanent member of a police department, or certain employees of a county correctional facility is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. Any case of disease of the lungs or respiratory tract resulting in total disability or death to a uniformed fireman is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. There is an additional presumption for uniformed firemen that certain types of cancer are job-related if onset occurs while actively employed or within five years of retirement.

Options

Members may elect to receive a full retirement allowance payable for life under Option A. Under Option B a member may elect to receive a lower monthly allowance in exchange for a guarantee that at the time of death contributions not expended for annuity payments will be refunded to his beneficiary. Option C allows the member to take a lesser retirement allowance in exchange for providing a survivor with two-thirds of the lesser amount. Option C pensioners will have their benefits converted from a reduced to a full retirement if the beneficiary predeceases the retiree.

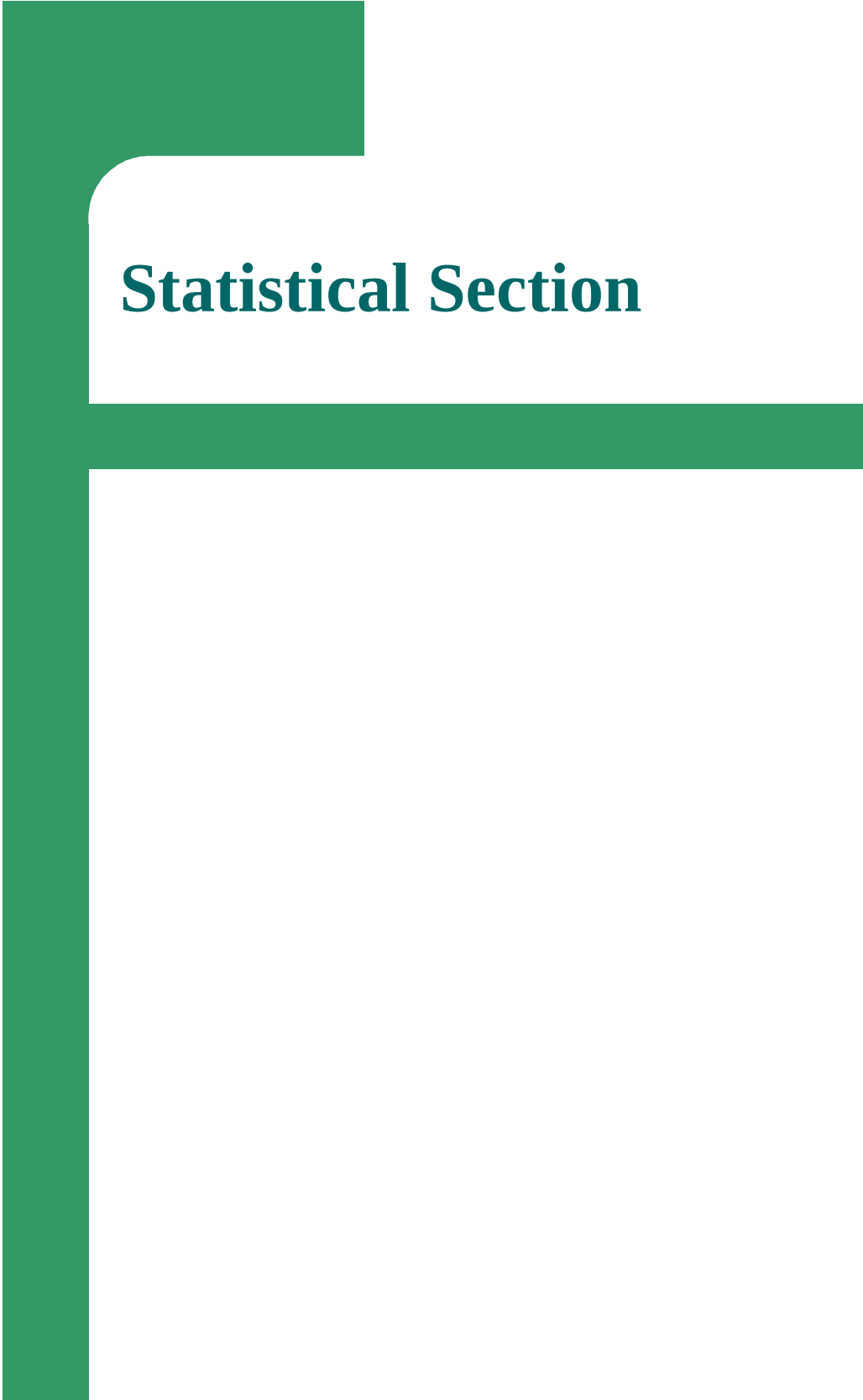
Post-Retirement Benefits

The Board has adopted the provisions of Section 51 Chapter 127 of the Acts of 1999, which provide that the Retirement Board may approve an annual COLA in excess of the Consumer Price Index but not to exceed a 3% COLA on the first \$12,000 of a retirement allowance. As of July 1, 2012, this increased to an annual COLA in excess of the CPI, but not to exceed 3% of the first \$13,000 of a retirement allowance. Cost-of-living increases granted prior to July 1, 1998 are reimbursed by the Commonwealth and are not reflected in this report.

Changes in Plan Provisions

The plan provisions are the same as those presented in the January 1, 2013 valuation.

This page left intentionally blank.



Statistical Section

STATISTICAL SECTION

This part of the WRS' Comprehensive Annual Financial Report presents information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information says about the WRS' overall financial health.

Table of Contents

	Page
Financial Trends	71-72
These schedules contain trend information to help the reader understand how the WRS' financial performance and well-being have changed over time.	
Schedule of Retired Members by Type of Benefit	73
This schedule presents trend data about retired members by type of benefit.	
Schedules of Average Benefit Payments	73-74
These schedules present trend data about average benefit payments.	
Schedule of Participating Employers	74
This schedule shows each participating employer's number of covered employees and percentage of total covered employees.	

Schedule of Additions to Plan Net Position by Source

<u>Fiscal Year</u>	<u>Plan Member Contributions</u>	<u>Employer Contributions</u>	<u>Employer Contributions as % of Covered Payroll</u>	<u>Investment Income(a)</u>	<u>Other(b)</u>	<u>Total</u>
2004	\$ 12,187,208	20,150,377	14.52	\$ 66,454,940	3,530,693	102,323,218
2005	12,509,613	23,579,478	16.03	55,470,779	3,015,645	94,575,515
2006	13,448,309	23,354,603	16.01	91,535,233	2,982,027	131,320,172
2007	13,922,938	24,166,318	15.81	61,690,401	2,800,696	102,580,353
2008	14,695,126	24,947,158	15.93	(213,653,903)	1,553,980	(172,457,639)
2009	14,785,935	28,505,066	17.17	109,307,795	2,308,137	154,906,933
2010	14,731,633	30,196,904	18.15	83,274,908	2,148,586	130,352,031
2011	14,526,760	32,706,347	20.74	(5,631,768)	2,084,878	43,686,217
2012	15,358,457	35,409,140	21.32	91,252,263	2,040,339	144,060,199
2013	16,208,897	38,148,683	22.59	93,539,100	2,485,176	150,381,856

(a) Net of Investment expenses

(b) Includes state pension reimbursements and transfer of employees' contributions from other public pension plans as defined by Massachusetts General Law, Chapter 32.

Schedule of Deductions from Plan Net Position by Type

<u>Fiscal Year</u>	<u>Benefits</u>	<u>Administrative Expenses</u>	<u>Withdrawals(a)</u>	<u>Total</u>
2004	\$ 50,517,094	\$ 518,078	\$ 3,704,908	\$ 54,740,080
2005	52,105,583	556,781	3,996,263	56,658,627
2006	53,350,080	621,648	4,568,178	58,539,906
2007	55,033,466	555,774	4,377,551	59,966,791
2008	56,516,348	554,276	3,303,810	60,374,434
2009	58,698,242	538,983	4,511,626	63,748,851
2010	61,274,343	557,170	4,355,679	66,187,192
2011	64,477,915	569,245	4,538,471	69,585,631
2012	66,303,041	528,845	3,762,744	70,594,630
2013	68,152,214	562,729	4,143,967	72,858,910

(a) Includes amounts for employee withdrawals and employee transfers to other governmental units.

Schedule of Total Change in Net Position

<u>Fiscal Year</u>	<u>Total Change in Net Assets</u>
2004	\$ 47,583,138
2005	37,916,888
2006	72,780,266
2007	42,613,562
2008	(232,832,073)
2009	91,158,082
2010	64,164,839
2011	(25,899,414)
2012	73,465,569
2013	77,522,946

Schedule of Benefit Expenses by Type

<u>Year ended December 31</u>	<u>Regular</u>	<u>Disability</u>	<u>Beneficiary</u>	<u>COLA</u>	<u>Annuities</u>	<u>Total</u>
2004	\$ 22,505,296	\$ 9,192,940	\$ 5,145,320	\$ 7,795,981	\$ 5,877,557	\$ 50,517,094
2005	22,855,516	9,796,237	4,830,540	8,581,377	6,041,913	52,105,583
2006	23,016,975	10,282,032	4,999,986	8,846,248	6,204,839	53,350,080
2007	23,437,804	10,890,179	5,081,340	9,147,566	6,476,577	55,033,466
2008	23,937,559	11,123,001	5,285,744	9,355,548	6,814,496	56,516,348
2009	24,711,047	11,798,651	5,331,443	9,522,992	7,334,109	58,698,242
2010	26,885,194	11,404,371	5,621,282	9,695,254	7,668,242	61,274,343
2011	28,911,453	11,616,006	5,677,792	9,878,255	8,394,409	64,477,915
2012	29,865,177	11,478,657	5,846,990	10,036,821	9,075,396	66,303,041
2013	30,940,561	11,481,993	6,275,471	10,277,781	9,176,408	68,152,214

Schedule of Refund Expenses by Type (a)

<u>Year ended December 31</u>	<u>Voluntary Refunds (Resignation)</u>	<u>Involuntary Refunds (Termination)</u>	<u>Deaths</u>	<u>Overpayment Contributions</u>	<u>Total</u>
2013	\$ 543,990	\$ 485,490	\$ 58,589	\$ 970	\$ 1,089,039

(a) Data is provided beginning in calendar year 2013, which is the first year data in this format is available.

Schedule of Retired Members by Type of Benefit

	12/31/2013	12/31/2012	12/31/2011	12/31/2010	12/31/2009	12/31/2008	12/31/2007	12/31/2006	12/31/2005	12/31/2004
Superannuation										
Group 1	1,474	1,471	1,499	1,524	1,482	1,493	1,545	1,560	1,577	1,622
Group 2&4	327	322	306	302	289	276	270	263	269	270
Total	1,801	1,793	1,805	1,826	1,771	1,769	1,815	1,823	1,846	1,892
Ordinary Disability										
Group 1	34	35	34	33	36	39	43	42	44	41
Group 2&4	8	8	8	7	6	6	7	7	6	5
Total	42	43	42	40	42	45	50	49	50	46
Accidental Disability										
Group 1	117	119	124	117	124	130	128	125	139	139
Group 2&4	278	281	296	301	315	317	319	318	323	321
Total	395	400	420	418	439	447	447	443	462	460
Beneficiaries										
Group 1	289	310	304	311	340	349	361	373	389	395
Group 2&4	206	208	205	203	182	182	176	176	172	174
Total	495	518	509	514	522	531	537	549	561	569
Total Retired Members										
Group 1	1,914	1,935	1,961	1,985	1,982	2,011	2,077	2,100	2,149	2,197
Group 2&4	819	819	815	813	792	781	772	764	770	770
Total	2,733	2,754	2,776	2,798	2,774	2,792	2,849	2,864	2,919	2,967

Source: Actuarial valuation as of January 1, 2012

Schedule of Average Benefit Payments (2011-2013)

Years of Credited Service	2011 (a)			2012 (a)			2013 (a)		
	Average Monthly Benefit (\$)	Average Final Salary (\$)	Number of Retired Members (b)	Average Monthly Benefit (\$)	Average Final Salary (\$)	Number of Retired Members (b)	Average Monthly Benefit (\$)	Average Final Salary (\$)	Number of Retired Members (b)
0	706	4,320	1	1,154	20,974	2	749	4,320	1
1 - 5	1,365	18,653	34	1,513	20,504	32	1,680	22,209	30
6 - 10	952	22,003	175	1,029	22,961	164	1,085	22,628	153
11 - 15	1,018	23,755	350	1,054	24,561	328	1,099	25,410	330
16 - 20	1,329	26,953	405	1,354	27,431	404	1,415	28,159	409
21 - 25	1,819	33,984	376	1,874	34,923	370	1,917	34,576	362
26 - 30	2,626	40,393	312	2,674	41,175	313	2,736	41,002	314
31 - 35	3,402	50,416	395	3,496	52,036	403	3,618	50,365	401
36 - 40	3,497	52,215	187	3,588	53,742	185	3,670	49,364	197
41 - 45	3,003	43,288	30	3,083	44,075	32	3,158	45,860	38
46 - 50	2,381	43,069	2	2,413	43,069	2	2,446	43,069	2
51 - 55	3,334	51,857	1	3,367	51,857	1	3,399	51,857	1

- (a) Data in the format presented in this table is provided beginning in calendar year 2011, which is the first year data in this format is available. Please see the "Schedule of Average Benefit Payments (2004-2010)" for average benefit payment data for calendar years 2004-2010.
- (b) Since the data in this table is organized by creditable service, it does not include "Beneficiaries"

Schedule of Average Benefit Payments (2004-2010) (a)

Year ended December 31	Number	Annual benefits (\$)	Monthly average (\$)	Annual average (\$)	% Increase
2004	2,967	50,517,094	1,419	17,026	6.61
2005	2,919	52,105,583	1,488	17,850	4.84
2006	2,864	53,350,080	1,552	18,628	4.36
2007	2,849	55,033,466	1,610	19,317	3.70
2008	2,792	56,516,348	1,687	20,242	4.79
2009	2,774	58,698,242	1,763	21,160	4.54
2010	2,798	61,274,343	1,825	21,899	3.49

(a) Data in the format presented in this table is provided for calendar years 2004-2010. The table provides for the most comprehensive average benefit payment data available for this time period.

Schedule of Participating Employers

Fiscal Year	Employer Name	Number of Covered Employees	Percentage of Total Covered Employees
2004	City of Worcester	3,266	94.8%
2004	Worcester Housing Authority	180	5.2%
2013	City of Worcester	3,121	94.8%
2013	Worcester Housing Authority	172	5.2%

Source: The WRS administrative staff