

COMPREHENSIVE ANNUAL FINANCIAL REPORT 2018

For the Year Ending December 31, 2018



State of Wisconsin
Department of Employee Trust Funds



COMPREHENSIVE ANNUAL FINANCIAL REPORT 2018

For the Year Ending December 31, 2018

State of Wisconsin Department of Employee Trust Funds
Cindy Klimke-Armatoski, Chief Trust Financial Officer and Controller

Wisconsin Department of Employee Trust Funds
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State of Wisconsin
Department of Employee Trust Funds

TABLE OF CONTENTS

Introductory Section

Letter of Transmittal	3
Professional Award	6
ETF Boards and Department Organization	7

Financial Section

Independent Auditor’s Report	15
Management’s Discussion and Analysis	18
Financial Statements	
Statement of Fiduciary Net Position	34
Statement of Changes in Fiduciary Net Position	36
Statement of Net Position - Proprietary Funds	38
Statement of Revenues, Expenses, and Changes in Fund Net Position - Proprietary Funds	39
Statement of Cash Flows - Proprietary Funds	40
Statement of Fiduciary Net Position - Agency Funds	41
Statement of Changes in Assets & Liabilities - Agency Funds	42
Notes to Financial Statements	43
Required Supplementary Information	100

Statistical Section

Wisconsin Retirement System	113
Group Health Insurance	131
Group Life Insurance	133
Duty Disability Insurance	137
Income Continuation Insurance	140
Employee Reimbursement Accounts Program	142
Department of Employee Trust Funds Administrative Expenses	143

Actuarial Section

Actuarial Certification Letter	147
WRS Actuarial Statement of Assets and Liabilities	149
Summary of WRS Benefit Provisions	150
Actuarial Method and Assumptions Used in WRS Valuations	153

Investment Section

Investments	169
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Contributions Paid and Employer Unfunded Liability Balances

State Agencies	180
Public Authorities	181
Cities	181
Villages	185
Special Districts	191
Towns	195
Counties	201
School Districts	203
Technical Colleges	212
Cooperative Educational Service Agencies (CESAs)	212



INTRODUCTORY SECTION



STATE OF WISCONSIN
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Robert J. Conlin
 SECRETARY

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September 24, 2019

GOVERNOR TONY EVERS
 MEMBERS OF THE STATE LEGISLATURE
 PUBLIC EMPLOYEES, EMPLOYERS AND OTHER INTERESTED PARTIES:

We are pleased to present the Comprehensive Annual Financial Report (CAFR) of the Wisconsin Department of Employee Trust Funds (ETF) for the year ended December 31, 2018. This report provides comprehensive information about ETF, the Wisconsin Retirement System (WRS), and other benefit programs administered by ETF.

Responsibility for the accuracy of the data and the fairness and completeness of this presentation, including all disclosures, rests with the management of ETF. To the best of our knowledge, the enclosed information is accurate in all material respects and is reported in a manner designed to provide a fair representation of the financial position and results of the operations of ETF.

As required by Wis. Stat. 13.94 (1) (dd), the Legislative Audit Bureau (LAB) has completed a financial audit of ETF and issued an unmodified ("clean") opinion on the financial statements for the year ended December 31, 2018. The independent auditor's report is located at the beginning of the Financial Section of this CAFR.

Management's Discussion and Analysis (MD&A) immediately follows the independent auditor's report and provides a narrative introduction, overview and analysis of the financial statements. The MD&A complements this Letter of Transmittal and should be read in conjunction with it.

Historical Overview

The WRS was created effective January 1, 1982. The system covers state and local public employees, including faculty and staff of the University of Wisconsin System, local police and firefighters, and all publicly-employed teachers in the state. Those not included are employees of the City of Milwaukee and Milwaukee County, who are covered under separate retirement systems. Pension coverage for local government employees has been in place since 1891, when the legislature required Milwaukee to create a pension fund for retired and disabled police and firefighters. The legislature has since extended pension coverage to other public employees, along with creating group life and health insurance programs.

The Group Insurance Board (GIB) was created in 1959 to monitor the administration of the life and health insurance programs. ETF was created in 1967 to administer the various retirement and related benefit programs.

Currently, the WRS is composed of 29% state employees and 71% local employees. As of December 31, 2018, the WRS had 257,911 active employees, 209,059 annuitants (retirees, disabled, and beneficiaries), and 174,922 inactive employees with deferred benefits payable.

ETF Mission and Responsibilities

ETF's mission is "to develop and deliver quality benefits and services to our customers while safeguarding the integrity of the Trust." ETF administers retirement, health, life, income continuation, long-term disability, and long-term care insurance programs, along with an employee reimbursement accounts program, commuter benefits program, and a deferred compensation plan. ETF also administers retirement disability coverage and serves as the state's designated coverage agent for Social Security for Wisconsin public employers. There are five

different statutory boards with responsibilities for programs operated by the Department. The ETF Board is both the overall governing body for the Department and the general policy-setting and trustee board for the WRS.

All insurance programs are administered through contractual arrangements with private sector insurance carriers and service corporations. Participation by eligible employees is mandatory for retirement and Social Security, but optional for the other programs. ETF collects but does not invest the trust fund monies created for these programs. That responsibility rests with the State of Wisconsin Investment Board (SWIB).

ETF is responsible for:

- Collecting all monies due the trust funds.
- Calculating and ensuring appropriate disbursement of all benefit payments from the trust funds.
- Providing information to, and answering inquiries from, participating employees and employers.
- Establishing the controls, systems, and procedures necessary to ensure the appropriate administration and security of the trust.

Funding Status

PENSION PLAN

The funded status of the WRS is the measure of the extent to which the system has accumulated enough assets to pay the benefits earned by participants. The funded ratio is the ratio of plan assets to estimated future liabilities. The assets can be measured using either the current fair value of assets or a smoothed funding value of assets. The fair value measurement gives a more timely measurement, but can be extremely volatile. The funding value measurement, where gains or losses are smoothed over a five-year period, is less representative of current fair value, but better presents the funding trends without the year-to-year volatility.

The WRS continues to be one of the best-funded public employee retirement systems in the country. A well-funded system ensures that a lifetime of benefits can be paid to today's workers without burdening the next generation of taxpayers with higher contributions. The financial strength of the WRS is attributable to its unique plan design, funding discipline at the state and local level, strong governance, and the effective investment strategies of the SWIB.

The funding value-based ratio of the WRS remains approximately 100% as of December 31, 2018. The fair value-based ratio, calculated in accordance with standards issued by the Governmental Accounting Standards Board, is 96.5%. This is a decrease from 102.9%, and was primarily the result of lower market returns in 2018 compared to 2017.

OTHER EMPLOYEE BENEFIT PROGRAMS

The funded status of the Health Insurance Program is a measure of the extent to which the system has accumulated enough assets to pay the benefits earned by participants, meet the liquidity needs of the program, and smooth year-to-year volatility in claims. Funded status is measured as the ratio of reserves to annual expenses.

In 2018, both the State and Local Health Plan include fully-insured Health Maintenance Organization Plans, a self-insured pharmacy benefit plan and a self-insured dental benefit plan. The reserves as a percentage of annual expenses of the self-insured plans as of December 31, 2018, were:

Plan Type	Reserves as a Percentage of Annual Expenses
State Pharmacy Benefit Plan	63%
State Dental Benefit Plan	6%
Local Pharmacy Benefit Plan	82%
Local Dental Benefit Plan	(12%)



2016 was the first year of the self-insured dental benefit plan. Considering the fund balance and projected future claims, the GIB approved a 2.0% premium rate increase at its August 2018 meeting for 2019 rates.

Please refer to Note 9 and the Statistical Section for the funding status of other employee benefit programs.

Investments

At December 31, 2018, the total assets of the Core and Variable investment portfolios was \$116.7 billion, a decrease from \$119.3 billion at December 31, 2017. The decrease was due to investment losses caused by less favorable market conditions in 2018 compared to 2017.

Legislative Initiatives

During 2018, there was no legislation enacted that significantly affected the WRS and the employee benefit programs administered by ETF.

Administration

ETF's administration of the WRS continues to make it one of the most cost-efficient systems in terms of administrative expenses per member. In a recent public pension fund administration benchmarking study conducted by industry leader CEM Benchmarking, Inc., the annual per-member administrative expenses associated with the retirement and disability programs was \$68 for the WRS, compared to the median per-member cost of \$93 for peer retirement systems. ETF employs one full-time equivalent staff person per 1,744 members, compared to the peer system median of one per 1,500 members.

Acknowledgements

We would like to express our appreciation to the Governor, members of the Legislature, members of the boards, staff, employers, participants, and all those whose efforts and interest combine to ensure the successful operation of our system, while protecting the integrity of the trust funds.

Sincerely,

A handwritten signature in black ink, appearing to read "R Conlin".

Robert J. Conlin
Secretary

A handwritten signature in black ink, appearing to read "C Klimke".

Cindy Klimke-Armatoski
Chief Trust Financial Officer



Public Pension Coordinating Council

***Public Pension Standards Award
For Funding and Administration
2018***

Presented to

Wisconsin Department of Employee Trust Funds

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)



Alan H. Winkle
Program Administrator



INTRODUCTORY SECTION

ETF Boards and Department Organization

The individuals who serve on the boards that provide oversight for the Department of Employee Trust Funds (ETF) play important roles. Board decisions affect hundreds of thousands of individuals who participate in the retirement programs funded by the trust funds as well as other fringe benefit programs ETF operates for Wisconsin.

This section explains how board membership is determined and how membership overlaps. Under state law, members of the boards are chosen in a variety of ways. Some members are ex-officio, some are direct appointees of the governor, others are appointed to fixed terms from lists submitted to the governor by specified organizations, and still others are directly elected by active participants or retirees.

The members and officers of each board are listed below, along with a short explanation of board responsibilities. Membership on the boards as of December 31, 2018, is as follows:

» *Employee Trust Funds Board (13 Members)*

This board has general oversight of ETF; appoints the ETF Secretary; approves tables used for computing benefits, contribution rates and actuarial assumptions; authorizes all annuities except for disability; approves or rejects ETF administrative rules; and generally oversees administration of the benefit programs, except group health, life and income continuation insurance plans, employee reimbursement account, commuter benefit, and health savings account programs.

State law sets ETF Board membership criteria, with some members appointed by the Teachers Retirement Board (TR Board) and the Wisconsin Retirement Board (WR Board). The ETF Board has established three committees to assist the Board in fulfilling its fiduciary and oversight responsibilities: an Executive Committee, an Audit Committee and a Budget and Operations Committee. The Executive Committee oversees the effective operation of Board and other Committee meetings and reviews personnel matters relating to the Department and

the Secretary. The Audit Committee reviews the adequacy and effectiveness of the Department's system of internal controls, including those relating to information technology systems, and the Department's accounting and financial reporting systems. The Budget and Operations Committee reviews the biennial budget process and the Department's operating budget, as well as the Department's strategic business and information technology planning activities.

Board Members

Chair: Wayne E. Koessl

Appointed by the WR Board. WR Board member appointed under § 15.165 (3)(b) 1, 2, 4, 5 or 8 (chief executive, finance officer or member of a governing body of a participating city or village, county clerk, deputy county clerk, chairperson, or member of the governing body of a participating county or town, or public member who is not a participant).

Vice Chair: John David

Appointed by Wisconsin Retirement Board. Any WR Board member appointed under § 15.16(1)(b).

Secretary: Robert M. Niendorf

Appointed by the TR Board. TR Board member appointed under § 15.165 (3)(a)4 (UW teacher participant).

William Ford

Elected by WRS annuitants. WRS annuitant as defined for purposes other than life insurance under § 40.02 (4). § 15.16 (1)(d)

Michael Langyel

Appointed by the TR Board. TR Board member elected under § 15.165 (3)(a)7 (City of Milwaukee teacher participant). § 15.16 (1)(a)3

Leilani Paul

Elected by educational support personnel. WRS participant who is either a public school district educational support employee or a technical college district educational support employee. § 15.16 (1)(f)

Roberta Rasmus

Appointed by the TR Board. TR Board member appointed under § 15.165 (3)(a)3 or 5 (public school administrator or school board member). § 15.165 (3)(a)5

Stacey Rolston

Administrator in Department of Administration, Division of Personnel Management or Administrator's designee. § 15.16 (1) (intro.)

Vacant

Appointed by Governor, with Senate confirmation. Public member who is not a participant in or beneficiary of the WRS, with at least five years of experience in actuarial analysis, administration of an employee benefit plan, or significant administrative responsibility in a major insurer. § 15.16 (1)(c)

Mary Von Ruden

Appointed by the WR Board. WR Board member appointed under § 15.165 (3)(b)3, 6, or 7 (participating employee of a city or village, participating employee of a local employer other than a city or village or participating state employee). § 15.16 (1)(b)2

David Wiltgen

Appointed by TR Board. TR Board member appointed or elected under § 15.165 (3)(a) 1 or 2 (public or vocational school teacher).

Bob Ziegelbauer

Governor or the Governor's designee on the Group Insurance Board. § 15.16 (1) (intro.)

Vacant

Appointed by Wisconsin Retirement Board. Wisconsin Retirement Board member appointed under § 15.165 (3)(b) 7 or 8 (participating state employee or public member who is not a participant). § 15.16 (1)(b) 3

» Wisconsin Retirement Board (9 Members)

The WR Board advises the ETF Board on matters relating to retirement; approves or rejects administrative rules; authorizes or terminates disability benefits for non-teachers; and hears appeals of disability rulings. This board appoints four members to the ETF Board and one non-teaching member to the State of Wisconsin Investment Board.

Board Members
Chair: Wayne E. Koessl

Appointed by the Governor from a list of five names submitted by the executive committee of the Wisconsin Counties Association. Chairperson or member of the governing body of a participating county or town, and from a different county than subs. 5 & 6. § 15.165 (3)(b)4

Vice Chair: John David

Appointed by the Governor from a list of five names submitted by the Board of Directors of the League of Wisconsin Municipalities. Chief executive or member of the governing body of a participating city or village and from a different county than subs. 2 & 3. § 15.165 (3)(b)1

Secretary: Steven Wilding

Appointed by the Governor. Participating employee of a participating city or village and from a different county than subs. 1 & 2 § 15.165 (3)(b)3

Ted Nickel

Ex officio; Commissioner of Insurance or an experienced actuary in the Office of the Commissioner designated by the Commissioner. § 15.165 (3)(b)9

Vacant

Appointed by Governor. Public member who is not a participant or beneficiary of the WRS. § 15.165 (3)(b)8

Herbert Stinski

Appointed by the Governor. Participating employee and principal finance officer of a participating city or village and from a different county than subs. 1 & 3. § 15.165 (3)(b)2

Mary Von Ruden

Appointed by the Governor. Participating employee from a participating local employer other than a city or village and from a different county than subs. 4 & 5. § 15.165 (3)(b)6

Julie Wathke

Appointed by the Governor. County clerk or deputy county clerk from a participating county different than subs. 4 & 6. § 15.165 (3)(b)5



INTRODUCTORY SECTION

Vacant

Appointed by the Governor. Participating state employee. § 15.165 (3)(b)7

» *Teachers Retirement Board (13 Members)*

The TR Board advises the ETF Board on retirement and other benefit matters involving public school, technical college, state and university teachers; acts on administrative rules and authorizes or terminates teacher disability benefits and hears disability benefit appeals. Nine of the 13 members are elected. This board appoints four members to the ETF Board and one teacher participant to the State of Wisconsin Investment Board.

Board Members

Chair: Robin Starck

Elected by public school teachers. Public school teacher. § 15.165 (3)(a)1

Vice Chair: David Wiltgen

Elected by public school teachers. Public school teacher. § 15.165 (3)(a)1

Secretary: Brent Grochowski

Elected by public school teachers. Public school teacher. § 15.165 (3)(a)1

Sandra Clafin-Chalton

Appointed by the Governor. UW teacher participant in the WRS (not from same campus as other UW teacher representative). § 15.165 (3)(a)4

Gary Epping

Appointed by the Governor. Member of a school board. § 15.165 (3)(a)5

Chris Heller

Elected by public school teachers. Public school teacher. § 15.165 (3)(a)1

Craig Hubbell

Appointed by the Governor. Public school administrator who is not a classroom teacher. § 15.165 (3)(a)3

James Langkamp

Elected by public school teachers. Public school teacher. § 15.165 (3)(a)1

Esther Ancel

Elected by annuitants who were teacher participants. Annuitant who was a teacher participant in the WRS. § 15.165 (3)(a)6

Anton (Tony) Przybylski Jr.

Elected by participating Wisconsin Technical College teachers. Public school teacher from a participating Wisconsin Technical College district and a participating employee in the WRS. § 15.165 (3)(a)2

Allison Pratt

Elected by public school teachers. Public school teacher. § 15.165 (3)(a)1

David Schalow

Appointed by the Governor. UW teacher participant in the WRS (not from same campus as other UW teacher representative). § 15.165 (3)(a)4

Vacant

Elected by Milwaukee Public School District teachers who are participants. City of Milwaukee teacher who is a participant in the WRS. § 15.165 (3)(a)7

» *Group Insurance Board (11 Members)*

This board sets policy for the group health, life, and income continuation insurance plans as well as employee reimbursement account, commuter benefit, and health savings account programs for state employees and the group health, life and income continuation insurance plans for local employers who choose to offer them. The board also can provide other insurance plans, if employees pay the entire premium.

Board Members

Chair: Michael Farrell

Appointed by the Governor. No membership requirement. § 15.165 (2)

Vice Chair: Stacey Rolston

Ex officio; Administrator in Department of Administration, Division of Personnel Management or Administrator's designee. § 15.165 (2)

Secretary: Herschel Day

Appointed by the Governor. Insured participant in the WRS who is a teacher. § 15.165 (2)

Charles Grapentine

Appointed by the Governor. Insured participant in the WRS who is a retired employee. § 15.165 (2)

Waylon Hurlburt

Ex officio; Secretary of Department of Administration or Secretary's designee. § 15.165 (2)

Theodore Neitzke

Appointed by the Governor. Insured participant in the WRS who is an employee of a local unit of government. § 15.165 (2)

Jennifer Stegall

Appointed by the Governor. Insured participant in WRS who is not a teacher. § 15.165 (2)

Bob Wimmer

Ex officio; Attorney General or his/her designee. § 15.165 (2)

Nancy Thompson

Appointed by the Governor. Chief executive or member of the governing body of a local unit of government that is a participating employer. § 15.165 (2)

J.P. Wieske

Ex officio; Commissioner of Insurance or Commissioner's designee. § 15.165 (2)

Bob Ziegelbauer

Ex officio; Governor or Governor's designee. § 15.165 (2)(intro)

» Deferred Compensation Board (5 Members)

This board sets policy, contracts with investment and administrative service providers, and oversees administration of the Deferred Compensation Program. The board is responsible for establishing criteria and procedures for selecting and evaluating investment options offered by the Program. The governor, with senate confirmation, appoints all board members; there are no statutory requirements for appointments.

Board Members
Chair: Edward D. Main

Appointed by the Governor, with Senate confirmation. No membership requirements. § 15.165 (4)

Vice Chair: Gail Hanson

Appointed by the Governor, with Senate confirmation. No membership requirements. § 15.165 (4)

Secretary: Arthur Zimmerman

Appointed by the Governor, with Senate confirmation. No membership requirements. § 15.165 (4)

Jason Rothenberg

Appointed by the Governor, with Senate confirmation. No membership requirements. § 15.165 (4)

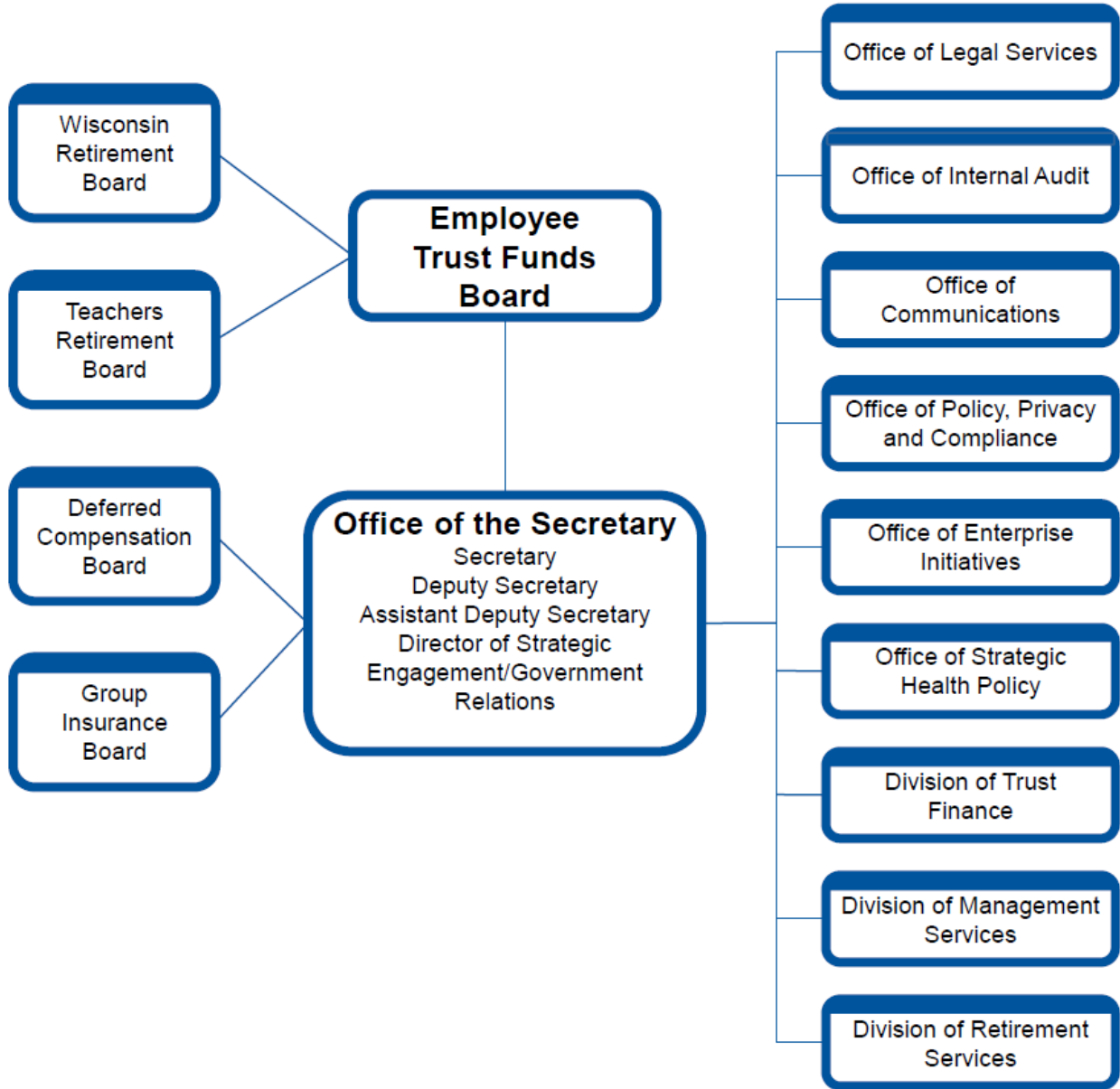
John Scherer

Appointed by the Governor, with Senate confirmation. No membership requirements. § 15.165 (4)

INTRODUCTORY SECTION

Department Organization

The Department of Employee Trust Funds had 272.2 permanent positions at the end of 2018. The Department’s organization chart is shown below:



» 2018 ETF Management Staff

Secretary: Robert J. Conlin
 Deputy Secretary: John Voelker
 Assistant Deputy Secretary: Pamela Henning

Director of Strategic Engagement/Government Relations: Tarna Hunter

Division of Retirement Services
 Administrator: Matt Stohr

Division of Management Services
 Administrator: Steve Mueller

Division of Trust Finance
 Administrator: Cindy Klimke-Armatoski

Office of Strategic Health Policy
 Director: Eileen Mallow

Office of Internal Audit
 Director: Yikchau Sze

Office of Communications
 Director: Mark Lamkins

Office of Policy, Privacy and Compliance
 Director: Steve Hurley

Office of Enterprise Initiatives
 Director: Michelle Baxter

Office of Legal Services
 Director: David Nispel

» Principal Consultants and Administrators
Consulting Actuaries

Gabriel Roeder Smith & Company
 Southfield, Michigan

Segal Consulting
 Atlanta, Georgia

Milliman, Inc.
 Portland, Maine

Auditors

Legislative Audit Bureau
 Madison, Wisconsin

» Third Party Administrators
Pharmacy Benefits Manager

Navitus Health Solutions, LLC
 Madison, Wisconsin

Dental Insurance

Delta Dental
 Stevens Point, Wisconsin

Wellness and Disease Management Program

The StayWell Company, LLC
 Saint Paul, Minnesota

Income Continuation Insurance

The Hartford
 Hartford, Connecticut

Deferred Compensation

Empower Retirement
 Greenwood Village, Colorado

**Employee Reimbursement Accounts /
 Commuter Benefits Program**

Total Administrative Services Corporation (TASC)
 Madison, Wisconsin

Life Insurance

Securian Financial Group, Inc
 Saint Paul, Minnesota

FINANCIAL SECTION



STATE OF WISCONSIN | Legislative Audit Bureau

22 East Mifflin St., Suite 500 ■ Madison, WI 53703 ■ (608) 266-2818 ■ Hotline: 1-877-FRAUD-17 ■ www.legis.wisconsin.gov/labJoe Chrisman
State Auditor**Independent Auditor's Report on the Financial Statements and
Other Reporting Required by *Government Auditing Standards***

Senator Robert Cowles and
Representative Samantha Kerkman, Co-Chairpersons
Joint Legislative Audit Committee

Mr. Robert J. Conlin, Secretary
Department of Employee Trust Funds and
Members of the Employee Trust Funds Board

Report on the Financial Statements

We have audited the accompanying Statement of Fiduciary Net Position, Statement of Changes in Fiduciary Net Position, and the related notes for the following fiduciary funds administered by the State of Wisconsin Department of Employee Trust Funds (ETF) as of and for the year ended December 31, 2018: the Wisconsin Retirement System, Accumulated Sick Leave Conversion Credits, Employee Reimbursement Accounts and Commuter Benefits, State Retiree Life Insurance, Local Retiree Life Insurance, and Milwaukee Retirement Systems. We have also audited the accompanying Statement of Fiduciary Net Position, Statement of Changes in Assets and Liabilities, and the related notes for the following fiduciary funds administered by ETF as of and for the year ended December 31, 2018: the State Retiree Health Insurance and Local Retiree Health Insurance funds. Finally, we have audited the accompanying Statement of Net Position; Statement of Revenues, Expenses, and Changes in Fund Net Position; Statement of Cash Flows; and the related notes for the following proprietary funds administered by ETF as of and for the year ended December 31, 2018: Duty Disability Insurance, Health Insurance, and Income Continuation Insurance.

Management's Responsibility for the Financial Statements

Management of ETF 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.

Auditor's Responsibility

Our responsibility is to express opinions 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*, which is 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 the 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 opinions on these financial statements.

Opinions

In our opinion, the financial statements present fairly, in all material respects, the financial position of each fiduciary fund and each proprietary fund referred to in the first paragraph as of December 31, 2018, the respective changes in the financial position and, where applicable, cash flows for the year then ended, in accordance with accounting principles generally accepted in the United States of America.

Emphases of Matter

As discussed in Note 1 to the financial statements, the financial statements referred to in the first paragraph present only the fiduciary and proprietary funds administered by ETF and do not purport to, and do not, present fairly the financial position of the State of Wisconsin as of December 31, 2018, the changes in its financial position, or where applicable, its cash flows for the year then ended, in accordance with accounting principles generally accepted in the United States of America.

As discussed in Note 2 to the financial statements, ETF no longer presents the financial statements and related notes for the active employee participants of the Group Life Insurance program. Employers and active employees who participate in the Group Life Insurance program pay premiums directly to the insurance carrier and ETF accounts for minimal activity for this fund.

As discussed in Note 3 to the financial statements, the financial statements include investments that do not have readily ascertainable market prices and are valued based on a variety of third-party pricing methods. However, because of the inherent uncertainty of valuation, those estimated values may differ from the values that would have been used had a ready market for the investments existed.

Our opinions are not modified with respect to these matters.

Other Matters

Required Supplementary Information—Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis on pages 18 through 32, and

FINANCIAL SECTION

the following information found on pages 100 through 110 be presented to supplement the financial statements: claims development information for public entity risk pools; the Wisconsin Retirement System's Schedules of Changes in Net Pension Liability (Asset) and Related Ratios, Schedule of Required Employer Contributions, and Schedule of Investment Returns, which include the related note; and the State Retiree Life Insurance Schedules of Changes in Net OPEB Liability (Asset) and Related Ratios, the Local Retiree Life Insurance Schedules of Changes in Net OPEB Liability (Asset) and Related Ratios, and the Schedule of Investment Returns for State and Local Retiree Life Insurance. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board, which considers it to be essential for placing the financial statements in an appropriate operational, economic, or historical context. In accordance with auditing standards generally accepted in the United States of America, we have applied certain limited procedures to the required supplementary information that included inquiries of management about the methods of preparing the information. We further compared the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the 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 do so.

Accompanying Information—Our audit was conducted for the purpose of forming opinions on the financial statements referred to in the first paragraph. The supplementary information included in the sections listed in the table of contents entitled Introductory Section, Statistical Section, Actuarial Section, Investment Section, and Contributions Paid and Employer Unfunded Liability Balances is presented for purposes of additional analysis and is not a required part of the financial statements. Such information has not been subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we do not express an opinion or provide any assurance on it.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued a report, which was dated September 24, 2019, and published as report 19-17, on our consideration of ETF's internal control over financial reporting; our tests of its compliance with certain provisions of laws, regulations, and contracts; and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the result 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* and should be used when considering ETF's internal control over financial reporting and compliance.

LEGISLATIVE AUDIT BUREAU



Joe Chrisman
State Auditor

September 24, 2019

Management's Discussion and Analysis

Management of the Wisconsin Department of Employee Trust Funds (ETF) presents this discussion and analysis of the financial activities for the year ended December 31, 2018. This narrative is intended to supplement the financial statements which follow and should be read in conjunction with the note disclosures, which are an integral part of the financial statements.

ETF administers a defined benefit pension trust and other employee benefit plans for approximately 642,000 members, retirees, and beneficiaries.

» *Overview of the Financial Statements*

The following discussion and analysis is intended to serve as an introduction to ETF's financial statements. The financial statements include:

- Statement of Fiduciary Net Position
- Statement of Changes in Fiduciary Net Position
- Statement of Net Position – Proprietary Funds
- Statement of Revenues, Expenses, and Changes in Fund Net Position – Proprietary Funds
- Statement of Cash Flows – Proprietary Funds
- Statement of Fiduciary Net Position – Agency Funds
- Statement of Changes in Assets and Liabilities – Agency Funds
- Notes to Financial Statements

Funds are categorized as either fiduciary, proprietary, or agency, based on the purpose and activities of the fund.

Fiduciary funds are used to report assets held by ETF as trustee for others. ETF is responsible for handling the assets placed under its control. The fiduciary funds reported by ETF include:

- Wisconsin Retirement System (WRS)
- Accumulated Sick Leave Conversion Credits
- Employee Reimbursement Accounts/Commuter Benefits
- State Retiree Life Insurance
- Local Retiree Life Insurance
- Milwaukee Retirement Systems

FINANCIAL SECTION

The activities in the proprietary funds operate similar to a private business. Fees are charged for services provided, and the focus is on determining financial position, operating and non-operating income, cash flows, and changes in net position. The proprietary funds reported by ETF include:

- Duty Disability Insurance
- Health Insurance
- Income Continuation Insurance

Agency funds are fiduciary funds where the assets of the fund are held for distribution by the Department as an agent for which ETF has custodial responsibility and accounts for the flow of assets. The agency funds reported by ETF include:

- State Retiree Health Insurance
- Local Retiree Health Insurance

» *Financial Statements*

The Statement of Net Position provides a snapshot of account balances at a point in time. It reports the assets available for future payments to benefit recipients, along with any liabilities that are owed as of the statement date. The full accrual basis of accounting is used.

The difference between assets and liabilities represents the net value of assets held in trust for future benefit payments. These amounts are called "Net Position - Restricted for Pensions, Other Post-employment Benefits, and Other Purposes" for fiduciary funds, "Net Position Restricted (Unrestricted) for Benefits" for proprietary funds, and "Net Position Held For Other Post Employment Benefits" for agency funds.

The Statement of Changes in Fiduciary Net Position for fiduciary funds, the Statement of Revenues, Expenses, and Changes in Fund Net Position for proprietary funds, and the Statement of Changes in Assets and Liabilities for agency funds displays the effect of financial transactions that occurred during the calendar year. For fiduciary funds, additions less deductions equals the net increase (decrease) in net position. For proprietary funds, revenues less expenses equal the change in net position. This net increase (decrease) reflects the change in the value of net position that occurred between the current and prior year.

Notes to the Financial Statements are an integral part of the financial statements and provide additional information that is essential for a comprehensive understanding of the data reported in the financial statements. The notes describe the accounting and administrative policies under which ETF operates, significant account balances and activities, material risks, obligations, contingencies and subsequent events, if any.

The Required Supplementary Information (RSI) includes:

- Public Entity Risk Pools Claims Development
- Schedule of Changes in Net Pension Liability (Asset) and Related Ratios-WRS
- Schedule of Required Employer Contributions-WRS
- Schedule of Investment Returns-WRS
- Schedule of Changes in Net OPEB Liability (Asset) and Related Ratios-State and Local Retiree Life Insurance

- Schedule of Investment Returns-State and Local Retiree Life Insurance

The financial statements and related notes are prepared in accordance with Generally Accepted Accounting Principles (GAAP) established by the Governmental Accounting Standards Board (GASB).

» Financial Highlights

- The following accounting changes for the year ended December 31, 2018, were made:
 - ETF administers the Group Life Insurance Program for current State of Wisconsin employees and employees of participating local public employers. The insurance carrier guarantees coverage and employers and active employees pay premiums directly to the the insurance carrier. ETF accounts for minimal activity for this fund, primarily related to administrative costs. Because this activity is immaterial, the financial statements and related notes for this fund are no longer reported in the ETF CAFR.
 - Effective December 31, 2018, insurance claims payable is reported on the Health Insurance Statement of Net Position - Proprietary Fund, Statement of Fiduciary Net Position - Agency Funds, and Statement of Changes in Assets and Liabilities - Agency Funds as "Benefits Payable". In previous reporting periods, this activity was reported as "Miscellaneous Payables". There is no impact on the beginning of the year or ending of the year Net Position as of December 31, 2018 as a result of this change.
 - Effective January 1, 2018, Investment Income - Interest and Investment Expense reported on the WRS Statement of Changes in Fiduciary Net Position reflect gross amounts. In previous reporting periods, Investment Income - Interest on the WRS Statement of Changes Fiduciary Net Position was netted with interest expense from reverse repurchase agreements.

Note 2 further describes these changes.

NET POSITION BY PROGRAM

AT DECEMBER 31

(In Thousands)

Program	2018	2017	\$ Change	% Change
Wisconsin Retirement System	\$ 96,737,081	\$ 104,396,462	\$ (7,659,381)	(7.3)%
Accumulated Sick Leave Conversion Credits	(139,623)	59,807	(199,430)	(333.5)
Employee Reimbursement Accounts/Commuter Benefits	1,936	1,303	633	48.6
State Retiree Life Insurance	343,984	351,972	(7,988)	(2.3)
Local Retiree Life Insurance	244,898	244,231	667	0.3
Milwaukee Retirement Systems	174,648	193,366	(18,718)	(9.7)
Duty Disability Insurance	152,534	192,144	(39,610)	(20.6)
Health Insurance	222,281	225,537	(3,256)	(1.4)
Income Continuation Insurance	18,354	20,534	(2,180)	(10.6)
Total	\$ 97,756,093	\$105,685,356	\$ (7,929,263)	(7.5)%

The WRS funding ratio under the funding methodology used to establish required contributions continues to be approximately 100% as of December 31, 2018. Under the GASB financial reporting method, the WRS is 96.5% funded as of December 31, 2018.



FINANCIAL SECTION

As of December 31, 2018, the WRS had a Net Pension Liability of \$3,557.7 million compared to a Net Pension Asset of \$2,969.1 million as of December 31, 2017. The decrease of approximately \$6,526.8 million is primarily attributable to losses on investments due to less favorable market conditions in 2018. The Total Pension Liability decreased from \$101.4 billion in 2017 to \$100.3 billion in 2018.

» *Analysis of WRS Financial Activity*

The WRS is a cost-sharing, multiple-employer public employee retirement system established and administered by the State of Wisconsin to provide pension benefits for state and local government employees. The system is administered in accordance with Chapter 40 of the Wisconsin Statutes. ETF, under the direction of the ETF Board, is responsible for administration of the WRS, including collecting contributions from employers and paying retirement benefits to WRS participants. The State of Wisconsin Investment Board (SWIB) is responsible for managing WRS investments.

The system’s funding objective is to meet its long-term benefit obligations through contributions and investment income. Contributions and the income from investments provide the reserves needed to finance the benefits provided under the programs.

The tables below show comparative summaries of the WRS Net Position and the changes in the WRS net position for 2018 and 2017.

SUMMARY OF WRS NET POSTION

AT DECEMBER 31

(In Millions)

	2018	2017	\$ Change	% Change
Assets				
Cash and Cash Equivalents	\$ 4,037	\$ 3,516	\$ 521	14.8 %
Receivables	4,049	1,802	2,247	124.7
Investments at Fair Value	108,313	112,616	(4,303)	(3.8)
Securities Lending Collateral	467	1,577	(1,110)	(70.4)
Prepaid Expenses	10	27	(17)	(63.0)
Capital Assets	6	34	(28)	(82.4)
Total Assets	\$ 116,882	\$ 119,572	\$ (2,690)	(2.2)%
Liabilities				
Core Investment Due To Other Benefit Programs	\$ 3,494	\$ 3,786	\$ (292)	(7.7)%
Variable Investment Due To Other Benefit Programs	17	20	(3)	(15.0)
Obligation Under Reverse Repurchase Agreements	8,834	6,114	2,720	44.5
Investment Payables	3,800	467	3,333	713.7
Securities Lending Collateral Liability	467	1,577	(1,110)	(70.4)
Other Payables	3,533	3,212	321	10.0
Total Liabilities	\$ 20,145	\$ 15,176	\$ 4,969	32.7 %
Net Position Restricted for Pensions	\$ 96,737	\$ 104,396	\$ (7,659)	(7.3)%

SUMMARY OF CHANGES IN WRS NET POSITION

FOR THE YEAR ENDED DECEMBER 31

(In Millions)

	2018	2017	\$ Change	% Change
Contributions	\$ 2,003	\$ 1,983	\$ 20	1.0 %
Net Investment Income	(4,050)	14,869	(18,919)	(127.2)
Other Income	1	6	(5)	(83.3)
Total Additions	\$ (2,046)	\$ 16,858	\$ (18,904)	(112.1)%
Benefits/Benefit Expenses	\$ 5,556	\$ 5,250	\$ 306	5.8 %
Administrative Expenses	32	26	6	23.1
Total Deductions	\$ 5,588	\$ 5,276	\$ 312	5.9 %
Loss due to Impairment of Capital Assets	\$ (25)	\$ 0	\$ (25)	(100.0)%
Net Increase (Decrease) in Net Position	\$ (7,659)	\$ 11,582	\$ (19,241)	(166.1)%
Net Position - Beginning of Year	\$ 104,396	\$ 92,814	\$ 11,582	12.5 %
Net Position - End of Year	\$ 96,737	\$ 104,396	\$ (7,659)	(7.3)%

Cash and Cash Equivalents

Cash and Cash Equivalents increased by \$521.0 million, or 14.8%, when comparing calendar year-end 2018 to 2017. The majority of the increase in cash and cash equivalents is attributed to SWIB holding a short-term, foreign discount bill at calendar-year end used within an active investment strategy. Short-term investments with maturities generally less than three months are included in Cash and Cash Equivalents. Also, SWIB utilized derivatives to implement strategic investment positions. Derivatives used for these strategies require defined levels of cash to conservatively provide for adequate levels of margin, near-term benefit payments, and to adjust risk to desired levels.

The increase in cash and cash equivalents was partially offset by a reduction in SWIB's exposures to the commodities markets, which was eliminated from the policy portfolio asset allocation and had been obtained using futures contracts. As in other instances, derivatives used for this strategy required certain levels of cash on-hand to moderate exposures. In addition, SWIB continued to reduce synthetic positions and increase the use of physical securities when possible during 2018.

Receivables

The balance in Receivables increased by \$2.2 billion, or 124.7%, when comparing calendar year-end 2018 to 2017. Most of this increase is due to SWIB's increased use of To Be Announced (TBA) securities in 2018. TBA securities are derivative contracts that consist of mortgage-backed securities (MBS) issued by the Government National Mortgage Association, a government entity, and by government-sponsored enterprises, such as the Federal National Mortgage Association or the Federal Home Loan Mortgage Corp. The term TBA is derived from the fact that the actual MBS that will be delivered to fulfill a TBA trade is not designated at the time the trade is made. Instead, the specific pool of mortgages making up the MBS is announced 48 hours prior to the established trade settlement date. Eligibility rules and standards for MBS pools deliverable into TBA contracts ensure that delivered MBS pools are fungible. TBA securities sold create a receivable on the Statement of Fiduciary Net Position because payment for TBA securities is not made until the settlement date.



FINANCIAL SECTION

Routine rebalancing activities, where investment positions were sold but pending settlement, also contributed to the change in Receivables at December 31, 2018.

Securities Lending Collateral and Securities Lending Collateral Liability

Securities Lending Collateral and Securities Lending Collateral Liability decreased by \$1.1 billion as of December 31, 2018, compared to December 31, 2017. Cash received as collateral for securities borrowed can be utilized by SWIB's internally managed portfolios to back short positions. Starting in 2018, investment policies permit the use of treasury securities as collateral to back short positions. The use of treasury securities as collateral is a more efficient option to increase SWIB's internal shorting capacity. As a result, the amount of cash used as collateral for short positions decreased in 2018.

Obligation Under Repurchase Agreements

Obligation Under Reverse Repurchase Agreements increased by \$2.7 billion, or 44.5%, when comparing calendar year-end 2018 to 2017. Reverse repurchase agreements involve the sale of assets with the simultaneous agreement to repurchase those assets for a pre-determined price, plus interest, at a future date. During 2018, SWIB increased its capacity to participate in reverse repurchase agreements, providing a low-cost way to obtain financing. The proceeds from these agreements are invested in Treasury Inflation-Protected Securities (TIPS).

Investment Payables

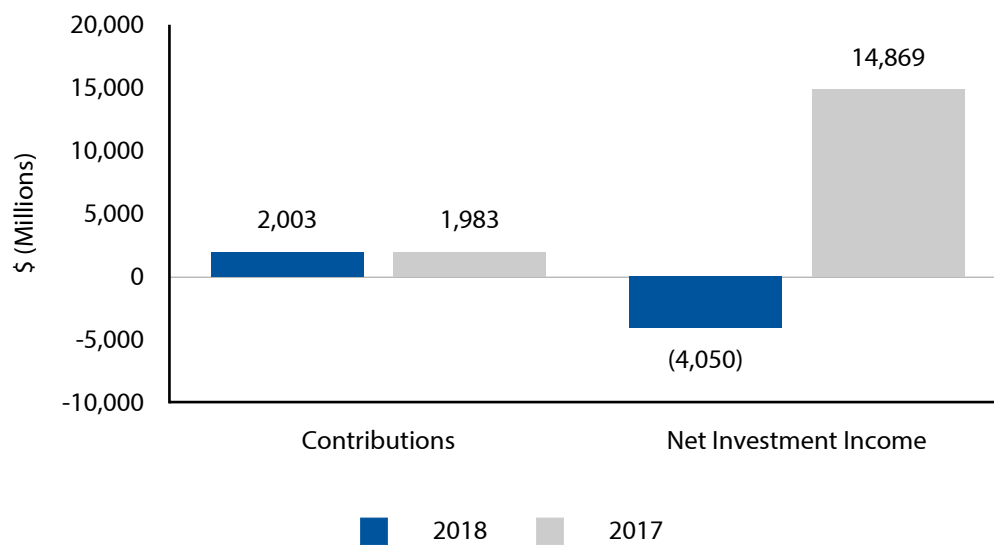
Investment Payables increased by \$3.3 billion as of December 31, 2018 versus the prior year-end balance. The majority of this increase is due to purchased TBA contracts held at December 31, 2018. SWIB began trading these derivative instruments in 2017 and increased the use of TBA securities in 2018. Purchased TBA securities create a payable on the Statement of Fiduciary Net Position because payment for TBA securities is not made until the settlement date.

Contributions and Investment Earnings

The retirement benefits provided by the WRS are funded from pension trust fund revenue. The primary sources of revenue are investment income generated from the investment of plan assets and contributions for active members made by members and their employers.

Total contributions and investment earnings for the year ended December 31, 2018, was \$(2.0) billion compared to \$16.9 billion in 2017. As the chart below shows, contributions remained relatively stable at about \$2.0 billion, while investment income decreased by \$18.9 billion. The decrease in income in 2018 is attributable to a total Core Fund gross-of-fee investment return of (3.3)% compared to 16.2% for the previous calendar year, and a total Variable Fund gross-of-fee investment return of (7.9)%, compared to 23.2% in 2017.

Contributions and Net Investment Income



The assets of the WRS are valued at fair market value and are invested in the Core Retirement Investment Trust (Core Fund) and the Variable Retirement Investment Trust (Variable Fund). All WRS members have at least half, if not all, of their pension contributions invested in the Core Fund. The Core Fund is a diversified, balanced fund invested for the long-term needs of the WRS. Diversification helps to stabilize the effects of market changes. The investment objective of this trust fund is to meet or exceed an average of 7.0% annual nominal return over the long-term. This objective is based on market rate of return and actuarial assumptions needed to meet the obligations of the WRS. The Variable Fund allows active employees participating in the WRS to put up to half of their pension fund contributions into this global stock fund. Approximately 15% of WRS members participate in the Variable Fund. By statute, the Variable Fund invests in stocks and provides participants the potential for higher returns in exchange for higher risk. The investment objective of the Variable Fund is to meet or exceed broad equity market indices over a full market cycle.

The State of Wisconsin Investment Board (SWIB) is responsible for managing the assets of the WRS. See Note 3 for additional information on Investments and Securities Lending Transactions.



FINANCIAL SECTION

Expenses - Deductions from Plan Net Position

The primary expenses of the WRS include annuity benefits for retirees and beneficiaries, refunds of contributions to former members, and expenses associated with the administration of the retirement plans. Benefit payments for 2018 totaled \$5,556 million, an increase of \$306 million or 5.8% over the 2017 amount of \$5,250 million. This was due to the number of retired participants increasing from 203,300 as of December 31, 2017, to 209,059 as of December 31, 2018. Administrative expenses of approximately \$32 million accounted for less than 1% of the deductions to net position in 2018, a \$6 million increase from \$26 million in 2017.

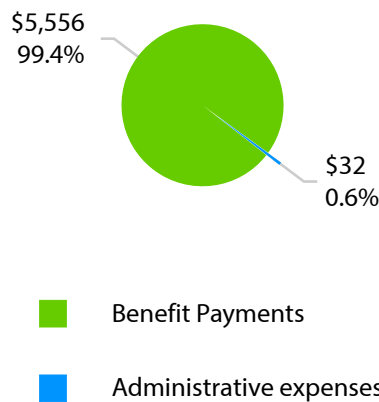
Investment expenses are deducted from investment income and were \$691 million in 2018, an increase of 41.8% from \$487 million in 2017. Approximately 78% of this change is due to an increase in transaction-related expenses from interest paid to counterparties that are now included in expenses because of an accounting change in 2018. In prior years, SWIB’s financial statements netted interest paid to counterparties in reverse repurchase agreements with interest income. Reverse repurchase agreements involve the sale of assets with the simultaneous agreement to repurchase those assets for a pre-determined price, plus interest. The cash proceeds from reverse repurchase agreements are reinvested into TIPS. Starting in 2018, SWIB discontinued the netting of interest expense paid in reverse repurchase agreements with investment income. This approach provides more transparency by disclosing the income and expense amounts separately. More information about the accounting change can be found in Note 2.

During calendar year 2018, SWIB increased the use of reverse repurchase agreements and, as interest rates rose, the rates for these agreements increased, which both contributed to the increase in interest expense compared to the prior calendar year.

The remaining increase in investment expense is due to increased base fees paid to external managers due to increased assets under management with such managers.

Expenses as of December 31, 2018

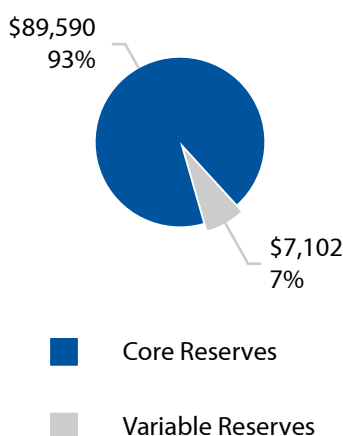
(In Millions)



Retirement Reserves

The funds accumulated by the WRS to meet current and future obligations to retirees and beneficiaries are derived from the excess of revenue over expenses. Reserves have been established to reflect legal restrictions established by Wisconsin Statutes on the use of funds. The higher level of funding a plan achieves, the larger the accumulation of assets and the greater the investment income potential. In 2018 expenses exceeded revenues, leading to a decrease of \$7,556 million in the retirement reserves. The decrease was primarily related to the decrease in investment earnings in 2018. The reserves are invested in either the Core Fund or the Variable Fund. 93% of the reserves are invested in the Core Fund and 7% are invested in the Variable Fund.

Total Reserves Core vs. Variable (In Millions)



SUMMARY OF PENSION PLAN RESERVE BALANCES

FOR THE YEARS ENDED DEC 31

(In Millions)

Total Reserves	2018	Increase (Decrease)	2017*
Annuity	\$ 60,236	\$ 704	\$ 59,532
Employee	18,255	18	18,237
Employee Additional	201	(3)	204
Employer	22,729	(384)	23,113
Market Recognition Account (WRS Only)	(4,729)	(7,891)	3,162
Total Reserves	\$ 96,692	\$ (7,556)	\$ 104,248

*Amounts for the prior year include restatement of prior year balances between annuity and employer reserves.



FINANCIAL SECTION

Members, Retirees, Beneficiaries and Employers

Approximately 258,000 active members were employed with 1,507 WRS-participating employers as of December 31, 2018. The number of inactives, retirees and other annuitants totaled 383,981 at year-end. Total members served by the WRS in 2018 was approximately 642,000 as shown in the following tables.

DISTRIBUTION OF ACTIVE MEMBERS

AT DECEMBER 31

	2018		2017	
	Number	Percent of Total	Number	Percent of Total
General	133,132	51.6%	133,107	51.7%
Teachers	101,235	39.3	100,738	39.1
Elected/Executive/Judges	1,317	0.5	1,351	0.5
Protective with Social Security	19,450	7.5	19,465	7.6
Protective without Social Security	2,777	1.1	2,752	1.1
Total Active Members	257,911	100.0%	257,413	100.0%

Additional information about members is presented in Note 4 and in the Statistical Section.

DISTRIBUTION OF INACTIVES, RETIREES, AND BENEFICIARIES

AT DECEMBER 31

	2018		2017	
	Number	Percent of Total	Number	Percent of Total
Inactive Members:				
Terminated Participants	170,869	44.5%	167,996	44.8%
Alternate Payees	4,053	1.1	4,093	1.1
Retirees and Beneficiaries:				
Retirement Annuitants	201,466	52.4	195,762	52.1
Disability Annuitants	6,214	1.6	6,189	1.6
Death Beneficiary Annuitants	1,379	0.4	1,349	0.4
Total Inactive and Retiree Members	383,981	100.0%	375,389	100.0%

Additional information about retirees and beneficiaries is presented in the Statistical Section.

Participants receiving LTDI benefits are categorized as either current employees, inactive participants, retirement annuitants, or disability annuitants.

The number of participating employers by category as of December 31, 2018 and 2017, was:

DISTRIBUTION OF EMPLOYERS

AT DECEMBER 31

	2018	2017
State Agencies, UW & Public Authorities	56	57
Cities	188	188
Counties	71	71
Villages	271	268
Towns	265	257
School Districts	422	422
Cooperative Educational Service Agencies	12	12
WI Technical College System Districts	16	16
Special Districts	206	208
Total Employers	1,507	1,499

Actuarial Valuations and Funding Progress - Pension Plan

ETF's actuarial consultant performs an actuarial valuation of the WRS each year to determine funding requirements and establish contribution rates. The funding policy provides for periodic employer contributions at actuarially determined rates that will remain relatively level over time as a percentage of payroll and will accumulate sufficient assets to meet the costs of all benefits when due. The latest valuation of the pension plan was performed by Gabriel Roeder Smith & Company (GRS). Under the funding methodology, the WRS is approximately 100% funded as of December 31, 2018. For financial reporting purposes, a funding ratio is calculated in accordance with GASB pension accounting standards. Under these standards, the WRS was 96.5% funded as of December 31, 2018.

» Analysis of Financial Activities – Other Employee Benefit Plans
Accumulated Sick Leave Conversion Credits (ASLCC) Program

The ASLCC Program allows retirees of the State of Wisconsin, the University of Wisconsin (UW) System, the UW Hospital & Clinics Authority, and other state authorities, at the time of their retirement, to convert the value of their unused sick leave accumulation into an account to be used to pay for post-retirement health insurance.

During 2018, the ASLCC Program collected \$54.7 million in contributions from participating employers compared to \$57.9 million in 2017. The program incurred expenses of \$160.4 million in 2018, a decrease of \$102.0 million from \$262.4 million in 2017. The change in actuarially determined liabilities from year to year impacts expenses and was the primary reason for the decrease.

The ASLCC Program has a net position of \$(139.6) million at December 31, 2018. This was a decrease of \$199.4 million from a \$59.8 million net position as of December 31, 2017. The program experienced investment losses of \$93.7 million for 2018 as compared to investment income of \$366.4 million for 2017.

As of December 31, 2018, there were approximately 72,000 active employees; 17,000 retirees and others using ASLCC credits; and 5,600 retirees that may use sick leave credits in the future.

FINANCIAL SECTION

Employee Reimbursement Accounts/Commuter Benefits Program

The Employee Reimbursement Accounts Program reimburses qualifying medical and dependent care expenses, while the Commuter Benefits Program reimburses qualifying transportation expenses, for employees of the State of Wisconsin who sign up for pre-tax payroll deductions.

During 2018, the Employee Reimbursement Accounts/Commuter Benefits program collected \$39.8 million in contributions from participating employees compared to \$37.4 million during 2017, primarily due to a 5.8% increase in program participants as compared to 2017. The program paid benefits and expenses of \$39.3 million in 2018, which was an increase of \$2.0 million from \$37.3 million in 2017.

The Employee Reimbursement Accounts/Commuter Benefits program had a net position of \$1.9 million at December 31, 2018. This was an increase of approximately \$0.6 million from a net position of \$1.3 million as of December 31, 2017.

There were 20,097 members that used the medical reimbursement accounts and 3,648 that used dependent care reimbursements accounts in 2018 compared to 19,102 medical and 3,343 dependent care accounts in 2017.

State Retiree Life Insurance Program

The State Retiree Life Insurance Program provides fully paid-up life insurance benefits for post-age 64 retired employees of the State of Wisconsin and pre-age 65 annuitants who pay for their coverage.

During 2018, the State Retiree Life Insurance Program collected \$1.4 million in contributions compared to approximately the same amount collected in 2017. The program incurred expenses of \$20.3 million during 2018 compared to \$18.4 million in 2017. Contributions received for pre-age 65 annuitants are reported as a reduction to benefit expense, in accordance with GASB Statement No. 74.

The State Retiree Life Insurance Program had a net position of \$344.0 million at December 31, 2018. This was a decrease of \$8.0 million from a \$352.0 million net position in 2017. Benefit expenses continue to exceed contributions and investment income and is the main reason for the decrease in net position.

There were 32,909 members participating in the State Retiree Life Insurance Program in 2018 which was a 2.8% increase in participants from 2017.

An actuarial valuation in accordance with GASB OPEB (Other Post Employment Benefits) accounting standards was conducted by Milliman. As of December 31, 2018, the plan had a Net OPEB Liability of \$431.5 million. The plan Fiduciary Net Position as a percentage of the Total OPEB Liability was 44%. Additional information on this valuation can be found in Note 9.

Local Retiree Life Insurance Program

The Local Retiree Life Insurance Program provides fully paid-up life insurance benefits for post-age 64 retired employees of participating local governments in Wisconsin and pre-age 65 annuitants who pay for their coverage.

During 2018, the Local Retiree Life Insurance Program collected \$1.9 million in contributions compared to \$2.1 million during 2017. The program incurred expenses of \$8.8 million in 2018 compared to \$8.6 million in 2017. Contributions received from pre-age 65 annuitants are reported as a reduction to benefit expense, in accordance with GASB Statement No. 74.

The Local Retiree Life Insurance Plan had a net position of \$244.9 million at December 31, 2018, which is an increase of \$0.7 million compared to the net position of \$244.2 million as of December 31, 2017.

There were 45,601 members participating in the Local Retiree Life Insurance Program in 2018, which was a 4.0% increase in participants from 2017.

An actuarial valuation in accordance with GASB OPEB accounting standards was conducted by Milliman. As of December 31, 2018, the plan had a Net OPEB Liability of \$258.0 million. The plan Fiduciary Net Position as a percentage of the Total OPEB Liability was 49%. Additional information on this valuation can be found in Note 9.

Milwaukee Retirement Systems

The Milwaukee Retirement Systems (MRS) invests funds with the WRS. Since 2014, the MRS only invested funds from two Milwaukee Public Schools Supplemental Retirement Plans.

During 2018, the MRS deposited \$6.0 million as compared to \$3.0 million in 2017. The program distributed \$17.0 million in 2018, a decrease of \$4.0 million in distributions from 2017. The program experienced an investment loss of \$7.7 million in 2018 compared to an investment gain of \$28.6 million in 2017.

The MRS had a fiduciary net position of \$174.6 million at December 31, 2018. This was a \$18.8 million decrease in net position from \$193.4 million in 2017. Additional information on the MRS can be found in Note 10.

Duty Disability Insurance Program

The Duty Disability Insurance Program pays special disability benefits to protective occupation participants in the WRS. The program is self-insured, and the risk is shared between the State of Wisconsin and local government employers in the program.

During 2018, the Duty Disability Insurance Program collected \$10.2 million in contributions from participating employers, an 18% increase from \$8.7 million in 2017 due to increased contribution rates. The program incurred benefits and expenses of \$26.3 million during 2018 compared to \$47.7 million in 2017. The change in actuarially determined liabilities from year to year impacts expenses and was the primary reason for the change.

The Duty Disability Insurance Program had a net position of \$152.5 million at December 31, 2018. This was a decrease of \$39.6 million from a net position of \$192.1 million as of December 31, 2017. The program experienced investment losses of \$23.5 million in 2018 compared to investment gains of \$91.8 million for the prior year.

At December 31, 2018, approximately 22,227 members were participating in the program. Additional information for the Duty Disability Insurance Program can be found in Note 8.

Health Insurance Program

The Health Insurance Program is a comprehensive benefit plan providing coverage for active employees of state and participating local governments. The state and local health plans each include separately managed risk pools for medical, pharmacy and dental benefits.

During 2018, ETF collected \$1,306.5 million in contributions from participating employers, an increase of \$26.3 million from 2017, and incurred expenses of \$1,300.8 million, an increase of \$13.4 million from 2017.

FINANCIAL SECTION

The Health Insurance Program had a net position of \$222.3 million at December 31, 2018. This was a decrease of \$3.2 million from the \$225.5 million net position in 2017. The program experienced investment losses of \$9.0 million during 2018 compared to an investment gain of \$29.0 million in 2017.

At December 31, 2018, approximately 80,061 active members from both state and local governments were participating in the Health Insurance Program, a decrease of 0.8% from 80,720 active members in 2017. Additional information for the Health Insurance Program can be found in Note 8.

Income Continuation Insurance (ICI) Program

The ICI Program pays disability benefits for employees of the State of Wisconsin and participating local governments in Wisconsin who enroll in the program. Employee premiums are based on sick leave accumulation and the waiting period selected.

During 2018, the ICI Program collected \$28.4 million in contributions from State agencies, an increase from \$24.3 million collected during 2017. These increased contributions were the result of a 20% premium increase for the State ICI program. The Local employers continued to have a premium holiday. The program incurred expenses of \$26.8 million during 2018. This is an increase of \$6.2 million from the \$20.6 million in benefits and expenses in 2017.

The ICI Program had a net position of \$18.4 million at December 31, 2018. This was a decrease of \$2.1 million from a \$20.5 million net position in 2017. This decrease in net position was primarily due to the current year investment losses that were offset by the increased contribution rates. The program experienced an investment loss of \$3.9 million during 2018 compared to an investment gain of \$13.9 million in 2017.

At December 31, 2018, approximately 60,414 total members were participating in ICI. This includes 9,434 Local employees and 50,980 State employees. Local employees had an increase of 11.9% and State employees had a 0.6% decrease in members participating. More information about the ICI Program can be found in Note 8.

State Retiree Health Insurance Program

Through the State Retiree Health Insurance Program, participants may choose a health plan within specific provider networks (i.e., HMOs). Required premiums are collected from retired employees of the State of Wisconsin.

Total assets and liabilities as of December 31, 2018, were \$45.0 million, an increase of \$5.1 million as compared to the prior year amounts. More information about the State Retiree Health Insurance Program can be found in Note 9.

Local Retiree Health Insurance Program

Through the Local Retiree Health Insurance Program, participants may choose a health plan within specific provider networks (i.e., HMOs). Required premiums are collected from retired employees of participating local government employers in Wisconsin.

Total assets and liabilities as of December 31, 2018, were \$5.4 million, an increase of \$1.7 million as compared to the prior year amount. More information about the Local Retiree Health Insurance Program can be found in Note 9.

» *Capital Asset Activity*

As of December 31, 2018, the total value of capital assets was \$12.0 million less accumulated depreciation of \$5.6 million, for a net capital asset value of \$6.4 million. This compares to the prior year at which time the total value of capital assets was \$37.7 million less accumulated depreciation of \$3.8 million, for a net capital asset value of \$33.9 million. The \$27.5 million decrease from 2017 to 2018 primarily relates to the impairment loss of a benefit administration system, myETF, which is considered an internally generated software program. In 2018, ETF's vendor for developing myETF stopped providing services. This unexpected stoppage significantly affected the development and service utility of myETF. Assets related to this stoppage are considered impaired as of December 31, 2018. Therefore, the WRS Statement of Changes in Fiduciary Net Position includes a Loss due to Impairment of Capital Assets of \$25.4 million. For additional information on Capital Assets and the related impairment loss, please refer to Note 1 and Note 11.

» *Financial Contact*

This financial report is designed to provide a general overview of ETF's finances and to demonstrate its accountability with the assets it holds in trust. Questions concerning any of the information provided in this report should be addressed to ETF at P.O. Box 7931, Madison, Wisconsin, 53707-7931.



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Wisconsin Department of Employee Trust Funds
Statement of Fiduciary Net Position
December 31, 2018

(In Thousands)

	Wisconsin Retirement System	Accumulated Sick Leave Conversion Credits	Employee Reimbursement Accounts/Commuter Benefits
Assets:			
Equity In Pooled Cash & Cash Equivalents	\$ 4,036,822	\$ 0	\$ 6,862
Securities Lending Collateral	466,630	0	0
Prepaid Expenses	9,774	13,298	1,100
Receivables:			
Contributions Receivable	148,145	2,699	220
Prior Service Contributions Receivable	13,832	0	0
Benefit Overpayments Receivable	2,408	0	140
Due From Other Benefit Programs	1,859	6,313	58
Miscellaneous Receivables	5,660	0	14
Securities Lending Income Receivable	2,587	0	0
Interest and Dividends Receivable	306,977	0	0
Investment Sales Receivable	3,567,892	0	0
Total Receivables	4,049,360	9,012	432
Investments at Fair Value:			
Equities	54,849,647	0	0
Fixed Income Investments	31,739,324	0	0
Limited Partnerships	13,590,506	0	0
Multi Asset Investments	5,759,422	0	0
Real Estate	1,372,027	0	0
Preferred Securities	210,046	0	0
Convertible Securities	326	0	0
Foreign Currency Contracts	(21,294)	0	0
Options Contracts	(8,148)	0	0
Financial Futures Contracts	156,900	0	0
Swaps	(21,790)	0	0
To Be Announced Securities	686,251	0	0
Investment In Core Fund	0	2,389,640	0
Investment In Variable Fund	0	0	0
Investment Contract	0	0	0
Total Investments	108,313,217	2,389,640	0
Capital Assets - Net of Accum. Depreciation	6,411	0	0
Total Assets	116,882,214	2,411,950	8,394
Liabilities:			
Core Investment Due To Other Benefit Programs	3,493,647	0	0
Variable Investment Due To Other Benefit Programs	17,053	0	0
Obligation Under Reverse Repurchase Agreements	8,834,034	0	0
Short Sell Obligations	3,002,001	0	0
Securities Lending Collateral Liability	466,630	0	0
Collateral Due to Counterparty	4,091	0	0
Benefits Payable	392,916	0	6,323
Estimated Future Benefits	0	2,551,567	0
Unearned Revenue	30	0	0
Due To Other Benefit Programs	7,752	0	47
Interfund Payables	0	0	0
Miscellaneous Payables	126,669	6	88
Investment Payables	3,800,310	0	0
Total Liabilities	20,145,133	2,551,573	6,458
Net Position - Restricted for Pensions, Other Post-employment Benefits, and Other Purposes	\$ 96,737,081	\$ (139,623)	\$ 1,936

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

Continued on next page



FINANCIAL SECTION

Wisconsin Department of Employee Trust Funds
Statement of Fiduciary Net Position
December 31, 2018
(In Thousands)

	State Retiree Life Insurance	Local Retiree Life Insurance	Milwaukee Retirement Systems
Assets:			
Equity In Pooled Cash & Cash Equivalents	\$ 0	\$ 0	\$ 0
Securities Lending Collateral	0	0	0
Prepaid Expenses	0	0	0
Receivables:			
Contributions Receivable	0	0	0
Prior Service Contributions Receivable	0	0	0
Benefit Overpayments Receivable	0	0	0
Due From Other Benefit Programs	9	13	0
Miscellaneous Receivables	54	72	0
Securities Lending Income Receivable	0	0	0
Interest and Dividends Receivable	0	0	0
Investment Sales Receivable	0	0	0
Total Receivables	63	85	0
Investments at Fair Value:			
Equities	0	0	0
Fixed Income Investments	0	0	0
Limited Partnerships	0	0	0
Multi Asset Investments	0	0	0
Real Estate	0	0	0
Preferred Securities	0	0	0
Convertible Securities	0	0	0
Foreign Currency Contracts	0	0	0
Options Contracts	0	0	0
Financial Futures Contracts	0	0	0
Swaps	0	0	0
To Be Announced Securities	0	0	0
Investment In Core Fund	0	0	157,595
Investment In Variable Fund	0	0	17,053
Investment Contract	343,984	244,898	0
Total Investments	343,984	244,898	174,648
Capital Assets - Net of Accum. Depreciation	0	0	0
Total Assets	344,047	244,983	174,648
Liabilities:			
Core Investment Due To Other Benefit Programs	0	0	0
Variable Investment Due To Other Benefit Programs	0	0	0
Obligation Under Reverse Repurchase Agreements	0	0	0
Short Sell Obligations	0	0	0
Securities Lending Collateral Liability	0	0	0
Collateral Due to Counterparty	0	0	0
Benefits Payable	0	0	0
Estimated Future Benefits	0	0	0
Unearned Revenue	0	0	0
Due To Other Benefit Programs	0	0	0
Interfund Payables	63	85	0
Miscellaneous Payables	0	0	0
Investment Payables	0	0	0
Total Liabilities	63	85	0
Net Position - Restricted for Pensions, Other Post-employment Benefits, and Other Purposes	\$ 343,984	\$ 244,898	\$ 174,648

Continued from previous page

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



Wisconsin Department of Employee Trust Funds
Statement of Changes in Fiduciary Net Position
For the Year Ended December 31, 2018
(In Thousands)

	Wisconsin Retirement System	Accumulated Sick Leave Conversion Credits	Employee Reimbursement Accounts/ Commuter Benefits
Additions:			
Contributions:			
Employer Contributions	\$ 1,030,508	\$ 54,671	\$ 656
Employee Contributions	972,950	0	39,143
Total Contributions	<u>2,003,458</u>	<u>54,671</u>	<u>39,799</u>
Deposits	0	0	0
Investment Income:			
Net Increase (Decrease) in Fair Value of Investments	(5,754,808)	0	0
Interest	630,210	0	0
Dividends	1,380,471	0	0
Securities Lending Income	41,909	0	0
Other	216,036	(93,735)	117
Less:			
Investment Income Distributed to Other Benefit Programs	137,733	0	0
Investment Expense	(691,202)	0	0
Securities Lending Rebates and Fees	(10,860)	0	0
Net Investment Income	<u>(4,050,511)</u>	<u>(93,735)</u>	<u>117</u>
Interest on Prior Service Receivable	774	0	0
Service Reimbursement Income	0	0	0
Miscellaneous Income	382	0	1
Total Additions	<u>(2,045,897)</u>	<u>(39,064)</u>	<u>39,917</u>
Deductions:			
Benefits and Refunds:			
Retirement, Disability, and Beneficiary	5,516,188	0	0
Separation Benefits	40,234	0	0
Other Benefit Expense	0	159,692	38,025
Distributions	0	0	0
Carrier Administrative Expenses	881	0	819
Administrative Expenses	30,732	674	440
Total Deductions	<u>5,588,035</u>	<u>160,366</u>	<u>39,284</u>
Loss due to Impairment of Capital Assets	(25,449)	0	0
Net Increase (Decrease)	<u>(7,659,381)</u>	<u>(199,430)</u>	<u>633</u>
Net Position - Beginning of Year	<u>104,396,462</u>	<u>59,807</u>	<u>1,303</u>
Net Position - End of Year	<u>\$ 96,737,081</u>	<u>\$ (139,623)</u>	<u>\$ 1,936</u>

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

Continued on next page



FINANCIAL SECTION

Wisconsin Department of Employee Trust Funds
Statement of Changes in Fiduciary Net Position
For the Year Ended December 31, 2018
(In Thousands)

	State Retiree Life Insurance	Local Retiree Life Insurance	Milwaukee Retirement Systems
Additions:			
Contributions:			
Employer Contributions	\$ 1,387	\$ 1,927	\$ 0
Employee Contributions	0	0	0
Total Contributions	<u>1,387</u>	<u>1,927</u>	<u>0</u>
Deposits	0	0	6,000
Investment Income:			
Net Increase (Decrease) in Fair Value of Investments	0	0	0
Interest	0	0	0
Dividends	0	0	0
Securities Lending Income	0	0	0
Other	10,838	7,502	(7,718)
Less:			
Investment Income Distributed to Other Benefit Programs	0	0	0
Investment Expense	0	0	0
Securities Lending Rebates and Fees	0	0	0
Net Investment Income	<u>10,838</u>	<u>7,502</u>	<u>(7,718)</u>
Interest on Prior Service Receivable	0	0	0
Service Reimbursement Income	59	78	0
Miscellaneous Income	0	0	0
Total Additions	<u>12,284</u>	<u>9,507</u>	<u>(1,718)</u>
Deductions:			
Benefits and Refunds:			
Retirement, Disability, and Beneficiary	0	0	0
Separation Benefits	0	0	0
Other Benefit Expense	19,538	7,605	0
Distributions	0	0	17,000
Carrier Administrative Expenses	676	1,157	0
Administrative Expenses	58	78	0
Total Deductions	<u>20,272</u>	<u>8,840</u>	<u>17,000</u>
Net Increase (Decrease)	<u>(7,988)</u>	<u>667</u>	<u>(18,718)</u>
Net Position - Beginning of Year	<u>351,972</u>	<u>244,231</u>	<u>193,366</u>
Net Position - End of Year	<u>\$ 343,984</u>	<u>\$ 244,898</u>	<u>\$ 174,648</u>

Continued from previous page

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



Wisconsin Department of Employee Trust Funds
Statement of Net Position - Proprietary Funds
December 31, 2018
(In Thousands)

	Duty Disability Insurance	Health Insurance	Income Continuation Insurance
Assets			
Current Assets:			
Cash and Cash Equivalents	\$ 0	\$ 0	\$ 0
Investment In Core Fund	607,873	225,321	113,219
Prepaid Expenses	0	439	64
Rebates Receivable	0	26,445	0
Contributions Receivable	779	0	0
Due From Other Benefit Programs	1,141	24,171	35
Interfund Receivables	0	0	0
Benefit Overpayments Receivable	297	0	3,227
Miscellaneous Receivables	10	117	0
Total Current Assets	<u>610,100</u>	<u>276,493</u>	<u>116,545</u>
Total Assets	<u>610,100</u>	<u>276,493</u>	<u>116,545</u>
Liabilities			
Current Liabilities:			
Benefits Payable	2,971	9,682	154
Premiums Payable	0	0	0
Unearned Revenue	0	13,980	0
Current Portion of Estimated Future Benefits	34,607	5,465	20,678
Due to Other Agency	0	0	0
Due To Other Benefit Programs	0	24,078	1,292
Miscellaneous Payables	8,873	1,007	4,611
Total Current Liabilities	<u>46,451</u>	<u>54,212</u>	<u>26,735</u>
Noncurrent Liabilities:			
Noncurrent Portion of Estimated Future Benefits	411,115	0	71,456
Total Noncurrent Liabilities	<u>411,115</u>	<u>0</u>	<u>71,456</u>
Total Liabilities	<u>457,566</u>	<u>54,212</u>	<u>98,191</u>
Net Position Restricted (Unrestricted) For Benefits	<u>\$ 152,534</u>	<u>\$ 222,281</u>	<u>\$ 18,354</u>

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



FINANCIAL SECTION

Wisconsin Department of Employee Trust Funds
Statement of Revenues, Expenses, and Changes in Fund Net Position - Proprietary Funds
For the Year Ended December 31, 2018
(In Thousands)

	Duty Disability Insurance	Health Insurance	Income Continuation Insurance
Operating Revenues:			
Contributions	\$ 10,202	\$ 1,306,456	\$ 28,393
Miscellaneous Income	8	0	128
Administrative Reimbursement Income	0	0	0
Total Operating Revenues	10,210	1,306,456	28,521
Operating Expenses:			
Benefit Expense	25,438	1,279,088	24,146
Carrier Administrative Expenses	0	12,989	2,146
Administrative Expenses	833	8,710	542
Other Expenses	0	0	0
Total Operating Expenses	26,271	1,300,787	26,834
Operating Income (Loss)	(16,061)	5,669	1,687
Nonoperating Revenues:			
Investment Income	(23,549)	(8,958)	(3,867)
Penalties and Fee	0	33	0
Total Nonoperating Revenues	(23,549)	(8,925)	(3,867)
Net Income (Loss)	(39,610)	(3,256)	(2,180)
Change in Net Position	(39,610)	(3,256)	(2,180)
Total Net Position - Beginning of Year	192,144	225,537	20,534
Total Net Position - End of Year	\$ 152,534	\$ 222,281	\$ 18,354

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



Wisconsin Department of Employee Trust Funds
Statement of Cash Flows - Proprietary Funds
For the Year Ended December 31, 2018
(In Thousands)

	Duty Disability Insurance	Health Insurance	Income Continuation Insurance
Cash Flows from Operating Activities			
Cash Received for Rebates	\$ 0	\$ 39,036	\$ 0
Cash Received (Paid) for Insurance Premiums	9,886	1,291,413	30,708
Cash Received (Paid) for Employee Benefits	(35,349)	(1,322,655)	(19,450)
Cash Paid for Administrative Services	(1,753)	(24,196)	(1,906)
Service Reimbursement Income	0	0	0
Miscellaneous Income (Expense)	8	0	128
Net Cash Provided (Used) by Operating Activities	(27,208)	(16,402)	9,480
Cash Flows from Noncapital Financing Activities			
Due to Other Agency	0	0	0
Interfund Cash Received (Provided)	0	0	0
Penalties and Fees	0	33	0
Net Cash Provided (Used) by Noncapital Financing Activities	0	33	0
Cash Flows from Investing Activities			
Investment Income (Loss)	(23,549)	(8,958)	(3,867)
Decrease (Increase) in Investment in Core Fund	50,757	25,327	(5,613)
Net Cash Provided (Used) by Investing Activities	27,208	16,369	(9,480)
Net Increase (Decrease) in Cash and Cash Equivalents	0	0	0
Equity in Pooled Cash and Cash Equivalents at Beginning of Year	0	0	0
Equity in Pooled Cash and Cash Equivalents at End of Year	0	0	0
Reconciliation of Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities			
Operating Income (Loss)	(16,061)	5,669	1,687
Adjustments to Reconcile Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities			
Provided (Used) by Operating Activities			
Changes in Assets and Liabilities:			
Decrease (Increase) in Rebates Receivable	0	(3,265)	0
Decrease (Increase) in Contributions Receivable	(18)	0	1,171
Decrease (Increase) in Miscellaneous Receivables	(10)	(96)	0
Decrease (Increase) in Benefit Overpayments Receivable	(56)	0	306
Decrease (Increase) in Prepaid Expenses	0	(415)	40
Decrease (Increase) in Due From Other Benefit Programs	(408)	(12,092)	1,108
Increase (Decrease) in Estimated Future Benefits	(9,853)	(1,698)	4,332
Increase (Decrease) in Premiums Payable	0	(2,795)	0
Increase (Decrease) in Unearned Revenue	0	(1,919)	0
Increase (Decrease) in Benefits Payable	(1)	9,682	18
Increase (Decrease) in Miscellaneous Payables	(413)	(9,979)	(373)
Increase (Decrease) in Due to Other Benefit Programs	(388)	506	1,191
Total Adjustments	(11,147)	(22,071)	7,793
Net Cash Provided (Used) by Operating Activities	\$ (27,208)	\$ (16,402)	\$ 9,480

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



FINANCIAL SECTION

Wisconsin Department of Employee Trust Funds
Statement of Fiduciary Net Position - Agency Funds
December 31, 2018
(In Thousands)

	State Retiree Health Insurance	Local Retiree Health Insurance
Assets:		
Prepaid Expenses	\$ 192	\$ 34
Receivables:		
Federal Subsidy Receivable	8,498	807
Benefit Overpayment Receivable	258	1
Due From Other Benefit Programs	20,299	3,444
Miscellaneous Receivables	166	2
Rebates Receivable	15,554	1,112
Total Receivables	44,775	5,366
Total Assets	44,967	5,400
Liabilities:		
Unearned Revenue	18,003	1,189
Due To Other Benefit Programs	21,022	3,313
Benefits Payable	3,048	538
Miscellaneous Payables	258	16
Benefit & Loss Liabilities - Current	2,636	344
Total Liabilities	44,967	5,400
Net Position Held for Other Post Employment Benefits	\$ 0	\$ 0

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

Wisconsin Department of Employee Trust Funds
Statement of Changes in Assets and Liabilities - Agency Funds
December 31, 2018

(In Thousands)

	Balance		Balance	
	January 1, 2018	Additions	Deductions	December 31, 2018
State Retiree Health Insurance				
Assets				
Cash and Cash Equivalents	\$ 0	\$ 298,425	\$ 298,425	\$ 0
Prepaid Expenses	0	192	0	192
Receivables:				
Federal Subsidy Receivable	7,427	22,545	21,475	8,497
Benefit Overpayment Receivable	192	66	0	258
Due From Other Benefit Programs	18,356	2,028	85	20,299
Miscellaneous Receivable	7	166	7	166
Rebates Receivable	13,933	30,958	29,336	15,555
Total Receivables	39,915	55,763	50,903	44,775
Total Assets	39,915	354,380	349,328	44,967
Liabilities				
Unearned Revenue	18,355	18,003	18,355	18,003
Due To Other Benefit Programs	11,326	9,695	0	21,021
Benefits Payable	0	3,048	0	3,048
Miscellaneous Payables	5,294	6,637	11,673	258
Benefit & Loss Liabilities - Current	4,940	133,800	136,103	2,637
Total Liabilities	\$ 39,915	\$ 171,183	\$ 166,131	\$ 44,967
Local Retiree Health Insurance				
Assets				
Cash and Cash Equivalents	\$ 0	\$ 25,592	\$ 25,592	\$ 0
Prepaid Expenses	0	34	0	34
Receivables:				
Federal Subsidy Receivable	1,081	1,661	1,935	807
Benefit Overpayment Receivable	0	1	0	1
Due From Other Benefit Programs	1,421	2,249	226	3,444
Miscellaneous Receivables	0	2	0	2
Rebates Receivable	1,168	2,371	2,427	1,112
Total Receivables	3,670	6,284	4,588	5,366
Total Assets	3,670	31,910	30,180	5,400
Liabilities				
Unearned Revenue	1,372	1,189	1,372	1,189
Due To Other Benefit Programs	1,597	1,716	0	3,313
Benefits Payable	0	538	0	538
Miscellaneous Payables	418	392	794	16
Benefit & Loss Liabilities - Current	283	11,699	11,638	344
Total Liabilities	\$ 3,670	\$ 15,534	\$ 13,804	\$ 5,400

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

NOTES TO FINANCIAL STATEMENTS

1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

» Presentation Basis

The financial statements of the Wisconsin Department of Employee Trust Funds (ETF) have been prepared in conformity with Generally Accepted Accounting Principles (GAAP) for government units as prescribed by the Governmental Accounting Standards Boards (GASB). ETF is not a general-purpose government and does not present government-wide statements. These statements are not intended to present the financial activity of the State of Wisconsin as a whole. The funds administered by ETF are included in the State of Wisconsin financial reporting entity and are presented in the State's Comprehensive Annual Financial Report.

The assets and operations of ETF are accounted for in the following funds:

Fiduciary Funds

Pension and Other Employee Benefit Trust Funds

Wisconsin Retirement System (WRS): This fund is used to account for the collection of employee and employer contributions; investment of assets; and payment of retirement, disability, and death benefits to former employees, and their beneficiaries, of the State of Wisconsin and participating local governments in Wisconsin.

Accumulated Sick Leave Conversion Credits (ASLCC): This fund is used to account for the collection of employer contributions, investment of assets, and purchase of post-retirement health insurance for retired employees of the State of Wisconsin and their beneficiaries. This benefit allows employees, at the time of their retirement, to convert the value of their unused sick leave accumulation into an account to be used to pay for post-retirement health insurance. The value of their account may also be increased by an employer match of part or all of their unused sick leave accumulation.

Employee Reimbursement Accounts/Commuter Benefits: This fund is used to account for the collection of voluntary payroll deferrals, investment of assets, and reimbursement of qualifying medical, dependent care, and transportation expenses for employees of the State of Wisconsin, in compliance with Internal Revenue Code Section 125 and Section 132.

State Retiree Life Insurance: This fund is used to account for the accumulation of assets and the payment of life insurance benefits for retired employees of the State of Wisconsin.

Local Retiree Life Insurance: This fund is used to account for the accumulation of assets and the payment of life insurance benefits for retired employees of participating local governments in Wisconsin.

Investment Trust Fund

Milwaukee Retirement Systems: These funds are used to account for the receipt, investment, and disbursement of funds from other public pension funds in Wisconsin.

Agency Funds

State Retiree Health Insurance: This fund is used to account for the collection of retiree contributions, the investment of assets, the purchase of health insurance coverage, and the payment of health insurance claims for retired employees of the State of Wisconsin.

Local Retiree Health Insurance: This fund is used to account for the collection of retiree contributions, the investment of assets, the purchase of health insurance coverage, and the payment of health insurance claims for retired employees of participating local governments in Wisconsin.

Proprietary Funds

Enterprise Funds

Duty Disability Insurance: This fund is used to account for the collection of employer contributions, investment of assets, and payment of special disability benefits to protective occupation participants in the WRS.

Health Insurance: This fund is used to account for the collection of employee and employer contributions, the investment of assets, the purchase of health insurance coverage, and the payment of health insurance claims for current employees of both the State of Wisconsin and participating local governments in Wisconsin.

Income Continuation Insurance: This fund is used to account for the collection of employee and employer contributions, the investment of assets, and the payment of disability benefits for employees of both the State of Wisconsin and participating local governments in Wisconsin.

Proprietary funds distinguish operating revenues and expenses from non-operating items. Operating revenues and expenses generally result from providing services in connection with a proprietary fund's principal ongoing operations. The principal ongoing operations for these proprietary funds are: collecting premiums and using the accumulated premiums and investment income to pay benefits. Revenues and expenses not directly related to the principal ongoing operations are classified as non-operating.

Department-wide administrative expenses, capital assets, and general fund activities are most closely associated with the WRS fund and have been blended with that fund for presentation. All material intrafund transactions have been eliminated from fund financial statements. Interfund transactions have not been eliminated.

» *Measurement Focus and Basis of Accounting*

The financial statements of ETF have been prepared in accordance with GAAP. The WRS, Accumulated Sick Leave Conversion Credits, Employee Reimbursement Accounts/Commuter Benefits, Retiree Life Insurance Funds, and all proprietary funds are accounted for using the flow of economic resources measurement focus and the accrual basis of accounting. Under the accrual basis of accounting, contributions are recognized in the accounting period in which the underlying earnings on which the contributions are based are paid and the employer has made a formal commitment to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of each plan. Security transactions and the related gains and losses are recorded on a trade date basis. Dividend income is recorded on the ex-dividend date, and interest income is accrued as earned.

The State Retiree and Local Retiree Health Insurance Funds are accounted for using the accrual basis of accounting, but have no measurement focus by virtue of their custodial nature.



FINANCIAL SECTION

» *Investments*

The assets of the WRS and the Milwaukee Retirement Systems are valued at fair value and are invested in the Core Retirement Investment Trust (Core Fund) and the Variable Retirement Investment Trust (Variable Fund), which are collectively the Retirement Funds. The assets of the Income Continuation Insurance, Duty Disability Insurance, Accumulated Sick Leave Conversion Credit, Health Insurance, State Retiree Health Insurance, and Local Retiree Health Insurance programs are invested in the Core Fund. Earnings are allocated between the WRS and other benefit programs based on the average balance invested for each program. Earnings allocated to other benefit programs are classified as “Investment Income Distributed to Other Benefit Programs” on the Statement of Changes in Fiduciary Net Position. The total amount invested by the other benefit programs included in the Retirement Funds is presented as “Core Investment Due To Other Benefit Programs” and “Variable Investment Due To Other Benefit Programs” on the Statement of Fiduciary Net Position. Investments for the Retiree Life Insurance Funds are held by the plan administrator and classified as “Investment Contract” on the Statement of Fiduciary Net Position. All other benefit plan assets are invested in the State Investment Fund (SIF). Investments in the SIF are classified as “Equity in Pooled Cash and Cash Equivalents” on the Statement of Fiduciary Net Position and “Cash and Cash Equivalents” on the Statement of Net Position – Proprietary Funds. The SIF is a pool of cash balances of various state and local government units with the investment objectives to provide safety, liquidity, and competitive rates of return.

The State of Wisconsin Investment Board (SWIB) manages the Retirement Funds and SIF with oversight by the SWIB Board of Trustees, as authorized in Wis. Stat. § 25.17. SWIB is not registered with the Securities and Exchange Commission as an investment company.

» *Funding Value of Assets*

While investments are valued at fair value for financial statement presentation, a funding value of assets is used in evaluating the funded status of the benefit plans and in determining future contribution requirements. Funding value does not include deferred market gains and losses that have not yet been distributed from the Market Recognition Account (MRA) to the program reserves. See Note 7 for further explanation of the MRA. As of December 31, 2018, the funding value of reserves (In Millions) was as follows:

Benefit Plan	Reserves at Funding Value	Deferred Market Gains (Losses)	Reserves at Fair Value
Wisconsin Retirement System	\$ 101,466.4	\$ (4,729.3)	\$ 96,737.1
Income Continuation Insurance (1)	14.0	4.4	18.4
Duty Disability Insurance (1)	187.4	(34.9)	152.5
Accumulated Sick Leave Conversion Credits (1)	(0.1)	(139.5)	(139.6)
Health Insurance (1)	243.9	(21.6)	222.3
State Retiree Health Insurance	(4.9)	4.9	0.0
Local Retiree Health Insurance	(0.2)	0.2	0.0

⁽¹⁾ The Reserves at Funding Value and the Reserves at Fair Value for Income Continuation Insurance, Duty Disability, Accumulated Sick Leave Conversion Credits and Health Insurance programs have been reduced by the estimated future claims for the benefit plan.

» *Administrative Expenses*

ETF administrative costs are financed by a separate appropriation and are allocated to each benefit plan administered by ETF in accordance with Wis. Stat. § 40.04. The sources of funds for this appropriation are investment earnings and third-party reimbursements received from the various programs administered by ETF. Total administrative expenses for the year were approximately \$46 million. Costs for third-party administrators are reported as "Carrier Administrative Expenses" within each program.

SWIB incurs expenses related to investing the trust funds. As authorized by Wis. Stat. § 25.187 (2), these costs are charged directly to the investment income of each trust fund.

» *Capital Assets*

Capital assets consist of office furniture and equipment and computer software (purchased or externally acquired and internally generated software). ETF capitalizes furniture and equipment, and purchased computer software with a purchase price in excess of \$5,000, and internally-generated software and other intangible assets in excess of \$1 million. Assets are depreciated on a composite basis over an estimated life, ranging from 5 to 20 years, using the straight-line method of depreciation.

As of December 31, 2018, the total value of capital assets was \$12.0 million, less accumulated depreciation of \$5.6 million for a net capital asset value of \$6.4 million. The net capital asset value primarily relates to internally-generated software.

» *Long-Term Liabilities*

The Accumulated Sick Leave Conversion Credits Fund reports an actuarially-determined liability for future benefits. The liability is determined using the Frozen Initial Liability actuarial cost method and actuarial assumptions that include a 7.0% long-term investment rate of return and a 3.0% annual base salary increase.

During 2018, the liability changed as follows (In Millions):

Beginning Balance	\$ 2,559
Plus: New Liabilities Recognized	160
Less: Benefit Paid	<u>(167)</u>
Ending Balance	<u>\$ 2,552</u>

The portion estimated to be due within one year is \$162 million.



FINANCIAL SECTION

» *Interfund Assets / Liabilities*

Interfund assets and liabilities at December 31, 2018, consist of the following (In Thousands):

Due To/From Other Benefit Programs

	Wisconsin Retirement System	Employee Reimbursement Account (ERA) & Commuter Benefits	Health Insurance	State Retiree Health Insurance	Local Retiree Health Insurance	Income Continuation Insurance	Deferred Comp.	Total
Wisconsin Retirement System		\$ 47	\$ 336	\$ 159	\$ 5	1,291	\$ 21	\$ 1,859
ERA & Commuter Benefits	\$ 58							58
Health Insurance				20,863	3,308			24,171
State Retiree Health Insurance			20,299					20,299
Local Retiree Health Insurance	1		3,443					3,444
Life Insurance	182							182
State Retiree Life Insurance	9							9
Local Retiree Life Insurance	13							13
Duty Disability Insurance	1,141							1,141
Income Continuation Insurance	35							35
Sick Leave	6,313							6,313
Total	\$ 7,752	\$ 47	\$ 24,078	\$ 21,022	\$ 3,313	\$ 1,291	\$ 21	\$ 57,524

Due From Other Benefit Programs

Due To Other Benefit Programs

Totals may vary from the financial statements due to rounding.

The outstanding balances between benefit programs result from the time lag between when actual receipts and disbursements are made and when those amounts are allocated between benefit programs. All liabilities are expected to be paid within one year of the balance sheet date.

» *Use of Estimates*

The preparation of financial statements in accordance with GAAP requires management to make estimates that affect amounts reported herein. Due to the inherent uncertainty involved, actual results could differ from those estimates.

2 ACCOUNTING CHANGES

ETF administers the Group Life Insurance Program for current State of Wisconsin employees and employees of participating local public employers. The insurance carrier guarantees coverage and employers and active employees pay premiums directly to the the insurance carrier. ETF accounts for minimal activity for this fund, primarily related to administrative costs. Because this activity is immaterial, the financial statements and related notes for this fund are no longer reported in the ETF CAFR.

Effective December 31, 2018, insurance claims payable is reported on the Health Insurance Statement of Net Position - Proprietary Fund, Statement of Fiduciary Net Position - Agency Funds, and Statement of Changes in Assets and Liabilities - Agency Funds as "Benefits Payable". In previous reporting periods, this activity was reported as "Miscellaneous Payables". There is no impact on the beginning of the year or ending of the year Net Position as of December 31, 2018 as a result of this change.

Effective January 1, 2018, Investment Income - Interest and Investment Expense reported on the WRS Statement of Changes in Fiduciary Net Position reflect gross amounts. In previous reporting periods, Investment Income - Interest on the WRS Statement of Changes in Fiduciary Net Position was netted with interest expense from reverse repurchase agreements. Disclosing interest income and expense amounts separately improves transparency and compliance with GAAP. This change results in an increase in "Investment Income - Interest" and an offsetting increase in "Investment Expense" on the Statement of Changes in Fiduciary Net Position as of December 31, 2018. Because the change in income and expense amounts offset, there is no impact on the WRS's reported beginning of the year or ending of the year "Net Position." Additional information on reverse repurchase agreements can be found in Note 3.

3 DEPOSITS, INVESTMENTS AND SECURITIES LENDING TRANSACTIONS

» Valuation of Securities

The investments of the Retirement Funds are reported in the Statement of Fiduciary Net Position at fair value as prescribed by GASB and per section 25.17(14) of the Wisconsin Statutes. Unrealized gains and losses are reflected in the Statement of Changes in Fiduciary Net Position as "Net Increase (Decrease) in Fair Value of Investments."

The fair value of the Retirement Funds' assets is obtained or estimated in accordance with a pricing hierarchy established with SWIB's custodian, Bank of New York Mellon (BNY Mellon). As prescribed by the hierarchy, a variety of independent pricing sources are used to price assets based on type, class, or issue.

When a portfolio includes securities or instruments for which the custodial bank does not receive fair value information from its vendor pricing sources, a variety of third-party pricing methods are used, including appraisals, pricing models, and other methods deemed acceptable by industry standards.

The "Equity in Pooled Cash and Cash Equivalents" account reported on the Statement of Fiduciary Net Position consists of short-term investments which are used to meet the liquidity requirements of the Retirement Funds. Equity in Pooled Cash and Cash Equivalents held by the Retirement Funds can include cash on deposit, foreign currencies, cash posted as collateral to counterparties, repurchase agreements, certificates of deposit, U.S.



FINANCIAL SECTION

Treasury Bills, short-term investment funds, and other U.S. or foreign liquid financial instruments with maturities that are generally less than three months. Equity in Pooled Cash and Cash Equivalents are reported at fair value or cost, which approximates fair value.

Privately-held debt, which is included in “Fixed Income Investments” on the Statement of Fiduciary Net Position, is priced using approaches that value each holding based on the best available information using the following hierarchy of pricing sources:

1. Custodian supplied prices for assets that can be priced in accordance with the pricing hierarchy established with SWIB’s custodian
2. Prices provided by a third party with expertise in the bond market

For private market investments where no readily ascertainable market value exists, including limited partnerships and real estate pooled funds, fair value is estimated based on the net asset value as reported by the general partner. The capital account balance as stated in the most recent available quarterly reporting period is adjusted for subsequent cash flows to derive fair value. The financial statements of the limited partnerships and real estate pooled funds are audited by independent auditors annually.

Certain portfolios make investments in privately-held companies alongside a strategic partner, such as a limited partnership fund manager. These co-investments are valued by SWIB’s strategic partner, using a variety of methodologies such as reviews of subsequent financing rounds, discounted cash flow analyses, cash flow multiples analyses, reviews of market comparable sales or metrics, and reviews of third-party appraisals.

Real estate properties wholly owned by SWIB are valued by independent appraisers every three years. In years when appraisals are not performed, properties are informally appraised by the asset advisor. Each year, audited financial statements are prepared for each property.

SWIB employs portfolio strategies which involve investments across multiple asset classes. The “Multi Asset Investments” account on the Statement of Fiduciary Net Position consists primarily of hedge funds. SWIB values hedge funds based on monthly statements or estimated returns received from each of the hedge fund’s administrators. A third-party administrator’s responsibility is to independently account for the hedge fund’s activity and calculate the net asset value of the fund. Generally, hedge fund administrators price financial instruments traded in active markets based on quoted market prices or binding dealer quotations. For certain over-the-counter instruments, fair value is determined based on valuation models used by the administrator. Annually, the financial statements prepared by the administrator are audited by independent auditors.

Derivative financial instruments are marked to fair value daily, with valuation changes recognized in income during the period the instruments are held and when the instrument is sold or expires. The nature and use of derivative instruments is discussed later in this note.

A limited number of securities are carried at cost. Certain non-public or closely-held investments are not reported at fair value, but are carried at cost since no independent quotation is available to estimate fair value for these securities.

» Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations to SWIB. Fixed income credit risk investment guidelines outline the minimum ratings required at the time of purchase by individual portfolios, or groups of portfolios, based on the portfolios’ investment objectives. In addition, some fixed income portfolios are required to carry a minimum weighted average rating at all times. Information regarding SWIB’s credit risk related to derivatives is discussed later in this note.

The table entitled Credit Quality Distribution displays the lowest credit rating assigned by nationally recognized statistical rating organizations on debt securities held by the Retirement Funds as of December 31, 2018. Included in this table are fixed income securities, including certain short-term securities, classified as

“Equity in Pooled Cash and Cash Equivalents” on the Statement of Fiduciary Net Position. Also included are interest rate sensitive investments held in the Retirement Funds’ securities lending collateral reinvestment pools, which are managed by SWIB’s custodian. Additional information regarding the securities lending program is discussed later in this note.

The table also includes SWIB’s investment in commingled fixed income funds, which are not rated. Although the funds themselves are not assigned ratings, external management investment guidelines govern minimum credit quality standards for the investments within each portfolio. These standards are determined based on the investment objectives and risk parameters of each fund.

Retirement Funds Credit Quality Distribution As of December 31, 2018 (In Thousands)		
Rating	Fair Value	% of Total
AAA/Aaa	\$ 258,277	1%
A-1/P-1	711,368	2
AA/Aa	18,935,351	53
A-2/P-2	157,278	0
A	1,788,316	5
BBB/Baa	2,432,784	7
BB/Ba	888,905	2
B	901,929	3
CCC/Caa or below	141,242	0
Not Rated	1,311,725	4
Commingled Fixed Income Funds	8,176,574	23
Total	\$ 35,703,749	100%

SWIB held \$8.8 billion in reverse repurchase agreements at December 31, 2018. Investment guidelines permit certain portfolios to enter into reverse repurchase agreements, which are a sale of securities with a simultaneous agreement to repurchase the securities in the future at a predetermined price plus a stated rate of interest. The market value of the securities underlying reverse repurchase agreements exceeds the cash received, providing the counterparty a margin against a decline in market value of the securities. If the counterparty defaults on their obligation to sell these securities back to SWIB or provide cash of equal value, SWIB could suffer an economic loss equal to the difference between the market value of the underlying securities plus accrued interest and the agreement obligation, including accrued interest.

SWIB enters into reverse repurchase agreements with various counterparties and such transactions are governed by Master Repurchase Agreements (MRA). MRAs are negotiated contracts and contain terms in which SWIB seeks to minimize counterparty credit risk. SWIB also controls credit exposures by limiting trades with any one counterparty to stipulated amounts. The counterparty credit exposure is managed through the transfer of margin, in the form of cash or securities, between SWIB and the counterparty. The Retirement Funds’ counterparty credit exposure for reverse repurchase agreements at December 31, 2018, is summarized in the table entitled Reverse Repurchase Agreements, Counterparty Credit Exposure.



FINANCIAL SECTION

Retirement Funds Reverse Repurchase Agreements Counterparty Credit Exposure As of December 31, 2018 (In Thousands)	
Fair Value of Collateral Held by Counterparty	\$ 8,965,253
Less:	
Cash due to Counterparty	8,834,033
Collateral and Interest due to Counterparty	20,074
Total due to Counterparty	8,854,107
Net Counterparty Credit Exposure	\$ 111,146

The cash proceeds from reverse repurchase agreements are reinvested by the Retirement Funds. The maturities of the purchases made with the proceeds of reverse repurchase agreements are not necessarily matched to the maturities of the agreements. The agreed-upon yields earned by the counterparty for the reverse repurchase agreements held were between 2.26% and 3.65% at December 31, 2018. Portfolio guidelines require agreements to mature between one and 90 days.

The cash due to counterparties resulting from reverse repurchase agreements is reported as “Obligation Under Reverse Repurchase Agreements” and the interest due to counterparties is included in “Investment Payables” on the Statement of Fiduciary Net Position. The underlying assets, as well as the reinvested proceeds, are reported in the “Investments at Fair Value” section on the Statement of Fiduciary Net Position.

» Custodial Credit Risk

Deposits - Custodial credit risk related to deposits is the risk that, in the event of the failure of a depository financial institution, SWIB will not be able to recover deposits that are in possession of an outside party. Cash deposits totaled \$483.9 million as of December 31, 2018. Of the total, \$91.7 million was collateralized by securities borrowed. Depository insurance covered another \$2.0 million of the total. The remaining deposits, totaling \$390.2 million, were uninsured and uncollateralized. These uninsured deposits represented balances held in foreign currencies in SWIB’s custodian’s nominee name, cash posted as collateral for derivatives transactions, and cash collateral posted in excess of the market value of securities borrowed by SWIB for short sales. In addition to cash deposits, the Retirement Funds also held \$84.0 million in certificates of deposit, all of which were covered by depository insurance as of December 31, 2018.

Investments - Custodial credit risk for investments is the risk that, in the event of failure of the counterparty to a transaction, SWIB will not be able to recover the value of investments that are in the possession of an outside party. The Retirement Funds held seven repurchase agreements totaling \$367.0 million as of December 31, 2018. These repurchase agreements were tri-party agreements held in a short-term cash management portfolio managed by SWIB’s custodian. The underlying securities for these agreements were held by the tri-party agent, not in SWIB’s name.

SWIB’s custodial credit risk policy addresses the primary risks associated with safekeeping and custody. It requires that SWIB’s custodial institution be selected through a competitive bid process and that the institution be designated a “Systemically Important Financial Institution” by the U.S. Federal Reserve. The policy also requires that SWIB be reflected as beneficial owner on all securities entrusted to the custodian and that SWIB have access to safekeeping and custody accounts. The custodian is also required to be insured for errors and omissions and must provide SWIB with an annual report on internal controls, prepared in

accordance with the Statement on Standards for Attestation Engagements. Furthermore, SWIB management has established a system of controls for the oversight of services and related processes of the custodian. SWIB's current custodial bank was selected in accordance with these guidelines and meets all requirements stipulated in the custodial credit risk policy.

» *Concentration of Credit Risk*

Concentration of credit risk is the risk of loss attributed to the magnitude of an organization's investment in a single issuer. SWIB limits concentrations of credit risk by establishing investment guidelines for individual portfolios or groups of portfolios that generally restrict issuer concentrations in any one company or Rule 144A securities to less than 5% of the portfolio's market value. The Retirement Funds did not hold any investments with a single issuer, exclusive of investments issued or explicitly guaranteed by the U.S. government, representing 5% or more of the Retirement Funds' value at December 31, 2018.

» *Interest Rate Risk*

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. SWIB uses a number of different methods to manage interest rate risk. Fixed income instruments held by the Retirement Funds include investments with variable rate securities, stepped rate securities, securities with no coupon, such as discount notes, and coupons that range between 0.0% and 14.75% at December 31, 2018.

Generally, SWIB analyzes long or intermediate term portfolios' interest rate risk using various duration calculations. Modified duration, which is stated in years, is the measure of price sensitivity of a fixed income security to an interest rate change of 100 basis points. The calculation is based on the weighted average of the present values for all cash flows. Some investments are analyzed using an option-adjusted duration calculation which is similar to the modified duration method. Option-adjusted duration incorporates the duration-shortening effect of any embedded call provisions in the securities. Duration statistics are weighted by the dollar value of the position to compute an average duration for each investment type.

Short-term portfolios' interest rate risk is analyzed using the weighted average maturity to next reset. Weighted average maturity is the maturity of each position in a portfolio weighted by the dollar value of the position to compute an average maturity for the portfolio as a whole. This measure indicates a portfolio's sensitivity to interest rate changes: a longer weighted average maturity implies greater volatility in response to interest rate changes.

SWIB's investment guidelines related to interest rate risk vary by portfolio. Some fixed income portfolios are required to be managed within a range of a targeted duration, while others are required to maintain a weighted average maturity at or below a specified number of days or years.

The table entitled Interest Rate Sensitivity by Investment Type presents the aggregated interest rate exposure for the Retirement Funds' assets at December 31, 2018. Weighted average maturity, where reset dates are assumed to be the effective maturity date for the security, is presented for repurchase agreements and short-term pooled investments. Longer-term instruments held by the Retirement Funds are presented using modified duration, as this measure more accurately states the interest rate sensitivity of these investments. The duration statistic is calculated utilizing reset dates for some floating rate instruments, such as term loans. Information about the interest rate sensitivity of derivative contracts is discussed later in this note.

SWIB invests in securities with contractual cash flows, such as asset-backed securities and U.S. government agencies. These types of structured product investments may be highly sensitive to interest rate changes in that they can be subject to early payment in a period of declining interest rates. The resulting changes in timing, or possible reduction in expected total cash flows, affect the fair value of these securities.



FINANCIAL SECTION

Retirement Funds
Interest Rate Sensitivity by Investment Type*
As of December 31, 2018
(In Thousands)

Investment Type	Fair Value	Weighted Average Duration (years)	Weighted Average Maturity (days)
Asset Backed Securities	\$ 211,145	2.5	
Commercial Paper	159,044		27
Corporate Bonds & Private Placements	5,476,637	5.4	
Foreign Government/Agency Bonds	3,081,113	6.1	
Municipal Bonds	105,001	10.2	
Repurchase Agreements	367,009		1
U.S Government Agencies	209,439	3.9	
U.S Treasury Inflation Protected Securities	14,565,286	7.2	
U.S Treasury Securities	3,352,501	5.5	
Commingled Funds			
Domestic Fixed Income	4,696,198	7.6	
Emerging Market Fixed Income	1,137,086	5.8	
Short Term Cash Management	2,343,290		19
Total	\$ 35,703,749		

*Excludes derivatives

» **Foreign Currency Risk**

Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of an investment. It includes the risk that currencies in which a portfolio's investments are denominated, or currencies in which a portfolio has taken on a long/short active position, will decline in value relative to the U.S. dollar.

Foreign currency exchange rates may fluctuate significantly for a number of reasons, including the forces of supply and demand in the foreign exchange markets, actual or perceived changes in interest rates, intervention by U.S. or foreign governments or central banks, currency controls, or political developments in the U.S. or abroad.

SWIB's policies include foreign currency risk management objectives relating to each individual portfolio. These guidelines address the foreign currency management activities permitted for each portfolio based on the portfolios mandates, risk tolerances, and objectives. SWIB also employs discretionary currency overlay strategies at the total fund level when currency market conditions suggest such strategies are warranted. Additional information related to the management of foreign currencies through the use of derivatives is discussed later in this note.

The table entitled Currency Exposures by Investment Type present the Retirement Fund investments which were exposed to foreign currency risk at December 31, 2018.

Retirement Funds
Currency Exposure by Investment Type
December 31, 2018
Stated in U.S. Dollars
 (In Thousands)

Currency	Cash & Cash Equivalents	Equities	Fixed Income	Limited Partnerships	Preferred Securities	Financial Futures Contracts	Options	Short Sell Obligations	Total
Argentina Peso	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Australian Dollar	7,060	1,010,281	33,175	0	0	104	0	(101,966)	948,654
Brazilian Real	173	66,871	0	0	22,367	0	0	0	89,411
Canadian Dollar	18,977	1,370,098	29,511	0	0	112	0	(107,750)	1,310,948
Chilean Peso	38	2,821	0	0	0	0	0	0	2,859
Colombian Peso	1	139	0	0	0	0	0	0	140
Czech Republic Koruna	43	781	0	0	0	0	0	0	824
Denmark Krone	124	336,192	11,642	0	0	0	0	(62,985)	284,973
Euro Member Countries	24,757	4,949,313	899,966	878,328	101,057	488	(211)	(293,321)	6,560,377
Hong Kong Dollar	7,500	894,753	0	0	0	(13)	0	(26,587)	875,653
Hungarian Forint	0	5,755	0	0	0	0	0	0	5,755
Indian Rupee	33	87,002	0	0	0	0	0	0	87,035
Indonesian Rupiah	585	27,159	0	0	0	0	0	0	27,744
Israeli Shekel	780	32,287	0	0	0	0	0	(766)	32,301
Japanese Yen	741,774	3,779,012	472,909	0	0	(1,295)	0	(355,929)	4,636,471
Korea (South) Won	107	207,485	0	0	219	0	0	0	207,811
Malaysian Ringgit	2,882	34,236	5,888	0	0	0	0	0	43,006
Mexican Peso	7,481	4,708	19,016	0	0	0	0	0	31,205
Moroccan Dirham	9	0	0	0	0	0	0	0	9
New Zealand Dollar	671	44,344	2,520	0	0	0	0	(12,729)	34,806
Norwegian Krone	1,652	116,145	5,032	0	0	0	0	(9,163)	113,666
Philippine Peso	20	1,468	0	0	0	0	0	0	1,488
Poland Zloty	1,610	37,244	15,417	0	0	0	0	0	54,271
Russian Ruble	5	0	0	0	0	0	0	0	5
Singapore Dollar	4,417	229,390	6,757	0	0	0	0	(26,945)	213,619
South African Rand	5,477	45,475	17,726	0	38	0	0	0	68,716
Sweden Krona	1,121	390,946	9,155	6,163	0	0	0	(35,001)	372,384
Swiss Franc	2,065	1,193,997	0	0	0	0	0	(66,321)	1,129,741
Taiwan New Dollar	68	87,575	0	0	0	0	0	0	87,643
Thailand Baht	7	76,585	0	0	0	0	0	0	76,592
Turkish Lira	3	56,103	0	0	0	0	0	0	56,106
United Kingdom Pound	46,931	2,576,496	167,151	189,654	13	(309)	(108)	(98,781)	2,881,047
Total	\$ 876,371	\$17,664,661	\$ 1,695,865	\$ 1,074,145	\$ 123,694	\$ (913)	\$ (319)	\$ (1,198,244)	\$20,235,260

1) Commingled funds (including limited partnerships and other pooled vehicles) represent investments where the Retirement Funds own only a portion of the overall fund. While the overall fund may be denominated in U.S. dollars, the underlying investments may be exposed to foreign currency risk in various currencies. Commingled funds are shown in the denomination used by the fund for financial reporting.

2) Short Sell Obligations are reported as liabilities on the Statement of Fiduciary Net Position. They are included in the above table because they have exposure to foreign currency risk.

3) Investment types holding instruments denominated only in U.S. Dollars are not included in the above table. At calendar year-end, these include: Convertible Securities, Multi Asset Investments, Real Estate, TBAs, Swaps and Obligation Under Reverse Repurchase Agreements.

4) Values may not add due to rounding.

FINANCIAL SECTION

» Fair Value of Investments

Fair value measurements of the investments held by the WRS are categorized by the hierarchy established by generally-accepted accounting principles. The hierarchy, which has three levels, is based on the valuation inputs used to measure the fair value of the asset.

Level 1 - Investments reflect unadjusted quoted prices in active markets for identical assets.

Level 2 - Investments reflect prices that are based on inputs that are either directly or indirectly observable for an asset (including quoted prices for similar assets), which may include inputs in markets that are not considered to be active.

Level 3 - Investments reflect prices based upon valuation techniques in which significant inputs or significant value drivers are unobservable.

The fair value hierarchy gives the highest priority to Level 1 inputs and the lowest priority to Level 3. When the inputs used to measure fair value fall within different levels of the hierarchy, the level within which the fair value measurement is categorized is based on the lowest level input that is significant to fair value. The categorization of investments within the hierarchy is based upon the pricing transparency of the instrument and does not represent the investment's overall risk.

Commingled investments are not categorized under the fair value hierarchy but are disclosed within this note as investments measured at net asset value (NAV).

The fair value measurements of investments as of December 31, 2018, are found in the table entitled Investments by Fair Value Level.

**Retirement Funds
Investments by Fair Value Level
As of December 31, 2018
(In Thousands)**

Asset Type	Fair Value			TOTAL
	Level 1	Level 2	Level 3	
Cash Equivalents				
Certificates of Deposit	\$ 0	\$ 41,709	\$ 27,296	\$ 69,005
Commercial Paper	0	0	159,044	159,044
Foreign Government/Agency	0	0	711,367	711,367
Total Cash Equivalents	0	41,709	897,707	939,416
Equities				
Domestic	30,805,076	0	78,165	30,883,241
International	17,660,734	0	3,928	17,664,662
Total Equities	48,465,810	0	82,093	48,547,903
Fixed Income				
Asset Backed Securities	0	207,145	4,000	211,145
Corporate Bonds & Private Placements	0	4,907,712	137,918	5,045,630
Foreign Government/Agency Bonds	0	2,369,745	0	2,369,745
Municipal Bonds	0	105,001	0	105,001
U.S. Government Agencies	0	209,439	0	209,439
U.S. Treasury Inflation Protected Securities	0	14,565,286	0	14,565,286
U.S. Treasury Securities	12,184	3,340,316	0	3,352,500
Total Fixed Income	12,184	25,704,644	141,918	25,858,746
Real Estate	0	0	1,372,027	1,372,027
Preferred Securities				
Domestic	0	44,529	41,822	86,351
International	123,476	0	219	123,695
Total Preferred Securities	123,476	44,529	42,041	210,046
Convertibles	0	0	326	326
Derivatives				
Foreign Exchange Contracts	0	(21,294)	0	(21,294)
Futures	156,899	0	0	156,899
Options	(8,095)	(53)	0	(8,148)
Swaps	0	(21,790)	0	(21,790)
To Be Announced Securities	0	686,251	0	686,251
Total Derivatives	148,804	643,114	0	791,918
Equity Short Sales	(3,002,001)	0	0	(3,002,001)
Total	\$ 45,748,273	\$ 26,433,996	\$ 2,536,112	\$ 74,718,381

Securities classified as Level 1 are generally valued at the official closing price (usually the last trade price) or the last bid price on the security's primary exchange. Such investments generally include exchange-traded securities such as equities, preferred stock, certain derivatives, and exchange-traded funds. U.S. Treasury Bills and only the most recently-issued US Treasury Notes and Bonds are classified as level 1 because available pricing for these securities is similarly reliable to exchange-traded securities.

FINANCIAL SECTION

Securities classified as Level 2 are valued using observable inputs by third-party pricing services using either a bid evaluation or a matrix-pricing technique. Bid evaluations may include market quotations that are based on yields, maturities, call features, and ratings. Matrix-pricing is used to value securities based on their relationship to benchmark market prices for securities with similar interest rates, maturities, and credit ratings. Pricing in this level may also include market approaches that incorporate benchmark interest rates. Debt securities comprise the majority of the level 2 investments because they are generally traded using a dealer market, with lower trading volumes than level 1 securities. Over-the-counter derivatives, such as swaps, TBAs, and foreign exchange contracts, are also included in level 2 because they are priced using a market approach that considers benchmark interest rates and foreign exchange rates.

Level 3 investments are generally valued using significant inputs that are unobservable to the marketplace. This may occur if an investment is illiquid or its value is based on estimates. For the WRS, such investments primarily include directly-held real estate, valued using appraisals and, as such, rely on unobservable inputs. Foreign Government/Agency securities in level 3 are valued using proprietary valuation models. Asset Backed Securities included in level 3 represent private placements that are valued at purchase price because third-party valuations are unavailable. Equities, convertibles, and preferred securities included in the level 3 hierarchy are generally privately-held securities valued using valuation models such as price multiples incorporating public company comparables, discounted cash flows and milestone valuation models. In some instances of privately-held preferred securities, valuation is determined based on recent financing rounds. Bank loans, which represent the majority of corporate bonds and private placements in the level 3 category, are priced by vendors using proprietary models which may incorporate unobservable inputs. Cash and Cash Equivalents included in level 3 represent securities priced at cost. Typically, due to their short-term nature, cost approximates fair value for these investments. Other factors such as infrequent trading, inactive market, or adjusted quoted prices may also result in level 3 measurements.

» *Investments Measured at NAV*

The fair value of investments in certain fixed income funds, private equity limited partnerships, stock funds, real estate limited partnerships, and hedge funds are based on the investments' net asset value (NAV) per share (or its equivalent), provided by the investee. The December 31, 2018 investments valued using NAV are shown in the table entitled Investments Measured at NAV and include commingled/pooled funds, private equity, and real estate limited partnerships.

**Retirement Funds
Investments Measured at NAV
As of December 31, 2018
(In Thousands)**

Investments Measured at NAV	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period ⁽⁸⁾
Cash and Cash Equivalents ⁽¹⁾	\$ 2,343,290	\$ 0	Daily	Same Day
Fixed Income ⁽²⁾	6,219,438	261,883	Daily, Monthly, Quarterly, N/A	2-90 days, N/A
Private Equity Limited Partnerships ⁽³⁾	8,168,019	5,721,846	N/A	N/A
Equities ⁽⁴⁾	6,301,746	0	Daily, Monthly	2-30 days
Real Estate Limited Partnerships ⁽⁵⁾	5,422,487	1,601,867	Quarterly, Annually N/A	30-90 days, Other, N/A
Hedge Funds ⁽⁶⁾	5,759,422	68,139	Various	Various
Total ⁽⁷⁾	<u>\$ 34,214,402</u>	<u>\$ 7,653,735</u>		

⁽¹⁾ This category consists of short-term cash funds with the investment objective of safety of principal and liquidity while earning a competitive money market rate of return. The short-term cash funds have daily liquidity with same day notice.

⁽²⁾ Corporate and government bond index funds make up a significant portion of this category (76%) and have the investment objective of approximating as closely as practicable the return of a given segment of the markets for publicly-traded investments. The corporate and government index funds have daily liquidity with 2 days' notice. An additional 18% of this category represents long-only fixed income managers, which can invest across the credit quality spectrum, in varying geographies, and can include derivatives, high yield and structured securities. These long-only managers require a redemption notice period between one and two weeks and have daily or monthly liquidity. The remaining 6% of this category includes LLCs which invest in private real estate debt. The majority of these LLC investments distribute earnings over the life of the investment and have an average remaining life of less than 5 years. One LLC investment has an average remaining life of greater than 10 years. The private real estate debt LLC's that do not distribute earnings over the life of the fund permit quarterly redemptions with 90 days' notice.

⁽³⁾ Private Equity Limited Partnerships include direct, co-investments with existing SWIB general partners, direct secondary investments and fund of funds. These investments are illiquid and are generally not resold or redeemed. Distributions from each fund will be received as the underlying investments are liquidated. The table entitled Limited Partnerships - Estimated Remaining Life provides an estimate of the period over which the underlying assets are expected to be liquidated. However, as of December 31, 2018, approximately 2.8% of these investments will be sold at an amount different from the NAV provided by the general partner. Therefore, the fair values of these investments have been determined using the nonbinding bids received from potential buyers of the investments. As of December 31, 2018, a buyer(s) for these investments has been identified and the secondary sale(s) is expected to be executed during 2019.

⁽⁴⁾ This category includes long-only equity managers (70%) with various fundamental, quantitative and other approaches spanning various styles, geographies and market cap weights. The majority of these long-only manager investments can be redeemed monthly with between 10 and 30 days' notice. One long-only manager investment can be redeemed daily with 30 days' notice. An additional 30% of this category represents emerging markets equity index funds with an investment strategy designed to track the return of the given segment of the emerging equity markets. These investments can be redeemed daily with 2 days' notice. This category includes investments that are in the process of being fully redeemed, with final distribution expected in 2019.

⁽⁵⁾ This category includes funds that invest directly in real estate and real estate related assets. Approximately 70% of these investments are generally not resold or redeemed. Distributions from each fund will be received as the underlying investments are liquidated. The table entitled Limited Partnerships - Estimated Remaining Life provides an estimate of the period over which the underlying assets are expected to be liquidated. The remaining 30% of this category consists of open-ended funds that invest directly in real estate and real estate related assets. The majority of these investments can be redeemed quarterly with between 30 and 90 days' notice. One fund can be redeemed annually with notice provided in the first quarter of the calendar year.

⁽⁶⁾ Hedge Fund investments are private investment funds that seek to produce absolute returns using a broad range of strategies. In certain instances, Hedge Fund investments are structured as limited partnerships, whereby participants receive distributions over the life of the fund. Estimated remaining life for the majority funds structured as limited partnerships is estimated to be between 5-10 years. One fund has an estimated remaining life of greater than 10 years. Additional information relating to Hedge Funds can be found later in this note.

⁽⁷⁾ WRS had additional unfunded commitments of approximately \$15.8 million, relating to assets not valued using NAV.

⁽⁸⁾ Redemption terms described for NAV investments reflect contractual agreements and assume withdrawals are made without adverse market impact under normal market conditions.

» Private Equity and Real Estate Limited Partnerships

In general, the Private Equity Limited Partnerships participated in the following investment strategies at December 31, 2018:

Buyout - This strategy acquires shares of a private company to gain a controlling interest.

Mezzanine - Provides mezzanine debt to finance leveraged buyouts, recapitalizations, and corporate acquisitions.



FINANCIAL SECTION

Special Situations - This strategy can invest in public and private companies undergoing financial distress, a turnaround in business operations, or which are believed to be undervalued because of a discrete extraordinary event.

Venture Capital - This strategy invests in companies with potential for significant growth (generally small to early stage emerging firms).

The Real Estate Limited Partnerships generally consisted of the following investment strategies at December 31, 2018:

Core - Core investments are expected to deliver a significant percentage of their return from income and should demonstrate lower volatility than Opportunistic and Value investments due to lower leverage, higher occupancy, and asset location.

Value - Value investments typically have significant near-term leasing, repositioning, and/or renovation risk. This strategy is expected to have modest initial operating revenues with potential for substantial income growth and will likely encounter greater volatility than Core strategies, but lower volatility than Opportunistic strategies.

Opportunistic - Opportunistic investments usually have significant development, lease-up, financial restructuring, and/or liquidity risk with little or no initial operating income. This strategy typically uses the highest leverage, is expected to achieve most of its return from future capital gains, and is likely to encounter greater volatility than Core and Value strategies.

Limited partnerships are generally structured to provide distributions to participants of the fund as the holdings of the partnership are liquidated over time. The table entitled Limited Partnerships - Estimated Remaining Life illustrates the distribution of estimated remaining liquidation periods for the Retirement Funds' private equity and real estate limited partnership holdings as of December 31, 2018.

Retirement Funds
Limited Partnerships - Estimated Remaining Life
As of December 31, 2018
(In Thousands)

Limited Partnership Type	Estimated Remaining Life*				Total
	< 5 Years	5 - 10 Years	> 10 Years	N/A	
Private Equity	\$ 1,705,190	\$ 4,955,151	\$ 1,507,677	\$ 0	\$ 8,168,018
Real Estate	595,928	3,094,962	178,149	1,553,449	5,422,488
Total	\$ 2,301,118	\$ 8,050,113	\$ 1,685,826	\$ 1,553,449	\$ 13,590,506

* Estimated remaining life represents subjective estimates, assuming normal market conditions.

N/A investments represent open-ended funds that can be redeemed.

» **Hedge Funds**

Hedge Fund investments are private investment funds that seek to produce absolute returns using a broad range of strategies. The Retirement Funds participated in the following Hedge Fund strategies at December 31, 2018:

Equity Long-Short - This strategy invests both long and short in publicly-traded stocks. These managers vary in their use of short selling and leverage.

Event-Driven - The funds in this strategy seek to gain an advantage from pricing inefficiencies that may occur before or after a corporate action or related event, such as a merger, spinoff, earnings call, bankruptcy, or restructuring.

Tactical Trading - The funds in this category invest their holdings in indexes, commodities, interest rate instruments, and currencies as a result of relative value or directional forecasts from a systematic or discretionary approach.

Relative Value - This strategy uses a range of fixed income arbitrage, long/short credit, and/or quantitative strategies that seek to take advantage of price differentials.

Multistrategy - The funds in this category employ a wide range of strategies and instruments in managing assets.

When redeeming Hedge Fund investments, the agreements governing the investment vehicle oftentimes require advanced notice and may restrict the timing of withdrawals. The table entitled Hedge Fund Redemption Timing depicts redemption terms, irrespective of other contractual restrictions, for SWIB's Hedge Fund investments at December 31, 2018.

**Retirement Funds
Hedge Fund Redemption Timing
As of December 31, 2018
(In Thousands)**

Redemption Frequency	Redemption Notice Period (days)	Fair Value
Monthly ⁽¹⁾	4 - 90	\$ 1,581,235
Quarterly ⁽¹⁾	30 - 120	3,208,002
Other ⁽¹⁾ (²)	60 - 90, N/A	970,185
Total		\$ 5,759,422

⁽¹⁾ These categories include funds that are in the process of being fully redeemed, with final distribution expected in 2019.

⁽²⁾ This category includes funds that are subject to rolling locks, whereby the fund automatically re-locks unless a withdrawal request is submitted. This category also includes funds that are structured as limited partnerships, whereby withdrawals are not permitted but the participants receive distributions over the life of the fund.

Hedge Fund agreements can also include "lock-up" periods, which restrict investors from redeeming their investment during a specified time frame. The lock-up period helps portfolio managers avoid liquidity problems. Lock-ups can be "hard," where redemptions are not permitted for a specified time period, or "soft," where redemptions are permitted provided the investor pays a penalty. In certain instances, a fund may have both hard and soft lock-up restrictions in place. In addition, hedge fund managers can also institute a "rolling" lock-up. A fund with a rolling lock-up period requires investors to commit to an initial lock-up period, and, if the investor does not submit a redemption notice within a set time prior to expiration of the lock-up, the lock-up is reset.



FINANCIAL SECTION

The table entitled Hedge Fund Lock-ups reflects the lock-up terms for the Hedge Fund investments held at December 31, 2018.

**Retirement Funds
Hedge Fund Lock-ups
As of December 31, 2018**
(In Thousands)

Hedge Fund Lock Type	Initial Duration of Lock (Years)	Year of Lock Expiration	Fair Value
Hard Lock	1 - 3	2019 - 2020	\$ 392,365
Soft Lock	1	2019	696,162
Rolling Lock	2 - 3	2019 - 2021	704,384
None ⁽¹⁾	N/A	N/A	3,877,930
Other ⁽²⁾	N/A	N/A	88,581
Total			\$ 5,759,422

⁽¹⁾ This category includes funds that are in the process of being fully redeemed, with final distribution expected in 2019.

⁽²⁾ This category includes funds that are structured as limited partnerships, whereby withdrawals are not permitted but the participants receive distributions over the life of the fund.

Similar to lock-ups, hedge fund agreements also commonly incorporate “gate” restrictions. An investor-level gate limits redemption on a particular redemption date to a specified percentage of the investor’s account value, while a fund-level gate may limit total investor withdrawals on a particular redemption date to a percentage of aggregated fund-level (or master fund-level) net asset value. In certain instances, funds can have both investor- and fund-level gates in place. Such funds are reflected in the “Investor Level” category. The table entitled Hedge Fund Gates summarizes the Hedge Fund Gates in place at December 31, 2018.

**Retirement Funds
Hedge Fund Gates
As of December 31, 2018**
(In Thousands)

Hedge Fund Gate Type	Gate Range	Fair Value
Investor Level ⁽¹⁾	25%	\$ 2,042,755
Fund Level	8.33% - 30%	1,367,103
None ⁽¹⁾	N/A	2,260,983
Other ⁽²⁾	N/A	88,581
Total		\$ 5,759,422

⁽¹⁾ These categories include funds that are in the process of being fully redeemed, with final distribution expected in 2019.

⁽²⁾ This category includes funds that are structured as limited partnerships, whereby withdrawals are not permitted but the participants receive distributions over the life of the fund.

» Derivatives

A derivative instrument, as defined by GASB Statement No. 53, is a financial instrument or other contract that has all of the following characteristics:

- **Settlement factors** - It has (1) one or more reference rates and (2) one or more notional amounts or payment provisions or both. Those terms determine the amount of the settlement or settlements and, in some cases, whether or not a settlement is required.
- **Leverage** - It requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors.
- **Net settlement** - Its terms require or permit net settlement, it can readily be settled net by a means outside the contract, or it provides for delivery of an asset that puts the recipient in a position not substantially different from net settlement.

Derivatives may be used to implement investment strategies for the Retirement Funds. All derivative instruments are subjected to risk analysis and monitoring processes at the portfolio, asset class, and fund levels. Investment guidelines define allowable derivative activity for each portfolio and are based on the investment objectives which have been approved by the Board of Trustees. Where derivatives are permitted, guidelines stipulate allowable instruments and the manner and degree to which they are to be used.

Gains and losses for all derivative instruments are reported in the Statement of Changes in Fiduciary Net Position as "Net Increase (Decrease) in Fair Value of Investments." SWIB invests in derivative investments directly as well as indirectly through commingled or pooled investments. Information relating to investments held in commingled funds has not been separately disclosed in the financial statements or the accompanying footnotes, consistent with GASB reporting requirements.

A derivative can take the form of an individually negotiated contract between the Retirement Funds and a specific counterparty. These types of negotiated positions are known as over-the-counter (OTC) contracts. OTC contracts can be structured as either "uncleared" or "cleared."

Uncleared OTC contracts are non-standardized bilateral contracts between counterparties and do not include the use of a centralized intermediary, such as a clearinghouse. Uncleared OTC transactions are subject to regulatory requirements with respect to data reporting and recordkeeping, trading relationship documentation, business conduct standards, portfolio reconciliation, and margin collection and posting. For these transactions, master netting agreements and credit support annexes governing the credit relationship and collateral exchange between two counterparties are put in place to mitigate counterparty credit risk.

Cleared OTC contracts offer additional protections to trade participants. These types of transactions employ the use of an intermediary between counterparties. The intermediary, known as a clearinghouse, serves to facilitate trading and mitigate risks. While not completely standardized, these contracts involve a high degree of standardization. Once cleared, the clearinghouse steps in as the counterparty to all trades. Regulatory bodies govern the tools and procedures for risk mitigation such as margin requirements and daily mark-to-market.

In addition to trading OTC, derivative contracts can also be transacted on established exchanges. These types of contracts are called "exchange-traded" and are completely standardized. Like cleared OTC contracts, the clearinghouse is an intermediary to the trade, reducing risks and standardizing the exchange of margin. The table entitled Derivative Contract Types summarizes the differences between OTC and exchange-traded contracts.



FINANCIAL SECTION

Retirement Funds Derivative Contract Types		
Uncleared (OTC)	Cleared (OTC)	Exchange-Traded
Trades negotiated over-the-counter	Trades negotiated over-the-counter	Trades executed on organized exchanges
Customized trade terms are agreed upon by counterparties	Trades limited to standardized terms	Trades limited to standardized terms
Traded bilaterally between counterparties	Trades are submitted through a clearinghouse, which is counterparty	Trades are booked with exchange's clearinghouse, which is counterparty
Margin (collateral) often exchanged but subject to negotiation between counterparties.	Mandatory margin requirements	Mandatory margin requirements
Common example: Forward Contracts	Common example: Credit Default Swaps	Common example: Futures Contracts

Collateral postings are commonplace for derivative contracts and vary based on the type of contract traded. SWIB posted \$306.4 million in cash and \$150.9 million in securities as collateral for derivatives positions as of December 31, 2018. More information regarding collateral requirements is included within the narrative that follows.

Uncleared OTC Derivatives

Inherent in the use of uncleared OTC derivatives, the Retirement Funds may be exposed to counterparty credit risk. Counterparty credit risk is the risk that a derivative counterparty may fail to meet its payment obligations under the terms of the derivative contract. SWIB seeks to mitigate this risk through counterparty credit evaluations and approvals, counterparty credit limits, and exposure monitoring procedures. Additionally, policies have been established which seek to implement master netting arrangements (MNA) with counterparties that permit the closeout and netting of transactions with the same counterparty upon the occurrence of certain events, such as payment default, rating downgrade, bankruptcy, illegality, or force majeure. Agreements may also require daily collateral postings to further mitigate credit risk.

The table entitled OTC Derivatives Subject to Counterparty Credit Risk, summarizes, by credit rating, the Retirement Funds' exposure to counterparty credit risk relating to uncleared OTC contracts as of December 31, 2018. The number of uncleared OTC counterparties with credit exposure at year-end was 16.

Retirement Funds
OTC Derivative Investments Subject to Counterparty Credit Risk
As of December 31, 2018
 (In Thousands)

Counterparty Credit Rating	FX Receivables	Swap Receivables	To Be Announced Securities¹	Warrants^{1,2}	Total
AA	\$ 20,603	\$ 0	\$ 0	\$ 0	\$ 20,603
A	3,842,839	867,334	19,975	0	4,730,148
Not Rated	0	0	0	3,709	3,709
					<u>\$ 4,754,460</u>
				Less Collateral and MNA offsets ³	4,743,202
				Total OTC Counterparty Credit Risk	<u><u>\$ 11,258</u></u>

¹Exposure to counterparty credit risk for To Be Announced Securities and Warrants is limited to unrealized gains on open positions.

²Warrants issued by privately held company that is not rated by statistical credit rating organization.

³Includes net collateral positions and liabilities with counterparties that have master netting arrangements (MNA).

Cleared OTC and Exchange-Traded Derivatives

Counterparty credit risk is mitigated by an intermediary for cleared OTC and exchange-traded derivative contracts. For these types of derivative investments, a clearinghouse interposes itself as counterparty to all trades and extends a guarantee that trades will be settled as originally intended. To ensure performance, margin requirements are imposed. The requirements are established with the intent to cover nearly all expected price changes based on market risk. Margin payments are settled daily based upon the price movements of the contracts, thereby significantly reducing counterparty credit risk.

» Foreign Currency Spot and Forward Contracts

Foreign Currency Spot and Forward contracts are uncleared OTC agreements between two counterparties to exchange designated currencies at a specific time in the future. No cash is exchanged when a foreign exchange spot or forward contract is initiated. Depending upon market movements, forward contracts may require collateral postings either to SWIB or to counterparties. Spot contracts are exempt from collateralization. For deliverable contracts, amounts due are paid or received on the contracted settle date. In other instances (most often in emerging markets), contracts are established as non-deliverable forwards (NDFs). Unlike deliverable contracts, NDFs are only settled in U.S. dollars.

Currency exposure management is permitted through the use of currency derivative instruments. Direct hedging of currency exposure back to the U.S. dollar is permitted when consistent with the strategy of the portfolio. Cross-currency exposure management to transfer out of an exposed currency and into a benchmark currency is permitted. In some portfolios, currencies of non-benchmark countries may be held through the use of forward contracts, provided that the notional value of any single non-benchmark currency does not exceed 5% of the market value of the portfolio. SWIB may employ discretionary currency overlay strategies at the total fund and asset class level when currency market conditions suggest such strategies are warranted.

Losses may arise from future changes in the value of the underlying currency, or if the counterparties do not perform under the terms of the contract. Spot and forward contracts are valued daily with the changes in fair value included in "Net Increase (Decrease) in Fair Value of Investments" on the Statement of Changes in



FINANCIAL SECTION

Fiduciary Net Position. The net receivable or payable for spot and forward contracts is reflected as "Foreign Currency Contracts" on the Statement of Fiduciary Net Position. The table entitled Foreign Currency Spot and Forward Contracts presents the fair value of foreign currency spot and forward contract assets and liabilities held by the Retirement Funds as of December 31, 2018.

**Retirement Funds
Foreign Currency Spot and Forward Contracts
December 31, 2018
(In Thousands)**

Currency	Notional (local currency)	Fair Value (\$US)	Unrealized Gain(Loss) (\$US)
Foreign Currency Contract Receivables			
Argentina Peso	65,630	\$ 1,739	\$ 95
Australian Dollar	145,860	102,689	(2,742)
Brazilian Real	144,410	37,240	(480)
Canadian Dollar	236,011	172,837	(3,325)
Chilean Peso	25,104,410	36,173	(1,213)
China Yuan Renminbi	84,753	12,337	125
Colombian Peso	7,955,086	2,444	(56)
Czech Republic Koruna	363,002	16,134	103
Danish Krone	193,332	29,622	116
Euro Member Countries	194,885	222,826	1,249
Hong Kong Dollar	332,831	42,511	(36)
Hungarian Forint	2,047,032	7,305	57
Indian Rupee	4,215,616	60,344	1,656
Indonesian Rupiah	386,877,630	26,860	464
Israeli Shekel	17,578	4,710	(22)
Japanese Yen	34,317,739	312,867	6,238
Korea (South) Won	9,412,682	8,447	19
Mexican Peso	622,102	31,549	888
New Zealand Dollar	24,416	16,372	(267)
Norway Krone	627,842	72,509	(439)
Peru Sol	9,254	2,732	7
Philippine Peso	786,569	14,916	117
Poland Zloty	46,181	12,296	82
Russian Ruble	1,510,656	21,719	(905)
Singapore Dollar	44,696	32,798	289
South African Rand	251,532	17,467	(182)
Sweden Krona	1,080,795	121,915	2,457
Switzerland Franc	142,698	144,768	1,057
Taiwan New Dollar	593,776	19,459	161
Thailand Baht	565,384	17,374	142
Turkish Lira	53,378	9,776	184
United Kingdom Pound	65,097	82,910	(234)
U.S. Dollar	2,147,797	2,147,797	0
Total Receivables		3,863,442	5,605
Foreign Currency Contract Payables			
Australian Dollar	(90,224)	\$ (63,519)	\$ 1,836
Brazil Real	(100,581)	(25,947)	(7)
Canadian Dollar	(90,410)	(66,206)	1,241
Chile Peso	(31,939,063)	(46,030)	121
China Yuan Renminbi	(195,170)	(28,410)	(352)
Colombian Peso	(9,167,700)	(2,817)	(10)
Czech Republic Koruna	(247,795)	(11,013)	16
Denmark Krone	(313,280)	(47,995)	(347)
Euro Members Countries	(441,523)	(504,916)	(3,372)
Hong Kong Dollar	(189,734)	(24,235)	35
Hungarian Forint	(4,125,059)	(14,721)	76
Indian Rupee	(1,156,019)	(16,545)	(807)
Indonesia Rupee	(430,370,864)	(29,847)	(223)
Israeli Shekel	(33,452)	(8,967)	118
Japanese Yen	(95,146,259)	(868,998)	(22,294)
Korea (South) Won	(17,910,643)	(16,073)	(228)
Mexican Peso	(14,156)	(710)	(25)
New Zealand Dollar	(36,303)	(24,345)	533
Norway Krone	(309,752)	(35,774)	361
Philippines Peso	(55,024)	(1,043)	(13)
Poland Zloty	(43,446)	(11,569)	46
Russian Ruble	(1,261,432)	(18,164)	47
Singapore Dollar	(27,221)	(19,975)	(165)
South African Rand	(148,879)	(10,270)	447
Sweden Krona	(482,751)	(54,457)	(1,067)
Switzerland Franc	(21,109)	(21,418)	(112)
Taiwan New Dollar	(521,596)	(17,093)	(58)
Thailand Baht	(455,758)	(14,005)	(109)
Turkish Lira	(10,989)	(1,995)	(43)
United Kingdom Pound	(131,614)	(167,639)	(2,544)
U.S. Dollar	(1,710,040)	(1,710,040)	0
Total Payables		(3,884,736)	(26,899)
Net		\$ (21,294)	\$ (21,294)



FINANCIAL SECTION

» *Futures Contracts*

A futures contract is an exchange-traded agreement to buy or sell a financial instrument, index, or commodity at an agreed upon price and time in the future.

The fair value of futures contracts represents the unrealized gain(loss) on the contracts, since trade inception, and is reflected as “Financial Futures Contracts” on the Statement of Fiduciary Net Position. Futures contracts are marked to market daily, based upon the closing market price of the contract at the board of trade or exchange on which they are traded. Gains and losses resulting from investments in futures contracts are included in the “Net Increase (Decrease) in Fair Value of Investments” on the Statement of Changes in Fiduciary Net Position.

Futures contracts involve, to varying degrees, risk of loss in excess of the margin deposited with the clearinghouse. Losses may arise from future changes in the value of the underlying instrument.

Futures contracts may be entered into for purposes such as the following:

- To efficiently gain or adjust market exposures for trust fund rebalancing,
- To adjust sector, interest rate, or duration exposures, and
- To securitize cash or act as a substitute for cash market transactions.

The table entitled Futures Contracts presents the Retirement Funds investments in futures contracts as of December 31, 2018.

Retirement Funds Futures Contracts As of December 31, 2018 (In Thousands)				
Futures Contract Description	Position	Expiration	Notional Amount	Fair Value*
Commodity	Long	Feb 19 - Dec 19	\$ 35,119	\$ 1,165
	Short	Jan 19 - Mar 19	(84,317)	1,556
Currency	Short	Mar 19	(96,032)	545
Equity	Long	Jan 19 - Mar 19	2,989,953	287
	Short	Jan 19 - Mar 19	(76,877)	534
Fixed Income	Long	Mar 19	8,450,993	157,276
	Short	Mar 19	(1,132,321)	(4,464)
Total			<u>\$ 10,086,518</u>	<u>\$ 156,899</u>

* Fair Value includes foreign currency gains(losses).

The table entitled Futures Contracts with Interest Rate Sensitivity presents the interest rate sensitivity of fixed income futures contracts as of December 31, 2018. Duration, which is stated in years, is the measure of price sensitivity of a fixed income security to an interest rate change of 100 basis points. Duration statistics presented in this table are weighted by the notional value of each position to compute an average duration for the contract types held.

Retirement Funds
Futures Contracts with Interest Rate Sensitivity
As of December 31, 2018
 (In Thousands)

Contract Type	Position	Notional Amount	Fair Value	Weighted Average Duration (Years)
U.S. Treasury Notes	Long	\$ 6,512,994	\$ 83,868	3.6
U.S. Treasury Notes	Short	(816,864)	(4,107)	4.0
U.S. Treasury Bonds	Long	1,489,365	72,175	16.4
U.S. Treasury Bonds	Short	(176,478)	80	16.4
Foreign Government Bonds	Long	448,634	1,234	4.7
Foreign Government Bonds	Short	(138,978)	(437)	7.2
Total		<u>\$ 7,318,673</u>	<u>\$ 152,813</u>	

» Options

An option contract gives the purchaser of the contract the right, but not the obligation, to buy (call) or sell (put) the security or index underlying the contract at an agreed upon price on or before the expiration of the option contract. The seller of the contract is subject to market risk, while the purchaser is subject to credit risk and market risk, to the extent of the premium paid to enter into the contract.

Trust fund rebalancing policies and certain portfolio investment guidelines permit the use of exchange-traded and OTC options. Investment guidelines allow options to be used to improve market exposure efficiency, enhance expected returns, or provide market exposure hedges. Exchange rules require that the seller of short exchange-traded options contracts cover these positions either by collateral deposits in the form of cash or by pledging, in escrow, the actual securities that would be transferred to the option purchaser in the event the option contract were exercised. In the case of OTC options, investment guidelines mitigate counterparty credit risk by establishing minimum credit ratings and requiring master netting agreements with provisions for collateral exchanges.

The fair value of options contracts is based upon the closing market price of the contract and is reflected as "Options Contracts" on the Statement of Fiduciary Net Position. Gains and losses as a result of investments in options contracts are included in the "Net Increase (Decrease) in Fair Value of Investments" on the Statement of Changes in Fiduciary Net Position. The table entitled Options Contracts presents the fair value of options contracts as of December 31, 2018.

Retirement Funds
Options Contracts
As of December 31, 2018
 (In Thousands)

Description	Contract Type	Position	Exchange-Traded (EXCH) vs. OTC	Expiration	Notional	Fair Value	Unrealized Gain (Loss)
Equity	CALL	Long	EXCH	Jan 19 - Dec 19	\$ 11,876	\$ 413	\$ (703)
Equity	CALL	Short	EXCH	Jan 19 - Feb 19	(189,992)	(2,309)	(211)
Equity	PUT	Short	EXCH	Jan 19 - Feb 19	(750,901)	(5,933)	468
Equity	PUT	Short	OTC	Jan 19 - Feb 19	(173,032)	(319)	455
Total					<u>\$ (1,102,049)</u>	<u>\$ (8,148)</u>	<u>\$ 9</u>



FINANCIAL SECTION

» Swaps

Swaps are negotiated contractual agreements between two counterparties that can be cleared or uncleared OTC investments. As is specified in SWIB’s investment guidelines, swaps may be used as an alternative to physical securities when it is deemed advantageous for portfolio construction. In addition, swaps may be used to adjust asset class exposures for the Retirement Funds. Guideline limits and soft risk parameters for each portfolio are applied to the aggregate exposures which includes both physical and synthetic securities. A synthetic security is created by combining securities to mirror the properties of another security.

Throughout the calendar year, the Retirement Funds held positions in Total Return Swaps (TRS) and Credit Default Swaps (CDS). The table entitled Open Swap Positions lists the open swap contracts held at December 31, 2018.

**Retirement Funds
Open Swap Positions
As of December 31, 2018**
(In Thousands)

Type	Maturity Date	Reference Rate	Notional Amount	Fair Value	Unrealized Gain (Loss)
Credit Default	Jun-23	NA (1)	\$ 175,000	\$ 1,404	\$ (1,764)
Total Return	Apr-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	49,407	(4,479)	(4,479)
Total Return	Apr-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	150,001	1,130	1,130
Total Return	Jun-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	50,001	(742)	(742)
Total Return	Jul-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	98,822	(7,599)	(7,599)
Total Return	Jul-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	24,703	(2,240)	(2,240)
Total Return	Jul-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	24,998	(2,036)	(2,036)
Total Return	Sep-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	47,067	(3,246)	(3,246)
Total Return	Sep-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	150,001	1,130	1,130
Total Return	Oct-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	49,411	(3,801)	(3,801)
Total Return	Dec-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	46,116	(2,464)	(2,464)
Total Return	Dec-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	49,999	23	23
Total Return	Dec-19	Pay 3-month LIBOR plus Spread, Receive Equity Index Return	150,001	1,130	1,130
Total			<u>\$ 1,065,527</u>	<u>\$(21,790)</u>	<u>\$ (24,958)</u>

(1) SWIB sold credit protection in exchange for periodic payments

The open CDS contracts at December 31, 2018, represent cleared OTC positions where SWIB sold credit protection. Under the terms of the contracts, SWIB receives periodic payments and, in exchange, agrees to

pay a formula-determined amount to counterparties for losses incurred if stipulated credit events occur. CDS spreads are sensitive to credit spread and interest rate changes. The fair value of CDS is determined using the closing price as reported by the applicable clearinghouse.

The open TRS contracts represent uncleared OTC positions where SWIB receives the return of the underlying equity index, in exchange, agrees to pay the stipulated rate benchmark. The rate benchmark is based on the 3-month London Interbank Offering Rate (LIBOR) and is sensitive to interest rate changes. The fair value for TRS is determined based on the change in quoted market price of the underlying equity index and represents the unrealized gain/(loss) on the contracts since trade inception.

The fair value of CDS and TRS is reflected as "Swaps" on the Statement of Fiduciary Net Position. Gains and losses resulting from investments in swap contracts are included in the "Net Increase (Decrease) in Fair Value of Investments" on the Statement of Changes in Fiduciary Net Position.

» To Be Announced Securities

To be announced mortgage-backed (TBA) securities are uncleared OTC forward contracts consisting of mortgage-backed securities (MBS) issued by Government National Mortgage Association, a government entity, and by government-sponsored enterprises such as, the Federal National Mortgage Association or the Federal Home Loan Mortgage Corp. The term TBA is derived from the fact that the actual MBS that will be delivered to fulfill a TBA trade is not designated at the time the trade is made. Instead, the specific pool of mortgages making up the MBS is announced 48 hours prior to the established trade settlement date. Eligibility rules and standards for MBS pools deliverable into TBA contracts ensure that delivered MBS pools are fungible. Payment for TBA securities is not made until the settlement date.

Certain portfolio investment guidelines allow for both long and short TBA positions. To mitigate counterparty credit risk, guidelines establish minimum credit ratings and require master netting agreements which include provisions for collateral exchanges.

TBAs, much like their underlying MBS securities, may be highly sensitive to interest rate changes. This is because the MBS pool on which these forward contracts are based can be subject to early payment in a period of declining interest rates. The price of TBAs can fluctuate as the marketplace predicts changes in timing, or possible reductions in expected cash flows, associated with a change in interest rates. The table entitled TBA Contracts includes the interest rate sensitivity of TBA contracts as of December 31, 2018. Duration, which is stated in years, is the measure of price sensitivity of a fixed income security to an interest rate change of 100 basis points. Duration statistics presented in this table are weighted by the fair value of each position to compute an average duration for the contracts held.

Retirement Funds TBA Contracts As of December 31, 2018 (In Thousands)				
Position	Contract Maturity	Fair Value	Unrealized Gain (Loss)	Weighted Average Duration (Years)
Long	Jan 19 - Apr 19	\$ 3,220,294	\$ 19,975	4.8
Short	Jan 19	(2,534,043)	(39,076)	6.6
Total		<u>\$ 686,251</u>	<u>\$ (19,101)</u>	



FINANCIAL SECTION

The fair value of TBAs is reflected in “To Be Announced Securities” on the Statement of Fiduciary Net Position. The unrealized gain/loss associated with these contracts is included within the “Net Increase (Decrease) in Fair Value of Investments” on the Statement of Changes in Fiduciary Net Position.

» *Warrants*

A warrant is a contract that entitles the holder to buy the underlying stock of the issuing company at a specified price. Warrants and options are similar in that the two instruments allow the holder special rights to buy securities. However, warrants differ from options in that they provide additional financing to the issuing company when exercised.

As of December 31, 2018, SWIB held warrant contracts giving SWIB the right to purchase 190,780 shares of preferred stock at a price of 1 Euro per share. SWIB was issued these warrants in 2017 in conjunction with an investment in a privately held company. The \$3.9 million fair value of these warrants is based upon third-party valuations and is included in “Equities” on the Statement of Fiduciary Net Position. The associated unrealized gain of \$3.7 million is included in the “Net Increase (Decrease) in Fair Value of Investments” on the Statement of Changes in Fiduciary Net Position.

» *Securities Lending Transactions*

State statutes and Board policies permit SWIB to use investments of the Retirement Funds to enter into securities lending transactions. These transactions involve the lending of securities to broker-dealers and other entities in exchange for collateral, in the form of cash or securities, with the simultaneous agreement to return the collateral for identical securities in the future. SWIB’s custodian is an agent in lending the Retirement Funds’ directly-held domestic and international securities. When the Retirement Funds’ securities are delivered to a borrower as part of a securities lending agreement, the borrower is required to place collateral with the lending agent equal to at least 102% of the loaned securities’ fair value, including interest accrued, as of the delivery date, so long as the securities and the collateral are denominated in the same currency. In the event that securities are loaned against collateral denominated in a different currency, the borrower is required to place collateral with the lending agent totaling at least 105% of the loaned securities’ fair value, including interest accrued, as of the delivery date. Collateral is marked to market daily and adjusted as needed to maintain the required minimum level. Pledging or selling non-cash collateral securities cannot be done without a borrower default. On December 31, 2018, the fair value of the securities on loan to counterparties was approximately \$11.3 billion.

Cash collateral is reinvested by the lending agent in two separate pools, a U.S. dollar cash collateral pool and a pool denominated in Euros. These pools are administered in accordance with contractual investment guidelines which are designed to minimize the risk of principal loss and provide a modest rate of return. Investment guidelines limit credit and liquidity risk by restricting new investments to overnight repurchase agreements collateralized with high quality U.S. government, U.S. government agencies, and sovereign debt securities. To further reduce credit risk, SWIB’s custodian provides indemnification to SWIB against counterparty default. The earnings generated from the collateral investments, plus or minus the rebates received from or paid to the dealers and less fees paid to agents, results in the net earnings from lending activities, which are then split on a percentage basis with the lending agent. Cash from the U.S. dollar pool may be posted as collateral relating to short sale transactions and earns the Overnight Bank Funding rate plus 10 basis points. Additional information relating to short sales is discussed later in this note.

At December 31, 2018, the Retirement Funds had minimal credit risk exposure to borrowers because loans are collateralized in excess of 100%. In addition to the cash collateral reinvestment indemnification, the contract with the lending agent requires it to indemnify the Retirement Funds if the borrowers fail to return the loaned

securities and the collateral is inadequate to replace the securities lent. The Retirement Funds are also indemnified against losses resulting from violations of investment guidelines.

The majority of security loans are open-ended and can be terminated on demand by the Retirement Funds or the borrower. Maturities of investments made with cash collateral are not necessarily matched to the maturities of the securities loaned because most loans do not have a fixed maturity date. The risk that SWIB would be unable to return collateral to securities borrowers upon termination of the loan is mitigated by the highly liquid nature of investments held in the collateral reinvestment pools. The average maturities of the loans and the average maturities of the assets held in the collateral reinvestment pools were similar at December 31, 2018.

Securities lending is allowed in certain commingled fund investments. As an investor in such funds, SWIB does not own the underlying securities and does not separately report on securities lending activity. All earnings of these funds are reported in the Statement of Changes in Fiduciary Net Position as "Net Increase (Decrease) in Fair Value of Investments."

» Short Sell Obligations

The Retirement Funds may sell a security it does not own in anticipation of purchasing the security later at a lower price. This is known as a short sale transaction. For the duration of the short sale transaction, a liability is recorded under "Short Sell Obligations" on the Statement of Fiduciary Net Position. The liability presented on the Statement of Fiduciary Net Position represents the fair value of the shorted securities necessary for delivery to the purchaser and is marked-to-market daily. Realized and unrealized gains and losses associated with short sales are recorded on the Statement of Changes in Fiduciary Net Position, within the "Net Increase (Decrease) in Fair Value of Investments" account. Prior to executing a short sale, SWIB will borrow the security from a party currently holding it. While the transaction is open, the Retirement Funds incur expenses for securities borrowing costs. In addition, as a security borrower, the Retirement Funds may incur dividend and interest expense as such payments must be remitted to the security lender during the course of the loan. During the duration of the borrow, there may be corporate action elections requiring the borrower to deliver items such as cash or securities to the lender. Expenses resulting from short sales are included in "Investment Expense" on the Statement of Changes in Fiduciary Net Position.

Risks arise from short sales due to the possible illiquidity of the securities markets and from potential adverse movements in security values. The cost to acquire the securities sold short may exceed the amount of proceeds initially received, as well as the amount of the liability recorded as "Short Sell Obligations" in the Statement of Fiduciary Net Position. Short sales expose the short seller to potentially unlimited liability because there is no upward limit on the price a shorted security could attain. Certain portfolio guidelines permit short sales and mitigate risks in various ways, such as: limiting the total value of short sales as a percentage of portfolio value, establishing portfolio vs. benchmark tracking error limits, and monitoring other statistical and economic risk measures of the portfolio. Investment performance and risk associated with each portfolio is measured against benchmarks and monitored by management.

When a short sale occurs, the shorting portfolio must borrow the security and deliver it to the buyer. If the shorted security is owned by another Retirement Fund portfolio, investment policies allow the borrowing of the shorted securities from other Retirement Fund portfolios, including inter-fund borrowings. In addition to borrowing securities from existing Retirement Fund portfolios, SWIB may borrow securities from external sources. These borrowings are facilitated by SWIB's custodian.

Except in the case of borrowings within the same trust fund, the Retirement Funds are required to post collateral to the lender, at the required rate of 102% for in-currency loans and 105% for cross-currency loans. The Retirement Funds posted \$95.1 million in cash and \$1,869.6 million in securities as collateral to security lenders representing \$60.4 million in excess of the fair market value of the securities borrowed as of December

FINANCIAL SECTION

31, 2018. If the security lender recalled the security and SWIB was not able to supply the lender with the security, the lender would be permitted to use SWIB's collateral to fund the purchase of the security.

» Investment Policy and Asset Allocation

As part of SWIB's Fiduciary responsibilities, SWIB is required by section 25.15(2)(b) of the Wisconsin Statutes "To diversify investments in order to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so, considering each trust's or fund's portfolio as a whole at any point in time." SWIB exercises this duty in part by establishing its investment policy and by setting the asset allocation.

SWIB's Board of Trustees has established the asset allocation pursuant to a comprehensive and ongoing evaluation of the appropriate risk and return standards for each fund under management. The Board of Trustees consists of nine members meeting specific requirements as follows:

- Six Governor-appointed and State Senate-approved members, including:
 - Four with at least ten years investment experience
 - One with at least ten years financial experience and who works for a local government participant in the Local Government Investment Pool
 - One additional member
- Educator participant in the WRS appointed by the Teachers Retirement Board
- Non-educator participant in the WRS appointed by the Wisconsin Retirement Board
- Secretary of the Department of Administration or designee

The Board of Trustees-approved investment policy is intended to assist in development of a diversified portfolio of investments within acceptable risk parameters. The policy represents a delegation of standing authority to the SWIB's Executive Director and investment managers within the organization to make prudent investments within the investment guidelines, pursuant to sections 15.02(4) and 25.15(2) of the Wisconsin Statutes and section IB 2.02 of the Wisconsin Administrative Code.

Additionally, the Investment Committee (IC) was created to provide oversight of SWIB investments within the parameters established by the Board of Trustees. Oversight includes analysis of risk and return of the portfolios, asset classes, and Core and Variable Funds. The IC is responsible for proposing to the Board of Trustees changes to investment policy, approving investment guidelines or strategies for internally-managed portfolios, approving the general strategies for each asset class, and for approving new investment instruments and derivatives strategies. Effective June 2017, the IC became responsible for approving and maintaining guidelines for internally-managed portfolios pursuant of the Board's investment policy. Previously, the internally-managed portfolio guidelines were approved by the Board of Trustees with recommendations coming from the IC. The change in oversight for internally-managed portfolios provides SWIB staff with the ability to more quickly respond to changing investment conditions and is more consistent with the Board's delegation of investment authority to internal investment management staff. The Board of Trustees reserves all rights to modify and amend IC guidelines at any time at its discretion.

The IC approved WRS Investment Guidelines include several policies, including a derivatives use policy, rebalancing procedures, and a leverage use policy. The derivatives use policy sets forth the objectives, monitoring, and reporting guidelines relating to derivative investments. The rebalancing procedures used in both mandatory and discretionary asset class rebalancing are described in the Investment Guidelines, and the leverage use policy describes SWIB's leverage philosophy. The total amount of financial leverage is approved by the Board of Trustees through the asset allocation process.

The Board of Trustees adopts the Retirement Funds' asset allocation policy, based on recommendations by the IC, the Board of Trustees's asset allocation consultant, Chief Investment Officer, and Managing Director of Asset and Risk Allocation. SWIB undertakes a comprehensive review of its strategic asset allocation plan every other year, including asset/liability modeling, to determine a suitable target allocation for each asset class included

in the Core and Variable Funds, and an annual review to assess whether any interim adjustments should be made. The strategic nature of these reviews contemplates a long-term time horizon over which potential results are evaluated. This exercise is not an attempt to predict short-term market movements, but an effort to understand the long-term impacts of poor, normal, and above average market results.

In addition to potential future market impact, SWIB also contemplates the objectives of the funds, the impact of actuarial analysis, and the soundness of investment return and risk expectations. SWIB's asset allocation policies reflect the Board of Trustees's program of risk allocation that involves reducing equity exposure by leveraging low-volatility assets, such as "fixed income" securities. This investment strategy results in Core Fund strategic targets which exceed 100% of invested assets. Currently, the Board has approved an asset allocation target of 10% financial leverage for the Core Fund; however, over time, SWIB may increase its financial leverage. Before implementing leverage beyond 10%, the Board of Trustees, SWIB's asset allocation consultant, and staff will engage in additional focused asset allocation discussion and the Board of Trustees will approve any additional financial leverage.

SWIB's asset allocation review process also includes assumptions regarding expected rates of return. Long-term (e.g., 30-year) expected real rates of return on pension plan investments are determined using a building block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected real rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The table entitled Asset Allocation Targets and Expected Returns presents the policy asset allocation targets and the best estimates of expected geometric rates of return for each major asset class as of December 31, 2018.

Retirement Funds
Asset Allocation Targets and Expected Returns
As of December 31, 2018

Core Fund Asset Class	Asset Allocation %	Long-Term Expected Nominal Rate of Return %	Long-Term Expected Real Rate of Return %
Global Equities	49 %	8.1 %	5.5 %
Fixed Income	24.5	4.0	1.5
Inflation Sensitive Assets	15.5	3.8	1.3
Real Estate	9	6.5	3.9
Private Equity/Debt	8	9.4	6.7
Multi-Asset	4	6.7	4.1
Total Core Fund	110 %	7.3 %	4.7 %
Variable Fund Asset Class			
U.S. Equities	70 %	7.6 %	5.0 %
International Equities	30	8.5	5.9
Total Variable Fund	100 %	8.0 %	5.4 %

New England Pension Consultants Long Term US CPI (Inflation) Forecast: 2.5%

Asset Allocations are managed within established ranges, target percentages may differ from actual monthly allocations

FINANCIAL SECTION

For purposes of determining asset allocation targets, investments may be categorized differently than they are within the financial statements. For example, SWIB's management considers inflation-sensitive assets separately from other "fixed income" investments for asset allocation purposes.

» Annual Money-Weighted Rate of Return

Money-weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. For the year ended December 31, 2018, the money-weighted rate of return for the Core Fund was (3.56)% and (7.61)% for the Variable Fund.

4 DESCRIPTION OF THE WISCONSIN RETIREMENT SYSTEM

The WRS is a cost-sharing, multiple-employer public employee retirement system established and administered by the State of Wisconsin to provide pension benefits for state and local government employees. WRS benefits and other plan provisions are established by Chapter 40 of the Wisconsin Statutes. Benefit terms may only be modified by legislation. ETF, under the direction of the ETF Board, is responsible for the administration of the WRS.

» Employee Trust Funds Board

The ETF Board has general oversight of ETF, appoints the ETF Secretary and oversees administration of the benefit programs, other than group insurance and deferred compensation. The ETF Board is comprised of 13 members, including:

- the Governor or the Governor's designee on the Group Insurance Board;
- the Administrator of the Department of Administration's Division of Personnel Management or the Administrator's designee;
- 4 members appointed by the Teachers Retirement Board (an advisory board to the ETF Board);
- 4 members appointed by the Wisconsin Retirement Board (an advisory board to the ETF Board);
- a public member who is not a participant in or beneficiary of the WRS, with at least 5 years of experience in actuarial analysis, administration of an employee benefit plan or significant administrative responsibility in a major insurer;
- a WRS annuitant; and
- a participant in the WRS who is a technical college or public school district educational support personnel employee.

» WRS Employers

The WRS is open to all public employers in Wisconsin. Participation is optional, except that participation is mandatory for school districts with respect to teachers, some municipalities with respect to police and firefighters, and all counties except Milwaukee County. As of December 31, 2018, the number of participating employers was:

State Agencies, UW & Public Authorities	56
Cities	188
Counties	71
Villages	271
Towns	265
School Districts	422
Cooperative Educational Service Agencies	12
Wisconsin Technical College System Districts	16
Special Districts	206
Total Employers	<u>1,507</u>

» WRS Membership

All eligible employees of a participating employer who are expected to work at least 1,200 hours per year (880 hours per year for teachers and school district educational support employees) must be covered by the WRS. As of December 31, 2018, the WRS membership consisted of:

Current Employees:	
General	133,132
Teachers	101,235
Elected / Executive / Judges	1,317
Protective with Social Security	19,450
Protective without Social Security	2,777
Total Current Employees	<u>257,911</u>
Inactive Participants:	
Terminated Participants	170,869
Alternate Payees	4,053
Total Inactive Participants	<u>174,922</u>
Retirees and Beneficiaries Currently Receiving Benefits:	
Retirement Annuitants	201,466
Disability Annuitants	6,214
Death Beneficiary Annuitants	1,379
Total Annuitants	<u>209,059</u>
Total Participants	<u>641,892</u>

Participants receiving LTDI benefits are categorized as either current employees, inactive participants, retirement annuitants, or disability annuitants.



FINANCIAL SECTION

» *WRS Benefits*

The WRS provides retirement benefits as well as death and disability benefits. Vesting requirements have changed over time, as follows:

- Participants in the system prior to January 1, 1990 were fully vested at the time they met participation requirements;
- For participants entering the system from January 1, 1990, to April 23, 1998, creditable service in each of five years was required for vesting;
- All active participants in the system at any time from April 24, 1998 to June 30, 2011 are fully vested; and
- 2011 Wisconsin Act 32 generally required participants hired on or after July 1, 2011 to have five years of creditable service to be vested.

Employees who retire at or after age 65 (54 for protective occupations and 62 for elected officials and executive service retirement plan participants, if hired on or before 12/31/2016) are entitled to a retirement benefit based on a formula factor, their final average earnings, and creditable service. Formula factors are shown in the table below:

Employment Category	Service Before 1/1/2000	Service Between 2000 and 2011	Service After 2011
General and Teachers	1.765%	1.6%	1.6%
Executive and Elected	2.165	2.0*	1.6*
Protective with Social Security	2.165	2.0	2.0
Protective without Social Security	2.665	2.5	2.5

*2011 Wisconsin Act 10 changed the Executive and Elected formula factor from 2.0% to 1.6%. The effective date of the change varies among different employee categories, and generally applies to the service earned after Act 10 effective date (i.e. June 29, 2011).

Final average earnings is the average of the participant's three highest annual earnings periods. Creditable service includes current service and prior service for which a participant received earnings and made contributions as required. Creditable service also includes creditable military service. The retirement benefit will be calculated as a money purchase benefit based on the employee's contributions plus matching employer's contributions, with interest, if that benefit is higher than the formula benefit.

Vested participants may retire at or after age 55 (50 for protective occupations) and receive an actuarially-reduced benefit. Participants terminating covered employment prior to eligibility for an annuity may either receive employee-required contributions plus interest as a separation benefit or leave contributions on deposit and defer application until eligible to receive a retirement benefit.

» *Post-Retirement Adjustments*

The Employee Trust Funds Board may periodically adjust annuity payments from the retirement system based on annual investment performance in accordance with s. 40.27, Wis. Stat. An increase (or decrease) in annuity payments may result when investment gains (losses), together with other actuarial experience factors, create a surplus (shortfall) in the reserves, as determined by the system's consulting actuary. Annuity increases are not based on cost of living or other similar factors. For Core annuities, decreases may be applied only to previously granted increases. By law, Core annuities cannot be reduced to an amount below the original, guaranteed amount (the "floor") set at retirement.

The Core and Variable Fund annuity adjustments granted during the past 10 years are as follows:

Year	Core Adjustment (%)	Variable Adjustment (%)
2009	(2.1)	(42.0)
2010	(1.3)	22.0
2011	(1.2)	11.0
2012	(7.0)	(7.0)
2013	(9.6)	9.0
2014	4.7	25.0
2015	2.9	2.0
2016	0.5	(5.0)
2017	2.0	4.0
2018	2.4	17.0

The negative Core annuity adjustments from 2009 to 2013 were primarily due to the Fund's \$21.0 billion investment decline in 2008, caused by the global economic crisis. Core Fund gains and losses are recognized over a five-year period.

» *Long-Term Receivables*

The "Prior Service Contributions Receivable" on the Statement of Fiduciary Net Position represents the WRS unfunded actuarial accrued liability (UAAL), determined under the plan's Frozen Initial Liability funding methodology. This liability is being amortized as a level percentage of payroll over a 40-year period beginning January 1, 1990, for employers in the WRS prior to 2009. The remaining balance is expected to be fully amortized by December 31, 2029. Liabilities for employers joining the WRS beginning in 2009 are amortized over 30 years. Interest is assessed on the outstanding liability at year-end at the assumed earnings rate. The level-percentage-of-payroll amortization method results in a relatively lower dollar contribution in earlier years than in later years, when payrolls have increased. During the early years of the amortization period, payments made are less than annual interest assessments, resulting in an increase in the liability. As payrolls increase annually, prior service payments increase proportionally until they exceed annual interest and ultimately fully liquidate the liability at the end of the amortization period. State law requires the accrued retirement cost to be funded. As of December 31, 2018, the receivable balance was \$13.8 million.

» *Variable Retirement Option*

Prior to 1980, WRS participants could opt to have one-half of their required contributions and matching employer contributions invested in the Variable Fund. Retirement benefits were adjusted for the difference between the investment experience of the Core Fund and the Variable Fund. Provisions for allowing members to withdraw from the Variable Fund were added with the passage of Chapter 221, Laws of 1979. The Variable Fund was closed to new membership after April 30, 1980. 1999 Wisconsin Act 11 reopened the Variable Fund for existing and future participants, effective January 1, 2001. As of December 31, 2018, there were 55,035 active and inactive members and 41,187 annuitants participating in the Variable Fund.

FINANCIAL SECTION

» *Municipal Police and Firefighters Pension Group*

As of March 31, 1978, administration of certain local funds for police officers and firefighters was assumed by the Wisconsin Retirement Fund. This included approximately 2,000 members. As of December 31, 2018, approximately 46 annuitants or their beneficiaries remained in the system. This group was closed to new members after January 1, 1948.

The liability for retirement benefits for these annuitants is funded by the employers, as benefit payments are made. Annuity reserves for these police and firefighter annuities are established by a transfer from the employer accumulation reserve at the time the annuity is approved. Earnings on these reserves are used to fund annuity adjustments on the same basis as for WRS annuitants. The unfunded liability for these annuitants as of December 31, 2018, was \$1.2 million.

» *Annuity Supplement - General Fund*

As authorized under 1985 Wis. Stats. § 40.27 (1), the State's General Fund provides certain supplemental annuity benefits to annuitants receiving a continuing annuity on or before September 1974. The benefit is subject to continuation of the appropriation by the Legislature. ETF serves as a clearing agent for its payment. Total supplemental annuity benefits paid were approximately \$81,000 in 2018.

5 CONTRIBUTIONS REQUIRED AND MADE

» *Required Contributions*

Contribution rates are determined by the "entry age normal with a frozen initial liability" actuarial method. This is a "level contribution" actuarial method intended to keep employer and employee contribution rates at a level percentage of payroll over the years. This method determines the amount of contributions necessary to fund: 1) the current service cost, which represents the estimated amount necessary to pay for benefits earned by the employees during the current service year plus actuarial gains or losses arising from the difference between actual and assumed experience; and 2) the prior service cost, which represents the estimated amount necessary to pay for unfunded benefits earned prior to the employer becoming a participating employer in the WRS and the past service cost of benefit improvements.

The 2018 contribution requirements were determined by the December 31, 2016, actuarial valuation.

Employee contributions are deducted from the employee's salary and remitted to ETF by the participating employer. Employers generally may not pay the employee required contribution. The employee required contribution is one-half of the actuarially-determined contribution rate for General category employees, which includes teachers and employees in the Executive and Elected Official category. By statute, employee required contributions for Protective occupation category employees are the same rate as General category employees. Employers are required to contribute the remainder of the actuarially-determined contribution rate.

Contribution rates in effect during 2018 by employment category were:

Employment Category	Employer Current	Employer Prior *	Employee	Total
General, Teachers, Executive & Elected Officials	6.7%	0.0%	6.7%	13.4%
Protective Occupation with Social Security	10.7	0.0	6.7	17.4
Protective Occupation without Social Security	14.9	0.1	6.7	21.7

*The employer prior service contribution rate is a weighted average of individual employer rates.

Contributions required and made during 2018 were:

	Contributions (In Millions)	Percentage of Payroll
Employer Current Service	\$1,028.4	7.19%
Employer Prior Service*	\$5.8	0.04%
Employee Required	\$958.3	6.70%

*Employer prior service contributions are recorded on the Statement of Fiduciary Net Position as a reduction in the Prior Service Contribution Receivable. Contributions include both mandatory and voluntary payments received from participating employers. Some prior service contributions received after year end are included in Contributions, but are not in the determination of Prior Service Contributions Receivable. This is due to a difference in how these payments are treated for actuarial and financial reporting purposes.

Employers also contributed approximately \$415,000 in reimbursement for benefits paid under the s. 62.13, Wis. Stat, Police and Firefighters Pension Program.

» Employee and Employer Additional Contributions

Contributions in addition to those required contributions by employees and/or employers may be made to the retirement system. These contributions are held in separate reserve accounts and are subject to certain restrictions as to amount, form of benefit payments, tax status, etc.

6 NET PENSION LIABILITY (ASSET) OF PARTICIPATING EMPLOYERS - WRS

The components of the Net Pension Liability (Asset) of the participating employers at December 31, 2018, were as follows (In Millions):

Total Pension Liability*	\$100,294.77
Plan Fiduciary Net Position**	96,737.08
Participating Employer's Net Pension Liability (Asset)	<u>\$ 3,557.69</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	96.45%

*Includes the impact of known Market Recognition account deferred gains/losses on the liability for dividend payments.

** Immaterial differences may exist between the Plan Fiduciary Net Position used in the actuarial valuation and that reported in the Statement of Fiduciary Net Position, due to the timing of the actuarial valuation.



FINANCIAL SECTION

Additional information as of the latest actuarial valuations follows:

Actuarial Valuation Date:	December 31, 2017
Measurement Date of Net Pension Liability (Asset):	December 31, 2018
Actual Cost Method:	Entry Age Normal
Asset Valuation Method:	Fair Value
Long-Term Expected Rate of Return:	7.0%
Discount Rate:	7.0%
Salary Increases:	
Inflation	3.0%
Senior/Merit	0.1% - 5.6%
Mortality:	Wisconsin 2018 Mortality Table
Post-retirement Adjustments:*	1.9%

*No post-retirement adjustments is guaranteed. Actual adjustments are based on recognized investment return, actuarial experience and other factors. 1.9% is assumed annual adjustments based on the investment return assumption and the post-retirement discount rate. Includes the impact of known Market Recognition Account deferred gains/losses on the liability for dividend payments.

Actuarial assumptions are based upon an experience study conducted in 2018 that covered a three-year period from January 1, 2015 to December 31, 2017. Based on this experience study, actuarial assumptions used to measure the Total Pension Liability changed from prior year, including the discount rate, long-term expected rate of return, post-retirement adjustment, wage inflation rate, mortality and separation rates. The Total Pension Liability for December 31, 2018, is based upon a roll-forward of the liability calculated from the December 31, 2017 actuarial valuation.

A single discount rate of 7.0% was used to measure the Total Pension Liability, as opposed to a discount rate of 7.2% for the prior year. The discount rate is based on the expected rate of return on pension plan investments. Because of the unique structure of the WRS, the 7.0% expected rate of return implies that a dividend of approximately 1.9% will always be paid after reflecting known changes in the Market Recognition Account. For purposes of the single discount rate, it was assumed that the dividend would always be paid.

The projection of cash flows used to determine the single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments (including expected dividends) of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability.

» Sensitivity of the Net Pension Liability (Asset) to Changes in the Discount Rate

The following presents the plan's Net Pension Liability (Asset), calculated using a single discount rate of 7.0%, as well as what the plan's Net Pension Liability (Asset) would be if it were calculated using a single discount rate that is one percentage point lower or one percentage point higher (In Millions):

	1% Decrease (6.0%)	Current Discount Rate (7.0%)	1% Increase (8.0%)
Total Pension Liability	\$ 110,875.70	\$ 100,294.77	\$ 92,427.02
Plan Fiduciary Net Position	96,737.08	96,737.08	96,737.08
Net Pension Liability (Asset)	<u>\$ 14,138.62</u>	<u>\$ 3,557.69</u>	<u>\$ (4,310.06)</u>

Amounts may not foot due to rounding.

For the WRS, the determination of liabilities also depends on the assumed dividend that is linked to the interest rate used in the liability calculation. Therefore, the following table shows an alternative set of Sensitivity Analysis, which varies the assumed dividend in conjunction with the change in the discount rate. For the liabilities shown below, the assumed dividend was 1.0% for the 6.0% discount rate, 1.9% for the 7.0% discount rate, and 2.9% for the 8.0% discount rate (In Millions):

	1% Decrease (6.0%)	Current Discount Rate (7.0%)	1% Increase (8.0%)
Total Pension Liability	\$ 104,583.88	\$ 100,294.77	\$ 97,043.31
Plan Fiduciary Net Position	96,737.08	96,737.08	96,737.08
Net Pension Liability (Asset)	<u>\$ 7,846.80</u>	<u>\$ 3,557.69</u>	<u>\$ 306.23</u>

Amounts may not foot due to rounding.



7 STATUTORY RESERVES

The following reserves have been established to reflect legal restrictions on the use of pension trust funds.

» *Employee Accumulation Reserve*

As authorized by Wis. Stats. § 40.04 (4), this reserve includes all required and voluntary employee contributions, including contributions made by the employer on behalf of the employee. This reserve may only be used to pay lump sum benefits or transfers to the Annuity Reserve to fund annuities. All legal restrictions on use of this reserve were met during the year. The Employee Accumulation Reserve is fully funded.

Employee Accumulation Reserve balances (In Millions) as of December 31, 2018, were:

	Core	Variable	Total
Employee Required	\$ 16,584.9	\$ 1,670.3	\$ 18,255.2
Employee Additional	187.5	13.6	201.1
Total	<u>\$ 16,772.4</u>	<u>\$ 1,683.9</u>	<u>\$ 18,456.3</u>

Amounts may not foot due to rounding.

» *Employer Accumulation Reserve*

As authorized by Wis. Stat. § 40.04 (5), this reserve includes all required employer contributions, including contributions for amortization of the unfunded accrued actuarial liability. This reserve may only be used to pay lump sum benefits or transfers to the Annuity Reserve to fund annuities. All legal restrictions on use of this reserve were met during the year. The Employer Accumulation Reserve is 99.99% funded.

Employer Accumulation Reserve balances (In Millions) as of December 31, 2018, were:

	Core	Variable	Police & Firefighters	Total
Employer Accumulation	\$ 21,059.8	\$ 1,670.3	\$ 0.0	\$ 22,730.1
Less: Unfunded Actuarial Accrued Liability	0.0	0.0	(1.2)	(1.2)
Net Employer Accumulation	<u>\$ 21,059.8</u>	<u>\$ 1,670.3</u>	<u>\$ (1.2)</u>	<u>\$ 22,728.9</u>

Amounts may not foot due to rounding.

» *Annuity Reserve*

As authorized by Wis. Stat. § 40.04 (6), this reserve includes the present value of all annuities. The present value of new annuities is transferred from the Employee Accumulation Reserve and the Employer Accumulation Reserve to the Annuity Reserve. This reserve may only be used for the payment of annuities and death benefits to annuitants. All legal restrictions on use of this reserve were met during the year. The Annuity Reserve is fully funded.

Annuity Reserve balances (In Millions) as of December 31, 2018, were:

		Core	Variable	Police & Firefighters	Total
Annuity Reserve	\$	56,485.2	3,747.4	3.4	60,236.0

» Market Recognition Account

As authorized by Wis. Stat. § 40.04 (3), this reserve is used to smooth the flow of investment income into the Employee, Employer, and Annuity Reserves and other benefit plans invested in the Core Fund. Under the Market Recognition Account (MRA), all investment income, including realized and unrealized market gains and losses, is deposited into the MRA. At year-end, income equal to the assumed earnings rate is recognized. Any surplus or shortfall in earnings is recognized equally over five years.

Year-end balances in the MRA (In Millions) for the last five years after annual distributions were as follows:

As of:	MRA
December 31, 2014	\$2,540
December 31, 2015	\$(3,404)
December 31, 2016	\$(3,086)
December 31, 2017	\$3,273
December 31, 2018	\$(4,916)

8 PUBLIC ENTITY RISK POOLS

ETF operates and reports three public entity risk pools: Health Insurance, Income Continuation Insurance (ICI), and Duty Disability Insurance. In accordance with GASB Statement No. 10, *Accounting and Financial Reporting for Risk Financing and Related Insurance Issues*, these funds are accounted for as enterprise funds.

ETF also administers the Group Life Insurance Program for current State of Wisconsin employees and employees of participating local public employers. All public employers in the state are eligible to participate. The insurance carrier guarantees coverage and employers and active employees pay premiums directly to the insurance carrier. Because ETF primarily accounts for administrative costs for the fund, it is not reported in the ETF CAFR.

» Health Insurance Fund

The Health Insurance Fund offers group health insurance for current employees of the State of Wisconsin and of participating local public employers. All public employers in the state are eligible to participate. The State of Wisconsin and 361 local employers participated during the year. The fund includes both a self-insured fee-for-service plan as well as various prepaid plans, primarily Health Maintenance Organizations (HMOs).

The Health Insurance Fund includes four separate risk pools. The first pool includes those members who have chosen health insurance coverage from an HMO. All liabilities for medical claims for these participants are the

FINANCIAL SECTION

responsibility of the HMO and are not included in the unpaid claims analysis or in the Required Supplementary Information (RSI).

The second pool includes medical coverage for those members selecting the self-insured indemnity plan offered by ETF. Liabilities for this pool are presented in the unpaid claims analysis and in the Required Supplementary Information. The self-insured medical coverage plan closed as of December 31, 2017. There was a run-out period in 2018, which accounts for the 2018 activity.

The third pool includes self-insured pharmacy benefits for all members regardless of whether they receive medical coverage from an HMO or through the medical coverage indemnity plan. Liabilities for this pool are presented in the unpaid claims analysis and in the Required Supplementary Information.

The fourth pool includes self-insured dental benefits for members selecting this self-insured indemnity plan offered by ETF. Prior to 2016, dental benefits were included as part of the HMO coverage. Liabilities for this pool are presented in the unpaid claims analysis and in the Required Supplementary Information.

» *Income Continuation Insurance Fund*

The Income Continuation Insurance (ICI) Fund offers both long-term and short-term disability benefits (up to 75% of gross salary) for current employees of the State of Wisconsin and participating local public employers. All public employers in Wisconsin are eligible to participate. The State of Wisconsin and 242 local employers currently participate in the plan, and it is self-insured. Since March 2012, premiums have been suspended for the local employers as a result of the increase in funded status of the local employer program.

» *Duty Disability Fund*

The Duty Disability Fund offers special disability insurance for State of Wisconsin and local WRS participants in protective occupations. Participation in the program is mandatory for all WRS employers with protective occupation employees. The State of Wisconsin and 492 local employers currently participate. The plan is self-insured, and the risk is shared between the State of Wisconsin and local government employers in the plan.

The Duty Disability program is intended to compensate WRS protective category employees for duty-related disabilities. Benefits are payable for duty-related injuries or diseases that are likely to be permanent and that cause the employee to retire, accept reduced pay or a light-duty assignment, or that impair the employee's promotional opportunities.

Contributions are actuarially determined and are employer paid. Contributions are based on a graduated, experience-rated formula. During 2018, contribution rates ranged from 0.23% to 6.07% of covered payroll based on employer experience.

Public Entity Risk Pool Accounting Policies

Basis of Accounting: All public entity risk pools are accounted for in enterprise funds using the full accrual basis of accounting and the flow of economic resources measurement focus.

Valuation of Investments: Assets of the Health Insurance, ICI, and Duty Disability funds are invested in the Core Retirement Investment Trust and are valued at fair value.

Unpaid Claims Liabilities: The fund establishes claims liabilities based on estimates of the ultimate cost of claims that have been reported but not settled and of claims that have been incurred but not reported. The estimate includes the effects of inflation and other societal and economic factors. Adjustments to claims liabilities are charged or credited to expense in the periods in which they are made. Unpaid claims liability is presented at face value and is not discounted for Health Insurance. These liabilities are discounted using an interest rate of 7.0% for the ICI and Duty Disability programs. The liabilities of the ICI, Health Insurance, and Duty Disability programs were determined by actuarial methods. Face value of the liability for these programs is not available.

Administrative Expenses: All maintenance expenses are expensed in the period they are incurred. Acquisition costs are immaterial and are treated as maintenance expenses.

Reinsurance: Health insurance plans provided by Health Maintenance Organizations (HMOs) are fully insured by outside insurers. All remaining risk is self-insured with no reinsurance coverage.

Risk Transfer: Participating employers are not subject to supplemental assessments in the event of deficiencies. If the assets of a fund were exhausted, participating employers would not be responsible for the fund's liabilities.

Premium Setting: Premiums are established by the GIB (Health Insurance and ICI) and ETF Board for Duty Disability in consultation with actuaries.

Statutory Authority: All programs are operated under the authority of Chapter 40, Wisconsin Statutes.



FINANCIAL SECTION

Unpaid Claims Liabilities

Each fund establishes a liability for both reported and unreported insured events, which is an estimate of future payments of losses. The following represents changes in those aggregate liabilities (In Millions) for each fund during the past year. The amounts for Health Insurance Programs include only the portion of the program that is self-insured.

	Income Continuation		Duty Disability**		Health Insurance		Pharmacy Benefits		Dental	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Unpaid claims and claim adjustment expenses at beginning of the calendar year:	\$ 92.7	\$ 93.5	\$ 464.8	\$ 453.4	\$ 1.8	\$ 2.0	\$ (18.8)	\$ (15.0)	\$ 1.0	\$ 1.9
Incurred claims and claim adjustment expenses:										
Provision for insured events of the current calendar year	19.2	17.7	20.4	19.2	0.0	16.0	156.1	164.5	43.8	44.4
Changes in provision for insured events of prior calendar years	4.5	1.1	4.7	27.2	0.4	(0.2)	(4.9)	(4.9)	(0.1)	(0.1)
Total incurred claims and claim adjustment expenses	23.7	18.8	25.1	46.4	0.4	15.8	151.2	159.6	43.7	44.3
Payments:										
Claims and claim adjustment expenses attributable to insured events of the current calendar year	4.2	4.6	0.0	0.0	0.0	14.2	177.8	183.3	42.9	43.4
Claims and claim adjustment expenses attributable to insured events of prior calendar years	15.6	15.0	35.3	35.0	2.2	1.8	(23.5)	(19.9)	0.9	1.8
Total payments	19.8	19.6	35.3	35.0	2.2	16.0	154.3	163.4	43.8	45.2
Total unpaid claims and claim adjustment expenses at end of the calendar year	\$ 96.5	\$ 92.7	\$ 454.6	\$ 464.8	\$ 0.0	\$ 1.8	\$ (21.9)*	\$ (18.8)*	\$ 0.9	\$ 1.0

*Total unpaid claims at the end of 2018 is the net of \$4.5 million in unpaid claims and \$26.4 million in rebates due from pharmaceutical companies; unpaid claims at the end of 2017 is the net of \$4.4 million in unpaid claims and \$23.2 million in rebates due from pharmaceutical companies.

Amounts may not foot due to rounding

9 OTHER POST-EMPLOYMENT BENEFIT (OPEB) PLANS ADMINISTERED BY ETF

ETF administers four OPEB plans: the State Retiree Life Insurance Fund, the Local Government Retiree Life Insurance Fund, the State Retiree Health Insurance Fund and the Local Government Retiree Health Insurance Fund.

Governance Board

The Group Insurance Board (GIB) sets policy for the life insurance as well as the health insurance programs for state employees and for those local employers who chose to offer them. Membership of the GIB is comprised of the following positions as required by Wisconsin Statutes:

- Appointed by the Governor (no membership requirement);
- Ex officio, Administrator in Department of Administration, Division of Personnel Management (or their designee);
- Appointed by the Governor (insured participant in the WRS who is a teacher);

- Appointed by the Governor (insured participant in the WRS who is a retiree);
- Ex officio, Secretary of the Department of Administration (or their designee);
- Appointed by the Governor (insured participant in the WRS who is an employee of a local government unit);
- Appointed by the Governor (insured participant in the WRS who is not a teacher);
- Ex officio, Attorney General (or their designee);
- Appointed by the Governor (chief executive or member of the governing body of a local government that is a participating employer);
- Ex officio, Commissioner of Insurance (or their designee); and
- Ex officio, Governor (or their designee).

Plan Descriptions

» Retiree Life Insurance Funds

The State Retiree Life Insurance Fund includes the State, the University of Wisconsin, and other component units of the State, and is considered a single-employer defined benefit OPEB plan. The Local Government Retiree Life Insurance Fund includes participating employees of 719 local government employers as of December 31, 2018, and is considered a cost-sharing multiple-employer defined benefit OPEB plan. The plans are reported as other employee benefit trust funds. The plans provide post-employment life insurance coverage to all eligible employees of participating employers. The plans are established by Wis. Stats. § 40.70. ETF, under the direction of the Group Insurance Board (GIB), is responsible for the administration of the life insurance programs. ETF contracts with Securian Financial Group, Inc (Securian) as a third-party administrator for the Retiree Life Insurance plans. Benefit terms may be modified by the GIB, subject to state and federal legislative constraints.

Membership

Enrollment Eligibility: Generally, members may enroll during a 30-day enrollment period after their date of hire. Members may also enroll after the initial 30-day enrollment period with evidence of insurability. Members under evidence of insurability enrollment must enroll in group life insurance coverage before age 55 to be eligible for Basic or Supplemental coverage.

Membership as of December 31, 2018, included:

	State	Local	Total
Active*	51,131	75,762	126,893
Inactive:			
Pre-Age 65 Annuitants	6,859	10,076	16,935
Post-Age 64 Annuitants	26,050	35,525	61,575
Totals	<u>84,040</u>	<u>121,363</u>	<u>205,403</u>

*Active members include disabled

Contributions



FINANCIAL SECTION

The GIB approves contribution rates annually, based on recommendations from the insurance carrier. Recommended rates are based on an annual valuation, taking into consideration an estimate of the present value of future benefits and the present value of future contributions. A portion of employer contributions made during a member’s working lifetime funds a post-retirement benefit.

Employers are required to pay the following contributions based on employee contributions for active members to provide them with Basic Coverage after age 65. There are no employer contributions required for pre-age 65 annuitant coverage. If a member retires prior to age 65, premium payments must continue until age 65 for the member to be eligible for the benefit after age 65.

State and Local Retiree Life Insurance Employer Contribution Rates For the year ended December 31, 2018		
Coverage Type	State	Local
50% Post Retirement Coverage	28% of employee contribution	40% of employee contribution
25% Post Retirement Coverage	N/A	20% of employee contribution

Employee contributions are based upon nine age bands through age 69 and an additional eight age bands for those age 70 and over. Participating employees must pay monthly contribution rates per \$1,000 of coverage until the age of 65 (age 70 if active). The employee contribution rates in effect for the year ended December 31, 2018 are as listed below:

Life Insurance Employee Contribution Rates For the year ended December 31, 2018				
Attained Age	State *		Local *	
	Basic	Supplemental	Basic	Supplemental
Under 30	\$0.04	\$0.04	\$0.05	\$0.05
30-34	0.04	0.04	0.06	0.06
35-39	0.04	0.04	0.07	0.07
40-44	0.06	0.06	0.08	0.08
45-49	0.10	0.10	0.12	0.12
50-54	0.16	0.16	0.22	0.22
55-59	0.22	0.22	0.39	0.39
60-64	0.30	0.30	0.49	0.49
65-69	0.39	0.39	0.57	0.57

* Disabled members under age 70 receive a waiver-of-premium benefit.

The subsequent table provides the total contributions paid during 2018 by employers and pre-age 65 annuitants to fund post-retirement benefits.

State and Local Retiree Life Insurance Contributions Paid For the year ended December 31, 2018		
Contribution Type	State	Local
Employer	\$ 1,387,182	\$ 1,926,713
Pre-age 65 Annuitants*	3,606,903	5,775,013
Total	\$ 4,994,085	\$ 7,701,726

*Contributions for pre-age 65 annuitants are recorded as a reduction of benefit expense on the Statement of Fiduciary Net Position.

Description of Benefits

Retirement Eligibility: At retirement, the member must have active group life insurance coverage and satisfy the following:

- WRS coverage prior to January 1, 1990, or
- At least one month of group life insurance coverage in each of five calendar years after 1989

and one of the following:

- Eligible for an immediate WRS benefit, or
- At least 20 years from their WRS creditable service as of January 1, 1990, plus their years of group life insurance coverage after 1989, or
- At least 20 years on the payroll of their last employer.

In addition, terminating members and retirees must continue to pay the employee contributions until age 65 (age 70 if active).

Basic Coverage Benefits: After retirement, basic coverage is continued for life in these amounts of the insurance in force before retirement:

Age	% of Basic Coverage Continuing	
	State	Local
Before age 65	100%	100%
While age 65	75%	75%
While age 66	50%	50%
After age 66	50%	50%/25% Employer Election

Supplemental Coverage Benefits: After retirement, supplemental coverage may be continued until age 65 at 100% of the amount of the insurance in force before retirement at the employee's expense.

Additional Coverage Benefits: After retirement, additional coverage may be continued until age 65 at 100% of the amount of the insurance in force before retirement at the employee's expense.

Spouse and Dependent Coverage Benefits: After retirement, the coverage is terminated.



FINANCIAL SECTION

Investment Contract with Insurance Carrier (Securian)

Investments for the Retiree Life Insurance Funds are held with the insurance carrier, Securian. In accordance with the administrative agreement between the GIB and Securian, interest is calculated and credited to the Retiree Life Insurance plans based on the rate of return for a segment of the insurance carrier’s general fund, specifically, 10 Year A- Bonds (as a proxy and not tied to any specific investments). The funds invested during the year earn interest based on that year’s rate of return for 10 Year A- Bonds. The overall aggregate interest rate is calculated using a tiered approach based on the year the funds were invested and the rate of return for that year. Investment interest is credited based on the aggregate rate of return and assets are not adjusted to fair market value. Furthermore, the insurance carrier guarantees the principal amounts of the reserves, including all interest previously credited thereto. No significant contract changes occurred during the year.

The targeted asset allocation and expected rates of return are presented in the following table:

State and Local Retiree Life Insurance Asset Allocation Targets and Expected Returns As of December 31, 2018			
Asset Class	Index	Target Allocation	Long-Term Expected Geometric Real Rate of Return
US Government Bonds	Barclays Government	1%	1.44%
US Credit Bonds	Barclays Credit	40%	2.69%
US Long Credit Bonds	Barclays Long Credit	4%	3.01%
US Mortgages	Barclays MBS	54%	2.25%
US Municipal Bonds	Bloomberg Barclays Muni	1%	1.68%
	Inflation		2.30%
	Long-Term Expected Rate of Return		5.00%

The annual money-weighted rate of return on plan investments is shown in the below table. The money-weighted rate of return expresses investment performance, net of OPEB plan investment expense, adjusted for the changing amounts actually invested.

State and Local Retiree Life Insurance Plans Schedule of Investment Returns Annual Money-Weighted Rate of Return	
	2018
State Retiree Life Insurance Plan	3.16%
Local Retiree Life Insurance Plan	3.10%

State Retiree Life Insurance Net OPEB Liability (Asset) of Participating Employer

The components of the Net OPEB Liability (Asset) of the participating State employer at December 31, 2018, were as follows (In Millions):

Total OPEB Liability	\$ 775.46
Plan Fiduciary Net Position*	343.98
Participating Employer's Net OPEB Liability (Asset)	<u>\$ 431.48</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	44.36%

*Immaterial difference may exist between the Plan Fiduciary Net Position used in the actuarial valuation and that reported in the Statement of Fiduciary Net Position, due to the timing of the actuarial valuation.

Additional information as of the latest actuarial valuation follows:

Actuarial Valuation Date:	January 1, 2018
Measurement Date of Net OPEB Liability (Asset):	December 31, 2018
Actuarial Cost Method:	Entry Age Normal
20 Year Tax-Exempt Municipal Bond Yield*	4.10%
Long-Term Expected Rate of Return:	5.00%
Discount Rate:	4.20%
Salary Increases:	
Inflation	3.00%
Senior/Merit	0.1% - 5.6%
Mortality:	Wisconsin 2018 Mortality Table

* Based on the Bond Buyers GO index.

Actuarial assumptions are based upon an experience study conducted in 2018 that covered a three-year period from January 1, 2015 to December 31, 2017. Based on this experience study, actuarial assumptions used to measure the Total OPEB Liability changed from the prior year, including the wage inflation rate and mortality and separation rates. Total OPEB Liability for December 31, 2018, is based upon a roll-forward of the liability calculated from the December 31, 2017, actuarial valuation.

The long-term expected rate of return is determined by adding expected inflation to expected long-term real returns and reflecting expected volatility and correlation.

A discount rate of 4.20% was used to measure the Total OPEB Liability for the current year, as opposed to a discount rate of 3.60% for the prior year. The projection of cash flows used to determine the single discount rate assumed that employer contributions will be made according to the current employer contribution schedule and that contributions are made by plan members retiring prior to age 65.

Based on these assumptions, the plan's fiduciary net position was projected to be insufficient to make all projected future benefit payments of current active and inactive employees. Therefore, the discount rate for calculating the Total OPEB Liability was applied to benefit payments, to the extent that the plan's fiduciary net position is projected to be sufficient to make projected benefit payments, and the municipal bond rate



FINANCIAL SECTION

applied to benefit payment to the extent that the plan’s fiduciary net position is projected to be insufficient. The plan’s fiduciary net position was projected to be available to make projected future benefit payments of current plan members through December 31, 2033. Therefore, the long-term expected rate of return on plan investments was applied through 2033 and the municipal bond index rate was applied for all remaining periods of projected benefit payments to determine the Total OPEB Liability.

Sensitivity of the State Retiree Life Insurance Net OPEB Liability (Asset) to Changes in the Discount Rate

The following presents the plan’s Net OPEB Liability (Asset) and shows what the plan’s Net OPEB Liability (Asset) would be if it were calculated using a single discount rate that is one percentage point lower or one percentage point higher (In Millions):

	1% Decrease (3.20%)	Current Discount Rate (4.20%)	1% Increase (5.20%)
Total OPEB Liability	\$ 932.0	\$ 775.5	\$ 654.2
Plan Fiduciary Net Position	344.0	344.0	344.0
Net OPEB Liability (Asset)	<u>\$ 588.0</u>	<u>\$ 431.5</u>	<u>\$ 310.2</u>

Local Retiree Life Insurance Net OPEB Liability (Asset) of Participating Employers

The components of the Net OPEB Liability (Asset) of the participating local employers at December 31, 2018, were as follows (In Millions):

Total OPEB Liability	\$ 502.93
Plan Fiduciary Net Position*	<u>244.90</u>
Participating Employer's Net OPEB Liability (Asset)	<u>\$ 258.03</u>
 Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	 48.69%

*Immaterial difference may exist between the Plan Fiduciary Net Position used in the actuarial valuation and that reported in the Statement of Fiduciary Net Position, due to the timing of the actuarial valuation.

Additional information as of the latest actuarial valuations follows:

Actuarial Valuation Date:	January 1, 2018
Measurement Date of Net OPEB Liability (Asset):	December 31, 2018
Actuarial Cost Method:	Entry Age Normal
20 Year Tax-Exempt Municipal Bond Yield*	4.10%
Long-Term Expected Rate of Return:	5.00%
Discount Rate:	4.22%
Salary Increases:	
Inflation	3.00%
Senior/Merit	0.1% - 5.6%
Mortality:	Wisconsin 2018 Mortality Table

* Based on the Bond Buyers GO index.

Actuarial assumptions are based upon an experience study conducted in 2018 that covered a three-year period from January 1, 2015, to December 31, 2017. Based on this experience study, actuarial assumptions used to measure the Total OPEB Liability changed from prior year, including the wage inflation rate and mortality and separation rates. The Total OPEB Liability for December 31, 2018, is based upon a roll-forward of the liability calculated from the December 31, 2017, actuarial valuation.

The long-term expected rate of return is determined by adding expected inflation to expected long-term real returns and reflecting expected volatility and correlation.

A discount rate of 4.22% was used to measure the Total OPEB Liability for the current year, as opposed to discount rate of 3.63% for the prior year. The projection of cash flows used to determine the single discount rate assumed that employer contributions will be made according to the current employer contribution schedule and that contributions are made by plan members retiring prior to age 65.

Based on these assumptions, the plan's fiduciary net position was projected to be insufficient to make all projected future benefit payments of current active and inactive employees. Therefore, the discount rate for calculating the Total OPEB Liability was applied to benefit payments, to the extent that the plan's fiduciary net position is projected to be sufficient to make projected benefit payments, and the municipal bond rate applied to benefit payment to the extent that the plan's fiduciary net position is projected to be insufficient. The plan's fiduciary net position was projected to be available to make projected future benefit payments of current plan members through December 31, 2036. Therefore, the long-term expected rate of return on plan investments was applied through 2036 and the municipal bond index rate was applied for all remaining periods of projected benefit payments to determine the Total OPEB Liability.



FINANCIAL SECTION

Sensitivity of the Local Retiree Life Insurance Net OPEB Liability (Asset) to Changes in the Discount Rate

The following presents the plan’s Net OPEB Liability (Asset) and shows what the plan’s Net OPEB Liability (Asset) would be if it were calculated using a single discount rate that is one percentage point lower or one percentage point higher (In Millions):

	1% Decrease (3.22%)	Current Discount Rate (4.22%)	1% Increase (5.22%)
Total OPEB Liability	\$ 612.0	\$ 502.9	\$ 418.8
Plan Fiduciary Net Position	244.9	244.9	244.9
Net OPEB Liability (Asset)	<u>\$ 367.1</u>	<u>\$ 258.0</u>	<u>\$ 173.9</u>

» Retiree Health Insurance Funds

The Retiree Health Insurance plans offer group health insurance to retired State of Wisconsin and local government employees. Retirees pay the full premium amount. The State Retiree Health Insurance Fund includes the State, the University of Wisconsin, and other component units of the State. The Local Government Retiree Health Insurance Fund includes 361 local government employers. The plans are not administered through a trust and are therefore reported as agency funds. The Retiree Health Insurance Funds contain certain non-OPEB components relating to post-Medicare pharmacy and health insurance benefits.

ETF and the GIB have statutory authority for program administration and oversight [Wis. Stats. §§ 15.165 (2) and 40.03 (6)].

Membership

State of Wisconsin and local government employees participating in the State Health Insurance Plan or the Wisconsin Public Employers Insurance Plan (local government plans) are eligible to continue their health insurance coverage after leaving covered employment. Membership as of December 31, 2018, included 26,874 former state employees or their beneficiaries and 1,920 former local government employees and beneficiaries.

Description of Benefits

Retirees may choose between several health plans with specific provider networks (i.e., Health Maintenance Organizations (HMO's), Preferred Provider Organizations (PPO's) or Medicare Advantage). The health plans must follow GIB guidelines for eligibility and program requirements. All health plans offer a prescribed benefit package called Uniform Benefits and participate in a yearly competitive premium rate bid process.

The pharmacy benefit is self-insured by the GIB and administered by Navitus Health Solutions.

Effective January 1, 2012, prescription drug coverage for Medicare eligible retirees enrolled in the State group health insurance program is provided by a self-funded Medicare Part D Employer Group Waiver Plan (EGWP). A Medicare “Wrap” product is also included to provide full coverage to members, as required by Uniform Benefits, when they reach the Medicare coverage gap, also known as the “donut hole.”

10 MILWAUKEE RETIREMENT SYSTEMS

The Milwaukee Retirement Systems (MRS), consisting of two funds within the Milwaukee Public Schools Retirement System, is reported as an Investment Trust Fund. MRS provides assets to ETF for investing in the Core and Variable Funds, described in the Investments section of Note 1. The Core and Variable Funds are managed by SWIB, with oversight by a board of trustees as authorized in Wis. Stat. § 25.17. SWIB is not registered with the Securities and Exchange Commission as an investment company. Participation of the MRS in the Core and Variable Funds is described in the Wisconsin Administrative Code, § ETF 10.12. Monthly, ETF distributes pro-rata shares of total Core Fund and total Variable Fund earnings, less administrative expenses to the MRS accounts. The MRS accounts are adjusted to fair value and gains/losses are recorded directly in the accounts per Wisconsin Administrative Code, § ETF 10.12 (2).

No state statute, legal provision, or legally-binding guarantee exists to support the value of shares. At December 31, 2018, the Core and Variable Funds held \$100.6 billion in investment related accounts, of which \$4.0 billion is classified as cash equivalents. In addition, the Core and Variable Funds held \$0.5 billion of securities lending collateral.

Summary information by investment classification in accordance with GASB Statement No. 31, *Accounting and Financial Reporting for Certain Investments and for External Investment Pools*, for the Core and Variable Funds at December 31, 2018, is presented in Note 3. Condensed financial data for the Core and Variable Funds for the year ended December 31, 2018, is presented on the next page.



FINANCIAL SECTION

Core and Variable Retirement Investment Funds
Condensed Statements of Net Position
As of December 31, 2018
(In Thousands)

Assets:	Core	Variable	Combined
Cash & Cash Equivalents	\$ 3,820,858	\$ 205,390	\$ 4,026,248
Securities Lending Collateral	445,786	20,843	466,629
Prepaid Items	9,774	0	9,774
Investment Receivables	3,842,022	35,436	3,877,458
Investments, at fair value	101,449,272	6,863,944	108,313,216
Total Assets	109,567,712	7,125,613	116,693,325
Liabilities:			
Securities Lending Collateral Liability	445,786	20,843	466,629
Obligation Under Reverse Repurchase Agreement	8,834,034	0	8,834,034
Short Sell Obligations	3,002,001	0	3,002,001
Collateral Due to Counterparty	3,811	280	4,091
Investment Payables	3,795,710	4,601	3,800,311
Total Liabilities	16,081,342	25,724	16,107,066
Net Position Held in Trust for:			
Internal Investment Pool Participants	93,328,775	7,082,836	100,411,611
Milwaukee Retirement Systems	157,595	17,053	174,648
Total	\$ 93,486,370	\$ 7,099,889	\$ 100,586,259

Combined totals may vary from financial statements due to rounding and non-investment activity.

Core and Variable Retirement Investment Funds
Condensed Statements of Changes in Net Position
As of December 31, 2018
 (In Thousands)

Additions:	Core	Variable	Combined
Net Increase (Decrease) in Fair Value of Investments	\$ (4,982,256)	\$ (772,551)	\$ (5,754,807)
Interest	627,984	2,225	630,209
Dividends	1,213,537	166,934	1,380,471
Securities Lending Income	34,422	7,488	41,910
Other	216,036	0	216,036
Total Additions	<u>(2,890,277)</u>	<u>(595,904)</u>	<u>(3,486,181)</u>
Deductions:			
Investment Expense	684,848	6,354	691,202
Securities Lending Rebates and Fees	10,140	721	10,861
Net Withdrawals by Pool Participants	3,199,793	475,572	3,675,365
Total Deductions	<u>3,894,781</u>	<u>482,647</u>	<u>4,377,428</u>
Net Increase (Decrease)	<u>(6,785,058)</u>	<u>(1,078,551)</u>	<u>(7,863,609)</u>
Net Investment Position Held in Trust			
Beginning of Year	100,271,428	8,178,440	108,449,868
End of Year	<u>\$ 93,486,370</u>	<u>\$ 7,099,889</u>	<u>\$ 100,586,259</u>

Combined totals may vary from financial statements due to rounding and non-investment activity.

11 CONTINGENCIES, RELATED PARTIES, UNUSUAL EVENTS, & SUBSEQUENT EVENTS

» *Loss Contingencies*

On September 5, 2008, the Internal Revenue Service (IRS) provided SWIB with a "Notice of Transferee Liability". This claim seeks taxes, penalties, and interest relating to the sale of Shockley Communications Corporation (SCC) stock in 2001.

SWIB is classified as a tax-exempt entity by the IRS. However, the IRS asserts that the shareholders' sale of SCC stock in 2001 should have been characterized as a sale of assets by SCC, on which SCC should have paid income taxes. Based on the theory of transferee liability, the IRS asserts that the former SCC shareholders, including SWIB, are liable for SCC's unpaid taxes, penalties, and interest.

SWIB has filed a petition in the United States Tax Court contesting the proposed IRS assessment. The principal shareholders of SCC were issued similar notices from the IRS and have been litigating their case through the Tax Court and United States Court of Appeals. In April 2014, SWIB and the IRS agreed to stay the Tax Court proceeding with respect to SWIB pending the resolution of the tax case initiated by the principal shareholders of SCC challenging the IRS' characterization of the SCC sale. In 2015, the Tax Court found that the principal shareholders of SCC were liable as putative transferees for the tax, penalties, and interest owed by SCC related to its sale. In October 2017, the 11th Circuit Court of Appeals upheld the 2015 Tax Court opinion with respect to the principal shareholders of SCC; concluding its litigation. Because SWIB has separate and distinct arguments from the principal shareholders of SCC, the Tax Court granted SWIB the opportunity to pursue its case with the Court. In 2018, SWIB's tax counsel and the IRS filed briefs with the Tax Court, and SWIB is awaiting the Court's



FINANCIAL SECTION

opinion. Although SWIB's case is still pending, at the end of 2015, SWIB determined it was prudent to accrue a potential loss from the SCC transaction based on the Tax Court's initial adverse opinion against the principal shareholders. SWIB's potential liability, as a putative transferee of SCC assets, is reasonably estimated to be between \$20.0 million and \$56.0 million as of December 31, 2018. Although results may differ, this estimated range of loss is based on a possible settlement strategy with the IRS and the maximum potential liability to the IRS for the taxes, interest, and potential penalties of SCC based on the Tax Court's decision against the principal shareholders. Accordingly, in calendar year 2015, SWIB accrued a loss of \$16.6 million, which represented the estimated minimum amount of the possible loss to which SWIB believes it may be exposed. In calendar year 2018, SWIB accrued an additional loss of \$3.4 million to account for accrued interest.

In the ordinary course of operations, SWIB may be party to other various legal actions. SWIB's Chief Legal Counsel handles these matters either directly or with assistance of outside legal counsel. As of December 31, 2018, these matters are not anticipated to have a material financial impact on the WRS's financial position.

» *Related Party Transactions*

During the calendar year, the Core Fund entered into reverse repurchase agreement transactions with the State Investment Fund (SIF), for which the investment assets are managed by SWIB, as a counterparty. The transactions were governed by a Master Repurchase Agreement, and investment guidelines limit exposure with the SIF to \$3.0 billion. Credit exposure is also managed through the transfer of margin between the Core Fund and SIF. As of December 31, 2018, the Core Fund held \$1.6 billion in a bilateral reverse repurchase agreement with the SIF. The repurchase agreement was an overnight agreement collateralized with U.S. Treasury securities in the amount of 102%. The Core Fund enters into similar reverse repurchase agreement transactions with other counterparties. The Core Fund is also a participant in the SIF, with an investment totaling \$1.6 billion at December 31, 2018. The SIF is a short-term, commingled fund with the investment objective of safety of principle and liquidity while earning a competitive money market rate of return.

» *Unusual Events*

In 2018, Vitech Systems Group, Inc. (Vitech), ETF's vendor for developing a benefits administration system, myETF, unexpectedly stopped providing services. This stoppage significantly affected the development and service utility of myETF. Capital assets impacted by this stoppage were evaluated and are considered impaired as of December 31, 2018. Therefore, the WRS Statement of Changes in Fiduciary Net Position includes a "Loss due to Impairment of Capital Assets" of \$25.4 million.

» *Subsequent Events*

On March 8, 2019, ETF filed a Complaint in Dane County Circuit Court against Vitech. The Complaint intends to remedy damages suffered when Vitech breached its contract with ETF by failing to fulfill its promises according to the provisions of the contract. In response to the Complaint, Vitech filed a counterclaim against ETF. The resolution of this dispute is not anticipated to have a material effect on the WRS's financial position.

REQUIRED SUPPLEMENTARY INFORMATION

» PUBLIC ENTITY RISK POOLS

Claims Development Information

The tables on the following pages illustrate how the funds' earned revenues and investment income compare to related costs of loss and other expenses assumed by the funds as of the end of each of the last ten years. The rows of the tables are defined as follows:

1. Net Earned Required Contributions and Investment Revenues. Shows the total of each calendar year's earned contribution revenues and investment revenues.
2. Unallocated Expense. Shows each calendar year's other operating costs of the fund, including overhead and claims expenses not allocable to individual claims.
3. Estimated Incurred Claims and expenses as of the End of the Policy Year. Shows the fund's incurred claims and allocated claim adjustment expense (both paid and accrued) as originally reported as the end of the first year in which the event that triggered coverage under the contract occurred (called policy year).
4. Paid (cumulative) as of Year-End. Shows the cumulative amounts paid as of the end of successive years for each policy year.
5. Re-estimated Incurred Claims and expenses. Shows how each policy year incurred claims increased or decreased as of the end of successive policy years. This annual re-estimation results from new information received on known claims, reevaluation of existing information on known claims, as well as emergence of new claims not previously known.
6. Increase (Decrease) in Estimated Incurred Claims from End of Policy Year. Compares the latest re-estimated incurred claims amount to the amount originally established (line 3) and shows whether this latest estimate of claims cost is greater or less than originally thought.

As data for individual policy years mature, the correlation between original estimates and re-estimated amounts is commonly used to evaluate the accuracy of incurred claims currently recognized in less mature policy years. The columns of the tables show data for successive policy years.



FINANCIAL SECTION

Public Entity Risk Pools
Required Supplementary Information
Pharmacy Benefit Claims Development Information
(In Millions)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Net earned required contributions and investment revenues	\$ 155.5	\$ 178.9	\$ 169.9	\$ 153.7	\$ 159.6	\$ 157.7	\$ 166.5	\$ 214.3	\$ 223.5	\$ 176.0
2. Unallocated expense	6.4	8.7	6.4	8.0	4.4	6.0	6.0	5.9	5.8	4.6
3. Estimated incurred claims and expenses as of the end of the policy year	134.8	148.4	144.6	141.3	149.0	163.5	176.9	156.0	164.5	156.1
4. Paid (cumulative) as of*										
End of Policy Year	139.1	155.8	150.7	148.3	156.6	173.4	196.4	171.0	183.3	177.8
One Year Later	134.1	147.3	145.1	141.2	148.3	163.5	177.0	151.0	159.9	
Two Years Later	134.1	147.3	145.1	141.2	148.3	163.5	177.1	151.0		
Three Years Later	134.1	147.3	145.1	141.2	148.3	163.5	177.1			
Four Years Later	134.1	147.3	145.1	141.2	148.3	163.5				
Five Years Later	134.1	147.3	145.1	141.2	148.3					
Six Years Later	134.1	147.3	145.1	141.2						
Seven Years Later	134.1	147.3	145.1							
Eight Years Later	134.1	147.3								
Nine Years Later	134.1									
5. Reestimated incurred claims and expenses:										
End of Policy Year	134.8	148.4	144.6	141.3	149.0	163.5	176.9	156.0	164.5	156.1
One Year Later	134.1	147.3	145.1	141.2	148.3	163.5	177.0	151.0	159.6	
Two Years Later	134.1	147.3	145.1	141.2	148.3	163.5	177.1	151.0		
Three Years Later	134.1	147.3	145.1	141.2	148.3	163.5	177.1			
Four Years Later	134.1	147.3	145.1	141.2	148.3	163.5				
Five Years Later	134.1	147.3	145.1	141.2	148.3					
Six Years Later	134.1	147.3	145.1	141.2						
Seven Years Later	134.1	147.3	145.1							
Eight Years Later	134.1	147.3								
Nine Years Later	134.1									
6. Increase (decrease) in estimated incurred claims and expenses from end of policy year	\$ (0.7)	\$ (1.1)	\$ 0.5	\$ (0.1)	\$ (0.7)	\$ 0.0	\$ 0.2	\$ (5.0)	\$ (4.9)	\$ 0.0

*Paid Claims include payments expected to be reimbursed as rebate payments from participating pharmaceutical companies. Incurred claims are presented net of anticipated rebates.

In accordance with GASB Statement No. 74, retiree health is reported separately in an agency fund and is not included with the active health information in this table.



**Public Entity Risk Pools
Required Supplementary Information
Health Insurance Claims Development Information
(In Millions)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Net earned required contributions and investment revenues	\$ 41.5	\$ 36.6	\$ 27.9	\$ 33.1	\$ 29.9	\$ 26.0	\$ 22.5	\$ 28.5	\$ 35.6	\$ 4.9
2. Unallocated expense	5.0	5.4	6.2	5.5	5.2	7.0	5.2	8.8	9.3	9.0
3. Estimated incurred claims and expenses as of the end of the policy year	25.9	24.0	21.4	17.7	16.9	17.7	14.7	15.1	16.0	0.0
4. Paid (cumulative) as of										
End of Policy Year	21.6	20.5	18.7	15.1	14.6	15.4	12.8	13.1	14.2	0.0
One Year Later	23.4	22.6	20.7	17.2	16.0	16.7	14.3	14.9	16.3	
Two Years Later	23.5	22.6	20.7	17.1	16.0	16.7	14.3	15.0		
Three Years Later	23.5	22.6	20.7	17.1	16.0	16.7	14.3			
Four Years Later	23.5	22.6	20.7	17.1	16.0	16.7				
Five Years Later	23.5	22.6	20.7	17.1	16.0					
Six Years Later	23.5	22.6	20.7	17.1						
Seven Years Later	23.5	22.6	20.7							
Eight Years Later	23.5	22.6								
Nine Years Later	23.5									
5. Reestimated incurred claims and expenses:										
End of Policy Year	25.9	24.0	21.4	17.7	16.9	17.7	14.7	15.1	16.0	0.0
One Year Later	23.5	22.6	20.7	17.2	16.0	16.7	14.3	14.9	16.3	
Two Years Later	23.5	22.6	20.7	17.1	16.0	16.7	14.3	15.0		
Three Years Later	23.5	22.6	20.7	17.1	16.0	16.7	14.3			
Four Years Later	23.5	22.6	20.7	17.1	16.0	16.7				
Five Years Later	23.5	22.6	20.7	17.1	16.0					
Six Years Later	23.5	22.6	20.7	17.1						
Seven Years Later	23.5	22.6	20.7							
Eight Years Later	23.5	22.6								
Nine Years Later	23.5									
6. Increase (decrease) in estimated incurred claims and expenses from end of policy year	\$ (2.4)	\$ (1.4)	\$ (0.7)	\$ (0.6)	\$ (0.9)	\$ (1.0)	\$ (0.4)	\$ (0.1)	\$ 0.3	\$ 0.0

In accordance with GASB Statement No. 74, retiree health is reported separately in an agency fund and is not included with the active health information in this table

Amounts above only include the portion of the medical program that is self-insured.



FINANCIAL SECTION

Public Entity Risk Pools
Required Supplementary Information
Dental Insurance Claims Development Information
(In Millions)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Net earned required contributions and investment revenues	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 41.9	\$ 44.3	\$ 45.6
2. Unallocated expense	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9
3. Estimated incurred claims and expenses as of the end of the policy year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.1	44.4	43.8
4. Paid (cumulative) as of										
End of Policy Year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.2	43.4	42.9
One Year Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0	44.3	
Two Years Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0		
Three Years Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Four Years Later	0.0	0.0	0.0	0.0	0.0	0.0				
Five Years Later	0.0	0.0	0.0	0.0	0.0					
Six Years Later	0.0	0.0	0.0	0.0						
Seven Years Later	0.0	0.0	0.0							
Eight Years Later	0.0	0.0								
Nine Years Later	0.0									
5. Reestimated incurred claims and expenses:										
End of Policy Year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.1	44.4	43.8
One Year Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0	44.3	
Two Years Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0		
Three Years Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Four Years Later	0.0	0.0	0.0	0.0	0.0	0.0				
Five Years Later	0.0	0.0	0.0	0.0	0.0					
Six Years Later	0.0	0.0	0.0	0.0						
Seven Years Later	0.0	0.0	0.0							
Eight Years Later	0.0	0.0								
Nine Years Later	0.0									
6. Increase (decrease) in estimated incurred claims and expenses from end of policy year	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ (0.1)	\$ (0.1)	\$ 0.0

*Prior to 2016 Dental Benefits were included as part of fully insured HMO coverage.

Public Entity Risk Pools
Required Supplementary Information
Income Continuation Insurance Claims Development Information
 (In Millions)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Net earned required contributions and investment revenues	\$ 28.8	\$ 25.0	\$ 16.6	\$ 25.0	\$ 25.7	\$ 20.5	\$ 16.3	\$ 27.1	\$ 38.3	\$ 24.7
2. Unallocated expense	1.8	2.0	2.3	1.9	2.0	5.7	1.8	3.0	1.8	2.7
3. Estimated incurred claims and expenses as of the end of the policy year	33.4	34.3	42.4	33.4	36.0	20.5	22.8	20.7	17.7	19.2
4. Paid (cumulative) as of										
End of Policy Year	5.5	6.0	6.7	5.9	6.4	5.9	6.6	5.6	4.6	4.2
One Year Later	9.7	11.0	11.9	11.0	11.8	11.9	12.5	10.6	9.5	
Two Years Later	10.8	12.2	12.8	12.3	13.8	13.6	14.3	12.5		
Three Years Later	11.7	13.3	13.6	13.8	15.1	14.8	15.7			
Four Years Later	12.6	14.2	14.3	14.5	16.0	15.8				
Five Years Later	13.3	15.3	14.9	15.4	17.0					
Six Years Later	14.2	16.2	15.4	16.2						
Seven Years Later	14.9	17.0	15.9							
Eight Years Later	15.5	17.7								
Nine Years Later	16.0									
5. Reestimated incurred claims and expenses:										
End of Policy Year	33.4	34.3	42.4	33.4	36.0	20.5	22.8	20.7	17.7	19.2
One Year Later	17.5	23.0	22.3	23.1	22.6	20.4	23.9	21.1	18.7	
Two Years Later	17.5	20.1	20.0	20.9	24.0	22.5	23.4	22.3		
Three Years Later	17.7	20.1	19.5	20.9	24.3	22.2	23.9			
Four Years Later	18.5	21.2	19.5	20.5	23.5	21.5				
Five Years Later	18.8	22.5	19.5	21.0	24.3					
Six Years Later	19.1	23.0	19.7	21.5						
Seven Years Later	19.6	23.3	19.7							
Eight Years Later	19.7	24.1								
Nine Years Later	20.0									
6. Increase (decrease) in estimated incurred claims and expenses from end of policy year	\$ (13.4)	\$ (10.2)	\$ (22.7)	\$ (11.9)	\$ (11.7)	\$ 1.0	\$ 1.1	\$ 1.6	\$ 1.0	\$ 0.0



FINANCIAL SECTION

Public Entity Risk Pools
Required Supplementary Information
Duty Disability Insurance Claims Development Information
(In Millions)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Net earned required contributions and investment revenues	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 50.3	\$ 100.5	\$ (13.3)
2. Unallocated expense	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	4.5	0.8
3. Estimated incurred claims and expenses as of the end of the policy year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.9	19.2	20.4
4. Paid (cumulative) as of										
End of Policy Year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
One Year Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3	
Two Years Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1		
Three Years Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Four Years Later	0.0	0.0	0.0	0.0	0.0	0.0				
Five Years Later	0.0	0.0	0.0	0.0	0.0					
Six Years Later	0.0	0.0	0.0	0.0						
Seven Years Later	0.0	0.0	0.0							
Eight Years Later	0.0	0.0								
Nine Years Later	0.0									
5. Reestimated incurred claims and expenses:										
End of Policy Year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.9	19.2	20.4
One Year Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	2.9	
Two Years Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.7		
Three Years Later	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Four Years Later	0.0	0.0	0.0	0.0	0.0	0.0				
Five Years Later	0.0	0.0	0.0	0.0	0.0					
Six Years Later	0.0	0.0	0.0	0.0						
Seven Years Later	0.0	0.0	0.0							
Eight Years Later	0.0	0.0								
Nine Years Later	0.0									
6. Increase (decrease) in estimated incurred claims and expenses from end of policy year	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ (0.2)	\$ (16.3)	\$ 0.0

*Prior to 2016 data not available.

Wisconsin Retirement System
Schedules of Changes in Net Pension Liability (Asset) and Related Ratios
 (In Millions)

Calendar Year Ended, December 31	2018	2017	2016	2015	2014	2013
Total Pension Liability						
Service Cost	\$ 1,860.9	\$ 1,842.9	\$ 1,814.1	\$ 1,787.9	\$ 1,757.0	\$ 1,745.0
Interest on the Total Pension Liability	7,169.7	6,627.2	6,372.4	6,347.1	6,089.3	5,680.7
Benefit Changes	0.0	0.0	0.0	0.0	0.0	0.0
Difference between Expected and Actual Experience*	(4,968.3)	4,459.5	150.3	(4,247.3)	437.3	2,659.9
Assumption Changes	361.5	0.0	0.0	1,412.0	0.0	0.0
Benefit Payments	(5,516.2)	(5,211.3)	(5,022.9)	(4,823.6)	(4,540.2)	(4,224.7)
Refunds of Employee Contributions	(40.2)	(38.4)	(39.3)	(37.6)	(34.4)	(33.3)
Net Change in Total Pension Liability	(1,132.6)	7,679.9	3,274.6	438.5	3,708.9	5,827.7
Total Pension Liability - Beginning	101,427.3	93,747.4**	90,129.7	89,691.2	85,982.2	80,154.6
Total Pension Liability - Ending (a)	\$100,294.8	\$ 101,427.3	\$ 93,404.3	\$ 90,129.7	\$ 89,691.2	\$ 85,982.2
Plan Fiduciary Net Position						
Employer Contributions	\$ 1,030.5	\$ 1,017.6	\$ 963.1	\$ 977.7	\$ 987.8	\$ 914.7
Employee Contributions	973.0	965.5	921.9	937.2	941.9	871.3
Pension Plan Net Investment Income	(4,049.4)	14,875.4	7,273.1	(673.1)	4,891.0	11,347.3
Benefit Payments	(5,516.2)	(5,211.3)	(5,022.9)	(4,823.6)	(4,540.2)	(4,224.7)
Refunds of Employee Contributions	(40.2)	(38.4)	(39.3)	(37.6)	(34.4)	(33.3)
Pension Plan Administrative Expense	(31.6)	(26.1)	(20.4)	(22.7)	(24.0)	(22.9)
Other ***	(25.4)	0.0	0.0	0.0	0.0	0.0
Net Change in Plan Fiduciary Net Position	(7,659.4)	11,582.7	4,075.4	(3,642.1)	2,222.0	8,852.4
Plan Fiduciary Net Position - Beginning	104,396.5	92,813.8****	88,504.7	92,146.8	89,924.7	81,072.3
Plan Fiduciary Net Position - Ending (b)	\$ 96,737.1	\$ 104,396.5	\$ 92,580.1	\$ 88,504.7	\$ 92,146.8	\$ 89,924.7
Net Pension Liability(Asset) - Ending (a) - (b)	\$ 3,557.7	\$ (2,969.1)	\$ 824.2	\$ 1,625.0	\$ (2,455.6)	\$ (3,942.5)
Plan Fiduciary Net Position as a Percentage of Total Pension	96.45%	102.93 %	99.12%	98.20%	102.74 %	104.59 %
Covered Employee Payroll	\$ 14,301.4	\$ 13,943.1	\$ 13,706.0	\$ 13,530.5	\$ 13,219.5	\$ 12,884.8
Net Pension Liability(Asset) as a Percentage of Covered Employee Payroll	24.88%	(21.29%)	6.01%	12.01%	(18.58%)	(30.60%)

Immaterial differences may exist between the amounts in this schedule and those reported in the Statement of Fiduciary Net Position

Amounts may not foot due to rounding.

* Starting with 2015, this item includes the impact of known Market Recognition account deferred gains/losses on the liability for dividend payments.

** As of calendar year 2017, the Long-Term Disability Insurance (LTDI) program is reported within the Wisconsin Retirement System (WRS). Beginning of year liabilities for 2017 were adjusted by \$343,079,422 to reflect the LTDI program.

*** Other for 2018 relates to an impairment loss on a capital asset.

**** As of calendar year 2017, the LTDI program is reported within the WRS. Beginning of year net position for 2017 was adjusted by \$233,691,533 to reflect the LTDI program.



FINANCIAL SECTION

**Wisconsin Retirement System
Schedule of Required Employer Contributions**
(In Millions)

Calendar Year Ending December 31,	Actuarially Determined Contributions	Actual Contributions	Contribution Deficiency (Excess)	Covered Payroll	Actual Contributions as a % of Covered Payroll
2013	905	905	0	12,885	7.02%
2014	977	977	0	13,220	7.39%
2015	968	968	0	13,531	7.15%
2016	954	954	0	13,706	6.96%
2017	1,015	1,015	0	13,943	7.28%
2018	1,028	1,028	0	14,301	7.19%

**Wisconsin Retirement System
Schedule of Investment Returns
Last Ten Calendar Years
Annual Money-Weighted Rate of Return (IRR), Net of Investment Expenses**

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Core Trust Fund	(3.56%)	15.85%	8.29%	(0.63%)	5.44%	13.18%	13.40%	1.25%	11.92%	21.76%
Variable Trust Fund	(7.61%)	23.27%	10.49%	(1.11%)	7.24%	28.78%	16.94%	(3.02%)	15.23%	33.06%

State Retiree Life Insurance
Schedules of Changes in Net OPEB Liability (Asset) and Related Ratios
 (In Millions)

Calendar Year Ended, December 31	2018	2017
Total OPEB Liability		
Service Cost	\$ 30.7	\$ 26.1
Interest on the Total OPEB Liability	31.2	30.7
Benefit Changes	0.0	0.0
Difference between Expected and Actual Experience	(17.5)	(5.3)
Assumption Changes	(94.9)	49.0
Benefit Payments	(19.5)	(17.7)
Net Change in Total OPEB Liability	<u>(70.0)</u>	<u>82.8</u>
Total OPEB Liability - Beginning	845.5	762.6
Total OPEB Liability - Ending (a)	<u><u>\$ 775.5</u></u>	<u><u>\$ 845.5</u></u>
Plan Fiduciary Net Position		
Employer Contributions	1.4	1.4
Net Investment Income	10.9	11.5
Benefit Payments	(19.5)	(17.7)
OPEB Plan Administrative Expense	(0.7)	(0.6)
Net Change in Plan Fiduciary Net Position	<u>(7.9)</u>	<u>(5.4)</u>
Plan Fiduciary Net Position - Beginning	352.0	357.4
Plan Fiduciary Net Position - Ending (b)	<u><u>\$ 344.0</u></u>	<u><u>\$ 352.0</u></u>
Net OPEB Liability(Asset) - Ending (a) - (b)	\$ 431.5	\$ 493.5
Plan Fiduciary Net Position as a Percentage of Total OPEB Liability	44.36%	41.63%
Covered Employee Payroll	\$ 3,182.5	\$ 3,184.0
Net OPEB Liability (Asset) as a Percentage of Covered Employee Payroll	13.56%	15.50%

Immaterial differences may exist between the amounts in this schedule and those reported in the Statement of Fiduciary Net Position



FINANCIAL SECTION

Local Retiree Life Insurance		
Schedules of Changes in Net OPEB Liability (Asset) and Related Ratios		
(In Millions)		
Calendar Year Ended, December 31	2018	2017
Total OPEB Liability		
Service Cost	\$ 21.1	\$ 18.1
Interest on the Total OPEB Liability	20.4	19.8
Benefit Changes	0.0	0.0
Difference between Expected and Actual Experience	(11.0)	(4.9)
Assumption Changes	(65.1)	33.5
Benefit Payments	(7.6)	(7.3)
Net Change in Total OPEB Liability	(42.2)	59.2
Total OPEB Liability - Beginning	545.1	485.9
Total OPEB Liability - Ending (a)	\$ 502.9	\$ 545.1
Plan Fiduciary Net Position		
Employer Contributions	1.9	2.1
Net Investment Income	7.6	7.6
Benefit Payments	(7.6)	(7.3)
OPEB Plan Administrative Expense	(1.2)	(1.2)
Net Change in Plan Fiduciary Net Position	0.7	1.2
Plan Fiduciary Net Position - Beginning	244.2	243.1
Plan Fiduciary Net Position - Ending (b)	\$ 244.9	\$ 244.2
Net OPEB Liability (Asset) - Ending (a) - (b)	\$ 258.0	\$ 300.9
Plan Fiduciary Net Position as a Percentage of Total OPEB Liability	48.69%	44.81%
Covered Employee Payroll	\$ 4,115.0	\$ 4,205.3
Net OPEB Liability (Asset) as a Percentage of Covered Employee Payroll	6.27%	7.15%

Immaterial differences may exist between the amounts in this schedule and those reported in the Statement of Fiduciary Net Position

State and Local Retiree Life Insurance Plans
Schedule of Investment Returns
Annual Money-Weighted Rate of Return, Net of Investment Expenses

	2018	2017
State Retiree Life Insurance Plan	3.16%	3.19%
Local Retiree Life Insurance Plan	3.10%	3.13%

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

Significant methods and assumptions used in calculating Wisconsin Retirement System Actuarially Determined Contributions:

Valuation Date:	December 31, 2016
Actuarial Cost Method:	Frozen Entry Age
Amortization Method:	Level Percent of Payroll-Closed Amortization Period
Amortization Period:	30 Year closed from date of participation in WRS
Asset Valuation Method:	Five Year Smoothed Market (Closed)
Actuarial Assumptions	
Net Investment Rate of Return:	5.5%
Weighted based on assumed rate for:	
Pre-retirement:	7.2%
Post-retirement:	5.0%
Salary Increases	
Inflation:	3.2%
Seniority/Merit:	0.1%-5.6%
Post-retirement Benefit Adjustments:	2.1*

*No post-retirement adjustment is guaranteed. Actual adjustments are based on recognized investment return, actuarial experience and other factors. 2.1% is the assumed annual adjustment based on the investment return assumption and the post-retirement discount rate.

STATISTICAL SECTION



STATISTICAL SECTION

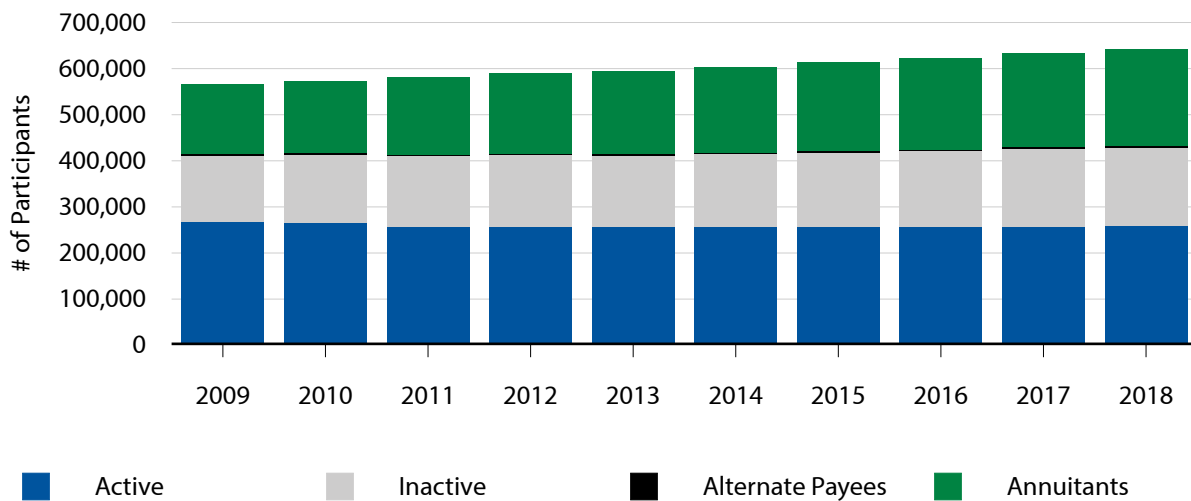
Wisconsin Retirement System (WRS) Statistics

WRS Active Participants by Employment Category

Year	General	Teachers	Executives & Elected Officials	Protective Occupations With Social Security	Protective Occupations Without Social Security	Totals
State Participants						
2009	42,814	20,002	709	8,890	0	72,415
2010	42,785	20,502	697	8,756	0	72,740
2011	41,136	20,184	717	8,354	0	70,391
2012	42,433	20,776	733	8,327	0	72,269
2013	42,898	21,065	730	8,398	0	73,091
2014	42,982	21,279	732	8,900	0	73,893
2015	42,498	21,282	728	8,528	0	73,036
2016	42,460	21,722	727	8,605	0	73,514
2017	42,485	22,354	715	8,531	0	74,085
2018	41,939	22,841	712	8,405	0	73,897
Local Participants						
2009	97,489	82,516	744	11,389	2,740	194,878
2010	97,175	81,866	733	11,354	2,761	193,889
2011	93,797	78,348	720	11,280	2,718	186,863
2012	92,122	77,938	687	11,083	2,734	184,564
2013	91,422	77,995	679	10,856	2,745	183,697
2014	90,900	78,339	677	10,703	2,743	183,362
2015	90,887	77,979	668	10,773	2,734	183,041
2016	91,383	78,128	642	10,863	2,755	183,771
2017	90,622	78,384	636	10,934	2,752	183,328
2018	91,193	78,394	605	11,045	2,777	184,014
Total Participants						
2009	140,303	102,518	1,453	20,279	2,740	267,293
2010	139,960	102,368	1,430	20,110	2,761	266,629
2011	134,933	98,532	1,437	19,634	2,718	257,254
2012	134,555	98,714	1,420	19,410	2,734	256,833
2013	134,320	99,060	1,409	19,254	2,745	256,788
2014	133,882	99,618	1,409	19,603	2,743	257,255
2015	133,385	99,261	1,396	19,301	2,734	256,077
2016	133,843	99,850	1,369	19,468	2,755	257,285
2017	133,107	100,738	1,351	19,465	2,752	257,413
2018	133,132	101,235	1,317	19,450	2,777	257,911

Total WRS Participants

Year	Active	Inactive	Alternate Payees	Annuitants	Total Participants
2009	267,293	144,424	3,929	150,671	566,317
2010	266,629	145,803	4,012	155,775	572,219
2011	257,254	153,123	4,063	167,453	581,893
2012	256,833	155,887	4,086	173,655	590,461
2013	256,788	153,721	4,040	180,056	594,605
2014	257,255	157,072	4,051	185,605	603,983
2015	256,077	161,851	4,111	191,795	613,834
2016	257,285	163,145	4,046	197,647	622,123
2017	257,413	167,996	4,093	203,300	632,802
2018	257,911	170,869	4,053	209,059	641,892

Total WRS Participants


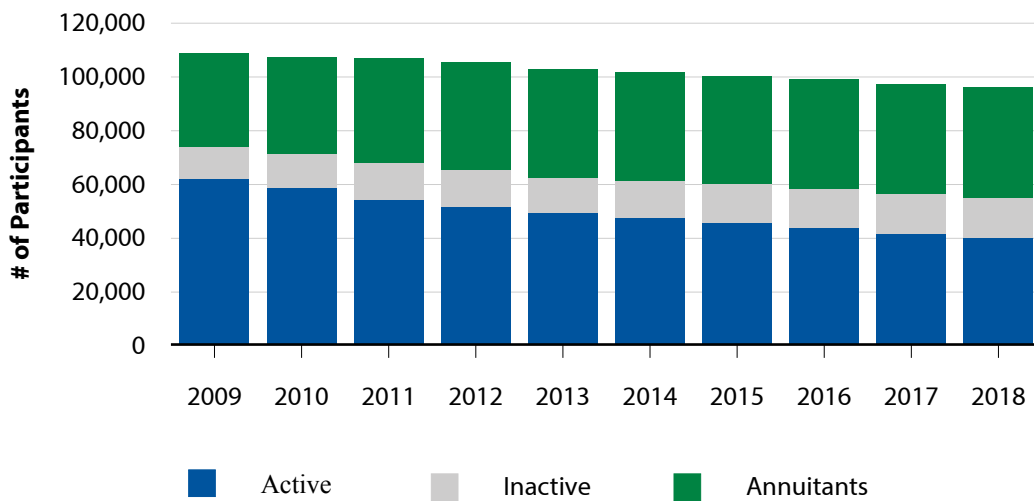


STATISTICAL SECTION

WRS Participants with Variable Election

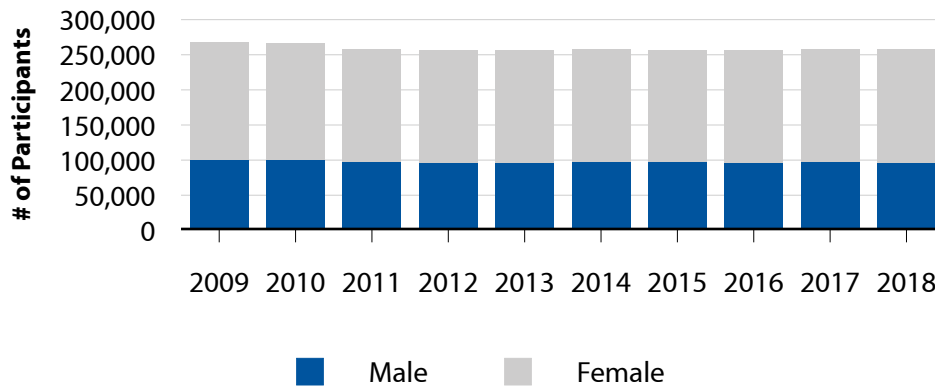
Year	Active	Inactive	Annuitants	Totals
2009	62,032	12,169	34,836	109,037
2010	58,781	12,519	35,866	107,166
2011	54,273	13,889	38,949	107,111
2012	51,771	13,858	39,873	105,502
2013	49,299	13,376	40,317	102,992
2014	47,671	13,805	40,402	101,878
2015	45,931	14,276	40,152	100,359
2016	44,083	14,223	40,647	98,953
2017	41,935	14,572	40,877	97,384
2018	40,288	14,747	41,187	96,222

WRS Participants with Variable Election



Active WRS Participants by Gender

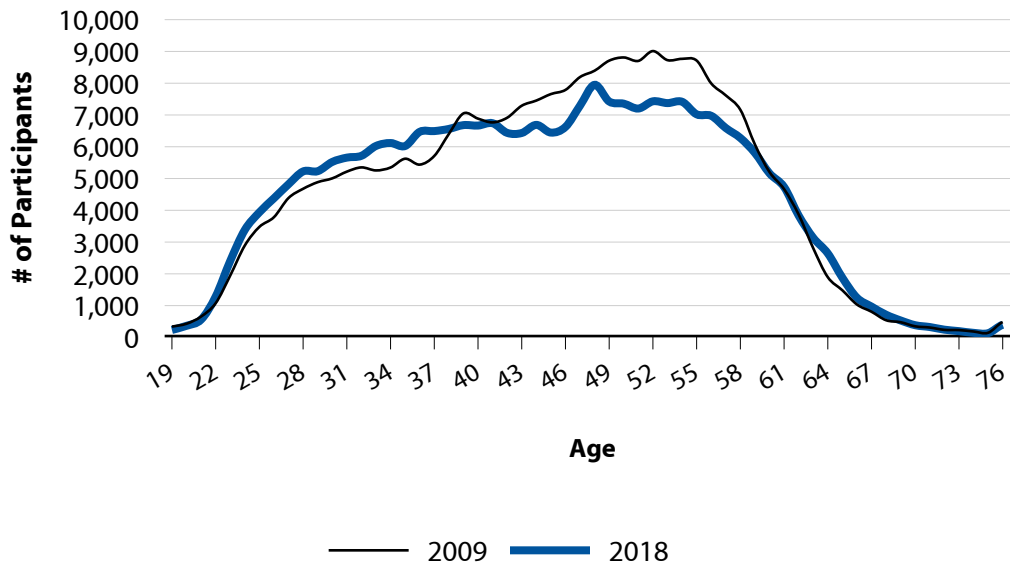
Year	Teachers		Protective Occupations		All Other Participants		Totals	
	Male	Female	Male	Female	Male	Female	Male	Female
2009	32,228	70,290	18,862	4,157	49,542	92,214	100,632	166,661
2010	32,155	70,213	18,744	4,127	49,563	91,827	100,462	166,167
2011	30,784	67,748	18,374	3,978	47,829	88,541	96,987	160,267
2012	30,983	67,761	18,278	3,866	47,836	88,109	97,097	159,736
2013	30,979	68,115	18,354	3,840	47,908	87,592	97,241	159,547
2014	30,949	68,669	18,337	4,009	48,155	87,136	97,441	159,814
2015	30,621	68,640	18,094	3,941	47,971	86,810	96,686	159,391
2016	30,708	69,142	18,192	4,031	47,913	87,299	96,813	160,472
2017	30,915	69,823	18,128	4,089	47,975	86,483	97,018	160,395
2018	30,891	70,344	18,080	4,147	47,966	86,483	96,937	160,974

Active WRS Participants by Gender




STATISTICAL SECTION

WRS Active Participants by Age

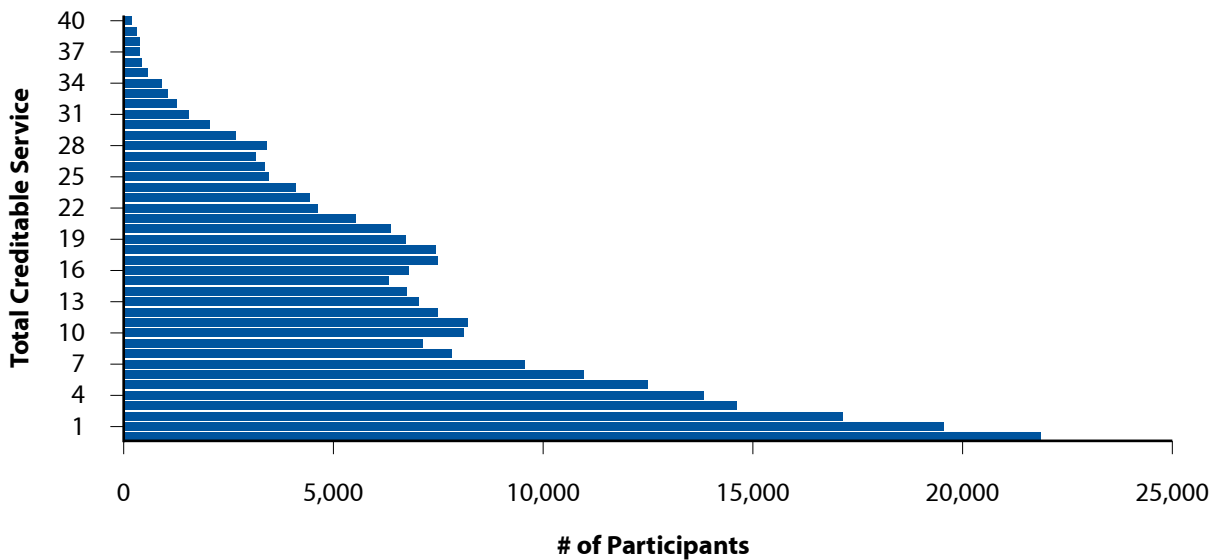


WRS Covered Payroll by Employer Type (In Millions)

Local Employers								
Year	School Districts	Counties	Cities	Technical Colleges	Villages	Towns	Special Districts	Totals
2009	4,959	1,553	1,241	579	223	60	156	8,771
2010	5,037	1,530	1,229	596	225	60	165	8,842
2011	5,006	1,537	1,236	607	227	63	171	8,847
2012	4,906	1,526	1,226	611	228	66	177	8,740
2013	4,956	1,551	1,244	616	233	66	187	8,853
2014	5,042	1,591	1,287	603	238	69	188	9,018
2015	5,167	1,629	1,318	611	246	70	195	9,236
2016	5,199	1,656	1,340	615	252	73	210	9,345
2017	5,292	1,703	1,379	620	267	68	151	9,480
2018	5,414	1,750	1,426	631	280	71	158	9,730

State Government				Totals
Year	State Agencies	University	Totals	All Employers
2009	2,161	1,690	3,851	12,622
2010	2,170	1,732	3,902	12,744
2011	2,126	1,746	3,872	12,719
2012	2,137	1,751	3,888	12,628
2013	2,212	1,820	4,032	12,885
2014	2,306	1,895	4,201	13,219
2015	2,372	1,922	4,294	13,530
2016	2,432	1,929	4,361	13,706
2017	2,496	1,967	4,463	13,943
2018	2,536	2,035	4,571	14,301

WRS Active Participants by Creditable Service



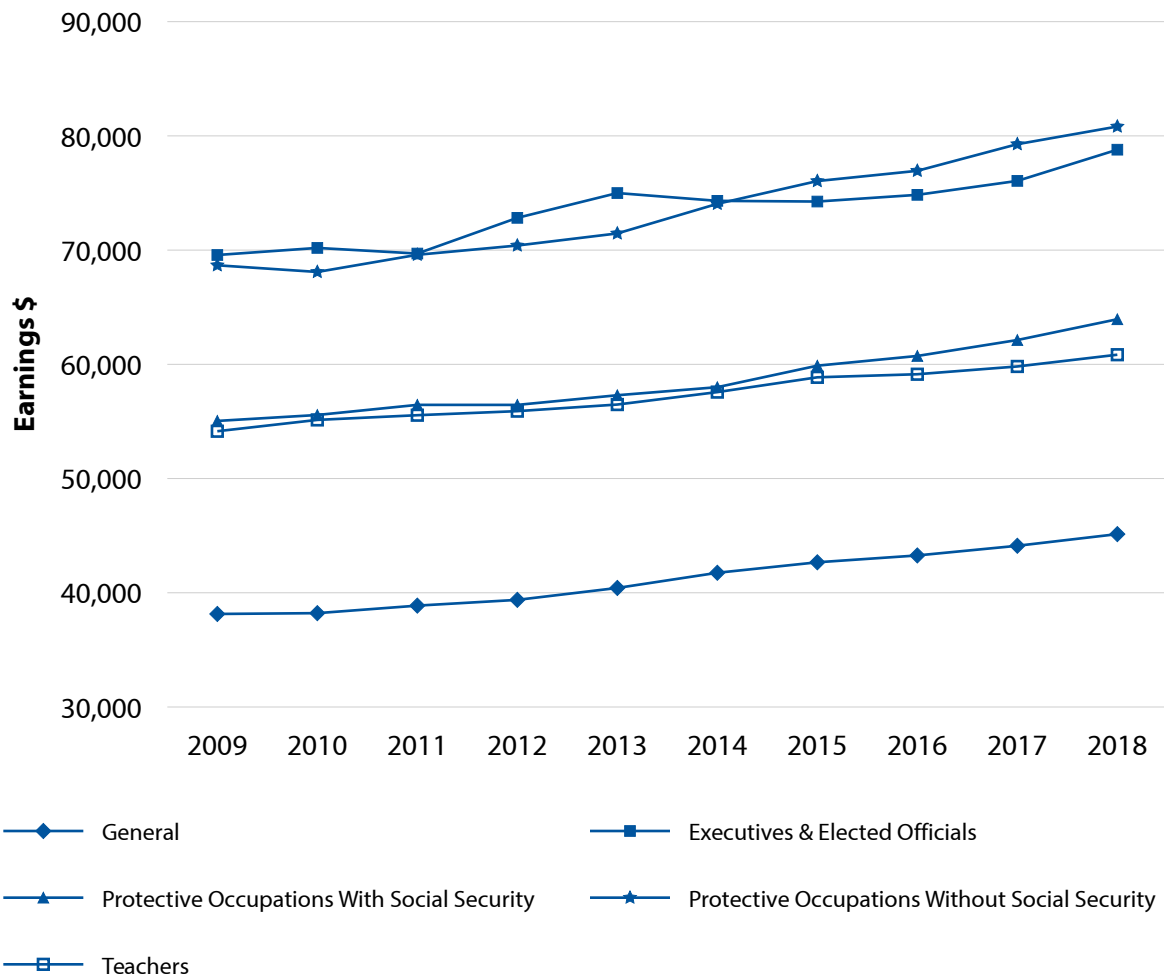


STATISTICAL SECTION

WRS Covered Payroll by Employment Category
(In Millions)

Year	General Employees	Teachers	Executives & Elected Officials	Protective Occupations with Social Security	Protective Occupations without Social Security	Totals
2009	5,492	5,704	104	1,132	190	12,622
2010	5,504	5,809	105	1,136	190	12,744
2011	5,485	5,797	105	1,139	193	12,719
2012	5,496	5,707	107	1,122	196	12,628
2013	5,638	5,809	109	1,129	200	12,885
2014	5,815	5,923	111	1,163	207	13,219
2015	5,951	6,064	112	1,191	212	13,530
2016	6,045	6,118	112	1,217	214	13,706
2017	6,135	6,230	111	1,248	219	13,943
2018	6,295	6,385	113	1,283	225	14,301

Average Annual Earnings



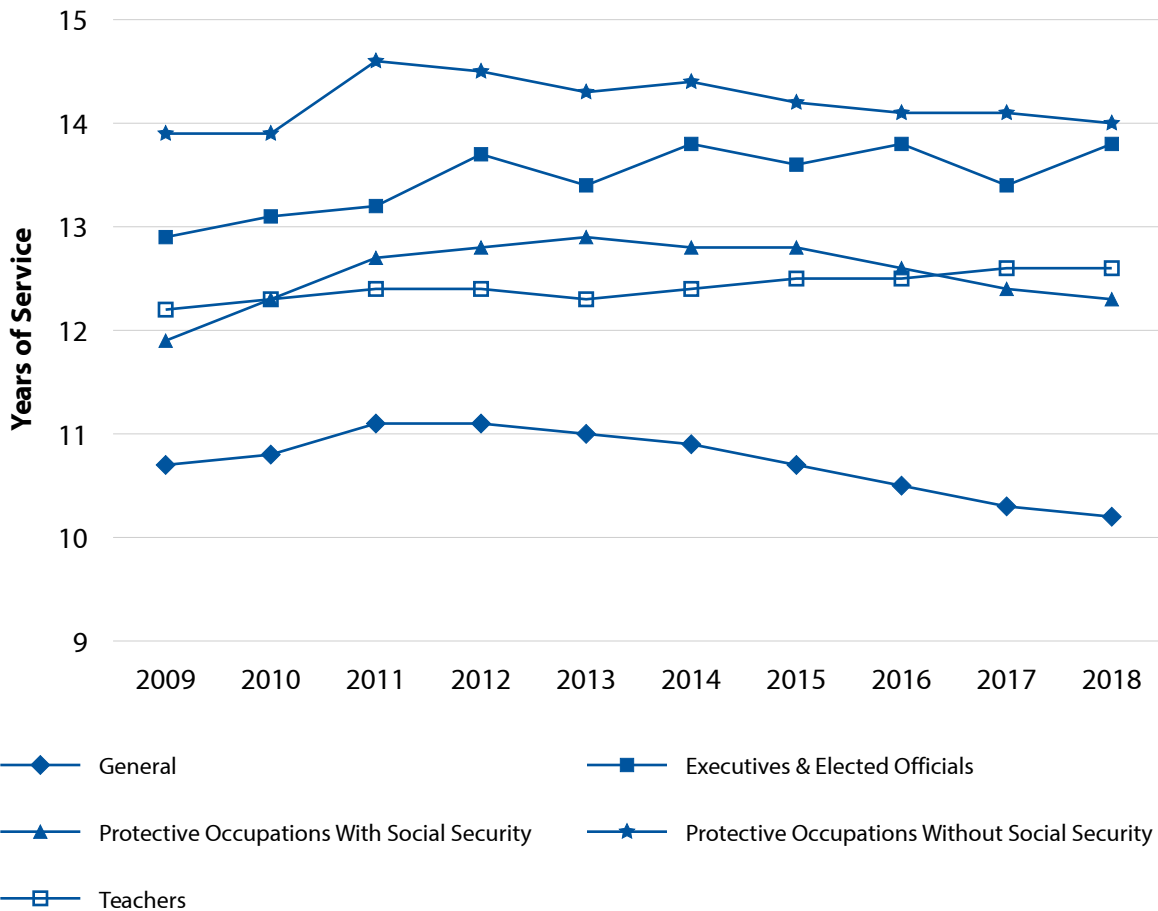
Average Annual Earnings

Year	General	Teachers	Executives & Elected Officials	Protective Occupations With Social Security	Protective Occupations Without Social Security	Average
2009	38,145	54,143	69,572	55,045	68,671	46,047
2010	38,216	55,135	70,191	55,564	68,087	46,501
2011	38,874	55,546	69,699	56,451	69,590	47,098
2012	39,379	55,902	72,824	56,448	70,402	47,535
2013	40,422	56,480	74,996	57,294	71,460	48,403
2014	41,750	57,569	74,312	57,999	74,051	49,634
2015	42,669	58,864	74,252	59,881	76,045	50,770
2016	43,268	59,133	74,838	60,733	76,942	51,273
2017	44,114	59,814	76,059	62,127	79,274	52,162
2018	45,135	60,842	78,791	63,947	80,819	53,273



STATISTICAL SECTION

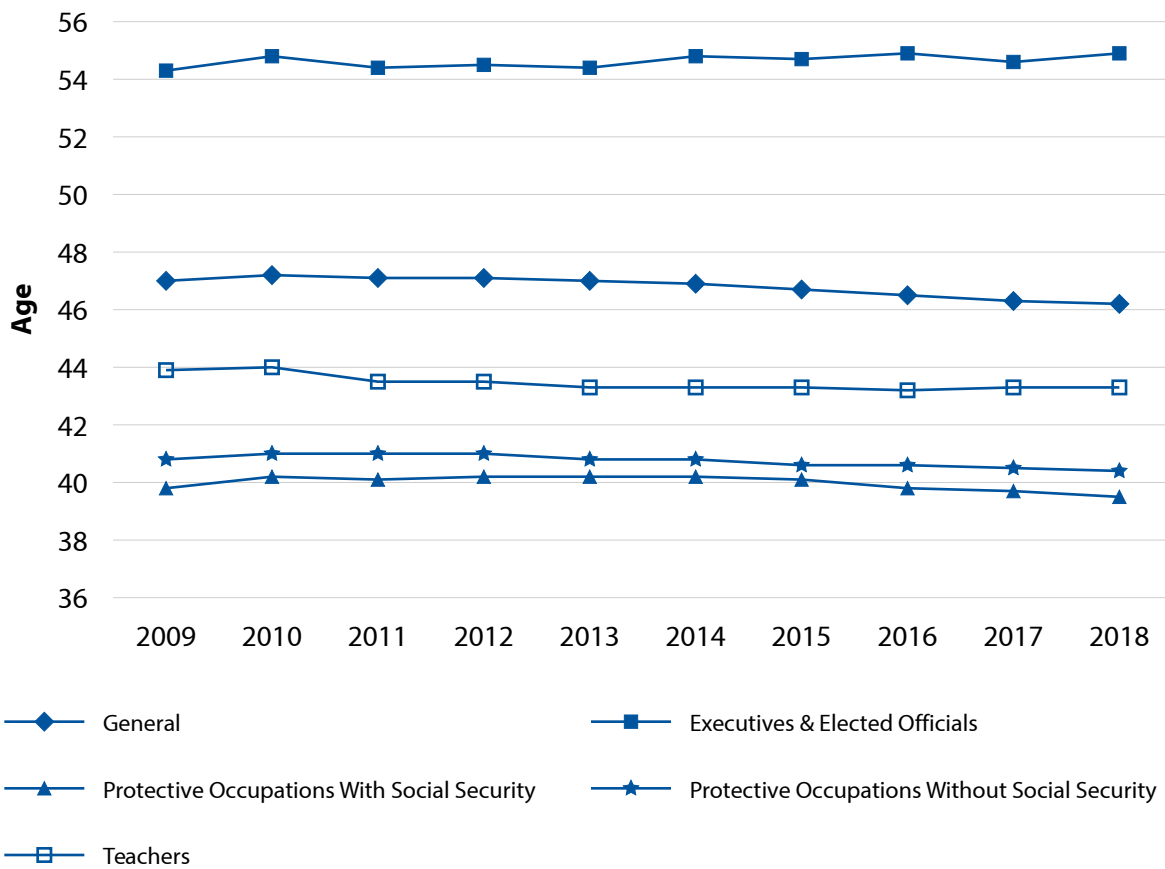
Average Creditable Service



Average Creditable Service

Year	General	Teachers	Executives & Elected Officials	Protective Occupations With Social Security	Protective Occupations Without Social Security	Average
2009	10.7	12.2	12.9	11.9	13.9	11.3
2010	10.8	12.3	13.1	12.3	14.0	11.5
2011	11.1	12.4	13.2	12.7	14.6	11.8
2012	11.1	12.4	13.7	12.8	14.5	11.8
2013	11.0	12.3	13.4	12.9	14.3	11.7
2014	10.9	12.4	13.8	12.8	14.4	11.7
2015	10.7	12.5	13.6	12.8	14.2	11.6
2016	10.5	12.5	13.8	12.6	14.1	11.5
2017	10.3	12.6	13.4	12.4	14.1	11.4
2018	10.2	12.6	13.8	12.3	14.0	11.4

Average Age



Average Age

Year	General	Teachers	Executives & Elected Officials	Protective Occupations With Social Security	Protective Occupations Without Social Security	Average
2009	47.0	43.9	54.3	39.8	40.8	44.9
2010	47.2	44.0	54.8	40.2	41.0	45.4
2011	47.1	43.5	54.4	40.1	41.0	45.2
2012	47.1	43.5	54.5	40.2	41.0	45.2
2013	47.0	43.3	54.4	40.2	40.8	45.1
2014	46.9	43.3	54.8	40.2	40.8	45.0
2015	46.7	43.3	54.7	40.1	40.6	44.8
2016	46.5	43.2	54.9	39.8	40.6	44.7
2017	46.3	43.3	54.6	39.7	40.5	44.6
2018	46.2	43.3	54.9	39.5	40.4	44.5



STATISTICAL SECTION

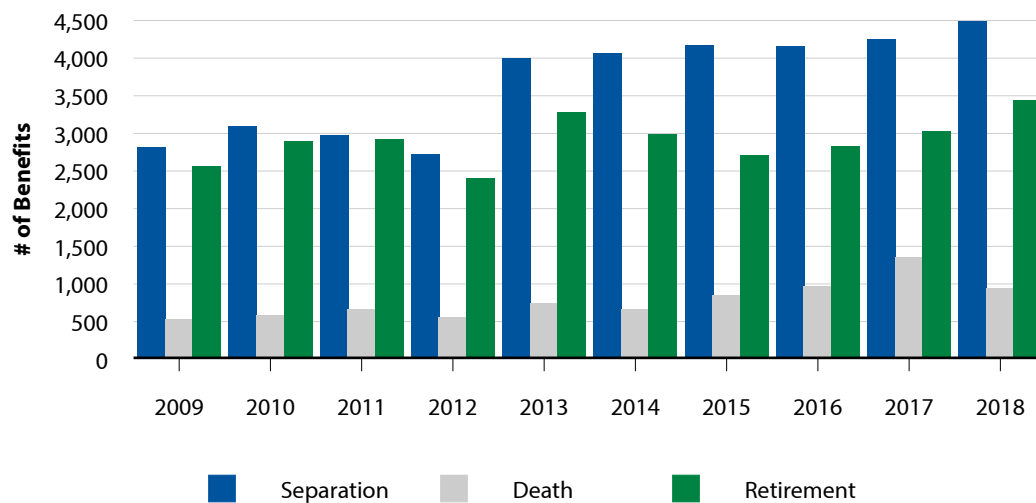
WRS Active Participants by Employer Type

Year	Local Employers							Totals
	School Districts	Counties	Cities	Technical Colleges	Villages	Towns	Special Districts	
2009	115,380	35,437	23,744	10,268	5,021	1,510	3,518	194,878
2010	114,882	34,652	23,661	10,431	5,031	1,507	3,725	193,889
2011	110,008	33,549	22,993	10,129	4,952	1,552	3,680	186,863
2012	108,758	33,045	22,506	10,036	4,838	1,566	3,815	184,564
2013	108,504	33,044	22,251	9,873	4,746	1,550	3,729	183,697
2014	108,565	32,836	22,211	9,751	4,717	1,519	3,763	183,362
2015	108,492	32,746	22,177	9,487	4,716	1,501	3,922	183,041
2016	109,245	32,757	22,071	9,393	4,789	1,489	4,027	183,771
2017	109,969	32,760	22,236	9,340	4,908	1,367	2,748	183,328
2018	110,457	32,890	22,326	9,162	4,969	1,384	2,826	184,014

Year	State Government			Totals
	State Agencies	University	Totals	All Employers
2009	41,497	30,918	72,415	267,293
2010	41,215	31,525	72,740	266,629
2011	39,642	30,749	70,391	257,254
2012	40,745	31,524	72,269	256,833
2013	41,333	31,758	73,091	256,788
2014	42,063	31,830	73,893	257,255
2015	42,096	30,940	73,036	256,077
2016	42,741	30,773	73,514	257,285
2017	42,941	31,144	74,085	257,413
2018	42,553	31,344	73,897	257,911

Number of Lump Sum Benefits Paid

Year	Separation	Death	Retirement
2009	2,817	534	2,571
2010	3,093	584	2,896
2011	2,979	670	2,929
2012	2,725	556	2,403
2013	3,998	740	3,281
2014	4,061	662	2,987
2015	4,167	855	2,710
2016	4,155	968	2,832
2017	4,250	1,362	3,027
2018	4,497	949	3,445

Number of Lump Sum Benefits Paid




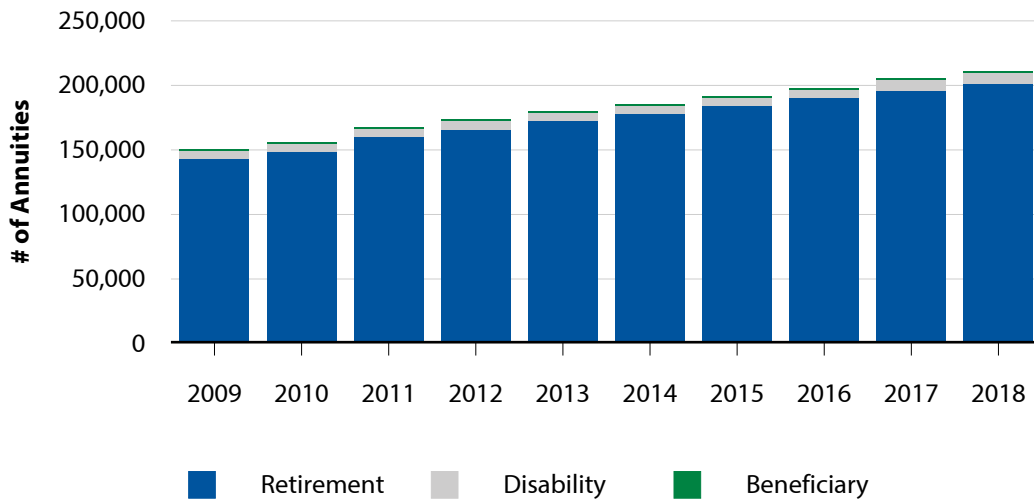
STATISTICAL SECTION

Number of Annuities in Force

Year	Retirement	Disability [^]	Beneficiary	Totals
2009	143,261	6,224	1,186	150,671
2010	148,380	6,194	1,201	155,775
2011	160,044	6,201	1,208	167,453
2012	165,966	6,473	1,216	173,655
2013	172,430	6,393	1,233	180,056
2014	177,959	6,363	1,283	185,605
2015	184,180	6,305	1,310	191,795
2016	190,111	6,198	1,338	197,647
2017	195,762	8,532	1,349	205,643
2018	201,466	8,281	1,379	211,126

[^] Beginning in 2017, Disability count includes annuities in force for the Long-Term Disability Insurance program.

Annuities in Force

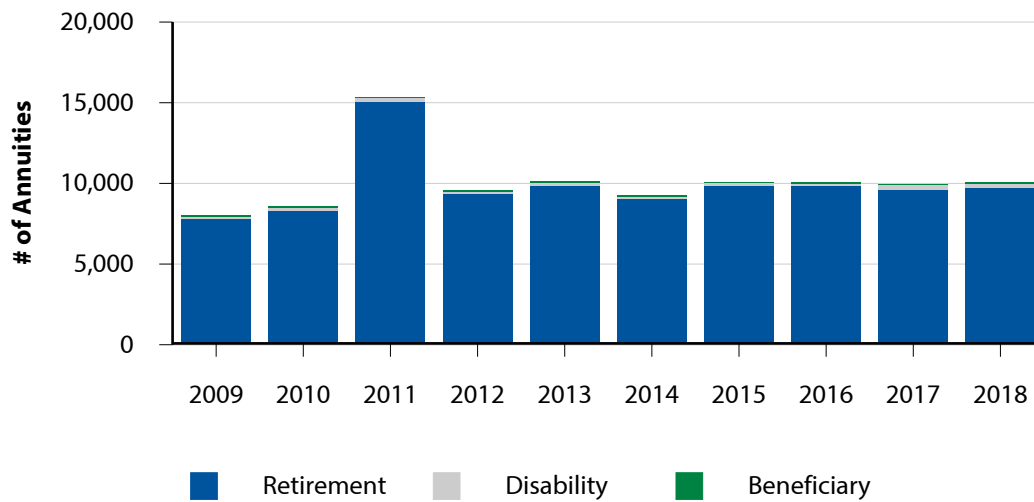


Number of New Annuities Approved

Year	Retirement	Disability [^]	Beneficiary	Totals
2009	7,779	156	73	8,008
2010	8,330	159	69	8,558
2011	15,096	196	60	15,352
2012	9,322	183	67	9,572
2013	9,889	146	70	10,105
2014	9,080	125	69	9,274
2015	9,881	124	57	10,062
2016	9,866	98	62	10,026
2017	9,591	327	42	9,960
2018	9,735	230	70	10,035

[^] Beginning in 2017, Disability count includes annuities in force for the Long-Term Disability Insurance program.

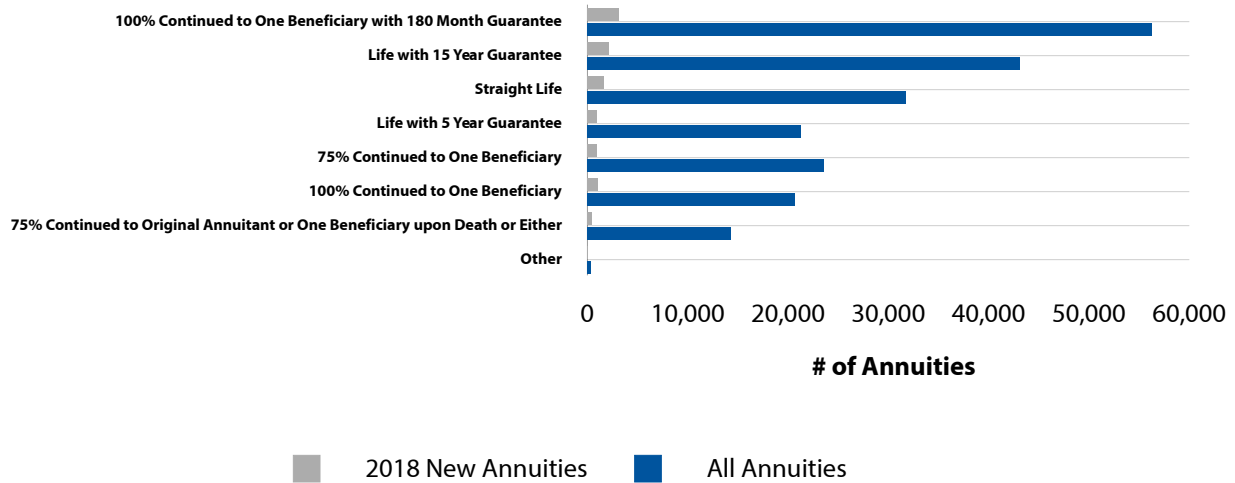
New Annuities Approved





STATISTICAL SECTION

Annuities by Payment Option



Average Monthly Annuities by Years of Service

	Years of Service									
	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	Over 45
Average Monthly Annuity	\$ 491	\$ 641	\$ 885	\$ 1,274	\$ 1,836	\$ 2,588	\$ 3,219	\$ 4,128	\$ 5,659	\$ 9,441
Average Final Average Salary	\$ 24,176	\$ 34,468	\$ 39,709	\$ 46,948	\$ 53,066	\$ 58,041	\$ 59,881	\$ 61,224	\$ 64,931	\$ 70,310
Number of Annuitants	7,184	18,682	22,679	25,184	26,878	30,779	40,165	15,388	2,557	248

Annuities by Type of Benefit

Monthly Annuity Amount	Total Number of Annuities	Type of Annuity			Annuity Payment Option			
		Retirement	Disability [^]	Beneficiary	Life Annuity	Life with Guarantee	Joint Survivor	Other [^]
\$ 0 - 500	27,573	26,356	696	521	4,750	10,907	11,886	30
\$ 500 - 1,000	33,551	31,534	1,379	638	6,422	12,029	15,063	37
\$ 1,000 - 1,500	29,453	27,359	1,731	363	5,106	9,521	14,806	20
\$ 1,500 - 2,000	26,777	25,042	1,551	184	4,036	7,846	14,884	11
\$ 2,000 - 2,500	25,402	24,076	1,210	116	3,223	6,920	15,249	10
\$ 2,500 - 3,000	22,206	21,354	753	99	2,678	5,843	13,680	5
\$ 3,000 - 3,500	16,887	16,280	527	80	2,117	4,360	10,405	5
\$ 3,500 - 4,000	11,941	11,559	317	65	1,423	2,941	7,576	1
\$ 4,000 - 4,500	7,922	7,717	176	29	982	1,927	5,012	1
\$ 4,500 - 5,000	5,055	4,952	87	16	573	1,188	3,293	1
Over \$ 5,000	9,778	9,628	79	71	1,158	2,119	6,495	6

Total 216,545 205,857 8,506 2,182 32,468 65,601 118,349 127

[^] Includes annuities in force for the Long Term Disability Insurance program.

Revenues by Source ⁽¹⁾
(In Thousands)

Year	Employee Contributions ⁽²⁾		Employer Contributions ⁽³⁾		Investment Income	Other Income	Total Revenues
	Dollars	% of Annual Payroll	Dollars	% of Annual Payroll			
2009	736,689	5.8%	705,997	5.6%	13,024,986	1,117	14,468,790
2010	787,460	6.2%	750,702	5.9%	8,317,435	990	9,856,588
2011	797,856	6.3%	789,244	6.2%	664,151	849	2,252,100
2012	757,151	6.0%	799,350	6.3%	9,858,710	678	11,415,889
2013	871,260	6.8%	914,698	7.1%	11,343,231	532	13,129,721
2014	906,499	6.9%	1,023,197	7.7%	4,888,240	642	6,818,578
2015	937,225	6.9%	977,734	7.2%	(674,988)	248	1,240,219
2016	921,864	6.7%	963,122	7.0%	7,271,531	341	9,156,858
2017	965,453	6.9%	1,017,559	7.3%	14,868,726	5,558	16,857,296
2018	972,950	6.8%	1,030,508	7.2%	(4,050,510)	382	(2,046,670)

1 Employee required contributions made in accordance with statutory requirements. Employer required contributions were made in accordance with actuarially-determined contribution requirements.

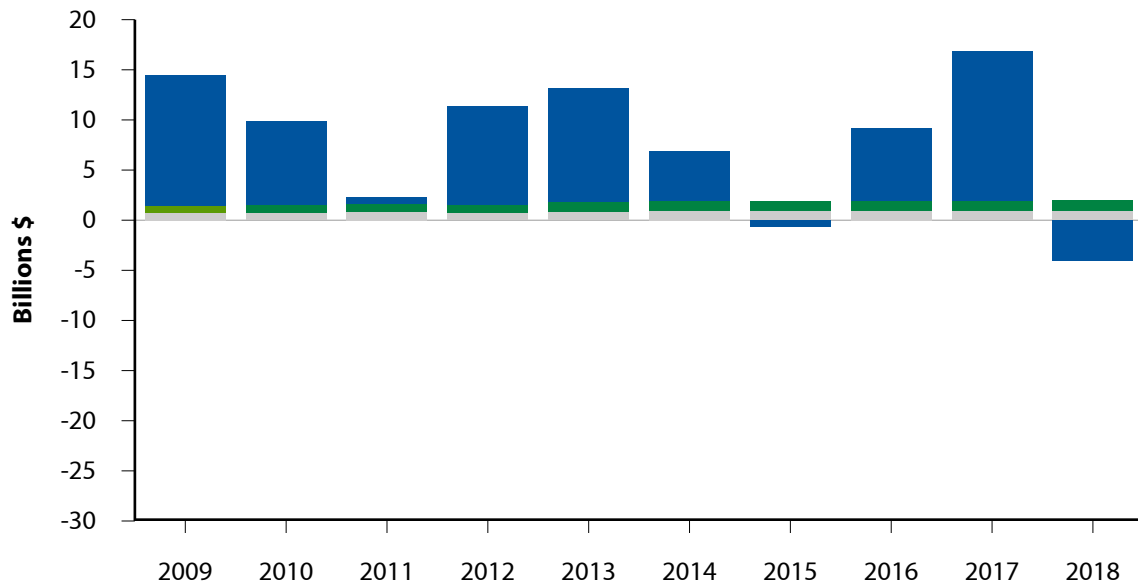
2 Employee contributions include all employee required, employee additional and benefit adjustment contributions, including those paid by the employer on behalf of the employee.

3 Employer contributions include all employer required contributions, including contributions for unfunded actuarial accrued liability.



STATISTICAL SECTION

Revenues by Source



Employee Contributions
 Employer Contributions
 Investment Income

Expenses by Type
 (In Millions)

Age and Service Benefits									
Year	Retirees	Beneficiaries	Disability Benefits[^]	Death Benefits	Separation Benefits	Administrative Expense	Other Expense	Total Expenses	
2009	3,609.6	17.4	\$ 146.3	\$ 24.4	\$ 24.8	\$ 20.9	\$ 0.0	\$ 3,843.3	
2010	3,683.2	17.2	145.2	29.1	26.4	17.6	0.0	3,918.7	
2011	3,941.6	17.8	144.4	33.1	28.0	18.6	0.0	4,183.5	
2012	4,023.8	18.2	141.5	24.8	26.6	21.5	0.0	4,256.4	
2013	4,035.5	18.2	132.9	38.0	33.3	22.9	0.0	4,280.8	
2014	4,309.0	19.5	135.9	33.5	34.4	24.0	42.3	4,598.6	
2015	4,587.3	20.7	140.5	31.8	37.6	22.7	43.3	4,883.9	
2016	4,759.2	21.5	140.5	30.4	39.3	20.4	71.3	5,082.6	
2017	4,972.5	21.8	185.7	31.3	38.4	26.1	0.0	5,275.8	
2018	5,216.0	69.4	189.3	41.5	40.2	31.6	25.4 *	5,613.4	

[^] Beginning in 2017, balance includes expenses related to Long-Term Disability Insurance program

* Other Expense for 2018 relates to an impairment loss on a capital asset.

Principal WRS Participating Employers
Current Year and Nine Years Ago

Participating Government	2018			2009		
	Covered Employees	Rank	Percentage of Total System	Covered Employees	Rank	Percentage of Total System
State of Wisconsin	73,897	1	28.6%	72,415	1	27.1%
Milwaukee Teachers Retirement System	5,764	2	2.2	7,020	2	2.7
Madison Metro School District	4,521	3	1.8	4,613	3	1.7
Green Bay Area School District	2,996	4	1.2	2,981	5	1.1
City of Madison	2,989	5	1.2	2,944	6	1.1
Racine Unified School District	2,796	6	1.1	2,782	7	1.0
Kenosha Unified School District	2,736	7	1.1	3,120	4	1.2
Dane County	2,408	8	0.9	2,332	8	0.9
Appleton Area School District	1,923	9	0.7	1,719	10	0.6
Milwaukee Area Technical College	1,580	10	0.6	1,944	9	0.7
All Other	156,301		60.6	165,423		61.9
Total (1,507 employers)	257,911		100.0%	267,293		100.0%



STATISTICAL SECTION

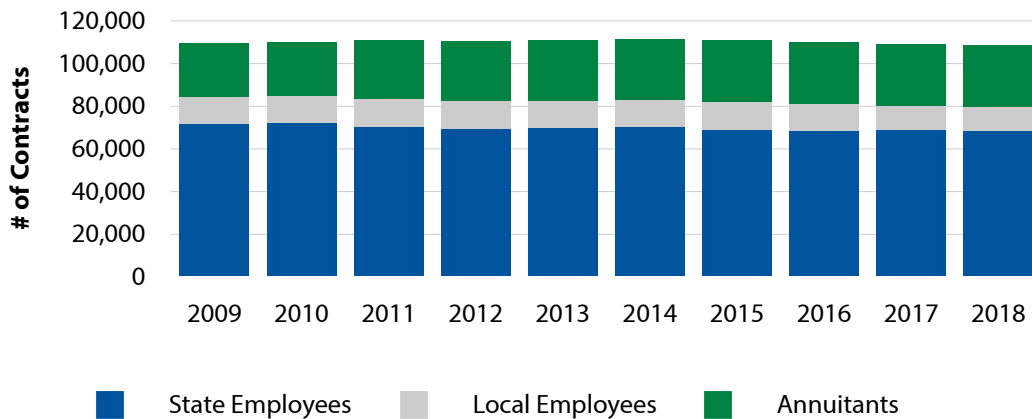
Group Health Insurance Program Statistics

Group Health Insurance Contracts

Year	Active Employees	Continuants	Annuitants				Totals
			Annuity Deduction	Sick Leave Conversion	Direct Pay [^]	Total Retired	
State							
2009	71,924	590	11,112	11,288	0	22,400	94,914
2010	72,313	478	9,179	11,788	1,732	22,699	95,490
2011	70,656	378	9,126	14,157	1,727	25,010	96,044
2012	69,650	430	9,146	14,398	1,827	25,371	95,451
2013	69,772	367	9,187	14,701	1,777	25,665	95,804
2014	70,219	178	8,913	15,074	1,823	25,810	96,207
2015	68,964	160	8,903	15,800	1,664	26,367	95,491
2016	68,463	180	8,550	16,453	1,568	26,571	95,214
2017	68,864	170	8,359	16,824	1,509	26,692	95,726
2018	68,468	192	8,260	17,238	1,376	26,874	95,534
Local							
2009	12,398	88	2,557	n/a	0	2,557	15,043
2010	12,700	89	2,258	n/a	225	2,483	15,272
2011	12,826	86	2,284	n/a	236	2,520	15,432
2012	12,679	80	2,366	n/a	229	2,595	15,354
2013	12,749	80	2,295	n/a	253	2,548	15,377
2014	12,890	43	2,283	n/a	252	2,535	15,468
2015	12,957	47	2,164	n/a	238	2,402	15,406
2016	12,812	37	2,003	n/a	205	2,208	15,057
2017	11,640	46	1,800	n/a	187	1,987	13,673
2018	11,351	50	1,735	n/a	185	1,920	13,321

[^]This data unavailable prior to 2010

Group Health Insurance Contracts*



*For display purposes, state and local continuants were statistically insignificant and therefore not included in this chart.

Group Health Insurance Premiums by Source
(In Thousands)

Year	Employer & Employee *	Annuitant	Sick Leave Conversion	Medicare	Stabilization	Life Insurance Conversion	Totals
State							
2009	965,386	63,453	100,390	11,909	25	95	1,141,258
2010	1,067,164	72,861	111,676	11,864	0	390	1,263,954
2011	1,112,382	73,166	130,840	11,733	0	464	1,328,585
2012	1,034,066	61,495	130,154	17,865	0	412	1,243,993
2013	1,082,211	64,201	133,809	19,438	0	485	1,300,144
2014	1,128,667	67,624	141,449	18,633	0	640	1,357,013
2015	1,173,419	71,537	155,688	23,053	0	681	1,424,378
2016	1,113,654	73,035	166,994	24,767	0	845	1,379,295
2017	1,130,698	75,086	171,961	20,339	0	797	1,398,881
2018	1,119,360	70,336	166,854	22,545	13,754	805	1,393,655
Local							
2009	167,907	14,282	n/a	461	1	4	182,655
2010	189,480	16,407	n/a	574	0	7	206,468
2011	205,211	15,685	n/a	427	0	2	221,325
2012	198,476	15,011	n/a	1,846	0	3	215,336
2013	206,812	15,843	n/a	2,047	0	3	224,705
2014	219,413	15,938	n/a	1,808	0	6	237,165
2015	222,514	15,783	n/a	2,051	0	6	240,354
2016	222,052	15,194	n/a	1,982	0	9	239,237
2017	195,553	14,459	n/a	1,835	0	1	211,848
2018	195,610	14,432	n/a	1,661	0	0	211,703

* Breakout between employer and employee paid portions of active participant health insurance premiums is not available.



STATISTICAL SECTION

Group Life Insurance Program Statistics

Group Life Insurance Premiums Collected

(In Thousands)

Year	Employee					Employer			Totals
	Basic	Supplemental	Additional	Spouse & Dependent	Total	Basic	Suppl	Total	
State									
2009	7,074	5,198	7,409	1,053	20,734	3,408	1,408	4,816	25,550
2010	7,363	5,404	7,834	1,253	21,854	3,519	1,453	4,971	26,826
2011	7,302	4,577	7,248	1,275	20,402	3,488	1,180	4,668	25,070
2012	6,285	4,557	6,758	1,233	18,833	2,873	1,204	4,078	22,911
2013	6,235	4,513	7,008	1,222	18,978	2,926	1,222	4,148	23,125
2014	6,323	4,573	7,351	1,217	19,465	3,028	1,262	4,290	23,755
2015	6,412	4,625	7,639	1,204	19,880	3,071	1,275	4,346	24,226
2016	6,519	4,688	7,912	1,193	20,312	3,074	1,271	4,345	24,657
2017	6,573	4,700	8,156	1,202	20,631	3,106	1,274	4,380	25,011
2018	6,768	4,847	8,644	1,226	21,484	3,233	1,329	4,562	26,046
Local									
2009	10,573	2,540	7,224	1,342	21,679	3,185	17	3,201	24,881
2010	10,950	2,642	7,636	1,329	22,558	3,247	53	3,300	25,858
2011	10,933	2,702	7,761	1,298	22,694	3,250	54	3,304	25,997
2012	10,612	2,692	7,666	1,248	22,218	3,319	51	3,370	25,588
2013	10,497	2,736	7,575	1,216	22,024	3,264	17	3,281	25,305
2014	10,561	2,789	7,737	1,209	22,296	3,317	16	3,334	25,629
2015	10,640	2,897	7,992	1,196	22,725	3,495	18	3,513	26,238
2016	10,976	3,072	8,312	1,191	23,551	3,576	19	3,595	27,146
2017	10,973	3,127	8,517	1,185	23,802	3,682	21	3,703	27,505
2018	11,130	3,202	8,718	1,172	24,222	3,714	19	3,733	27,955

Group Life Insurance In Force
(In Thousands)

Year	Pre-Age 65 Insurance			Post-Age 64 Insurance	Spouse & Dependent	Totals
	Basic	Supplemental	Additional			
State						
2009	3,288,721	2,401,767	3,175,970	371,715	605,205	9,843,378
2010	3,302,757	2,410,238	3,247,085	396,600	601,900	9,958,580
2011	3,296,564	2,385,886	3,250,843	449,897	567,755	9,950,945
2012	3,231,871	2,321,576	3,258,782	493,214	561,610	9,867,053
2013	3,327,163	2,387,599	3,424,431	536,246	562,840	10,238,279
2014	3,392,305	2,431,610	3,563,096	581,765	570,825	10,539,601
2015	3,449,798	2,462,720	3,673,851	628,843	566,585	10,781,797
2016	3,592,964	2,537,127	3,870,341	685,322	568,225	11,253,979
2017	3,690,966	2,594,857	4,008,538	735,296	559,785	11,589,442
2018	3,704,144	2,587,730	4,043,321	779,130	562,535	11,676,860
Local						
2009	4,173,626	1,237,027	3,614,168	247,986	897,225	10,170,032
2010	4,280,427	1,296,473	3,809,183	263,635	882,590	10,532,308
2011	4,303,919	1,364,577	3,903,476	296,558	852,035	10,720,565
2012	4,182,413	1,346,900	3,801,144	339,426	819,980	10,489,863
2013	4,340,129	1,412,278	4,146,681	369,512	810,265	11,078,865
2014	4,440,538	1,458,009	4,263,886	401,639	805,950	11,370,022
2015	4,537,463	1,534,501	4,408,995	433,245	807,400	11,721,604
2016	4,706,013	1,620,126	4,609,255	472,046	803,760	12,211,200
2017	4,747,370	1,646,364	4,718,591	509,136	795,935	12,417,396
2018	4,822,753	1,686,176	4,832,893	537,175	796,730	12,675,727



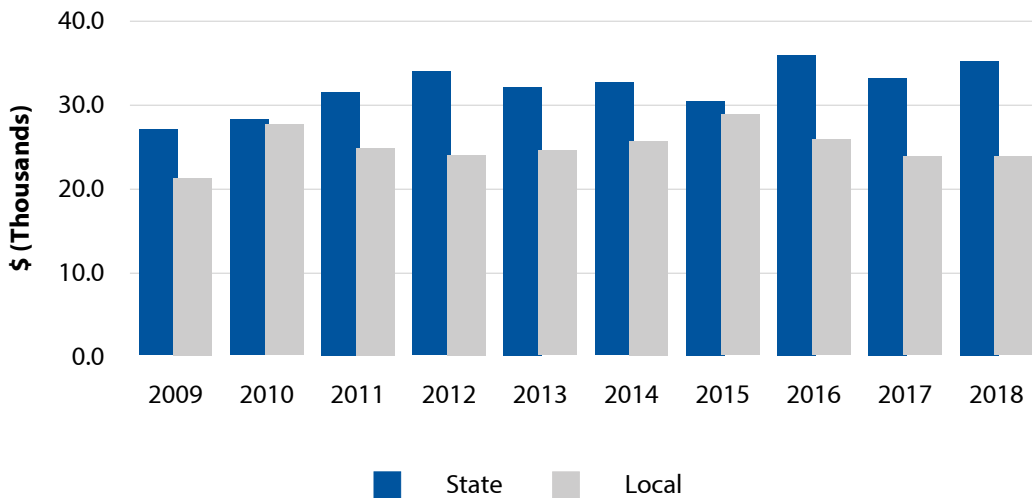
STATISTICAL SECTION

Group Life Insurance Paid Claims
(In Thousands)

Year	Pre-Age 65 Insurance			Post-Age 64 Insurance	Spouse & Dependent	Living Benefits ⁽¹⁾	Totals
	Life	AD&D	Disability				
State							
2009	13,567	1,152	1,697	9,300	1,116	314	27,146
2010	14,356	893	1,496	10,473	959	162	28,339
2011	16,749	1,285	1,184	9,881	1,241	1,211	31,551
2012	17,137	1,260	1,343	12,040	1,027	1,185	33,992
2013	17,179	284	323	12,894	1,309	252	32,241
2014	13,243	1,314	1,512	14,772	1,091	792	32,724
2015	14,302	45	6	14,180	887	1,111	30,531
2016	19,808	935	(475)	13,897	966	894	36,025
2017	15,337	736	(955)	16,168	842	1,089	33,217
2018	16,223	1,136	(1,341)	17,130	857	1,273	35,278
Local							
2009	12,408	444	1,070	5,552	1,540	240	21,254
2010	16,512	1,513	943	5,954	1,458	1,332	27,712
2011	14,646	1,188	1,215	6,141	1,633	81	24,904
2012	13,704	788	1,175	6,588	1,180	655	24,090
2013	14,456	1,305	6	7,415	1,331	37	24,550
2014	13,195	1,468	1,484	7,337	1,246	928	25,658
2015	16,181	1,225	611	8,705	1,051	1,165	28,938
2016	13,216	743	1,245	8,954	1,202	504	25,864
2017	12,846	486	(245)	8,993	1,031	764	23,875
2018	12,325	993	(1,136)	9,705	1,000	1,035	23,923

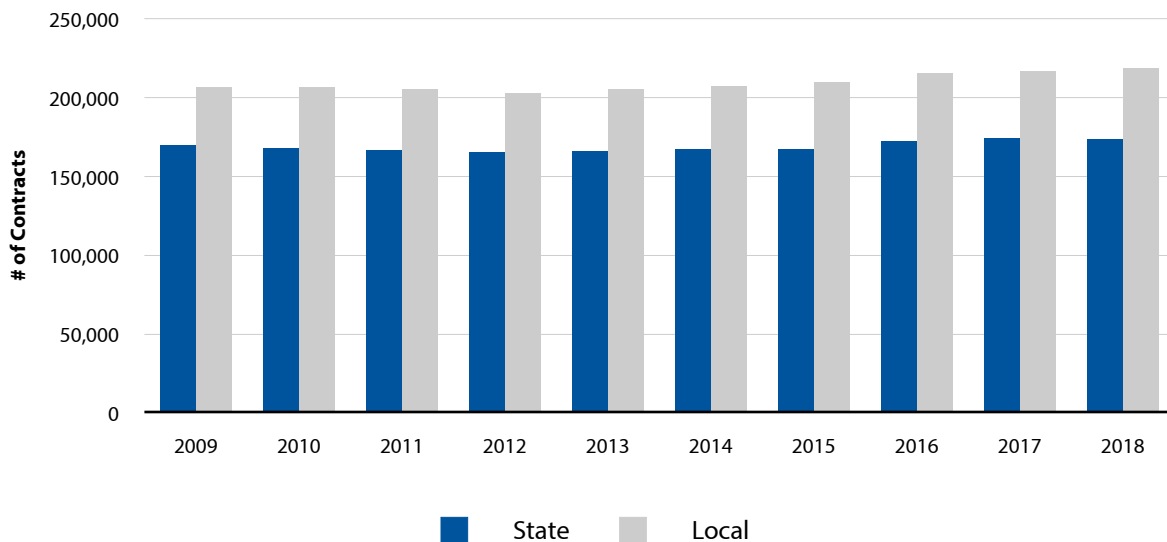
¹ Living Benefits may originate as Pre-Retirement, Post-Retirement or Spouse & Dependent Benefits

Group Life Insurance Paid Claims



Group Life Insurance Contracts and Participants

Year	Pre-Age 65 Insurance			Post-Age 64 Insurance	Spouse & Dependent	Total Contracts	Total Participants
	Basic	Supplemental	Additional				
State							
2009	59,045	42,467	26,959	16,034	25,145	169,650	75,079
2010	58,070	41,840	26,805	16,584	25,008	168,307	74,654
2011	57,673	41,247	26,503	17,847	23,446	166,716	75,520
2012	56,773	40,243	26,288	18,921	23,153	165,378	75,694
2013	56,516	39,940	26,297	20,025	23,203	165,981	76,541
2014	56,652	39,958	26,237	21,168	23,478	167,493	77,820
2015	56,194	39,441	26,120	22,396	23,309	167,460	78,590
2016	58,073	40,135	27,009	23,767	23,393	172,377	81,840
2017	58,470	40,611	27,337	24,973	23,020	174,411	83,443
2018	57,990	39,705	26,928	26,050	23,063	173,736	84,040
Local							
2009	87,616	25,128	35,114	21,787	36,940	206,585	109,403
2010	86,828	25,336	35,257	22,671	36,340	206,432	109,499
2011	85,714	26,155	34,768	23,956	35,036	205,629	109,670
2012	83,863	26,053	33,833	25,573	33,704	203,026	109,436
2013	83,519	26,111	35,166	27,049	33,297	205,142	110,568
2014	83,887	26,288	35,241	28,634	33,117	207,167	112,521
2015	84,087	27,065	35,355	30,209	33,230	209,946	114,296
2016	86,252	28,163	36,194	31,927	32,810	215,346	118,179
2017	85,914	28,258	36,167	33,644	32,786	216,769	119,558
2018	85,838	28,291	36,096	35,525	32,828	218,578	121,363

Life Insurance Contracts




STATISTICAL SECTION

Duty Disability Insurance Statistics

(In Millions)

Year	Employers	Active Participants	Disabilitants	Benefit Payments	Contributions	Average Contribution Rate
2009	502	23,019	839	\$29	\$52	3.89%
2010	504	22,871	938	\$30	\$52	3.91%
2011	503	22,352	957	\$30	\$53	3.98%
2012	501	22,144	964	\$30	\$53	4.02%
2013	512	21,976	973	\$31	\$54	4.06%
2014	506	22,346	990	\$32	\$9	0.70%
2015	497	22,035	1,002	\$33	\$9	0.64%
2016	496	22,223	1,007	\$34	\$4	0.28%
2017	495	22,217	1,014	\$43	\$9	0.61%
2018	493	22,227	1,025	\$25	\$10	0.66%

Duty Disability Insurance Funded Status

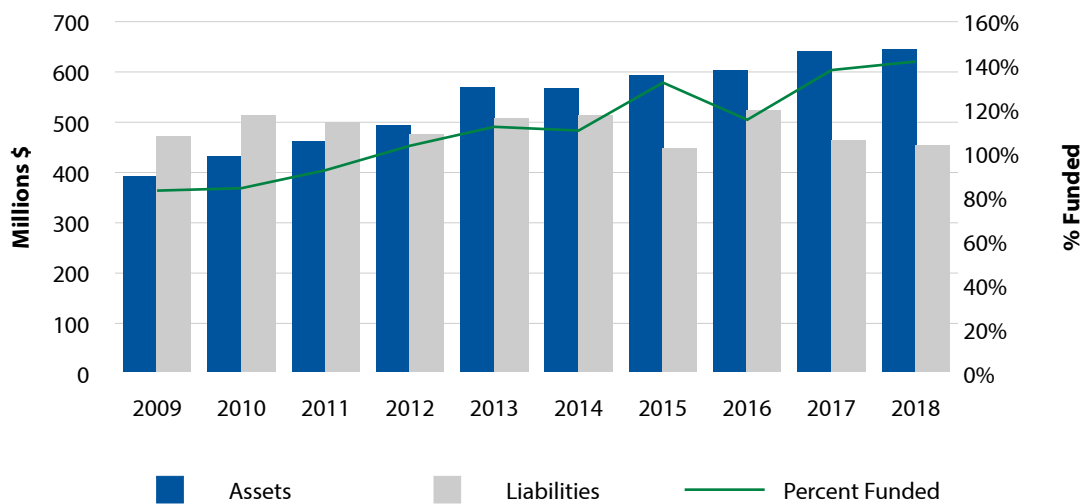
(In Millions)

Year	Assets	Liabilities*	Unfunded (Overfunded) Liability	Percent Funded	Covered Payroll	UAAL as % of Covered Payroll
2009	\$392.4	\$471.7	\$79.3	83.2%	\$1,322.5	6.0%
2010	\$432.1	\$512.8	\$80.7	84.3%	\$1,326.3	6.1%
2011	\$461.6	\$499.0	\$37.4	92.5%	\$1,332.7	2.8%
2012	\$494.1	\$477.0	\$(17.1)	103.6%	\$1,318.3	(1.3)%
2013	\$568.9	\$507.1	\$(61.8)	112.2%	\$1,328.2	(4.7)%
2014	\$567.2	\$513.2	\$(54.0)	110.5%	\$1,370.7	(3.9)%
2015	\$592.8	\$448.1	\$(144.7)	132.3%	\$1,401.3	(10.3)%
2016	\$603.8	\$523.2	\$(80.6)	115.4%	\$1,430.8	(5.6)%
2017 *	\$641.4	\$464.8	\$(176.6)	138.0%	\$1,467.6	(12.0)%
2018	\$645.0	\$454.6	\$(190.4)	141.9%	\$1,508.1	(12.6)%

UAAL = Unfunded Actuarial Accrued Liability

*Beginning in 2017, Duty Disability Insurance is reported as an enterprise fund following GASB Statement No. 10. This resulted in a change in the way the actuarial liability is calculated compared to prior years.

Duty Disability Insurance Funding



Duty Disability Insurance Principal Participating Employers Current Year and Nine Years Ago

Participating Government	2018			2009		
	Covered Employees	Rank	Percentage of Total System	Covered Employees	Rank	Percentage of Total System
State of Wisconsin	8,386	1	37.7%	8,890	1	38.6%
City of Madison	856	2	3.8%	768	2	3.3%
Dane County	445	3	2.0%	449	3	2.0%
City of Green Bay	373	4	1.7%	353	4	1.5%
City of Kenosha	349	5	1.6%	347	5	1.5%
City of Racine	324	6	1.5%	337	6	1.5%
City of Waukesha	217	7	1.0%	215	8	0.9%
City of West Allis	220	8	1.0%	237	9	1.0%
City of Oshkosh	203	9	0.9%	204	11	0.9%
City of Appleton	196	10	0.9%	201	10	0.9%
All Other	<u>10,658</u>		<u>47.9%</u>	<u>11,018</u>		<u>47.9%</u>
Total (493 employers)	<u><u>22,227</u></u>		<u><u>100.0%</u></u>	<u><u>23,019</u></u>		<u><u>100.0%</u></u>



STATISTICAL SECTION

**Duty Disability Insurance
Annuities by Type of Benefit**

Monthly Benefit Amount	Number of Annuitants	Type of Annuity	
		Disability	Beneficiary
\$ 0 - 500	34	34	0
\$ 500 - 1,000	64	47	17
\$ 1,000 - 1,500	74	67	7
\$ 1,500 - 2,000	104	102	2
\$ 2,000 - 2,500	107	99	8
\$ 2,500 - 3,000	90	85	5
\$ 3,000 - 3,500	128	121	7
\$ 3,500 - 4,000	98	95	3
\$ 4,000 - 4,500	93	91	2
\$ 4,500 - 5,000	86	85	1
Over \$ 5,000	88	84	4
Total	966	910	56

* This table excludes annuitants whose benefit is totally offset by other income sources.

**Duty Disability Insurance
Average Monthly Benefit by Years of Service**

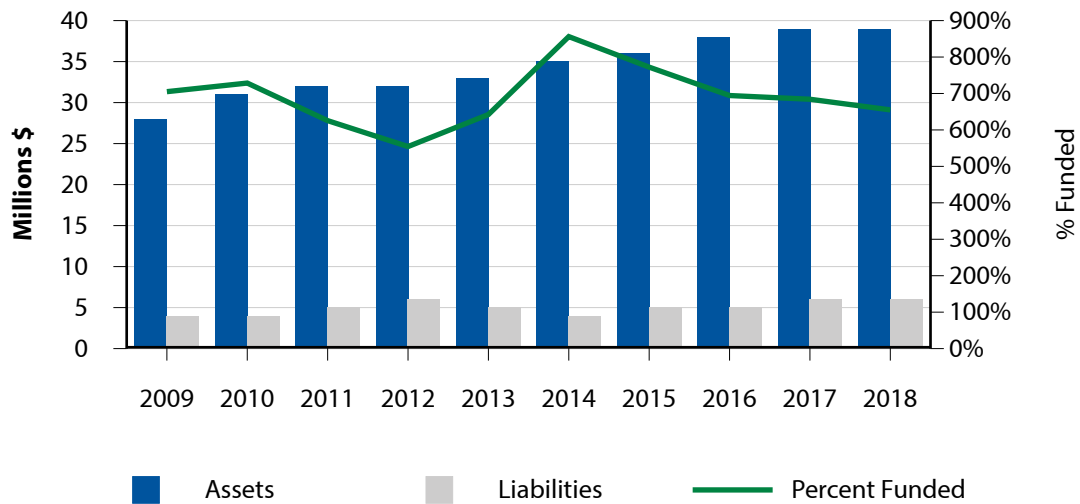
	Years of Service						
	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35
Average Monthly Annuity	\$ 3,360	\$ 3,867	\$ 3,486	\$ 2,968	\$ 2,259	\$ 1,629	\$ 1,986
Average Final Average Salary	\$ 2,638	\$ 3,482	\$ 3,693	\$ 3,967	\$ 4,057	\$ 4,410	\$ 5,204
Number of Annuitants	53	166	207	262	196	76	6

* This table excludes annuitants for whom years of service data is not available

Local Income Continuation Insurance Program Statistics
(In Millions)

Year	Members	New Claims	Assets	Liabilities	Unfunded (Overfunded) Liability	Funded Ratio
Local						
2009	8,229	87	\$28.2	\$4.0	\$(24.2)	705.0%
2010	7,964	75	\$30.6	\$4.2	\$(26.4)	728.6%
2011	7,878	93	\$31.9	\$5.1	\$(26.8)	625.5%
2012	7,593	90	\$31.6	\$5.7	\$(25.9)	554.4%
2013	8,344	130	\$33.4	\$5.2	\$(28.2)	642.3%
2014	8,463	118	\$35.1	\$4.1	\$(31.0)	856.1%
2015	8,597	137	\$36.3	\$4.7	\$(31.6)	772.3%
2016	8,710	149	\$37.5	\$5.4	\$(32.1)	694.4%
2017	8,431	129	\$39.0	\$5.7	\$(33.3)	684.2%
2018	9,434	195	\$39.3	\$6.0	\$(33.3)	655.0%

Local Income Continuation Insurance Funding



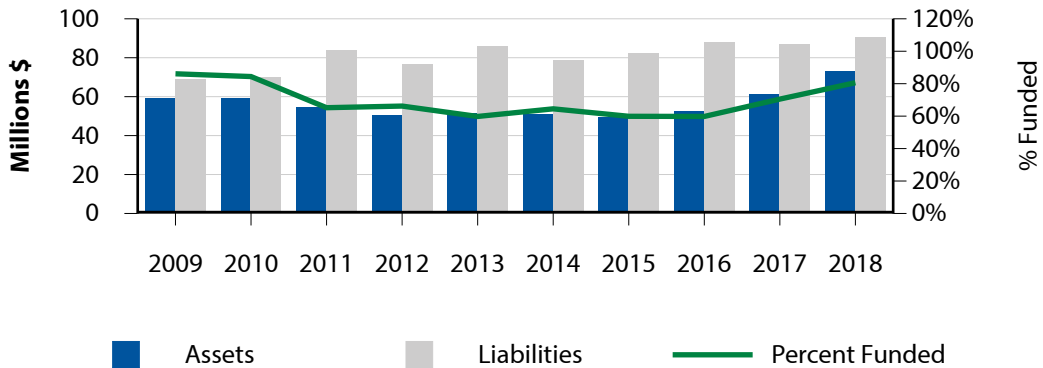


STATISTICAL SECTION

State Income Continuation Insurance Program Statistics
(In Millions)

Year	Members	New Claims	Assets	Liabilities	Unfunded (Overfunded) Liability	Funded Ratio
State						
2009	56,596	1,399	\$59.4	\$69.0	\$9.6	86.1%
2010	56,068	1,415	\$59.3	\$70.3	\$11.0	84.4%
2011	52,573	1,545	\$54.6	\$83.7	\$29.1	65.2%
2012	53,488	1,663	\$50.7	\$76.6	\$25.9	66.2%
2013	51,692	1,648	\$51.4	\$85.9	\$34.5	59.8%
2014	51,379	1,645	\$50.8	\$78.8	\$28.0	64.5%
2015	49,769	1,581	\$49.4	\$82.5	\$33.1	59.9%
2016	49,724	1,434	\$52.6	\$88.0	\$35.4	59.8%
2017	51,295	1,413	\$61.3	\$87.0	\$25.7	70.5%
2018	50,980	1,386	\$72.9	\$90.5	\$17.6	80.6%

State Income Continuation Insurance Funding

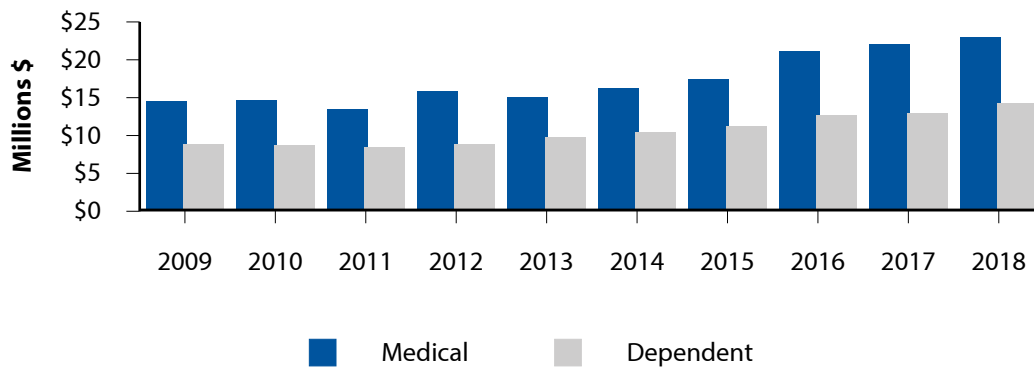


Employee Reimbursement Accounts Program Statistics

Salary Reductions and Claims

Year	Medical					Dependent Care			
	Accounts	Salary Reductions	Claims	Forfeitures	Carryover	Accounts	Salary Reductions	Claims	Forfeitures
2009	10,975	14,455,388	14,243,697	211,691	0	2,211	8,948,891	8,860,082	88,810
2010	11,428	14,690,079	14,496,161	193,918	0	2,166	8,737,997	8,668,217	69,780
2011	10,723	13,498,149	13,373,269	124,880	0	2,133	8,476,558	8,420,493	56,065
2012	12,373	15,948,452	15,828,849	119,603	0	2,245	8,911,658	8,847,562	64,096
2013	12,956	15,149,278	14,922,337	226,941	0	2,469	9,750,422	9,675,871	74,551
2014	13,370	16,163,180	15,911,661	251,519	0	2,672	10,496,707	10,398,333	98,374
2015	14,496	17,522,880	17,363,053	159,827	922,961	2,964	11,258,100	11,063,383	194,717
2016	17,562	21,212,300	20,278,280	235,481	1,621,500	3,284	12,668,920	12,440,766	228,154
2017	19,102	22,051,502	21,521,725	281,232	1,870,045	3,343	12,996,661	12,761,819	234,842
2018	20,097	23,022,646	22,131,963	511,974	2,248,754	3,648	14,255,991	13,915,793	340,198

ERA Salary Reductions



ERA Administrative Funding

Year	Receipts				Expenses			Surplus / (Deficit)
	Fees	Interest	Forfeitures	Totals	Administrator	State	Total	
2009	409,931	28,172	300,500	738,603	603,121	123,055	726,176	12,427
2010	430,071	9,449	263,698	703,218	709,032	117,967	826,999	(123,781)
2011	427,725	10,435	180,945	619,105	681,803	111,024	792,827	(173,722)
2012	418,251	7,260	183,699	609,210	753,307	226,690	979,997	(370,787)
2013	500,554	3,910	301,492	805,956	786,888	230,327	1,017,215	(211,259)
2014	671,414	3,685	349,893	1,024,992	847,955	388,875	1,236,830	(211,838)
2015	667,768	5,371	354,544	1,027,683	516,225	246,118	762,343	265,340
2016	536,844	8,647	463,635	1,009,126	592,241	398,038	990,279	18,847
2017	566,568	67,035	516,074	1,149,677	644,467	277,945	922,412	227,265
2018	563,894	115,912	852,173	1,531,979	783,699	293,648	1,077,347	454,632



STATISTICAL SECTION

Administrative Expense Statistics

Administrative Expenses (In Thousands)

Year	ETF Expenses #	Investment Expenses	Third Party Administrator Contracts								Deferred Comp	Total Administration
			ERA	Commuter Benefits	Health	Dental*	Wellness^	Pharmacy	ICI	WRS		
2009	28,449	230,129	603	94	2,244	0	0	9,717	1,348	1,764	2,548	277,012
2010	25,446	245,806	709	79	2,461	0	0	13,379	1,525	1,616	2,659	295,943
2011	28,775	241,413	682	77	2,264	0	0	9,056	1,449	1,692	2,639	287,935
2012	31,500	290,608	753	73	2,235	0	0	12,413	1,455	1,777	2,160	343,630
2013	33,514	362,011	787	87	2,286	0	0	8,756	1,419	1,881	2,484	413,526
2014	36,355	356,811	848	94	2,874	0	0	10,700	5,026	13,189	2,890	426,916
2015	32,795	350,036	516	60	2,938	0	0	10,779	1,508	3,104	3,126	413,579
2016	36,647	391,427	592	55	3,149	1,190	0	10,683	2,380	5,571	1,999	452,812
2017	43,052	487,384	645	22	3,342	1,212	7,738	10,593	1,231	2,170	2,966	560,355
2018	45,949	691,202	784	35	1,318	1,250	8,013	9,331	2,146	881	3,936	764,845

*This data unavailable prior to 2016

^This data unavailable prior to 2017

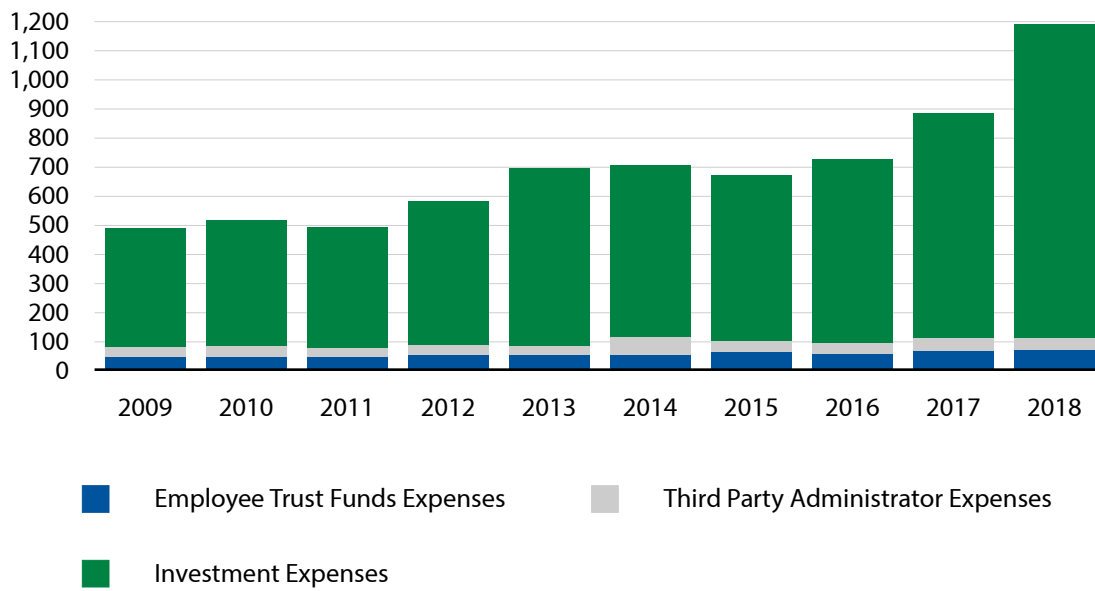
Beginning in 2017, ETF Expenses include the change in the actuarial accrued liability related to loss adjustment expense for the Duty Disability program

Administrative Expenses per Participant

Year	Participants	Employee Trust Funds #		Investment Expenses		Third Party Administrators		Total Administration	
		Amount (\$000's)	Per Participant	Amount (\$000's)	Per Participant	Amount (\$000's)	Per Participant	Amount (\$000's)	Per Participant
2009	566,317	28,565	50.4	230,129	406.4	18,318	32.3	277,012	489.1
2010	572,219	27,709	48.4	245,806	429.6	22,428	39.2	295,943	517.2
2011	581,893	28,664	49.3	241,413	414.9	17,859	30.7	287,936	494.8
2012	590,461	32,154	54.5	290,608	492.2	20,867	35.3	343,629	582.0
2013	594,605	33,817	56.9	362,011	608.8	17,699	29.8	413,527	695.5
2014	603,983	34,484	57.1	356,811	590.8	35,621	59.0	426,916	706.8
2015	613,834	41,512	67.6	350,036	570.2	22,031	35.9	413,579	673.8
2016	622,123	35,766	57.5	391,427	629.2	25,619	41.2	452,812	727.8
2017	632,802	43,052	68.0	487,384	770.2	29,919	47.3	560,355	885.5
2018	641,892	45,949	71.6	691,202	1,076.8	27,694	43.1	764,845	1,191.5

Beginning in 2017, ETF Expenses include the change in the actuarial accrued liability related to loss adjustment expense for the Duty Disability

Administrative Expenses per Participant



ACTUARIAL SECTION

ACTUARIAL SECTION



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July 11, 2019

Employee Trust Funds Board
 c/o ETF
 P.O. Box 7931
 Madison, Wisconsin 53707-7931

**Re: Wisconsin Retirement System (WRS)
 Actuarial Valuation as of December 31, 2018**

Ladies and Gentlemen:

The basic financial objective of the WRS is to establish and receive contributions which:

- When expressed in terms of percents of active member payroll, will remain approximately level from generation-to-generation; and
- When combined with present assets and future investment return, will be sufficient to meet the financial obligations of WRS to present and future retirees and beneficiaries.

The purpose of the valuation was to determine contribution rates for the 2020 fiscal year. The valuation should not be relied upon for any other purpose. The valuation process develops contribution rates that are sufficient to fund the plan’s normal cost (i.e., the costs assigned by the valuation method to the year of service about to be rendered), as well as to fund unfunded actuarial accrued liabilities as a level percent of active member payroll over a finite period. The valuations were completed based upon population data, asset data, and plan provisions in effect on December 31, 2018. Note that GRS also prepares separate financial reporting information for accounting purposes.

The valuation was based upon information, furnished by the plan’s administrative staff, concerning Retirement System benefits, financial transactions, and individual members, terminated members, retirees and beneficiaries. We checked the data for internal and year-to-year consistency, but did not audit the data. As a result, we do not assume responsibility for the accuracy or completeness of the data provided.

The actuary prepared the following supporting schedules for the Comprehensive Annual Financial Report:

- Percent Increase in Salaries
- Single Life Retirement Values
- Rates of Retirement for Those Eligible to Retire
- Early Retirement Pattern
- Percentage of Active Members Withdrawing (Select and Ultimate)
- Percentage of Active Members becoming Disabled
- Solvency Test
- Summary of Accrued and Unfunded Accrued Liabilities

Employee Trust Funds Board
 July 11, 2019
 Page 2

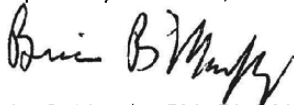
Assets are valued on a statutory market related basis that recognizes assumed return fully each year and spreads each year's gain or loss above or below assumed return over a closed five-year period.

Actuarial valuations are based upon assumptions regarding future activity in specific risk areas including, but not limited to, the rates of investment return and payroll growth, eligibility for the various classes of benefits, and longevity among retired lives. The Board adopts these assumptions after considering the advice of the actuary and other professionals. The assumptions and the methods are in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Each actuarial valuation takes into account all prior differences between actual and assumed experience in each risk area and adjusts the contribution rates as needed. The December 31, 2018 valuations were based upon assumptions that were recommended in connection with a study of experience covering the 2015-2017 period. Future actuarial measurements may differ significantly from those presented in the valuations due to such factors as experience differing from that anticipated by actuarial assumptions, changes in plan provisions, actuarial assumptions/methods or applicable law. Due to the limited scope of the assignment, we did not perform an analysis of the potential range of future measurements. Readers desiring a more complete understanding of the actuarial condition of the WRS are encouraged to obtain and read the complete valuation reports. The material in the Actuarial Section and Financial Section of this CAFR contains some, but not all, of the information in the valuation reports.

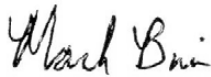
Based upon the results of the December 31, 2018 valuations, we are pleased to report to the Board that the Wisconsin Retirement System is meeting its basic financial objective and continues to operate in accordance with actuarial principles of level percent of payroll financing.

Brian B. Murphy, Mark Buis, and James D. Anderson are Members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

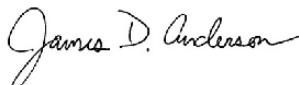
Respectfully submitted,



Brian B. Murphy, FSA, EA, FCA, MAAA, PhD



Mark Buis, FSA, EA, FCA, MAAA



James D. Anderson, FSA, EA, FCA, MAAA

BBM/MB/JDA:dj





ACTUARIAL SECTION

WISCONSIN RETIREMENT SYSTEM
ACTUARIAL STATEMENT OF ASSETS AND LIABILITIES
(In Millions)

	December 31, 2018	December 31, 2017	Increase (Decrease)
Assets and Employer Obligations			
Net Assets			
Cash, Investments & Receivables			
Less: Payables & Suspense Items			
Core Division	\$ 94,304.5	\$ 92,730.6	\$ 1,573.9
Variable Division	7,106.0	8,071.9	(965.9)
Totals	101,410.5	100,802.5	608.0
Obligations of Employers			
Unfunded Accrued Liability	11.8	16.8	(5.0)
Total Assets	\$ 101,422.3	\$ 100,819.3	\$ 603.0
Reserves and Surplus			
Reserves			
Actuarial Present Value of Projected Benefits Payable to Terminated Vested Participants and Active Members:			
Member Normal Contributions	\$ 18,254.5	\$ 18,237.3	\$ 17.2
Member Additional Contributions	201.1	197.1	4.0
Employer Contributions	22,723.8	23,160.0	(436.2)
Total Contributions	41,179.4	41,594.4	(415.0)
Actuarial Present Value of Projected Benefits Payable to Current Retirees and Beneficiaries:			
Core Annuities	56,629.3	53,590.0	3,039.3
Variable Annuities	4,207.6	3,682.1	525.5
Total Annuities	60,836.9	57,272.1	3,564.8
Total Reserves	102,016.3	98,866.5	3,149.8
Surplus			
Core Annuity Reserve Surplus	(135.5)	1,310.0	(1,445.5)
Variable Annuity Reserve Surplus	(458.5)	642.8	(1,101.3)
Total Surplus	(594.0)	1,952.8	(2,546.8)
Total Reserves and Surplus	\$ 101,422.3	\$ 100,819.3	\$ 603.0

SUMMARY OF WRS BENEFIT PROVISIONS

Normal Retirement Eligibility

The age a participant becomes eligible for an unreduced age and service annuity is:

General		Protective Occupation		Executive & Elected [^]	
Age	Service	Age	Service	Age	Service
65	Any *	54	Any*	62	Any*
57	30	53	25	57	30

**Participants first employed after 1989 and terminated before April 24, 1998 must have creditable service in five calendar years. Participants first employed after June 30, 2011 must have five years of creditable service.*

^These conditions apply to those people hired on or before December 31, 2016. For others, the General eligibility conditions apply.

Normal Retirement Annuity

The age and service annuity payable at Normal Retirement Age is based on Final Average Earnings (FAE) and Creditable Service (CS) as follows:

Multiplier for Service Rendered			Group
Before 2000	Between 2000 and 2011	After 2011	
2.165%	2.0%	1.6%	Executive group and elected officials
2.165%	2.0%	2.0%	Protective occupation participants covered by Social Security
2.665%	2.5%	2.5%	Protective occupation participants not covered by Social Security
1.765%	1.6%	1.6%	All other participants

FAE is generally the average of the three highest years of earnings preceding retirement (July 1 - June 30 for teachers, educational support staff, and judges; calendar year for others). These years do not have to be consecutive. For legislators and state constitutional officers who are ineligible to receive pay increases during their term, FAE is the statutory rate of earnings at termination.

Maximum formula annuity is 85% of FAE for protective occupation participants not covered by Social Security, 65% of FAE for protectives covered by Social Security, and 70% for all other participants. If greater than the formula amount, an annuity equal to the actuarial equivalent of two times the required accumulated contributions is paid in lieu of the formula amount.

Early Retirement: Any participant who has attained age 55 and any protective occupation participant who has attained age 50 may apply for an early retirement annuity. The benefit is reduced 0.4% for each month that the annuity effective date precedes the Normal Retirement Age. For non-protective participants terminating after June 30, 1990, the 0.4% is reduced for months after the attainment of age 57 and before the annuity effective date by .001111% for each month of creditable service.

Voluntary Termination Before Immediate Benefit Eligibility: A participant who terminates service before being eligible for a retirement annuity may either (1) receive a refund of accumulated contributions, or (2) leave contributions on deposit and apply for a retirement annuity on or after the minimum retirement age based upon age and accrued service at time of termination.



ACTUARIAL SECTION

Post-Retirement Adjustments: Annuities are increased annually if the investment income credited to retired life funds is in excess of the assumed rate (presently 5%), other plan experiences are within projected ranges, and the resulting adjustment would be at least 0.5% (2.0% for the variable fund).

Previously granted adjustments can be revoked if the investment income is insufficient to support these previously granted increases. However, a Core Fund annuity cannot be reduced below the amount granted upon inception. Slightly different provisions apply to variable annuities.

Disability Benefits: Generally, disability means the inability to engage in any substantial gainful activity by reason of a medically determinable physical or mental impairment which can be expected to result in death or to be of long-continued and indefinite duration. Disability applicants must be participating employees who are under normal retirement age, have not already taken a WRS benefit and who meet a service requirement.

For this purpose normal retirement age is:

- 65 for general employees and executives and elected officials hired after December 31, 2016
- 62 for executives and elected officials hired on or before December 31, 2016
- 53 for protective occupation employees with 25 or more years of creditable service
- 54 for other protective occupation employees

The service requirement is that during the seven years preceding application the individual must have earned:

- At least 6 months of service credit in five of those years or
- A total of five years of service credit

The service credit requirement may be waived if the disability is work related. Protective occupation employees who become disabled between the ages of 50 and 55, who have at least 15 years of service, and who can no longer perform the duties of their position may apply for a special disability benefit until age 55.

Disability Amount: The disability benefit is the WRS formula benefit based upon service projected to normal retirement age as described above, without regard to the early retirement reduction.

	WRS Plan	Long-Term Disability Insurance (LTDI) Plan
Participants Covered	- Participants continuously employed by a WRS employer since 10/15/92, who applied for disability benefits prior to 1/1/18, and did not elect LTDI coverage. - All participants who apply for disability benefits after 12/31/17.	- Participants who were eligible for WRS disability, but elected LTDI coverage and applied for disability benefits prior to 1/1/18. - Participants who were not eligible for WRS disability and applied for an LTDI benefit prior to 1/1/18.
Benefit to age 65*	WRS formula benefit based on service projected to normal retirement age.	40% of FAE for participants covered by Social Security; 50% of FAE for non-covered participants who cannot qualify for Social Security disability benefits.
Benefit at age 65*	Continuation of pre-65 amount.	WRS benefit accrued to date of disability plus 7% of FAE money purchase benefit during disability period, both of which are adjusted in accordance with the dividend rate.

* Conversion age is later for participants becoming disabled after age 61.

Death In Service: (a) Prior to age 50 for protective participants and age 55 for others, the benefit is the equivalent of twice the accumulated employee required and all additional contributions and employer amounts contributed prior to 1974 for teachers or 1966 for others. (b) After age 50 for protective participants, and age 55 for others, the benefit is the amount that would have been paid if participant had retired and

elected the 100% survivor option. The benefit is payable to any natural living person. If there is no eligible beneficiary, a refund of contributions is paid to the estate.

Interest credits: For years after 1999, and for people with some active service after 1999, participant core accounts (including the variable at core accounts) are credited with interest at the full (core) effective rate. For others, accounts are credited with interest as shown below:

Date of Participation	Rate Credited For Purpose of	
	Money Purchase Minimum	Refunds
Prior to 1982	Core effective rate	Core effective rate
January 1, 1982 and later and terminated prior to January 1, 2000	5%	3%
January 1, 1982 and later and not terminated prior to January 1, 2000	Core Effective Rate	Core Effective Rate

Interest is credited on member Variable Fund accounts based on the prior year ending account balance and the Variable effective rate.

Interest on both Core and Variable member additional deposit accounts is based on the prior year ending account balance and the appropriate effective rate.

Contribution Rates: The financial objective of the WRS is to establish and receive contributions that will remain level from year to year and decade to decade.

Effective June 28, 2011, the employee contribution for general category employees, teachers and executives and elected officials is equal to one-half the actuarially required contribution. The employee contribution for protective occupations is the same percentage as general employees. The employer is responsible for the remainder of the actuarially determined contribution. The employer may not pay any portion of the employee contribution unless provided for by a pre-existing collective bargaining agreement.

Normal form of Benefit: The normal form of benefit is a straight life annuity with no death benefits. Optional forms of benefit which are actuarially reduced are listed below:

- A life annuity with 60 or 180 monthly payments guaranteed.
- A joint survivorship annuity with 75% continued to beneficiary.
- A joint survivorship annuity with 100% continued to beneficiary.
- A joint survivorship annuity reduced 25% upon either your death or your beneficiary's death.
- A joint survivorship annuity with 100% continued to beneficiary combined with 180 monthly payments guaranteed.

For formula benefit calculations, optional forms are calculated at the lower of the current age or age 62 (Normal Retirement Age for Protective occupations). If a retiree (and beneficiary if in receipt of a joint survivorship annuity) dies prior to receiving benefits which, in total, are at least equal to the members contributions, a "residual refund" for the difference is paid.

Vesting: Participants hired prior to July 1, 2011 vest immediately. After July 1, 2011, participants vest after five years of service.

ACTUARIAL METHOD AND ASSUMPTIONS USED IN WRS VALUATIONS

The principal areas of risk assumption are:

1. Long-term rates of investment income likely to be generated by the assets of the retirement fund. This includes both realized and unrealized appreciation and depreciation.
2. Rates of mortality among participants, retirees and beneficiaries.
3. Rates of withdrawal of active participants.
4. Rates of disability among participants.
5. Patterns of salary increases to be experienced by participants.
6. The age and service distribution of actual retirements.

In an actuarial valuation, the actuary projects the monetary value of each assumption for each distinct experience group, for the next year and for each year over the next half-century or longer.

Once actual risk experience has occurred and been observed, it will not coincide exactly with assumed risk experience, regardless of the skill of the actuary, the completeness of the data, and the precision of the calculations. Each valuation provides a complete recalculation of assumed future risk experience and takes into account all past differences between assumed and actual risk experience. The result is a continual series of small adjustments to the computed contribution rate. From time to time it becomes necessary to adjust the package of risk measurements to reflect basic experience trends -- but not random year-to-year fluctuations.

The actuarial funding method used in the valuation was the Frozen Initial Liability (FIL) method. Under this method, the amount of remaining unfunded actuarial accrued liabilities at any valuation date is affected only by the monthly amortization payments, compound interest, the added liability created by new employer units, and any added liabilities caused by changes in benefit provisions.

» Economic Assumptions

The **Investment Return Assumption** for plan assets is 7.0%.

For determining plan liabilities, the **Discount Rate** is 5.0% for retired participants, 5.0% for active and inactive participants following retirement, and 7.0% for active and inactive participants prior to their retirement. A valuation performed assuming a 5.4% discount rate for all participants at all stages of life, reproduces the results of an actuarial valuation using the 5.0% post-retirement and 7.0% pre-retirement assumptions. Thus, it can be said that the net discount rate assumed in the valuations was 5.4% per year, compounded annually (net after administrative expenses).

The **Wage Inflation Rate** assumed in this valuation was 3.0% per year. The wage inflation rate is defined to be the portion of total pay increases for an individual that are due to macroeconomic forces, including productivity, price inflation, and labor market conditions. The wage inflation rate does not include pay changes related to individual merit and seniority effects.

No specific **Price Inflation** assumption is required to perform this valuation. The price inflation assumption used to evaluate the investment return assumption is 2.5%.

The assumed **Real Rate of Return** over wage inflation is defined to be the portion of total investment return that is more than the assumed total wage growth rate. Considering other economic assumptions, the 7.0% pre-retirement investment return rate translates to an assumed real rate of return over wage inflation of 4.0%. The assumed real rate of return over price inflation is 4.5% considering an inflation assumption of 2.5%.

Merit and Longevity pay increase assumptions for individual active participants are shown for sample services below. An additional 3.0% recognizes wage inflation, including price inflation, productivity increases, and other macroeconomic forces.

% Merit and Longevity Increase Next Year						
Service	General	University Teachers	Public School Teachers	Protective Occupation With SS	Protective Occupation Without SS	Executive/Elected
1	3.5%	3.0%	5.6%	4.8%	5.5%	2.5%
2	3.5%	3.0%	5.6%	4.8%	5.5%	2.5%
3	3.1%	2.9%	5.2%	4.1%	4.7%	2.0%
4	2.8%	2.8%	4.7%	3.5%	3.8%	1.6%
5	2.5%	2.7%	4.3%	2.8%	3.0%	1.1%
10	1.5%	2.2%	2.6%	1.1%	0.9%	0.2%
15	1.1%	1.7%	1.4%	0.8%	0.5%	0.2%
20	0.9%	1.2%	0.6%	0.7%	0.4%	0.2%
25	0.6%	0.9%	0.3%	0.6%	0.3%	0.2%
30	0.4%	0.7%	0.2%	0.5%	0.2%	0.2%

» *Decrement Probabilities*

The Active Member Population is assumed to remain constant. For purposes of financing the unfunded liabilities, total payroll is assumed to grow at the wage inflation rate of 3.00% per year.

The mortality table used to measure mortality for retired participants was the Wisconsin 2018 Mortality Table. The rates in this table were based on actual WRS experience adjusted for future mortality improvements using the MP-2018 fully generated improvement scale (multiplied by 60%). This mortality assumption was adopted by the Board in connection with the 2015-2017 Experience Study. Sample retirement values from this table are shown below. This assumption is used to measure the probabilities of participants dying before retirement and the probabilities of each benefit payment being made after retirement.



ACTUARIAL SECTION

Single Life Retirement Values (Retired Participants)

Wisconsin 2018 Mortality Table With 5% Interest

Sample Attained Ages	Present Value of \$1 Monthly for Life*		Future Life Expectancy (years)*		Mortality Rates*	
	Males	Females	Males	Females	Males	Females
40	\$ 212.90	\$ 217.57	45.2	48.2	0.098%	0.061%
45	\$ 204.56	\$ 210.20	40.2	43.1	0.123%	0.092%
50	\$ 194.06	\$ 201.03	35.2	38.1	0.162%	0.134%
55	\$ 181.39	\$ 189.85	30.3	33.1	0.378%	0.242%
60	\$ 167.14	\$ 176.59	25.7	28.3	0.544%	0.351%
65	\$ 150.16	\$ 160.61	21.3	23.7	0.832%	0.526%
70	\$ 130.92	\$ 141.58	17.1	19.2	1.352%	0.878%
75	\$ 109.41	\$ 119.90	13.2	14.9	2.276%	1.590%
80	\$ 86.66	\$ 96.54	9.7	11.1	4.182%	2.990%
85	\$ 65.27	\$ 73.38	6.8	7.8	7.818%	6.005%

*With a fully generational mortality table, the mortality rate depends on the year of birth. Later years of birth will correspond to a lower mortality rate at a given age.

The values shown above are for non-disabled participants in 2018. For disabled participants, the following table is used:

Single Life Retirement Values (Disabled Participants)

Wisconsin 2018 Mortality Table With 5% Interest

Sample Attained Ages	Present Value of \$1 Monthly for Life		Future Life Expectancy (years)		Mortality Rates*	
	Males	Females	Males	Females	Males	Females
40	\$ 199.47	\$ 207.75	37.7	41.7	0.141%	0.101%
45	\$ 187.81	\$ 198.03	32.7	36.7	0.234%	0.153%
50	\$ 174.32	\$ 186.22	28.0	31.8	0.467%	0.272%
55	\$ 158.54	\$ 172.11	23.4	27.0	0.632%	0.398%
60	\$ 140.06	\$ 155.27	19.0	22.4	1.096%	0.612%
65	\$ 119.73	\$ 135.60	15.0	17.9	1.777%	1.051%
70	\$ 97.72	\$ 113.56	11.3	13.8	3.073%	1.908%
75	\$ 75.52	\$ 90.06	8.1	10.1	5.841%	3.608%
80	\$ 55.90	\$ 67.48	5.7	7.1	10.766%	7.371%
85	\$ 39.92	\$ 49.35	3.8	4.9	17.368%	12.711%

*With a fully generational mortality table, the mortality rate depends on the year of birth. Later years of birth will correspond to a lower mortality rate at a given age.

Active Participant Mortality Rates

The active participant mortality assumption is used to measure the probability of participants becoming deceased while in service.

Sample Attained Ages	Mortality Rates*	
	Males	Females
20	0.000134	0.000081
25	0.000164	0.000090
30	0.000211	0.000122
35	0.000371	0.000220
40	0.000489	0.000305
45	0.000617	0.000460
50	0.000810	0.000672
55	0.001889	0.001209
60	0.002720	0.001755
65	0.004158	0.002634
70	0.006759	0.004392
75	0.011382	0.007958
80	0.020907	0.014964

**With a fully generational mortality table, the mortality rate depends on the year of birth. Later years of birth will correspond to a lower mortality rate at a given age.*



ACTUARIAL SECTION

Rates of Retirement for Those Eligible to Retire—Normal Retirement Pattern

% Retiring Next Year

Age	General		Public School		University		Protective*		Exec.& Elected
	Male	Female	Male	Female	Male	Female	With S.S.	W/O S.S.	
50	0%	0%	0%	0%	0%	0%	6%	2%	0%
51	0	0	0	0	0	0	8	4	0
52	0	0	0	0	0	0	10	4	0
53	0	0	0	0	0	0	25	17	0
54	0	0	0	0	0	0	20	23	0
55	0	0	0	0	0	0	20	25	0
56	0	0	0	0	0	0	20	25	0
57	19	17	33	27	12	15	20	25	8
58	19	17	29	27	12	15	20	33	8
59	19	17	24	27	12	10	20	33	8
60	19	17	25	27	12	12	20	20	20
61	19	17	25	27	12	16	20	20	12
62	26	27	35	37	12	15	30	40	12
63	29	27	32	30	12	20	30	40	12
64	28	27	29	28	12	20	30	40	15
65	30	30	29	37	15	20	40	40	15
66	35	35	35	39	20	24	40	100	15
67	30	30	33	33	20	20	40	100	15
68	19	25	27	30	18	17	40	100	15
69	19	25	23	28	16	17	40	100	20
70	19	25	25	38	20	18	100	100	20
71	19	20	20	20	18	18	100	100	20
72	19	20	15	20	16	18	100	100	20
73	19	20	15	20	16	15	100	100	20
74	19	20	15	20	16	15	100	100	20
75	100	100	100	100	100	100	100	100	100

*Includes reduced retirements for protective with 20+ years of service.

Rates of Retirement for Those Eligible to Retire—Early Retirement Pattern

% Retiring Next Year

Age	General		Public School		University		Exec.& Elected
	Male	Female	Male	Female	Male	Female	
55	8.0%	7.0%	13.0%	12.0%	3.0%	5.0%	3.0%
56	8.0	7.0	13.0	12.0	3.0	5.0	3.0
57	4.8	5.5	12.0	12.0	3.0	5.0	3.0
58	5.7	6.5	13.0	12.0	3.0	5.0	3.0
59	6.8	7.0	14.0	13.0	4.0	5.0	3.0
60	8.5	9.5	14.0	17.0	5.5	9.0	5.0
61	9.0	9.5	15.0	17.0	5.5	9.0	5.0
62	17.0	16.0	21.0	23.0	7.4	12.0	2.0
63	18.0	18.0	21.0	23.0	7.4	12.0	2.0
64	17.0	18.0	21.0	23.0	10.0	15.0	2.0

The assumed rates of separation from employment prior to service retirement due to disability and other causes are shown below for sample ages. For other terminations it was assumed that a percentage, depending on age of participants terminating after age 35 with five or more years of service, will leave their contributions on deposit and be paid a benefit at normal retirement age and that the remaining participants would take a separation benefit. The percentage taking a separation benefit is 25% at age 35, grading downward to 0% at retirement eligibility. All participants terminating prior to normal retirement age with less than five years of service were assumed to take a separation benefit.



ACTUARIAL SECTION

Assumed Termination Rates
% of Active Participants Terminating

Age & Service	Protective		Public Schools		University		Exec. & Elected	Other		
	With S.S.	W/O S.S.	Male	Female	Male	Female		Male	Female	
0	16.0%	4.0%	18.5%	15.0%	16.0%	14.5%	14.0%	17.0%	20.0%	
1	9.5	3.5	11.0	11.0	15.0	14.0	13.0	12.3	15.0	
2	6.0	1.5	8.0	8.0	13.0	13.0	12.0	9.3	11.5	
3	5.0	1.3	6.5	6.0	11.0	10.0	10.0	7.6	10.0	
4	4.5	1.2	5.5	5.5	9.0	9.5	10.0	7.5	9.5	
5	4.0	1.1	4.0	5.0	8.0	9.0	5.0	5.8	7.8	
6	3.8	1.0	3.5	4.0	7.5	7.0	5.0	4.8	7.0	
7	3.5	0.9	3.2	3.7	6.0	6.0	5.0	4.7	6.0	
8	3.0	0.8	3.0	3.3	5.5	5.0	5.0	4.1	5.7	
9	2.5	0.7	2.8	3.0	5.0	4.0	5.0	4.0	5.3	
25	10 & Over	2.5	0.7	2.5	2.5	5.0	4.0	5.0	4.0	5.0
30		2.3	0.7	2.2	2.4	4.7	4.0	5.0	3.7	4.7
35		2.0	0.7	1.8	1.9	4.2	4.0	5.0	3.0	3.9
40		1.6	0.6	1.5	1.5	3.4	3.7	5.0	2.4	3.2
45		1.4	0.6	1.4	1.3	2.7	3.2	4.7	2.0	2.7
50		1.2	0.5	1.3	1.2	2.2	2.7	4.2	1.7	2.2
55		1.2	0.5	1.3	1.2	2.0	2.5	4.0	1.6	2.0
60		1.2	0.5	1.3	1.2	2.0	2.5	4.0	1.6	2.0

Disability Rates
% of Active Participants Becoming Disabled

Age	Protective		Public Schools		University		Exec. & Elected		General	
	With S.S.	W/O S.S.	Male	Female	Male	Female	Male	Female	Male	Female
20	0.01%	0.03%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
25	0.01	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
30	0.01	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02
35	0.01	0.03	0.00	0.01	0.00	0.02	0.01	0.01	0.01	0.02
40	0.02	0.04	0.01	0.01	0.00	0.02	0.01	0.01	0.02	0.03
45	0.02	0.08	0.02	0.04	0.01	0.02	0.01	0.01	0.04	0.04
50	0.04	0.46	0.06	0.07	0.01	0.04	0.02	0.02	0.09	0.06
55	0.61	0.34	0.12	0.10	0.04	0.06	0.09	0.09	0.17	0.12
60	1.02	0.10	0.19	0.15	0.06	0.09	0.11	0.11	0.30	0.16

Summary of Member Valuation Data
General Participants and Teachers

Valuation Date	Participating Employers	Active Participants	Annual Payroll (In Millions)	Annual Average Pay (\$)	% Increase In Average Pay
12/31/2009	1,438	240,401	11,098.1	46,165	2.1%
12/31/2010	1,444	239,959	11,195.4	46,655	1.1%
12/31/2011	1,450	232,518	10,947.0	47,080	0.9%
12/31/2012	1,450	231,765	11,041.0	47,639	1.2%
12/31/2013	1,450	231,973	11,270.0	48,584	2.0%
12/31/2014	1,454	232,433	11,574.0	49,794	2.5%
12/31/2015	1,457	232,646	12,016.6	51,652	3.7%
12/31/2016	1,463	233,693	12,163.8	52,050	0.8%
12/31/2017	1,473	233,845	12,364.7	52,876	1.6%
12/31/2018	1,479	234,367	12,680.7	54,106	2.3%

Executive Group and Elected Officials

Valuation Date	Participating Employers	Active Participants	Annual Payroll (In Millions)	Annual Average Pay (\$)	% Increase In Average Pay
12/31/2009	258	1,427	101.0	70,786	0.7%
12/31/2010	254	1,418	101.2	71,394	0.9%
12/31/2011	257	1,393	98.6	70,802	(0.8)%
12/31/2012	249	1,408	104.1	73,968	4.5%
12/31/2013	249	1,397	106.0	76,125	2.9%
12/31/2014	251	1,401	109.0	77,998	2.5%
12/31/2015	254	1,396	112.2	80,372	3.0%
12/31/2016	252	1,369	111.3	81,300	1.2%
12/31/2017	245	1,351	110.8	82,013	0.9%
12/31/2018	241	1,317	112.6	85,497	4.2%

Protective with Social Security

Valuation Date	Participating Employers	Active Participants	Annual Payroll (In Millions)	Annual Average Pay (\$)	% Increase In Average Pay
12/31/2009	502	20,205	1,124.1	55,636	1.4%
12/31/2010	504	20,019	1,124.7	56,184	1.0%
12/31/2011	503	19,610	1,119.0	57,065	1.6%
12/31/2012	501	19,353	1,105.1	57,104	0.1%
12/31/2013	512	19,290	1,121.0	58,127	1.8%
12/31/2014	506	19,533	1,151.0	58,916	1.4%
12/31/2015	497	19,301	1,190.9	61,701	4.7%
12/31/2016	496	19,468	1,217.4	62,533	1.3%
12/31/2017	495	19,465	1,248.4	64,136	2.6%
12/31/2018	499	19,450	1,282.7	65,949	2.8%



ACTUARIAL SECTION

Protective Without Social Security

Valuation Date	Participating Employers	Active Participants	Annual Payroll (In Millions)	Annual Average Pay (\$)	% Increase In Average Pay
12/31/2009	57	2,733	189.0	69,149	4.0%
12/31/2010	58	2,754	188.8	68,559	(0.9)%
12/31/2011	57	2,711	189.5	69,898	2.0%
12/31/2012	57	2,727	193.5	70,949	1.5%
12/31/2013	58	2,736	197.0	71,960	1.4%
12/31/2014	58	2,733	204.0	74,487	3.5%
12/31/2015	57	2,734	210.3	76,920	3.3%
12/31/2016	56	2,755	213.2	77,387	0.6%
12/31/2017	56	2,752	219.2	79,651	2.9%
12/31/2018	55	2,777	225.5	81,203	1.9%

All Participants

Valuation Date	Participating Employers	Active Participants	Annual Payroll (In Millions)	Annual Average Pay (\$)	% Increase In Average Pay
12/31/2009	1,469	264,766	12,512.2	47,258	2.1%
12/31/2010	1,474	264,150	12,610.1	47,738	1.0%
12/31/2011	1,480	256,232	12,354.1	48,215	1.0%
12/31/2012	1,478	255,253	12,443.7	48,750	1.1%
12/31/2013	1,479	255,396	12,694.0	49,703	2.0%
12/31/2014	1,482	256,100	13,038.0	50,910	2.4%
12/31/2015	1,487	256,077	13,530.0	52,836	3.8%
12/31/2016	1,495	257,285	13,705.7	53,270	0.8%
12/31/2017	1,499	257,413	13,943.1	54,166	1.7%
12/31/2018	1,507	257,911	14,301.4	55,451	2.4%

Summary of Accrued and Unfunded Accrued Liabilities

(In Millions)

Valuation Year	Aggregate Accrued Liabilities	Valuation Assets	Assets as a % of Accrued Liabilities	Unfunded Accrued Liabilities	Annual Active Member Payroll	UAL as a % of Annual Active Member Payroll
2009	79,104.6	78,911.3	99.8%	193.3	12,622.2	1.5%
2010	80,758.8	80,626.9	99.8%	131.9	12,744.0	1.0%
2011	79,039.3	78,940.0	99.9%	99.3	12,855.6	0.8%
2012	78,682.7	78,613.0	99.9%	69.7	12,627.6	0.6%
2013	85,328.7	85,276.1	99.9%	52.6	12,884.8	0.4%
2014	89,392.1	89,360.4	100.0%	31.7	13,219.5	0.2%
2015	91,526.5	91,502.4	100.0%	24.1	13,530.5	0.2%
2016	95,414.0	95,396.2	100.0%	17.8	13,706.0	0.1%
2017	100,819.3	100,802.5	100.0%	16.8	13,943.1	0.1%
2018	101,422.3	101,410.5	100.0%	11.8	14,301.4	0.1%

Funding Metrics

(In Millions)

Valuation Date Dec 31	Actuarial Value of Assets	F-I-L Accrued Liability For				Percent Funded for			
		Annuitants and Beneficiaries	Member Contribs.	Active & Inactive Members	Total	Annuitants and Beneficiaries	Participant Contribs.	Active & Inactive Members	Total
2009	78,911.3	39,734.2	16,156.6	23,213.8	79,104.6	100.0%	100.0%	99.2%	99.8%
2010	80,626.9	41,139.0	16,253.6	23,366.2	80,758.8	100.0%	100.0%	99.4%	99.8%
2011	78,940.0	43,609.4	14,434.4	20,995.5	79,039.3	100.0%	100.0%	99.5%	99.9%
2012	78,613.0	44,055.5	14,401.1	20,226.1	78,682.7	100.0%	100.0%	99.7%	99.9%
2013	85,276.1	48,460.5	15,559.2	21,309.0	85,328.7	100.0%	100.0%	99.8%	99.9%
2014	89,360.4	51,131.1	16,259.3	22,001.7	89,392.1	100.0%	100.0%	99.9%	100.0%
2015	91,502.4	52,851.8	16,707.2	21,967.5	91,526.5	100.0%	100.0%	99.9%	100.0%
2016	95,396.2	55,764.0	17,361.7	22,288.3	95,414.0	100.0%	100.0%	99.9%	100.0%
2017	100,802.5	59,224.9	18,434.4	23,160.0	100,819.3	100.0%	100.0%	99.9%	100.0%
2018	101,410.5	60,242.9	18,455.6	22,723.9	101,422.3	100.0%	100.0%	99.9%	100.0%



ACTUARIAL SECTION

WRS Contribution Rates

» *Notes to Contribution Rates Schedule*

1. Prior to June 28, 2011, the employee contribution rate was set by Wis Stats. 40.05 (1) and part or all the required employee contributions could be paid by the employer on behalf of the employee. Effective June 28, 2011, the employee contribution rate for general and executive/elected category employees is equal to the general category rate. Employers may not pay the employee contribution on their behalf unless provided for by an existing collective bargaining agreement.

2. The unfunded liability was recalculated in 1990 to reflect benefit improvements and is being amortized on a level percentage of salary basis over a period of 40 years beginning January 1, 1990, for the employers in the WRS prior to 2009, or on the effective date of the employer’s participation, whichever is later. Liabilities for employers joining the WRS beginning in 2009 are amortized over 30 years. Prior service rates vary by employers. The percentage reported represents a weighted average.

General Participants and Teachers

	Current Cost	Prior Cost	Employer Total	Employee	BAC	Total
2009	4.5%	0.2%	4.7%	5.0%	0.9%	10.6%
2010	4.8%	0.2%	5.0%	5.0%	1.2%	11.2%
2011	5.1%	0.1%	5.2%	5.0%	1.5%	11.7%
2011*	5.8%	0.1%	5.9%	5.8%	0.0%	11.7%
2012	5.9%	0.1%	6.0%	5.9%	0.0%	11.9%
2013	6.65%	0.1%	6.75%	6.65%	0.0%	13.4%
2014	7.0%	0.0%	7.0%	7.0%	0.0%	14.0%
2015	6.8%	0.0%	6.8%	6.8%	0.0%	13.6%
2016	6.6%	0.0%	6.6%	6.6%	0.0%	13.2%
2017	6.8%	0.1%	6.9%	6.8%	0.0%	13.7%
2018	6.7%	0.0%	6.7%	6.7%	0.0%	13.4%

Executive Group and Elected Officials

	Current Cost	Prior Cost	Employer Total	Employee	BAC	Total
2009	8.5%	0.0%	8.5%	3.0%	0.0%	11.5%
2010	8.7%	0.0%	8.7%	3.2%	0.0%	11.9%
2011	9.4%	0.0%	9.4%	3.9%	0.0%	13.3%
2011*	6.65%	0.0%	6.65%	6.65%	0.0%	13.3%
2012	7.05%	0.0%	7.05%	7.05%	0.0%	14.1%
2013	7.0%	0.0%	7.0%	7.0%	0.0%	14.0%
2014	7.75%	0.0%	7.75%	7.75%	0.0%	15.5%
2015	7.7%	0.0%	7.7%	7.7%	0.0%	15.4%
2016	6.6%	0.0%	6.6%	6.6%	0.0%	13.2%
2017	6.8%	0.1%	6.9%	6.8%	0.0%	13.7%
2018	6.7%	0.0%	6.7%	6.7%	0.0%	13.4%

* 2011 WI Act 10 adjusted employee and employer contribution rates effective June 28, 2011

Protective with Social Security

	Current Cost	Prior Cost	Duty Disability	Employer Total	Employee	BAC	Total
2009	8.1%	0.1%	3.9%	12.1%	5.0%	0.0%	17.1%
2010	8.6%	0.0%	3.9%	12.5%	5.5%	0.0%	18.0%
2011	8.9%	0.0%	4.0%	12.9%	5.8%	0.0%	18.7%
2011*	8.9%	0.0%	4.0%	12.9%	5.8%	0.0%	18.7%
2012	9.0%	0.0%	4.0%	13.0%	5.9%	0.0%	18.9%
2013	9.75%	0.0%	4.1%	13.85%	6.65%	0.0%	20.5%
2014	10.1%	0.0%	0.7%	10.8%	7.0%	0.0%	17.8%
2015	9.5%	0.0%	0.6%	10.1%	6.8%	0.0%	16.9%
2016	9.4%	0.0%	0.3%	9.7%	6.6%	0.0%	16.3%
2017	10.6%	0.1%	0.6%	11.3%	6.8%	0.0%	18.1%
2018	10.7%	0.0%	0.7%	11.4%	6.7%	0.0%	18.1%

Protective without Social Security

	Current Cost	Prior Cost	Duty Disability	Employer Total	Employee	BAC	Total
2009	10.6%	0.3%	3.9%	14.8%	3.2%	0.0%	18.0%
2010	11.3%	0.3%	3.9%	15.5%	3.9%	0.0%	19.4%
2011	12.2%	0.3%	4.0%	16.5%	4.8%	0.0%	21.3%
2011*	11.2%	0.3%	4.0%	15.5%	5.8%	0.0%	21.3%
2012	11.3%	0.3%	4.0%	15.6%	5.9%	0.0%	21.5%
2013	12.35%	0.3%	4.1%	16.75%	6.65%	0.0%	23.4%
2014	13.7%	0.3%	0.7%	14.7%	7.0%	0.0%	21.7%
2015	13.1%	0.3%	0.6%	14.0%	6.8%	0.0%	20.8%
2016	13.2%	0.2%	0.3%	13.7%	6.6%	0.0%	20.3%
2017	14.9%	0.1%	0.6%	15.6%	6.8%	0.0%	22.4%
2018	14.9%	0.1%	0.7%	15.7%	6.7%	0.0%	22.4%

* 2011 WI Act 10 adjusted employee and employer contribution rates effective June 28, 2011



ACTUARIAL SECTION

Analysis of Actuarial Experience WRS
Gains and Losses in Accrued Liabilities During 2018 Resulting Differences Between Assumed Experience & Actual Experience

(In Millions)

Type of Activity	General	Executive & Elected	Protective Occupation With Social Security	Protective Occupation Without Social Security	Total
Normal Retirement					
If members retire at older ages or with lower final average pay than assumed, there is a gain. If younger ages or higher pay, there is a loss.	\$(2.2)	\$0.6	\$(12.0)	\$(0.9)	\$(14.5)
Early Retirement					
If fewer members choose early retirement than assumed, there is a loss. If more early retirements, there is a gain.	(19.3)	0.0	1.0	0.0	(18.3)
Death with Benefit					
If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(3.3)	0.0	(0.1)	0.5	(2.9)
Disability Retirement					
If disability claims are less than assumed, there is a gain. If more claims, a loss.	(7.7)	0.1	0.0	(0.1)	(7.7)
Other Separations					
If more liabilities are released by separations than assumed, there is a gain. If smaller releases, a loss.	(10.5)	0.2	(2.2)	(1.3)	(13.8)
Salary Increases					
If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	322.0	1.7	(5.4)	(0.7)	317.6
Investment Return					
If there is greater investment income than assumed, there is a gain. If less income, a loss.	(583.3)	(0.7)	(89.9)	(23.1)	(697.0)
Other Activity	(80.2)	(2.1)	(7.1)	0.7	(88.7)
Total Gain (Loss)	<u>\$(384.5)</u>	<u>\$(0.2)</u>	<u>\$(115.7)</u>	<u>\$(24.9)</u>	<u>\$(525.3)</u>
% of accrued liability	(1.1)%	(0.1)%	(2.8)%	(2.5)%	(1.3)%

Changes in Number of Annuities - WRS

Year	Annuity Type	Beginning	Additions	Deletions	Ending
2018	Retirement	195,762	9,735	4,031	201,466
	Disability*	6,091	2,382	192	8,281
	Beneficiary	1,349	70	40	1,379
	Total	203,202	10,035	2,111	211,126
2017	Retirement	190,111	9,591	3,940	195,762
	Disability	6,198	98	205	6,091
	Beneficiary	1,338	42	31	1,349
	Total	197,647	9,731	4,176	203,202
2016	Retirement	184,180	9,866	3,935	190,111
	Disability	6,305	98	205	6,198
	Beneficiary	1,310	62	34	1,338
	Total	191,795	10,026	4,174	197,647
2015	Retirement	177,959	9,881	3,660	184,180
	Disability	6,363	124	182	6,305
	Beneficiary	1,283	57	30	1,310
	Total	185,605	10,062	3,872	191,795
2014	Retirement	172,430	9,080	3,551	177,959
	Disability	6,393	125	155	6,363
	Beneficiary	1,233	69	19	1,283
	Total	180,056	9,274	3,725	185,605
2013	Retirement	165,966	9,889	3,425	172,430
	Disability	6,473	146	226	6,393
	Beneficiary	1,216	70	53	1,233
	Total	173,655	10,105	3,704	180,056
2012	Retirement	160,044	9,322	3,400	165,966
	Disability	6,201	183	(89)	6,473
	Beneficiary	1,208	67	59	1,216
	Total	167,453	9,572	3,370	173,655
2011	Retirement	148,380	15,096	3,432	160,044
	Disability	6,194	196	189	6,201
	Beneficiary	1,201	60	53	1,208
	Total	155,775	15,352	3,674	167,453
2010	Retirement	143,261	8,330	3,211	148,380
	Disability	6,224	159	189	6,194
	Beneficiary	1,186	69	54	1,201
	Total	150,671	8,558	3,454	155,775
2009	Retirement	136,502	7,779	1,020	143,261
	Disability	6,397	156	329	6,224
	Beneficiary	1,134	73	21	1,186
	Total	144,033	8,008	1,370	150,671

*Disability additions include 2,152 LTDI members.

INVESTMENT SECTION

Investments

Prepared by the State of Wisconsin Investment Board

» MESSAGE FROM THE EXECUTIVE DIRECTOR/CHIEF INVESTMENT OFFICER

"U.S. Indexes Close With Worst Yearly Losses Since 2008," read the January 1, 2019, headline in the *Wall Street Journal*. Despite the turbulent market and negative performance in 2018, the State of Wisconsin Investment Board's (SWIB) disciplined and diversified asset allocation and investment strategy provided moderate protection to the Wisconsin Retirement System (WRS) from a full equities market decline. Thanks to past performance and the WRS's smoothing mechanism, Core Fund annuity payments remained unchanged, and the WRS remains stable and strong.

The WRS is one of the only fully funded public pensions in the United States. It is the eighth largest public pension fund in the U.S. and 25th largest public or private pension fund in the world. Over 641,000 retirees and active members and over 1,500 public employers participate in the WRS. As of December 31, 2018, SWIB managed WRS trust fund assets of \$100.6 billion.

SWIB implements a prudent and innovative long-term investment strategy to manage the WRS trust funds. SWIB's portfolio of investments is highly diversified, carefully monitored, and designed to strike an appropriate balance between risk and returns. On a long-term basis, the Core Fund, the larger of the two WRS trust funds with \$93.5 billion in assets, ended 2018 with a 10-year gross return of 8.8 percent, and the Variable Fund, an optional stock-only fund with \$7.1 billion in assets, had gross return of 11.6 percent for the 10-year period, both of which well exceed the actuarial assumed rate of return of 7.0 percent that is required to keep the plan fully funded. The assumed rate was lowered in December 2018 to 7.0 percent from 7.2 percent. Investment returns account for about 75 percent of the income needed to fund the WRS.

A major reason for the WRS's long-term success is because of SWIB's ability to manage over half of the trust fund assets internally. Over the past several years, SWIB has invested in adding new staff, technology, and functionality to support increased in-house investment management across multiple investment strategies. While SWIB does utilize outside managers where it makes sense to do so and market opportunities arise, SWIB's highly qualified professionals manage WRS funds internally for significantly less than what it would cost to use external managers. SWIB's independent cost benchmarking consultant's analysis shows SWIB saved about \$90 million in 2017, the latest data available, and \$1.3 billion over the last ten years, compared to median cost of what similar public pension funds would pay for managing the same amount of assets. These savings are driven by SWIB having fewer high cost assets and more internal management.

The investing world continues to recognize SWIB as a destination for top talent. In 2018, for the second time in as many years, SWIB has been chosen by its peers as an *Institutional Investor* Allocators' Choice Award winner. In addition, in 2018, *Trusted Insight* named SWIB staff members to its Top 30 Institutional Investors in the Midwest and Top 30 Private Equity and Venture Capital Investors. While these are a few examples of individual recognition, they are indicative of the excellent quality of SWIB's staff as whole. We believe it is an honor to work for the public employees, retirees, and employers who depend on us to manage the funds entrusted to us.



David Villa
Executive Director/Chief Investment Officer

INVESTMENT SECTION

» ABOUT THE INVESTMENT BOARD

SWIB is a trusted and skilled investment organization contributing to the strong financial future of the beneficiaries of the funds entrusted to us. SWIB is responsible for managing the assets of the WRS, the State Investment Fund (SIF), and four separately managed funds.

The largest portion of the assets managed by SWIB is the trust funds of the WRS. The assets managed by SWIB include the SIF, a pool of invested cash balances of the WRS and various state and local government units. The remaining assets are separately managed funds invested by SWIB including the Injured Patients and Families Compensation Fund, University of Wisconsin System Trust Funds, State Life Insurance Fund, and State Historical Society of Wisconsin Endowment Fund.

SWIB was created under section 15.76 of the state statutes and its duties to invest these funds are provided in Chapter 25 of the statutes. SWIB is a fiduciary and is governed by the “prudent investor” standard, which requires it to use the diligence, skill, and care that a prudent person acting in a similar capacity and with the same resources would use in managing a large public pension fund. The law also requires SWIB to make investment decisions and conduct its operations solely to fulfill the purpose of the funds under management.

SWIB is governed by a nine-person, independent Board of Trustees (Board). The Board appoints the executive director and sets the overall policy for SWIB. The executive director/chief investment officer (ED/CIO) oversees the staff, develops and recommends agency and investment policies for Board adoption, and ensures adherence to state law and policies. The ED/CIO serves as chair of the Investment Committee. The Investment Committee provides oversight of SWIB’s investments and reports to and makes recommendations to the Trustees.

The creation of a five-member executive leadership Management Council by SWIB’s Board of Trustees occurred in October 2018, at the same time the ED and CIO roles were combined. The Management Council consists of: the ED/CIO, deputy executive director/ chief administration officer, chief technology & operations officer, agency business director, and a representative from investment management. (The investment management appointee serves on a six-month rotating basis.) The new structure provides leadership the opportunity to collaborate, to discuss innovative ideas and how to best implement them, and to drive strategy.

SWIB publishes an annual report and a detailed schedule of investments as of the end of the calendar year. More information about SWIB and the funds it manages can be found at www.swib.state.wi.us.

» WISCONSIN RETIREMENT SYSTEM

The WRS is a hybrid defined benefit plan. It contains elements of both a 401(k), or defined contribution plan, and a defined benefit plan. More than 641,000 current and former state and local government employees and their families rely on the WRS for some of their retirement security.

The Core Fund, the larger of the two WRS funds, with diversified holdings in stocks, bonds, private equity, real estate, hedge funds, and other investments, earned (3.3) percent in 2018, which is ahead of its benchmark of (3.5) percent. SWIB’s out performance is due to the investment strategy that has been implemented. That investment strategy is designed to weather a variety of economic environments to ensure the WRS is able to meet its obligations today and in the future. It also allows SWIB to meet one of its standards of responsibility that is outlined in state statutes. That statute, s. 25.15 (2) (b), says SWIB should

“diversify investments in order to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so.” Because of SWIB’s sound investment performance over the long-term, the Core Fund, which had a net asset value of approximately \$93.5 billion as of December 31, 2018, also outperformed its three-, five-, and ten-year benchmarks.

The objective of the Core Fund investment strategy is to earn returns comparable to the actuarial objective of 7.2 percent over the long-term, but with less risk than the typical 60 percent equities/40 percent fixed income portfolio. The long-term actuarial objective was decreased to 7.0 percent in December 2018 and will be effective for the 2018 WRS valuation to determine contribution rates for 2020. The annualized 20-year return for the Core Fund, as of December 31, 2018, was 6.2 percent, which is ahead of its benchmark of 5.8 percent.

The Variable Fund, an optional, U.S. and international stock fund, ended the year with a return of (7.9) percent, compared to its benchmark of (7.8) percent. The Variable Fund’s net asset value was approximately \$7.1 billion as of December 31, 2018. As of December 31, 2018, the Variable Fund’s 20-year annualized return was 5.9 percent, outperforming the benchmark return of 5.4 percent.

The investment strategy for the Variable Fund is to achieve returns equal to or above that of similar stock portfolios over a market cycle.

» BASIS OF PRESENTATION OF INVESTMENT DATA

The investments of the WRS are reported at fair value as prescribed by GASB and per section 25.17(14) of the Wisconsin Statutes. Unrealized gains and losses are included as investment income.

The fair value of the WRS assets is obtained or estimated in accordance with a pricing hierarchy established with SWIB’s custodian. As prescribed by the hierarchy, a variety of independent pricing sources are used to price assets based on type, class, or issue.

When a portfolio includes securities or instruments for which the custodial bank does not receive fair value information from its vendor pricing sources, a variety of third-party pricing methods are used, including appraisals, pricing models, and other methods deemed acceptable by industry standards.

Cash and cash equivalents consist of short-term investments which are used to meet the liquidity requirements of the WRS. Cash and cash equivalents held by the WRS can include cash on deposit, foreign currencies, cash posted as collateral to counterparties, repurchase agreements, certificates of deposit, U.S. Treasury Bills, short-term investment funds, and other U.S or foreign liquid financial instruments with maturities that are generally less than three months. Cash and cash equivalents are reported at fair value or cost, which approximates fair value.

Exchange-traded securities such as equities, preferred stock, certain derivatives, and exchange-traded funds are generally valued at the official closing price (usually the last trade price) or the last bid price on the security’s primary exchange.

Privately-held debt is priced using approaches that value each holding based on the best available information using the following hierarchy of pricing sources:

1. Custodian-supplied prices for assets that can be priced in accordance with the pricing hierarchy established with SWIB’s custodian
2. Prices provided by a third party with expertise in the bond market

For private market investments where no readily ascertainable market value exists, including limited partnerships and real estate pooled funds, fair value is estimated based on the net asset value as reported

INVESTMENT SECTION

by the general partner. The capital account balance as stated in the most recent available quarterly reporting period is adjusted for subsequent cash flows to derive fair value. The financial statements of the limited partnerships and real estate pooled funds are audited by independent auditors annually.

Certain portfolios make investments in privately-held companies alongside a strategic partner, such as a limited partnership fund manager. These co-investments are valued by SWIB's strategic partner, using a variety of methodologies such as reviews of subsequent financing rounds, discounted cash flow analyses, cash flow multiples analyses, reviews of market comparable sales or metrics, and reviews of third-party appraisals.

Real estate properties wholly owned by SWIB are valued by independent appraisers every three years. In years when appraisals are not performed, properties are informally appraised by the asset advisor. Each year, audited financial statements are prepared for each property.

SWIB employs portfolio strategies which involve investments across multiple asset classes. The "Multi Asset" category on SWIB's financial statements consists primarily of hedge funds. SWIB values hedge funds based on monthly statements or estimated returns received from each of the hedge fund's administrators. A third-party administrator's responsibility is to independently account for the hedge fund's activity and calculate the net asset value of the fund. Generally, hedge fund administrators price financial instruments traded in active markets based on quoted market prices or binding dealer quotations. For certain over-the-counter instruments, fair value is determined based on valuation models used by the administrator. Annually, the financial statements prepared by the administrator are audited by independent auditors.

Derivative financial instruments are marked to fair value daily, with valuation changes recognized in income during the period the instruments are held and when the instrument is sold or expires.

A limited number of securities are carried at cost. Certain non-public or closely-held investments are not reported at fair value, but are carried at cost since no independent quotation is available to estimate fair value for these securities.

» INVESTMENT POLICY

As part of SWIB's fiduciary responsibilities, SWIB is required by section 25.15(2)(b) of the Wisconsin Statutes "To diversify investments in order to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so, considering each trust's or fund's portfolio as a whole at any point in time."

SWIB exercises this duty in part by establishing its investment policy and by setting the asset allocation. The Board-approved investment policy for the WRS is intended to assist in development of a diversified portfolio of investments within acceptable risk parameters. The policy represents a delegation of standing authority to the Executive Director/Chief Investment Officer and investment managers within the organization to make prudent investments within the investment guidelines, pursuant to sections 15.02(4) and 25.15(2) of the Wisconsin Statutes and section IB 2.02 of the Wisconsin Administrative Code.

Additionally, the Investment Committee (IC) was created to provide oversight of SWIB investments within the parameters established by the Board. Oversight includes analysis of risk and return of the portfolios, asset classes, and Core and Variable Funds. The IC is responsible for proposing to the Board changes to the WRS investment policy, approving investment guidelines or strategies for internally-managed portfolios, approving the general strategies for each asset class, and for approving new investment instruments and derivatives strategies. Effective June 2017, the IC became responsible for approving and maintaining guidelines for internally-managed portfolios pursuant of the Board's investment policy. Previously, the internally-managed portfolio guidelines were approved by the Board with recommendations coming from the IC. The change in oversight for internally-managed portfolios provides SWIB staff with the ability to more quickly respond to changing investment conditions and is more consistent with the Board's

delegation of investment authority to internal investment management staff. The Board of Trustees reserves all rights to modify and amend IC guidelines at any time at its discretion.

The IC approved WRS Investment Guidelines include several policies, including a derivatives use policy, rebalancing procedures, and a leverage use policy. The derivatives use policy sets forth the objectives, monitoring, and reporting guidelines relating to derivative investments. The rebalancing procedures used in both mandatory and discretionary asset class rebalancing are described in the Investment Guidelines, and the leverage use policy describes SWIB's leverage philosophy. The total amount of financial leverage is approved by the Board through the WRS asset allocation process.

» SCHEDULE OF INVESTMENT RESULTS

The tables below present returns for the Core and Variable Funds on a total fund basis as well as by asset class. Appropriate benchmark returns are provided for comparison purposes.

Time-Weighted Core Fund & Asset Class Returns As of December 31, 2018

	1-Year Return %	5-Year Return %	10-Year Return %
Core Fund	(3.3)	5.2	8.8
<i>Benchmark</i>	(3.5)	4.9	8.2
Public Equities	(9.2)	4.5	10.4
<i>Aggregated Equities Benchmark</i>	(8.9)	4.6	10.1
Fixed Income	(0.8)	2.5	4.3
<i>Aggregated Fixed Income Benchmark</i>	(0.8)	2.3	3.7
Inflation Sensitive	(0.5)	0.8	3.5
<i>Aggregated Inflation Sensitive Benchmark</i>	(0.8)	0.7	3.2
Real Estate	8.8	11.8	7.1
<i>100% ODCE Benchmark (since 1/1/13)</i>	8.7	10.7	7.4
Private Equity/Debt	15.9	13.1	11.7
<i>Aggregated Private Equity Benchmark</i>	11.2	10.7	9.7
Multi Asset	(6.6)	3.7	8.7
<i>Aggregated Multi Asset Benchmark</i>	(4.9)	4.3	7.5

Returns are gross of management fees, with the exception of Private Equity/Debt, which are net of external manager fees.



INVESTMENT SECTION

Time-Weighted Variable Fund & Asset Class Returns

As of December 31, 2018

	1-Year Return %	5-Year Return %	10-Year Return %
Variable Fund	(7.9)	5.9	11.7
<i>Benchmark</i>	(7.8)	5.9	11.3
Public Equities	(7.9)	5.9	11.7
<i>Aggregated Equities Benchmark</i>	(7.8)	5.9	11.3

Returns are gross of management fees.

» **ASSET ALLOCATION**

SWIB’s Board has established the asset allocation pursuant to a comprehensive and ongoing evaluation of the appropriate risk and return standards for each fund under management.

The Board adopts the Retirement Funds’ asset allocation policy, based on recommendations by the IC, the Board’s asset allocation consultant, the Executive Director/Chief Investment Officer, and the Managing Director of Asset and Risk Allocation. SWIB undertakes a comprehensive review of its strategic asset allocation plan every other year, including asset/liability modeling, to determine a suitable target allocation for each asset class included in the Core and Variable Funds, and an annual review to assess whether any interim adjustments should be made. The strategic nature of these reviews contemplates a long-term time horizon over which potential results are evaluated. This exercise is not an attempt to predict short-term market movements, but an effort to understand the long-term impacts of poor, normal, and above average market results.

In addition to potential future market impact, SWIB also contemplates the objectives of the funds, the impact of actuarial analysis, and the soundness of investment return and risk expectations. SWIB’s asset allocation policies reflect the Board’s program of risk allocation that involves reducing equity exposure by leveraging low-volatility assets, such as “fixed income” securities. This investment strategy results in Core Fund strategic targets which exceed 100% of invested assets. Currently, the Core Fund has adopted an asset allocation target of 10% financial leverage; however, over time, it is anticipated SWIB will increase its financial leverage. Before implementing leverage beyond 10%, the Board, SWIB’s asset allocation consultant, and staff will engage in additional focused asset allocation discussion and the Board will approve any additional financial leverage.

SWIB’s asset allocation review process also includes assumptions regarding expected rates of return. Long-term (e.g. 30-year) expected real rates of return on pension plan investments are determined using a building block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected real rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The table entitled Asset Allocation Targets and Expected Returns presents the policy asset allocation targets and the best estimates of expected geometric rates of return for each major asset class as of December 31, 2018.

Retirement Funds
Asset Allocation Targets and Expected Returns
 As of December 31, 2018

Core Fund Asset Class	Asset Allocation %	Long-Term Expected Nominal Rate of Return %	Long-Term Expected Real Rate of Return %
Global Equities	49.0 %	8.1 %	5.5 %
Fixed Income	24.5	4.0	1.5
Inflation Sensitive Assets	15.5	3.8	1.3
Real Estate	9.0	6.5	3.9
Private Equity/Debt	8.0	9.4	6.7
Multi-Asset	4.0	6.7	4.1
Total Core Fund	110.0 %	7.3 %	4.7 %
Variable Fund Asset Class			
U.S. Equities	70.0 %	7.6 %	5.0 %
International Equities	30.0	8.5	5.9
Total Variable Fund	100.0 %	8.0 %	5.4 %

New England Pension Consultants Long Term US CPI (Inflation) Forecast: 2.5%

Asset Allocations are managed within established ranges, target percentages may differ from actual monthly allocations

For purposes of determining asset allocation targets, investments may be categorized differently than they are within the financial statements. For example, SWIB's management considers inflation-sensitive assets separately from other "fixed income" investments for asset allocation purposes.



INVESTMENT SECTION

» WRS LARGEST HOLDINGS

WRS Largest Equity Holdings			
As of December 31, 2018			
(In Thousands)			
Issuer	Shares	Fair Value	% of Total Equities
MICROSOFT CORP	9,120,104	\$ 926,329	1.69%
APPLE INC	5,505,892	868,499	1.58
ALPHABET INC	744,852	774,718	1.41
AMAZON.COM INC	484,773	728,115	1.33
JOHNSON & JOHNSON	2,977,976	384,308	0.70
FACEBOOK INC	2,712,813	355,623	0.65
JPMORGAN CHASE & CO	3,475,785	339,306	0.62
ROYAL DUTCH SHELL PLC	11,180,314	330,281	0.60
EXXON MOBIL CORP	4,828,772	329,274	0.60
VISA INC	2,460,644	324,657	0.59

WRS Largest Fixed Income Holdings				
As of December 31, 2018				
(In Thousands)				
Security	Coupon Rate	Maturity Date	Fair Value	% of Total Fixed Income
US TREAS-CPI INFLAT	0.375	7/15/2025	\$ 726,716	2.29%
US TREAS-CPI INFLAT	0.125	4/15/2020	626,898	1.98
US TREAS-CPI INFLAT	0.125	4/15/2021	599,103	1.89
US TREAS-CPI INFLAT	0.125	1/15/2023	598,849	1.89
US TREAS-CPI INFLAT	0.625	1/15/2024	596,419	1.88
US TREAS-CPI INFLAT	0.625	4/15/2023	559,998	1.76
US TREAS-CPI INFLAT	0.125	1/15/2022	546,234	1.72
US TREAS-CPI INFLAT	0.125	4/15/2022	542,442	1.71
US TREAS-CPI INFLAT	0.250	1/15/2025	524,853	1.65
US TREAS-CPI INFLAT	0.125	7/15/2022	510,785	1.61

US TREAS-CPI INFLAT - Treasury Inflation Protected Securities

Listing of largest holdings does not include externally managed commingled funds.

A complete list of WRS investments can be found using the following link.

<http://www.swib.state.wi.us/publications>

» WRS INVESTMENT INCOME AND FEES
**Schedule of WRS Investment Income and Fees
For the Calendar Year Ended December 31, 2018**

(In Thousands)

	<u>Core Fund</u>	<u>Variable Fund</u>
Investment Income (Loss)	\$ (2,890,277)	\$ (595,904)
Investment Expense	(684,848)	(6,354)
Securities Lending Fees	(10,140)	(721)
Net Investment Income (Loss)	\$ (3,585,265)	\$ (602,979)

Investment Expense includes transaction-related expenses, external management fees, and administrative-related expenses. Transaction-related expenses are incurred as part of executing a trade or investment strategy and include interest and dividend expenses and securities lending fees. Unlike other expenses, transaction-related expenses often represent payments to counterparties, rather than vendors and not invoiced to SWIB. SWIB does not include transaction-related expenses in its Total Cost of Management Plan because these expenses are already accounted for in gross performance. Commission and trade execution fees, which are transaction-related expenses, are excluded from Investment Expense and included in the "Net Increase (Decrease) in the Fair Value of Investments" on the Statement of Changes in Net Investment Position as these fees are not readily separable from the acquisition or disposal of an investment. External management fees include base and performance fees paid to external managers. Administrative-related expenses include operating expenses, legal fees, custodial bank fees, R&D services, and investment consulting fees.

» INVESTMENT SUMMARY
**Core Fund Summary of Investments by Asset Type
As of December 31, 2018**

(In Thousands)

<u>Asset Type</u>	<u>Fair Value</u>	<u>% of Total Investments</u>
Equities	\$ 47,991,991	47.3%
Fixed Income	31,739,324	31.3
Limited Partnerships	13,590,506	13.4
Multi Asset	5,759,422	5.7
Real Estate	1,372,027	1.3
Preferred Securities	199,356	0.2
Convertible Securities	326	0.0
To Be Announced Securities	686,251	0.7
Foreign Currency Contracts	(21,647)	0.0
Option Contracts	(8,148)	0.0
Futures Contracts	161,654	0.1
Swaps	(21,790)	0.0
Total Core Fund Investments	\$ 101,449,272	100.0%

Does not include investment-related liabilities.



INVESTMENT SECTION

Variable Fund Summary of Investments by Asset Type
As of December 31, 2018
(In Thousands)

Asset Type	Fair Value	% of Total Investments
Equities	\$ 6,857,656	99.9%
Preferred Securities	10,690	0.2
Foreign Currency Contracts	353	0.0
Futures Contracts	(4,755)	(0.1)
Total Variable Fund Investments	\$ 6,863,944	100.0%



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**CONTRIBUTIONS PAID
AND EMPLOYER
UNFUNDED LIABILITY
BALANCES**

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
State Agencies					
ADMINISTRATION, DEPT OF	75,634,535	6,084,391	5,067,532	11,151,923	0
AGRIC TRADE CONS PROT, DEPT OF	35,171,116	2,778,536	2,356,475	5,135,011	0
BD FOR PEOPLE WITH DEVELOP DIS	463,602	36,624	31,061	67,686	0
BOARD AGING & LONG TERM CARE	1,822,206	143,954	122,089	266,042	0
BRD OF COMMSRS OF PUBLIC LANDS	780,350	61,647	52,284	113,931	0
CHILDREN & FAMILIES, DEPT OF	45,447,987	3,595,112	3,045,026	6,640,137	0
CORRECTIONS, DEPT. OF	503,506,323	53,216,018	33,735,017	86,951,035	0
COURTS - STATE	74,491,797	5,884,836	4,990,966	10,875,802	0
DISTRICT ATTORNEYS	33,042,083	2,610,065	2,213,831	4,823,896	0
EDUCATIONAL COMMUNICATIONS BD	2,592,451	204,803	173,695	378,498	0
ELECTIONS COMMISSION	1,609,554	127,155	107,840	234,995	0
EMPLOYEE TRUST FUNDS, DEPT OF	17,182,071	1,357,379	1,151,203	2,508,582	0
EMPLOYMENT RELATIONS COMM	482,275	38,100	32,312	70,412	0
ETHICS COMMISSION	440,399	34,791	29,507	64,298	0
EXECUTIVE OFFICE	2,027,468	160,169	135,841	296,010	0
FINANCIAL INSTITUTIONS, DEPT	8,871,248	701,365	594,376	1,295,741	0
HEALTH SERVICES, DEPT OF	324,353,916	27,901,202	21,731,785	49,632,987	0
HIGHER EDUCATIONAL AIDS BOARD	437,294	34,546	29,299	63,845	0
HISTORICAL SOCIETY - STATE	9,467,431	747,924	634,321	1,382,245	0
INSURANCE COMMISSIONR'S OFFICE	8,671,976	685,084	581,024	1,266,109	0
INVESTMENT BOARD	29,082,884	2,297,544	1,948,557	4,246,101	0
JUDICIAL COMMISSION	128,382	10,142	8,602	18,744	0
JUSTICE, DEPT OF	49,404,223	4,374,673	3,310,095	7,684,768	0
KICKAPOO RESERVE MANGMT BD	260,241	20,559	17,436	37,995	0
LABOR & INDUSTRY REVIEW COMM	1,331,576	105,194	89,216	194,410	0
LEGIS ASSEMBLY - CHIEF CLERK	14,806,434	1,169,706	992,034	2,161,739	0
LEGISLATIVE AUDIT BUREAU	5,260,633	415,589	352,464	768,052	0
LEGISLATIVE COUNCIL STAFF	2,182,717	172,435	146,242	318,677	0
LEGISLATIVE FISCAL BUREAU	2,355,117	186,054	157,793	343,847	0
LEGISLATIVE REFERENCE BUREAU	3,164,561	250,000	212,026	462,026	0
LEGISLATIVE TECH SERV BUREAU	2,747,193	217,028	184,063	401,090	0
LEGISLATURE - SENATE	10,494,356	829,052	703,124	1,532,176	0
LIEUTENANT GOVERNOR'S OFFICE	159,509	12,601	10,687	23,288	0
LOWER WIS. STATE RIVERWAY BD.	127,645	10,084	8,552	18,636	0
MILITARY AFFAIRS, DEPT OF	23,256,686	2,114,137	1,558,204	3,672,341	0
NATURAL RESOURCES, DEPT OF	147,635,723	12,999,683	9,891,625	22,891,308	0
PUBLIC DEFENDER'S OFFICE	37,034,805	2,925,784	2,481,340	5,407,124	0
PUBLIC INSTRUCTION, DEPT OF	37,341,270	2,949,950	2,501,875	5,451,825	0
PUBLIC SERVICE COMMISSION	9,732,030	768,828	652,048	1,420,876	0
REVENUE, DEPT OF	66,525,066	5,287,833	4,457,197	9,745,030	0
SAFETY & PROFESS SVCES, DEPT	12,883,314	1,017,797	863,185	1,880,982	0
SECRETARY OF STATE'S OFFICE	171,680	13,563	11,503	25,065	0
STATE FAIR PARK BOARD	4,519,111	362,140	302,782	664,922	0
TOURISM, DEPARTMENT OF	1,591,574	125,734	106,636	232,370	0
TRANSPORTATION, DEPT OF	192,426,311	16,837,267	12,892,606	29,729,873	0
TREASURER'S OFFICE - STATE	70,323	5,556	4,712	10,267	0

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
VETERANS AFFAIRS, DEPT OF	55,557,429	4,406,872	3,722,360	8,129,232	0
WIS TECH COLLEGE SYS BOARD	3,788,971	299,328	253,862	553,190	0
WISCONSIN ECON DEVELOP CORP	7,955,783	533,035	533,040	1,066,075	0
WORKFORCE DEVELOPMENT, DEPT OF	77,145,441	6,094,784	5,168,768	11,263,552	0
Total State Agencies (50)	1,945,637,073	173,216,652	130,358,117	303,574,770	0
UNIVERSITY OF WISCONSIN SYSTEM	2,034,643,432	161,398,683	136,321,457	297,720,140	0
Public Authorities					
FOX RIVER NAVIGATION SYS AUTH	226,651	17,905	15,186	33,091	0
HEALTH & EDUC FACILITIES AUTH	348,255	34,825	23,333	58,158	0
HOUSING & ECON DEVELOP AUTH	11,666,443	921,647	781,654	1,703,301	0
UW HOSPITAL AUTHORITY	575,734,354	45,416,809	38,574,303	83,991,112	0
WISCRAFT INC - ENT FOR BLIND	2,695,244	269,511	180,583	450,093	576,128
Total Public Authorities (5)	590,670,947	46,660,697	39,575,058	86,235,755	576,128
Total State of Wisconsin (56)	4,570,951,451	381,276,033	306,254,632	687,530,665	576,128
Cities					
ABBOTSFORD, CITY OF	498,152	33,376	33,376	66,752	0
ADAMS, CITY OF	624,567	56,769	41,846	98,615	73,907
ALGOMA, CITY OF	3,301,606	234,149	221,209	455,358	0
ALMA, CITY OF	277,621	18,601	18,601	37,201	46,033
ALTOONA, CITY OF	2,470,181	210,012	165,503	375,515	0
AMERY, CITY OF	1,339,348	109,602	89,737	199,339	0
ANTIGO, CITY OF	4,458,321	436,292	298,709	735,001	0
APPLETON, CITY OF	42,848,353	3,966,918	2,870,850	6,837,768	0
ARCADIA, CITY OF	1,434,203	106,352	96,092	202,443	0
ASHLAND, CITY OF	5,477,661	567,880	367,005	934,885	0
AUGUSTA, CITY OF	628,159	50,946	42,087	93,033	0
BARABOO, CITY OF	5,821,834	478,938	390,064	869,002	0
BARRON, CITY OF	1,745,570	133,415	116,953	250,368	0
BAYFIELD, CITY OF	647,130	50,435	43,358	93,792	0
BEAVER DAM, CITY OF	7,610,364	859,831	509,896	1,369,727	2,480,229
BELOIT, CITY OF	23,233,959	2,345,575	1,556,680	3,902,256	0
BERLIN, CITY OF	2,403,659	195,275	161,046	356,321	0
BLACK RIVER FALLS, CITY OF	2,745,534	211,097	183,952	395,049	0
BLAIR, CITY OF	434,721	35,403	29,126	64,530	0
BLOOMER, CITY OF	391,009	42,737	26,198	68,935	0
BOSCOBEL, CITY OF	1,558,859	119,959	104,444	224,404	0
BRILLION, CITY OF	1,038,420	92,376	69,575	161,950	0
BRODHEAD, CITY OF	1,495,864	118,758	100,223	218,981	0
BROOKFIELD, CITY OF	24,945,032	2,479,270	1,671,323	4,150,593	0
BUFFALO CITY, CITY OF	60,724	4,069	4,069	8,137	0
BURLINGTON, CITY OF	4,420,808	393,622	296,195	689,816	0
CEDARBURG, CITY OF	6,587,857	517,209	441,388	958,598	0
CHETEK, CITY OF	231,332	25,285	15,499	40,784	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
CHILTON, CITY OF	1,267,239	104,825	84,905	189,730	0
CHIPPEWA FALLS, CITY OF	6,734,089	686,277	451,186	1,137,463	0
CLINTONVILLE, CITY OF	2,787,594	220,107	186,770	406,877	0
COLBY, CITY OF	418,488	28,039	28,039	56,077	0
COLUMBUS, CITY OF	2,551,381	192,597	170,943	363,540	0
CORNELL, CITY OF	504,652	37,898	33,812	71,710	0
CRANDON, CITY OF	665,359	51,194	44,579	95,773	0
CUBA CITY, CITY OF	696,290	54,660	46,652	101,312	0
CUDAHY, CITY OF	8,530,116	874,350	571,520	1,445,870	0
CUMBERLAND, CITY OF	958,694	78,269	64,233	142,502	0
DARLINGTON, CITY OF	983,352	78,896	65,885	144,781	0
DE PERE, CITY OF	10,029,997	989,032	672,012	1,661,044	0
DELAFIELD, CITY OF	2,822,002	243,931	189,075	433,006	0
DELAVAN, CITY OF	3,451,872	291,567	231,276	522,843	0
DODGEVILLE, CITY OF	1,666,682	136,453	111,668	248,122	0
DURAND, CITY OF	595,419	47,201	39,893	87,094	0
EAGLE RIVER, CITY OF	1,694,305	129,946	113,519	243,465	0
EAU CLAIRE, CITY OF	34,901,676	3,348,224	2,338,419	5,686,642	0
EDGERTON, CITY OF	1,758,381	144,179	117,812	261,991	0
ELKHORN, CITY OF	3,773,863	306,192	252,850	559,041	0
ELROY, CITY OF	691,444	52,105	46,327	98,432	0
EVANSVILLE, CITY OF	2,478,434	194,473	166,056	360,528	0
FENNIMORE, CITY OF	1,313,919	100,272	88,033	188,305	0
FITCHBURG, CITY OF	11,693,384	1,019,465	783,460	1,802,924	0
FOND DU LAC, CITY OF	22,756,383	2,396,109	1,524,682	3,920,792	0
FORT ATKINSON, CITY OF	4,816,488	404,461	322,705	727,165	0
FOUNTAIN CITY, CITY OF	140,545	9,417	9,417	18,833	0
FOX LAKE, CITY OF	455,955	33,950	30,549	64,499	0
FRANKLIN, CITY OF	9,094,719	1,119,559	609,347	1,728,906	0
GALESVILLE, CITY OF	518,370	43,618	34,731	78,349	0
GILLETT, CITY OF	501,266	42,727	33,585	76,312	0
GLENDALE, CITY OF	5,333,314	629,330	357,333	986,663	0
GLENWOOD, CITY OF	103,752	11,340	6,952	18,291	0
GREEN BAY, CITY OF	63,402,390	6,377,431	4,247,972	10,625,404	0
GREEN LAKE, CITY OF	651,536	51,549	43,653	95,202	0
GREENFIELD, CITY OF	16,659,434	1,592,755	1,116,188	2,708,943	0
GREENWOOD, CITY OF	538,915	42,825	36,107	78,933	0
HARTFORD, CITY OF	7,365,363	584,132	493,481	1,077,613	0
HAYWARD, CITY OF	813,987	70,481	54,538	125,019	0
HILLSBORO, CITY OF	556,436	41,879	37,282	79,160	0
HORICON, CITY OF	1,359,983	111,460	91,119	202,579	0
HUDSON, CITY OF	6,078,348	495,445	407,251	902,696	0
HURLEY, CITY OF	988,177	81,464	66,208	147,672	0
INDEPENDENCE, CITY OF	459,711	39,719	30,801	70,519	13,767
JANESVILLE, CITY OF	32,815,853	3,233,954	2,198,668	5,432,623	0
JEFFERSON, CITY OF	3,985,903	306,234	267,056	573,290	0
JUNEAU, CITY OF	1,154,264	86,831	77,336	164,166	0

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
KAUKAUNA, CITY OF	11,511,789	980,737	771,292	1,752,029	0
KENOSHA, CITY OF	56,396,229	5,755,067	3,778,569	9,533,636	0
KEWAUNEE, CITY OF	1,061,390	86,872	71,113	157,985	0
KIEL, CITY OF	1,857,715	147,709	124,467	272,176	0
LA CROSSE, CITY OF	33,894,372	3,236,825	2,270,923	5,507,748	0
LADYSMITH, CITY OF	1,674,064	130,996	112,163	243,159	0
LAKE GENEVA, CITY OF	5,231,346	440,064	350,502	790,565	0
LAKE MILLS, CITY OF	3,197,060	244,268	214,204	458,472	0
LANCASTER, CITY OF	1,439,403	113,109	96,441	209,549	0
LODI, CITY OF	1,530,638	117,326	102,553	219,879	0
LOYAL, CITY OF	436,648	38,081	29,256	67,336	12,057
MADISON, CITY OF	208,001,288	19,070,468	13,936,124	33,006,593	0
MANAWA, CITY OF	535,871	47,437	35,903	83,340	94,610
MANITOWOC, CITY OF	22,706,973	2,071,531	1,521,372	3,592,903	0
MARINETTE, CITY OF	5,832,981	562,281	390,811	953,092	0
MARION, CITY OF	181,087	19,793	12,133	31,926	0
MARKESAN, CITY OF	492,769	40,941	33,016	73,957	0
MARSHFIELD, CITY OF	11,665,694	1,157,788	781,605	1,939,392	0
MAUSTON, CITY OF	1,745,208	140,784	116,929	257,714	0
MAYVILLE, CITY OF	1,773,617	139,804	118,833	258,637	0
MEDFORD, CITY OF	2,199,505	171,857	147,368	319,225	0
MELLEN, CITY OF	328,043	25,452	21,979	47,431	0
MENASHA, CITY OF	9,477,142	982,706	634,970	1,617,677	0
MENOMONIE, CITY OF	7,631,965	817,552	511,344	1,328,896	0
MEQUON, CITY OF	8,109,538	726,573	543,341	1,269,914	0
MERRILL, CITY OF	6,972,423	682,423	467,154	1,149,577	0
MIDDLETON, CITY OF	10,666,587	894,907	714,661	1,609,568	0
MILTON, CITY OF	2,157,495	175,509	144,552	320,061	0
MINERAL POINT, CITY OF	825,327	70,183	55,297	125,480	2,394
MONDOVI, CITY OF	819,121	65,197	54,882	120,079	0
MONONA, CITY OF	4,540,713	402,163	304,229	706,392	0
MONROE, CITY OF	4,965,647	409,284	332,699	741,983	0
MONTELLO, CITY OF	406,512	34,390	27,236	61,626	49,727
MONTREAL, CITY OF	171,199	11,470	11,471	22,941	0
MOSINEE, CITY OF	1,198,564	101,740	80,304	182,044	0
MUSKEGO, CITY OF	7,473,479	658,582	500,725	1,159,307	0
NEENAH, CITY OF	14,063,467	1,388,174	942,256	2,330,430	0
NEILLSVILLE, CITY OF	1,074,184	85,826	71,971	157,796	0
NEKOOSA, CITY OF	1,460,497	117,617	97,854	215,471	0
NEW BERLIN, CITY OF	16,880,777	1,584,266	1,131,019	2,715,284	0
NEW HOLSTEIN, CITY OF	1,925,046	147,366	128,979	276,345	0
NEW LISBON, CITY OF	787,924	62,435	52,792	115,227	0
NEW LONDON, CITY OF	4,683,409	368,623	313,790	682,413	0
NEW RICHMOND, CITY OF	4,845,144	424,416	324,626	749,042	64,077
NIAGARA, CITY OF	684,631	55,816	45,870	101,686	0
OAK CREEK, CITY OF	19,887,692	1,985,096	1,332,481	3,317,577	0
OCONOMOWOC, CITY OF	8,199,985	625,582	549,401	1,174,984	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
OCONTO FALLS, CITY OF	1,451,761	113,273	97,268	210,541	0
OCONTO, CITY OF	2,296,813	225,522	153,887	379,409	0
OMRO, CITY OF	1,189,115	95,916	79,671	175,587	0
ONALASKA, CITY OF	5,752,578	531,976	385,424	917,400	0
OSHKOSH, CITY OF	37,018,002	3,552,672	2,480,215	6,032,887	0
OSSEO, CITY OF	625,611	51,154	41,916	93,070	0
OWEN, CITY OF	333,878	22,370	22,370	44,740	0
PARK FALLS, CITY OF	1,285,027	103,791	86,097	189,888	0
PESHTIGO, CITY OF	322,834	35,286	21,630	56,916	0
PHILLIPS, CITY OF	842,534	81,571	56,450	138,022	9,347
PITTSVILLE, CITY OF	66,803	7,301	4,476	11,777	0
PLATTEVILLE, CITY OF	4,040,929	318,908	270,744	589,652	0
PLYMOUTH, CITY OF	4,196,530	329,218	281,169	610,386	0
PORT WASHINGTON, CITY OF	5,121,235	423,468	343,124	766,592	0
PORTAGE, CITY OF	4,473,632	400,551	299,734	700,286	0
PRAIRIE DU CHIEN, CITY OF	2,006,434	170,540	134,431	304,971	0
PRESCOTT, CITY OF	1,390,336	116,901	93,153	210,054	0
PRINCETON, CITY OF	557,907	45,818	37,380	83,198	0
RACINE, CITY OF	52,350,961	5,380,712	3,507,529	8,888,241	0
REEDSBURG, CITY OF	5,538,283	427,581	371,065	798,646	0
RHINELANDER, CITY OF	5,680,341	558,841	380,585	939,426	0
RICE LAKE, CITY OF	5,780,643	538,140	387,304	925,444	0
RICHLAND CENTER, CITY OF	2,737,629	212,355	183,422	395,777	0
RIPON, CITY OF	3,034,875	242,393	203,337	445,730	0
RIVER FALLS, CITY OF	8,119,664	618,312	544,020	1,162,332	0
SCHOFIELD, CITY OF	550,448	41,837	36,880	78,717	0
SEYMOUR, CITY OF	1,110,634	87,829	74,413	162,241	0
SHAWANO, CITY OF	3,368,009	285,572	225,657	511,229	0
SHEBOYGAN FALLS, CITY OF	2,662,220	223,388	178,369	401,758	0
SHEBOYGAN, CITY OF	27,492,935	2,584,629	1,842,027	4,426,656	0
SHELL LAKE, CITY OF	560,065	44,525	37,524	82,050	0
SHULLSBURG, CITY OF	387,558	28,530	25,967	54,497	0
SOUTH MILWAUKEE, CITY OF	9,861,966	1,189,343	660,754	1,850,097	0
SPARTA, CITY OF	3,429,634	283,458	229,786	513,244	0
SPOONER, CITY OF	1,480,002	115,994	99,161	215,155	0
ST CROIX FALLS, CITY OF	896,235	75,903	60,048	135,951	0
ST FRANCIS, CITY OF	4,853,075	571,544	325,157	896,701	0
STANLEY, CITY OF	683,332	57,993	45,783	103,776	0
STEVENS POINT, CITY OF	13,765,158	1,356,773	922,269	2,279,042	0
STOUGHTON, CITY OF	6,864,772	533,008	459,942	992,949	0
STURGEON BAY, CITY OF	5,851,570	546,050	392,058	938,108	0
SUN PRAIRIE, CITY OF	11,584,831	989,277	776,186	1,765,463	0
SUPERIOR, CITY OF	16,873,160	1,803,878	1,130,506	2,934,385	0
THORP, CITY OF	492,217	39,170	32,979	72,149	0
TOMAH, CITY OF	4,770,930	381,972	319,653	701,626	0
TOMAHAWK, CITY OF	1,606,232	129,603	107,618	237,221	0
TWO RIVERS, CITY OF	8,182,118	993,046	548,204	1,541,250	1,755,460

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
VERONA, CITY OF	5,977,401	511,415	400,486	911,900	0
VIROQUA, CITY OF	1,894,580	245,544	126,938	372,481	1,247,200
WASHBURN, CITY OF	935,016	73,869	62,647	136,516	0
WATERLOO, CITY OF	1,661,470	133,940	111,319	245,259	0
WATERTOWN, CITY OF	10,068,591	917,515	674,600	1,592,115	0
WAUKESHA, CITY OF	39,445,631	3,838,450	2,642,868	6,481,318	0
WAUPACA, CITY OF	3,236,938	261,415	216,875	478,290	0
WAUPUN, CITY OF	4,034,483	328,890	270,311	599,201	0
WAUSAU, CITY OF	19,678,481	1,937,062	1,318,458	3,255,520	0
WAUTOMA, CITY OF	774,122	63,745	51,867	115,611	0
WAUWATOSA, CITY OF	30,496,633	3,140,585	2,043,281	5,183,865	0
WEST ALLIS, CITY OF	37,386,730	3,724,093	2,504,921	6,229,014	0
WEST BEND, CITY OF	14,256,588	1,463,254	955,195	2,418,449	0
WESTBY, CITY OF	883,038	66,970	59,164	126,133	0
WEYAUWEGA, CITY OF	648,421	55,082	43,444	98,526	0
WHITEHALL, CITY OF	959,121	73,420	64,261	137,681	0
WHITEWATER, CITY OF	5,370,807	439,888	359,844	799,733	0
WISCONSIN DELLS, CITY OF	3,364,150	273,893	225,399	499,292	0
WISCONSIN RAPIDS, CITY OF	15,304,894	1,378,238	1,025,432	2,403,670	0
Total Cities (188)	1,425,771,279	134,623,212	95,526,999	230,150,211	5,848,808

Villages

ADELL, VILLAGE OF	123,353	8,265	8,265	16,529	0
ALBANY, VILLAGE OF	425,506	34,527	28,509	63,037	0
ALLOUEZ, VILLAGE OF	1,950,398	130,676	130,677	261,353	0
AMHERST, VILLAGE OF	249,272	16,701	16,701	33,402	0
ARGYLE, VILLAGE OF	283,228	21,618	18,976	40,594	0
ARLINGTON, VILLAGE OF	132,409	8,871	8,871	17,743	0
ASHWAUBENON, VILLAGE OF	8,419,687	839,081	564,121	1,403,201	0
ATHENS, VILLAGE OF	242,612	18,714	16,255	34,969	0
AVOCA, VILLAGE OF	136,464	9,143	9,143	18,286	0
BALDWIN, VILLAGE OF	1,529,818	134,622	102,498	237,120	0
BALSAM LAKE, VILLAGE OF	382,638	32,608	25,637	58,245	2,387
BANGOR, VILLAGE OF	848,288	62,545	56,835	119,381	0
BAY CITY, VILLAGE OF	141,221	9,462	9,462	18,924	0
BAYSIDE, VILLAGE OF	2,878,305	233,105	192,847	425,952	0
BELGIUM, VILLAGE OF	316,224	21,187	21,187	42,374	0
BELLEVILLE, VILLAGE OF	1,004,165	82,195	67,279	149,474	0
BELLEVUE, VILLAGE OF (BROWN)	2,082,752	165,902	139,545	305,447	0
BELMONT, VILLAGE OF	357,675	28,054	23,965	52,019	0
BENTON, VILLAGE OF	252,695	16,931	16,931	33,861	0
BIG BEND, VILLAGE OF	462,650	41,867	30,998	72,865	0
BIRCHWOOD, VILLAGE OF	177,003	14,249	11,859	26,108	0
BIRNAMWOOD, VILLAGE OF	77,211	5,173	5,173	10,346	0
BIRON, VILLAGE OF	245,671	16,460	16,460	32,920	0
BLACK CREEK, VILLAGE OF	338,619	24,914	22,688	47,602	0
BLACK EARTH, VILLAGE OF	310,336	20,792	20,793	41,585	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
BLANCHARDVILLE, VILLAGE OF	177,260	11,876	11,876	23,753	0
BLOOMFIELD, VILLAGE OF	1,138,273	99,313	76,265	175,578	0
BLUE MOUNDS, VILLAGE OF	215,128	16,651	14,414	31,065	0
BLUE RIVER, VILLAGE OF	116,294	7,792	7,792	15,583	0
BOYCEVILLE, VILLAGE OF	369,371	35,376	24,748	60,124	5,978
BOYD, VILLAGE OF	217,939	16,094	14,602	30,696	0
BRANDON, VILLAGE OF	262,099	18,093	17,561	35,654	0
BRISTOL, VILLAGE OF	809,322	76,823	54,225	131,048	319,559
BROOKLYN, VILLAGE OF	376,484	29,058	25,224	54,283	0
BROWN DEER, VILLAGE OF	4,933,700	434,047	330,560	764,607	0
BROWNSVILLE, VILLAGE OF	166,156	11,132	11,133	22,265	0
BROWNTOWN, VILLAGE OF	74,089	4,964	4,964	9,928	0
BRUCE, VILLAGE OF	171,890	11,517	11,517	23,033	0
BUTLER, VILLAGE OF	984,571	91,324	65,966	157,290	0
CADOTT, VILLAGE OF	545,239	43,111	36,531	79,642	0
CALEDONIA, VILLAGE OF (RACINE)	10,049,826	1,096,548	673,342	1,769,890	0
CAMBRIA, VILLAGE OF	224,840	15,064	15,064	30,129	0
CAMBRIDGE, VILLAGE OF	401,994	26,933	26,934	53,867	0
CAMERON, VILLAGE OF	492,117	39,895	32,972	72,867	0
CAMP DOUGLAS, VILLAGE OF	125,936	8,438	8,438	16,875	0
CAMPBELLSPORT, VILLAGE OF	479,079	34,311	32,099	66,410	0
CASCADE, VILLAGE OF	118,078	7,911	7,911	15,822	0
CASCO, VILLAGE OF	58,026	3,888	3,888	7,776	0
CASHTON, VILLAGE OF	539,306	40,018	36,134	76,152	0
CEDAR GROVE, VILLAGE OF	341,285	22,866	22,866	45,732	0
CENTURIA, VILLAGE OF	302,168	28,158	20,246	48,404	111,468
CHASEBURG, VILLAGE OF	70,954	4,754	4,754	9,508	0
CHENEQUA, VILLAGE OF	829,943	82,674	55,606	138,281	0
CLAYTON, VILLAGE OF	156,010	11,608	10,453	22,060	0
CLEAR LAKE, VILLAGE OF	506,950	41,434	33,966	75,400	0
CLEVELAND, VILLAGE OF	417,445	32,898	27,969	60,866	0
CLINTON, VILLAGE OF	706,891	61,101	47,362	108,463	0
CLYMAN, VILLAGE OF	113,562	7,836	7,609	15,444	1,906
COBB, VILLAGE OF	84,377	5,653	5,653	11,307	0
COCHRANE, VILLAGE OF	87,344	5,852	5,852	11,704	0
COLEMAN, VILLAGE OF	222,029	16,752	14,876	31,628	0
COLFAX, VILLAGE OF	554,917	41,285	37,180	78,465	0
COLOMA, VILLAGE OF	225,793	16,453	15,128	31,581	0
COMBINED LOCKS, VILLAGE OF	437,295	29,299	29,299	58,598	0
COON VALLEY, VILLAGE OF	211,992	15,461	14,204	29,665	0
COTTAGE GROVE, VILLAGE OF	1,744,018	146,961	116,849	263,810	0
CRIVITZ, VILLAGE OF	304,765	24,480	20,419	44,899	0
CROSS PLAINS, VILLAGE OF	1,151,484	110,208	77,150	187,358	61,540
DALLAS, VILLAGE OF	41,786	2,800	2,800	5,599	0
DANE, VILLAGE OF	173,457	11,622	11,622	23,243	0
DARIEN, VILLAGE OF	382,885	25,653	25,654	51,307	0
DE SOTO, VILLAGE OF	72,707	4,871	4,871	9,743	0

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
DEERFIELD, VILLAGE OF	479,674	32,138	32,138	64,276	0
DEFOREST, VILLAGE OF	3,475,320	298,915	232,848	531,762	0
DENMARK, VILLAGE OF	311,415	20,865	20,865	41,730	0
DICKEYVILLE, VILLAGE OF	255,983	19,575	17,151	36,726	0
DOUSMAN, VILLAGE OF	217,670	14,584	14,584	29,168	0
DRESSER, VILLAGE OF	270,638	20,441	18,133	38,573	0
EAGLE, VILLAGE OF	361,660	33,300	24,231	57,531	0
EAST TROY, VILLAGE OF	1,458,231	125,978	97,702	223,680	0
EASTMAN, VILLAGE OF	73,638	4,934	4,934	9,867	0
EDGAR, VILLAGE OF	276,406	20,467	18,519	38,987	0
EGG HARBOR, VILLAGE OF	463,636	31,063	31,064	62,127	0
ELEVA, VILLAGE OF	185,231	14,496	12,410	26,906	0
ELK MOUND, VILLAGE OF	339,927	24,866	22,775	47,642	0
ELKHART LAKE, VILLAGE OF	611,351	49,601	40,961	90,562	0
ELLSWORTH, VILLAGE OF	995,354	81,344	66,689	148,033	0
ELM GROVE, VILLAGE OF	3,236,257	284,728	216,830	501,558	0
ELMWOOD, VILLAGE OF	199,544	14,972	13,369	28,342	0
EPHRAIM, VILLAGE OF	372,650	24,967	24,968	49,935	0
ETTRICK, VILLAGE OF	153,179	10,263	10,263	20,526	0
FAIRWATER, VILLAGE OF	61,641	4,130	4,130	8,260	0
FALL CREEK, VILLAGE OF	366,689	29,682	24,569	54,251	0
FALL RIVER, VILLAGE OF	299,086	24,463	20,039	44,502	0
FERRYVILLE, VILLAGE OF	34,188	2,291	2,291	4,581	0
FONTANA ON GNVA LK, VILLAGE OF	1,438,588	116,990	96,386	213,375	0
FOX CROSSING, VILLAGE OF	5,447,784	474,318	365,003	839,320	0
FOX POINT, VILLAGE OF	3,406,954	297,012	228,267	525,279	0
FREDERIC, VILLAGE OF	336,133	23,658	22,521	46,179	0
FREMONT, VILLAGE OF	128,227	9,890	8,591	18,481	0
FRIENDSHIP, VILLAGE OF	175,261	11,742	11,743	23,485	0
GAYS MILLS, VILLAGE OF	170,634	11,432	11,433	22,865	0
GENOA CITY, VILLAGE OF	929,294	78,509	62,263	140,772	0
GERMANTOWN, VILLAGE OF	7,386,990	630,340	494,930	1,125,270	0
GILMAN, VILLAGE OF	188,849	14,866	12,654	27,519	0
GRAFTON, VILLAGE OF	5,186,729	433,088	347,512	780,600	0
GRANTON, VILLAGE OF	164,720	11,036	11,036	22,073	0
GRANTSBURG, VILLAGE OF	549,249	44,357	36,800	81,157	0
GREENDALE, VILLAGE OF	6,880,341	785,621	460,985	1,246,605	0
GRESHAM, VILLAGE OF	442,532	29,650	29,650	59,299	0
HALES CORNERS, VILLAGE OF	2,679,254	248,452	179,511	427,963	0
HAMMOND, VILLAGE OF	558,191	45,546	37,399	82,945	0
HARRISON, VILLAGE OF	1,023,634	68,583	68,584	137,167	0
HARTLAND, VILLAGE OF	3,425,903	296,614	229,536	526,151	0
HAUGEN, VILLAGE OF	38,446	2,576	2,576	5,152	0
HAWKINS, VILLAGE OF	96,016	8,833	6,433	15,266	4,665
HAZEL GREEN, VILLAGE OF	469,502	35,943	31,457	67,400	0
HIGHLAND, VILLAGE OF	213,117	16,033	14,279	30,312	0
HILBERT, VILLAGE OF	262,800	17,608	17,608	35,215	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
HIXTON, VILLAGE OF	64,053	4,932	4,292	9,224	9,843
HOBART, VILLAGE OF	1,287,387	114,385	86,255	200,640	0
HOLLANDALE, VILLAGE OF	24,422	1,636	1,636	3,273	0
HOLMEN, VILLAGE OF	2,126,563	177,951	142,480	320,431	0
HORTONVILLE, VILLAGE OF	932,917	75,091	62,506	137,597	0
HOWARD, VILLAGE OF	2,950,074	208,858	197,656	406,513	0
HOWARDS GROVE, VILLAGE OF	368,393	24,682	24,682	49,365	0
HUSTISFORD, VILLAGE OF	646,560	51,078	43,320	94,398	67,217
IOLA, VILLAGE OF	522,900	43,031	35,034	78,065	0
IRON RIDGE, VILLAGE OF	149,480	12,129	10,015	22,144	0
JACKSON, VILLAGE OF	2,388,297	206,125	160,017	366,141	0
JOHNSON CREEK, VILLAGE OF	845,401	65,542	56,642	122,185	0
JUNCTION CITY, VILLAGE OF	75,636	8,320	5,068	13,388	81,798
KENDALL, VILLAGE OF	153,099	10,258	10,258	20,515	0
KEWASKUM, VILLAGE OF	1,155,400	102,324	77,412	179,736	0
KIMBERLY, VILLAGE OF	1,469,939	98,485	98,487	196,972	0
KOHLER, VILLAGE OF	1,137,245	101,101	76,196	177,296	0
KRONENWETTER, VILLAGE OF	1,335,317	111,208	89,467	200,675	0
LA FARGE, VILLAGE OF	412,569	29,249	27,642	56,892	0
LA VALLE, VILLAGE OF	74,618	4,999	4,999	9,999	0
LAC LA BELLE, VILLAGE OF	31,517	2,111	2,112	4,223	0
LAKE DELTON, VILLAGE OF	2,891,872	276,755	193,756	470,511	0
LAKE HALLIE, VILLAGE OF	896,507	82,646	60,066	142,712	0
LAKE NEBAGAMON, VILLAGE OF	199,501	13,367	13,367	26,733	0
LANNON, VILLAGE OF	119,876	10,411	8,032	18,443	0
LENA, VILLAGE OF	235,410	17,843	15,773	33,616	0
LINDEN, VILLAGE OF	140,898	9,964	9,440	19,404	0
LITTLE CHUTE, VILLAGE OF	4,021,160	345,053	269,419	614,472	0
LOGANVILLE, VILLAGE OF	44,870	3,006	3,006	6,013	0
LOMIRA, VILLAGE OF	541,703	44,087	36,294	80,381	0
LUCK, VILLAGE OF	536,495	45,693	35,945	81,638	25,304
LUXEMBURG, VILLAGE OF	251,070	18,724	16,822	35,546	0
MAPLE BLUFF, VILLAGE OF	1,090,926	106,391	73,092	179,483	0
MARATHON CITY, VILLAGE OF	528,237	41,300	35,392	76,692	0
MARSHALL, VILLAGE OF	1,031,754	90,214	69,128	159,342	0
MATTOON, VILLAGE OF	52,491	3,517	3,517	7,034	0
MAZOMANIE, VILLAGE OF	393,950	26,395	26,395	52,789	0
MCFARLAND, VILLAGE OF	3,365,238	293,935	225,472	519,407	0
MENOMONEE FALLS, VILLAGE OF	14,186,137	1,271,321	950,475	2,221,796	0
MILLTOWN, VILLAGE OF	313,605	24,040	21,012	45,052	0
MINONG, VILLAGE OF	252,124	20,987	16,892	37,879	0
MISHICOT, VILLAGE OF	328,854	27,183	22,033	49,216	0
MONTFORT, VILLAGE OF	153,079	10,256	10,256	20,513	0
MONTICELLO, VILLAGE OF	337,813	26,841	22,634	49,474	0
MOUNT HOREB, VILLAGE OF	3,037,687	242,163	203,526	445,689	0
MT PLEASANT, VILLAGE OF(RACINE	11,292,357	1,187,662	756,590	1,944,252	0
MUKWONAGO, VILLAGE OF	3,617,139	310,898	242,349	553,247	0



Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
MUSCODA, VILLAGE OF	557,963	43,867	37,384	81,251	0
NECEDAH, VILLAGE OF	346,655	25,313	23,226	48,539	0
NESHKORO, VILLAGE OF	76,535	10,945	5,128	16,072	106,745
NEW GLARUS, VILLAGE OF	980,446	73,800	65,690	139,490	0
NEWBURG, VILLAGE OF	119,412	8,001	8,001	16,001	0
NICHOLS, VILLAGE OF	45,531	3,051	3,051	6,101	0
NORTH FOND DU LAC, VILLAGE OF	2,445,066	210,870	163,820	374,690	0
NORTH FREEDOM, VILLAGE OF	108,965	7,301	7,301	14,601	0
NORTH HUDSON, VILLAGE OF	561,269	47,401	37,605	85,006	0
OCONOMOWOC LAKE, VILLAGE OF	658,113	67,006	44,094	111,100	0
ONTARIO, VILLAGE OF	159,151	11,820	10,663	22,483	0
OOSTBURG, VILLAGE OF	407,135	27,278	27,278	54,556	0
OREGON, VILLAGE OF	3,220,749	268,721	215,791	484,512	0
ORFORDVILLE, VILLAGE OF	445,474	34,895	29,847	64,742	0
OSCEOLA, VILLAGE OF	907,380	73,381	60,795	134,176	0
OXFORD, VILLAGE OF (MARQUETTE)	134,532	10,206	9,014	19,220	0
PADDOCK LAKE, VILLAGE OF	370,571	24,828	24,828	49,657	0
PARDEVILLE, VILLAGE OF	473,780	31,743	31,744	63,487	0
PEPIN, VILLAGE OF	228,392	17,461	15,302	32,763	0
PEWAUKEE, VILLAGE OF	3,040,524	265,034	203,716	468,750	0
PLAIN, VILLAGE OF	221,832	14,863	14,863	29,726	0
PLAINFIELD, VILLAGE OF	185,622	14,408	12,437	26,844	0
PLEASANT PRAIRIE, VILLAGE OF	13,692,595	1,124,955	917,406	2,042,360	0
PLOVER, VILLAGE OF	4,172,160	356,663	279,536	636,199	0
PORT EDWARDS, VILLAGE OF	743,828	58,212	49,837	108,049	0
POUND, VILLAGE OF	79,903	5,353	5,354	10,707	0
POYNETTE, VILLAGE OF	833,261	67,148	55,829	122,977	0
PRAIRIE DU SAC, VILLAGE OF	1,168,925	78,317	78,319	156,636	0
PRAIRIE FARM, VILLAGE OF	796,189	53,344	53,345	106,689	0
PULASKI, VILLAGE OF	1,106,193	93,309	74,115	167,424	0
RANDOLPH, VILLAGE OF	487,741	52,955	32,679	85,633	77,672
RANDOM LAKE, VILLAGE OF	356,419	25,507	23,880	49,387	0
RIB LAKE, VILLAGE OF	154,972	10,383	10,383	20,766	0
RIO, VILLAGE OF	309,109	24,830	20,710	45,541	0
RIVER HILLS, VILLAGE OF	1,499,281	141,600	100,452	242,052	0
ROBERTS, VILLAGE OF	610,543	49,366	40,907	90,273	0
ROCHESTER, VILLAGE OF	249,005	16,683	16,683	33,367	0
ROCK SPRINGS, VILLAGE OF	68,575	4,595	4,595	9,189	0
ROCKLAND, VILLAGE OF	128,038	8,578	8,579	17,157	0
ROSENDALE, VILLAGE OF	197,744	15,685	13,249	28,934	0
ROSHOLT, VILLAGE OF	73,318	4,912	4,912	9,825	0
ROTHSCHILD, VILLAGE OF	1,679,017	145,859	112,495	258,354	0
SALEM LAKES, VILLAGE OF	1,713,532	132,990	114,807	247,797	0
SAUK CITY, VILLAGE OF	977,375	65,484	65,484	130,968	0
SAUKVILLE, VILLAGE OF	1,851,432	158,355	124,047	282,401	0
SHARON, VILLAGE OF	605,869	52,764	40,593	93,358	0
SHERWOOD, VILLAGE OF	393,514	26,365	26,366	52,731	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
SHIOCTON, VILLAGE OF	269,279	19,993	18,042	38,035	0
SHOREWOOD HILLS, VILLAGE OF	1,253,583	105,023	83,990	189,014	0
SHOREWOOD, VILLAGE OF	4,885,910	414,366	327,357	741,722	0
SIREN, VILLAGE OF	396,554	33,117	26,569	59,686	0
SISTER BAY, VILLAGE OF	707,267	47,387	47,387	94,774	0
SLINGER, VILLAGE OF	1,975,353	166,081	132,349	298,430	0
SOLDIERS GROVE, VILLAGE OF	141,905	17,312	9,508	26,820	155,300
SOLO SPRINGS, VILLAGE OF	125,670	8,420	8,420	16,840	0
SOMERS, VILLAGE OF	1,822,914	156,257	122,136	278,393	0
SOMERSET, VILLAGE OF	1,086,015	87,584	72,763	160,348	0
SOUTH WAYNE, VILLAGE OF	85,065	5,699	5,700	11,399	0
SPENCER, VILLAGE OF	554,454	45,527	37,149	82,675	0
SPRING GREEN, VILLAGE OF	539,246	42,800	36,130	78,929	0
SPRING VALLEY, VILLAGE OF	307,837	23,270	20,625	43,895	0
ST NAZIANZ, VILLAGE OF	185,466	12,426	12,426	24,852	0
STOCKBRIDGE, VILLAGE OF	30,727	2,059	2,059	4,117	0
STODDARD, VILLAGE OF	173,499	11,624	11,624	23,249	0
STRATFORD, VILLAGE OF	514,851	39,383	34,495	73,878	0
STRUM, VILLAGE OF	318,605	30,098	21,347	51,445	16,002
SUAMICO, VILLAGE OF	1,153,710	78,860	77,299	156,158	0
SULLIVAN, VILLAGE OF	137,336	9,201	9,202	18,403	0
SUMMIT, VILLAGE OF (WAUKESHA)	1,282,872	121,251	85,953	207,204	0
SURING, VILLAGE OF	223,023	18,351	14,943	33,294	47,825
SUSSEX, VILLAGE OF	2,922,290	217,491	195,795	413,286	0
THIENSVILLE, VILLAGE OF	1,220,952	105,407	81,804	187,211	0
TREMPEALEAU, VILLAGE OF	751,857	57,713	50,374	108,088	0
TURTLE LAKE, VILLAGE OF	565,633	48,445	37,898	86,342	0
TWIN LAKES, VILLAGE OF	2,306,302	193,182	154,522	347,704	0
UNION CENTER, VILLAGE OF	118,290	8,425	7,926	16,351	0
UNION GROVE, VILLAGE OF	807,255	54,086	54,086	108,172	0
VALDERS, VILLAGE OF	488,024	32,698	32,698	65,395	0
WALWORTH, VILLAGE OF	868,128	82,120	58,165	140,285	4,256
WARRENS, VILLAGE OF	139,146	9,323	9,323	18,646	0
WATERFORD, VILLAGE OF	1,073,733	76,037	71,940	147,978	0
WAUNAKEE, VILLAGE OF	4,252,603	349,138	284,926	634,063	0
WAUSAUKEE, VILLAGE OF	150,576	10,089	10,089	20,177	0
WAUZEKA, VILLAGE OF	100,353	6,724	6,724	13,447	0
WEST BARABOO, VILLAGE OF	205,959	13,799	13,799	27,599	0
WEST MILWAUKEE, VILLAGE OF	2,842,132	314,429	190,424	504,853	2,532,435
WEST SALEM, VILLAGE OF	957,676	80,534	64,165	144,699	0
WESTFIELD, VILLAGE OF	311,073	24,213	20,842	45,055	0
WESTON, VILLAGE OF (MARATHON)	2,077,489	139,192	139,192	278,383	0
WHITE LAKE, VILLAGE OF	106,711	7,150	7,150	14,299	0
WHITEFISH BAY, VILLAGE OF	4,376,895	377,903	293,252	671,155	0
WHITELAW, VILLAGE OF	93,369	6,256	6,256	12,511	0
WHITING, VILLAGE OF	263,914	17,682	17,682	35,364	0
WILD ROSE, VILLAGE OF	263,954	21,634	17,685	39,319	0

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
WILLIAMS BAY, VILLAGE OF	1,351,655	124,511	90,561	215,073	69,773
WILSON, VILLAGE OF	45,533	3,233	3,051	6,284	4,709
WIND POINT, VILLAGE OF	254,044	19,908	17,021	36,929	0
WINDSOR, VILLAGE OF	980,755	65,710	65,711	131,421	0
WINNECONNE, VILLAGE OF	866,332	69,961	58,044	128,006	0
WITHEE, VILLAGE OF	118,954	7,970	7,970	15,940	0
WONEWOC, VILLAGE OF	296,008	22,050	19,833	41,882	0
WOODVILLE, VILLAGE OF	568,050	47,371	38,059	85,431	0
WRIGHTSTOWN, VILLAGE OF	842,731	66,985	56,463	123,448	0
WYOCENA, VILLAGE OF	138,296	9,266	9,266	18,532	0
YORKVILLE, VILLAGE OF	106,823	7,157	7,157	14,314	0
Total Villages (271)	280,314,599	24,093,705	18,781,155	42,874,860	3,706,383

Special Districts

ADRC OF THE NORTHWOODS	424,176	28,420	28,420	56,840	0
ALBANY HOUSING AUTHORITY	39,651	2,657	2,657	5,313	0
ALGOMA CITY HOUSING AUTH	26,128	1,751	1,751	3,501	0
ALGOMA SANITARY DIST	475,402	31,852	31,852	63,704	0
ALLENTON SANITARY DIST	12,015	805	805	1,610	0
ANTIGO CITY HOUSING AUTH	312,681	20,950	20,950	41,899	0
APPLETON CITY HOUSING AUTH	836,740	56,061	56,062	112,123	0
ASHLAND CITY HOUSING AUTH	278,393	20,879	18,652	39,532	11,289
ASHLAND COUNTY HOUSING AUTH	645,370	43,240	43,240	86,480	0
BARABOO DISTRICT AMBULANCE	1,606,917	172,701	107,663	280,365	0
BARRON CO HOUSING AUTHORITY	150,206	10,064	10,064	20,128	0
BAY AREA RURAL TRANSIT COMMISS	377,444	25,289	25,289	50,578	0
BAYFIELD COUNTY HOUSING AUTH	113,870	7,629	7,629	15,259	0
BAY-LAKE REGIONAL PLAN COMM	453,589	30,390	30,391	60,781	0
BIG CEDAR LAKE PROT/REHAB DIST	62,427	4,756	4,183	8,938	0
BROCKWAY SANITARY DISTRICT #1	100,138	6,709	6,709	13,419	0
BRUCE VILLAGE HOUSING AUTH	88,145	5,906	5,906	11,811	0
BURLINGTON CITY HOUSING AUTH	55,348	3,708	3,708	7,417	0
CAMBRIDGE-OAKLAND WSTEWTR COMM	122,478	8,206	8,206	16,412	0
CAPITAL AREA REG PLAN COMM	573,009	38,392	38,392	76,783	0
CENTRAL BROWN CTY WATER AUTH	99,317	6,654	6,654	13,309	0
CHILTON CITY HOUSING AUTH	67,472	4,521	4,521	9,041	0
CHIPPEWA CO HOUSING AUTH	462,018	30,955	30,956	61,910	0
CHIPPEWA FIRE DISTRICT	962,297	103,580	64,474	168,054	0
CITY-COUNTY DATA CENTER COMM	2,061,925	138,149	138,149	276,298	0
CLINTONVILLE CITY HOUS AUTH	105,459	7,066	7,066	14,132	0
COLBY/ABBOTSFORD JT POLICE COM	467,040	49,585	31,292	80,877	0
CONSOL KOSHKONONG SANITARY DIS	342,993	22,981	22,981	45,961	0
COUNTRY ESTATES SAN DIST	31,223	2,092	2,092	4,184	0
CROSS PLAINS AREA EMS	85,150	8,765	5,705	14,470	0
CUMBERLAND MUNICIPAL UTILITY	707,787	47,422	47,422	94,843	0
DANE COUNTY DIST #1 EMS	65,372	7,145	4,380	11,525	0
DANE COUNTY HOUSING AUTHORITY	554,135	43,776	37,127	80,904	438,284

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
DANE-IOWA WASTEWATER COMM	167,558	11,226	11,226	22,453	0
DARBOY JOINT SANITARY DIST #1	287,164	19,240	19,240	38,480	0
DEER-GROVE EMS DIST	515,523	55,929	34,540	90,469	0
DEFOREST WINDSOR FIRE & EMS	440,863	46,453	29,538	75,991	0
DELAFIELD-HARTL WATER POL CNTL	528,638	35,419	35,419	70,837	0
DELAVAN LAKE SANITARY DISTRICT	505,286	33,854	33,854	67,708	0
DELLS-DELTON EMS COMM	1,261,918	136,809	84,549	221,358	0
DELTON FIRE & AMBULANCE COMM	115,372	11,910	7,730	19,640	0
DODGE COUNTY HOUSING AUTHORITY	128,841	8,632	8,632	17,265	0
DOOR CTY TOURISM ZONE COMM	55,500	3,718	3,718	7,437	0
EAGLE RIVER UNION AIRPORT	116,903	7,832	7,833	15,665	0
EAST CENTRAL WIS REG PLAN COMM	1,232,174	82,555	82,556	165,111	0
EASTERN COLUMBIA CTY JM COURT	60,976	4,085	4,085	8,171	0
EAU CLAIRE CITY HOUSING AUTH	540,663	36,224	36,225	72,449	0
EAU CLAIRE COUNTY HOUSING AUTH	145,016	9,716	9,716	19,432	0
EAUCLAIRE CITY-CO HEALTH DPT	3,311,834	221,891	221,895	443,786	0
EDGERTON CITY HOUSING AUTH	131,964	8,842	8,842	17,683	0
EDGERTON FIRE PROT DIST	310,461	33,933	20,801	54,734	0
EVEREST METRO POLICE COMM	2,145,855	226,589	143,772	370,362	0
FISH CREEK SANITARY DIST #1	210,067	14,074	14,075	28,149	0
FITCH-RONA EMS DISTRICT	1,211,027	131,944	81,139	213,083	0
FOND DU LAC CITY HOUSING AUTH	710,594	47,610	47,610	95,220	0
FONTANA/WALWORTH WTR POL CN CM	336,397	22,539	22,539	45,077	0
FOX LAKE WASTEWATER CONTR COMM	13,753	921	921	1,843	0
FOX WEST REGIONAL SEWER COMM	365,753	24,505	24,506	49,011	0
FREEDOM SANITARY DISTRICT #1	153,491	10,284	10,284	20,568	0
GB/BROWN CO PRO FTBLL STAD DIS	81,272	5,445	5,445	10,890	0
GOODMAN SANITARY DISTRICT NO 1	42,390	2,840	2,840	5,680	0
GREEN BAY METRO SEWERAGE DIST	7,382,850	494,649	494,653	989,302	0
GREEN LAKE SANITARY DISTRICT	208,944	13,999	13,999	27,999	0
HA OF THE CITY OF S MILWAUKEE	177,219	11,874	11,874	23,747	0
HARMONY GROVE-OKEE JT SEW COMM	144,993	9,714	9,715	19,429	0
HEART OF THE VALLEY MET SEW DS	733,388	49,137	49,137	98,274	0
HOLMEN AREA FIRE DEPT	245,842	26,871	16,471	43,342	0
HUDSON CITY HOUSING AUTHORITY	73,391	4,917	4,917	9,834	0
HUM SRV CTR ONIDA VILAS FORST	2,210,107	148,076	148,078	296,154	0
HURLEY HOUSING AUTHORITY	71,954	4,821	4,821	9,642	0
INDIANHEAD FED LIBRARY SYSTEM	737,282	49,398	49,398	98,796	0
IRON RIVER SANITARY DIST #1	100,345	6,723	6,723	13,446	0
JEFFERSON CITY HOUSING AUTH	138,938	10,420	9,309	19,729	11,489
KAUKAUNA CITY HOUSING AUTH	143,010	9,582	9,582	19,163	0
KEGONSA SANITARY DISTRICT	93,460	6,262	6,262	12,524	0
KELLY LAKE SANITARY DIST #1	36,259	2,429	2,429	4,859	0
KENOSHA JOINT SERVICES	4,090,977	274,095	274,096	548,191	0
LA CROSSE CITY HOUSING AUTH	1,044,514	69,982	69,983	139,965	0
LADYSMITH HOUSING AUTH	110,095	7,376	7,376	14,753	0
LAKE COMO SANITARY DIST #1	264,104	19,015	17,695	36,711	21,376

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
LAKE COUNTRY FIRE & RESCUE	1,206,498	129,327	80,835	210,163	0
LAKE MILLS CITY HOUSING AUTH	102,918	6,896	6,896	13,791	0
LAKE RIPLEY MGT DISTRICT	48,785	3,415	3,269	6,684	7,486
LAKELAND SANITARY DISTRICT #1	303,932	20,363	20,364	40,727	0
LAKESHORES LIBRARY SYSTEM	328,957	22,040	22,040	44,080	0
LAONA SANITARY DISTRICT #1	84,564	5,666	5,666	11,332	0
LEAGUE OF WISC MUNICIPALITIES	750,626	50,292	50,292	100,584	0
LINCOLN COUNTY HOUSING AUTH	104,521	7,003	7,003	14,006	0
LODI COMMUNITY AMBULANCE SERV	161,786	17,683	10,840	28,523	0
LYONS SANITARY DISTRICT #2	91,886	6,156	6,156	12,313	0
MADELINE SANITARY DISTRICT	61,186	4,099	4,099	8,199	0
MADISON METRO SEWERAGE DIST	8,362,037	560,255	560,258	1,120,513	0
MANITOWOC CITY HOUSING AUTH	121,071	8,112	8,112	16,223	0
MANITOWOC-CALUMET LIB SYS	102,721	6,882	6,882	13,765	0
MARINETTE CITY HOUSING AUTH	194,752	15,775	13,048	28,823	90,102
MARSHALL AREA EMS DIST #14	166,133	17,942	11,131	29,073	0
MARSHFIELD CDA	303,470	20,332	20,333	40,665	0
MARSHFIELD ELECTRIC & WATER	3,291,065	220,501	220,502	441,003	0
MENASHA ELECTRIC & WATER	2,903,571	194,539	194,540	389,079	0
MENOMONIE CITY HOUSING AUTH	202,683	13,580	13,580	27,160	0
MEQUON - THIENSVILLE LIBRARY	489,931	32,825	32,826	65,651	0
MERCER SANITARY DISTRICT #1	137,960	9,243	9,243	18,487	0
MERRILL CITY HOUSING AUTHORITY	418,922	28,068	28,068	56,136	0
MIDDLETON FIRE DISTRICT	416,991	54,908	27,938	82,846	0
MID-MORAINÉ MUNICIPAL COURT	367,690	24,635	24,635	49,271	0
MILW AREA DOM ANIMAL CONT COMM	1,394,707	93,445	93,446	186,891	0
MILWAUKEE CO FED LIB SYS	336,677	22,557	22,557	45,115	0
MISSISSIPPI RIVER REG PLAN COM	229,202	15,356	15,357	30,713	0
MONARCH LIBRARY SYSTEM	517,517	34,673	34,674	69,347	0
MONROE CITY HOUSING AUTHORITY	181,159	12,138	12,138	24,275	0
MOSINEE FIRE DIST	97,884	10,699	6,558	17,257	0
MT HOREB AREA FIRE DEPT	322,335	48,769	21,597	70,366	0
MUNI COURT W WAUKESHA COUNTY	161,557	10,824	10,825	21,649	0
NEW GLARUS EMS	89,008	9,729	5,964	15,692	0
NEW LONDON CITY HOUSING AUTH	86,107	6,544	5,769	12,313	(128)
NEW RICHMOND AMBULANCE	418,447	28,036	28,036	56,072	0
NICOLET FEDERATED LIBRARY SYS	214,374	14,363	14,363	28,726	0
NORTH CENTRAL HEALTH CARE FAC	28,622,271	1,917,691	1,917,693	3,835,384	0
NORTH CENTRAL WIS REG PLAN COM	387,342	25,952	25,952	51,904	0
NORTH SHORE FIRE DEPT	8,567,002	1,756,520	573,990	2,330,510	0
NORTH SHORE WATER COMMISSION	485,287	32,514	32,514	65,029	0
NORTHERN MORAINÉ UTILITY COMM	135,166	9,056	9,056	18,112	0
NORTHERN WATERS LIBRARY SERV	312,340	20,927	20,927	41,854	0
NORTHWEST REGIONAL PLAN COMM	913,427	61,199	61,200	122,399	0
NORWAY SANITARY DISTRICT #1	285,352	19,119	19,119	38,237	0
OCONTO CITY HOUSING AUTHORITY	136,762	9,163	9,163	18,326	0
ONEIDA-VILAS TRANSIT COMM	292,564	19,602	19,602	39,204	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
OREGON AREA FIRE - EMS DIST	636,556	69,579	42,650	112,229	0
ORFORDVILLE VOL FIRE PROT DIST	53,728	5,872	3,600	9,472	0
OSHKOSH CITY HOUSING AUTHORITY	1,607,309	107,689	107,691	215,379	0
OUTAGAMIE COUNTY HOUSING AUTH	1,032,618	69,185	69,186	138,371	0
OUTAGAMIE WAUPC CO FED LIBR SY	493,372	33,055	33,056	66,112	0
PHELPS SANITARY DISTRICT #1	50,928	3,412	3,412	6,824	0
PLEASANT SPRINGS SAN DIS #1	112,902	7,564	7,564	15,129	0
PLYMOUTH CITY HOUSING AUTH	58,189	3,899	3,899	7,797	0
PORTAGE COUNTY HOUSING AUTH	173,191	11,604	11,604	23,208	0
PRAIRIE DU SAC JT SEWER COMM	67,653	4,533	4,533	9,065	0
RACINE COUNTY HOUSING AUTH	514,555	34,475	34,475	68,950	0
REEDSBURG AREA AMBULANCE SVCES	386,174	42,209	25,874	68,083	0
REEDSVILLE VIL HOUSING AUTH	35,919	2,407	2,407	4,813	0
RHINELANDER CITY HOUSING AUTH	151,255	10,134	10,134	20,268	0
RIB MOUNTAIN METRO SEW DIST	556,399	37,279	37,279	74,558	0
RICE LAKE CITY HOUSING AUTH	214,857	14,395	14,395	28,791	86,974
RICHLAND CENTER CITY HOUS AUTH	105,724	7,084	7,084	14,167	0
RICHLAND FIRE DEPARTMENT	16,630	1,818	1,114	2,932	0
RIPON AREA FIRE DISTRICT	69,411	7,587	4,651	12,237	0
RIVER FALLS CITY HOUSING AUTH	373,620	28,022	25,033	53,054	10,691
SAUK CITY HOUSING AUTHORITY	40,125	2,688	2,688	5,377	0
SAUK COUNTY HOUSING AUTHORITY	253,637	16,994	16,994	33,987	0
SAUK PRAIRIE AMBULANCE ASSOC	114,662	12,533	7,682	20,215	0
SAUK PRAIRIE POLICE COMMISSION	1,013,466	107,215	67,902	175,117	0
SAUK PRAIRIE RECREATION COMM	110,184	7,382	7,382	14,765	0
SAWYER COUNTY HOUSING AUTH	140,239	9,396	9,396	18,792	0
SHAWANO CITY HOUSING AUTHORITY	192,067	12,869	12,869	25,737	0
SHAWANO COUNTY HOUSING AUTH	172,739	11,573	11,574	23,147	0
SHAWANO LAKE SANITARY DIST #1	679,238	45,509	45,509	91,018	0
SHAWANO MUNICIPAL UTILITIES	1,170,397	78,417	78,417	156,833	0
SHEBOYGAN CITY HOUSING AUTH	382,853	25,651	25,651	51,302	0
SHELL LAKE CITY HOUS AUTH	51,441	3,447	3,447	6,893	0
SILVER LAKE SAN. DIST.	369,920	24,785	24,785	49,569	0
SLINGER VILLAGE HOUSING AUTH	32,531	2,180	2,180	4,359	0
SOUTH AREA FIRE & EMS DIST	1,231,244	134,574	82,493	217,067	0
SOUTH CENTRAL LIBRARY SYSTEM	2,698,464	180,795	180,799	361,594	0
SOUTHEASTERN WIS REG PLAN COMM	4,218,339	282,627	282,630	565,257	0
SOUTHWEST WIS LIBRARY SYSTEM	171,392	11,483	11,483	22,967	0
SOUTHWESTERN WIS REG PLAN COMM	316,079	21,177	21,177	42,355	0
SPOONER CITY HOUSING AUTH	74,472	4,990	4,990	9,979	0
SPOONER FIRE DISTRICT	62,500	6,831	4,188	11,019	0
ST JOSEPH SANITARY DISTRICT #1	29,366	1,967	1,967	3,935	0
STEVENS POINT CITY HOUS AUTH	538,777	36,098	36,098	72,196	0
SULLIVAN SANITARY DISTRICT #1	27,038	1,811	1,812	3,623	0
SUPERIOR CITY HOUSING AUTH	941,961	63,111	63,112	126,223	0
TAYLOR COUNTY HOUSING AUTH	35,691	2,391	2,391	4,783	0
THORP CITY HOUSING AUTHORITY	137,279	9,198	9,198	18,395	0



Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
THREE LAKES SANITARY DIST #1	69,283	4,642	4,642	9,284	0
TREMPEALEAU COUNTY HOUS AUTH	324,920	24,369	21,770	46,139	23,155
UNIFIED COMMUNITY SERVICES	1,882,962	126,158	126,159	252,317	0
VALLEY RIDGE CLEAN WATER COMM	82,970	5,559	5,559	11,118	0
VANGUARD ELECTRIC UTIL COMM	453,255	30,368	30,368	60,736	0
VIROQUA CITY HOUSING AUTHORITY	192,269	12,882	12,882	25,764	0
WABENO SANITARY DISTRICT #1	30,468	2,041	2,041	4,083	0
WALES/GENESEE JOINT FIRE BD	128,400	14,034	8,603	22,637	0
WALTER E OLSON MEMORIAL LIB	62,199	4,167	4,167	8,335	0
WALWORTH COUNTY METRO SEW DIST	1,119,633	83,972	75,016	158,988	96,277
WASHBURN CITY HOUSING AUTH	116,497	7,805	7,806	15,611	0
WATERTOWN CITY HOUSING AUTH	127,665	9,575	8,554	18,128	9,068
WAUKESHA CITY HOUSING AUTH	701,042	46,970	46,970	93,940	0
WAUNAKEE AREA EMS	244,293	26,701	16,368	43,069	0
WAUNAKEE AREA FIRE DIST	58,663	3,930	3,930	7,861	0
WAUNAKEE WATER & LIGHT	1,293,696	86,677	86,678	173,355	0
WAUPACA CHAIN O'LAKES SAN DIST	60,000	4,020	4,020	8,040	0
WAUSAUKEE VILLAGE HOUS AUTH	96,662	6,476	6,476	12,953	0
WEST BEND CITY HOUSING AUTH	255,836	17,140	17,142	34,282	0
WEST CENTRAL WI BISOLIDS COMM	162,817	10,909	10,909	21,817	0
WEST CENTRAL WIS REG PLAN COMM	771,344	51,680	51,680	103,360	0
WESTERN LAKES FIRE DIST	1,400,898	152,148	93,861	246,009	0
WESTERN RACINE CO SEWERAGE DIS	116,208	7,786	7,786	15,572	0
WINDING RIVERS LIBRARY SYS	438,869	29,404	29,405	58,808	0
WINNEFOX LIBRARY SYSTEM	727,716	48,757	48,757	97,514	0
WIS DELLS-LAKE DELTON SEW COMM	211,493	14,170	14,170	28,340	0
WISCONSIN COUNTIES ASSOCIATION	2,100,782	140,752	140,753	281,505	0
WISCONSIN MUNIC MUTAL INS CO	796,418	53,360	53,360	106,720	0
WISCONSIN RAPIDS CITY HS AUTH	392,643	26,307	26,307	52,614	0
WISCONSIN TOWNS ASSOCIATION	477,135	31,968	31,968	63,936	0
WISCONSIN VALLEY LIBRARY SRV	415,651	27,848	27,849	55,697	0
WPPI ENERGY	9,915,877	664,361	664,367	1,328,728	0
Total Special Districts (206)	157,958,037	12,523,253	10,583,227	23,106,480	806,063

Towns

ADDISON, TOWN OF (WASHINGTON)	147,615	9,890	9,890	19,780	0
ALBAN, TOWN OF (PORTAGE)	67,013	4,490	4,490	8,980	0
ALBION, TOWN OF (DANE)	155,101	10,392	10,392	20,784	0
ALBION, TOWN OF (JACKSON)	41,377	2,772	2,772	5,545	0
ALGOMA, TOWN OF (WINNEBAGO)	158,209	10,600	10,600	21,200	0
ANSON, TOWN OF (CHIPPEWA)	61,008	5,037	4,088	9,125	63,400
ARBOR VITAE, TOWN OF (VILAS)	208,361	17,294	13,960	31,254	11,997
ASHIPPUN, TOWN OF (DODGE CO)	127,341	8,532	8,532	17,064	0
ASHLAND, TOWN OF (ASHLAND)	75,792	5,078	5,078	10,156	0
ATHELSTANE, TOWN OF (MARINETTE)	99,596	6,673	6,673	13,346	0
AZTALAN, TOWN OF (JEFFERSON)	63,077	5,745	4,226	9,972	147,993
BAILEYS HARBOR, TOWN OF (DOOR)	433,490	29,044	29,044	58,088	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
BALSAM LAKE, TOWN OF (POLK)	52,756	3,535	3,535	7,069	0
BARABOO, TOWN OF (SAUK)	95,848	6,422	6,422	12,844	0
BARKSDALE, TOWN OF (BAYFIELD)	63,746	4,271	4,271	8,542	0
BARRON, TOWN OF (BARRON)	52,580	3,523	3,523	7,046	0
BAYVIEW, TOWN OF (BAYFIELD)	65,704	4,402	4,402	8,804	0
BEAR CREEK, TOWN OF (SAUK)	78,115	5,234	5,234	10,467	0
BELMONT, TOWN OF (LAFAYETTE)	13,908	932	932	1,864	0
BELOIT, TOWN OF (ROCK)	2,774,761	308,872	185,910	494,782	0
BENNETT, TOWN OF (DOUGLAS)	92,570	6,202	6,202	12,404	0
BERGEN, TOWN OF (VERNON)	51,093	3,423	3,423	6,846	0
BERRY, TOWN OF (DANE)	82,639	5,537	5,537	11,074	0
BLOOMFIELD, TOWN OF (WALWORTH)	8,693	582	582	1,165	0
BLOOMING GROVE, TOWN OF (DANE)	171,919	11,518	11,519	23,037	0
BLUE MOUNDS, TOWN OF (DANE)	64,388	4,314	4,314	8,628	0
BOULDER JUNCTION, TOWN (VILAS)	209,118	14,011	14,011	28,022	0
BRIGHAM, TOWN OF (IOWA)	124,065	8,312	8,312	16,625	0
BRISTOL, TOWN OF (DANE)	103,380	6,926	6,926	13,853	0
BROCKWAY, TOWN OF (JACKSON)	132,538	8,880	8,880	17,760	0
BROOKFIELD, TOWN OF (WAUKESHA)	2,987,672	282,147	200,175	482,322	0
BROOKLYN, TOWN OF (GREEN)	79,087	5,299	5,299	10,598	0
BROTHERTOWN, TOWN OF (CALUMET)	50,695	3,397	3,397	6,793	0
BUCHANAN, TOWN OF (OUTAGAMIE)	154,610	10,359	10,359	20,718	0
BURKE, TOWN OF (DANE)	203,815	13,655	13,656	27,311	0
BURLINGTON, TOWN OF (RACINE)	368,279	27,956	24,675	52,631	0
CABLE, TOWN OF (BAYFIELD)	217,135	14,548	14,548	29,096	0
CAMPBELL, TOWN OF (LA CROSSE)	586,272	52,438	39,280	91,718	0
CAREY, TOWN OF (IRON)	53,223	3,566	3,566	7,132	0
CASSIAN, TOWN OF (ONEIDA)	87,320	5,850	5,850	11,701	0
CEDARBURG, TOWN OF (OZAUKEE)	601,379	40,292	40,292	80,585	0
CHETEK, TOWN OF (BARRON)	79,364	5,317	5,317	10,635	0
CHRISTIANA, TOWN OF (DANE)	145,674	9,760	9,760	19,520	0
CLAYTON, TOWN OF (POLK)	49,140	3,292	3,292	6,585	0
CLAYTON, TOWN OF (WINNEBAGO)	470,520	34,102	31,525	65,626	0
CLEAR LAKE, TOWN OF (POLK)	44,950	3,012	3,012	6,023	0
CLIFTON, TOWN OF (MONROE)	46,745	3,132	3,132	6,264	0
CLINTON, TOWN OF (BARRON)	52,877	3,543	3,543	7,085	0
CLINTON, TOWN OF (ROCK)	33,384	2,237	2,237	4,473	0
CLOVER, TOWN OF (BAYFIELD)	107,065	7,173	7,173	14,347	0
CLOVERLAND, TOWN OF (VILAS)	18,700	1,253	1,253	2,506	0
COLBY, TOWN OF (CLARK)	47,533	3,185	3,185	6,369	0
COLFAX, TOWN OF (DUNN)	35,472	2,377	2,377	4,753	0
CORNING, TOWN OF (LINCOLN)	37,968	2,544	2,544	5,088	0
COTTAGE GROVE, TOWN OF (DANE)	228,741	15,326	15,326	30,651	0
CRESCENT, TOWN OF (ONEIDA)	143,542	9,617	9,617	19,235	0
CROSS PLAINS, TOWN OF (DANE)	79,299	5,313	5,313	10,626	0
DAIRYLAND, TOWN OF (DOUGLAS)	49,676	3,328	3,328	6,657	0
DARIEN, TOWN OF (WALWORTH)	88,251	5,913	5,913	11,826	0



Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
DELAVAN, TOWN OF (WALWORTH)	1,383,533	132,491	92,697	225,188	0
DELTA, TOWN OF (BAYFIELD)	110,695	7,416	7,417	14,833	0
DELTON, TOWN OF (SAUK)	174,738	11,707	11,708	23,415	0
DOVER, TOWN OF (RACINE)	81,351	5,451	5,451	10,901	0
DRAPER, TOWN OF (SAWYER)	87,937	5,892	5,892	11,784	0
DRUMMOND, TOWN OF (BAYFIELD)	269,952	18,087	18,087	36,174	0
DUNBAR, TOWN OF (MARINETTE)	37,849	2,536	2,536	5,072	0
DUNKIRK, TOWN OF (DANE)	130,469	8,741	8,741	17,483	0
DUNN, TOWN OF (DANE)	486,511	32,596	32,596	65,192	0
EAGLE POINT, TOWN OF(CHIPPEWA)	66,698	4,469	4,469	8,938	0
EAGLE, TOWN OF (WAUKESHA)	288,391	21,770	19,322	41,092	0
EAST TROY, TOWN OF(WALWORTH)	779,972	71,694	52,259	123,953	0
EASTON, TOWN OF (MARATHON)	94,855	6,355	6,355	12,711	0
EAU GALLE, TOWN OF (DUNN)	48,562	3,254	3,254	6,507	0
EGG HARBOR, TOWN OF (DOOR)	46,440	3,111	3,111	6,223	0
ELK MOUND, TOWN OF (DUNN)	19,504	1,307	1,307	2,613	0
ERIN, TOWN OF (WASHINGTON)	156,282	10,471	10,471	20,942	0
EUREKA, TOWN OF (POLK)	57,908	3,880	3,880	7,760	0
EXETER, TOWN OF (GREEN)	77,982	5,225	5,225	10,450	0
FARMINGTON, TOWN OF (LACROSSE)	80,874	5,419	5,419	10,837	0
FARMINGTON, TOWN OF (WAUPACA)	30,849	2,067	2,067	4,134	0
FLAMBEAU, TOWN OF (RUSK)	27,253	2,671	1,826	4,497	22,183
FLORENCE, TOWN OF (FLORENCE)	956,566	64,090	64,090	128,180	0
FRANKLIN, TOWN OF (MANITOWOC)	68,003	4,556	4,556	9,112	0
FREEDOM, TOWN OF (OUTAGAMIE)	420,827	35,170	28,195	63,366	0
FREEDOM, TOWN OF (SAUK)	62,921	4,216	4,216	8,431	0
FULTON, TOWN OF (ROCK)	54,779	3,670	3,670	7,340	0
GENEVA, TOWN OF (WALWORTH)	802,550	73,420	53,771	127,191	0
GEORGETOWN, TOWN OF (POLK)	48,089	6,684	3,222	9,906	173,879
GERMANTOWN, TOWN (JUNEAU)	123,131	8,250	8,250	16,500	0
GIBRALTAR, TOWN OF (DOOR)	339,066	25,399	22,718	48,117	0
GILMAN, TOWN OF (PIERCE)	57,331	3,841	3,841	7,682	0
GOODMAN, TOWN OF(MARINETTE)	82,934	5,557	5,557	11,113	0
GRAND CHUTE, TOWN OF(OUTAGAME)	7,087,691	654,449	474,877	1,129,326	0
GRAND RAPIDS, TOWN OF (WOOD)	720,005	66,305	48,241	114,545	0
GRANT, TOWN OF (PORTAGE)	39,783	2,665	2,665	5,331	0
GRATIOT, TOWN OF (LAFAYETTE)	78,460	5,257	5,257	10,514	0
GREEN LAKE, TOWN OF (GRN LAKE)	53,114	3,559	3,559	7,117	0
GREENFIELD, TOWN OF (LACROSSE)	78,049	5,229	5,229	10,459	0
GREENVILLE, TOWN OF(OUTAGAMIE)	1,740,316	127,338	116,602	243,940	0
GREENWOOD, TOWN OF (VERNON)	43,904	2,942	2,942	5,883	0
HAMBURG, TOWN OF (VERNON)	58,322	3,908	3,908	7,815	0
HARRISON, TOWN OF (GRANT)	44,932	3,010	3,010	6,021	0
HAY RIVER, TOWN OF (DUNN)	48,960	3,280	3,280	6,561	0
HAYWARD, TOWN OF (SAWYER)	165,750	12,972	11,105	24,077	0
HAZELHURST, TOWN OF (ONEIDA)	140,831	9,436	9,436	18,871	0
HIGHLAND, TOWN OF (IOWA)	91,866	6,155	6,155	12,310	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
HUGHES, TOWN OF (BAYFIELD)	61,562	4,125	4,125	8,249	0
HULL, TOWN OF (PORTAGE)	286,117	19,170	19,170	38,340	0
IRON RIVER, TOWN OF (BAYFIELD)	360,000	31,294	24,120	55,414	0
ITHACA, TOWN OF (RICHLAND)	47,948	3,213	3,213	6,425	0
IXONIA, TOWN OF (JEFFERSON)	335,173	22,456	22,457	44,913	0
JACKSON, TOWN OF (WASHINGTON)	234,127	15,686	15,687	31,373	0
JEFFERSON, TOWN OF (JEFFERSON)	49,478	3,315	3,315	6,630	0
KIMBALL, TOWN OF (IRON)	101,937	9,378	6,830	16,208	64,474
KNIGHT, TOWN OF (IRON)	63,148	4,231	4,231	8,462	0
KNOWLTON, TOWN OF (MARATHON)	40,361	2,704	2,704	5,408	0
KOMENSKY, TOWN OF (JACKSON)	49,248	3,300	3,300	6,599	0
KOSHKONONG, TOWN OF (JEFFERSON)	85,970	5,760	5,760	11,520	0
LA POINTE, TOWN OF (ASHLAND)	764,983	58,344	51,254	109,598	0
LA VALLE, TOWN OF (SAUK)	187,037	14,467	12,532	26,999	0
LAC DU FLAMBEAU, TOWN (VILAS)	282,579	23,003	18,933	41,936	201,677
LAFAYETTE, TOWN OF (CHIPPEWA)	189,301	12,683	12,683	25,366	0
LAFAYETTE, TOWN OF (WALWORTH)	89,811	6,017	6,017	12,035	0
LAKE HOLCOMBE, TOWN (CHIPPEWA)	80,292	5,380	5,380	10,759	0
LAKE, TOWN OF (MARINETTE)	59,908	4,014	4,014	8,028	0
LAKETOWN, TOWN OF (POLK)	58,855	3,943	3,943	7,887	0
LANARK, TOWN OF (PORTAGE)	43,891	2,941	2,941	5,881	0
LAND O LAKES, TOWN OF (VILAS)	310,305	20,790	20,791	41,581	0
LAONA, TOWN OF (FOREST)	185,730	14,123	12,444	26,567	0
LAWRENCE, TOWN OF (BROWN CO)	466,789	31,275	31,275	62,550	0
LEBANON, TOWN OF (DODGE)	109,806	7,357	7,357	14,714	0
LEDGEVIEW, TOWN OF (BROWN)	559,170	37,464	37,464	74,929	0
LINCOLN, TOWN OF (TREMPEALEAU)	49,097	3,290	3,290	6,579	0
LINCOLN, TOWN OF (VILAS)	45,500	3,049	3,049	6,097	0
LINN, TOWN OF (WALWORTH)	683,071	65,558	45,766	111,324	0
LINWOOD, TOWN OF (PORTAGE)	46,459	3,113	3,113	6,226	0
LISBON, TOWN OF (WAUKESHA)	975,271	77,973	65,343	143,316	0
LODI, TOWN OF (COLUMBIA)	60,508	4,054	4,054	8,108	0
LUCAS, TOWN OF (DUNN)	45,723	3,063	3,063	6,127	0
LUDINGTON, TOWN OF (EAU CLAIRE)	39,312	2,634	2,634	5,268	0
LYONS, TOWN OF (WALWORTH)	174,403	11,685	11,685	23,370	0
MADISON, TOWN OF (DANE)	2,466,360	249,630	165,246	414,877	0
MANITOWOC RAPIDS, TOWN (MANITWC)	84,489	5,661	5,661	11,322	0
MAPLE, TOWN OF (DOUGLAS)	73,720	4,939	4,939	9,878	0
MARENGO, TOWN OF (ASHLAND)	78,151	5,236	5,236	10,472	0
MARION, TOWN OF (WAUSHARA)	34,418	2,306	2,306	4,612	0
MARTELL, TOWN OF (PIERCE)	53,694	3,597	3,597	7,195	0
MAZOMANIE, TOWN OF (DANE)	82,780	5,546	5,546	11,093	0
MEDFORD, TOWN OF (TAYLOR)	48,927	3,278	3,278	6,556	0
MEDINA, TOWN OF (DANE)	104,874	7,027	7,027	14,053	0
MERCER, TOWN OF (IRON)	373,884	25,050	25,051	50,100	0
MERTON, TOWN OF (WAUKESHA)	743,718	49,829	49,829	99,658	0
MIDDLETON, TOWN OF (DANE)	581,753	38,977	38,977	77,955	0



Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
MILLTOWN, TOWN OF (POLK)	101,608	10,770	6,808	17,578	50,928
MINOCQUA, TOWN OF(ONEIDA)	1,605,456	154,907	107,566	262,473	362,433
MINONG, TOWN OF (WASHBURN)	198,743	13,316	13,316	26,632	0
MISHICOT, TOWN OF(MANITOWOC)	53,352	3,575	3,575	7,149	0
MONTROSE, TOWN OF (DANE)	80,431	5,389	5,389	10,778	0
MUKWONAGO, TOWN (WAUKESHA)	796,208	73,087	53,346	126,433	0
NEENAH, TOWN OF (WINNEBAGO)	47,611	3,190	3,190	6,380	0
NEW GLARUS, TOWN OF (GREEN)	102,772	6,886	6,886	13,771	0
NEW HAVEN, TOWN OF (DUNN)	45,706	3,062	3,062	6,125	0
NEWBOLD, TOWN OF (ONEIDA)	318,484	21,338	21,338	42,677	0
NORWAY, TOWN OF (RACINE)	518,077	37,526	34,711	72,237	0
OAK GROVE, TOWN OF (BARRON)	63,073	4,226	4,226	8,452	0
OAKDALE, TOWN OF (MONROE)	47,686	3,195	3,195	6,390	0
OAKLAND, TOWN OF (JEFFERSON)	188,475	12,628	12,628	25,256	0
OCONOMOWOC, TOWN OF (WAUKESHA)	1,521,009	139,121	101,908	241,029	0
OMA, TOWN OF (IRON)	111,317	7,458	7,458	14,917	0
ONALASKA, TOWN OF (LA CROSSE)	188,554	12,633	12,633	25,266	0
OREGON, TOWN OF (DANE)	198,017	13,267	13,267	26,534	0
ORIENTA, TOWN OF (BAYFIELD)	42,640	2,857	2,857	5,714	0
OTTAWA, TOWN OF (WAUKESHA)	95,959	6,429	6,429	12,858	0
PARKLAND, TOWN OF (DOUGLAS)	97,461	6,627	6,530	13,157	1,550
PELICAN, TOWN OF (ONEIDA)	101,719	6,815	6,815	13,630	0
PEWAUKEE, CITY OF	5,206,185	452,649	348,816	801,465	0
PHELPS, TOWN OF (VILAS)	201,489	13,500	13,500	27,000	0
PINE LAKE, TOWN OF (ONEIDA)	120,483	8,072	8,072	16,145	0
PLEASANT SPRINGS, TOWN(DANE)	163,719	10,969	10,969	21,938	0
PLEASANT VALLEY, TOWN(EAUCLR)	143,397	9,608	9,608	19,215	0
PORT WING, TOWN OF (BAYFIELD)	106,080	7,107	7,107	14,215	0
PRAIRIE LAKE, TOWN OF (BARRON)	58,675	3,931	3,931	7,862	0
PRENTICE, TOWN OF (PRICE)	33,948	2,274	2,274	4,549	0
PRESQUE ISLE, TOWN OF(VILAS)	271,713	18,204	18,205	36,410	0
PRESTON, TOWN OF (ADAMS)	68,762	4,607	4,607	9,214	0
PRIMROSE, TOWN OF (DANE)	50,839	3,406	3,406	6,812	0
QUINCY, TOWN OF (ADAMS)	107,156	7,179	7,180	14,359	0
RAYMOND, TOWN OF (RACINE)	240,439	16,109	16,109	32,219	0
RIB MOUNTAIN, TOWN (MARATHON)	675,739	45,274	45,275	90,549	0
RICE LAKE, TOWN OF (BARRON)	127,201	8,522	8,522	17,045	0
RICHFIELD, VILLAGE OF(WASHING)	632,202	42,357	42,358	84,715	0
RICHMOND, TOWN OF (WALWORTH)	69,815	4,678	4,678	9,355	0
RIPON, TOWN OF(FOND DU LAC)	94,092	8,672	6,304	14,977	0
RIVER FALLS, TOWN OF (PIERCE)	137,776	9,231	9,231	18,462	0
ROME, TOWN OF (ADAMS)	1,157,909	96,184	77,580	173,764	0
RUDOLPH, TOWN OF (WOOD)	41,776	2,799	2,799	5,598	0
RUTLAND, TOWN OF (DANE)	138,973	9,311	9,311	18,622	0
SANBORN, TOWN OF (ASHLAND)	113,483	7,603	7,603	15,207	0
SCOTT, TOWN OF (BROWN)	230,941	15,473	15,473	30,946	0
SCOTT, TOWN OF (SHEBOYGAN)	69,407	4,650	4,650	9,300	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
SEVASTOPOL, TOWN OF (DOOR)	50,500	3,384	3,384	6,767	0
SHARON, TOWN OF (PORTAGE)	115,321	7,726	7,727	15,453	0
SHARON, TOWN OF (WALWORTH)	50,299	3,370	3,370	6,740	0
SHEBOYGAN, TOWN OF (SHEBOYGAN)	412,533	27,640	27,640	55,279	0
SHELBY, TOWN OF (LA CROSSE)	618,703	46,314	41,453	87,767	0
SOMERSET, TOWN OF (ST CROIX)	185,617	12,436	12,436	24,873	0
SOUTH LANCASTER, TOWN (GRANT)	45,342	3,038	3,038	6,076	0
SPARTA, TOWN OF (MONROE)	90,114	6,038	6,038	12,075	0
SPIRIT, TOWN OF (PRICE)	38,019	2,547	2,547	5,095	0
SPRING LAKE, TOWN OF (PIERCE)	55,020	3,686	3,686	7,373	0
SPRINGDALE, TOWN OF (DANE)	87,988	5,895	5,895	11,790	0
SPRINGFIELD, TOWN OF (DANE)	152,363	10,208	10,208	20,417	0
SPRINGFIELD, TOWN OF (JACKSON)	53,860	4,794	3,609	8,402	60,562
ST CROIX FALLS, TOWN OF (POLK)	56,405	3,779	3,779	7,558	0
ST GERMAIN, TOWN OF (VILAS)	332,987	22,310	22,310	44,620	0
STANTON, TOWN OF (DUNN)	74,324	4,980	4,980	9,959	0
STETTIN, TOWN OF (MARATHON)	175,433	11,754	11,754	23,508	0
STOCKTON, TOWN OF (PORTAGE)	177,419	11,887	11,887	23,774	0
STRONGS PRAIRIE, TOWN OF (ADMS)	36,518	2,447	2,447	4,893	0
SUGAR CREEK, TOWN OF (WALWORTH)	115,244	7,721	7,721	15,443	0
SULLIVAN, TOWN OF (JEFFERSON)	84,587	5,667	5,667	11,335	0
SUMMIT, TOWN OF (DOUGLAS)	133,499	8,944	8,944	17,889	0
SUMMIT, TOWN OF (JUNEAU)	67,203	4,503	4,503	9,005	0
SUMNER, TOWN OF (BARRON)	52,400	3,511	3,511	7,022	0
SUPERIOR, TOWN OF (DOUGLAS)	116,850	7,829	7,829	15,658	0
TAINTER, TOWN OF (DUNN)	139,867	9,371	9,371	18,742	0
THERESA, TOWN OF (DODGE)	72,401	4,851	4,851	9,702	0
THREE LAKES, TOWN OF (ONEIDA)	718,440	60,587	48,136	108,723	0
TIFFANY, TOWN OF (DUNN)	49,375	3,308	3,308	6,616	0
TRADE LAKE, TOWN OF (BURNETT)	54,411	3,646	3,646	7,291	0
TREMPELEAU, TOWN (TREMPELEAU)	127,928	8,571	8,571	17,142	0
TRENTON, TOWN OF (WASHINGTON)	259,825	18,325	17,409	35,733	0
TROY, TOWN OF (WALWORTH)	149,046	11,327	9,986	21,314	1,355
TURTLE LAKE, TOWN OF (BARRON)	51,624	3,459	3,459	6,918	0
UNION, TOWN OF (ROCK)	49,345	3,306	3,306	6,612	0
UNITY, TOWN OF (CLARK)	33,228	2,226	2,226	4,452	0
VERMONT, TOWN OF (DANE)	52,233	3,500	3,500	6,999	0
VERNON, TOWN OF (WAUKESHA)	517,169	40,625	34,651	75,276	0
VERONA, TOWN OF (DANE)	246,376	16,507	16,507	33,014	0
VIENNA, TOWN OF (DANE)	188,518	12,631	12,631	25,261	0
VIROQUA, TOWN OF (VERNON)	150,725	10,099	10,099	20,197	0
WABENO, TOWN OF (FOREST)	88,222	6,969	5,911	12,880	30,248
WALWORTH, TOWN OF (WALWORTH)	103,826	7,787	6,956	14,743	10,386
WARREN, TOWN OF (ST CROIX)	41,400	2,774	2,774	5,548	0
WASCOTT, TOWN OF (DOUGLAS)	214,234	14,873	14,354	29,227	0
WASHINGTON, TOWN OF (DOOR)	443,264	34,298	29,699	63,996	0
WASHINGTON, TOWN OF (LACROSSE)	56,549	3,789	3,789	7,578	0

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
WASHINGTON, TOWN OF (VILAS)	126,249	8,459	8,459	16,917	0
WASHINGTON, TOWN OF(EAUCLAIRE)	348,855	23,373	23,373	46,747	0
WATERFORD, TOWN OF (RACINE)	1,084,964	101,673	72,693	174,366	0
WAUKESHA, TOWN OF(WAUKESHA)	340,562	29,121	22,818	51,939	0
WAYNE, TOWN OF (LAFAYETTE)	49,359	3,307	3,307	6,614	0
WESCOTT, TOWN OF (SHAWANO)	285,671	19,140	19,140	38,280	0
WEST BEND, TOWN OF(WASHINGTON)	161,481	10,819	10,819	21,638	0
WEST POINT, TOWN (COLUMBIA)	24,610	1,649	1,649	3,298	0
WEST SWEDEN, TOWN OF (POLK)	47,058	3,153	3,153	6,306	0
WESTFIELD, TOWN OF (SAUK CO)	47,066	3,153	3,153	6,307	0
WESTPORT, TOWN OF (DANE)	523,959	35,105	35,105	70,211	0
WHEATLAND, TOWN OF (VERNON)	50,704	3,397	3,397	6,794	0
WHEATON, TOWN OF (CHIPPEWA)	99,381	6,659	6,659	13,317	0
WILSON, TOWN OF (SHEBOYGAN)	153,094	10,257	10,257	20,515	0
WILTON, TOWN OF (MONROE)	44,513	2,982	2,982	5,965	0
WINTER, TOWN OF (SAWYER)	199,243	13,349	13,349	26,699	0
WIOTA, TOWN OF (LAFAYETTE)	77,049	5,162	5,162	10,325	0
WOODRUFF, TOWN OF (ONEIDA)	595,526	53,678	39,900	93,578	0
Total Towns (265)	71,153,062	5,762,617	4,767,274	10,529,890	1,203,065

Counties

ADAMS COUNTY	12,221,455	894,605	818,842	1,713,447	0
ASHLAND COUNTY	7,238,512	548,626	484,984	1,033,610	0
BARRON COUNTY	17,284,053	1,244,611	1,158,037	2,402,648	0
BAYFIELD COUNTY	8,392,171	620,188	562,279	1,182,467	0
BROWN COUNTY	78,519,877	5,862,292	5,260,854	11,123,147	0
BUFFALO COUNTY	5,405,106	388,495	362,144	750,639	0
BURNETT COUNTY	7,214,127	525,506	483,349	1,008,855	0
CALUMET COUNTY	14,614,754	1,057,600	979,194	2,036,794	0
CHIPPEWA COUNTY	19,644,637	1,426,729	1,316,196	2,742,925	0
CLARK COUNTY	21,090,983	1,486,429	1,413,102	2,899,531	0
COLUMBIA COUNTY	25,349,571	1,827,306	1,698,428	3,525,734	0
CRAWFORD COUNTY	6,809,873	521,263	456,262	977,525	0
DANE COUNTY	164,142,277	12,896,665	10,997,578	23,894,243	0
DODGE COUNTY	42,125,595	2,989,598	2,822,429	5,812,027	0
DOOR COUNTY	18,328,681	1,462,829	1,228,027	2,690,856	0
DOUGLAS COUNTY	14,895,546	1,115,923	998,008	2,113,931	0
DUNN COUNTY	22,425,438	1,629,146	1,502,512	3,131,658	0
EAU CLAIRE COUNTY	30,080,843	2,208,772	2,015,424	4,224,196	0
FLORENCE COUNTY	3,522,899	271,113	236,035	507,148	0
FOND DU LAC COUNTY	40,373,863	2,876,221	2,705,059	5,581,279	0
FOREST COUNTY	4,689,890	362,509	314,224	676,732	0
GRANT COUNTY	16,937,417	1,216,075	1,134,814	2,350,889	0
GREEN COUNTY	17,773,734	1,302,821	1,190,845	2,493,667	0
GREEN LAKE COUNTY	9,718,367	704,409	651,133	1,355,543	0
IOWA COUNTY	10,260,367	771,081	687,448	1,458,528	0
IRON COUNTY	4,576,879	336,914	306,653	643,567	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
JACKSON COUNTY	9,038,350	662,783	605,573	1,268,356	0
JEFFERSON COUNTY	28,367,876	2,212,752	1,900,658	4,113,411	0
JUNEAU COUNTY	12,395,684	957,984	830,514	1,788,498	0
KENOSHA COUNTY	58,258,794	4,297,801	3,903,355	8,201,156	0
KEWAUNEE COUNTY	8,246,046	620,788	552,488	1,173,276	0
LA CROSSE COUNTY	51,613,532	3,583,752	3,458,123	7,041,876	0
LAFAYETTE COUNTY	14,921,094	1,070,067	999,718	2,069,786	0
LANGLADE COUNTY	8,107,033	592,231	543,174	1,135,404	0
LINCOLN COUNTY	18,071,877	1,300,476	1,210,822	2,511,297	0
MANITOWOC COUNTY	24,924,516	1,869,275	1,669,950	3,539,225	0
MARATHON COUNTY	44,063,287	3,228,452	2,952,255	6,180,707	0
MARINETTE COUNTY	17,556,813	1,274,178	1,176,313	2,450,490	0
MARQUETTE COUNTY	8,831,413	680,689	591,708	1,272,397	0
MENOMINEE COUNTY	3,247,106	234,805	217,556	452,361	0
MONROE COUNTY	17,067,983	1,211,928	1,143,560	2,355,487	0
OCONTO COUNTY	13,986,394	1,027,679	937,093	1,964,771	0
ONEIDA COUNTY	13,929,833	1,049,733	933,303	1,983,037	0
OUTAGAMIE COUNTY	59,609,032	4,271,001	3,993,823	8,264,824	0
OZAUKEE COUNTY	30,555,563	2,205,408	2,047,229	4,252,637	0
PEPIN COUNTY	4,223,526	316,648	282,978	599,626	0
PIERCE COUNTY	15,282,339	1,137,398	1,023,921	2,161,319	0
POLK COUNTY	20,620,785	1,473,101	1,381,598	2,854,699	0
PORTAGE COUNTY	27,749,711	2,005,894	1,859,241	3,865,135	0
PRICE COUNTY	6,609,566	493,035	442,843	935,878	0
RACINE COUNTY	40,332,164	3,890,803	2,702,265	6,593,068	0
RICHLAND COUNTY	11,117,688	789,933	744,889	1,534,822	0
ROCK COUNTY	63,975,578	4,810,271	4,286,382	9,096,653	0
RUSK COUNTY	14,422,243	1,040,897	966,294	2,007,191	0
SAUK COUNTY	31,161,492	2,365,094	2,087,829	4,452,923	0
SAWYER COUNTY	9,516,400	705,891	637,602	1,343,493	0
SHAWANO COUNTY	17,605,065	1,423,161	1,179,540	2,602,700	0
SHEBOYGAN COUNTY	41,022,625	2,972,368	2,748,527	5,720,895	0
ST CROIX COUNTY	31,477,566	2,363,257	2,109,010	4,472,267	0
TAYLOR COUNTY	8,923,286	653,044	597,863	1,250,908	0
TREMPEALEAU COUNTY	23,058,493	1,612,877	1,544,926	3,157,803	0
VERNON COUNTY	12,059,678	865,415	808,004	1,673,419	0
VILAS COUNTY	9,399,214	728,442	629,751	1,358,193	0
WALWORTH COUNTY	46,094,863	3,455,059	3,088,370	6,543,429	0
WASHBURN COUNTY	8,496,132	614,808	569,243	1,184,051	0
WASHINGTON COUNTY	35,515,112	2,624,960	2,379,524	5,004,484	0
WAUKESHA COUNTY	87,446,984	6,405,074	5,858,974	12,264,048	0
WAUPACA COUNTY	20,721,115	1,523,674	1,388,321	2,911,995	0
WAUSHARA COUNTY	13,133,148	1,003,995	879,927	1,883,922	0
WINNEBAGO COUNTY	55,216,860	4,138,277	3,699,550	7,837,827	0
WOOD COUNTY	28,519,962	2,040,525	1,910,851	3,951,376	0
Total Counties (71)	1,750,130,737	130,353,411	117,259,296	247,612,706	0



Name	Contributions			Total	Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid		
School Districts					
ABBOTSFORD SCHOOL DISTRICT	3,735,490	250,277	250,279	500,556	0
ADAMS-FRIENDSHIP AREA SCH DIST	9,745,903	652,973	652,978	1,305,951	0
ALBANY SCHOOL DISTRICT	2,512,060	168,307	168,309	336,616	0
ALGOMA SCHOOL DISTRICT	4,145,316	277,735	277,738	555,472	0
ALMA CENTER-HUMBRD-MERIL SCH D	3,805,293	254,953	254,956	509,909	0
ALMA SCHOOL DISTRICT	1,773,898	118,851	118,852	237,702	0
ALMOND-BANCROFT SCHOOL DIST	2,538,054	170,049	170,050	340,099	0
ALTOONA SCHOOL DISTRICT	9,589,340	642,482	642,489	1,284,972	0
AMERY SCHOOL DISTRICT	10,910,912	731,027	731,036	1,462,062	0
ANTIGO UNIFIED SCHOOL DISTRICT	13,665,006	915,550	915,561	1,831,111	0
APPLETON AREA SCHOOL DISTRICT	97,264,609	6,516,700	6,516,758	13,033,458	0
ARBOR VITAE-WOODRUFF JSD #1	3,542,638	237,356	237,358	474,713	0
ARCADIA SCHOOL DISTRICT	8,207,584	549,906	549,910	1,099,816	0
ARGYLE SCHOOL DISTRICT	1,885,499	126,328	126,329	252,657	0
ARROWHEAD UNION HIGH SCH DIST	13,480,598	903,197	903,203	1,806,400	0
ASHLAND SCHOOL DISTRICT	12,491,098	836,898	836,909	1,673,807	0
ASHWAUBENON SCHOOL DISTRICT	19,673,559	1,318,123	1,318,134	2,636,257	0
ATHENS SCHOOL DISTRICT	2,460,019	164,820	164,822	329,643	0
AUBURNDALE SCHOOL DISTRICT	4,519,788	302,824	302,827	605,652	0
AUGUSTA SCHOOL DISTRICT	4,511,519	302,270	302,274	604,544	0
BALDWIN-WOODVILLE AREA SCH DIS	10,679,994	715,556	715,563	1,431,119	0
BANGOR SCHOOL DISTRICT	3,632,746	243,392	243,396	486,788	0
BARABOO SCHOOL DISTRICT	19,048,263	1,276,226	1,276,242	2,552,467	0
BARNEVELD SCHOOL DISTRICT	2,546,920	170,643	170,644	341,287	0
BARRON AREA SCHOOL DISTRICT	9,115,080	610,706	610,715	1,221,421	0
BAYFIELD SCHOOL DISTRICT	4,497,242	301,313	301,317	602,630	0
BEAVER DAM UNIFIED SCHOOL DIST	20,748,668	1,390,152	1,390,169	2,780,322	0
BEECHER DUNBAR PEMBINE SCH DIS	1,792,910	120,125	120,125	240,250	0
BELLEVILLE SCHOOL DISTRICT	5,824,171	390,217	390,222	780,439	0
BELMONT COMMUNITY SCHOOL DIST	2,415,300	161,824	161,826	323,650	0
BELOIT SCHOOL DISTRICT	41,042,506	2,749,834	2,749,862	5,499,696	0
BELOIT TURNER SCHOOL DISTRICT	9,243,911	619,339	619,345	1,238,684	0
BENTON SCHOOL DISTRICT	1,308,119	87,643	87,645	175,288	0
BERLIN AREA SCHOOL DISTRICT	9,561,975	640,650	640,655	1,281,305	0
BIG FOOT UHS SCH DIST	3,578,047	239,728	239,730	479,458	0
BIRCHWOOD SCHOOL DISTRICT	1,952,064	130,788	130,789	261,577	0
BLACK HAWK SCHOOL DISTRICT	2,630,130	176,217	176,220	352,437	0
BLACK RIVER FALLS SCH DIST	11,014,940	737,996	738,006	1,476,002	0
BLAIR-TAYLOR SCHOOL DISTRICT	3,638,189	243,757	243,760	487,517	0
BLOOMER SCHOOL DISTRICT	6,782,477	454,422	454,430	908,852	0
BONDUEL SCHOOL DISTRICT	4,444,796	297,800	297,803	595,603	0
BOSCOBEL SCHOOL DISTRICT	5,460,427	365,846	365,851	731,697	0
BOWLER SCHOOL DISTRICT	2,431,528	162,911	162,913	325,825	0
BOYCEVILLE COMMUNITY SCH DIST	4,392,597	294,303	294,305	588,608	0
BRIGHTON SCH DIST #1	909,140	60,912	60,913	121,825	0
BRILLION PUBLIC SCHOOL DIST	5,298,988	355,031	355,034	710,064	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
BRISTOL, TOWN, SCH DIST #1	4,405,440	295,163	295,166	590,329	0
BRODHEAD SCHOOL DISTRICT	6,554,148	439,126	439,130	878,256	0
BROWN DEER SCHOOL DISTRICT	11,695,934	783,623	783,633	1,567,255	0
BRUCE SCHOOL DISTRICT	3,093,348	207,253	207,256	414,509	0
BURLINGTON AREA SCHOOL DIST	20,604,240	1,380,480	1,380,488	2,760,968	0
BUTTERNUT SCHOOL DISTRICT	1,581,905	105,987	105,989	211,975	0
CADOTT COMM SCHOOL DISTRICT	5,293,142	354,639	354,642	709,281	0
CAMBRIA-FRIESLAND SCHOOL DIST	2,974,853	199,314	199,316	398,630	304,092
CAMBRIDGE SCHOOL DISTRICT	5,880,627	394,000	394,005	788,004	0
CAMERON SCHOOL DISTRICT	6,381,940	427,588	427,592	855,180	0
CAMPBELLSPORT SCHOOL DISTRICT	8,139,234	545,324	545,333	1,090,657	0
CASHTON SCHOOL DISTRICT	3,782,738	253,442	253,445	506,887	0
CASSVILLE SCHOOL DISTRICT	1,587,388	106,354	106,356	212,710	0
CEDAR GROVE-BELGIUM SCH DIST	5,781,699	387,372	387,376	774,748	0
CEDARBURG SCHOOL DISTRICT	18,454,363	1,236,437	1,236,448	2,472,885	0
CHEQUAMEGON SCHOOL DISTRICT	5,174,214	346,670	346,675	693,345	0
CHETEK-WEYERHAEUSER AREA SD	6,691,721	448,343	448,348	896,691	0
CHILTON SCHOOL DISTRICT	7,222,281	483,890	483,895	967,786	0
CHIPPEWA FALLS AREA UNIF SCH	29,495,292	1,976,175	1,976,194	3,952,369	0
CLAYTON SCHOOL DISTRICT	2,580,308	172,879	172,882	345,761	0
CLEAR LAKE SCHOOL DISTRICT	3,786,048	253,664	253,667	507,330	0
CLINTON COMMUNITY SCHOOL DIST	7,178,145	480,933	480,939	961,871	0
CLINTONVILLE PUBLIC SCH DIST	9,137,441	612,206	612,211	1,224,417	0
COCHRANE-FOUNTAIN CITY SCH DIS	3,797,990	254,450	254,481	508,931	0
COLBY SCHOOL DISTRICT	4,013,682	268,916	268,918	537,833	0
COLEMAN SCHOOL DISTRICT	3,707,276	248,386	248,389	496,775	0
COLFAX SCHOOL DISTRICT	5,130,836	343,763	343,769	687,532	0
COLUMBUS SCHOOL DISTRICT	7,282,729	487,939	487,946	975,886	0
CORNELL SCHOOL DISTICT	2,409,582	161,440	161,444	322,884	0
CRANDON SCHOOL DISTRICT	6,117,805	409,890	409,896	819,786	0
CRIVITZ SCHOOL DISTRICT	3,750,146	251,257	251,263	502,520	0
CUBA CITY SCHOOL DISTRICT	4,675,675	313,269	313,272	626,540	0
CUDAHY SCHOOL DISTRICT	18,148,310	1,215,931	1,215,942	2,431,874	0
CUMBERLAND SCHOOL DISTRICT	5,965,477	399,685	399,689	799,374	0
DARLINGTON COMM SCHOOL DIST	4,903,532	328,534	328,539	657,073	0
DC EVEREST AREA SCHOOL DIST	37,596,290	2,518,942	2,518,961	5,037,903	0
DEERFIELD COMM SCHOOL DISTRICT	5,092,821	341,217	341,221	682,438	0
DEFOREST AREA SCHOOL DISTRICT	22,371,813	1,498,904	1,498,919	2,997,823	0
DELAVAN-DARIEN SCHOOL DISTRICT	14,511,717	972,280	972,290	1,944,570	0
DENMARK SCHOOL DISTRICT	8,961,367	600,409	600,414	1,200,823	0
DEPERE UNIFIED SCHOOL DISTRICT	22,779,310	1,526,211	1,526,217	3,052,427	0
DESOTO AREA SCHOOL DISTRICT	3,318,708	222,352	222,355	444,707	0
DODGELAND SCHOOL DISTRICT	5,602,945	375,396	375,398	750,795	0
DODGEVILLE SCHOOL DISTRICT	8,336,519	558,543	558,550	1,117,094	0
DRUMMOND SCHOOL DISTRICT	2,370,932	158,851	158,854	317,705	0
DURAND-ARKANSAW SCHOOL DIST	5,181,435	347,153	347,159	694,312	0
EAST TROY COMMUNITY SCH DIST	10,149,858	680,038	680,043	1,360,081	0



Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
EAU CLAIRE AREA SCHOOL DIST	67,848,615	4,545,857	4,545,857	9,091,714	0
EDGAR SCHOOL DISTRICT	3,219,167	215,683	215,686	431,368	0
EDGERTON SCHOOL DISTRICT	11,533,311	772,728	772,736	1,545,464	0
ELCHO SCHOOL DISTRICT	2,520,174	168,847	168,857	337,703	0
ELEVA-STRUM SCHOOL DISTRICT	3,692,272	247,381	247,383	494,765	0
ELK MOUND AREA SCHOOL DISTRICT	6,647,231	445,362	445,367	890,729	0
ELKHART LAKE-GLENBEULAH SCH DS	3,142,187	210,525	210,528	421,053	0
ELKHORN AREA SCHOOL DISTRICT	20,064,695	1,344,325	1,344,344	2,688,669	0
ELLSWORTH COMM SCH DIST	10,030,405	672,033	672,041	1,344,074	0
ELMBROOK SCHOOL DISTRICT	50,144,572	3,359,670	3,359,702	6,719,373	0
ELMWOOD SCHOOL DISTRICT	2,498,066	167,369	167,372	334,741	0
ERIN SCH DIST #2	1,611,372	107,962	107,962	215,924	0
EVANSVILLE COMM SCH DIST	11,223,601	751,979	751,984	1,503,963	0
FALL CREEK SCHOOL DISTRICT	4,552,944	305,045	305,050	610,095	0
FALL RIVER SCHOOL DISTRICT	2,571,425	172,283	172,287	344,571	0
FENNIMORE COMMUNITY SCH DIST	5,690,558	381,266	381,269	762,535	0
FLAMBEAU SCHOOL DISTRICT	3,725,893	249,634	249,636	499,270	0
FLORENCE COUNTY SCH DIST	3,397,133	227,607	227,609	455,216	0
FOND DU LAC SCHOOL DISTRICT	45,376,798	3,040,232	3,040,259	6,080,491	0
FONTANA JT SCH DIST #8 ETAL	1,777,668	119,103	119,105	238,207	0
FORT ATKINSON SCHOOL DISTRICT	19,460,304	1,303,833	1,303,848	2,607,681	0
FOX POINT JT SCH DIST # 2 ETAL	6,766,880	453,379	453,383	906,762	0
FRANKLIN PUBLIC SCHOOL DIST	29,822,097	1,998,071	1,998,090	3,996,161	0
FREDERIC SCHOOL DISTRICT	3,401,035	227,868	227,871	455,739	0
FREEDOM AREA SCHOOL DISTRICT	9,049,024	606,281	606,288	1,212,569	0
FRIESS LAKE SCHOOL DISTRICT	507,445	33,999	33,999	67,998	0
GALESVILLE SCHOOL DISTRICT ETAL	9,108,566	610,269	610,278	1,220,548	0
GENEVA JT SCH DIST #4 ETAL	1,078,217	72,241	72,241	144,481	0
GENOA CITY JT SCH DIST #2 ETAL	3,431,090	229,882	229,885	459,766	0
GERMANTOWN SCHOOL DISTRICT	25,716,046	1,722,969	1,722,982	3,445,950	0
GIBRALTAR AREA SCHOOL DISTRICT	5,748,841	385,171	385,174	770,345	0
GILLETT SCHOOL DISTRICT	3,541,353	237,269	237,272	474,541	0
GILMAN SCHOOL DISTRICT	2,291,717	153,544	153,546	307,090	0
GILMANTON SCHOOL DISTRICT	793,567	53,169	53,169	106,338	0
GLENDALE-RIVER HILLS SCH DIST	8,198,891	549,324	549,328	1,098,651	0
GLENWOOD CITY SCHOOL DISTRICT	4,021,371	269,430	269,434	538,864	0
GOODMAN-ARMSTRONG SCHOOL DIST	992,512	66,498	66,499	132,997	0
GRAFTON SCHOOL DISTRICT	13,407,391	898,291	898,299	1,796,590	0
GRANTON AREA SCHOOL DISTRICT	1,843,560	123,518	123,519	247,037	0
GRANTSBURG SCHOOL DISTRICT	6,393,414	428,356	428,361	856,718	0
GREEN BAY AREA PUBLIC SCHOOLS	149,799,873	10,036,589	10,036,594	20,073,183	0
GREEN LAKE SCHOOL DISTRICT	2,188,189	146,608	146,609	293,217	0
GREENDALE SCHOOL DISTRICT	19,077,732	1,278,205	1,278,211	2,556,416	0
GREENFIELD SCHOOL DISTRICT	22,435,258	1,503,154	1,503,170	3,006,325	0
GREENWOOD SCHOOL DISTRICT	2,716,645	182,014	182,016	364,030	0
GRESHAM SCHOOL DIST	2,048,380	137,241	137,242	274,483	0
HAMILTON SCHOOL DISTRICT	29,003,622	1,943,232	1,943,253	3,886,485	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
HARTFORD JT SCH DIST #1 ETAL	10,119,138	677,978	677,986	1,355,965	0
HARTFORD UNION HIGH SCH DIST	9,229,435	618,369	618,375	1,236,744	0
HARTLAND JT SCH DIST #3 ETAL	7,031,911	471,136	471,140	942,276	0
HAYWARD COMMUNITY SCHOOL DIST	10,577,153	708,665	708,673	1,417,339	0
HERMAN-NEOSHO-RUBICAN SD	2,298,267	153,983	153,985	307,968	0
HIGHLAND SCHOOL DISTRICT	1,430,871	95,868	95,869	191,737	0
HILBERT SCHOOL DISTRICT	2,728,725	182,824	182,825	365,649	0
HILLSBORO SCHOOL DISTRICT	3,690,285	247,247	247,251	494,498	0
HOLMEN SCHOOL DISTRICT	27,720,919	1,857,291	1,857,312	3,714,603	0
HOLY HILL AREA SCHOOL DIST	1,951,887	130,776	130,777	261,553	0
HORICON SCHOOL DISTRICT	4,503,359	301,723	301,727	603,450	0
HORTONVILLE AREA SCHOOL DIST	21,263,507	1,424,647	1,424,663	2,849,310	0
HOWARDS GROVE SCHOOL DISTRICT	5,725,742	383,623	383,626	767,249	0
HOWARD-SUAMICO SCHOOL DISTRICT	31,484,601	2,109,457	2,109,480	4,218,937	0
HUDSON SCHOOL DISTRICT	37,654,106	2,522,815	2,522,836	5,045,650	0
HURLEY SCHOOL DISTRICT	3,755,612	251,625	251,627	503,252	0
HUSTISFORD SCHOOL DISTRICT	2,883,754	193,210	193,213	386,423	0
INDEPENDENCE SCHOOL DISTRICT	2,597,990	174,064	174,067	348,131	0
IOLA-SCANDINAVIA SCHOOL DIST	4,158,557	278,622	278,625	557,247	0
IOWA-GRANT SCHOOL DISTRICT	5,449,887	365,141	365,144	730,285	0
ITHACA SCHOOL DISTRICT	2,710,030	181,571	181,573	363,144	0
JANESVILLE SCHOOL DISTRICT	69,672,934	4,668,060	4,668,113	9,336,173	0
JEFFERSON SCHOOL DISTRICT	12,638,385	846,767	846,777	1,693,544	0
JOHNSON CREEK SCHOOL DISTRICT	4,233,040	283,613	283,615	567,227	0
JUDA SCHOOL DISTRICT	1,633,128	109,420	109,420	218,839	0
KANSASVILLE DOVER DIST #1	646,096	43,288	43,289	86,577	0
KAUKAUNA AREA SCHOOL DISTRICT	22,515,112	1,508,506	1,508,519	3,017,025	0
KENOSHA UNIFIED SCH DIST #1	144,131,115	9,656,764	9,656,806	19,313,569	0
KETTLE MORAINES SCHOOL DISTRICT	25,454,380	1,705,435	1,705,452	3,410,887	0
KEWASKUM SCHOOL DISTRICT	11,032,674	739,185	739,193	1,478,378	0
KEWAUNEE SCHOOL DISTRICT	5,458,028	365,685	365,691	731,376	0
KICKAPOO AREA SCHOOL DISTRICT	3,177,424	212,886	212,889	425,775	0
KIEL AREA SCHOOL DISTRICT	7,756,971	519,714	519,720	1,039,434	0
KIMBERLY AREA SCHOOL DISTRICT	27,971,564	1,874,087	1,874,102	3,748,190	0
KOHLER SCHOOL DISTRICT	4,126,988	276,508	276,509	553,016	0
LA CROSSE SCHOOL DISTRICT	54,701,621	3,664,994	3,665,023	7,330,017	0
LAC DU FLAMBEAU SCH DIST #1	6,770,761	453,639	453,643	907,282	0
LADYSMITH-HAWKINS SCH DIST	5,393,297	361,349	361,353	722,702	0
LAFARGE SCHOOL DISTRICT	1,833,259	122,828	122,829	245,657	0
LAKE COUNTRY SCH DIST	3,042,005	203,814	203,815	407,629	0
LAKE GENEVA JT SCH DIS #1 ETAL	12,057,458	807,847	807,852	1,615,699	0
LAKE GENEVA SCHOOL DISTRICT	10,723,025	718,440	718,445	1,436,885	0
LAKE HOLCOMBE SCHOOL DISTRICT	2,230,332	149,432	149,433	298,864	0
LAKE MILLS AREA SCHOOL DIST	8,997,832	602,852	602,857	1,205,710	0
LAKELAND UNION HIGH SCH DIST	6,323,441	423,670	423,671	847,341	0
LANCASTER COMM SCH DIST	6,369,254	426,737	426,743	853,480	0
LAONA SCHOOL DISTRICT	1,752,550	117,420	117,422	234,842	0



Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
LENA PUBLIC SCHOOL DISTRICT	2,272,151	152,233	152,235	304,468	0
LINN JT SCH DIST #4 ETAL	903,356	60,525	60,525	121,050	0
LINN JT SCH DIST #6 ETAL	760,153	50,930	50,931	101,860	0
LITTLE CHUTE AREA SCHOOL DIST	9,375,547	628,157	628,166	1,256,323	0
LODI SCHOOL DISTRICT	9,985,258	669,009	669,015	1,338,025	0
LOMIRA SCHOOL DISTRICT	6,553,271	439,066	439,072	878,138	0
LOYAL SCHOOL DISTRICT	2,962,939	198,516	198,518	397,034	0
LUCK SCHOOL DISTRICT	3,056,696	204,797	204,800	409,597	0
LUXEMBURG-CASCO SCHOOL DIST	9,445,721	632,859	632,868	1,265,727	0
MADISON METRO SCHOOL DISTRICT	227,246,935	15,225,509	15,225,581	30,451,089	0
MANAWA SCHOOL DISTRICT	3,897,693	261,144	261,147	522,291	0
MANITOWOC PUBLIC SCHOOL DIST	33,681,629	2,256,661	2,256,677	4,513,338	0
MAPLE DALE-INDIAN HILL SCH DIS	3,893,192	260,843	260,845	521,688	0
MAPLE SCHOOL DISTRICT	7,915,215	530,315	530,324	1,060,639	0
MARATHON CITY SCHOOL DISTRICT	3,512,522	235,338	235,340	470,678	0
MARINETTE SCHOOL DISTRICT	11,295,323	756,783	756,791	1,513,573	0
MARION SCHOOL DISTRICT	1,933,229	129,526	129,527	259,053	0
MARKESAN SCHOOL DISTRICT	4,648,710	311,463	311,464	622,927	0
MARSHALL JT SCH DIST #2 ETAL	7,269,830	487,076	487,082	974,157	0
MARSHFIELD UNIFIED SCHOOL DIST	23,637,000	1,583,673	1,583,685	3,167,358	0
MAUSTON SCHOOL DISTRICT	8,826,868	591,398	591,402	1,182,800	0
MAYVILLE SCHOOL DISTRICT	7,443,949	498,743	498,747	997,489	0
MCFARLAND SCHOOL DISTRICT	16,908,431	1,132,860	1,132,870	2,265,730	0
MEDFORD AREA PUBLIC SCHL DIST	14,376,111	963,195	963,204	1,926,399	0
MELLEN SCHOOL DISTRICT	1,697,568	113,736	113,738	227,474	0
MELROSE-MINDORO SCHOOL DIST	4,677,345	313,381	313,383	626,764	0
MENASHA JOINT SCHOOL DISTRICT	22,901,250	1,534,376	1,534,392	3,068,767	0
MENOMINEE INDIAN SCHOOL DIST	8,489,004	568,760	568,766	1,137,526	0
MENOMONEE FALLS SCHOOL DISTRICT	27,803,169	1,862,802	1,862,823	3,725,625	0
MENOMONIE AREA SCHOOL DISTRICT	18,788,095	1,258,797	1,258,808	2,517,605	0
MEQUON-THIENSVILLE SCHOOL DIST	23,250,920	1,557,806	1,557,817	3,115,623	0
MERCER SCHOOL DISTRICT	1,387,757	92,979	92,981	185,959	0
MERRILL AREA COMMON PUB SCH	17,963,456	1,203,545	1,203,558	2,407,103	0
MERTON COMMUNITY SCHOOL DIST	4,823,887	323,199	323,202	646,401	0
MIDDLETON-CROSS PLNS SCH DIST	50,664,907	3,394,528	3,394,570	6,789,098	0
MILTON SCHOOL DISTRICT	21,024,884	1,408,662	1,408,673	2,817,334	0
MILWAUKEE TEACHERS RETIREM SYS	361,540,335	24,223,135	24,223,270	48,446,405	0
MINERAL POINT UNIF SCH DIST	4,355,944	291,847	291,849	583,697	0
MINOCQUA JT SCH DIST #1 M-H-LT	4,029,596	269,981	269,985	539,966	0
MISHICOT SCHOOL DISTRICT	5,274,638	353,398	353,403	706,801	0
MONDOVI SCHOOL DISTRICT	5,972,167	400,133	400,137	800,270	0
MONONA GROVE SCHOOL DISTRICT	22,682,029	1,519,688	1,519,704	3,039,392	0
MONROE SCHOOL DISTRICT	16,800,930	1,125,657	1,125,668	2,251,325	0
MONTELLO SCHOOL DISTRICT	4,504,635	301,809	301,812	603,621	0
MONTICELLO SCHOOL DISTRICT	2,592,528	173,699	173,700	347,399	0
MOSINEE SCHOOL DISTRICT	12,975,554	869,358	869,366	1,738,724	0
MOUNT HOREB AREA SCHOOL DIST	15,455,341	1,035,502	1,035,513	2,071,016	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
MUKWONAGO SCHOOL DISTRICT	27,625,899	1,850,924	1,850,947	3,701,870	0
MUSKEGO-NORWAY SCHOOL DISTRICT	29,710,517	1,990,593	1,990,616	3,981,209	0
NECEDAH AREA SCHOOL DISTRICT	4,299,581	288,070	288,073	576,144	0
NEENAH JOINT SCHOOL DISTRICT	37,730,840	2,527,955	2,527,978	5,055,933	0
NEILLSVILLE SCHOOL DISTRICT	5,091,856	341,153	341,156	682,309	0
NEKOOSA SCHOOL DISTRICT	6,545,140	438,522	438,527	877,049	0
NEW AUBURN SCHOOL DISTRICT	2,101,815	140,821	140,823	281,643	0
NEW BERLIN SCHOOL DISTRICT	26,776,103	1,793,986	1,794,011	3,587,998	0
NEW GLARUS SCHOOL DISTRICT	6,021,379	403,431	403,434	806,865	0
NEW HOLSTEIN SCHOOL DISTRICT	6,101,201	408,779	408,782	817,561	0
NEW LISBON SCHOOL DISTRICT	3,937,409	263,805	263,808	527,613	0
NEW LONDON SCHOOL DISTRICT	12,640,085	846,882	846,889	1,693,771	0
NEW RICHMOND SCHOOL DISTRICT	19,211,451	1,287,159	1,287,175	2,574,334	0
NIAGARA SCHOOL DISTRICT	2,946,768	197,433	197,434	394,867	0
NICOLET HIGH SCHOOL DISTRICT	11,135,975	746,107	746,113	1,492,221	0
NORRIS SCHOOL DISTRICT	1,159,285	77,672	77,672	155,344	0
NORTH CAPE CONSOLIDATED S D	1,319,367	88,397	88,398	176,795	0
NORTH CRAWFORD SCHOOL DISTRICT	3,162,113	211,861	211,863	423,723	0
NORTH FOND DU LAC SCH DIST	8,382,559	561,628	561,634	1,123,263	0
NORTH LAKE SCHOOL DISTRICT	1,681,517	112,661	112,663	225,323	0
NORTH LAKELAND SCHOOL DISTRICT	1,528,965	102,440	102,441	204,881	0
NORTHERN OZAUKEE SCHOOL DIST	4,939,016	330,913	330,916	661,828	0
NORTHLAND PINES SCHOOL DIST	10,161,732	680,832	680,840	1,361,672	0
NORTHWOOD SCHOOL DISTRICT	2,655,748	177,934	177,936	355,870	0
NORWALK-ONTARIO SCHOOL DIST	4,640,937	310,941	310,944	621,886	0
NORWAY-RAYMOND JT#7 SD	575,335	46,026	38,548	84,574	64,519
OAK CREEK-FRANKLIN JT SCH DIST	39,750,561	2,663,274	2,663,301	5,326,575	0
OAKFIELD SCHOOL DISTRICT	3,655,736	244,933	244,936	489,869	0
OCONOMOWOC AREA SCHOOL DIST	25,742,712	1,724,754	1,724,769	3,449,523	0
OCONTO FALLS PUBLIC SCH DIST	10,627,427	712,034	712,041	1,424,075	0
OCONTO UNIFIED SCHOOL DISTRICT	6,558,415	439,411	439,416	878,828	0
OMRO SCHOOL DISTRICT	7,261,399	486,512	486,516	973,028	0
ONALASKA SCHOOL DISTRICT	19,920,783	1,334,685	1,334,700	2,669,385	0
OOSTBURG SCHOOL DISTRICT	5,853,159	392,159	392,164	784,323	0
OREGON SCHOOL DISTRICT	27,220,081	1,823,735	1,823,756	3,647,491	0
OSCEOLA SCHOOL DISTRICT	10,861,644	727,726	727,734	1,455,460	0
OSHKOSH AREA SCHOOL DISTRICT	63,909,269	4,281,895	4,281,947	8,563,842	0
OSSEO-FAIRCHILD SCHOOL DIST	5,365,730	359,502	359,506	719,008	0
OWEN-WITHEE SCHOOL DISTRICT	2,992,574	200,501	200,504	401,005	0
PALMYRA-EAGLE AREA SCHOOL DIST	5,311,336	355,858	355,861	711,719	0
PARDEEVILLE AREA SCHOOL DIST	5,116,498	404,202	342,807	747,009	507,374
PARIS JT SCH DIST #1 ETAL	1,331,397	89,203	89,204	178,407	0
PARKVIEW SCHOOL DISTRICT	5,462,578	365,991	365,994	731,985	0
PECATONICA AREA SCHOOL DIST	3,139,913	210,373	210,375	420,748	0
PEPIN AREA SCHOOL DISTRICT	1,931,478	129,408	129,410	258,818	0
PESHTIGO SCHOOL DISTRICT	6,515,310	436,524	436,528	873,051	0
PEWAUKEE SCHOOL DISTRICT	17,523,955	1,174,100	1,174,110	2,348,210	0



Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
PHELPS SCHOOL DISTRICT	1,327,832	88,964	88,966	177,929	0
PHILLIPS SCHOOL DISTRICT	4,869,730	326,270	326,274	652,544	0
PITTSVILLE SCHOOL DISTRICT	3,590,087	240,535	240,537	481,072	0
PLATTEVILLE SCHOOL DISTRICT	9,152,600	613,221	613,227	1,226,448	0
PLUM CITY SCHOOL DISTRICT	1,483,174	99,372	99,373	198,745	0
PLYMOUTH JOINT SCHOOL DISTRICT	14,340,492	960,806	960,820	1,921,626	0
PORT EDWARDS SCHOOL DISTRICT	2,703,096	181,106	181,108	362,215	0
PORT WASHINGTON-SAUKVILLE SCH	17,320,826	1,160,490	1,160,500	2,320,991	0
PORTAGE COMMUNITY SCHOOL DIST	14,684,697	983,870	983,880	1,967,749	0
POTOSI SCHOOL DISTRICT	2,434,358	163,101	163,103	326,204	0
POYNETTE SCHOOL DISTRICT	6,415,318	429,824	429,828	859,653	0
PRAIRIE DU CHIEN AREA SCH DIST	8,293,053	555,632	555,637	1,111,269	0
PRAIRIE FARM PUBLIC SCH DIST	2,222,829	148,929	148,930	297,859	0
PRENTICE SCHOOL DISTRICT	2,554,712	171,165	171,166	342,331	0
PRESCOTT SCHOOL DISTRICT	8,186,657	548,503	548,509	1,097,012	0
PRINCETON SCHOOL DISTRICT	2,045,283	137,033	137,034	274,068	0
PULASKI COMMUNITY SCHOOL DIST	24,238,032	1,623,941	1,623,955	3,247,896	0
RACINE UNIFIED SCHOOL DISTRICT	141,548,128	9,483,694	9,483,755	18,967,449	0
RANDALL JT SCH DIST #1 ETAL	4,147,157	277,858	277,861	555,719	0
RANDOLPH SCHOOL DISTRICT	3,498,597	234,405	234,407	468,812	0
RANDOM LAKE SCHOOL DISTRICT	5,208,337	348,956	348,961	697,917	0
RAYMOND SCH DIST #14	2,381,960	159,591	159,592	319,183	0
REEDSBURG SCHOOL DISTRICT	18,160,215	1,216,730	1,216,739	2,433,469	0
REEDSVILLE SCHOOL DISTRICT	3,779,886	253,251	253,253	506,505	0
RHINELANDER SCHOOL DISTRICT	14,632,219	980,354	980,363	1,960,717	0
RIB LAKE SCHOOL DISTRICT	2,809,649	188,246	188,247	376,493	0
RICE LAKE AREA SCHOOL DISTRICT	15,398,826	1,031,717	1,031,726	2,063,443	0
RICHLAND SCHOOL DISTRICT	8,193,372	548,952	548,960	1,097,912	0
RICHMOND SCHOOL DISTRICT	2,258,383	151,311	151,312	302,623	0
RIO COMMUNITY SCHOOL DISTRICT	3,028,759	202,926	202,928	405,854	0
RIPON AREA SCHOOL DISTRICT	10,015,760	671,053	671,058	1,342,112	0
RIVER FALLS SCHOOL DISTRICT	19,020,888	1,274,393	1,274,406	2,548,799	0
RIVER RIDGE SCHOOL DISTRICT	3,542,956	237,377	237,379	474,756	0
RIVER VALLEY SCHOOL DISTRICT	7,995,704	535,709	535,715	1,071,424	0
RIVERDALE SCHOOL DISTRICT	3,617,232	242,354	242,355	484,709	0
ROSENDALE-BRANDON SCHOOL DIST	5,848,723	391,863	391,866	783,729	0
ROSHOLT SCHOOL DISTRICT	3,256,493	218,183	218,187	436,370	0
ROYALL SCHOOL DISTRICT	3,679,865	246,549	246,553	493,102	0
SALEM SCHOOL DISTRICT	6,359,912	508,790	426,117	934,907	423,537
SAUK PRAIRIE SCHOOL DISTRICT	17,314,466	1,160,063	1,160,075	2,320,138	0
SENECA SCHOOL DISTRICT	1,730,862	115,967	115,968	231,935	0
SEVASTOPOL SCHOOL DISTRICT	4,558,422	305,413	305,415	610,829	0
SEYMOUR COMMUNITY SCHOOL DIST	13,235,734	886,790	886,799	1,773,588	0
SHARON JT SCH DIST # 11 ETAL	1,616,291	108,291	108,292	216,583	0
SHAWANO SCHOOL DIST	14,581,943	976,986	976,995	1,953,980	0
SHEBOYGAN AREA SCHOOL DISTRICT	67,026,154	4,490,742	4,490,762	8,981,505	0
SHEBOYGAN FALLS SCHOOL DIST	10,576,092	708,595	708,601	1,417,196	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
SHELL LAKE SCHOOL DISTRICT	4,318,378	289,331	289,331	578,663	0
SHIOCTON SCHOOL DISTRICT	4,709,939	315,564	315,567	631,132	0
SHOREWOOD SCHOOL DISTRICT	16,494,001	1,105,094	1,105,103	2,210,196	0
SHULLSBURG SCHOOL DISTRICT	2,392,987	191,438	160,331	351,769	82,027
SILVER LAKE JT SCH DIS #1 ETAL	2,588,861	173,453	173,454	346,907	0
SIREN SCHOOL DISTRICT	3,512,667	235,349	235,349	470,697	0
SLINGER SCHOOL DISTRICT	16,764,090	1,123,189	1,123,199	2,246,388	0
SOLOON SPRINGS SCHOOL DISTRICT	1,926,250	129,058	129,060	258,118	0
SOMERSET SCHOOL DISTRICT	10,025,630	671,715	671,720	1,343,434	0
SOUTH MILWAUKEE SCHOOL DIST	21,420,202	1,435,147	1,435,160	2,870,307	0
SOUTH SHORE SCHOOL DISTRICT	1,540,397	103,206	103,207	206,413	0
SOUTHERN DOOR COUNTY SCH DIST	6,921,138	463,714	463,718	927,432	0
SOUTHWESTERN WISC COMM SCH DIS	2,732,553	183,080	183,082	366,162	0
SPARTA AREA SCHOOL DISTRICT	17,587,767	1,178,371	1,178,390	2,356,761	0
SPENCER SCHOOL DISTRICT	3,476,573	232,929	232,931	465,861	0
SPOONER AREA SCHOOL DISTRICT	7,126,028	477,442	477,446	954,888	0
SPRING VALLEY SCHOOL DISTRICT	4,654,865	311,875	311,877	623,752	0
ST CROIX CENTRAL SCH DIST	10,052,163	673,491	673,499	1,346,990	0
ST CROIX FALLS SCHOOL DISTRICT	7,240,416	485,105	485,111	970,216	0
ST FRANCIS SCHOOL DISTRICT #6	6,568,617	440,095	440,100	880,195	0
STANLEY-BOYD AREA SCHOOL DIST	6,098,310	408,585	408,589	817,174	0
STEVENS POINT AREA PUB SCH DIS	44,380,615	2,973,488	2,973,514	5,947,002	0
STOCKBRIDGE SCH DIST	1,281,915	85,888	85,889	171,777	0
STONE BANK SCHOOL DISTRICT	2,447,288	163,962	163,975	327,937	0
STOUGHTON AREA SCHOOL DISTRICT	20,626,021	1,381,937	1,381,950	2,763,887	0
STRATFORD SCHOOL DISTRICT	5,027,580	336,846	336,849	673,696	0
STURGEON BAY SCHOOL DISTRICT	8,533,037	571,710	571,716	1,143,427	0
SUN PRAIRIE AREA SCH DIS	55,130,179	3,693,701	3,693,743	7,387,444	0
SUPERIOR SCHOOL DISTRICT	31,881,105	2,136,028	2,136,040	4,272,068	0
SURING PUBLIC SCHOOL DISTRICT	2,476,252	165,908	165,910	331,818	0
SWALLOW SCHOOL DISTRICT	2,800,600	187,640	187,641	375,280	0
THORP SCHOOL DISTRICT	3,573,740	239,440	239,441	478,881	0
THREE LAKES SCHOOL DISTRICT	4,692,444	314,392	314,395	628,788	0
TIGERTON SCHOOL DISTRICT	1,342,352	89,937	89,938	179,875	0
TOMAH AREA SCHOOL DISTRICT	18,727,603	1,254,744	1,254,755	2,509,499	0
TOMAHAWK SCHOOL DISTRICT	7,990,907	535,387	535,395	1,070,782	0
TOMORROW RIVER SCHOOL DISTRICT	6,687,586	448,067	448,070	896,136	0
TREVOR-WILMOT CONS GR S.D.	3,436,504	230,246	230,246	460,492	0
TRI-COUNTY AREA SCH DIST-PLNFD	4,046,843	271,138	271,139	542,277	0
TURTLE LAKE SCHOOL DISTRICT	2,732,511	183,077	183,080	366,156	0
TWIN LAKES SCH DIST #4	2,446,748	163,931	163,933	327,864	0
TWO RIVERS PUBLIC SCHOOL DIST	10,810,781	724,319	724,326	1,448,645	0
UNION GROVE JT SCH DIS #1 ETAL	5,073,124	339,898	339,901	679,799	0
UNION GROVE UNION HIGH SCH DIS	5,558,419	372,413	372,415	744,828	0
UNITY SCHOOL DISTRICT	6,285,077	421,098	421,103	842,200	0
VALDERS AREA SCHOOL DISTRICT	6,302,776	422,284	422,288	844,572	0
VERONA AREA SCHOOL DISTRICT	38,323,394	2,567,653	2,567,682	5,135,335	0



Name	Contributions				Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid	Total	
VIROQUA AREA SCHOOL DISTRICT	6,899,974	462,295	462,302	924,596	0
WABENO AREA SCHOOL DISTRICT	3,466,533	232,256	232,259	464,515	0
WALWORTH JT SCH DIST # 1 ETAL	2,560,243	171,536	171,537	343,073	0
WASHBURN SCHOOL DISTRICT	3,922,288	262,792	262,795	525,587	0
WASHINGTON SCHOOL DISTRICT	600,868	46,867	40,259	87,126	73,775
WASHINGTON-CALDWELL SCH DIST	1,027,708	68,856	68,857	137,713	0
WATERFORD UNION HIGH SCH DIST	8,114,542	543,672	543,676	1,087,349	0
WATERFORD VIL JT SCH DIST #1	7,331,831	491,230	491,235	982,465	0
WATERLOO SCHOOL DISTRICT	5,052,030	338,484	338,488	676,972	0
WATERTOWN UNIFIED SCHOOL DIST	23,321,300	1,562,519	1,562,535	3,125,054	0
WAUKESHA SCHOOL DISTRICT	85,585,861	5,734,230	5,734,275	11,468,505	0
WAUNAKEE COMMUNITY SCHOOL DIST	27,774,661	1,860,892	1,860,912	3,721,805	0
WAUPACA SCHOOL DISTRICT	14,550,821	974,902	974,908	1,949,810	0
WAUPUN AREA SCHOOL DISTRICT	11,850,952	794,010	794,018	1,588,028	0
WAUSAU SCHOOL DISTRICT	59,035,595	3,955,363	3,955,407	7,910,770	0
WAUSAUKEE SCHOOL DISTRICT	2,950,677	197,694	197,696	395,391	0
WAUTOMA AREA SCHOOL DISTRICT	8,614,977	577,199	577,208	1,154,407	0
WAUWATOSA SCHOOL DISTRICT	43,804,413	2,934,885	2,934,906	5,869,791	0
WAUZKA JT SCH DIST ETAL	2,043,671	136,925	136,927	273,852	0
WEBSTER SCHOOL DISTRICT	4,544,994	304,513	304,517	609,029	0
WEST ALLIS-WEST MILW SCH DIST	51,644,919	3,460,194	3,460,225	6,920,419	0
WEST BEND JT SCH DIST #1	41,311,126	2,767,836	2,767,855	5,535,691	0
WEST DEPERE SCHOOL DISTRICT	18,343,802	1,229,027	1,229,042	2,458,069	0
WEST SALEM SCHOOL DISTRICT	10,996,567	736,766	736,774	1,473,540	0
WESTBY AREA SCHOOL DISTRICT	6,364,104	426,391	426,399	852,790	0
WESTFIELD SCHOOL DISTRICT	5,925,868	397,031	397,035	794,066	0
WESTON SCHOOL DISTRICT	1,978,586	132,565	132,565	265,131	0
WESTOSHA CENTRAL HIGH SCH DIST	7,076,079	474,097	474,097	948,195	0
WEYAUWEGA-FREMONT SCHOOL DIST	5,371,820	359,910	359,914	719,824	0
WHEATLAND JT SCH DIST #1 ETAL	3,547,792	237,701	237,703	475,404	0
WHITE LAKE SCHOOL DISTRICT	1,097,141	73,508	73,509	147,017	0
WHITEFISH BAY SCHOOL DISTRICT	18,706,943	1,253,360	1,253,371	2,506,730	0
WHITEHALL SCHOOL DISTRICT	4,514,246	302,453	302,456	604,909	0
WHITEWATER UNIFIED SCHOOL DIST	12,329,393	826,065	826,074	1,652,139	0
WHITNALL SCHOOL DISTRICT	16,373,336	1,097,008	1,097,019	2,194,027	0
WILD ROSE SCHOOL DISTRICT	3,514,750	235,487	235,489	470,977	0
WILLIAMS BAY SCHOOL DISTRICT	4,120,370	276,065	276,065	552,130	0
WILMOT UNION HIGH SCHOOL DIST	8,661,675	580,331	580,334	1,160,664	0
WINNECONNE COMM SCHOOL DIST	9,222,564	617,909	617,915	1,235,824	0
WINTER SCHOOL DISTRICT	2,166,980	145,187	145,188	290,375	0
WISCONSIN DELLS SCHOOL DIST	10,593,090	709,733	709,741	1,419,474	0
WISCONSIN HEIGHTS SCHOOL DIST	5,269,022	353,022	353,027	706,049	0
WISCONSIN RAPIDS SCHOOL DIST	32,404,456	2,171,084	2,171,113	4,342,197	0
WITTENBERG-BIRNAMWOOD SCH DIST	6,808,924	456,194	456,202	912,396	0
WONEWOC & UNION CENTER SCH DIS	2,112,523	141,538	141,540	283,078	0
WRIGHTSTOWN COMMUNITY SCH DIST	7,118,091	476,910	476,914	953,824	0
YORKVILLE JT SCH DIST #2 ETAL	2,523,900	169,100	169,102	338,203	0

CONTRIBUTIONS PAID AND UAAL

Name	Contributions			Total	Unfunded Liability Balance
	Covered Payroll	Employer Paid*	Employee Paid		
Total School Districts (422)	5,350,219,235	358,652,366	358,466,286	717,118,652	1,455,325
Technical Colleges					
BLACKHAWK TECHNICAL COLLEGE	14,821,564	993,041	993,049	1,986,090	0
CHIPPEWA VALLEY TECH COLLEGE	33,039,627	2,213,645	2,213,665	4,427,310	0
FOX VALLEY TECHNICAL COLLEGE	64,604,732	4,328,504	4,328,530	8,657,034	0
GATEWAY TECH COLLEGE	47,548,247	3,185,722	3,185,743	6,371,465	0
LAKESHORE TECHNICAL COLLEGE	18,788,429	1,258,820	1,258,830	2,517,650	0
MADISON AREA TECH COLLEGE	97,563,128	6,536,729	6,536,730	13,073,459	0
MID-STATE TECHNICAL COLLEGE	15,813,238	1,059,483	1,059,491	2,118,974	0
MILWAUKEE AREA TECH COLLEGE	111,634,556	7,479,482	7,479,548	14,959,031	0
MORAIN PARK TECHNICAL COLLEGE	27,183,686	1,821,300	1,821,314	3,642,614	0
NICOLET AREA TECHNICAL COLLEGE	11,724,134	785,513	785,521	1,571,034	0
NORTH CENTRAL TECH COLLEGE	26,334,881	1,764,430	1,764,444	3,528,874	0
NORTHEAST WISC TECH COLLEGE	55,894,579	3,744,924	3,744,950	7,489,874	0
SOUTHWEST WISC TECH COLLEGE	11,883,774	796,209	796,216	1,592,426	0
WAUKESHA CO TECHNICAL COLLEGE	40,370,063	2,704,785	2,704,804	5,409,588	0
WESTERN TECH COLLEGE	28,095,740	1,882,414	1,882,415	3,764,829	0
WISCONSIN INDIANHEAD TECH COLL	25,646,897	1,718,334	1,718,350	3,436,684	0
Total Technical Colleges (16)	630,947,276	42,273,336	42,273,599	84,546,935	0
CESAs					
CESA #1	4,817,025	385,361	322,742	708,103	241,955
CESA #2	6,283,927	421,021	421,025	842,046	0
CESA #3, FENNIMORE	1,548,427	103,744	103,745	207,489	0
CESA #4, LACROSSE	2,203,284	147,619	147,621	295,240	0
CESA #5, PORTAGE	10,772,574	721,759	721,766	1,443,525	0
CESA #6, OSHKOSH	7,321,613	490,546	490,551	981,096	0
CESA #7, GREEN BAY	6,856,834	459,406	459,410	918,816	0
CESA #8, GILLETT	4,874,821	326,612	326,614	653,226	0
CESA #9, TOMAHAWK	2,184,945	146,391	146,392	292,783	0
CESA #10, CHIPPEWA FALLS	7,836,493	525,042	525,048	1,050,090	0
CESA #11	7,149,244	478,998	479,001	957,999	0
CESA #12, ASHLAND	2,151,407	144,143	144,145	288,289	0
Total CESAs (12)	64,000,592	4,350,640	4,288,060	8,638,701	241,955
Total WRS (1507)	14,301,446,269	1,093,908,573	958,200,528	2,052,109,101	13,837,728

* Includes contributions for WRS, Accumulated Sick Leave Conversion and Duty Disability