

STATE OF WISCONSIN
Department of Employee Trust Funds
Robert J. Conlin
SECRETARY

801 W Badger Road
PO Box 7931
Madison WI 53707-7931
1-877-533-5020 (toll free)
Fax (608) 267-4549
<http://etf.wi.gov>

CORRESPONDENCE MEMORANDUM

DATE: May 30, 2012
TO: Employee Trust Funds Board
FROM: Robert C. Willett, CPA, Chief Trust Financial Officer
Office of Budget and Trust Finance
SUBJECT: Duty Disability Program – Interim Actuarial Valuation

Staff recommends the Employee Trust Funds Board approve the January 1, 2012, Interim Actuarial Valuation of the Duty Disability Program, including the recommendation for no change in employer contribution rates for 2013.

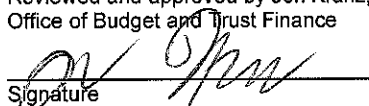
Deloitte Consulting has completed an actuarial valuation of the Duty Disability Program as of January 1, 2012. This valuation is considered “interim” because the participant data required for a complete valuation was not available when needed. Deloitte used standard actuarial techniques to update prior year participant data for use in this valuation. Deloitte will finalize the valuation later this year, when participant data becomes available.

Deloitte found that the funded status of the Duty Disability Program has continued to improve over the last year. As of January 1, 2012, the Program had accumulated assets equal to 86.2% of liabilities, up from 82.8% one year earlier and only 52.1% in 2006. The Program is projected to reach full funding in 2014.

Based on the improving funded status, Deloitte recommends that no change be made to the current experience rated employer contribution structure. However, Deloitte noted that in a few years, when the plan achieves full funding, it will be necessary to reevaluate the contribution structure.

Staff will be at the Board meeting to answer any questions you may have.

Attachment: Duty Disability Program – Interim Actuarial Valuation

Reviewed and approved by Jon Kranz, Director
Office of Budget and Trust Finance

Signature _____ Date 6/5/12

Board	Mtg Date	Item #
ETF	6.21.12	4C

State of Wisconsin
Duty Disability Program

January 1, 2012
Interim Actuarial Valuation

Executive Summary

The purpose of this report is to provide the actuarial value of assets and estimated actuarial accrued liability of the Wisconsin Duty Disability Program (“the Plan”) as of the valuation date as well as the changes in these values over the past year. This information is important to provide an understanding of the sufficiency of the contribution policy to meet the future obligations of the Plan. This report also provides a version of the information necessary for the Department of Employee Trust Funds’ financial statement disclosures under the Statement of Governmental Accounting Standards No. 43 (GASB 43) based on these estimated results. An updated valuation will be provided for disclosure purposes once active data is available.

Prior to 2011, the review of the sufficiency of the contribution policy and the GASB 43 disclosure information were contained in separate reports. Prior to this date, the actuarial reviews of the contribution policy were based on the liability for participants receiving benefits, the liability for participants who had become disabled but not yet started receiving benefits, and a reserve for conservatism.

Since 2011, the actuarial valuation is have been based on the standards required under GASB 43, which necessitate that the liabilities attributable to the current active population be accrued during their working career. Therefore, a liability is determined for active participants based on expected future disablements in addition to current disabled participants and survivors.

This interim January 1, 2012 actuarial valuation is determined based on January 1, 2011 census data since final census data is not yet available.

As of January 1, 2012, the Plan is 86% funded on an actuarial basis. The current contribution policy is projected to result in the Plan becoming fully funded in 2014. It is our recommendation that no change be made to the contribution policy at this time; however, it would be appropriate for the Board to consider future changes in the contribution policy as the level of funding improves.

A brief summary of the results of the current and prior GASB 43 valuations are shown below (dollar values in millions):

	<u>2011</u>	<u>2012</u>
Actuarial Accrued Liability		
Actives	\$ 129	\$ 130
Disableds and Survivors	<u>370</u>	<u>391</u>
Total	\$ 499	\$ 521
Actuarial Value of Assets	<u>\$ (413)</u>	<u>\$ (449)</u>
Unfunded Actuarial Accrued Liability	\$ 86	\$ 72
Funded ratio	83%	86%
Annual Required Contribution (GASB 43)	\$ 50	\$ 52

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April 2012

ACTUARIAL VALUATION CERTIFICATION

This report presents the estimated results of the actuarial valuation of the State of Wisconsin Duty Disability Program (“the Plan”) as of January 1, 2012 based on census data as of January 1, 2011.

The State of Wisconsin provided the participant data, financial information and plan descriptions used in this valuation. The actuary has checked the data for reasonableness, but has not independently audited the data. The actuary has no reason to believe the data is not complete and accurate, and knows of no further information that is essential to the preparation of the actuarial valuation.

Actuarial information under Government Accounting Standards Board Statement No. 43 (GASB 43) is for purposes of fulfilling plan financial accounting requirements. The results have been made on a basis consistent with GASB 43 and are based upon assumptions prescribed by the State of Wisconsin.

In our opinion, all costs, liabilities, rates of interest, and other factors under the Plan have been determined on the basis of actuarial assumptions and methods that are each reasonable (or consistent with authoritative guidance), taking into account the experience of the Plan and future expectations and that, when combined, represent our best estimate of anticipated experience under the Plan.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operations of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law.

Our scope did not include analyzing the potential range of such future measurements, and we did not perform that analysis.

The undersigned with actuarial credentials collectively meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Any tax advice included in this written communication was not intended or written to be used, and it cannot be used by the taxpayer, for the purpose of avoiding any penalties that may be imposed by any governmental taxing authority or agency.

Deloitte Consulting LLP



Michael de Leon, EA, FCA, MAAA
Senior Manager



Jeannie Chen, ASA, MAAA
Manager

**State of Wisconsin
Duty Disability Program
January 1, 2012
Interim Actuarial Valuation**

Section I - Background and Comments

The Governmental Accounting Standards Board released the Statement of Governmental Accounting Standards No. 43 (“GASB 43”) and No. 45 (“GASB 45”) in 2004. These statements require trusts (GASB 43) and employers (GASB 45) to accrue the cost of Postretirement Welfare Plans while employees who will receive these benefits are providing services to the employer. The State of Wisconsin was a Phase 1 entity for implementation of GASB 43 and was therefore required to adopt GASB 43 for the financial period beginning January 1, 2006. The purpose of this report is to provide an estimate of the information required under GASB 43 to be disclosed on the Plan’s financial statements for the financial period ending December 31, 2012. This report also provides the information necessary to provide an understanding of the sufficiency of the contribution policy to meet the future obligations of the Plan.

Plan Overview

The State of Wisconsin provides duty disability benefits for protective occupation participants at no cost to the employees. There were no changes to the plan provisions since the previous valuation. The substantive plan benefits are described in Section XI of this report.

Assumptions

Where applicable, the assumptions used in this actuarial valuation were based on the assumptions used for the WRS actuarial valuation as of December 31, 2010. Some additional or differing assumptions were required to handle issues unique to the plan and estimate the potential offsets to the Duty Disability benefits. The actuarial methods and assumptions are described in Section X of this report.

Since the January 1, 2011 actuarial valuation, there have been no changes in assumptions.

Actuarial Experience

During 2011, the market value of assets experienced an estimated investment return of 0.8%. Compared to the investment return assumption of 7.8%, there was a market value loss of about 7.0% or \$28.8 million. The Actuarial Value of Assets uses a method to smooth investment gains and losses over a 5-year period. On an actuarial value basis, there was an asset loss of \$19.3 million from the partial recognition of market value gains and losses from 2007 to 2012. The effective rate of return on investments on an actuarial value basis was 3.3%.

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Funding Policy

The program is funded entirely by employer contributions, which vary by experience. The contribution policy does not meet the GASB 43 requirements for determining an Annual Required Contribution (ARC), which requires using a consistent amortization policy for the unfunded actuarial accrued liability; therefore, an amortization policy for the purpose of determining the ARC under GASB 43 was created. The initial amortization period was selected to approximate the actual contribution policy as of January 1, 2006. Subsequent gains and losses were amortized over 15 years.

The actual contribution policy resulted in employer contributions that were \$2.0 million more than the ARC. Additional details about the policy used to determine contributions under this plan can be found in Section XI.

**State of Wisconsin
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Section II – Summary of Actuarial Valuation Results

Presented below are the actuarial valuation results for the State of Wisconsin Duty Disability Program. Dollar amounts are in thousands.

	<u>January 1, 2011</u>	<u>January 1, 2012*</u>
a. Actuarial Accrued Liability		
- Actives	\$ 128,702	\$ 129,868
- Disableds and Survivors	<u>370,332</u>	<u>391,448</u>
- Total	\$ 499,034	\$ 521,316
b. Actuarial Value of Assets	\$ 412,988	\$ 449,177
c. Unfunded Actuarial Accrued Liability (UAAL): (a) – (b)	\$ 86,046	\$ 72,139
d. Funded ratio: (b / a)	82.8%	86.2%
e. UAAL as a percentage of covered payroll: (c / h.2)	6.6%	5.3%
f. Annual Required Contribution (ARC)		
- Normal Cost	\$ 12,907	\$ 11,941
- Amortization Payment	33,813	36,531
- Interest to End of Year	<u>3,644</u>	<u>3,781</u>
- Total	\$ 50,364	\$ 52,253
g. Discount rate	7.8%	7.8%
h. Census data used		
1. Count of Covered Participants		
- Actives	22,716	22,716
- Disableds and Survivors**	<u>957</u>	<u>957</u>
- Total	23,673	23,673
2. Covered payroll***	\$ 1,297,690	\$ 1,350,895
3. Expected Benefit Payments	\$ 29,410	\$ 31,326

* Estimated results based on January 1, 2011 census data.

** Includes 57 disabled participants in 2011 and 2012 with zero benefits.

*** 2012 covered payroll is estimated based on the January 1, 2011 covered payroll, adjusted by the assumed payroll growth of 4.1%.

**State of Wisconsin
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Section III – Market Value of Assets and Summary of Transactions

A summary of the transactions during 2011 of the assets for the State of Wisconsin Duty Disability Program is shown below. Dollar amounts are in thousands.

1. Market value of assets as of January 1, 2011		\$ 401,162
2. Income		
Employer Contributions	\$ 52,335	
Investment Income	<u>3,885</u>	
Total Income		\$ 56,220
3. Disbursements		
Benefit Payments	\$ 29,963	
Expenses	<u>504</u>	
Total Disbursements		\$ 30,467
4. Net Change in Assets: (2) – (3)		\$ 25,753
5. Market Value of Assets as of December 31, 2011 (1) + (4)		\$ 426,915
6. Estimated Rate of Investment Return		0.82%

**State of Wisconsin
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Section IV – Actuarial Value of Assets

The following table develops the Actuarial Value of Assets as of January 1, 2012. Dollar amounts are in thousands.

1. Market value of assets as of January 1, 2011	\$ 401,162
2. Contributions*	52,335
3. Benefit payments*	(29,963)
4. Assumed earnings at 7.80% on (1), (2), and (3)	<u>32,163</u>
5. Expected assets at January 1, 2011: (1) + (2) + (3) + (4)	\$ 455,697
6. Actual assets at January 1, 2012	\$ 426,915
7. Investment gain (loss)	
a. Gain (loss) for 2011: (6) – (5)	\$ (28,782)
b. Gain (loss) for 2010	15,529
c. Gain (loss) for 2009	38,767
d. Gain (loss) for 2008	(120,301)
8. Gain (loss) not yet reflected in actuarial value of assets	
a. 80% of 2011 gain (loss)	\$ (23,026)
b. 60% of 2010 gain (loss)	9,317
c. 40% of 2009 gain (loss)	15,507
d. 20% of 2008 gain (loss)	<u>(24,060)</u>
e. Total gain (loss) not yet reflected in actuarial value of assets:	(22,262)
9. Preliminary actuarial value of plan assets as of January 1, 2012: (6) - (8e)	\$ 449,177
10. Maximum and minimum values:	
a. 80% of market	\$ 341,532
b. 120% of market	512,298
11. Actuarial value of assets as of January 1, 2012: (item (9) but not less than (10.a) or greater than (10.b))	\$ 449,177
12. Estimated rate of return on actuarial value of assets	3.26%

* Contributions and Benefit payments are assumed to be made/paid evenly throughout the year.

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Section V – Development of Unfunded Actuarial Accrued Liability

Presented below is the development of the Unfunded Actuarial Accrued Liability as of January 1, 2012, which is the excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The Actuarial Accrued Liability is the portion of the Present Value of Future Benefits (PVFB) accrued to date. The Present Value of Future Normal Costs represents the portion of the PVFB expected to accrue in the future, based on the current population. Dollar amounts are in thousands.

a.	Present Value of Future Benefits	
	Actives	\$ 204,769
	Disableds and Survivors	<u>391,448</u>
	Total	\$ 596,217
b.	Present Value of Future Normal Costs	\$ 74,901
c.	Actuarial Accrued Liability: (a) – (b)	\$ 521,316
d.	Actuarial Value of Assets	\$ 449,177
e.	Unfunded Accrued Actuarial Liability as of January 1, 2012: (c) – (d)	\$ 72,139

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Section VI – Actuarial Experience

Actuarial gains and losses arise from experience different from that assumed, changes in actuarial assumptions and methods, and changes in plan provisions. The following summarizes the changes in the Unfunded Actuarial Accrued Liability (UAAL) due to these sources from January 1, 2011 to January 1, 2012. Dollar amounts are in thousands.

a.	UAAL as of January 1, 2011	\$ 86,046
b.	Normal Cost for 2011	12,907
c.	Annual Required Contribution for 2011	(50,364)
d.	Interest on UAAL and Normal Cost at 7.8%	<u>7,718</u>
e.	Expected UAAL as of January 1, 2012	\$ 56,307
f.	2011 (Gain)/Loss	<u>15,832</u>
g.	UAAL as of January 1, 2012	\$ 72,139
Sources of 2011 (Gain)/Loss*		
	(Gain)/Loss due to (over)/underpayment of ARC	\$ (1,972)
	(Gain)/loss due to asset returns	<u>17,804</u>
	Total	\$ 15,832

* See Section I for additional details regarding the sources of the 2011 gains and losses.

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Section VII – Determination of Annual Required Contribution

GASB 43 requires the disclosure of the Annual Required Contribution. The following is a brief explanation of the components of the Annual Required Contribution:

- **Normal Cost:** The portion of the total present value of benefits attributed to employee service during the current fiscal year.
- **Amortization Payments:** closed, 8-year level percent of pay amortization of the initial unfunded actuarial accrued liability, and closed 15-year level percent of pay amortizations of any future experience gains and losses, assumption changes, and contribution deficiencies or excess contributions (contributions less than or greater than the Annual Required Contribution, respectively). The total amortization of the UAAL, determined by the preceding method, will not be less than the amount necessary to create an equivalent single amortization period of 30 years (consistent with GASB 43 requirements for disclosure).

Presented below is an illustration of the expected Annual Required Contribution for the fiscal year ending December 31, 2012. Dollar amounts are in thousands.

**Annual Required Contribution
for Fiscal Year Ending
December 31, 2012***

a. Normal Cost	\$ 11,941
b. Amortization Payment	36,531
c. Interest to End of Year	<u>3,781</u>
d. Annual Required Contribution	\$ 52,253

* Estimated results based on January 1, 2011 census data.

**State of Wisconsin
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Section VII – Determination of Annual Required Contribution (continued)

**Schedule of Amortization Payments
(000's)**

	<u>Date Established</u>	<u>Initial Amount</u>	<u>Initial Years</u>	<u>Remaining Years</u>	<u>1/1/2012 Balance</u>	<u>Amortization</u>
Initial UAAL	1/1/2006	\$ 204,397	8	2	\$ 71,995	\$ 36,626
2006 (Gain)/Loss	1/1/2007	(5,925)	15	10	(5,236)	(610)
2007 (Gain)/Loss	1/1/2008	(6,047)	15	11	(5,555)	(598)
2008 (Gain)/Loss	1/1/2009	15,364	15	12	15,896	1,594
2009 (Gain)/Loss	1/1/2010	6,256	15	13	6,067	571
2010 (Gain)/Loss	1/1/2011	(27,205)	15	14	(26,859)	(2,384)
2011 (Gain)/Loss*	1/1/2012	15,832	15	15	<u>15,832</u>	<u>1,332</u>
Total					\$ 72,140	\$ 36,531

*Estimated results based on January 1, 2011 census data.

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Section VIII - Disclosure Information Pursuant to Statement No. 43 of the Governmental Accounting Standards Board

Governmental Accounting Standards Board (“GASB”) Statement No. 43 requires disclosure of notes to the financial statements and supplementary information that includes information shown in two schedules, the Schedule of Funding Progress and the Schedule of Employer Contributions. Table A shows the Schedule of Funding Progress. Table B shows the Schedule of Employer Contributions.

Table A
GASB No. 43 Schedule of Funding Progress
(000’s)

<u>Actuarial Valuation Date</u>	(a) <u>Actuarial Value of Assets</u>	(b) <u>Actuarial Accrued Liability (AAL)</u>	(c) Unfunded <u>Actuarial Accrued Liability (UAAL)</u> (b - a)	(d) <u>Funded Ratio</u> (a / b)	(e) <u>Covered Payroll</u>	(f) UAAL as a Percentage of <u>Covered Payroll</u> (c) / (e)
January 1, 2006	\$ 222,692	\$ 427,089	\$ 204,397	52.1%	\$ 1,144,529	17.9%
January 1, 2008	311,778	471,668	159,890	66.1	1,257,666	12.7
January 1, 2010	373,048	512,785	139,737	72.7	1,370,978	10.2
January 1, 2011	412,988	499,034	86,046	82.8	1,297,690	6.6
January 1, 2012*	449,177	521,316	72,139	86.2	1,350,895	5.3

*Estimated results based on January 1, 2011 census data.

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Section VIII - Disclosure Information Pursuant to Statement No. 43 of the Governmental Accounting Standards Board (continued)

Table B
GASB No. 43 Schedule of Employer Contributions
(000's)

<u>Year Ended</u>	(a) Annual Required Contribution	(b) Employer Contribution	(c) Percentage Contributed (b / a)
December 31, 2006	\$ 44,397	\$ 44,566	100.4%
December 31, 2007	46,174	47,765	103.4
December 31, 2008	47,684	50,574	106.1
December 31, 2009	50,193	51,556	102.7
December 31, 2010	53,181	51,861	97.5
December 31, 2011	50,364	52,335	103.9
December 31, 2012*	52,253	TBD	TBD

* Estimated results based on January 1, 2011 census data.

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Section IX – 10-Year Projection of Employer Benefit Payments

Presented below are the projected employer benefit payments for the next ten years starting in 2012 based on the current plan design. These projected benefit payments are based on the actuarial assumptions shown in Section X. If actual experience differs from that expected by the actuarial assumptions, the actual employer benefit payments will vary from those presented below. Dollar amounts are in thousands.

<u>Year</u>	<u>Total</u>
2012	\$ 31,326
2013	33,251
2014	35,180
2015	37,108
2016	39,025
2017	40,914
2018	42,794
2019	44,622
2020	46,357
2021	47,993

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Section X - Summary of Actuarial Methods and Assumptions

Actuarial Cost Method

The Actuarial Cost Method used in this valuation to determine the Actuarial Accrued Liability and the Annual Required Contribution (ARC) was the Projected Unit Credit Method with service prorated to date of disability.

Under this method, the total present value of benefits is determined by projecting the benefit to be paid after the disability date and discounting those amounts to the valuation date. The Normal Cost is computed by dividing the total present value of benefits by the participant's total service (actual plus expected service) to date of disability.

The Actuarial Accrued Liability under this method represents the total present value of benefits multiplied by the ratio of the participant's actual service to date to expected service at decrement.

The Actuarial Accrued Liability for participants currently receiving payments is calculated as the actuarial present value of future benefits expected to be paid. No normal cost is payable for these participants.

This actuarial cost method is one of the GASB 43 approved methods.

Actuarial Value of Assets

The Actuarial Value of Assets is determined using a Five-Year Smoothed Market Value, with Phase-In. Under this method, the Actuarial Value of Assets equals the Market Value of the fund balance as of January 1, 2006. However, in each subsequent year, the Actuarial Value of Assets equals the Market Value less a decreasing fraction (4/5, 3/5, 2/5, etc.) of the prior five years of investment gains and losses compared to the assumed rate of investment return (currently 7.80%). Furthermore, the resulting Actuarial Value must fall within 80% to 120% of Market Value.

Amortization of Unfunded Accrued Actuarial Liability

The Unfunded Accrued Actuarial Liability (UAAL) is the excess of the Accrued Actuarial Liability over the Actuarial Value of Assets. This excess will be amortized in the following ways:

- 8-year, level percent of pay, closed amortization period for the initial UAAL;
- 15-year, level percent of pay, closed amortization periods for future gains and losses; and

The total amortization of the UAAL, determined by the preceding method, will not be less than the amount necessary to create an equivalent single amortization period of 30 years (consistent with GASB 43 requirements for disclosure).

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Section X - Summary of Actuarial Methods and Assumptions (continued)

Valuation Date: January 1, 2012

Census Date: January 1, 2011*

Discount Rate: 7.80% (net of expenses)

Salary Increases: Assumed annual rates of salary increase are as follows:

<u>Service</u>	<u>Protective with Social Security</u>	<u>Protective w/o Social Security</u>
1	9.00%	9.00%
2	9.00	9.00
3	8.40	8.30
4	7.70	7.60
5	7.10	6.90
10	5.40	5.40
15	5.10	4.70
20	4.90	4.60
25	4.80	4.50
30	4.60	4.40

Payroll Growth: 4.1% annually

Pre-Retirement Mortality: This assumption applies to death while in service. Rates follow the Wisconsin Projected Experience Table – 2005 for males and females. Sample rates of mortality are as follows:

<u>Age</u>	<u>Males</u>	<u>Females</u>
25	0.0303%	0.0085%
35	0.0391	0.0203
45	0.0725	0.0445
55	0.2085	0.1280

*This interim January 1, 2012 actuarial valuation is determined based on January 1, 2011 census data.

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Section X - Summary of Actuarial Methods and Assumptions (continued)

Post-Retirement Mortality: This assumption applies to spouse mortality. Rates follow the Wisconsin Projected Experience Table – 2005 for males and females. Sample rates of mortality are as follows:

<u>Age</u>	<u>Males</u>	<u>Females</u>
45	0.1449%	0.0891%
55	0.4171	0.2561
65	0.9320	0.6650
75	3.0059	1.9501
85	9.2413	6.5117

Post-Disability Mortality: This assumption applies to death after disablement. Rates follow the Wisconsin Projected Experience Table – 2005 for males and females. Sample rates of mortality are as follows:

<u>Age</u>	<u>Males</u>	<u>Females</u>
45	0.3864%	0.1871%
55	1.1122	0.5378
65	2.4852	1.3965
75	8.0158	4.0952
85	24.6434	13.6746

Disability: Percent of employees expected to become disabled each year are as follows:

<u>Age</u>	<u>Protective with Social Security</u>	<u>Protective w/o Social Security</u>
20	0.01%	0.01%
25	0.03	0.03
30	0.07	0.07
35	0.12	0.12
40	0.19	0.19
45	0.25	0.25
50	0.33	0.33
55	0.28	0.28
60	0.20	0.20

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Section X - Summary of Actuarial Methods and Assumptions (continued)

Withdrawal: Percent of employees expected to terminate each year within the first 10 years of employment are as follows:

<u>Service</u>	<u>Protective with Social Security</u>	<u>Protective w/o Social Security</u>
0	13.0%	5.2%
1	7.0	3.4
2	4.6	2.1
3	4.1	1.5
4	3.2	1.4
5	3.0	1.3
6	2.7	1.2
7	2.5	1.0
8	2.3	0.9
9	1.9	0.9

Percent of employees expected to terminate each year after the first 10 years of employment are as follows:

<u>Age</u>	<u>Protective with Social Security</u>	<u>Protective w/o Social Security</u>
25	1.9%	0.9%
30	1.9	0.8
35	1.7	0.8
40	1.3	0.7
45	1.1	0.7
50	1.0	0.6
55	1.0	0.6
60	1.0	0.6

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Section X - Summary of Actuarial Methods and Assumptions (continued)

Retirement: Percent of employees expected to retire each year are as follows.

<u>Age</u>	<u>Protective with Social Security</u>	<u>Protective w/o Social Security</u>
50	8%	4%
51	8	4
52	9	6
53	28	23
54	20	28
55	17	28
56	17	28
57	17	37
58	17	32
59	17	35
60	17	22
61	20	15
62	20	20
63	30	20
64	18	20
65	30	40
66	30	40
67	23	40
68	23	40
69	20	40
70	100	100

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Section X - Summary of Actuarial Methods and Assumptions (continued)

Benefit Offsets: There are many potential offsets to the member's basic benefit. The following assumptions estimate those offsets.

<u>Offset</u>	<u>Valuation Estimate</u>
WRS Benefits and LTDI	<p>Assume 20% of members qualify for a WRS disability benefit or LTDI.</p> <p>Assume 10% of members under age 50 who do not qualify for a WRS disability benefit or LTDI elect to receive a WRS separation benefit.</p> <p>Assume other members commence a WRS retirement benefit at age 50 (requirement of plan).</p> <p>Benefits are based on plan provisions and actuarial assumptions stated above.</p>
Social Security	<p>Assume 10% of members covered by Social Security qualify for a Social Security disability award.</p> <p>Benefits are based on Social Security formula and assuming:</p> <ul style="list-style-type: none"> • 4.1% pay increases • 4.1% Social Security Taxable Wage Base increases • 3.0% cost-of-living adjustments
Unemployment Compensation:	None (No offsets observed)
Combined Offset from: <ul style="list-style-type: none"> • Worker's Compensation • Employer Earnings • Other Earnings 	<p>Assume 3% reduction to 75%/80% target benefit</p> <p>(Observed reduction from all these offsets was about 3.2% of target benefit. This observation does not include a review of income tax returns or one-time earnings offsets as observation is taken from the December Payroll of each year.)</p>

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Section X - Summary of Actuarial Methods and Assumptions (continued)

Active Members Included:	Current eligible WRS active members were included only.
Expenses:	None included.
Future Service:	All members earn a full year of service in each calendar year.
Marital Status:	100% of members are married. Husbands are assumed to be three years older than their wives.
Dependents:	No dependent children are assumed to be covered at retirement.
Annual Benefit Increases:	Before age 60 (salary-indexed increases): 4.10% After age 60 (WRS dividend-based increases): 2.67%
Benefit Adjustment for Inactive Members:	The current benefits of inactive members were reduced by 8% under the assumption, consistent with recent experience, that not all benefit offsets have been reported.
Changes Since Prior Valuation:	None

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Section XI - Summary of Substantive Plan Provisions

Participants Included: State and local protective occupation active employees, and retirees and their survivors who are currently receiving duty disability program benefits

Benefit Eligibility: Member must satisfy all of the following

- injured while performing duties or contracted disease due to occupation
- disability is work-related
- disability is expected to be permanent

Also, the disability must result in one of the following

- reduction in pay or position
- assignment to light duty
- retirement
- impairs promotional opportunities

Member Benefits: 80% of salary (75% for local employees who are not eligible for a Social Security disability award and not eligible for a WRS disability benefit or LTDI). For local members who have been terminated but not approved for WRS disability or LTDI only, the percentage is reduced by 0.5% for each month of WRS creditable service over 25, but not to less than 50%. For local members who have not been terminated or have been approved for WRS disability or LTDI, the percentage is reduced by 0.5% per month for every month over 30 years, but not to less than 50%. For all members, the offsets are as follows (with mandatory commencement ages in parenthesis if applicable):

- Any Social Security benefit based upon the participant's work record (age 62; if not already receiving SSDI)
- Unemployment compensation
- Worker's Compensation
- Any WRS retirement, separation, or disability benefit based upon member's earnings and service (age 50)
- all earnings from the employer where the disability occurred
- a percent of other earnings as follows:
 - 1/3 of earnings less than 40% of salary

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Section XI - Summary of Substantive Plan Provisions (continued)

- 1/2 of earnings between 40% and 80% of salary
- 2/3 of earnings over 80% of salary

a 5% reduction for non-state members who have not filed a Worker's Compensation claim for permanent disability

Individuals receive an annual increase of either 1 or 2 below.

**Annual Increases in
Member Benefits:**

- 1) Social Security salary index for the following individuals:
 - under age 60, or
 - older than 60 and receiving a regular disability retirement or regular LTDI
- 2) Prior year's WRS core annuity dividend for the following individuals:
 - over age 60 and receiving special disability retirement or special LTDI, or
 - not receiving any regular disability retirement or LTDI, or
 - receiving a duty disability death benefit

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Section XI - Summary of Substantive Plan Provisions (continued)

- Survivor Benefits:**
- State employees and pre-5/3/88 applications for local employees
- 1/3 of the participant's monthly salary at time of death to surviving spouse or domestic partner (State employees only), plus
 - \$15/month to the guardian of each unmarried child under the age of 18
 - not to exceed 65% of the participant's monthly salary at time of death
 - no annual adjustments
- Post-5/3/88 applications for local employees
- 1/2 of the participant's monthly salary at time of death to surviving spouse less other income sources that are based on the participant's earnings record, plus
 - 1/10 of the participant's monthly salary at time of death to each unmarried child under the age of 18
 - not to exceed 70% of the participant's monthly salary at time of death less offsets for other income
 - subject to annual adjustments based on salary indexing
- Cancer Presumptive Law (state and local)
- 70% of the participant's monthly salary at time of death to surviving spouse or domestic partner, less other income sources that are based on the participant's earnings record
 - 1/10 of the participant's monthly salary at time of death to the guardian of each unmarried child under the age of 18, as long as there is no surviving spouse
 - there is no maximum on dependent benefits
 - subject to annual adjustments based on salary indexing
- Survivor benefits are offset by Chapter 102 Worker's Compensation death benefits
- Contributions:**
- Funded entirely by Employer contributions, which vary by experience as detailed in the following table.

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Section XI - Summary of Substantive Plan Provisions (continued)

Contribution Rate Schedule

% of Covered Payroll	Applicable To
1.9	Groups with claims payout during the prior year of less than or equal to 0.5% of payroll.
2.4	Groups with one claim in which the payout during the prior year exceeded 0.5% of payroll, and groups with two or more claims in which the payout was more than 0.5% but less than 1.0% of payroll.
3.6	Groups with two or more claims in which the payout during the prior year was more than 1.0% but less than 2.0% of payroll.
5.4	Groups with two or more claims in which the payout during the prior year was more than 2.0% and less than 3.0% of payroll.
6.6	Groups with two or more claims in which the payout exceeded 3.0% but was less than 6.6% of payroll during the prior year.
6.6 + ½ of claims over 6.6%	Groups with two or more claims in which the payout exceeded 6.6% of payroll during the prior year.

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Section XII - Summary of Participant Demographic Information

The participant data used in the valuation was provided by the State of Wisconsin as of January 1, 2011. While the participant data was checked for reasonableness, the data was not audited, and the valuation results presented in this report are dependent upon the accuracy of the participant data provided. The table below presents a summary of the basic participant information for the active and inactive participants covered under the terms of the Plan.

	<u>Protective with Social Security</u>	<u>Protective w/o Social Security</u>	<u>Total</u>
a. Active participants			
Count	19,972	2,744	22,716
Average Age	40.7	41.4	40.8
Average Service	12.7	14.5	12.9
Average 2011 Pay	\$55,798	\$68,183	\$57,294
b. Disabled participants and Survivors*			
Count			957
Average Age			59.3
Average Current Benefit**			\$31,588

* Includes 57 disabled participants with zero benefits.

**Prior to 8% reduction to account for benefit offsets not yet reported.

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Section XII - Summary of Participant Demographic Information (continued)

Distribution by Age, Service and Average 2011 Pay – Actives – Protective with Social Security

Age Group	0-4 Years		5-9 Years		10-14 Years		15-19 Years		20-24 Years		25 -29 Years		30 Years +		All Years	
	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay
0-19	8	\$ 15,328	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	8	\$ 15,328
20-24	706	32,778	18	41,031	0	0	0	0	0	0	0	0	0	0	724	32,984
25-29	1,689	42,746	789	51,302	36	50,830	0	0	0	0	0	0	0	0	2,514	45,547
30-34	700	41,426	1,395	53,907	879	56,765	17	56,018	0	0	0	0	0	0	2,991	51,838
35-39	383	39,972	728	52,748	1,663	59,729	567	62,835	13	66,567	0	0	0	0	3,354	56,509
40-44	274	37,486	452	50,696	947	57,440	1,402	63,761	491	68,405	3	57,335	0	0	3,569	59,045
45-49	171	34,095	317	47,193	424	56,062	649	63,984	1,002	69,081	359	72,226	11	71,772	2,933	62,061
50-54	114	35,080	234	45,775	233	55,978	370	61,416	464	66,675	612	72,328	292	74,671	2,319	63,598
55-59	57	24,197	148	46,272	133	52,623	173	58,785	214	64,261	179	66,889	217	72,596	1,122	59,603
60-64	29	24,180	56	44,532	48	51,137	65	57,989	65	62,691	49	66,814	65	70,416	377	56,617
65 & Up	13	10,828	9	37,525	14	46,754	10	56,834	7	59,480	4	81,222	5	81,553	62	45,974
Total	4,144	\$ 39,115	4,146	\$ 51,395	4,377	\$ 57,659	3,253	\$ 62,935	2,256	\$ 67,753	1,206	\$ 71,259	590	\$ 73,443	19,972	\$ 55,798

Distribution by Age, Service and Average 2011 Pay – Actives – Protective without Social Security

Age Group	0-4 Years		5-9 Years		10-14 Years		15-19 Years		20-24 Years		25 -29 Years		30 Years +		All Years	
	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay
0-19	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
20-24	79	43,429	0	0	0	0	0	0	0	0	0	0	0	0	79	43,429
25-29	171	49,686	79	63,919	1	74,664	0	0	0	0	0	0	0	0	251	54,265
30-34	124	50,293	177	64,520	100	66,347	0	0	0	0	0	0	0	0	401	60,576
35-39	41	52,158	100	65,740	264	68,201	67	73,189	2	78,627	0	0	0	0	474	67,043
40-44	20	46,987	58	65,651	173	69,081	173	72,232	76	75,268	0	0	0	0	500	69,830
45-49	8	46,967	16	63,670	58	69,745	129	71,597	186	74,975	92	79,028	2	69,738	491	73,383
50-54	2	63,897	3	74,570	25	69,484	48	70,855	119	75,327	139	80,721	56	85,553	392	77,716
55-59	1	70,390	1	63,911	3	67,622	18	81,580	47	77,929	39	80,025	31	83,599	140	79,863
60-64	0	0	1	127,838	3	97,976	0	0	3	86,005	4	75,151	4	90,950	15	89,612
65 & Up	0	0	0	0	0	0	1	38,219	0	0	0	0	0	0	1	38,219
Total	446	\$ 48,914	435	\$ 65,024	627	\$ 68,492	436	\$ 72,348	433	\$ 75,537	274	\$ 79,972	93	\$ 84,794	2,744	\$ 68,183

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Section XII - Summary of Participant Demographic Information (continued)

Distribution by Age, Service and Average 2011 Pay – Actives – Total

Age Group	0-4 Years		5-9 Years		10-14 Years		15-19 Years		20-24 Years		25 -29 Years		30 Years +		All Years	
	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay	Count	Avg. Pay
0-19	8	\$ 15,328	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	8	\$15,328
20-24	785	33,850	18	41,031	0	0	0	0	0	0	0	0	0	0	803	34,011
25-29	1,860	43,384	868	52,450	37	51,474	0	0	0	0	0	0	0	0	2,765	46,339
30-34	824	42,761	1,572	55,102	979	57,744	17	56,018	0	0	0	0	0	0	3,392	52,871
35-39	424	41,151	828	54,317	1,927	60,889	634	63,929	15	68,175	0	0	0	0	3,828	57,813
40-44	294	38,133	510	52,397	1,120	59,238	1,575	64,691	567	69,325	3	57,335	0	0	4,069	60,371
45-49	179	34,670	333	47,985	482	57,709	778	65,246	1,188	70,004	451	73,614	13	71,459	3,424	63,684
50-54	116	35,577	237	46,139	258	57,286	418	62,500	583	68,441	751	73,882	348	76,422	2,711	65,639
55-59	58	24,993	149	46,391	136	52,954	191	60,933	261	66,722	218	69,239	248	73,972	1,262	61,851
60-64	29	24,180	57	45,994	51	53,892	65	57,989	68	63,720	53	67,443	69	71,606	392	57,880
65 & Up	13	10,828	9	37,525	14	46,754	11	55,141	7	59,480	4	81,222	5	81,553	63	45,851
Total	4,590	\$ 40,067	4,581	\$ 52,689	5,004	\$ 59,016	3,689	\$ 64,048	2,689	\$ 69,007	1,480	\$ 72,872	683	\$ 74,989	22,716	\$ 57,294

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Section XII - Summary of Participant Demographic Information (continued)

Distribution by Age and Average Current Benefits – Disableds and Survivors*

Age Group	Count	Average Current Benefit
Under 30	1	\$ 6,118
30-34	6	23,966
35-39	26	37,274
40-44	44	37,190
45-49	101	43,905
50-54	139	41,607
55-59	184	34,700
60-64	178	33,074
65-69	133	31,082
70-74	84	24,867
75-79	46	21,648
80-84	13	22,029
85 & Up	2	22,179
Total	957	\$ 31,588

* Includes 57 disabled participants with zero benefits; average current benefit prior to 8% reduction to account for offsets not yet reported.