Accumulated Sick Leave Conversion Credit Programs

Annual Actuarial Valuations

DECEMBER 31, 2002

Presented to the Wisconsin Department of Employee Trust Funds

GABRIEL, ROEDER, SMITH & COMPANY

June 2, 2003

Employee Trust Funds Board Wisconsin Retirement System 801 West Badger Road Madison, Wisconsin 55713-2526

Ladies and Gentlemen:

The results of the **Annual Actuarial Valuation** of benefit liabilities and costs of non-retired participants of the Accumulated Sick Leave Conversion Credit Programs are presented in this report.

The date of the valuation was December 31, 2002.

The valuation was based upon data, furnished by the Department of Employee Trust Funds, concerning retired and non-retired participants and pertinent financial information.

The valuation was completed in accordance with standards of practice prescribed by the Actuarial Standards Board and in conformance with Chapter 40 of the Wisconsin Statutes. To the best of our knowledge this report is complete and accurate, and the actuarial methods and assumptions produced results which are reasonable.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

Norman L. Jones, F.S.A. Brian B. Murphy, F.S.A.

NLJ/zag/lr

• Combined Results and Discussion

ASLCC PROGRAM BASE PLUS SUPPLEMENTAL COMPUTED TOTAL EMPLOYER CONTRIBUTION RATES

The financial objectives of the ASLCC Program are to establish and receive contributions to support benefits that will remain approximately level from year to year. Combined program valuation results since 1995 are presented below.

Valuation Date				UAAL* Amortization
December 31	Base	Supplemental	Total	Years
1995	1.9%	1.1%	3.0%	29
1996	1.8%	1.1%	2.9%	28
1997@#	1.8%	0.9%	2.7%	27
1998	1.9%	0.8%	2.7%	20
1999	1.8%	0.9%	2.7%	25
2000@	1.7%	1.0%	2.7%	24
2001	1.7%	1.1%	2.8%	24
2002	1.8%	1.2%	3.0%	23

* Unfunded actuarial accrued liabilities

ⓐ Assumption change.

Benefit change.

COMMENTS

- Based on the policy established at the June 2002 ETF Board meeting, the amortization period for unfunded actuarial accrued liabilities was closed. Therefore, the remaining period will decline one year at a time until the UAAL is fully amortized.
- Full level percent of payroll contributions were suspended during 2002. If scheduled contributions had continued throughout the year, the year-end total ASLCC balance would have been \$38.1 million higher and the total computed rate would have been 2.9% of covered payroll. If level percent of payroll contributions are not resumed, the computed rate will continue to increase.

ASLCC PROGRAM SUMMARY OF PARTICIPANT DATA DECEMBER 31, 2002

Active Participants

	State Employees (Non-University)	University	University Hospital	Total
Number	33,155	28,556	4,731	66,442
Annual Payroll	\$1,439,642,110	\$1,457,347,949	\$199,720,724	\$ 3,096,710,783
Accrued Unused Sick Days	2,683,291 days	2,504,274 days	190,694 days	5,378,259 days
Averages: Age	44.3 years	46.1 years	40.4 years	44.8 years
Service	12.6 years	11.5 years	8.2 years	11.8 years
Sick Leave Days	80.9 days	87.7 days	40.3 days	80.9 days

Retirees & Beneficiaries

	Rate Ca		
	Without Medicare	With Medicare	Total
Number*	3,482	5,398	8,880
Monthly Premiums			
Total	\$2,649,877	\$2,898,255	\$5,548,132
Average	\$761.02	\$536.91	
Prior Year Average	\$700.91	\$484.26	

* Number count does not include 2,648 escrowed annuitants.

ASLCC PROGRAM SUMMARY OF ASSETS DECEMBER 31, 2002

	Base Program	Supple mental Program	Total
	Trogram	iiogiam	Iotai
Beginning Balance	\$ 611,660,340	\$ 133,374,517	\$ 745,034,857
Adjustment	2,693,428	2,926,708	5,620,136
Beginning Bal after adjustment	614,353,768	136,301,225	750,654,993
Revenues			
Contributions	28,549,801	16,817,582	45,367,383
Investment Income	29,120,263	6,857,037	35,977,300
Total Revenues	57,670,064	23,674,619	81,344,683
Expenses			
Insurance Premiums	52,964,421	5,801,241	58,765,662
Administration	103,719	10,046	113,765
Total Expenses	53,068,140	5,811,287	58,879,427
Ending Balance - December 31, 2002	\$ 618,955,692	\$154,164,557	\$773,120,249

• Base Plan Results

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SECTION 40.05(4)(B) ACCUMULATED SICK LEAVE CONVERSION CREDIT PROGRAM SUMMARY OF ACCUMULATION AND PAYMENT CONDITIONS

Accumulation. For most participants, sick leave has historically accrued at the rate of 4 hours every two weeks to a maximum of 13 days a year. The potential accrual rate was increased to 5 hours per pay period in 1998, which corresponds to 16.25 days per year. Unused portions accumulate from year to year and are converted at retirement as indicated below. The average annual sick leave balance of Wisconsin state employees (other than University employees) in 2002 was 80.9 days. Based upon an average of 12.6 years of service, this would correspond to an average annual addition of 6.4 days per year to sick leave accounts for past years. For University and University Hospital employees, the average balance was 81 days. Based upon an average of 11 years of service, this would correspond to an average annual addition of 7.4 days per year to the sick leave accounts for past years. In the future, average annual additions are assumed to be higher because potential sick leave accrual rates have been increased. For purposes of estimating sick leave balances at retirement, each individual was assumed to continue using sick leave at the same rate as in the past but not less than 25% nor more than 75% of the person's annual accrual rate (usually 16.25 days).

Eligibility For Payment of Accrued Sick Leave. Termination of employment with eligibility for an immediate annuity from the Wisconsin Retirement System. State elected officials and certain state administrative officials terminating before their minimum service retirement age retain eligibility for benefits at their minimum service retirement age providing they do not elect a WRS separation benefit.

Amount of Payment for Unused Sick Leave. A conversion credit is computed at the time of retirement or death by multiplying the number of days of unused sick leave by the current basic pay rate. The conversion credit is then used to cover the cost of health insurance premiums for the employee and eligible dependents. Unused portions are carried forward from year to year without interest and when total health insurance premiums paid on behalf of the retired employee equal or exceed the conversion credit, no further payments are made under the ASLCC program. Payments from the sick leave account may be escrowed indefinitely after retirement for participants who provide evidence of comparable health insurance coverage from another source.

40.05(4)(B) - BASE ASLCC PROGRAM DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES DECEMBER 31, 2002

Actuarial Present Value	(1) Total Present Value	(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Acrued Liabilities (1)-(2)
Future Amount to be paid on behalf of present retirants and beneficiaries	\$ 230,946,487	\$0	\$230,946,487
Future Amount to be paid on behalf of future retirees and beneficiaries	823,815,555	173,164,605	650,650,950
Total	\$1,054,762,042	\$173,164,605	\$881,597,437
Assets		_	618,955,692
Unfunded Actuarial Accrued Liabilities			\$262,641,745

40.05(4)(B) - BASE ASLCC PROGRAM COMPUTED EMPLOYER CONTRIBUTIONS DECEMBER 31, 2002

Contributions for	Computed Employer Contribution Rate as a % of Covered Payroll		
Normal Cost	1.3%		
UAAL*	0.5%		
Total	1.8%		

* Unfunded actuarial accrued liabilities of \$262.6 million were amortized over 23 years.

Discussion:

The financial objective of the ASLCC program is to establish and receive contributions to support benefits that will remain approximately level from year to year. Contributions to the program are 1.8% of covered payroll in 2003. By statute, they had originally been scheduled to increase by 0.2% each year until the ETF Board, based upon valuation results, determined that the level contribution rate objective was being met.

COMPARATIVE STATEMENT OF RESULTS 40.05(4)(B) - BASE ASLCC PROGRAM

Computed Employer Rate 2.3%2.4% 2.1%2.1%2.1%2.1%2.1%1.9%1.8% 1.8% 1.9% l.7% 1.7% 1.8% 1.9%1.8%218.7 262.6 \$355.0 391.9 383.5 407.9 387.4 354.4 251.8 241.9 260.0 214.2 377.4 364.4 380.4 370.1 UAAL **\$ Millions** \$20.2 34.4 50.0 73.9 92.4 121.6 156.4 186.7 236.8 283.2 337.2 392.9 457.0 515.6 611.7 619.0 Assets Liabilities 830.4 881.6 \$375.2 426.3 606.9 637.6 589.0 634.8 717.0 433.5 451.3 500.3 509.0 520.8 729.8 Accrued 567.1 Accr. Sick Days 80.6 80.7 80.8 78.0 76.0 77.0 79.5 79.9 81.0 80.6 80.9 80.9 81.3 74.7 80.3 79.4 Average Service 11.6 11.0 11.2 12.2 11.8 11.3 11.8 12.5 12.0 11.8 11.8 12.1 12.3 12.3 12.2 12.2 43.5 43.4 44.6 44.5 44.8 Age 43.4 43.4 43.043.3 43.6 44.2 44.2 44.3 44.4 44.6 43.1 **\$ Millions** 1,412.7 2,184.32,260.8 2,753.32,980.61,434.5 1,624.3 1,810.4 2,021.8 2,151.9 2,415.52,521.6 3,096.7 1,932.4 2,136.9Covered \$1,319.9 Payroll No. Active 64,510 58,299 57,920 63,008 66,442 48,292 48,247 49,983 54,675 58,872 60,502 48,127 57,577 58,971 57,941 62,158 December 31 1997@# Valuation 2000@1988@1991(a)1994(a)Date 1987 1989 1990 1992 1993 1995 1996 1998 1999 2001 2002

Assumption change. Benefit change.

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• Supplemental Plan Results

ACCUMULATED SICK LEAVE CONVERSION CREDIT PROGRAM SUPPLEMENTAL PLAN DECEMBER 31, 2002

This supplemental plan provides matching credits for participants retiring with 15 or more years of state service as follows:

- Protective: Match up to 78 hours (9.75 days) per full year of service through 24 years, plus 104 hours (13 days) per full year of service over 24 years.
- Others: Match up to 52 hours (6.5 days) per full year of service through 24 years, plus up to 104 hours (13 days) per full year of service over 24 years.

The results below are for the supplemental program only. (The results on page 5 are for the ASLCC base program only.) The supplemental plan accrued liabilities are offset by supplemental plan assets which are accounted for separately by DETF. The contribution rate sufficient to amortize the UAAL over a period of 23 years (the same period as in the base program) is 1.2% of covered payroll as shown below.

Contributions for	Computed Employer Contribution Rate As a % of Covered Payroll
Normal Cost	0.6%
UAAL*	0.6%
Total	1.2%

* Unfunded actuarial accrued liabilities of \$273.9 million were amortized over 23 years.

The contribution rate shown above was developed based upon the active participant data as shown on page 2. This is the same data that was used in the development of the base plan rates.

40.05(4)(B) – SUPPLEMENTAL ASLCC PROGRAM DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES DECEMBER 31, 2002

Actuarial Present Value	(1) Total Present Value	(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Acrued Liabilities (1)-(2)
Future Amount to be paid on behalf of present retirants and beneficiaries	\$ 127,790,984	\$ 0	\$127,790,984
Future Amount to be paid on behalf of future retirees and beneficiaries	408,111,199	107,814,302	300,296,897
Total	\$535,902,183	\$107,814,302	\$428,087,881
Assets		-	154,164,557
Unfunded Actuarial Accrued Liabilities			\$273,923,324

COMPARATIVE STATEMENT OF RESULTS ASLCC SUPPLEMENTAL PLAN

Computed Employer Rate 0.8%1.1% 1.1% 0.9%0.9% 1.0%1.1%1.2% \$268.8 273.2 154.5 139.6 212.6 245.0 273.9 143.1 UAAL **S** M illions Assets 0.0 13.7 41.2 133.4 54.2 0.169.4 97.3 $\boldsymbol{\circ}$ Liabilities \$268.8 180.8 212.5 309.9 273.3 168.2 378.4 Accrued 428.1 Accr. Sick Days 79.5 79.9 81.0 80.6 80.9 80.9 80.3 79.4 Average Service 12.5 12.2 12.0 11.8 12.3 12.3 12.2 11.8 44.4 44.6 44.6 44.5 44.8 44.2 44.2 44.3 Age **\$ Millions** \$3,096.7 \$2,980.6 \$2,151.9 Covered \$2,184.3 \$2,260.8 \$2,415.5 \$2,521.6 \$2,753.3 Payroll Assumption change. No. Active 64,510 57,920 62,158 63,008 66,442 58,872 60,502 57,941 *®*# December 31 1997@# Valuation 2000(a)1996 Date 1995 1998 1999 2001 2002

Benefit change.

For the 2000 and subsequent valuations, retiree liabilities were separately calculated for the supplemental plan. For 1999 and prior, those liabilities were reported as base plan liabilities.

Actuarial Methods and Assumptions

The actuarial funding method used in the ASLCC valuation is the **Entry Age Normal Cost Method**. Under this method, actuarial gains or losses arising from differences between actual and assumed experience are reflected in the determination of the unfunded actuarial accrued liability.

For each person included in the valuation, the Present Value of Future Benefits is determined by projecting the sick leave balance to retirement based upon an estimate of the individual's historical sick leave utilization and the total Sick Leave Accrual rate applicable to the person. The Entry Age Normal Cost (EANC) is determined in a similar manner except that for purposes of EANC only, each non-retired individual is assumed to have average utilization of Sick Leave. The Actuarial Accrued Liability is the difference between the Present Value of Future Benefits and the Present Value of Future Entry Age Normal Costs.

The principal areas of risk assumption are:

- long-term *rates of investment return* likely to be generated by system assets
- rates of mortality among participants, retirees and beneficiaries
- rates of withdrawal of active participants
- *rates of disability* among participants
- *patterns of salary increases* to be experienced by participants
- the age and service *distribution of actual retirements*
- future *rates of sick leave usage* by plan participants.

In an actuarial valuation, the actuary projects the monetary effect of each risk 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.

SUMMARY OF ASSUMPTIONS USED FOR ANNUAL ACTUARIAL VALUATIONS ASSUMPTIONS ADOPTED BY ETF BOARD AFTER CONSULTING WITH ACTUARY

ECONOMIC ASSUMPTIONS

The long-term rates of investment return used in making the valuation was 8.0% a year, compounded yearly.

Salary adjustment factors used to project earnings for each participant between the valuation date and the participant's retirement age are shown below for sample ages. This assumption is used to project a participant's current earnings to the earnings upon which benefits will be based.

	% Merit and Longvity Increase Next Year				
			Protective		Exec. &
Age	Gen.	Teachers	With S.S.	w/o S.S.	Elec.
20	5.0 %	6.0 %	4.2 %	5.0 %	5.0 %
25	5.0 %	5.8 %	4.2 %	4.2 %	4.2 %
30	3.2 %	4.2 %	3.8 %	2.8 %	2.8 %
35	2.2 %	3.1 %	2.6 %	1.4 %	1.4 %
40	1.3 %	2.2 %	1.2 %	0.8 %	0.8 %
45	0.7 %	1.5 %	0.5 %	0.5 %	0.5 %
50	0.4 %	1.0 %	0.3 %	0.3 %	0.3 %
55	0.3 %	0.4 %	0.1 %	0.1 %	0.1 %
60	0.3 %	0.3 %	0.1 %	0.1 %	0.1 %
65	0.2 %	0.3 %	0.1 %	0.1 %	0.1 %

If the number of active participants remains constant, then the total active participant payroll will increase 4.5% a year, the base portion of the individual salary increase assumptions. This increasing payroll was recognized in amortizing unfunded actuarial accrued liabilities.

DECREMENT PROBABILITIES

The mortality table used to measure mortality for retired participants was the Wisconsin Projected Experience Table - 96 for men and women. 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.

SINGLE LIFE RETIREMENT VALUES WISCONSIN PROJECTED EXPERIENCE TABLE – 96 WITH 5% INTEREST

Sample Attained	Future Life Expectancy (years)		
Ages	Males	Females	
40	39.7	45.1	
45	34.9	40.3	
50	30.2	35.4	
55	25.7	30.7	
60	21.4	26.1	
65	17.3	21.6	
70	13.5	17.3	
75	10.3	13.4	
80	7.6	10.1	
85	5.5	7.3	

For disability retirements, basing mortality on an age 12 years older than the actual age recognizes impaired longevity.

Sample	Mortality Rates		
Attained Ages	M ales	Females	
20	0.000145	0.000085	
25	0.000179	0.000113	
30	0.000234	0.000153	
35	0.000324	0.000212	
40	0.000472	0.000305	
45	0.000844	0.000454	
50	0.001526	0.000699	
55	0.002460	0.001057	
60	0.003788	0.001782	
65	0.006433	0.003126	
70	0.011998	0.005513	
75	0.020418	0.011278	
80	0.035773	0.020671	

This assumption is used to measure the probability of participants dying while in service.

	Gen	e ral	Public	School	Univ	ersity	Prote	Exec. &	
Age	M ale	Female	M ale	Female	M ale	Female	With S.S.	W/O S.S.	Elected
50							5%	2%	
51							5%	2%	
52							5%	4%	
53							31%	34%	
54							27%	36%	
55							27%	39%	
56							27%	42%	
57	25%	27%	30%	25%	20%	25%	27%	38%	8%
58	25%	27%	30%	22%	16%	15%	27%	37%	8%
59	25%	27%	30%	22%	15%	25%	27%	33%	12%
60	25%	28%	30%	25%	16%	17%	31%	31%	14%
61	28%	34%	30%	23%	18%	19%	26%	40%	20%
62	47%	50%	45%	36%	25%	32%	47%	40%	15%
63	45%	50%	45%	25%	22%	26%	38%	40%	15%
64	45%	50%	45%	40%	23%	37%	31%	40%	15%
65	45%	50%	55%	40%	25%	33%	34%	40%	20%
66	32%	39%	50%	31%	25%	32%	50%	40%	20%
67	29%	30%	40%	20%	25%	24%	50%	40%	20%
68	24%	25%	40%	20%	25%	26%	50%	40%	20%
69	22%	20%	40%	20%	25%	20%	50%	40%	20%
70	12%	20%	40%	20%	25%	20%	100%	100%	20%
71	12%	20%	40%	20%	25%	20%	100%	100%	20%
72	12%	20%	40%	20%	25%	20%	100%	100%	20%
73	12%	20%	40%	20%	25%	20%	100%	100%	20%
74	12%	20%	40%	20%	25%	20%	100%	100%	20%
75	100%	100%	100%	100%	100%	100%	100%	100%	100%

Normal Retirement Pattern

* Includes early retirements.

Early Retirement Pattern

	% Retiring Next Year									
	Gen	e ral	Public	School	Univ	Exec. &				
Age	M ale Fe male		Male Female		M ale	Female	Elected			
55	7%	6%	13%	11%	5%	7.5%	6%			
56	5%	6%	10%	7%	5%	7.5%	6%			
57	4%	6%	6%	8%	5%	7.5%	6%			
58	4%	6%	8%	9%	5%	7.5%	6%			
59	4%	7%	9%	10%	5%	7.5%	6%			
60	6%	9%	10%	13%	5%	7.5%	6%			
61	9%	11%	15%	14%	5%	7.5%	6%			
62	20%	20%	15%	20%	5%	7.5%				
63	20%	20%	15%	20%	5%	7.5%				
64	20%	20%	15%	20%	5%	7.5%				

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 5 or more years 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 is 100% at age 35, grading downward to 0% at retirement eligibility. These assumptions are used to measure the probabilities of participants remaining in employment and the probabilities of being paid a disability or other termination benefits.

ASSUMED TERMINATION RATES BY ATTAINED AGE AND YEARS OF SERVICE

		% of Active Participants Terminating									
		Protective									
		With	Without								
		Soc.	Soc.	Public Schools		University		Exec. &	Other		
Age &	Service	Sec.	Sec.	Males Females		Males	Females	Elected	Males	Females	
	0	11.7%	4.9%	10.1%	10.0%	18.0%	18.9%	7.5%	17.6%	16.9%	
	1	6.4%	2.5%	7.0%	7.0%	15.0%	16.2%	7.0%	10.6%	11.1%	
	2	5.1%	2.4%	5.3%	6.0%	13.0%	14.9%	6.5%	7.9%	8.7%	
	3	3.6%	2.3%	3.8%	5.4%	11.0%	12.8%	6.0%	6.8%	7.1%	
	4	3.0%	2.2%	3.5%	4.0%	10.0%	10.5%	5.5%	6.0%	6.0%	
25	5 & Over	2.1%	1.0%	3.5%	4.0%	10.0%	10.5%	5.0%	6.0%	6.0%	
30		1.7%	1.0%	2.7%	3.5%	10.0%	10.5%	4.8%	4.6%	5.8%	
35		1.2%	0.7%	1.5%	2.3%	9.0%	8.3%	4.6%	3.1%	4.5%	
40		1.1%	0.7%	1.2%	1.5%	5.0%	5.3%	4.0%	2.1%	3.2%	
45		1.1%	0.7%	1.0%	1.2%	3.3%	3.8%	3.2%	1.8%	2.9%	
50		1.0%	0.7%	0.9%	1.2%	2.0%	2.9%	2.4%	1.5%	2.5%	
55		1.0%	0.7%	0.9%	1.2%	1.0%	2.0%	2.0%	1.5%	1.8%	
60		1.0%	0.7%	0.9%	1.2%	0.7%	2.0%	2.0%	1.5%	0.6%	

DISABILITY RATES

	% of Active Participants Becoming Disabled									
	Protective		Public Schools		University		Exec. & Elected		Other	
Age	With SS	W/O SS	Males	Females	Males	Females	Males	Females	Males	Females
20	0.01%	0.04%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
25	0.01%	0.04%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
30	0.01%	0.05%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.04%
35	0.04%	0.06%	0.01%	0.01%	0.01%	0.05%	0.02%	0.02%	0.02%	0.05%
40	0.06%	0.11%	0.02%	0.02%	0.02%	0.08%	0.02%	0.02%	0.06%	0.07%
45	0.11%	0.19%	0.05%	0.07%	0.04%	0.07%	0.04%	0.04%	0.11%	0.10%
50	0.38%	0.59%	0.14%	0.13%	0.07%	0.13%	0.08%	0.08%	0.25%	0.16%
55	1.25%	0.65%	0.26%	0.19%	0.21%	0.20%	0.30%	0.30%	0.48%	0.29%
60	0.85%	0.50%	0.43%	0.28%	0.28%	0.30%	0.37%	0.37%	0.85%	0.41%

June 2, 2003

Ms. Julie Reneau Wisconsin Department of Employee Trust Funds 801 West Badger Road Madison, Wisconsin 53713

Re: Accumulated Sick Leave Conversion Credit Programs

Dear Julie:

Enclosed are 75 bound copies and one unbound copy of the report of the December 31, 2002 annual actuarial valuations of the ASLCC Programs.

Sincerely,

Brian B. Murphy

BBM/lr

Enclosures