



**Municipal Employees' Retirement System
of Michigan**

**The Report of the
Fifty-Sixth Annual Actuarial Valuation
as of December 31, 2001
Covering Participating Municipalities in the
MUNICIPAL EMPLOYEES' RETIREMENT
SYSTEM OF MICHIGAN**

Submitted to

**The Retirement Board
Municipal Employees' Retirement System of Michigan**

September 30, 2002



GABRIEL, ROEDER, SMITH & COMPANY



GABRIEL, ROEDER, SMITH & COMPANY
CONSULTANTS & ACTUARIES

One Towne Square • Suite 800 • Southfield, Michigan 48076 • 248-799-9000 • 800-521-0498 fax 248-799-9020

September 30, 2002

The Retirement Board
Municipal Employees' Retirement System of Michigan
Lansing, Michigan

Ladies and Gentlemen:

This report presents the results of the 56th Annual Actuarial Valuation, prepared as of December 31, 2001, for 561 participating municipalities in the Municipal Employees' Retirement System. This total includes 15 municipalities that have ceased active membership in MERS, but for whom MERS retains assets and liabilities for future benefit payments.

Our actuarial valuation was based on the following:

1. The benefit provisions of MERS, as described in Section VI.
2. Demographic data on the participants covered, as described in Section II.
3. Financial information regarding plan assets, as shown in Section III.
4. The actuarial assumptions and funding methods adopted by the Retirement Board. See Section VII for details.

The valuation utilized information furnished by the MERS administrative staff concerning Retirement System benefits, financial transactions, individual members, vested former members, retirants and beneficiaries. Data was checked for year-to-year consistency, but was not otherwise audited by us.

To the best of our knowledge, this report is complete and accurate and was made in accordance with generally recognized actuarial principles in compliance with Act No. 220 of the Public Acts of 1996 and the MERS plan document, as revised. The actuarial assumptions used for the valuation produce results that we believe are reasonable.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

Alan E. Sonnanstine, MAAA, ASA

Cathy Nagy, MAAA, FSA

W. James Koss, MAAA, ASA

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I. RESULTS OF ACTUARIAL VALUATION

Our actuarial valuation of the liabilities and contribution rates for each of the 561 participating municipalities in the Municipal Employees' Retirement System as of December 31, 2001 is based on four major elements:

1. The present benefit provisions of MERS, as governed by Act 220 of the Public Acts of 1996 and the MERS plan document, as revised (see Section VI).
2. The characteristics of active and inactive MERS members as of December 31, 2001 (see Section II).
3. The assets attributable to MERS members of each participating municipality. The total assets (at actuarial value) for all 561 municipalities included in the December 31, 2001 valuation was \$4.03 billion (see Section III).
4. The actuarial assumptions and funding method, which include an investment yield rate of 8% and the entry age normal actuarial cost method (see Section VII).

The employer contribution rate has been determined for each municipality based on the entry age normal funding method. Under the entry age normal cost funding method, the total employer contribution is comprised of the normal cost plus the level annual percentage of payroll payment required to amortize the unfunded actuarial accrued liability over a period of 30 years. For 128 municipalities that joined MERS from 1996 through 1999, the amortization period ranges from 31 to 34 years (declining one year each year, until 30 years is reached), depending on the year the municipality joined. Negative unfunded accrued liabilities are amortized over 10 years. The total normal cost is, for each active member, the level percentage of payroll contribution (from entry age to retirement) required to accumulate sufficient assets at the member's retirement to pay for his or her projected benefit. The employer normal cost is the total normal cost reduced by the member contribution rate.

The actuarial accrued liability represents the difference between the present value of all future benefits and the present value of future normal costs. The unfunded actuarial accrued liability (i.e., the actuarial accrued liability less assets accumulated as of the valuation date) is then amortized as noted above.

Each of these components of the employer contribution rate (i.e., normal cost and amortization payment) are shown separately for each municipality in the Appendix, together with the estimated dollar contribution for the fiscal year beginning in 2003 (based on valuation payroll, but the actual required contribution will be based on actual reported monthly pays during the fiscal year and will be different).

During the 1980's, the Retirement Board implemented a program of contribution credits which gave recognition of accelerated funding levels. The accelerated funding credit allowed, in certain situations, for contributions to temporarily be reduced from the regular contribution. The accelerated funding credit program was eliminated by the Board effective with this valuation. Those divisions adversely impacted by the change have a temporary three year phase-in adjustment to the contribution requirement, as shown in the Appendix, as well as in their respective valuation reports. The temporary adjustment will be reduced by half in the 2002 valuations, and eliminated in 2003 and later valuations.

Within each municipality an individual employer contribution rate is determined for each valuation group (division). The funded status of each municipality is shown in the Appendix. Chart 6 on page 22 shows a distribution of the regular contribution rate and a distribution of the minimum contribution rate for valuation divisions included in the December 31, 2001 valuation.

There is no single all-encompassing test for measuring a Retirement System's funding progress and current funded status. However, some common indicators of the progress that a Retirement System has achieved in funding their obligations include observing the changes over time in the following items:

1. The ratio of valuation assets to actuarial accrued liabilities.
2. The pattern of the unfunded actuarial accrued liability as a percentage of active payroll.
3. The ratio of valuation assets to the termination liability (computed as if all active employees terminated employment on the valuation date).
4. The ratio of valuation assets to the actuarial present value of accrued benefits.

The tables and charts that are included in this report provide illustrations of the above funding measures on a current basis and on a historical basis.

Table 1
SUMMARY OF VALUATION RESULTS

	December 31, 2001	December 31, 2000	December 31, 1999
Number of Participating Municipalities	561	560	552
Number of Valuation Divisions	1,737	1,725	1,669
Total Payroll (millions)	\$1,272	\$1,226	\$1,179
Assets at Market Value (millions)	\$3,647.8	\$3,788.9	\$3,941.9
Assets at Actuarial Value (millions)	4,034.4	3,719.4	3,464.6
Actuarial Rate of Return	7.72%	10.36%	15.38%
Actuarial Accrued Liability (millions – Entry Age Normal)	\$4,783.9	\$4,397.0	\$3,835.5
Percent of AAL Funded (based on actuarial value of assets)	84.3%	86.1%	90.3%
Present Value of Accrued Benefits (millions)	\$3,706.8	\$3,415.9	\$2,976.6
Percent of PVAB Funded (based on actuarial value of assets)	108.8%	110.9%	116.4%
Termination Liability (millions)*	\$3,813.5	\$3,167.8	\$2,728.6
Percent of Liability Funded (based on actuarial value of assets)	105.8%	120.0%	127.0%
Employer Normal Cost (millions)	\$ 92.9	\$ 83.4	\$ 89.1
Amortization Payment (millions)#	<u>40.3</u>	<u>41.3</u>	<u>29.1</u>
Total Regular Annual Contribution (millions)	133.2	\$124.7	\$118.2
Temporary Adjustment (millions)	<u>(4.5)</u>	<u>(7.7)</u>	<u>(14.5)</u>
Required Contribution (millions)	\$128.7	\$117.0	\$103.7

* Prior to 2001 a somewhat different measurement for liability was employed, the present value of vested benefits.

Excludes 15 closed plans.

II. MEMBERSHIP CHARACTERISTICS

Active Members

The total number of defined benefit plan active members increased from 36,573 on December 31, 2000 to 36,583 on December 31, 2001.

The basic demographic characteristics of the active members are shown below with comparative statistics for the past two years.

Item	December 31, 2001	December 31, 2000	December 31, 1999
Number of defined benefit plan active members	36,583	36,573	36,472
Average age	43.6	43.3	43.2
Average benefits service	10.2	10.1	10.1
Average vesting service	10.5	10.3	10.4
Average compensation	\$34,758	\$ 33,522	\$ 32,334
Aggregate compensation (millions)	\$1,271.6	\$1,226.0	\$1,179.3

Vested Former Members

A vested former member is a person who terminated employment after 10 or more years of service (6 or 8 years with Benefit V-6 or V-8), with rights to a deferred benefit commencing at age 60 (or earlier if "F" benefits have been adopted).

There were 5,799 former employees with deferred vested rights as of December 31, 2001. This compares to 5,303 such members as of the prior valuation.

Item	December 31, 2001	December 31, 2000	December 31, 1999
Number of vested former members	5,799	5,303	4,794
Average age	46.4	46.2	46.1
Average annual benefit	\$5,999	n/a	n/a

Retirees and Beneficiaries

There were 16,905 retirees and beneficiaries receiving payments as of December 31, 2001. The table below presents age and benefit information as of the current valuation and for the past two years.

Item	December 31, 2001	December 31, 2000	December 31, 1999
Number of pensioners	16,905	16,275	15,325
Average age	69.7	69.8	69.8
Average annual benefit	\$11,345	\$10,664	\$9,969

Defined Contribution Plan Participants and Total MERS Participants

Although defined contribution plan participants are not included in the annual actuarial valuation of the MERS defined benefit plan, the trend in defined contribution participation is of interest. Numerous municipality divisions have established defined contribution plan benefits for future new employees. Existing defined benefit plan active members of those divisions were offered the choice of plans. The table below shows recent trends in defined contribution plan participation and overall MERS participants.

Item	December 31, 2001	December 31, 2000	December 31, 1999
Number of participants			
Total	63,714	61,595	58,275
Defined benefit plan	59,287	58,151	56,591
% of total	93.1%	94.4%	97.1%
Defined contribution plan	4,427	3,444	1,684
% of total	6.9%	5.6%	2.9%

Table 2 provides a historical comparison of the number of active and vested former members included in the actuarial valuations, along with the number of participating municipalities.

Table 3 shows a history of the number and annual benefits paid to retirees and beneficiaries, together with various ratios.

Table 4 presents a historical development of retirees and beneficiaries added or removed from the rolls.

Chart 1 presents a comparison of the growth in participating employers to the growth in plan participants (active members, vested former members and retirees).

Chart 2 illustrates graphically the historical growth in the number of active members and retirees and beneficiaries.

Charts 3 and 4 illustrate how MERS has matured over the years. Over time the number of active members per retiree has declined from over 7 to around 2. The benefit payout as a percentage of active member payroll has increased to over 15%.

Table 5 shows the distribution of active members by age and service and includes information on average compensation.

Table 6 shows the retirees and beneficiaries by attained age, while Tables 7 and 8 present distributions of retirees and beneficiaries on the rolls by type of benefit being paid and option selected.

Finally, Table 9 shows the distribution of benefit provisions in effect for the 2001 and past two valuations.

Table 2

**Participating Municipalities and Covered Persons
Historical Comparison**

Valuation Date Dec. 31	No. of Participating Municipalities	Active Members				Persons on Deferred Status	Annual Deferred Benefits
		Number	Annual Payroll	Average Pay	Percent Increase		
1970	259	17,266	\$ 121,261,793	\$ 7,023	8.9%	220	
1971	264	18,210	135,661,008	7,450	6.1	187	
1972	276	19,652	156,544,021	7,966	6.9	248	
1973	286	20,587	173,585,082	8,432	5.8	300	
1974	291	21,853	196,874,730	9,009	6.8	273	
1975	299	27,358	243,726,619	8,909	(1.1)	311	
1976	312	26,951	263,792,787	9,788	9.9	306	
1977	320	28,772	292,097,384	10,152	3.7	321	
1978	324	28,066	314,343,079	11,200	10.3	366	
1979	332	29,148	352,208,832	12,083	7.9	363	
1980	334	29,528	399,413,360	13,527	12.0	432	
1981	332	29,289	430,542,086	14,700	8.7	439	
1982	333	28,896	461,539,421	15,972	8.7	504	
1983	336	29,095	483,436,531	16,616	4.0	524	
1984	337	28,927	505,865,473	17,488	5.2	549	
1985	342	29,659	544,238,433	18,350	4.9	641	
1986	345	30,036	577,785,159	19,236	4.8	681	
1987	349	29,802	598,014,814	20,066	4.3	846	
1988	361	30,345	635,074,449	20,928	4.3	839	
1989	370	31,313	674,297,441	21,534	2.9	955	
1990	381	32,256	725,691,155	22,498	4.5	1,261	
1991	401	33,118	782,914,985	23,640	5.1	1,605	
1992	418	34,001	852,361,539	25,069	6.0	1,855	
1993	438	34,139	869,313,319	25,464	1.6	1,941	
1994	463	34,994	925,500,706	26,447	3.9	2,034	
1995	490	35,611	972,975,649	27,322	3.3	2,322	
1996	506	36,070	1,025,214,728	28,423	4.0	2,713	
1997	529	36,547	1,068,597,733	29,239	3.0	3,752	
1998	541	36,817	1,163,056,817	31,590	8.0	4,369	
1999	552	36,472	1,179,274,854	32,334	2.4	4,794	
2000	560	36,573	1,225,992,204	33,522	3.7	5,303	
2001	561	36,583	1,271,563,960	34,758	3.7	5,799	\$34,788,263

Table 3

**Benefits Being Paid To Retirees and Beneficiaries
Historical Comparison**

Valuation Date December 31	Number of Retirees and Beneficiaries	Percent Increase in Retirees and Beneficiaries	Annual Retirement Allowances	Percent Increase in Retirement Allowances
1970	3,110	7.6%	\$ 3,751,482	13.3%
1971	3,356	7.9	4,279,362	14.1
1972	3,658	9.0	5,003,270	16.9
1973	4,040	10.4	5,913,130	18.2
1974	4,338	7.4	6,706,607	13.4
1975	4,615	6.4	7,538,299	12.4
1976	4,963	7.5	8,753,807	16.1
1977	5,316	7.1	10,753,677	22.8
1978	5,648	6.2	12,012,571	11.7
1979	6,010	6.4	13,450,368	12.0
1980	6,423	6.9	15,234,503	13.3
1981	6,861	6.8	17,446,778	14.5
1982	7,175	4.6	19,618,191	12.4
1983	7,554	5.3	21,674,209	10.5
1984	7,902	4.6	24,369,121	12.4
1985	8,343	5.6	27,747,190	13.9
1986	8,741	4.8	31,567,968	13.8
1987	9,104	4.2	35,740,364	13.2
1988	9,500	4.3	40,676,119	13.8
1989	9,863	3.8	45,635,598	12.2
1990	10,317	4.6	51,738,242	13.4
1991	11,061	7.2	61,807,210	19.5
1992	11,617	5.0	71,044,806	14.9
1993	12,040	3.6	80,964,212	14.0
1994	12,492	3.8	91,226,923	12.7
1995	13,032	4.3	102,010,673	11.8
1996	13,263	1.8	109,841,190	7.7
1997	14,236	7.3	123,112,928	12.1
1998	14,790	3.9	138,700,740	12.7
1999	15,325	3.6	152,771,711	10.1
2000	16,275	6.2	173,549,622	13.6
2001	16,905	3.9	191,785,646	10.5

Table 4**Retirees and Beneficiaries Added and Removed
Historical Comparison**

Year Ended December 31	Added		Removed		End of Year	
	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances
1970	394	\$ 628,117	173	\$ 186,392	3,110	\$ 3,751,482
1971	414	709,674	167	181,794	3,357	4,279,362
1972	485	951,337	184	227,429	3,658	5,003,270
1973	570	1,154,089	188	244,229	4,040	5,913,130
1974	479	1,024,206	181	230,729	4,338	6,706,607
1975	506	1,144,419	229	312,727	4,615	7,538,299
1976	573	1,527,655	225	312,147	4,963	8,753,807
1977	562	2,328,316	209	328,446	5,316	10,753,677
1978	545	1,691,557	213	432,663	5,648	12,012,571
1979	642	1,985,592	280	547,795	6,010	13,450,368
1980	666	2,377,702	253	593,567	6,423	15,234,503
1981	753	2,835,979	315	623,704	6,861	17,446,778
1982	630	2,852,317	316	680,904	7,175	19,618,191
1983	665	2,802,889	286	746,871	7,554	21,674,209
1984	665	3,468,634	317	773,722	7,902	24,369,121
1985	781	4,297,247	340	919,178	8,343	27,747,190
1986	737	4,840,442	339	1,019,664	8,741	31,567,968
1987	762	5,419,205	399	1,246,809	9,104	35,740,364
1988	783	6,097,248	387	1,161,493	9,500	40,676,119
1989	832	6,560,106	469	1,600,627	9,863	45,635,598
1990	865	7,777,389	411	1,674,745	10,317	51,738,242
1991	1,189	11,803,085	445	1,734,117	11,061	61,807,210
1992	1,181	11,771,336	625	2,533,740	11,617	71,044,806
1993	1,024	12,219,419	601	2,300,023	12,040	80,964,212
1994	946	12,978,853	494	2,716,142	12,492	91,226,923
1995	1,154	13,799,665	614	3,015,915	13,032	102,010,673
1996	824	10,582,845	593	2,752,328	13,263	109,841,190
1997	1,504	16,305,680	531	3,033,941	14,236	123,112,929
1998	1,122	19,230,034	568	3,642,223	14,790	138,700,740
1999	1,312	19,663,240	777	5,592,269	15,325	152,771,711
2000	1,319	23,588,044	369	2,810,133	16,275	173,549,622
2001	1,238	22,971,336	608	4,735,312	16,905	191,785,646

CHART 1

MERS Growth

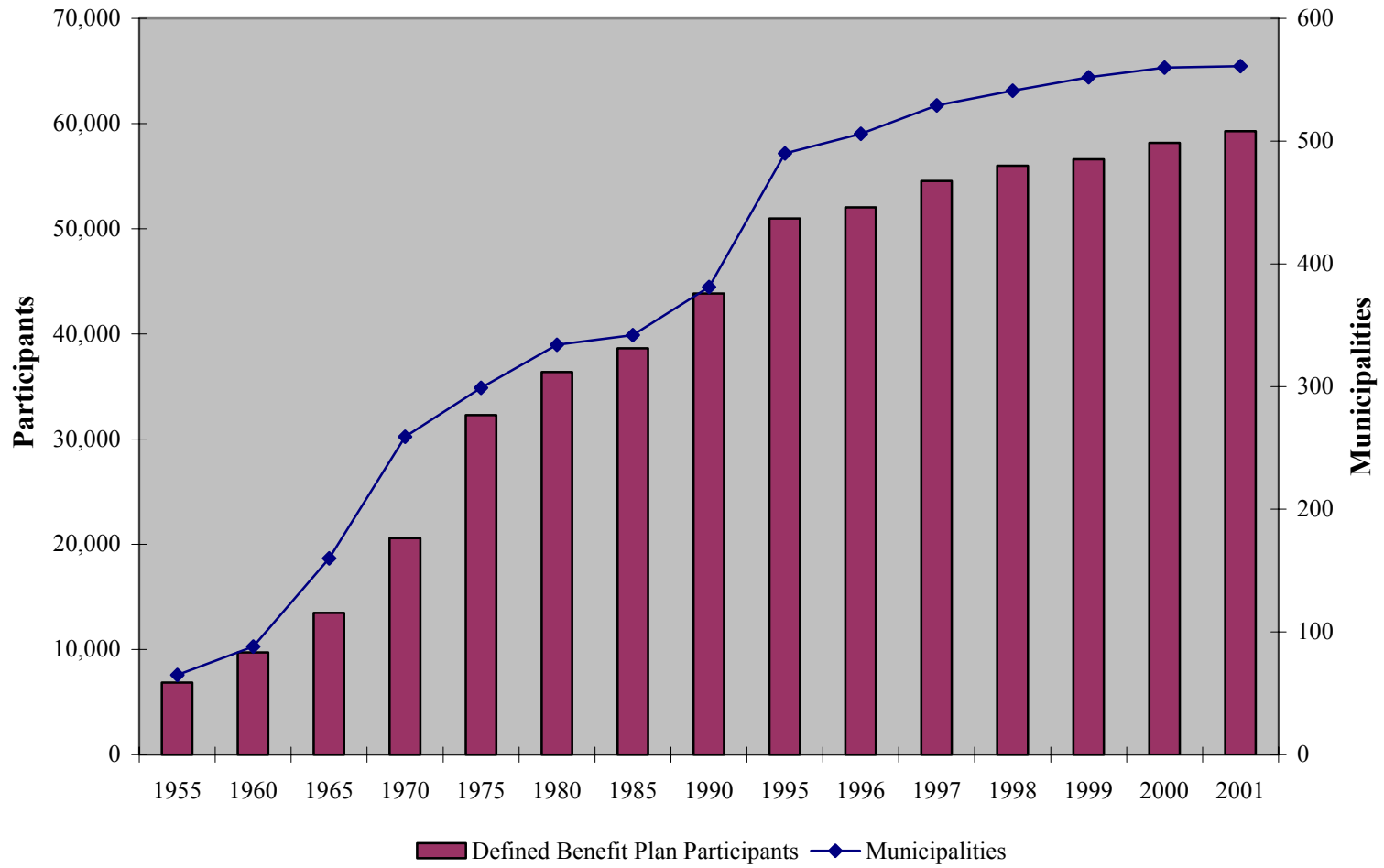


CHART 2

Active and Retired Participants

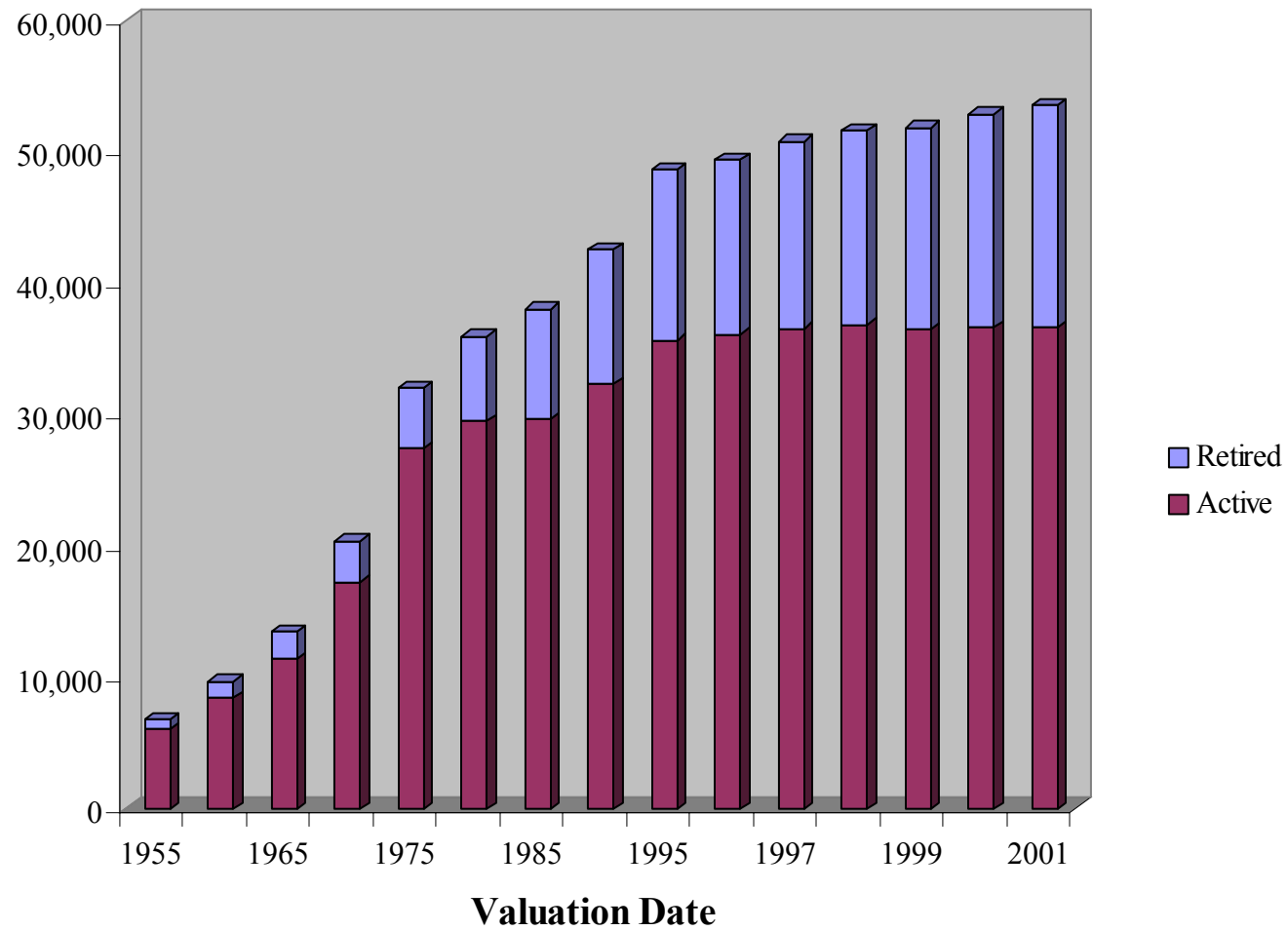


CHART 3

Active Members Per Pension Recipient

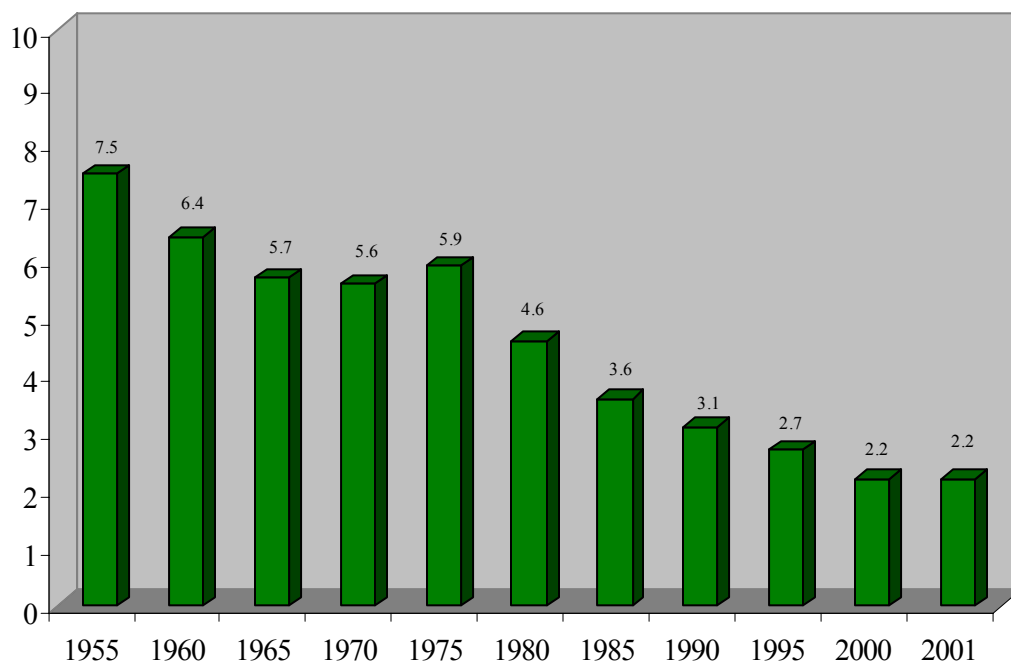


CHART 4

Benefits as Percent of Pay

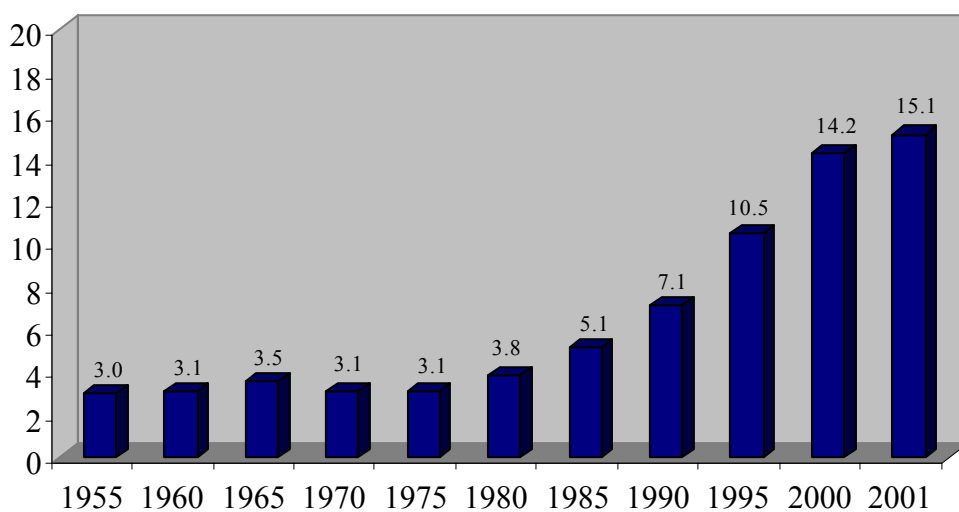


Table 5**Number and Average Pay of Members in Active Service
as of December 31, 2001 By Age and Years of Benefit Service**

Age	Total	Years of Benefit Service						
		0-4	5-9	10-14	15-19	20-24	25-29	30 & Over
Total	36,583 \$34,758	13,360 \$28,190	7,288 \$35,167	5,895 \$37,935	3,888 \$39,668	3,441 \$41,460	1,995 \$43,648	716 \$43,371
Under 20	136 \$10,757	136 \$10,757	-- --	-- --	-- --	-- --	-- --	-- --
20 - 24	1,285 \$22,668	1,269 \$22,663	16 \$23,040	-- --	-- --	-- --	-- --	-- --
25 - 29	2,861 \$30,595	2,357 \$29,572	491 \$35,587	13 \$27,710	-- --	-- --	-- --	-- --
30 - 34	4,069 \$34,183	2,244 \$30,185	1,363 \$39,103	451 \$39,195	11 \$34,496	-- --	-- --	-- --
35 - 39	4,834 \$34,994	1,909 \$29,140	1,251 \$36,657	1,202 \$41,191	432 \$39,093	39 \$31,790	-- --	1 \$33,792
40 - 44	5,920 \$35,376	1,845 \$28,274	1,254 \$34,812	1,225 \$39,029	937 \$42,108	616 \$40,012	43 \$39,391	-- --
45 - 49	6,870 \$37,134	1,591 \$28,678	1,182 \$34,139	1,206 \$37,889	978 \$41,054	1,179 \$43,466	684 \$43,697	50 \$43,065
50 - 54	5,719 \$37,693	1,100 \$29,095	833 \$33,909	940 \$36,720	782 \$39,046	919 \$42,173	796 \$45,428	349 \$43,977
55 - 59	3,199 \$35,442	578 \$27,965	525 \$32,259	551 \$33,474	518 \$36,724	461 \$40,368	337 \$42,390	229 \$43,299
60 - 64	1,235 \$32,828	219 \$24,790	248 \$29,918	232 \$33,160	182 \$35,379	190 \$36,813	102 \$38,367	62 \$42,807
65 & Over	455 \$24,531	112 \$17,322	125 \$21,519	75 \$25,561	48 \$28,332	37 \$31,615	33 \$34,410	25 \$37,973

Table 6

**Retirees and Beneficiaries
as of December 31, 2001
Tabulated by Attained Ages**

Age	Number
Total	16,905
Under 50	459
50 - 54	817
55 - 59	1,624
60 - 64	2,807
65 - 69	3,089
70 - 74	2,704
75 - 79	2,379
80 - 84	1,733
85 - 89	876
90 & Over	388
Certain Only#	29

*# These are beneficiaries of deceased retirees who had elected years certain and life options.
The beneficiaries receive benefits until the end of the term certain period.*

Table 7

**Allowances Being Paid Retirees and Beneficiaries
December 31, 2001
Tabulated by Type of Benefit Being Paid**

Monthly Benefits	All Retired Members	Type of Annuity					
		1	2	3	4	5	6
0 - 199	2,166	1,357	52	28	590	137	2
200 - 399	3,202	2,212	137	61	614	165	13
400 - 599	2,425	1,748	149	45	361	109	13
600 - 799	1,874	1,421	102	38	238	67	8
800 - 999	1,378	1,100	67	27	121	57	6
1,000 - 1,199	1,154	927	58	22	106	38	3
1,200 - 1,399	894	750	36	9	72	25	2
1,400 - 1,599	735	633	30	6	45	18	3
1,600 - 1,799	618	553	20	4	27	14	0
1,800 - 1,999	506	459	16	1	19	10	1
2,000 & Over	1,953	1,888	11	4	25	24	1
Totals	16,905	13,048	678	245	2,218	664	52
Total Monthly Benefits	15,982,137	13,743,502	498,865	157,632	1,128,252	417,616	36,270

Type of Annuity

1. Normal Retirement for age and service
2. Non-Duty Disability*
3. Duty Disability*
4. Beneficiaries
5. Non-Duty Death
6. Duty Death

** At age 60, these annuity types are converted to Type 1, normal retirement for age and service.*

Table 8
Allowances Being Paid Retirees and Beneficiaries
December 31, 2001
Tabulated by Optional Form of Benefit Being Paid

Monthly Benefits	All Retired Members	Option Selected								
		1	2	3	4	5	6	7	8	9
\$ 0 – 199	2,166	693	315	7	53	14	8	8	7	1,061
200 – 399	3,202	873	404	17	88	25	27	11	14	1,743
400 – 599	2,425	692	330	29	62	22	23	14	10	1,243
600 – 799	1,874	523	303	23	43	31	31	9	11	900
800 – 999	1,378	344	262	18	28	27	25	4	8	662
1,000 – 1,199	1,154	337	222	29	25	15	22	6	6	492
1,200 – 1,399	894	273	217	24	16	9	6	1	4	344
1,400 – 1,599	735	258	153	25	19	10	6	2	4	258
1,600 – 1,799	618	209	138	32	15	7	6	2	4	205
1,800 – 1,999	506	147	129	23	13	6	7	2	4	175
2,000 & over	1,953	554	516	153	57	27	23	8	9	606
Totals	16,905	4,903	2,989	380	419	193	184	67	81	7,689
Total Monthly Benefits	\$15,982,137	\$4,635,470	\$3,472,220	\$710,502	\$408,081	\$211,240	\$189,565	\$63,146	\$80,894	\$6,211,021

Option Selected

1. Beneficiary draws 100% of retiree's benefit
2. Beneficiary draws 50% of retiree's benefit
3. Beneficiary draws 75% of retiree's benefit
4. Equated option (changing at social security age)
5. 5 year certain and life
6. 10 year certain and life
7. 15 year certain and life
8. 20 year certain and life
9. Straight life allowance

Table 9

**Valuation Divisions in 2001, 2000, and 1999 Valuations
 Tabulated by Benefit Plan
 (excludes 15 closed municipalities with 19 divisions)**

Benefits	Number of Divisions with Benefit on December 31,		
	2001	2000	1999
Benefit A	2	2	2
Benefit B	4	4	4
Benefit B-1	88	89	95
Benefit B-2	374	426	445
Benefit B-2 (B-3 for 92 pts)	--	--	1
Benefit B-3	484	462	445
Benefit B-4	572	503	424
Benefit C New	12	13	12
Benefit C Old	7	8	9
Benefit C-1 New	47	51	57
Benefit C-1 Old	36	45	48
Benefit C-2			
(Base B-1)	42	56	65
(Base C-1 New)	--	1	1
(Base C-1 Old)	13	13	14
Non Standard Benefit C-2			
B-4 (Base B-3)	2	2	1
2.8% (Base B-4)	1	1	1
2.35% to maximum of 80%	4	4	4
2.75% to maximum of 80%	8	8	6
2.80% to maximum of 80%	3	3	3
2.80% (25 years) + 1.00% (over 25)	3	1	1
2.80% (30 years) + 1.00% (over 30)	1	1	1
3.00% to maximum of 80%	6	4	1
3.20% to maximum of 80%	<u>9</u>	<u>9</u>	<u>8</u>
Total Divisions	1,718	1,706	1,648

III. ACTUARIAL VALUE OF ASSETS

For actuarial valuation purposes, the actuarial value of assets is determined on the basis of a valuation method that assumes the fund earns the expected rate of return (8%), and includes an adjustment to reflect market value. This procedure was instituted for the December 31, 1993 valuation, and is applied as follows:

- (i) Preliminary value is determined by taking the sum of the actuarial value at the beginning of the year and the excess of income over expenses during the year, assuming that the fund earns the assumed rate (8%) during the year.
- (ii) This value is written-up or written-down by recognizing 20% of the current year's difference between actual and expected return and 20% of that difference for the 4 prior years. Actual return for the year includes net interest, dividends, realized and unrealized gains or losses.

For the December 31, 2001 valuation, this procedure produced an actuarial asset value that is equal to 110.60% of market value (compared to 100.07% and 87.89% in 2000 and 1999, respectively).

In table 14 on page 48, we have illustrated the development of the actuarial value of assets for the December 31, 1997 through December 31, 2001 actuarial valuations.

The reader should note that, given that the actuarial value of assets is currently 10% higher than the market value, meeting the actuarial assumption in the next few years will require average future market returns that exceed the 8% investment return assumption.

IV. EMPLOYER CONTRIBUTIONS AND FUNDED STATUS

In the tables and charts that follow, we have illustrated the employer contribution requirements and funded status of the participating municipalities within MERS. This information is aggregated by division or municipality, as indicated in each table or chart.

- Table 10 provides a distribution of average employer contribution rates by type of benefit program. This information is shown on a divisional basis.
- Chart 5 provides a distribution of the active municipalities by funded percentage of the entire municipality.
- Chart 6 provides a distribution of divisions by employer contribution rate.
- Tables 11-A, 11-B, 11-C, and 11-D provide a historical comparison of the funded status of MERS.
- Table 12 provides the funded status of the present value of accrued benefits and the termination liability for all MERS municipalities in the aggregate.
- Table 13 provides additional historical funding information.

Table 10

**Computed Employer Contribution Rates
(Prior to Application of Temporary Adjustments)
(excludes closed municipalities)**

Benefit Program	Contributory Groups			Non-Contributory Groups		Total Groups	
	No. of Divisions	Member Contrib. Avg. %	Employer Contrib. Avg. %	No. of Divisions	Employer Contrib. Avg. %	No. of Divisions	Employer Contrib. Avg. %
Benefit A	--	--	--	2	0.00%	2	0.00%
Benefit B-1	52	3.31%	3.38%	36	8.44	88	5.29
Benefit B-2	177	3.75	6.69	197	8.86	374	8.01
Benefit B-3 - 80% Max	246	3.77	8.01	238	11.35	484	9.52
Benefit B-4 - 80% Max	334	4.43	12.35	238	16.97	572	13.93
Benefit C New	8	3.53	1.53	4	6.07	12	3.20
Benefit C Old	3	4.65	0.11	4	7.12	7	7.07
Benefit C-1 New	27	3.86	2.54	20	7.75	47	4.86
Benefit C-1 Old	14	3.54	4.58	22	6.47	36	5.80
Benefit C-2							
(B-1 Base)	15	4.26	3.62	27	7.51	42	6.41
(C-1 Old Base)	7	3.86	2.05	6	7.38	13	3.44
Nonstandard Benefit C-2							
B-4(B-3 Base)-80%Max	2	0.93	11.29	--	--	2	11.29
2.8%(B-4@65)-80% Max	1	2.00	29.62	--	--	1	29.62
2.35% - 80% Max	--	--	--	4	31.50	4	31.50
2.75% - 80% Max	6	4.49	18.42	2	6.17	8	13.25
2.80% - 80% Max	1	5.04	16.56	2	47.12	3	26.67
2.8% (1%>25y)-80%Max	--	--	--	3	30.89	3	30.89
2.8% (1%>30y)-No Max	--	--	--	1	75.62	1	75.62
3.00% - 80% Max	6	5.84	16.72	--	--	6	16.72
3.20% - 80% Max	8	13.25	13.43	1	-- #	9	14.05
Old Plan Benefits	--	--	--	4	-- #	4	-- #
Total	907	4.20%	9.22%	811	11.95%	1,718	10.47%

Division has no active member payroll.

Benefit Program	No. of Divisions	Benefit Program	No. of Divisions	Benefit Program	No. of Divisions	Benefit Program	No. of Divisions	Benefit Program	No. of Divisions
20 & out	10	E-1	281	F50	325	FAC-3	617	V-5	1
21 & out	1	E-2	477	F55	980	FAC-4	1	V-6	116
25 & out	69	D-2	5			FAC-5	<u>1,100</u>	V-8	294
30 & out	2	RS 50%	85			Total	1,718	V-10	<u>1,307</u>
		RS 100%	1					Total	1,718

CHART 5

DISTRIBUTION OF FUNDED PERCENTAGE OF ACTUARIAL ACCRUED LIABILITY AMONG THE 546 PARTICIPATING MUNICIPALITIES AS OF DECEMBER 31, 2001

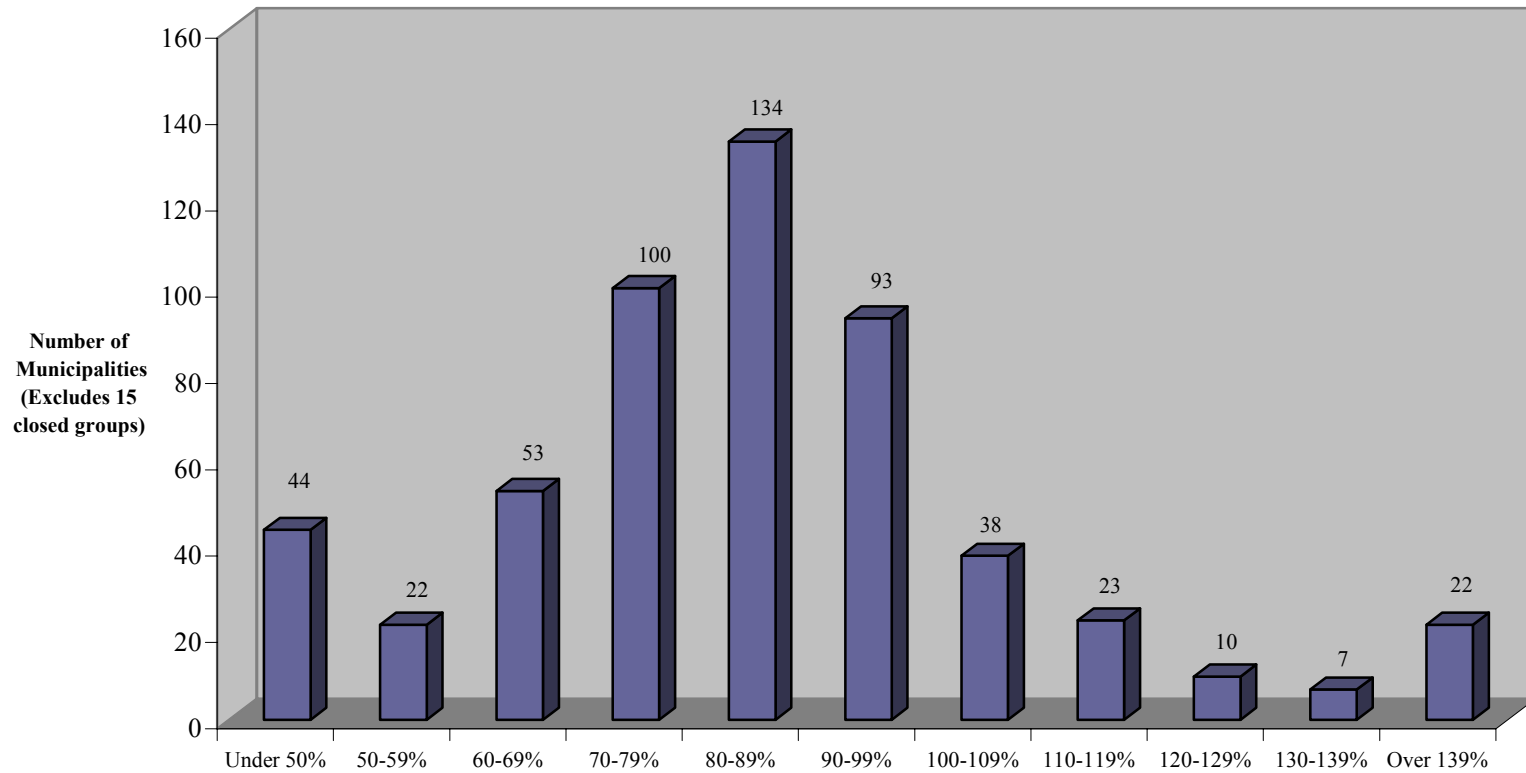


CHART 6

DISTRIBUTION OF MUNICIPALITY DIVISIONS BY EMPLOYER CONTRIBUTION RATE

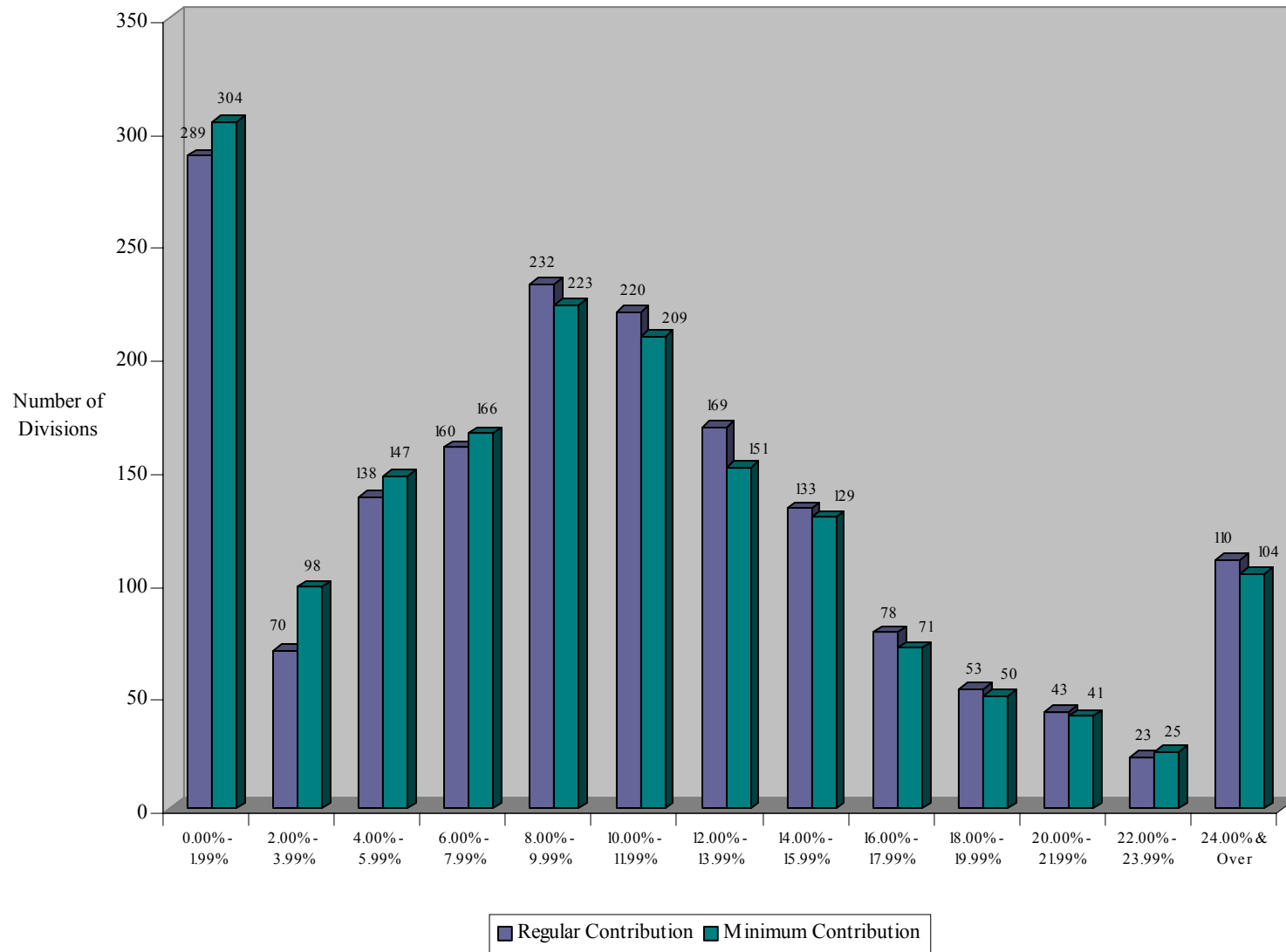


Table 11-A

**Accrued Liabilities and Funded Percentages
Historical Comparison**

Valuation Date Dec. 31	Non-Retired Members Accrued Liabilities	Annual Allowances Being Paid	Retiree & Beneficiary Liabilities	Aggregate Accrued Liabilities	Aggregate Valuation Assets	Ratio of Valuation Assets to Accrued Liabilities
1970	\$ 95,880,370	\$ 3,751,482	\$ 40,411,788	\$ 136,292,158	\$ 86,026,735	63.1%
1971	108,712,811	4,279,362	46,187,130	154,899,941	99,370,030	64.2
1972	127,143,608	5,003,270	47,013,254	174,156,862	114,341,481	65.7
1973	142,925,270	5,913,130	55,980,829	198,906,099	130,956,299	65.8
1974	160,249,089	6,706,607	64,072,947	224,322,036	152,455,503	68.0
1975	188,566,575	7,538,299	71,708,510	260,275,085	177,758,126	68.3
1976	211,840,776	8,753,807	90,361,506	302,202,282	209,071,263	69.2
1977	244,970,343	10,753,677	103,736,444	348,706,787	243,536,698	69.8
1978	276,353,722	12,012,571	115,949,168	392,302,890	280,893,767	71.6
1979	315,733,909	13,450,368	130,607,800	446,341,709	327,542,457	73.4
1980	362,838,351	15,234,503	148,945,789	511,784,140	387,265,070	75.7
1981	363,323,286	17,446,778	149,976,466	513,299,752	473,256,032	92.2
1982	414,051,335	19,618,191	168,634,555	582,685,890	556,991,697	95.6
1983	446,269,077	21,674,209	186,670,065	632,939,142	662,916,808	104.7
1984	461,576,458	24,369,121	210,461,164	672,037,622	753,645,676	112.1
1985	515,821,524	27,747,190	241,109,150	756,930,674	852,594,742	112.6
1986	561,682,159	31,567,968	274,975,217	836,657,376	975,239,340	116.6
1987	562,053,213	35,740,364	312,365,574	874,418,787	1,101,948,565	126.0
1988	607,495,332	40,676,119	356,617,104	964,112,436	1,178,554,489	122.3
1989	680,170,204	45,635,598	402,345,765	1,082,515,969	1,299,895,892	120.1
1990	775,542,300	51,738,242	457,239,911	1,232,782,211	1,397,164,304	113.3
1991	878,855,313	61,807,210	562,788,136	1,441,643,449	1,550,887,208	107.6
1992	996,091,502	71,044,806	648,167,481	1,644,258,983	1,720,222,990	104.6
1993	1,442,124,270	80,964,212	704,868,169	2,146,992,632	1,863,307,761	86.8
1994	1,624,832,681	91,226,923	844,417,739	2,469,250,420	1,986,586,888	80.5
1995	1,775,482,400	102,010,673	968,431,013	2,743,913,413	2,166,888,155	79.0
1996	1,940,753,420	109,841,190	1,035,006,491	2,975,759,911	2,386,832,847	80.2
1997	2,110,440,654	124,469,481	1,174,726,785	3,285,167,459	2,692,666,308	82.0
1998	2,275,823,309	138,700,740	1,316,174,131	3,591,997,440	3,030,361,014	84.4
1999	2,372,394,581	152,771,711	1,463,153,486	3,835,548,067	3,464,935,295	90.3
2000	2,652,393,426	173,549,622	1,744,617,407	4,397,010,833	3,787,192,159	86.1
2001	2,839,295,057	191,785,646	1,944,557,814	4,783,852,871	4,034,376,766	84.3

Table 11-B

**Reserve for Employee Contributions
Aggregate Accrued Liabilities and Aggregate Valuation Assets
Historical Comparison**

Valuation Date December 31	Aggregate Accrued Liabilities	Aggregate Valuation Assets	Ratio of Valuation Assets to Accrued Liabilities
1970	\$ 25,306,895	\$ 25,306,895	100.0%
1971	29,217,193	29,217,193	100.0
1972	32,673,553	32,673,553	100.0
1973	37,055,398	37,055,398	100.0
1974	42,914,325	42,914,325	100.0
1975	50,542,901	50,542,901	100.0
1976	57,510,496	57,510,496	100.0
1977	63,787,655	63,787,655	100.0
1978	70,679,181	70,679,181	100.0
1979	78,583,584	78,583,584	100.0
1980	87,322,139	87,322,139	100.0
1981	99,974,213	99,974,213	100.0
1982	110,972,544	110,972,544	100.0
1983	123,119,737	123,119,737	100.0
1984	134,610,254	134,610,254	100.0
1985	146,719,594	146,719,594	100.0
1986	158,270,468	158,270,468	100.0
1987	166,483,204	166,483,204	100.0
1988	175,671,692	175,671,692	100.0
1989	184,507,092	184,507,092	100.0
1990	193,558,998	193,558,998	100.0
1991	202,674,346	202,674,346	100.0
1992	214,772,461	214,772,461	100.0
1993	221,196,735	221,196,735	100.0
1994	238,971,125	238,971,125	100.0
1995	250,640,757	250,640,757	100.0
1996	265,314,637	265,314,637	100.0
1997	277,465,847	277,465,847	100.0
1998	291,925,302	291,925,302	100.0
1999	305,474,698	305,474,698	100.0
2000	318,387,711	318,387,711	100.0
2001	336,500,799	336,500,799	100.0

Table 11-C**Actuarial Accrued Liabilities for Retired Benefit Payments
Historical Comparison**

Valuation Date December 31	Annual Retirement Allowances	Aggregate Accrued Liabilities	Aggregate Valuation Assets	Ratio of Valuation Assets to Accrued Liabilities
1970	\$ 3,751,482	\$ 40,411,788	\$ 41,474,917	102.6%
1971	4,279,362	46,187,130	47,139,170	102.1
1972	5,003,270	47,013,254	49,221,783	104.7
1973	5,913,130	55,980,829	58,353,084	104.2
1974	6,706,607	64,072,947	66,582,630	103.9
1975	7,538,299	71,708,510	74,282,131	103.6
1976	8,753,807	90,361,506	93,578,119	103.6
1977	10,753,677	103,736,444	106,505,499	102.7
1978	12,012,571	115,949,168	117,165,585	101.0
1979	13,450,368	130,607,800	130,953,142	100.3
1980	15,234,503	148,945,789	149,933,072	100.7
1981	17,446,778	149,976,466	161,990,110	108.0
1982	19,618,191	168,634,555	181,975,448	107.9
1983	21,674,209	186,670,065	202,412,938	108.4
1984	24,369,121	210,461,164	210,461,164	100.0
1985	27,747,190	241,109,150	241,109,150	100.0
1986	31,567,968	274,975,217	274,975,217	100.0
1987	35,740,364	312,365,574	312,365,574	100.0
1988	40,676,119	356,617,104	356,617,104	100.0
1989	45,635,598	402,345,765	402,345,765	100.0
1990	51,738,242	457,239,911	457,239,911	100.0
1991	61,807,210	562,788,136	562,788,136	100.0
1992	71,044,806	648,167,481	648,167,481	100.0
1993	80,964,212	704,868,169	704,868,169	100.0
1994	91,226,923	844,417,739	844,417,739	100.0
1995	102,010,673	968,431,013	968,431,013	100.0
1996	109,841,190	1,035,006,491	1,035,006,491	100.0
1997	124,469,481	1,174,726,785	1,121,695,199	95.5
1998	138,700,740	1,316,174,131	1,255,316,779	95.4
1999	152,771,711	1,463,153,486	1,399,439,687	95.6
2000	173,549,622	1,744,617,407	1,661,933,518	95.3
2001	191,785,646	1,944,557,814	1,838,700,512	94.6

Table 11-D

**Reserve for Employer Contributions
Historical Comparison**

Valuation Date December 31	Aggregate Accrued Liabilities (Excluding Retirees)	Aggregate Valuation Assets	Ratio of Valuation Assets to Accrued Liabilities	Unfunded Accrued Liabilities	
				Aggregate Dollars	As Percent of Active Payroll
1970	\$ 70,573,475	\$ 19,224,923	27.3%	\$ 51,328,552	42.3%
1971	79,495,618	23,013,667	28.9	56,481,951	41.6
1972	94,470,055	32,446,145	34.3	62,023,910	39.6
1973	105,869,872	35,547,817	33.6	70,322,055	40.5
1974	117,334,764	42,958,548	36.6	74,376,216	37.8
1975	138,023,674	52,933,094	38.4	85,090,580	34.9
1976	154,330,280	57,982,648	37.6	96,347,632	36.5
1977	181,182,688	73,243,544	40.4	107,939,144	37.0
1978	205,674,541	93,049,001	45.2	112,625,540	35.8
1979	237,150,325	118,005,731	49.8	119,144,594	33.8
1980	275,516,212	150,009,859	54.4	125,506,353	31.4
1981	263,349,073	211,291,709	80.2	52,057,364	12.1
1982	303,078,791	264,043,705	87.1	39,035,086	8.5
1983	323,149,340	337,384,133	104.4	-	-
1984	326,966,204	408,574,258	125.0	-	-
1985	369,101,930	464,765,998	125.9	-	-
1986	403,411,691	541,993,655	134.4	-	-
1987	395,570,009	623,099,787	157.5	-	-
1988	431,823,640	647,265,693	149.9	-	-
1989	495,663,112	713,043,035	143.9	-	-
1990	581,983,302	746,365,395	128.2	-	-
1991	676,180,967	785,424,726	116.2	-	-
1992	781,319,041	857,283,048	109.7	-	-
1993	1,220,927,535	937,242,857	76.8	283,684,871	32.6
1994	1,385,861,556	903,198,024	65.2	482,663,536	52.2
1995	1,524,841,643	947,816,385	62.2	577,025,258	59.3
1996	1,675,438,783	1,086,511,719	64.8	588,927,064	57.4
1997	1,832,974,807	1,293,505,262	70.6	539,469,545	50.0
1998	1,983,898,007	1,483,118,933	74.2	500,779,074	43.1
1999	2,066,919,883	1,760,020,910	85.2	306,898,973	26.0
2000	2,334,005,715	1,806,870,930	77.4	527,134,785	43.0
2001	2,502,794,258	1,859,175,455	74.3	643,618,803	50.6

Table 12

Present Value of Accrued Benefits as of December 31, 2001

Type of Member	Present Value of Accrued Benefit	Termination Liability
Active Members	\$1,582,692,149	\$1,689,429,654
Vested Former Members	179,506,689	179,506,689
Retired Members and Beneficiaries	<u>1,944,557,814</u>	<u>1,944,557,814</u>
Total	\$3,706,756,652	\$3,813,494,157
Total Valuation Assets	\$4,034,376,766	\$4,034,376,766
Funded Percent	108.8%	105.8%

Comment: The Termination Liability represents the present value of benefits payable in the event that all active members terminate employment on December 31, 2001, based upon the valuation interest and mortality assumptions. The present value of accrued benefits (PVAB) includes vested and non-vested benefits accrued as of December 31, 2001. For a non-vested active member, the PVAB represents the present value of the non-vested accrued benefit, and may exceed the Termination Liability which represents for that member only the member's accumulated contributions, if any. For some vested active members the Termination Liability may exceed the PVAB, because the Termination Liability assumes that members retire at the earliest possible age for commencement of unreduced deferred benefits, whereas the PVAB assumes continued employment based on actuarial assumptions for retirement, death, disability and withdrawal.

Table 13
Funding Progress Achievement Tests – Historical Comparison
(\$ Millions)

Valuation Date Dec. 31	Valuation Assets	Termination Test		Continuation Tests				
		Termination Liability	Funded Ratio	Actuarial Accrued Liability	Funded Ratio	Unfunded Actuarial Liability	Member Payroll	Ratio of Unfunded Actuarial Liability to Payroll
1975	\$ 177.8			\$ 260.3	68.3%	\$ 82.5	\$ 243.8	33.8%
1980	387.3	\$ 419.0	92.4%	511.8	75.7	124.5	399.4	31.2
1981	473.3	383.5	123.4	513.3	92.2	40.0	430.5	9.3
1982	557.0	424.6	131.2	582.7	95.6	25.7	461.5	5.6
1983	662.9	463.6	143.0	632.9	104.7	-	483.4	-
1984	753.6	543.7	138.6	672.0	112.1	-	505.9	-
1985	852.6	609.7	139.8	756.9	112.6	-	544.2	-
1986	975.2	680.9	143.2	836.7	116.6	-	577.8	-
1987	1,101.9	707.5	155.7	874.4	126.0	-	598.0	-
1988	1,179.6	780.5	151.1	964.1	122.4	-	635.1	-
1989	1,299.9	874.7	148.6	1,082.5	120.1	-	674.3	-
1990	1,397.2	997.4	140.1	1,232.8	113.3	-	725.7	-
1991	1,550.9	1,170.3	132.5	1,441.6	107.6	-	782.9	-
1992	1,720.2	1,333.5	129.0	1,644.3	104.6	-	852.4	-
1993	1,863.3	1,416.7	131.5	2,147.0	86.8	283.7	869.3	32.6
1994	1,986.6	1,627.0	122.1	2,469.3	80.5	482.7	925.5	52.2
1995	2,166.9	1,817.1	119.2	2,743.9	79.0	577.0	973.0	59.3
1996	2,386.8	1,980.0	120.5	2,975.8	80.2	589.0	1,025.2	57.5
1997	2,692.7	2,248.9	119.7	3,285.2	82.0	592.5	1,068.6	55.4
1998	3,030.4	2,505.3	121.0	3,592.0	84.4	561.6	1,163.1	48.3
1999	3,464.9	2,728.6	127.0	3,835.5	90.3	370.6	1,179.3	31.4
2000	3,787.2	3,167.8	119.6	4,397.0	86.1	609.8	1,226.0	49.7
2001	4,034.4	3,813.5	105.8	4,783.9	84.3	749.5	1,271.6	58.9

V. GASB 25 AND GASB 27 INFORMATION

The following information has been prepared to provide the information necessary to comply with GASB Statements Number 25 and 27. Statement 25 is effective for fiscal years beginning after June 15, 1997 and Statement 27 is effective for fiscal years beginning after June 15, 1998.

All entries are based on the actuarial methods and assumptions that were used in the December 31, 2001 actuarial valuation to determine the annual employer contribution amounts. The entry age normal actuarial method was used to determine the disclosure entries.

GASB 25 INFORMATION (AS OF 12/31/2001)

Actuarial Accrued Liability

Retirees and beneficiaries currently receiving benefits	\$1,944,557,814
Terminated employees (vested former members) not yet receiving benefits	179,506,689
Current employees	<u>2,659,788,368</u>
Total Actuarial Accrued Liability	\$4,783,852,871

Net Assets Available for Benefits at Actuarial Value (Market Value is \$3,647,820,834)	<u>4,034,376,766</u>
Unfunded (Overfunded) Actuarial Accrued Liability	\$ 749,476,105

GASB 27 INFORMATION (AS OF 12/31/2001)

Municipality Fiscal Years Beginning in 2003

Annual Required Contribution (ARC)	\$ 133,189,308*
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* Based on valuation payroll, but the actual required contributions will be based on current monthly payrolls (during fiscal years beginning in 2003) times the computed employer contribution rate(s) shown in Tables 15 and 16 of the individual municipality actuarial valuation reports.