MERS Municipal Employees' Retirement System of Michigan

City of Pleasant Ridge (6301)

in the

MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM
OF MICHIGAN

Annual Actuarial Valuation as of December 31, 2001

GRS

GABRIEL, ROEDER, SMITH & COMPANY

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Consultants & Actuaries
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September 4, 2002

The Retirement Board
Municipal Employees' Retirement System of Michigan

Ladies and Gentlemen:

This report presents the results of the Annual Actuarial Valuation, prepared as of December 31, 2001. The report includes the determination of liabilities and contribution rates resulting from the participation of City of Pleasant Ridge in the Municipal Employees' Retirement System of Michigan ("MERS").

There are no material changes in actuarial assumptions or methods reflected in this valuation, with the following exceptions:

- Assets in excess of actuarial accrued liabilities (negative unfunded accrued liabilities) are amortized over a 10 year period, as explained on page 42.
- For divisions affected by the phase-in of new actuarial assumptions in the previous valuation (denoted with "Transition Assumptions" in the 2000 Valuation column of Table 1) this year's valuation reflects the ultimate uniform assumptions. However, the impact of the change in assumptions is phased in over a new three year period, instead of the remaining two year period. This results in a Minimum Required Contribution (Tables 15, 16 and 17) that is different from the Regular Contribution.

The valuation utilized information furnished by the MERS administrative staff concerning Retirement System benefits, financial transactions, and individual member information. Data was checked for consistency with the prior year, 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 methods in compliance with Act No. 220 of the Public Acts of 1996, as amended, and the MERS Plan Document as revised. The actuarial assumptions used for the valuation produce results that we believe are reasonable.

Sincerely,

GABRIEL, ROEDER, SMITH & COMPANY

Alan Sonnanstine, MAAA, ASA

Cathy Nagy, MAAA, FSA

Jim Koss, MAAA, ASA

rpc_id: 4053

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City of Pleasant Ridge (6301)

Table 1

Benefit Provisions Evaluated and/or Considered

Division	2001 Valuation	2000 Valuation
1 - Gnrl Oth	B-1 Normal Ret Age: 60 V-6 F55(25) FAC-5 E-2 (2.5%) (07/01/1984) 0.00% Member Contrib.	B-1 Normal Ret Age: 60 V-6 F55(25) FAC-5 E-2 (2.5%) (07/01/1984) 0.00% Member Contrib. Transition Assumptions
2 - Police	B-4 - 80% Max Normal Ret Age: 60 V-10 F50(25) FAC-5 0.00% Member Contrib.	B-4 - 80% Max Normal Ret Age: 60 V-10 F50(25) FAC-5 0.00% Member Contrib. Transition Assumptions
10 - NonUnion	B-4 - 80% Max Normal Ret Age: 60 V-8 FAC-5 E-2 (2.5%) (07/01/1984) 0.00% Member Contrib.	B-1 Normal Ret Age: 60 V-8 FAC-5 E-2 (2.5%) (07/01/1984) 0.00% Member Contrib. Transition Assumptions

City of Pleasant Ridge (6301)

Table 2

Membership Summary

Division	2001 Valuation		2000 Valuation	
	Number	Annual Payroll*	Number	Annual Payroll*
1 - Gnrl Oth				
Active Members	0	$ 0	0	$ 0
Vested Former Members	6	31,987	6	
Retirees and Beneficiaries	6	62,462	7	
2 - Police				
Active Members	7	$ 340,885	6	$ 326,534
Vested Former Members	3	20,033	4	
Retirees and Beneficiaries	6	111,527	5	
10 - NonUnion				
Active Members	4	$ 157,577	4	$ 157,491
Vested Former Members	3	14,838	3	
Retirees and Beneficiaries	1	3,256	1	
Total Municipality				
Active Members	**11**	**$ 498,462**	**10**	**$ 484,025**
Vested Former Members	**12**	**66,858**	**13**	
Retirees and Beneficiaries	**13**	**177,245**	**13**	

* *Annual payroll for active members; annual deferred benefits payable for vested former members; annual benefits being paid for retirees and beneficiaries.*

City of Pleasant Ridge (6301)

Table 3

Active Members in the Valuation - Comparative Schedule

Valuation Date 12/31	Number	Annual Payroll	Average Pay Annual $	Average Pay % Increase	Average Age	Average Benefit Service	Average Vesting Service
1991	20	$ 569,904	$ 28,495	(2.6)%	37.3	8.3	
1992	19	621,488	32,710	14.8	37.8	9.7	
1993	17	584,090	34,358	5.0	38.6	10.2	
1994	17	603,969	35,527	3.4	39.5	11.2	
1995	16	579,256	36,203	1.9	39.9	11.6	
1996	16	524,684	32,792	(9.4)	39.4	10.6	
1997	11	472,880	42,989	31.1	41.4	11.6	
1998	10	443,029	44,302	3.1	40.3	11.8	
1999	11	488,515	44,410	0.2	39.7	11.7	
2000	10	484,025	48,402	9.0	42.2	11.7	
2001	11	498,462	45,315	(6.4)	37.9	8.8	8.8

Table 4

Flow of Active Membership

Year Ended 12/31	Retired	Disabled	Died (Survivor Benefit)	Other Termination Vested	Other Termination Non-Vested	Transfer Out	Transfer In	New Member	End of Year
2000									10
2001	1			1				3	11

City of Pleasant Ridge (6301)

Table 5

Vested Former Members in the Valuation - Comparative Schedule

Valuation Date 12/31	Number	Annual Deferred Benefits	Average Age	Average Benefit Service	Average Vesting Service
1991	1	$			
1992	1				
1993	1				
1994	1				
1995	1				
1996	1				
1997	1				
1998	11				
1999	11				
2000	13				
2001	12	66,858	43.5	8.8	10.9

Table 6

Flow of Vested Former Members

Year Ended 12/31	Retired	Return To Work	Died (Survivor Benefit)	Forfeit Benefit	Transfer		New	End of Year
					Out	In		
2000								13
2001				2			1	12

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Table 7

Retirees and Beneficiaries in the Valuation - Comparative Schedule

Valuation Date 12/31	Retirees Number	Retirees Annual Benefits	Beneficiaries Number	Beneficiaries Annual Benefits	Total Recipients Number	Total Recipients Annual Benefits	No. of Actives per Recip.	Benefits As % of Active Payroll
1991		$		$	17	$ 133,672	1.2	23.5%
1992					16	133,440	1.2	21.5
1993					17	154,870	1.0	26.5
1994					17	155,499	1.0	25.7
1995					16	141,666	1.0	24.5
1996					17	159,754	0.9	30.4
1997					15	155,061	0.7	32.8
1998					14	150,264	0.7	33.9
1999					14	151,319	0.8	31.0
2000					13	147,552	0.8	30.5
2001	11	168,452	2	8,793	13	177,245	0.8	35.6

Table 8

Flow of Retirees and Beneficiaries

Year Ended 12/31	Added to Rolls Number@	Added to Rolls Annual Benefits	Added to Rolls Benefit Adjust. *	Removed from Rolls Number	Removed from Rolls Annual Benefits	Removed from Rolls Benefit Adjust. #	Year End Number	Year End Annual Benefits
1991		$ 629	$		$	$	17	$ 133,672
1992		629		1	861		16	133,440
1993	1	21,430					17	154,870
1994		629					17	155,499
1995		629		1	14,462		16	141,666
1996	1	18,088					17	159,754
1997		1,055		2	5,748		15	155,061
1998		1,055		1	5,853		14	150,264
1999		1,055					14	151,319
2000		1,055		1	4,822		13	147,552
2001	2	41,941	1,055	2	13,303		13	177,245

@ Includes beneficiaries of retirees who died during the year.
** Includes where applicable E, E-1, and E-2 benefits, and corrections.*
 # Includes where applicable C-2 and Accelerated Option benefits, and corrections.

City of Pleasant Ridge (6301)

Table 9

Retirees and Beneficiaries on the Rolls as of December 31, 2001

Distribution by Type of Benefit Being Paid

Benefits Being Paid to:	Annual Benefits	
	Number	Amount
Age and service retirants	10	$159,150
Non-duty disability retirants	0	0
Duty disability retirants	1	9,302
Beneficiaries of deceased retirants	2	8,793
Beneficiaries of deceased members:		
Non-duty death	0	0
Duty death	0	0
Total Benefits Being Paid	13	$177,245

City of Pleasant Ridge (6301)

Table 10

Reported Assets (Market Value)

Division	2001 Valuation		2000 Valuation	
	Employer And Retiree*	Employee#	Employer And Retiree*	Employee#
01 - Gnrl Oth	$ 489,239	$ 3,057	$ 562,071	$ 2,939
02 - Police	1,653,350	17,435	1,756,171	44,822
10 - NonUnion	142,573	0	219,512	16,246
Total Municipality	**$ 2,285,162**	**$ 20,492**	**$ 2,537,754**	**$ 64,007**
Combined Reserves	**$2,305,654**		**$2,601,761**	

** Reserve for Employer Contributions and Benefit Payments*
 # Reserve for Employee Contributions

The December 31, 2001 Valuation Assets are equal to 1.105969 times the reported Market Value of assets. The derivation of Valuation Assets is described on page 44.

City of Pleasant Ridge (6301)

Table 11

Flow of Valuation Assets (Actuarial Value)

Year Ended 12/31	Contributions		Investment Income	Benefit Payments	Member Contrib. Refunds	Transfer		Balance
	Employer	Member				Out	In	
2000	$	$	$	$	$	$	$	$ 2,603,505
2001	45,491	0	170,226	(172,528)	(96,713)	(77,955)	77,955	2,549,981

City of Pleasant Ridge (6301)

Table 12

Termination Liability and Present Value of Accrued Benefits as of December 31, 2001

Termination Liability*	Division	PVAB* Present Value of Accrued Benefits	Valuation Assets	PVAB Percent Funded	Unfunded (Overfunded) PVAB
	01 - Gnrl Oth				
$ 0	Active Members	$ 0			
89,211	Vested Former Members	89,211			
527,504	Retirees and Beneficiaries	527,504			
$ 616,715	Total	$ 616,715	$ 544,464	88.3%	$ 72,251
	02 - Police				
$ 284,559	Active Members	$ 450,573			
66,106	Vested Former Members	66,106			
1,154,773	Retirees and Beneficiaries	1,154,773			
$ 1,505,438	Total	$ 1,671,452	$ 1,847,836	110.6%	$ (176,384)
	10 - NonUnion				
$ 103,285	Active Members	$ 97,413			
44,624	Vested Former Members	44,624			
24,100	Retirees and Beneficiaries	24,100			
$ 172,009	Total	$ 166,137	$ 157,681	94.9%	$ 8,456
	Total Municipality				
$ 387,844	**Active Members**	**$ 547,986**			
199,941	**Vested Former Members**	**199,941**			
1,706,377	**Retirees and Beneficiaries**	**1,706,377**			
$ 2,294,162	**Total**	**$ 2,454,304**	**$ 2,549,981**	**103.9%**	**$ (95,677)**

* 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.

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Table 13

Actuarial Accrued Liabilities and Valuation Assets as of December 31, 2001

Division	Actuarial Accrued Liabilities	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
01 - Gnrl Oth				
Reserve for Employer Contributions and Benefit Payments				
Active Members	$ 0	$ 0	0.0%	$ 0
Vested Former Members	86,154	13,903	16.1	72,251
Retirees and Beneficiaries	527,504	527,504	100.0	0
Total	$ 613,658	$ 541,407	88.2%	$ 72,251
Reserve for Employee Contributions				
Active Members	$ 0	$ 0		
Vested Former Members	3,057	3,057		
Total	$ 3,057	$ 3,057	100.0%	$ 0
Division Total	**$ 616,715**	**$ 544,464**	**88.3%**	**$ 72,251**
02 - Police				
Reserve for Employer Contributions and Benefit Payments				
Active Members	$ 793,301	$ 609,521	76.8%	$ 183,780
Vested Former Members	66,106	66,106	100.0	0
Retirees and Beneficiaries	1,154,773	1,154,773	100.0	0
Total	$ 2,014,180	$ 1,830,400	90.9%	$ 183,780
Reserve for Employee Contributions				
Active Members	$ 17,436	$ 17,436		
Vested Former Members	0	0		
Total	$ 17,436	$ 17,436	100.0%	$ 0
Division Total	**$ 2,031,616**	**$ 1,847,836**	**91.0%**	**$ 183,780**
10 - NonUnion				
Reserve for Employer Contributions and Benefit Payments				
Active Members	$ 209,208	$ 88,957	42.5%	$ 120,251
Vested Former Members	44,624	44,624	100.0	0
Retirees and Beneficiaries	24,100	24,100	100.0	0
Total	$ 277,932	$ 157,681	56.7%	$ 120,251
Reserve for Employee Contributions				
Active Members	$ 0	$ 0		
Vested Former Members	0	0		
Total	$ 0	$ 0	0.0%	$ 0
Division Total	**$ 277,932**	**$ 157,681**	**56.7%**	**$ 120,251**

City of Pleasant Ridge (6301)

Table 13 (continued)

Actuarial Accrued Liabilities and Valuation Assets as of December 31, 2001

Division	Actuarial Accrued Liabilities	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
Municipality Totals				
Reserve for Employer Contributions and Benefit Payments				
Active Members	$ 1,002,509	$ 698,478	69.7%	$ 304,031
Vested Former Members	196,884	124,633	63.3	72,251
Retirees and Beneficiaries	1,706,377	1,706,377	100.0	0
Total	$ 2,905,770	$ 2,529,488	87.1%	$ 376,282
Reserve for Employee Contributions				
Active Members	$ 17,436	$ 17,436		
Vested Former Members	3,057	3,057		
Total	$ 20,493	$ 20,493	100.0%	$ 0
Municipality Total	$ 2,926,263	$ 2,549,981	87.1%	$ 376,282

City of Pleasant Ridge (6301)

Table 14

Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Accrued Liabilities	Valuation Assets	Funded Percent	Unfunded Accrued Liability	UAL as Percent of Annual Payroll
1987	$ 1,328,230	$ 1,463,360	110%	$ (135,130)	0%
1988	1,422,792	1,505,226	106	(82,434)	0
1989	1,556,882	1,602,806	103	(45,924)	0
1990	1,659,934	1,655,415	100	4,519	1
1991	1,740,847	1,720,612	99	20,235	4
1992	1,854,573	1,774,418	96	80,155	13
1993	2,178,546	1,817,009	83	361,537	62
1994	2,302,979	1,813,034	79	489,945	81
1995	2,202,291	1,888,222	86	314,069	54
1996	2,297,473	1,964,031	85	333,442	64
1997	2,259,605	2,066,573	91	193,032	41
1998	2,437,936	2,226,720	91	211,216	48
1999	2,592,649	2,458,093	95	134,556	28
2000	2,694,694	2,603,504	97	91,190	19
2001	2,926,263	2,549,981	87	376,282	75

Notes: Actuarial assumptions were revised for the 1993, 1997 and 2000 actuarial valuations. The funding method was changed to entry age normal for the 1993 valuation.

City of Pleasant Ridge (6301)

Table 15

Computed Employer Contributions to the Retirement System
For the Fiscal Year Beginning July 1, 2003

Division	Employer Contributions @			
	Normal Cost	Unfunded Accrued Liability #	Total Regular Employer Contribution	Minimum Required Contribution
Percentage of Payroll				
01 - Gnrl Oth	-%	-%	-%	-%
02 - Police	8.54	2.89	11.43	8.88
10 - NonUnion	10.97	4.09	15.06	14.00
Estimated Monthly Contribution*				
01 - Gnrl Oth	$ 0	$ 323	$ 323	$ 242
02 - Police	2,426	821	3,247	2,523
10 - NonUnion	1,441	537	1,978	1,839
Total Municipality	**$ 3,867**	**$ 1,681**	**$ 5,548**	**$ 4,604**
Estimated Annual Contribution*				
Total Municipality	**$ 46,404**	**$ 20,172**	**$ 66,576**	**$ 55,248**

@ *The above Employer contribution requirements are in addition to the Member contributions, if any, shown in Table 1.*

* *Based on Valuation Payroll. Actual contributions will be based on actual reported monthly pays, and will be different from the above amounts (usually higher).*

The amortization method and period are described in Table 16 for each division.

City of Pleasant Ridge (6301)

Division 01 - Gnrl Oth

Table 16A

Computed Employer Contributions to the Retirement System
For the Fiscal Year Beginning July 1, 2003

	Employer Contribution @	
Contribution for	**As Percentage of Active Member Payroll**	**Estimated Monthly Dollar Contribution ***
Normal Cost (in addition to member contributions)	0.00%	$0
Amortization of Unfunded Accrued Liability (30 years)	0.00	323
Total Long Term Contribution	0.00	323
Overfunding Credit #	0.00	0
Total Regular Contribution	0.00	323
Temporary Adjustment	0.00	(81)
Required Contribution	**0.00%**	**$242**

@ *The above Employer contribution requirement is based on Member contributions of 0.00% of pay. If Member contributions are increased/decreased by 1.00% of pay, the Employer long term contribution requirement (based on a 30 year amortization) will decrease/increase by 0.00% of pay.*

* *Based on Valuation Payroll. Actual contributions will be based on actual reported monthly pays, and will be different from the above amounts (usually higher).*

Only applies if assets exceed accrued liabilities.

City of Pleasant Ridge (6301)

Division 01 - Gnrl Oth

Table 17A

Computed Employer Contributions - Comparative Statement

Valuation Date December 31,	Active Members		Employer Contribution as Percent of Payroll	
	Number	Annual Payroll	Regular Contribution	Minimum Required Contribution
1987	10	$ 180,717	9.56%	0.00%
1988	11	230,753	9.10	1.50
1989	9	216,557	8.80	2.10
1990	5	129,839	8.60	2.60
1991	8	186,934	8.70	2.80
1992	6	181,228	9.50	3.60
1993	6	186,908	6.72	3.36
1994	6	196,933	7.75	5.43
1995	6	195,474	8.37	7.53
1996	5	95,528	14.72	14.72
1997	0	0	-	-
1998	0	0	-	-
1999	0	0	-	-
2000	0	0	-	-
2001	0	0	-	-

Notes: Actuarial assumptions were revised for the 1993 valuation.
Adoption of Benefits F55 (25 years) and V-6 reflected in 1996 valuation.
Actuarial assumptions were revised for the 1997 valuation.
Actuarial assumptions were revised for the 2000 valuation.

City of Pleasant Ridge (6301)

Division 01 - Gnrl Oth

Table 18A

Flow of Active Membership

Year Ended 12/31	Retired	Disabled	Died (Survivor Benefit)	Other Termination		Transfer		New Member	End of Year
				Vested	Non-Vested	Out	In		
2000									0
2001									0

Table 19A

Flow of Vested Former Members

Year Ended 12/31	Retired	Return To Work	Died (Survivor Benefit)	Forfeit Benefit	Transfer		New	End of Year
					Out	In		
2000								6
2001								6

Table 20A

Flow of Retirees and Beneficiaries

Year Ended 12/31	Added to Rolls			Removed from Rolls			Year End	
	Number@	Annual Benefits	Benefit Adjust.*	Number	Annual Benefits	Benefit Adjust.#	Number	Annual Benefits
2000							7	$ 62,955
2001		$	$ 991	1	$ 1,484	$	6	62,462

@ Includes beneficiaries of retirees who died during the year.
** Includes where applicable E, E-1, and E-2 benefits, and corrections.*
 # Includes where applicable C-2 and Accelerated Option benefits, and corrections.

Table 21A

Flow of Valuation Assets (Actuarial Value)

Year Ended 12/31	Contributions		Investment Income	Benefit Payments	Member Contrib. Refunds	Transfer		Balance
	Employer	Member				Out	In	
2000	$	$	$	$	$	$	$	$ 565,389
2001	4,440	0	36,971	(62,336)	0	0	0	544,464

City of Pleasant Ridge (6301)

Division 02 - Police

Table 16B

Computed Employer Contributions to the Retirement System

For the Fiscal Year Beginning July 1, 2003

Contribution for	Employer Contribution @ As Percentage of Active Member Payroll	Employer Contribution @ Estimated Monthly Dollar Contribution *
Normal Cost (in addition to member contributions)	8.54%	$2,426
Amortization of Unfunded Accrued Liability (30 years)	2.89	821
Total Long Term Contribution	11.43	3,247
Overfunding Credit #	0.00	0
Total Regular Contribution	11.43	3,247
Temporary Adjustment ^	(2.55)	(724)
Required Contribution	**8.88%**	**$2,523**

@ *The above Employer contribution requirement is based on Member contributions of 0.00% of pay. If Member contributions are increased/decreased by 1.00% of pay, the Employer long term contribution requirement (based on a 30 year amortization) will decrease/increase by 0.85% of pay.*

* *Based on Valuation Payroll. Actual contributions will be based on actual reported monthly pays, and will be different from the above amounts (usually higher).*

^ *Adjustments for 2001 and 2002 valuations are determined by the Retirement Board's resolution adopted March 13, 2002. See cover letter for details.*

\# *Only applies if assets exceed accrued liabilities.*

City of Pleasant Ridge (6301)

Division 02 - Police

Table 17B

Computed Employer Contributions - Comparative Statement

Valuation Date December 31,	Active Members		Employer Contribution as Percent of Payroll	
	Number	Annual Payroll	Regular Contribution	Minimum Required Contribution
1987	9	$ 237,303	10.43%	0.00%
1988	7	204,598	9.00	1.40
1989	7	215,437	12.00	2.90
1990	7	239,534	12.50	3.80
1991	8	263,670	12.50	4.00
1992	9	316,141	14.30	5.40
1993	7	270,045	8.42	4.21
1994	7	277,554	9.57	6.70
1995	7	285,512	7.74	6.97
1996	8	329,967	7.54	7.54
1997	8	365,057	6.71	6.71
1998	7	341,346	5.64	5.64
1999	7	338,538	5.21	5.21
2000	6	326,534	5.68	5.68
2001	7	340,885	11.43	8.88

Notes: Adoption of Benefits B-2 and F50 (25 years) reflected in 1989 valuation.
Adoption of Benefit B-3 reflected in 1992 valuation.
Actuarial assumptions were revised for the 1993 valuation.
Actuarial assumptions were revised for the 1997 valuation.
Adoption of Benefit B-4 reflected in 1999 valuation.
Actuarial assumptions were revised for the 2000 valuation.

City of Pleasant Ridge (6301)

Division 02 - Police

Table 18B

Flow of Active Membership

Year Ended 12/31	Retired	Disabled	Died (Survivor Benefit)	Other Termination		Transfer		New Member	End of Year
				Vested	Non-Vested	Out	In		
2000									6
2001	1							2	7

Table 19B

Flow of Vested Former Members

Year Ended 12/31	Retired	Return To Work	Died (Survivor Benefit)	Forfeit Benefit	Transfer		New	End of Year
					Out	In		
2000								4
2001				1				3

Table 20B

Flow of Retirees and Beneficiaries

Year Ended 12/31	Added to Rolls			Removed from Rolls			Year End	
	Number@	Annual Benefits	Benefit Adjust.*	Number	Annual Benefits	Benefit Adjust.#	Number	Annual Benefits
2000							5	$ 81,405
2001	2	$ 41,941	$	1	$ 11,819	$	6	111,527

@ Includes beneficiaries of retirees who died during the year.
** Includes where applicable E, E-1, and E-2 benefits, and corrections.*
 # Includes where applicable C-2 and Accelerated Option benefits, and corrections.

Table 21B

Flow of Valuation Assets (Actuarial Value)

Year Ended 12/31	Contributions		Investment Income	Benefit Payments	Member Contrib. Refunds	Transfer		Balance
	Employer	Member				Out	In	
2000	$	$	$	$	$	$	$	$ 1,802,200
2001	22,523	0	130,113	(107,000)	0	0	0	1,847,836

City of Pleasant Ridge (6301)

Division 10 - NonUnion

Table 16C

Computed Employer Contributions to the Retirement System For the Fiscal Year Beginning July 1, 2003

Contribution for	Employer Contribution @	
	As Percentage of Active Member Payroll	Estimated Monthly Dollar Contribution *
Normal Cost (in addition to member contributions)	10.97%	$1,441
Amortization of Unfunded Accrued Liability (30 years)	4.09	537
Total Long Term Contribution	15.06	1,978
Overfunding Credit #	0.00	0
Total Regular Contribution	15.06	1,978
Temporary Adjustment ^	(1.06)	(139)
Required Contribution	**14.00%**	**$1,839**

@ *The above Employer contribution requirement is based on Member contributions of 0.00% of pay. If Member contributions are increased/decreased by 1.00% of pay, the Employer long term contribution requirement (based on a 30 year amortization) will decrease/increase by 0.88% of pay.*

* *Based on Valuation Payroll. Actual contributions will be based on actual reported monthly pays, and will be different from the above amounts (usually higher).*

^ *Adjustments for 2001 and 2002 valuations are determined by the Retirement Board's resolution adopted March 13, 2002. See cover letter for details.*

Only applies if assets exceed accrued liabilities.

City of Pleasant Ridge (6301)

Division 10 - NonUnion

Table 17C

Computed Employer Contributions - Comparative Statement

Valuation Date December 31,	Active Members		Employer Contribution as Percent of Payroll	
	Number	Annual Payroll	Regular Contribution	Minimum Required Contribution
1990	4	$ 98,896	9.10%	2.70%
1991	4	119,300	9.60	3.10
1992	4	124,119	10.10	3.80
1993	4	127,137	7.35	3.68
1994	4	129,482	7.83	5.48
1995	3	98,270	3.76	3.38
1996	3	99,189	3.73	3.73
1997	3	107,823	3.50	3.50
1998	3	101,683	7.48	7.48
1999	4	149,977	6.59	6.59
2000	4	157,491	8.82	8.81
2001	4	157,577	15.06	14.00

Notes: Adoption of Benefit V-8 reflected in 1990 valuation.
Actuarial assumptions were revised for the 1993 valuation.
Actuarial assumptions were revised for the 1997 valuation.
Actuarial assumptions were revised for the 2000 valuation.
Adoption of Benefit B-4 - 80% Maximum reflected in 2001 valuation.

City of Pleasant Ridge (6301)

Division 10 - NonUnion

Table 18C

Flow of Active Membership

Year Ended 12/31	Retired	Disabled	Died (Survivor Benefit)	Other Termination		Transfer		New Member	End of Year
				Vested	Non-Vested	Out	In		
2000									4
2001				1				1	4

Table 19C

Flow of Vested Former Members

Year Ended 12/31	Retired	Return To Work	Died (Survivor Benefit)	Forfeit Benefit	Transfer		New	End of Year
					Out	In		
2000								3
2001				1			1	3

Table 20C

Flow of Retirees and Beneficiaries

Year Ended 12/31	Added to Rolls			Removed from Rolls			Year End	
	Number@	Annual Benefits	Benefit Adjust.*	Number	Annual Benefits	Benefit Adjust.#	Number	Annual Benefits
2000							1	$ 3,192
2001		$	$ 64		$	$	1	3,256

@ Includes beneficiaries of retirees who died during the year.
** Includes where applicable E, E-1, and E-2 benefits, and corrections.*
 # Includes where applicable C-2 and Accelerated Option benefits, and corrections.

Table 21C

Flow of Valuation Assets (Actuarial Value)

Year Ended 12/31	Contributions		Investment Income	Benefit Payments	Member Contrib. Refunds	Transfer		Balance
	Employer	Member				Out	In	
2000	$	$	$	$	$	$	$	$ 235,916
2001	18,528	0	3,142	(3,192)	(96,713)	(77,955)	77,955	157,681

City of Pleasant Ridge (6301)

Table 22

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, 1996 and Statement 27 is effective for fiscal years beginning after June 15, 1998.

All entries and the annual employer contribution amount were based on the actuarial methods and assumptions used in the December 31, 2001 actuarial valuation. 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	$1,706,377
Terminated employees (vested former members) not yet receiving benefits	199,941
Current employees - Accumulated employee contributions including allocated investment income	17,436
Employer financed	1,002,509
Total Actuarial Accrued Liability	$2,926,263
Net Assets Available for Benefits at Actuarial Value	2,549,981
(Market Value is $2,305,653)	
Unfunded (Overfunded) Actuarial Accrued Liability	$376,282

GASB 27 Information (as of 12/31/2001)

Fiscal Year Beginning	July 1, 2003
Annual Required Contribution (ARC)	$ 66,576*
Amortization Factor Used - Underfunded Liabilities (30 years)	0.053632

* Based on valuation payroll, but the actual required contribution will be based on current monthly payroll (during the fiscal year beginning July 1, 2003) times the computed employer contribution rate(s) shown in Tables 15 and 16.

APPENDIX

SUMMARY OF

PLAN PROVISIONS

AND

ACTUARIAL ASSUMPTIONS

AND

ACTUARIAL FUNDING METHOD

AS OF DECEMBER 31, 2001

FOR THE

MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN

INTRODUCTION

An actuarial valuation is the mathematical process that estimates plan liabilities and employer contribution requirements for purposes of financing the retirement system. This process is repeated annually to update the liabilities and contribution requirements for changes in member census and plan features, and to reflect actual plan experience in the process. The valuation reflects the present provisions of the Municipal Employees' Retirement Act of 1984, as amended by 1996 Public Act 220, as embodied in the MERS Plan Document (as revised). The specific benefit provisions in effect for each municipality are listed in Table 1 in the results section of the report.

In addition to utilizing current membership and financial data, an actuarial valuation requires the use of a series of assumptions regarding uncertain future events. The assumptions and methods used in the December 31, 2001 actuarial valuation are those adopted by the Retirement Board. The actuarial assumptions were last revised as of December 31, 2000 to reflect the results of the study of plan experience covering the period from December 31, 1993 through December 31, 1998.

There have been no changes in the funding method which was adopted by the Retirement Board commencing with the December 31, 1993 valuations. The basic funding method is entry age normal and employer contribution amounts are developed as a level percentage of payroll.

Details on MERS plan provisions, actuarial assumptions, and actuarial methodology follow this section.

SUMMARY OF PLAN PROVISIONS

The benefits summarized in this section are intended only as general information regarding the Municipal Employees' Retirement System of Michigan. They are not a substitute for Act. No. 220 of the Public Acts of 1996, and the MERS Plan Document as revised. If any conflict occurs between the information in this summary and Act. No. 220 of the Public Acts of 1996, as amended, or the MERS Plan Document, as revised, the provisions of Act. No. 220 and the MERS Plan Document govern.

Eligibility for Retirement (Plan Section 10)

Age 60 with 10 or more years of credited service (reduced to 8 or 6 years if either Benefit V-8 or V-6, respectively, is adopted).

Age 55 with 15 or more years of credited service (reduced benefit unless Benefit F55 is adopted).

Age 50 with 25 or more years of credited service (reduced benefit unless Benefit F50 is adopted).

The retirement allowance is reduced ½ of 1% for each complete month that the retirement date precedes the age at which full normal retirement benefits are available. The reduction may be partially or fully waived by adopting Benefit F55 and/or Benefit F50 and/or Benefit F(N).

Optional Retirement Programs (Unreduced Benefits) (Plan Section 10)

Benefit F50	-	Age 50 with a required period of credited service of either 25 or 30 years.
Benefit F55	-	Age 55 with a required period of credited service of 15, 20, 25 or 30 years.
Benefit F(N)	-	Any age with a required period of credited service of either 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 or 30 years.

Mandatory Retirement

None.

Deferred Retirement (Plan Section 12)

Termination of membership before age 60 other than by retirement or death, after 10 years of credited service (8 or 6 years if Benefit V-8 or V-6 is adopted). Retirement allowance begins upon application and satisfaction of the eligibility requirements for retirement. The deferred retirement allowance is computed in the same manner as a service retirement allowance, based on the benefit program in effect as of the date of termination of membership.

Rights to an allowance are forfeited if the member's accumulated contributions are withdrawn after termination of employment.

Service Retirement Allowance (Plan Sections 13-19)

Credited service at time of termination of membership is multiplied by:

Benefit A	- 1.0% of a member's final average compensation (FAC). Benefit A may not be adopted after January 2, 1986.
Benefit B	- Contact MERS office for details. Benefit B may not be adopted after January 2, 1986.
Benefit C New	- 1.3% of FAC.
Benefit C Old	- Sum of 1.0% times the first $4,200 of FAC, plus 1.5% times the portion of FAC over $4,200. Benefit C Old may not be adopted after January 2, 1986.
Benefit C-1 New	- 1.5% of FAC.
Benefit C-1 Old	- Sum of 1.2% times the first $4,200 of FAC, plus 1.7% times the portion of FAC over $4,200. Benefit C-1 Old may not be adopted after January 2, 1986.
Benefit B-1	- 1.7% of FAC.
Benefit C-2	- 2.0% of FAC, payable until attainment of the age at which unreduced Social Security benefits are available (currently age 65 for normal retirement, gradually increasing to age 67). Upon attainment of this age, the benefit reverts to the basic Benefit A, C New, C Old, C-1 New, C-1 Old or B-1.
Benefit B-2	- 2.0% of FAC.
Benefit B-3	- 2.25% of FAC, with a maximum benefit of 80% of FAC.
Benefit B-4	- 2.5% of FAC, with a maximum benefit of 80% of FAC.

Note for MERS' Defined Contribution Program: The Annual Actuarial Valuation addresses assets and liabilities for participation under MERS' Defined Benefit Programs. MERS' Defined Contribution Program, which first became available for adoption in late 1997, is not addressed in the valuation results as it is not a defined benefit program.

Final Average Compensation (Plan Sections 2A(6) and 2A(11))

MERS plan benefits are based on a member's final average compensation (FAC). For this purpose, final average compensation means one-fifth of the aggregate amount of compensation (as defined in the MERS Plan Document, Section 2A(6)) paid to a member during the period of 5 consecutive years of the member's credited service in which the aggregate compensation paid is highest, known as FAC-5. Adoption of Benefit FAC-3 results in final average compensation being averaged over 3 years, instead of 5 years.

Disability Retirement Allowance (Plan Section 24)

Total and permanent disability while employed by a participating municipality and after meeting the vesting requirement of the benefit program. The service requirement is waived if the disability is the natural and proximate result of duty-connected causes.

The allowance is computed in the same manner as a service retirement allowance, except that the reduction for retirement before age 60 is not applied.

If disability is due to duty-connected causes, the amount of the retirement allowance shall not be less than 25% of the member's final average compensation.

Adoption of optional Benefit Program D-2 will provide a retirement allowance for a duty-connected disability that is the greater of:

(i) 25% of the member's final average compensation; or

(ii) A benefit based on 10 years of credited service in addition to the member's actual period of service, provided the total years of service do not exceed the greater of 30 years or the member's actual period of service.

Non-Duty Death Allowance (Plan Sections 26 and 28)

If a member or vested former member with the minimum years of service required to be vested dies before retirement, a monthly survivor allowance may be payable.

If the member is married, the spouse is the automatic beneficiary unless the spouse, in writing, declines a benefit in favor of another named beneficiary.

A contingent survivor beneficiary (named in an Option II Contingent Beneficiary Designation form filed with MERS) will receive a retirement allowance computed in the same manner as a service retirement allowance, based on service and final average compensation at death, but reduced to reflect an Option II (100% joint and survivor) election. The reduction for retirement before age 60 is not applied. Payment of a retirement allowance to the contingent survivor beneficiary of a deceased member commences immediately. Payment of a retirement allowance to the contingent survivor beneficiary of a deceased vested former member commences on the date the member would have first satisfied eligibility for retirement with an unreduced service retirement allowance.

If there is no named beneficiary and the member leaves a spouse, the spouse will receive a survivor allowance. Payment of a retirement allowance to the surviving spouse of a deceased member commences immediately. Payment of a retirement allowance to the surviving spouse of a deceased vested former member commences on the date the member would have first satisfied eligibility for retirement for an unreduced service retirement allowance. The amount of a surviving spouse's retirement allowance shall be 85% of the deceased member's or deceased vested former member's accrued retirement allowance computed in the same manner as a service retirement allowance, based on service and final average compensation at time of death.

The amount of a surviving spouse's benefit is always the larger of i) the benefit computed as a contingent survivor beneficiary, and ii) the 85% of accrued retirement allowance benefit described above.

If there is no named beneficiary and no retirement allowance being paid to a surviving spouse, unmarried children under age 21 will be paid an equal share of 50% of the deceased member's or deceased vested former member's accrued retirement allowance. The reduction for retirement before age 60 is not applied.

If no retirement allowance becomes payable at death, the member's accumulated contributions, if any, are paid to the beneficiary or to the decedent's estate.

Duty-Connected Death Allowance (Plan Section 27)

A duty death allowance, computed in the same manner as a non-duty death allowance, may be payable to a spouse or children if death occurs as the natural and proximate result of performance of duty with a participating municipality. The vesting requirement is waived, and the minimum benefit is 25% of the deceased member's final average compensation.

Adoption of optional Benefit Program D-2 will provide a retirement allowance for a duty-connected death that is the greater of:

(i) 25% of the member's final average compensation; or

(ii) A benefit based on 10 years of credited service in addition to the member's actual period of service, provided the total years of service do not exceed the greater of 30 years or the member's actual period of service.

Member Contributions (Plan Sections 32 and 35)

Each member contributes a percent of annual compensation, as selected by the municipality. Any percentage from 0% to 10% (in 0.1% increments) may be selected. A 3%/5% contribution program was available prior to 1985 and may be continued (until any new benefit programs are adopted), but not adopted, after 1984. Under this program the member contributes 3% of the first $4,200 of annual compensation and 5% of portions of annual compensation over $4,200.

If a member leaves the employ of the municipality, or dies, without a retirement allowance or other benefit payable on his/her account, the member's accumulated contributions plus interest (at a rate determined by MERS, currently 4%) are refunded with spousal consent, to the member, if living, or to the member's surviving spouse, if any, or to a named beneficiary (after spousal consent, if applicable).

Post-Retirement Adjustments (Plan Sections 20-22)

Benefit E – provides a one-time benefit increase to present retirants and beneficiaries. The amount of the increase is equal to a fixed percentage of the present benefit, or a fixed dollar amount times the number of years since the later of retirement or the date specified in the resolution. Benefit E may be readopted from time to time.

Benefit E-1 – provides automatic 2.5% annual non-compounded benefit increases to persons (and their beneficiaries) retired before the effective date of Benefit E-1. Such increases are further limited to increases in the consumer price index (CPI) if Benefit E-1 was adopted before January 1, 1999. For all adoptions or readoptions after that date, the increase is an automatic 2.5% non-compounded increase without any CPI limitation.

Benefit E-2 – provides automatic 2.5% annual non-compounded benefit increases to persons (and their beneficiaries) retired on or after the effective date of Benefit E-2. Such increases are further limited to increases in the consumer price index (CPI) if Benefit E-2 was adopted before January 1, 1999. For all adoptions or readoptions after that date, the increase is an automatic 2.5% non-compounded increase without any CPI limitation.

Death-After-Retirement Surviving Spouse Benefit (Plan Sections 23 and 23A)

A retiring member electing form of payment SL (straight life retirement allowance) is normally paid a lifetime retirement allowance, with payments terminating at death. The retiring member could provide benefits to a surviving spouse or another named beneficiary (see below) by electing Option II (100% continuation to beneficiary) or Option II-A (75% continuation to beneficiary) or Option III (50% continuation to beneficiary). A surviving spouse is automatically the beneficiary to an Option II, IIA or III allowance unless the spouse, in writing, relinquishes the benefit to the member electing a straight life allowance or to another named beneficiary. Electing these alternate forms of payment would lower the retiring member's retirement allowance.

If Benefit Program RS50% is adopted, a member retiring on or after the effective date of Benefit RS50% may elect form of payment SL and still provide a 50% survivor benefit to the member's spouse. To be eligible for a surviving spouse benefit, the retiring member and spouse must have been married to each other both at the time of death and during the full one-year period just before retirement.

ACTUARIAL ASSUMPTIONS

Actuarial Assumptions

To calculate MERS contribution requirements, assumptions are made about future events that could affect the amount and timing of benefits to be paid and the assets to be accumulated. The economic and demographic assumptions include:

- An assumed rate of investment return that is used to discount liabilities and project what plan assets will earn.
- A mortality table projecting the number of members who will die before retirement and the duration of benefit payments after retirement.
- Assumed retirement rates projecting when members will retire and commence receiving retirement benefits.
- A set of withdrawal and disability rates to estimate the number of members who will leave the work force before retirement.
- Assumed rates of salary increase to project member compensation in future years.

The actuarial assumptions used in connection with this December 31, 2001 actuarial valuation are unchanged from the December 31, 2000 valuation assumptions, except as described in the cover letter to this report. The actuarial assumptions currently utilized are summarized below and on the following pages.

Interest Rate

Funding plan benefits involves the accumulation of assets to pay benefits in the future. These assets are invested and the net rate of investment earnings is a significant factor in determining the contributions required to support the ultimate cost of benefits. For the 2001 actuarial valuation, the net long-term investment yield is assumed to be 8%.

Salary Increases

Because benefits are based on a member's final average compensation, it is necessary to make an assumption with respect to each member's estimated salary progression. The salary increase assumption used in the actuarial valuation projects annual salary increases of 4.5% plus a percentage based on an age-related scale to reflect merit, longevity and promotional salary increases.

The salary increase assumption used for the valuation projects the following salary increases for selected ages:

Age	Base (Inflation)	Merit and Longevity	Total Percentage Increase in Salary
20	4.50%	4.16%	8.66%
25	4.50	2.88	7.38
30	4.50	1.98	6.48
35	4.50	1.52	6.02
40	4.50	1.10	5.60
45	4.50	0.66	5.16
50	4.50	0.32	4.82
55	4.50	0.14	4.64
60	4.50	0.00	4.50

Withdrawal Rates

The withdrawal rates are used to estimate the number of employees at each age that are expected to terminate employment before qualifying for retirement benefits. The withdrawal rates do not apply to members eligible to retire, and do not include separation on account of death or disability. The assumed rates of withdrawal applied in the current valuation are based on years of service for members with less than 5 years of service, and based on age for members with 5 or more years of service.

Sample rates of withdrawal from active employment are below:

Sample Ages	Years of Service	% of Active Members Withdrawing Within the Next Year
	0	18.00%
	1	18.00
	2	16.00
	3	12.00
	4	10.00
20	5 and over	9.00
25		9.00
30		9.00
35		7.00
40		5.00
45		4.00
50		4.00
55		3.00
60		3.00
65		2.00
70		0.00

Retirement Rates

A schedule of retirement rates is used to measure the probability of eligible members retiring during the next year. To reflect the impact plan design may have on retirement experience, separate retirement rates apply to valuation divisions without Benefits F50, F55 or F(N), to those divisions that have adopted F55, to those that have adopted F50, and to those that have adopted F(N). The retirement rates in use for each category are shown below:

NORMAL RETIREMENT - AGE BASED - BENEFIT F(N) NOT ADOPTED

	Percent of Eligible Active Members Retiring Within Next Year		
Retirement Ages	**Without F50 or F55 or F(N)**	**With F55**	**With F50**
50			22%
51			22
52			22
53			22
54			24
55		18%	18
56		14	14
57		16	16
58		18	18
59		18	18
60	20%	20	20
61	24	24	24
62	24	24	24
63	24	24	24
64	27	27	27
65	30	30	30
66	30	30	30
67	30	30	30
68	30	30	30
69	30	30	30
70	100	100	100

Normal Retirement - Service Based - Benefit F(N) Adopted

Years of Service	Percent of Eligible Active Members Retiring Within Next Year	Years of Service	Percent of Eligible Active Members Retiring Within Next Year	Years of Service	Percent of Eligible Active Members Retiring Within Next Year
20	22%	31	22%	41	24%
21	22	32	22	42	24
22	22	33	22	43	24
23	22	34	24	44	27
24	22	35	18	45	30
25	22	36	14	46	30
26	22	37	16	47	30
27	22	38	18	48	30
28	22	39	18	49	30
29	22	40	20	50	100
30	22				

Municipalities that have adopted a non-standard benefit multiplier after December 31, 1996 that is in excess of the B-4, 2.5% multiplier, will have a retirement rate equal to 75% at the first age at which unreduced plan benefits are available.

Early Retirement – Reduced Benefit

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year
50	3%
51	3
52	5
53	8
54	15
55	4
56	4
57	4
58	8
59	10

Disability Rates

Disability rates are used in the valuation to estimate the incidence of member disability in future years.

The assumed rates of disablement at various ages are shown below:

Sample Ages	Percent Becoming Disabled Within Next Year
20	0.02%
25	0.02
30	0.02
35	0.02
40	0.05
45	0.12
50	0.25
55	0.40
60	0.45
65	0.50

85% of the disabilities are assumed to be non-duty and 15% of the disabilities are assumed to be duty related. For those plans which have adopted disability provision D-2, 70% of the disabilities are assumed to be non-duty and 30% are assumed to be duty related.

Mortality Table

In estimating the amount of the reserves required at the time of retirement to pay a member's benefit for the remainder of his or her lifetime, it is necessary to make an assumption with respect to the probability of surviving to retirement and the life expectancy after retirement.

The mortality table used to project the mortality experience of plan members is the 1994 Group Annuity Mortality Table. For disabled retirees, the regular mortality tables are used with a 3-year set forward in ages to reflect the higher expected mortality rates of disabled members.

The life expectancies and mortality rates projected by the 1994 Group Annuity Mortality table for **non-disabled** members are shown below for selected ages:

	Expected Years of Life Remaining		Mortality Rates	
Age	Male	Female	Male	Female
20	58.90	63.60	0.05%	0.03%
25	54.06	58.69	0.07	0.03
30	49.25	53.77	0.08	0.04
35	44.45	48.88	0.09	0.05
40	39.64	44.01	0.11	0.07
45	34.88	39.18	0.16	0.10
50	30.19	34.39	0.26	0.14
55	25.65	29.67	0.44	0.23
60	21.33	25.09	0.80	0.44
65	17.34	20.77	1.45	0.86
70	13.79	16.80	2.37	1.37
75	10.62	13.10	3.72	2.27
80	7.87	9.81	6.20	3.94

The life expectancies and mortality rates projected by the 1994 Group Annuity Mortality table for **disabled** members are shown below for selected ages:

	Expected Years of Life Remaining		Mortality Rates	
Age	Male	Female	Male	Female
20	55.99	60.65	0.06%	0.03%
25	51.17	55.74	0.08	0.03
30	46.37	50.83	0.08	0.04
35	41.56	45.95	0.09	0.06
40	36.77	41.11	0.14	0.09
45	32.05	36.30	0.21	0.12
50	27.45	31.55	0.36	0.19
55	23.02	26.89	0.63	0.34
60	18.89	22.46	1.15	0.67
65	15.16	18.36	1.99	1.18
70	11.84	14.54	3.12	1.83
75	8.90	11.07	5.02	3.17
80	6.50	8.08	8.25	5.49

Miscellaneous and Technical Assumptions

Marriage Assumptions	- 70% of males and 70% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing	- Beginning of valuation year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing	- Decrements of all types are assumed to occur mid-year.
Eligibility Testing	- Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Benefit Service	- Exact fractional service is used to determine the amount of benefit payable.
Decrement Relativity	- Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation	- Disability and death-in-service decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during retirement eligibility.
Normal Form of Benefit	- The assumed normal form of benefit is the straight life form.
Loads	- None.
Incidence of Contributions	- Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made. New entrant normal cost contributions are applied to the funding of new entrant benefits.

ACTUARIAL FUNDING METHOD

The Retirement Board has adopted funding methodology for the Retirement System to achieve the following major objectives:

- Develop level required contribution rates as a percentage of payroll;
- Finance benefits earned by present employees on a current basis;
- Accumulate assets to enhance members' benefit security;
- Produce investment earnings on accumulated assets to help meet future benefit costs;
- Make it possible to estimate the long-term actuarial cost of proposed amendments to System provisions; and
- Assist in maintaining the Retirement System's long-term financial viability.

The basic funding objective is a level pattern of cost as a percentage of salary throughout each member's working lifetime. The funding method used in this actuarial valuation – the entry age normal cost method – is intended to meet this objective and result in a relatively level long-term contribution requirement as a percentage of salary.

Under the entry age normal cost method, the total actuarially-determined contribution requirement is equal to the sum of the normal cost plus the payment required to fund the unfunded actuarial accrued liability over a period of years. Funding or amortizing the unfunded actuarial accrued liability includes a payment toward the liability (principal) plus a payment to reflect the time value of money (interest).

Normal Cost

In general terms, the normal cost is the cost of benefit rights accruing on the basis of current service. Technically, the normal cost rate is the level percentage-of-salary contribution required each year, with respect to each member, to accumulate over his or her projected working lifetime the reserves needed to meet the cost of earned benefits. The normal cost represents the ultimate cost of the Retirement System, if the unfunded liability is paid up and the actual experience of the System conforms to the assumptions.

Actuarial Accrued Liability

The total actuarial present value of future benefits is computed using the valuation's actuarial assumptions. Subtracting the present value of future normal costs results in the actuarial accrued liability.

The total actuarial accrued liability essentially represents the amount that would have been accumulated as of December 31, 2001, if contributions sufficient to meet the normal costs of the Retirement System had been made each year in the past, benefit provisions had always been the same as current benefit provisions, and actual past experience had always conformed to current actuarial assumptions. If assets equaled the total accrued liability, there would be no unfunded liability and future contribution requirements would consist solely of the calculated normal cost rates.

Amortization of Unfunded Actuarial Accrued Liability

Unfunded actuarial accrued liability is amortized by level percent of payroll contributions over a period of years. Active member payroll is assumed to increase 4.5% a year for the purpose of determining the level percent contributions. The standard amortization period to fund the unfunded liability is 30 years for positive unfunded liabilities, and 10 years for negative unfunded liabilities, with these time periods reestablished with each annual actuarial valuation. However, municipalities that entered MERS before January 1, 2000 may currently have an amortization period that is longer than 30 years that reduces annually by 1 year until the period reaches 30 years. At that point, the amortization period will remain at 30 years. All new municipalities entering MERS on and after January 1, 2000 have 30 year amortization. Shorter amortization periods may be elected by a municipality (but not shorter than 5 years for negative unfunded liabilities). Table 16 in the results section of this report indicates the current length of the amortization period for each division. Note that when the 10 year amortization is used for negative unfunded liabilities, Table 16 reports the amortization in two parts: i) a long term credit based on a 30 year amortization, plus ii) an overfunding credit resulting from using a 10 year amortization instead of 30 years.

Present Value of Accrued Benefits

The present value of accrued benefits represents the actuarial value of benefits that have been earned as of the valuation date for all members of the valuation division. This benefit reflects the final average compensation and plan benefit service of each member, and plan features of the member's valuation division as of the valuation date. Included in this value is the current value of vested benefits for members who have met plan vesting requirements and the current value of non-vested benefits for member who have not yet met plan vesting requirements. Regardless of plan vesting service, all member contributions are vested. Active members are assumed to continue in employment until retirement, death, disability or termination, but benefit amounts are frozen on the valuation date.

Termination Liability

The termination liability represents the value of the benefits that have been earned as of the valuation date based on final average compensation and benefit service as of the valuation date. All active members are assumed to terminate employment on the valuation date. Vested active members are assumed to retire at the first age when the member would be eligible for unreduced deferred retirement benefits, assuming no continued employment after the valuation date. Non-vested active members are assumed to only receive a refund of member contributions, if any.

ASSET VALUATION METHOD

The actuarial value of assets is determined on the basis of a method that calculates expected investment income at the valuation rate of return and adds a portion of the difference between the expected investment income and actual investment income earned on a market value basis. The difference in investment income between expected return and market return is recognized over a 5-year period at the rate of 20% per year. This asset valuation method was first adopted for the December 31, 1993 valuation, and is applied as follows:

Actuarial Value equals:

(a) Actuarial value of assets from the previous actuarial valuation, plus
(b) Aggregate employer and member contributions since the last valuation, minus
(c) Benefit payments and refunds of member contributions since the last valuation, plus
(d) Estimated investment income at the 8% valuation interest rate, plus
(e) Portion of gain (loss) recognized in the current valuation.

For the above purpose, gain (loss) is defined as the excess during the period of the investment return on the market value of assets over the expected investment income. The portion recognized in the valuation is 20% of the current year's gain (loss) plus 20% of the gain (loss) from each of the 4 preceding years.

During 2001, the approximate net investment return on average total assets at actuarial value (determined as the actuarial value of investment income divided by the average actuarial value of assets during the year) was 7.72%. The corresponding amounts for 2000, 1999, 1998 and 1997 were 10.36%, 15.38%, 12.93% and 12.02%, respectively.

For the December 31, 2001 valuation, the actuarial value of assets is equal to 110.60% of market value (compared to 100.07%, 87.89%, 88.86% and 89.63% in 2000, 1999, 1998 and 1997, respectively). This percentage is applied to each division's reported market value of assets to estimate the actuarial value of assets for the division. The chart on the following page provides the details of the derivation of the actuarial value of assets for the retirement system in the aggregate.

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

Municipal Employees' Retirement System of Michigan
Derivation of Actuarial Value of Assets

Valuation Date December 31:	1997	1998	1999	2000	2001
1. Beginning of Year Assets					
a) Market Value	$ 2,602,370,729	$ 3,003,527,525	$ 3,411,188,529	$ 3,941,864,651	$ 3,788,886,471
b) Valuation Assets	2,412,858,589	2,692,161,219	3,031,278,484	3,464,584,875	3,791,423,339
2. End of Year Market Value Assets	3,003,527,525	3,411,188,529	3,941,864,651	3,788,886,471	3,647,820,869
3. Net Additions to Market Value					
a) Net Contributions	116,715,726	144,118,741	161,911,772	162,703,877	154,103,475
b) Net Investment Income = (3d) - (3a) - (3c)	411,336,769	416,174,409	561,188,970	(122,407,374)	(93,269,286)
c) Benefit Payments	(126,895,699)	(152,632,146)	(192,424,619)	(193,274,683)	(201,899,791)
d) Total Additions to Market Value = (2) - (1a)	401,156,796	407,661,004	530,676,123	(152,978,180)	(141,065,602)
4. Average Valuation Assets = (1b) + .5x[(3a) + (3c)]	2,407,768,603	2,687,904,516	3,016,022,060	3,449,299,472	3,767,525,181
5. Expected Income at Valuation Rate = 8% x (4)	192,621,488	215,032,361	241,281,765	275,943,958	301,402,014
6. Gain (Loss) = (3b) - (5)	218,715,281	201,142,048	319,907,205	(398,351,332)	(394,671,300)
7. Phased-In Recognition of Investment Return					
a) Current Year: 0.2 x (6)	43,743,056	40,228,410	63,981,441	(79,670,266)	(78,934,260)
b) First Prior Year	13,182,671	43,743,056	40,228,410	63,981,441	(79,670,266)
c) Second Prior Year	61,401,895	13,182,671	43,743,056	40,228,410	63,981,441
d) Third Prior Year	(25,957,723)	61,401,895	13,182,671	43,743,056	40,228,410
e) Fourth Prior Year	4,491,215	(25,957,723)	61,401,895	13,182,671	43,743,057
f) Total Recognized Investment Gain	96,861,114	132,598,309	222,537,473	81,465,312	(10,651,618)
8. Change in Valuation Assets (3a) + (3c) + (5) + (7f)	279,302,629	339,117,265	433,306,391	326,838,464	242,954,080
9. End of Year Assets					
a) Market Value = (2)	3,003,527,525	3,411,188,529	3,941,864,651	3,788,886,471	3,647,820,869
b) Valuation Assets = (1b) + (8)	2,692,161,219	3,031,278,484	3,464,584,875	3,791,423,339	4,034,377,419
c) Difference Between Market & Valuation Assets	311,366,306	379,910,045	477,279,776	(2,536,868)	(386,556,550)
10. Recognized Rate of Return = [(5) + (7f)] / (4)	12.02%	12.93%	15.38%	10.36%	7.72%
11. Market Rate of Return	15.84%	13.88%	16.53%	(3.12%)	(2.48%)
12. Valuation Asset Adjustment Factor = (9b) / (9a)	0.896333	0.888628	0.878920	1.000670	1.105969