



City of Taylor Police and Fire Retirement System

Actuarial Valuation as of June 30, 2010





RODWAN
consulting
company

May 9, 2011

The Retirement Board
City of Taylor Police and Fire Retirement System
Taylor, Michigan

Dear Board Members:

The purpose of the annual actuarial valuation of the City of Taylor Police and Fire Retirement System as of June 30, 2010 is to:

- Compute the liabilities associated with benefits likely to be paid on behalf of current retired and active members of the Retirement System,
- Compare accrued assets with accrued liabilities to assess the funded condition of the Retirement System, and
- Compute the City's recommended contribution rate for the Fiscal Year beginning July 1, 2011.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices. Data concerning active members, retirees, beneficiaries and assets was provided by your staff. This data has been reviewed for reasonableness, but no attempt has been made to audit such information. The valuation was based on the provisions of the Retirement System as amended through June 30, 2010. The actuarial assumptions used in this valuation represent reasonable expectations of future experience under the System. This valuation has been prepared under the supervision of a Member of the American Academy of Actuaries who meets the qualification standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,

Denise M. Jones

Sandra W. Rodwan, M.A.A.A

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Section One:
Valuation Summary



Purpose of Valuation

The purpose of the annual actuarial valuation of the City of Taylor Police and Fire Retirement System as of June 30, 2010 is to:

- ❖ Compute the liabilities associated with benefits likely to be paid on behalf of current retired and active members of the Retirement System,
- ❖ Compare accrued assets with accrued liabilities to assess the funded condition of the Retirement System, and
- ❖ Compute the City's recommended contribution rate for the Fiscal Year beginning July 1, 2011.

Liabilities and Funded Condition of Retirement System

Accrued liabilities of the Retirement System as of June 30, 2010 were computed to be \$150,774,376. The funding value of accrued assets was \$104,077,490. The ratio of the funding value of accrued assets to accrued liabilities was 69.0%.

Funding Value of Assets

A smoothed market value of assets was used for the June 30, 2010 valuation. This method, which spreads the difference between actual and expected investment return over five years, is unchanged from last year's valuation.

Computed City's Contribution Rate

The City's normal cost contribution rate was computed to be 22.00% of active member payroll (27.00% total normal cost less 5.00% member contributions). The unfunded accrued liabilities were amortized over 20 years as a level percent of future payroll. The amortization of the unfunded accrued liabilities was 23.04% of member payroll. The City's total contribution for the FY beginning July 1, 2011 was therefore computed to be 45.04% of member payroll.

Retirement System Experience

Experience for the year ended June 30, 2010 was less favorable than expected. The primary source of the unfavorable experience was the recognized rate of investment return on the funding value of assets which was less than assumed (0.9% vs. 7.6%). Partially offsetting the unfavorable experience were salary increases which were less than assumed.

Assumption and Method Changes

There were no assumption and method changes included in this valuation.

Benefit Provision Changes

There were no benefit provision changes included in this valuation.

Participant Data

	<u>06/30/2010</u>	<u>06/30/2009</u>
Active Members	143	151
Active Member Payroll	\$12,813,161	\$13,889,065
Retirees and Beneficiaries*	201*	194**
Annual Pensions	\$9,210,058	\$8,589,355
Inactive Vested Members	2	2
Estimated Annual Pensions	\$35,176	\$35,176

*Including 19 alternate payees receiving benefits totaling \$367,813 pursuant to Eligible Domestic Relations Orders.

**Including 20 alternate payees receiving benefits totaling \$377,379 pursuant to Eligible Domestic Relations Orders.

Financial Data

	<u>06/30/2010</u>	<u>06/30/2009</u>
Funding Value of Assets	\$104,077,490	\$106,010,390
Market Value of Assets	84,114,462	78,423,314



Section Two:

***Actuarial Calculations –
Funding***



Computed Contribution Rates for the Year Beginning July 1, 2011

The contribution rates shown below are expressed as level percents of active member payroll.

The normal cost can be viewed as the long-term on-going cost of the Retirement System. Unfunded actuarial accrued liability as of June 30, 2010 was amortized as a level percent of payroll over 20 years and added to the computed normal cost. The 20 year period is unchanged from last year’s valuation. The City’s total contribution rate has been computed to be 45.04% of payroll for the fiscal year beginning July 1, 2011.

	<u>Percents of Payroll</u>
Normal Cost	
Regular Retirement	24.21%
Pre-retirement Death	0.55
Disability	1.09
Withdrawal	<u>1.15</u>
Total Normal Cost	27.00%
Member Portion	5.00
City’s Computed Normal Cost	22.00%
Unfunded Actuarial Accrued Liability	23.04
City’s Total Contribution Rate	45.04%
City’s Dollar Contribution*	<u>\$6,059,600</u>

*Based on projected payroll.

Unfunded Actuarial Accrued Liability

	<u>June 30, 2010</u>	<u>June 30, 2009</u>
Actuarial Accrued Liabilities	\$150,774,376	\$146,368,393
Assets Allocated to Funding	<u>104,077,490</u>	<u>106,010,390</u>
Unfunded Actuarial Accrued Liabilities	\$46,696,886	\$40,358,003

Computed City Contributions

Valuation Date June 30	Fiscal Year Beginning July 1	Recommended Dollar Contributions*	Percent of Valuation Payroll
1995	1996	\$886,000	11.45%
1996#	1997	966,424	10.55
1997#@	1998	1,099,141	10.19
1998#	1999	590,214	3.67
1999#	2000	1,018,067	7.78
2000#@	2001	792,263	5.94
2001@	2002	1,258,709	12.20
2002@	2003	2,000,194	16.11
2003#@	2004	2,497,495	20.32
2004#	2005	2,943,025	24.94
2005	2006	4,023,065	29.95
2006+	2007	4,820,841	34.07
2006@	2007	4,977,904	35.18
2007	2008	5,483,018	36.61
2008@	2009	5,613,904	38.19
2009@	2010	5,917,992	40.58
2010	2011	6,059,600	45.04

*Actual amounts for Fiscal Years beginning before July 1, 2005.

After changes in benefit provisions.

@ After changes in actuarial assumptions or methods.

+ Before changes in actuarial assumptions.

Note: Results shown throughout this report for years prior to 2004 were prepared by the previous actuarial firm.

History of Assets and Accrued Liabilities

Valuation Date June 30	Valuation Assets	Actuarial Accrued Liabilities	Funded Ratio	Unfunded Actuarial Accrued Liabilities
1986@	\$29,032,053	\$30,445,103	95.4%	\$1,413,050
1987	35,044,194	36,474,114	96.1	1,429,920
1988	38,765,420	38,867,633	99.7	99,213
1989	42,512,992	41,626,330	102.1	(886,662)
1990	46,063,061	43,922,543	104.9	(2,140,518)
1991	49,737,330	47,178,973	105.4	(2,558,357)
1992	53,556,305	50,247,014	106.6	(3,309,291)
1993	58,155,660	56,081,864	103.7	(2,073,796)
1994	62,741,421	59,670,974	105.1	(3,070,447)
1995	66,738,487	64,413,553	103.6	(2,324,934)
1996@	72,893,834	69,575,148	104.8	(3,318,686)
1997#@	80,642,072	77,075,797	104.6	(3,566,275)
1998#	90,246,507	80,253,845	112.5	(9,992,662)
1999#	100,539,640	95,699,572	105.1	(4,840,068)
2000#@	106,949,853	100,490,847	106.4	(6,459,006)
2001@	109,890,095	106,771,235	102.9	(3,118,860)
2002@	108,014,638	110,532,059	97.7	2,517,421
2003#@	103,993,810	113,029,146	92.0	9,035,336
2004#	100,385,111	117,089,217	85.7	16,704,106
2005	98,951,961	123,358,784	80.2	24,406,823
2006*	100,038,258	130,920,662	76.4	30,882,404
2006@	100,038,258	132,777,933	75.3	32,739,675
2007	105,253,136	138,917,506	75.8	33,664,370
2008@	107,616,702	143,634,491	74.9	36,017,789
2009@	106,010,390	146,368,393	72.4	40,358,003
2010	104,077,490	150,774,376	69.0	46,696,886

After changes in benefit provisions.

@ After changes in actuarial assumptions or methods.

*Before changes in actuarial assumptions.

Note: Results shown throughout this report for years prior to 2004 were prepared by the previous actuarial firm.

City of Taylor Police and Fire
Retirement System

Aggregate Gain/Loss - Year Ended June 30, 2010

(1) UAAL ^a at start of year	\$40,358,003
(2) Employer normal cost	3,275,448
(3) Interest accrual	2,978,347
(4) Employer contributions	5,613,904
(5) Expected UAAL before changes	40,997,894
(6) Change from amendments	None
(7) Change from assumption revision	None
(8) Expected UAAL after changes	40,997,894
(9) Actual UAAL	46,696,886
(10) Gain(Loss)	(5,698,992)
(11) Percent of AAL ^b	(3.89)%

^a Unfunded Actuarial Accrued Liability.

^b Actuarial Accrued Liability at beginning of year \$146,368,393.

Comments and Recommendations

Comment 1: Experience for the year ended June 30, 2010 was less favorable than expected. The primary source of the unfavorable experience was the recognized rate of investment return on the funding value of assets which was less than assumed (0.9% vs. 7.6% assumed). Partially offsetting the unfavorable experience were salary increases which were less than assumed.

Recommendation: Retired life liabilities as of June 30, 2010 were computed to be \$97,973,402, and the Reserve for Retired Benefit Payments was reported to be \$95,711,850. The following transfer from the Reserve for Employer Contributions to the Reserve for Retired Benefit Payments is recommended in order to fully cover the retired life liabilities as of June 30, 2010.

Recommended Transfer	
To Reserve for Retired Benefit Payments	From Reserve for Employer Contributions
\$2,261,552	\$2,261,552



Section Three:

***Retirement System
Benefit Provisions***



Benefit Provision Summary

Service Retirement

Eligibility:

Corporal/Patrol and Fire: Any age with 20 or more years of service or age 60 regardless of service.

Police Command: Any age with 25 or more years of service or age 60 regardless of service.

Annual Benefit:

Corporal/Patrol:

Straight life pension equals 2.8% of average final compensation (AFC) times first 25 years of service, maximum of 70% of AFC.

Police Command and Fire hired prior July 1, 2007:

Straight life pension equals 2.8% of average final compensation (AFC) times first 25 years of service plus 1.0% of AFC times years of service in excess of 25 years to a maximum of 75% of AFC.

Fire hired on or after July 1, 2007: Straight life pension equals 2.25% of AFC times years of service. AFC will use base wages only and overtime is capped at \$3,000.

Average Final Compensation:

Highest 3 years out of last 10.

Deferred Retirement

Eligibility:

10 or more years of service.

Annual Benefit:

Computed as service retirement but based upon service, AFC and benefit provisions in effect at termination. Benefit begins at date retirement would have occurred had member remained in employment.

Duty Disability Retirement

Eligibility:

Payable upon the total and permanent disability of a member in the line of duty.

Annual Benefit:

To age 55: 50% of AFC.

At age 55: Same as Service Retirement Pension with service credit from date of disability to age 55.

Non-Duty Disability

Eligibility:

Payable upon the total and permanent disability of a member with 5 or more years of service

Annual Benefit:

To Age 55: 1.5% of AFC times years of service.

At Age 55: Same as Service Retirement Pension.

Duty Death in Service Survivor's Pension

Eligibility:

Payable upon the expiration of a worker's compensation to the survivors of a member who died in the line of duty.

Annual Benefit:

Same amount that was paid by worker's compensation.

Non-Duty Death in Service Survivor's Pension

Eligibility:

Payable to a surviving spouse, if any, upon the death of a member with 10 or more years of service.

Annual Benefit:

Fire: Spouse's pension equals 60% of the straight life pension.

All others: Accrued straight life pension actuarially reduced in accordance with an Option I election.

Death After Retirement Survivor's Pension

Eligibility:

Payable to an eligible surviving spouse, if any, upon the death of a retired member who was receiving a straight life pension which was effective July 1, 1975 or later.

Annual Benefit:

Spouse's pension equals 60% of the straight life pension the deceased retiree was receiving.

Member Contributions

5% of pay.



Section Four:

***Actuarial Assumptions
And Methods***



Actuarial Assumptions

Economic Assumptions

- (i) **Interest Rate** 7.6% (net of expenses)

- (ii) **Salary Increases**
 - Across-the-Board 5.0%
 - Merit and Longevity Age-related rates

Sample Annual Rates of Salary Increase

Age	Inflation	Merit and Longevity	Total
20	5.0%	3.0%	8.0%
25	5.0%	3.0	8.0
30	5.0%	2.6	7.6
35	5.0%	1.1	6.1
40	5.0%	0.2	5.2
45	5.0%	0.2	5.2
50	5.0%	0.2	5.2
55	5.0%	0.1	5.1
60	5.0%	-	5.0

Demographic Assumptions**(i) Mortality****RP2000 Combined Healthy Mortality Table**

Sample Ages	Future Life Expectancy (Years)	
	Men	Women
50	30.8	33.6
55	26.2	29.0
60	21.8	24.4
65	17.6	20.1
70	13.9	16.3
75	10.6	12.8
80	7.8	9.7

Note: The valuation process uses mortality rates at each future age for an individual in order to determine the present value of future benefits. Life expectancy is shown to illustrate the mortality table but is not used in the valuation process.

(ii) Disability

Sample Ages	Percent Becoming Disabled Within Next Year	
	Men	Women
20	0.07%	0.03%
25	0.09	0.05
30	0.10	0.07
35	0.14	0.13
40	0.21	0.19
45	0.32	0.28
50	0.52	0.45
55	0.92	0.76

(iii) Termination of Employment

Service related rates for first 5 years of employment. Age related rates after first 5 years of employment

Sample Ages	Years of Service	Percent Terminating	
		Police	Fire
All	0	10.00%	8.00%
	1	8.00	6.00
	2	6.00	4.50
	3	4.00	3.00
	4	3.00	2.00
25	5 & Over	2.97	2.00
30		2.57	1.65
35		1.52	0.86
40		0.59	0.34
45		0.33	0.29
50		0.33	0.29
55		0.33	0.29
60		0.33	0.29

(iv) Retirement Rates

**Active Members Retiring within Year
Following Attainment of Indicated Retirement Age**

Years of Service	Percent of Active Members Retiring Within Next Year			Retirement Age	Percent of Active Members Retiring Within Next Year	
	Police				Police	Fire
	Corp/Patrol	Command	Fire			
20	70%		30%	60	100%	100%
21	20		20			
22	20		20			
23	20		20			
24	20		20			
25	100	50%	50			
26		40	50			
27		40	50			
28		40	50			
29		40	50			
30		90	100			
31		40				
32		100				

Corporal/Patrol and Fire members are eligible for retirement with 20 years of service or after attaining age 60. All others are eligible for normal retirement with 25 years of service or after attaining age 60.

Lump sum factors: 17% of active member normal retirement liabilities for Police and 10% of active member normal retirement liabilities for Fire. These loads may need to be revised in the future based on emerging experience.

Actuarial Method Used for the Valuation

Normal Cost. Normal cost and the allocation of actuarial present values between service rendered before and after the valuation date were determined using an individual entry-age actuarial cost method having the following characteristics:

- ❖ The annual normal costs for each individual active member, payable from date of hire to date of retirement, are sufficient to accumulate the value of the member's benefit at the time of retirement;
- ❖ Each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

Financing of Unfunded Actuarial Accrued Liability. Unfunded actuarial accrued liability was amortized as a level percent of payroll over a 20 year period and added to the computed employer normal cost.

Active member payroll was assumed to increase 5.0% a year for the purpose of determining the level percent of payroll amortization payment.



Section Five:
Valuation Data



Asset Summary

As of June 30, 2010 the market value of assets was reported to be \$84,114,462. The funding value of assets (smoothed market value) was computed to be \$104,077,490.

Funding Value of Assets

A. Funding Value Beginning of Year	\$106,010,390
B. Market Value End of Year	84,114,462
C. Market Value Beginning of Year	78,423,314
D. Non-Investment Net Cash Flow	(2,829,349)
E. Investment Income	
E1. Market Total B-C-D	8,520,497
E2. Amount for Immediate Recognition (7.6%)	7,949,274
E3. Amount for Phased-In Recognition E1-E2	571,223
F. Phased-In Recognition of Investment Income	
F1. Current Year $0.20 \times E3$	114,245
F2. First Prior Year	(5,289,298)
F3. Second Prior Year	(2,807,764)
F4. Third Prior Year	1,063,416
F5. Fourth Prior Year	(133,423)
F6. Total Phased-In Amount	(7,052,825)
G. Funding Value End of Year $A+D+E2+F6$	104,077,490
H. Difference Between Market and Funding Value	\$(19,963,028)
I. Recognized Rate of Return	0.9%
J. Ratio of Funding Value to Market Value	123.7%

Participant Summary

Retirees and Beneficiaries Included in the Valuation

There were 201 retirees and beneficiaries included in the valuation, with annual pensions totaling \$9,210,058. Included in this total are 19 alternate payees receiving benefits totaling \$367,813.

There were 9 new age and service retirements with a pension totaling \$705,480, 3 new beneficiaries with pensions totaling \$70,390 were added and 4 retirees removed in 2010.

Pensions Being Paid Historical Schedule

Valuation Date June 30	No.	Annual Pensions	Average Pension	Discounted Value of Pensions	
				Total	Average
1990	47	\$1,429,038	\$30,405	\$16,224,469	\$345,201
1995	83	2,844,663	34,273	31,974,175	385,231
1996	90	3,078,874	34,210	35,204,091	391,157
1997	104	3,576,801	34,392	39,994,818	384,566
1998	112	3,943,015	35,205	43,660,477	346,512
1999	126	4,671,551	37,076	51,973,507	412,488
2000	149	6,085,866	40,845	68,126,791	457,227
2001	156	6,442,233	41,296	71,745,841	459,909
2002	163	6,707,742	41,152	74,134,281	454,812
2003	181	7,645,268	42,239	85,119,435	470,273
2004	181	7,700,045	42,542	85,195,935	470,696
2005	184	7,881,237	42,833	86,107,080	467,973
2006	190	8,283,847	43,599	90,795,403	477,871
2007	191	8,404,642	44,003	91,369,752	478,376
2008	195	8,605,974	44,133	92,592,662	474,834
2009	194	8,589,355	44,275	91,404,656	471,158
2010	201	9,210,058	45,821	97,973,402	487,430

Retirees and Beneficiaries - June 30, 2010
Age Distribution (Including Alternate Payees)

Attained Ages	Retirees		Disability		Totals	
	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions
40-44	2	\$158,265		\$ -	2	\$158,265
45-49	18	1,108,417			18	1,108,417
50-54	22	1,257,116	1	5,177	23	1,262,293
55-59	30	1,598,072			30	1,598,072
60-64	43	2,223,750			43	2,223,750
65	7	263,953			7	263,953
66	10	224,874			10	224,874
67	10	491,844			10	491,844
68	11	432,460	1	20,207	12	452,667
69	3	106,989			3	106,989
70	3	137,616			3	137,616
71	1	22,244			1	22,244
72	5	214,305			5	214,305
73	5	160,799			5	160,799
74	3	56,317			3	56,317
75	2	63,227			2	63,227
76	5	156,840			5	156,840
77	7	205,546			7	205,546
78	4	105,909			4	105,909
79	1	35,597			1	35,597
81	1	30,001			1	30,001
82	2	71,252			2	71,252
84	1	17,060			1	17,060
85	1	10,589			1	10,589
86	1	24,205			1	24,205
88	1	7,427			1	7,427
Totals	199	\$9,184,674	2	\$25,384	201	\$9,210,058

Active Members as of June 30, 2010
Age and Service Distribution

Attained Age	Service					No.	Totals Payroll
	0-4	5-9	10-14	15-19	20-24		
25-29		4	1			5	\$404,585
30-34		16	18			34	2,872,497
35-39	1	8	33	4		46	3,909,383
40-44		2	18	14	2	36	3,436,559
45-49			4	3	6	13	1,270,725
50-54			1	2	3	6	617,434
55-59			1	1	1	3	301,978
Totals	1	30	76	24	12	143	\$12,813,161

Group Averages:

Age: 39.1 years
Service: 12.8 years
Annual Pay: \$89,603

Active Members – Three-Year Summary

	2010	2009	2008
Active Members	143	151	152
Valuation Payroll	\$12,813,161	\$13,889,065	\$13,999,934
Average Compensation	\$89,603	\$91,981	\$92,105
Average Age (yrs.)	39.1	38.6	37.7
Average Service (yrs.)	12.8	12.4	11.6



Section Six:

Accounting Disclosures



GASB Statement No. 25 Supplementary Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation Date:	June 30, 2010
Actuarial Cost Method:	Individual Entry Age
Amortization method:	Level percent of payroll
Remaining amortization period:	20 years
Asset valuation method:	5-year smoothed market value
Actuarial assumptions:	
Investment rate of return	7.6%
Projected salary increases	5.0% - 8.0%
Includes inflation at	5.0%

Membership data as of June 30, 2010, indicated in Section Five of this report.

Analysis of Funding Progress

Valuation Date June 30	(1) Funding Value of Assets	(2) Actuarial Accrued Liability	(3) Percent Funded (1)/(2)	(4) Unfunded AAL (2)-(1)	(5) Annual Covered Payroll	(6) UAAL As a % Of Covered Payroll
1994	\$62,741,421	\$59,670,974	105.1%	\$(3,070,447)	\$8,010,185	-%
1995	66,738,487	64,413,553	103.6	(2,324,934)	7,737,010	-
1996#	72,893,834	69,575,148	104.8	(3,318,686)	7,831,295	-
1997#	80,642,072	77,075,797	104.6	(3,566,275)	8,547,862	-
1998#	90,246,507	80,253,845	112.5	(9,992,662)	8,616,996	-
1999#	100,539,640	95,699,572	105.1	(4,840,068)	9,711,972	-
2000#	106,949,853	100,490,847	106.4	(6,459,006)	9,060,243	-
2001#	109,890,095	106,771,235	102.9	(3,118,860)	9,589,184	-
2002#	108,014,638	110,532,059	97.7	2,517,421	10,645,413	23.6
2003#	103,993,810	113,029,146	92.0	9,035,336	10,621,521	85.1
2004#	100,385,111	117,089,217	85.7	16,704,106	11,166,056	149.6
2005	98,951,961	123,358,784	80.2	24,406,823	12,606,578	193.6
2006#	100,038,258	132,777,933	75.3	32,739,675	13,476,011	242.9
2007	105,253,136	138,917,506	75.8	33,664,370	14,262,553	236.0
2008#	107,616,702	143,634,491	74.9	36,017,789	13,999,934	257.3
2009#	106,010,390	146,368,393	72.4	40,358,003	13,889,065	290.6
2010	104,077,490	150,774,376	69.0	46,696,886	12,813,161	364.4

After changes in benefit provisions and/or actuarial assumptions or cost method.

Note: Results shown throughout this report for years prior to 2004 were prepared by the previous actuarial firm.

**Required Supplementary Information
Schedule of Employer Contributions**

Valuation Date June 30	Fiscal Year Beginning July 1	Computed Rates as Percents of Valuation Payroll	Actual Annual Contributions
1994	1995	10.80%	\$1,007,624
1995	1996	11.45	886,000
1996	1997	10.55	966,424
1997	1998	10.19	1,099,144
1998	1999	3.67	590,214
1999	2000	7.78	1,018,067
2000	2001	5.94	792,263
2001	2002	12.20	1,258,709
2002	2003	16.11	2,000,194
2003	2004	20.32	2,497,495
2004	2005	24.94	2,943,025
2005	2006	29.95	4,023,065
2006	2007	35.18	4,977,904
2007	2008	36.61	5,483,018
2008	2009	38.19	5,613,904
2009	2010	40.58	
2010	2011	45.04	