City of Ferguson, Missouri

Actuarial Review and Analysis of City Pension Plan as of July 1, 2010

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Summary of Results

Introduction

This Report presents the results of an actuarial review and analysis of the City of Ferguson Pension Plan (the Plan) as of July 1, 2010. The purposes of this review are:

- To compute the annual contribution required in order to fund the Plan in accordance with actuarial principles, and
- To determine the funding ratio of the Plan, and
- To present those items required for disclosure under Statement No. 25 of the Governmental Accounting Standards Board (GASB 25).

Summary

	7/1/2009	7/1/2010
Fully Projected Actuarial Liability	$23.1 M	$24.3 M
Actuarial Accrued Liability	19.2 M	20.3 M
Actuarial Value of Assets	20.5 M	20.3 M
Funding Ratio	107%	100%
Unfunded Actuarial Accrued Liability (UAAL)	($1.3) M	(0.0)
Amortization of UAAL	($0.2) M	$0.0
Normal Cost	$0.5 M	$0.5 M
Total Contribution as of end of fiscal year	$317,969	$480,448
Projected Payroll	$6.2 M	$6.2 M
Contribution as % of Payroll	5.15%	7.73%

Contribution Rates

The employer contribution increased from $318,000 for fiscal year 2010 to $480,000 for fiscal year 2011. The reasons for this change can be broken down as follows:

Change in Contribution		Amount
Contribution for fiscal year 2010		$317,969
Change due to:		
Investment Experience, including recognition of prior losses	+ $ 87,848	
Demographic and Salary Experience	+ $ 44,828	
New Plan Entrants	+ $ 29,803	
Total Change		+ $ 162,479
Contribution for fiscal year 2011		**$ 480,448**

The contribution is assumed to be paid 12 months after the valuation date.

The primary reasons for changes in the employer contribution since the prior valuation are summarized below:

- Investment Experience

  During the year ended June 30, 2010; the return on the market value of Plan assets was 8.3%, a slight gain versus the assumed 7.5% return. On an actuarial basis – recognizing gains/losses from prior years – the return was about 4.0%, representing an actuarial loss compared to the assumed actuarial return of 7.5%. The effect of this loss was an increase in the contribution of about $90,000.

- Demographic Experience

  This refers to the movement of employees from the prior year. As part of an actuarial valuation, assumptions are made regarding employee termination, death, disability, and retirement rates. Future increases in member pay are also projected. When actual experience during the year differs from assumed levels, actuarial gains or losses occur that affect the employer contribution rate.

Overall, the demographic experience – including data corrections – was unfavorable, causing the contribution to increase by almost $45,000.

- New Entrants

  Each valuation is performed based on a closed group of Plan members; however, as employees terminate and retire, they are replaced by new members. The addition of these new members caused an increase in the contribution (primarily normal cost) of about $30,000.

Conclusion and Certification

Currently, the Unfunded Actuarial Accrued Liability (UAAL) is very close to $0 on an actuarial basis. If all investment losses were recognized immediately, the funding ratio would be about 86%, and the contribution rate would be approximately 13% of pay (about $0.8 million for fiscal 2011). Contributions are expected to increase over the next few years as investment losses from fiscal 2009 continue to be gradually recognized according to the plan's five year asset smoothing method.

The nature of funding pension benefits is such that there will be gains and losses each year due to demographic, salary, and investment experience, causing contributions to fluctuate. These gains and losses are expected to balance out over the long term; however, actuarial assumptions should be reviewed every few years, through an actuarial experience study, to validate their reasonability and to mitigate the chances of a consistent pattern of gains or losses.

This statement has been prepared in accordance with generally accepted actuarial principles and practices. The undersigned are members of the American Academy of Actuaries.

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Section 1:

Summary of Plan Provisions, Member Statistics, and Actuarial Assumptions

1.1: Brief Outline of Plan Provisions

Definitions

Credited Service

Service is defined as a period of continuous, uninterrupted employment as an employee of the City of Ferguson. Credited Service begins on the first day of the month coincident with or following the date of hire, and is counted in years and completed months.

Normal Retirement Date

The Normal Retirement Date is the first day of the month coincident with or following the completion of eight years of Credited Service, provided the participant is at least 60 years old. Unreduced benefits are also available at age 55 if the sum of the member's age and service is at least 82½.

Average Monthly Compensation

The highest average of the monthly compensation received during 60 consecutive months which are part of the last 96 months of service.

Funding

There are no employee contributions. The City contributes the amount necessary to fund any remaining cost over the future lifetime of current participants.

Participation

All regular, full time uniformed and non-uniformed employees are covered under the Plan.

Retirement Benefit

Eligibility

A Plan participant may retire at his or her Normal Retirement Date or upon completion of eight years of Credited Service and after age 55. Retirement before the Normal Retirement Date is reduced by one-quarter of one percent for each month that the retirement date precedes the Normal Retirement Date. The participant may also retire without a reduced benefit after his or her 55th birthday, provided the sum of his or her age plus Credited Service is equal to at least 82½.

Benefit Amount

The benefit is equal to one and three-fourths of a percent of Average Monthly Compensation for each year of Credited Service.

Form of Benefit

The benefit begins at retirement and continues for the Participant's life. Alternate optional forms which provide either a continuance benefit or a guaranteed certain period are also available. A reduction in benefit is applied for alternate forms.

Termination Benefit

An employee who has completed at least eight years of service is entitled to receive a monthly benefit calculated in accordance with the Retirement Benefit formula beginning at his or her Normal Retirement Date.

Disability Retirement

Eligibility

Total and permanent disability as deemed by the Board.

Benefit Amount

The monthly benefit, payable for the lifetime of the participant, is determined in accordance with Retirement Benefit provisions, and is payable immediately. In no event may the monthly amount be lower than $450.

Death Benefits

Retirement Eligible

If a participant dies while in active service and eligible for retirement, his beneficiary shall receive a benefit determined as an actuarial equivalent of the benefit as if the participant had actually retired on the date before their death. The benefit will be paid for 120 months.

Not Retirement Eligible

If a participant dies while in active service and vested but not eligible for retirement, his beneficiary shall receive 120 monthly payments equal to the amount of benefit accrued to the date of death, with no reduction for early retirement.

Supplemental Benefit

Upon retirement before Medicare Eligibility, the participant will receive a monthly supplement equal to $5 for each year of service (up to 30 years). The benefit is payable until the retiree is eligible for Medicare.

Changes in Benefit Provisions since Prior Valuation

There have been no changes in benefits since the prior valuation.

1.2: Participant Data

Active Participants	July 1, 2009	July 1, 2010
Number Active	131	128
Average Age	43.1	42.8
Average Service	11.7	11.3
Average Pay	$45,318	$46,707

Inactive Participants	July 1, 2009	July 1, 2010
Number of Retired Participants	65	66
Average Age	70.3	69.8
Average Monthly Benefit	$961	$1,119
Number of Disabled Participants	8	9
Average Age	64.6	64.2
Average Monthly Benefit	$798	$937
Number of Terminated Vested Participants	18	17
Average Age	55.1	55.0
Average Monthly Benefit	$635	$648
Number of Beneficiaries*	10	11
Average Age	64.2	66.3
Average Monthly Benefit	$863	$913

* Three beneficiaries with temporary benefits are included in these figures.

Summary of Active Participants

Number of Participants	Years of Service								
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total
20-24	5								5
25-29	10	5							15
30-34	10	8	1						19
35-39	7	7	5	1					20
40-44	1	1	6	5	1				14
45-49	1	2	4	3	3	1			14
50-54	2	3	2	3	3	1	1		15
55-59	1	5	3	1	2		7		19
60-64	1	2	3					1	7
65+									
Total	**38**	**33**	**24**	**13**	**9**	**2**	**8**	**1**	**128**

Summary of Active Participant Pay

Average Pay	Years of Service								
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total
20-24	34,910								34,910
25-29	36,865	37,365							37,031
30-34	38,782	43,138	48,568						41,131
35-39	38,115	40,062	47,811	52,998					41,965
40-44	43,272	43,243	49,612	55,661	52,998				51,107
45-49	31,824	56,940	45,703	54,419	51,584	61,676			50,586
50-54	58,053	39,617	37,866	49,351	55,252	56,181	84,215		50,993
55-59	82,410	41,321	43,014	54,579	65,510		70,366		57,696
60-64	70,470	41,028	40,934					67,579	48,987
65+									
Total	**40,576**	**41,727**	**45,654**	**53,630**	**56,058**	**58,929**	**72,098**	**67,579**	**46,707**

Changes in Plan Membership

	Active	Terminated Vested	Retired	Disabled	Surviving Beneficiaries	Total
Members on July 1, 2009	131	18	65	8	10	**232**
New Hires	8	-	-	-	-	**8**
Disabilities	(1)	-	-	1	-	**0**
Retirements/ New Beneficiaries	(6)	(2)	8	-	1	**1**
Terminations with Vested Benefits	-	-	(1)	-	-	**(1)**
Died or Terminated without a Vested Benefit	(4)	-	(2)	-	(2)	**(8)**
Benefits Expired	-	-	-	-	-	**0**
Data Corrections	-	1	(4)	-	2	**3**
Members on July 1, 2010	**128**	**17**	**66**	**9**	**11**	**231**

1.3: Actuarial Methods and Assumptions

Actuarial Method

Annual contributions to the Plan are computed under the Entry Age Normal Actuarial cost method.

Under this cost method, the annual employer contribution is computed as follows:

Normal Cost

- The benefit obligation for all future benefits payable under the Plan to current participants is computed. This is called the Fully Projected Liability (or Present Value of Future Benefits).
- Entry age is established based on the dates provided in the data from the City.
- A portion of the Fully Projected Liability is assigned for each participant to estimate prior Entry Age Normal costs, based on assumed past earnings The sum of these portions is called the Actuarial Accrued Liability.
- The excess of the total Fully Projected Liability over the Actuarial Accrued Liability is divided by the present value of future pay to determine the Normal Cost as a percentage of pay. The percentage for each individual is multiplied by their respective pay. The sum of these is the Employer Normal Cost.

Amortization Cost

- The value of assets used in the valuation (Actuarial Value of Assets) is subtracted from the Actuarial Accrued Liability, producing the Unfunded Actuarial Accrued Liability.
- The Unfunded Actuarial Accrued Liability is amortized as a level percentage of pay (assuming 4% per year growth in total payroll) over an open period of 10 years.
- Amortizations of future gains and losses can be tracked individually and amortized over different periods.

The sum of the Employer Normal Cost and the Amortization Cost is the total employer contribution. The contribution is assumed to be paid 12 months after the valuation date.

Changes in Methods since Prior Valuation

One slight change in methodology was implemented. Based on the expected timing of contributions, the amount has been determined as an end of year payment, rather than a percentage of projected payroll.

Actuarial Value of Plan Assets

The actuarial value of Plan assets (AVA) is based on a five year smoothed market value. The AVA for a given year is defined as the expected actuarial value, plus 20% of the difference between the actual market value and the expected actuarial value. The AVA cannot be less than 80% or more than 120% of the market value of assets.

Changes in Assumptions since Prior Valuation

There have been no changes in actuarial assumptions since the prior valuation.

Actuarial Assumptions

Valuation Date — All assets and liabilities are computed as of July 1, 2010.

Rate of Return — The annual rate of return on all Plan assets is assumed to be 7.50%, net of all investment and administrative expenses.

Increases in Pay — Salary levels are assumed to increase by 4.0% per year, due to inflation.

Active, Retired, and Disabled Mortality — Rates of mortality for active and retired Participants are given by the 1983 Group Annuity Mortality Tables for males and females published by the Society of Actuaries.

For deaths while employed, it is assumed that all members will have an eligible beneficiary.

Service Retirement — 25% of participants are assumed to retire when first eligible. Rates for other ages are based on the following:

Age	Rate
55-61	0.05
62	0.75
63-64	0.20
65+	1.00

Terminated vested members are assumed to retire are age 60.

Disability

Rates of disability for Participants are given by the Period 2, Benefit 4 rates in the 1952 disability study. Representative rates are as follows:

Age	Rate
20	0.0105
30	0.0012
40	0.0020
50	0.0046
60+	0.000

Termination

Rates of termination for all Participants from causes other than death, disability, and service retirement are based on the Participant's age, and are applied when not eligible for retirement. Representative rates are as follows:

Age	Rate
20	0.0658
30	0.0483
40	0.0384
50	0.0153
60	0.0150

Participant Data

Data on active and inactive Participants as of July 1, 2010 was updated by City staff. Participant data was reviewed for reasonableness and consistency but was neither verified nor audited.

Section 2:

Asset Information

2.1: Statement of Net Plan Assets

	June 30, 2009	June 30, 2010
Assets		
Interest Receivable	63,436	83,555
Investments		
Common Stock	8,737,927	9,488,034
Fixed Income Securities	7,977,855	7,170,894
Cash and Equivalents	295,253	724,927
Total Assets	17,074,471	17,467,410
Liabilities		
Accounts Payable	0	0
Accrued Expenses	0	0
Total Liabilities	0	0
Net Assets Available For Benefits	**17,074,471**	**17,467,410**

2.2: Statement of Changes in Net Plan Assets for Year Ending June 30, 2010

	Market Value	Expected Actuarial Value	Actuarial Value
Beginning of Plan Year	17,074,471	20,489,365	20,489,365
Contributions			
Employer Contributions	107,526	107,526	107,526
Employee Contributions	0	0	0
Total Contributions	107,526	107,526	107,526
Investment Income			
Interest and Dividends	408,351	N/A	N/A
Appreciation/(Depreciation) in Market Value	601,560	N/A	N/A
Other Investment Income	20,120	N/A	N/A
Realized Gains/(Losses)	352,071	N/A	N/A
Total Investment Income	1,382,102	1,503,641	796,355
Disbursements			
Benefit Payments	(1,044,935)	N/A	N/A
Other Payments	0	N/A	N/A
Expenses	(51,754)	N/A	N/A
Total Disbursements	(1,096,689)	(1,096,689)	(1,096,689)
End of Plan Year	17,467,410	21,003,843	20,296,557
Approximate Rate of Return	8.34%	7.50%	3.98%

Section 3:

Actuarial Computations

3.1: Computation of Employer Contribution Rate

		7/1/2009	7/1/2010
	Present Value of Future Benefits		
	Active Members	14,166,630	13,616,520
	Beneficiaries of Deceased Members	779,951	881,977
	Disabled Members	752,768	1,053,703
	Retired Members	6,482,033	7,870,686
	Terminated Vested Members	942,891	846,458
(1)	Total Present Value of Future Benefits	23,124,274	24,269,343
(2)	Actuarial Accrued Liability (AAL)	19,215,789	20,254,008
(3)	Actuarial Value of Plan Assets (AVA)	20,489,365	20,296,557
(4)	Unfunded Actuarial Accrued Liability (UAAL) (2) – (3)	(1,273,576)	(42,548)
(5)	Amortization of UAAL, Beginning of Year	(147,147)	(4,916)
(6)	Normal Cost, Beginning of Year	453,107	451,844
(7)	**Total Contribution, End of Year (5) + (6) + 7.5% interest***	**$ 317,969**	**$ 480,448**
(8)	Projected Payroll	6,174,150	6,217,662
(9)	**Contribution as a % of Pay (7) ÷ (8)**	**5.15%**	**7.73%**

* Contributions assumed to be paid 12 months after valuation date.

3.2: Change in Present Value of Accumulated Benefits

Present Value of Accumulated Benefits as of 7/1/2009		16,822,170
Change from:		
New Accruals	453,107	
Interest	1,256,461	
Changes in Assumptions	0	
Plan Amendments	0	
(Gain)/Loss	267,551	
Benefits Paid	(1,044,934)	
Total Change in Present Value		932,185
Present Value of Accumulated Benefits as of 7/1/2010		17,754,355

Section 4:

Disclosure Information Required Under GASB 25

Schedule of Employer Contributions

Year Ended (6/30)	Annual Required Contribution	Percentage Contributed
1999	$ 0	100%
2000	0	100%
2001	0	100%
2002	0	100%
2003	0	100%
2004	0	100%
2005	0	100%
2006	0	100%
2007	0	100%
2008	7,075	100%
2009	35,496	100%
2010	107,526	100%

Schedule of Funding Status

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	Unfunded Liability as a Percent of Payroll
7/1/2006	$20,277,743	$16,810,351	($3,467,392)	121%	$5,668,903	(61%)
7/1/2007	$21,097,686	$17,605,559	($3,492,127)	120%	$5,688,280	(61%)
7/1/2008	$21,600,485	$18,575,389	($3,025,096)	116%	$6,011,092	(50%)
7/1/2009	$20,489,365	$19,215,789	($1,273,576)	107%	$5,936,682	(21%)
7/1/2010	$20,296,557	$20,254,008	($42,548)	100%	$5,978,521	(1%)