City of Lansing
Police and Fire Retirement System

Actuarial Review and Analysis
as of December 31, 2010

January 13, 2012

EFI ACTUARIES | EFI ASSET/LIABILITY MANAGEMENT SERVICES, INC.
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Contents

Executive Summary

This report presents the results of an actuarial review and analysis of the City of Lansing Police and Fire Retirement System (P&F) as of December 31, 2010.

The required Employer contribution for Fiscal Year 2012 has been determined based on actual demographic and asset information as of December 31, 2010. A summary of the current status of the P&F Plan as a whole is as follows:

	December 31, 2009		December 31, 2010
Plan Membership			
Active	458		424
Inactive	15		20
Receiving Benefits	635		659
Total	1,108		1,103
Average Pay	$66,469		$67,302
Assets ($ millions)			
Market Value (MVA)	$ 235.5		$ 251.8
	Prior Actuary	**EFI**	
Valuation Results ($ millions)			
Valuation Assets (AVA)	$ 280.3	$ 279.3	$ 276.4
Actuarial Accrued Liability (AAL)	$ 337.3	$ 337.5	$ 359.3
Unfunded Accrued Liability	57.0	58.2	82.9
Funding Ratio (AVA/AAL)	83%	83%	77%
Funding Ratio (MVA/AAL)	70%	70%	70%
Contributions			
Employer Normal Cost Rate	15.47%	15.11%	15.15%
Total Employer Contribution Rate	25.70%	25.56%	31.03%
Estimated Employer Contribution (millions)	$ 8.2	$ 8.1	$ 9.2

Purpose of the Report

This Report presents the results of an actuarial review and analysis of the City of Lansing Police and Fire Retirement Plan as of December 31, 2010. The purposes of this Report are:

- To review the experience of the Plan over the past year and to discuss reasons for changes in Plan cost;
- To compute the annual contribution required to fund the Plan in accordance with actuarial principles;
- To discuss other issues associated with the determination of Plan costs and future cost implications; and
- To present those items required for disclosure under Statement No. 25 of the Governmental Accounting Standards Board (GASB).

Change in Plan Cost from December 31, 2009 to December 31, 2010

The employer contribution determined based on actual demographic and asset information has increased since the prior valuation. The actuarial assumptions and benefit provisions of the Plan remained unchanged; however, the narrative and table below summarize the impact of actuarial experience and other changes on Plan cost.

	Employer Contribution Rate
December 31, 2009 (Prior Actuary)	**25.70%**
Change in Cost Due to:	
Change in Actuary / Software / Methods	(0.14%)
Scheduled Investment Loss Recognition	3.70%
Actual Investment Experience	(0.38%)
Demographic and Salary Experience*	2.15%
Total Change	5.33%
December 31, 2010	**31.03%**
Projected Payroll	$ 29,780,315
Projected Contribution Amount	**$ 9,242,173**

* includes impact of data corrections and collection of Post Retirement Benefit Adjustment information.

The following impacted the change in cost from 12/31/2009 to 12/31/2010:

- There was a change in actuary and valuation system

  This report represents the first time that EFI has conducted the actuarial valuation of the plan, using EFI's own valuation systems and accompanying methods. To determine the impact of the change in system and methods, we conducted a valuation as of December 31, 2009 using the data supplied by the prior actuary, and compared our calculations to those in the December 31, 2009 valuation report.

  As shown in Section 4.1, our comparison with the results of the prior actuary was well within an acceptable range. The change in actuary caused a slight decrease in the contribution rate.

- Investment loss recognition

  As part of the asset smoothing process, investment losses from prior years (specifically from 2008) are gradually recognized and cause contribution rates to increase. This caused a significant increase in the contribution rate.

  More information on asset smoothing can be found in Section 3.3 herein.

- Actual Investment experience

  While prior loss recognition served to increase the contribution rate, the actual experience during 2010 represented an investment gain (12% return versus 8% expected). In accordance with the asset smoothing process, part of this gain was recognized immediately, partially offsetting the prior loss recognition. This is the intended operation of asset smoothing: gains and losses are expected to offset each other over time.

- Demographic and salary experience

  Demographic experience includes movement within the population from one time period to another, in this case during the course of calendar year 2010. When experience differs from that expected (e.g., number of retirements or terminations, salary increases), then actuarial gains and losses occur, increasing or decreasing the contribution rate.

  During 2010, demographic and salary experience was reasonably close to expected in aggregate. However, we enhanced the retiree database to include members receiving the Post Retirement Benefit Adjustment (i.e., $525 supplement). The inclusion of this data resulted in an increase in the total retiree liability and thus the contribution rate.

There were no plan changes or assumption/method changes that impacted costs since the prior valuation, other than the change in actuary as describe above.

Future Costs

There are a number of factors that can be expected to impact costs in the future:

- The liabilities and contributions determined in this Report are based on a set of actuarial assumptions. Despite the care and effort expended in determining the most accurate possible set of assumptions, the future experience of the Plan will certainly differ from what we assume. As a result, actuarial gains or losses will occur annually, and the employer contributions will fluctuate.

- Based on the assumptions and cost method, Plan assets are currently below the target level of assets; consequently, there is an unfunded actuarial accrued liability (UAAL). As a result, the employer contribution consists of two components: The normal cost and the amortization of the UAAL.

  The employer normal cost represents the cost of the additional benefits earned each year by active Plan members. The balance of the employer contribution represents the amortization of the unfunded liability, which is a payment, designed to bring the Plan's assets up to the target level. Currently, the amortization represents about half of the total contribution.

- There are investment losses that are deferred by the actuarial smoothing method and not included in the actuarial value of assets used to determine the employer contribution. The current amount of unrecognized investment experience is a net loss equal to about $24.6 million. This creates upward pressure on the contribution over the next few years.

Projections

The following graphs show baseline projections of contribution rates and funding progress for the Plan. These are based on only one of an infinite number of possible future outcomes – the case that all actuarial assumptions are exactly met each and every year. Even though this scenario is impossible, it is helpful to study these graphs to gain a sense of the general trend over the next two decades under current assumptions, policies, and plan provisions.

In Figure 1, the estimated funding ratio (assets as a percent of AAL) is shown on the left axis. The estimated UAAL is shown in dollars on the right axis. While gradual funding progress is expected in terms of the ratio of assets to actuarial liabilities, we can see that the UAAL is not expected to decrease at all under the current funding policies (i.e., rolling 30 year level percentage of pay amortization).

During the time that the UAAL is increasing most rapidly – over the next few years as investment losses are recognized – the contribution rate is expected to noticeably increase, as shown in Figure 2. After this, ignoring the impact of any gains or losses in the interim, a decrease in the rate is expected. Table 1 shows the dollar values of the expected future cash flows.

In other words, these projections are representations of the impact of past experience (prior to 12/31/2010) on future funding. What happens after 12/31/2010 will certainly impact contributions and funding as well.

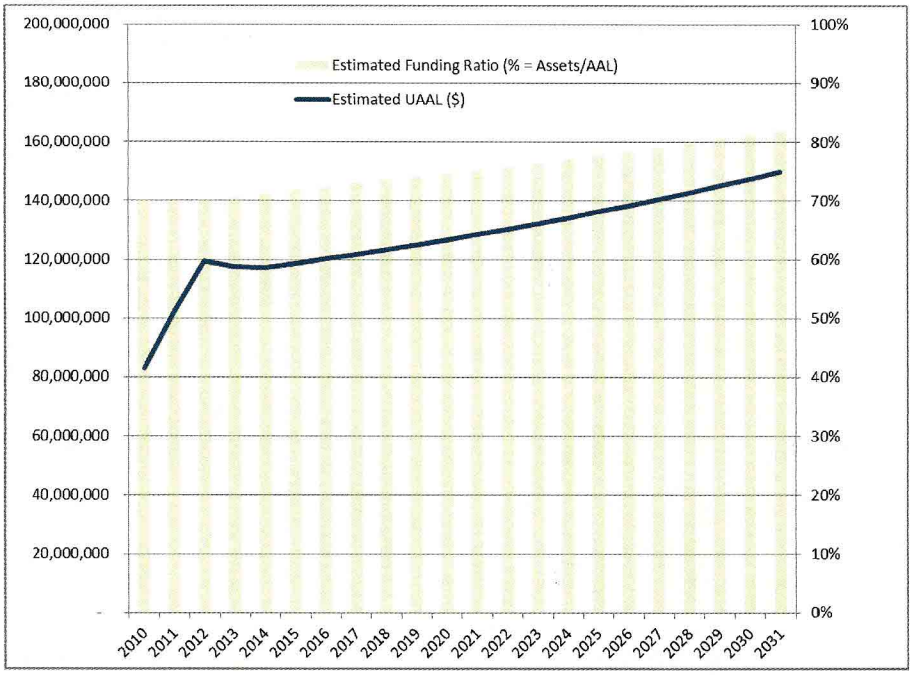

Figure 1: Estimated Future Funding Progress

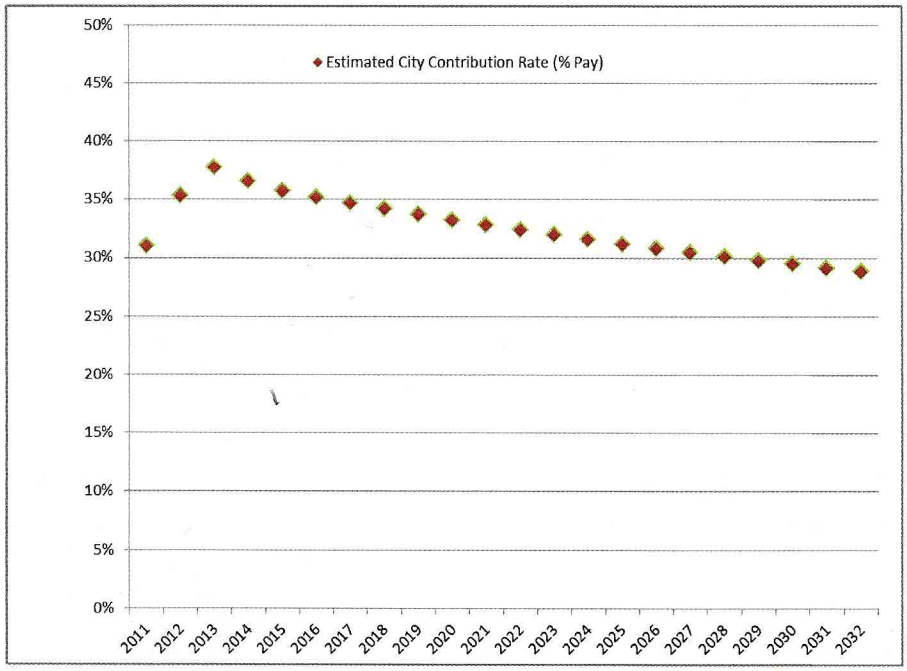

Figure 2: Estimated Future City Contribution Rates

Table 1: Estimated Future Cash Flows ($ thousands)

Year Ending December 31	Estimated City Contribution	Estimated Member Contributions	Estimated Benefit Payments
2011	$ 9,242	$ 2,326	$ 24,190
2012	10,476	2,419	24,502
2013	11,649	2,516	24,823
2014	11,730	2,617	25,091
2015	11,923	2,721	25,628
2016	12,210	2,830	26,745
2017	12,514	2,943	27,888
2018	12,829	3,061	28,946
2019	13,157	3,183	29,690
2020	13,497	3,310	30,559

Note: This is under the current amortization policy and assumptions.

Actuarial Certification

In this study, we conducted an examination of all participant data for reasonableness and consistency. Actuarial funding is based on the Entry Age Normal Cost Method. Under this method, the employer contribution provides for current cost (normal cost) plus an amount to amortize the unfunded actuarial accrued liability (UAAL). As of the valuation date, the amortization period is 30 years.

For actuarial valuation purposes, Plan assets are valued at Actuarial Value, using a method that gradually recognizes investment gains and losses. The assumptions and plan provisions are the same as those used in the prior valuation.

We certify that the valuation was performed in accordance with generally accepted actuarial principles and practices. In particular, the assumptions and methods used for funding purposes meet the parameters of the Governmental Accounting Standards Board Statement No. 25.

The undersigned are members of and meet the qualification standards of the American Academy of Actuaries, and are qualified to render the actuarial opinions presented herein.

Respectfully Submitted,

Gregory M. Stump, FSA, MAAA

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Section 1:

Summary of Plan Provisions and Member Data

1.1: Brief Outline of Plan Provisions

Membership

The Plan covers all Police Officers and Fire Fighters employed by the City.

Definitions

Final Average Compensation

Final Average Compensation is determined as the average of the member's compensation for the twenty-four consecutive months which produces the highest average.

Retirement

Eligibility

Members are eligible for Normal Retirement at age 55 or after earning 25 years of service.

Mandatory Retirement

Age 60 for Police groups; age 70 for Firefighters.

Benefit Amount

Benefit is determined as 3.2% of Final Average Compensation multiplied by the number of years of credited service, not to exceed 25 years. Maximum benefit is 80% of Final Average Compensation.

Form of Benefit

The spouse will receive 50% of the regular retirement benefit for their lifetime upon the death of the member. Optional benefit forms are also available, as described below.

Deferred Vested Benefit

Eligibility

A member is eligible for a Deferred Vested Benefit upon termination of employment after earning ten years of credited service.

Benefit Amount

The Deferred Vested Benefit is computed in the same manner as the Normal Retirement Benefit, but it is based on credited service and Final Average Compensation on the date of termination.

Form of Benefit

The Deferred Vested Benefit will be paid monthly beginning at age 55.

Duty Disability

Eligibility

Members are eligible for Duty Disability Retirement benefits immediately upon employment.

Benefit Amount (Before Retirement Eligible)

The Duty Disability Retirement Benefit payable to members is equal to 2/3 of Final Average Compensation.

Benefit Amount (After Retirement Eligible)

The Duty Disability Retirement Benefit payable to members is equal to the accrued Retirement benefit. In computing the benefit amount, credited service is increased to include the period of disability, and Final Average Compensation is calculated using current rates of compensation for those with similar rank.

The Disability Benefit will be offset by any workers' compensation payable on account of the disability.

Form of Benefit

The Duty Disability Retirement Benefit will be paid monthly beginning at the effective date of disability retirement and for the life of the member.

Non-Duty Disability

Eligibility

Members are eligible for Non-Duty Disability Retirement benefits after completing ten years of service.

Benefit Amount

The Non-Duty Disability Retirement Benefit payable to members is equal to the accrued Retirement benefit, with a maximum benefit equal to 2/3 of the annual rate of compensation of either a full-paid patrolman or a full-paid firefighter as of the date of retirement, whichever is higher.

Form of Benefit

The Non-Duty Disability Retirement Benefit will be paid monthly beginning at the effective date of disability retirement and for the life of the member.

Death in Line of Duty

Eligibility

The Death in Line of Duty Benefit is payable to the survivors of a member who died as a result of an injury or disease arising out of and in the course of duty.

Benefit Amount

A benefit equal to 86% of the Normal Retirement Benefit is payable to the widow or widower, with a minimum benefit equal to 1/3 of the deceased member's Final Compensation. In addition, unmarried children under the age of 21 will receive a benefit equal to 1/4 of the deceased member's Final Compensation, divided equally among children.

Form of Benefit

The benefit described above is payable as a life annuity.

Non-Duty Pre-Retirement Death

Eligibility

The Non-Duty Pre-Retirement Death Benefit is payable upon the death of a member after earning ten years of credited service.

Benefit Amount

50% of the accrued retirement benefit, computed in the same manner as the Retirement Benefit.

Form of Benefit

The benefit described above is payable as a life annuity to the surviving spouse.

Optional Benefit Forms

Prior to retirement, a member may elect a reduced benefit of either 93% or 86% of the original amount, thereby increasing the spouse benefit to either 75% or 86%, respectively.

Member Contributions

Each member contributes a percentage of Compensation to the Plan. The percentages contributed are as follows:

Contribution Rates (% of Pay)

Member Group	Percentage
Fire	7.58%
Police, Supervisor	9.52%
Police, Non-Supervisor	8.50%

Ad Hoc Cost-of-Living Adjustments

One-time cost of living increases were granted in 1973, 1984 and 1987.

Post Retirement Benefit Adjustments

Effective January 1, 1995 and each January 1 thereafter, the annual benefit amount will be increased by $525 for each retiree who meets each of the following conditions:

1) 25 or more years of credited service at the time of retirement
2) Age 60 as of the January 1 increase date
3) Has been retired at least 6 months as of the January 1 increase date

The $525 amount is reduced for retirees who elected the 75% or 86% optional forms of benefit ($488.25 and $451.50, respectively).

Spouses of deceased members are also eligible for benefit increases each January 1 if:

1) The deceased member had at least 25 years of credited service at the time of retirement
2) The deceased member would have attained at least age 60 as of the January 1 increase date
3) The deceased member had been deceased at least 6 months as of the January 1 increase date.

The spouse's annual benefit increase amount is adjusted based on the form of payment elected by the deceased member, according to the following schedule:

Spouse Benefit %	Annual Benefit Increase
50%	$262.50
75%	$393.75
86%	$451.50

The benefit increases accumulate from year to year, but cumulative benefit increases shall not exceed cumulative increases in the Consumer Price Index.

Changes in Plan Provisions since Prior Valuation

There have been no changes in Plan provisions since the prior valuation.

1.2: Member Data Summary

Data for active and inactive members and their beneficiaries as of the valuation date was supplied by the Plan Administrator on electronic media. Member data was neither verified nor audited.

	12/31/2009	12/31/2010		
Active Participants	**Total***	**Fire**	**Police**	**Total**
Number of Active Employees	458	198	226	424
Average Age	39.2	40.5	38.8	39.6
Average Service	12.6	12.9	13.0	13.0
Average Pay	$ 66,469	$ 70,767	$ 64,266	$ 67,302
Number Vested	297			286

Inactive Participants	**Total***	**Fire**	**Police**	**Total**
Number of Retired Participants	465	201	265	466
Average Age	64.6	65.1	64.8	64.9
Average Annual Benefit	$ 39,300	$ 44,611	$40,447	$ 42,243
Number of Disabled Retirees	50	36	23	59
Average Age	55.3	55.9	54.2	55.2
Average Annual Benefit	$ 35,372	$ 37,802	$ 33,469	$ 36,113
Number of Beneficiaries/EDROs	120	56	78	134
Average Age	75.8	72.9	72.8	72.8
Average Annual Benefit	$ 14,939	$ 14,867	$ 14,439	$ 14,618
Number of Deferred Vested Participants	15	1	16	17
Average Age	48.1	39.4	48.1	47.6
Average Annual Benefit	$ 23,262	$ 27,142	$ 24,394	$ 24,556
Number of Terminated Participants Due Refunds	0	2	1	3

* From prior valuation report

1.3: Changes in Membership from Prior Valuation

	Actives	Non-vested Terminations	Vested Terminations	Retired	Disabled	Beneficiaries*	Total Participants
December 31, 2009	**458**	**0**	**15**	**464**	**50**	**121**	**1,108**
New Entrants							0
Rehires							0
Retirements	(25)			25			0
Disabilities	(3)				3		0
Vested Terminations	(2)		2				0
Died, With Beneficiaries' Benefit Payable				(6)		6	0
Non-Vested Terminations and Death without beneficiary	(3)	3		(3)		(8)	(11)
Domestic Relations Orders						5	5
Withdrawals Paid	(1)						(1)
Data Corrections				(14)	6	10	2
December 31, 2010	**424**	**3**	**17**	**466**	**59**	**134**	**1,103**

* also includes EDRO beneficiaries

Section 2:

Actuarial Methods and Assumptions

2.1: Actuarial Methods

Actuarial Cost Method

Annual contributions to the Plan are computed under the Entry Age Normal Actuarial Cost Method. Under this Cost Method, the Normal Cost is calculated as the amount necessary to fund members' benefits as a level percentage of payroll over their projected working lives.

At each valuation date, the Actuarial Accrued Liability is equal to the difference between the liability for the members' total projected benefit and the present value of future Normal Cost contributions.

The excess of the Actuarial Accrued Liability (AAL) over Plan assets is the Unfunded Actuarial Accrued Liability (UAAL), and the liability for each change in UAAL is amortized as a level percent of payroll over an open period of 30 years.

The total Plan cost is the sum of the Normal Cost and the amortization of the Unfunded Actuarial Accrued Liability.

Actuarial Value of Plan Assets

The valuation assets are equal to the expected actuarial value, plus a portion of actuarial gains and losses. Actuarial gains and losses from Plan investments over each of the five years prior to the calculation date are recognized at the rate of 20% per year in computing the actuarial value of assets. The detailed calculation of the actuarial value of Plan assets is shown in Section 3.3.

Changes in Actuarial Methods since Prior Valuation

There have been no changes in actuarial methods since the prior valuation, other than the change in actuary.

2.2: Actuarial Assumptions

Valuation Date

All assets and liabilities are computed as of December 31, 2010.

Rate of Investment Return

The annual rate of return on all Plan assets is assumed to be 8.0%, net of investment and administrative expenses.

Cost of Living (inflation)

The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 4.00% per year.

Increases in Pay

Increases in salary are assumed to include a wage inflation component of 4.0% per year, plus an amount based on age and service, as shown below (representative rates):

	Service					
Age	**0**	**5**	**10**	**15**	**20**	**25**
25	11.5%	7.0%				
30	8.0%	3.5%	2.5%			
40	6.4%	1.9%	0.9%	0.4%	0.4%	
50	6.2%	1.7%	0.7%	0.2%	0.2%	0.2%

Member Mortality

Rates of mortality for Plan members are specified by the Retired Pensioners (RP) 2000 Mortality Tables for males and females. For Disabled members, the disabled versions of these tables are assumed.

Service Retirement

Retirement is assumed to occur among eligible members in accordance with the table below.

Age	Fire	Police
45	39%	52%
46	39%	65%
47	52%	78%
48	52%	65%
49-52	52%	52%
53-58	39%	52%
59	52%	52%
60+	100%	100%

Disability

Rates of disability vary based on the age of the member as shown below. 95% of disabilities are assumed to be duty-related.

Representative Assumed Rates of Disability

Age	Rate
20	0.08%
30	0.08%
40	0.50%
50	0.60%
60	1.30%
65+	0.00%

Termination

Rates of termination vary based on the age and service of the member as shown below.

Representative Assumed Rates of Termination

Service	All Ages
0	5.0%
1	3.0%
2	2.0%
3	1.0%
4	1.0%

Age	Service 5+
20	0.8%
25	0.8%
30	0.7%
40	0.4%
50	0.2%
55+	0.0%

Family Composition

90% of Plan members are assumed to be married. If no spouse data is available, male spouses are assumed to be three years older than their wives.

Change in Actuarial Assumptions since Prior Valuation

There have been no changes to the Actuarial Assumptions since the prior valuation.

2.3: Glossary of Actuarial Terms

Actuarial Accrued Liability

A plan's actuarial accrued liability is the level of assets estimated by the system actuary to be needed as of the valuation date to

- Finance all previously earned benefits for actively employed members of the plan (and their beneficiaries, if applicable) for when they eventually retire, die or terminate with deferred vested benefits, and
- Finance all currently payable benefits of current pensioners and their beneficiaries (if applicable).

It is important to note that the Actuarial Accrued Liability is not a debt; instead, it is an asset target set by the actuarial cost method to produce an orderly accumulation of assets to finance the plan's obligations.

Actuarial Assumptions

The actuarial assumptions are the actuary's anticipated rates of future termination, death, disability and retirement for each member of the plan as well as the actuary's anticipated rate of investment return on underlying assets. Because these assumptions will not be in exact accord with actual events, actuarial gains and losses will materialize.

Actuarial Value of Assets

The actuarial value of assets, used for funding purposes, is computed using an asset smoothing technique in which investment gains and losses are not fully recognized in the year they occur, but are spread out over time, typically a specified number of years. Use of an actuarial value of assets (rather than market value) helps avoid large fluctuations in recognized value of the underlying assets and, in turn, avoids large fluctuations in required contribution rates.

Actuarial Present Value of Benefits

The actuarial present value of benefits is the Actuarial Accrued Liability plus actuarial present value of future Normal Costs. The actuarial present value of benefits can also be explained as the actuarial present value of all future benefits expected to be paid to the Plan's current members, whether based on current or future service.

Actuarial Funding Policy

The plan's actuarial funding policy is the scheduled program of accumulating assets to fund the plan's obligations, often as a level percentage of payroll.

The funding policy includes:

- The Normal Cost, and
- Amortization of the Unfunded or Overfunded Actuarial Accrued Liability (whichever is applicable).

Investment Gains and Losses

When the investment return on assets exceeds the assumed rate of return (the actuarial assumption as to investment return), this difference is identified as an investment gain. Correspondingly, when the returns are less than expected, this difference is identified as an investment loss. These investment gains and losses are either recognized immediately to produce the market value of assets or are spread out to produce the Actuarial Value of Assets.

Normal Cost

The Normal Cost is calculated as the annual amount necessary to fund each member's benefits from that member's Plan entry date to the end of his or her projected working life.

Unfunded Actuarial Accrued Liability

When the actuarial value of assets is below the Actuarial Accrued Liability, there is an Unfunded Actuarial Accrued Liability is funded according to an amortization schedule. When the actuarial value of assets is in excess of the Actuarial Accrued Liability, the amortization is negative, and can partially or fully offset the Normal Cost contribution.

Section 3:

Asset Information

3.1: Statement of Net Plan Assets

	12/31/2009	12/31/2010
ASSETS		
Cash and Short-Term Investments	$ 10,065,961	$ 14,518,659
Receivables	841,994	(785,973)
Accrued Interest and Dividends	276,597	300,415
Investments:		
Government Bonds	38,076,040	42,518,850
Corporate Bonds	51,968,748	43,965,995
Common Stock	56,425,392	126,147,343
Other Equities	86,068,000	33,572,842
Real Estate	9,452,000	10,086,419
Total System Assets	**$ 253,174,732**	**$ 270,324,550**
Accounts Payable	(179,270)	(191,756)
NET ASSETS AVAILABLE FOR BENEFIT	**$ 252,995,462**	**$ 270,132,794**

3.2: Income Statement

		2009	2010
Total Plan Assets – Beginning of Year	$	229,194,262	$ 252,995,462
ADDITIONS			
Member contributions		2,584,162	3,178,514
Employer contributions		6,790,757	7,900,000
Employer contributions – Healthcare Reserve		725,000	47,677
Adjustment		0	0
Investment Income:			
Interest		1,968,596	12,470,158
Dividends		229,924	551,108
Market Appreciation		35,733,627	16,903,189
Total Additions	+$	48,032,066	41,050,646
EXPENDITURES			
Member contributions refunded		0	0
Retirement benefits paid		23,381,532	22,982,285
Administrative expenses		24,527	310,985
Investment expenses		824,807	620,045
Transfers		0	0
Total Expenditures	-$	24,230,866	23,913,315
NET INCREASE/(DECREASE)	$	23,801,200	17,137,331
Total Plan Assets – End of Year		**252,995,462**	**$ 270,132,794**

3.3: Computation of Actuarial Value of Assets

Year Ended	Expected Earnings[1]	Actual Earnings[2]	Investment Gain/(Loss)	Percent of (c) Deferred	Amount Deferred
	(a)	(b)	(c) = (b) – (a)	(d)	(e) = (c) x (d)
12/31/2010	23,061,562	29,613,471	6,551,909	80%	5,241,527
12/31/2009	23,753,776	37,082,814	13,329,038	60%	7,997,423
12/31/2008	24,277,335	(66,223,328)	(90,500,663)	40%	(36,200,265)
12/31/2007	22,983,393	14,749,778	(8,233,615)	20%	(1,646,723)
(1) Total Gain/(Loss) Unrecognized as of Valuation Date					(24,608,038)
(2) Market Value, Total Fund					270,132,794
(3) Actuarial Value, Total Fund: [(2)-(1)]					294,740,832
(4) Healthcare Reserve as of 12/31/2010					18,363,791
(5) Actuarial Value, Pension Plan: [(3)-(4)]					276,377,041
Ratio of Actuarial Value to Market Value, Total Fund					109.1%
Approximate Rate of Return based on Market Value					12.0%
Approximate Rate of Return based on Actuarial Value					3.2%

[1] Computed assuming 8.0% return on actuarial value. Employee contributions and benefits assumed to be paid throughout the year, employer contributions one month prior to end of year.

[2] Market Value return

Section 4:

Actuarial Computations

4.1: Comparison of Prior Actuarial Calculations

	Prior Actuary (2010)	EFI (2010)
Total Entry Age Normal Cost	$ 7,205,774	7,094,363
Estimated Employee Contributions	2,496,297	2,495,256
Net City Normal Cost	4,709,477	4,599,107
Valuation Payroll	30,442,645	30,442,645
City Normal Cost Rate (% of pay)	15.47%	15.11%
Active Actuarial Accrued Liability	120,691,304	123,095,021
Terminated Members Actuarial Accrued Liability	2,087,748	2,310,661
Retiree/Beneficiary Actuarial Accrued Liability	214,535,784	212,109,012
Total Actuarial Accrued Liability (AAL)	337,314,836	337,514,694
Actuarial Value of Assets	280,341,913	279,264,980
Net Unfunded Actuarial Accrued Liability (UAAL)	56,972,923	58,249,713
Amortization of UAAL	3,113,725	3,183,505
Amortization Rate (% of pay)	10.22%	10.46%
Total City Contribution Rate	**25.69%**	**25.56%**
Projected Fiscal Payroll	32,076,982	31,824,403
Estimated City Contribution	$ 8,240,688	$ 8,135,856

4.2: Employer Contributions

	2010 (EFI)	2011
Total Entry Age Normal Cost	7,094,363	6,650,599
Estimated Employee Contributions	2,495,256	2,326,159
Net City Normal Cost	4,599,107	4,324,441
Valuation Payroll	30,442,645	28,536,056
City Normal Cost Rate (% of pay)	15.11%	15.15%
Active Actuarial Accrued Liability	123,095,021	114,784,182
Terminated Members Actuarial Accrued Liability	2,310,661	2,592,014
Retiree/Beneficiary Actuarial Accrued Liability	212,109,012	241,916,820
Total Actuarial Accrued Liability	337,514,694	359,293,016
Actuarial Value of Assets (Section 3.3)	279,264,980	276,377,041
Net Unfunded Actuarial Accrued Liability (UAAL)	58,249,713	82,915,974
Amortization of UAAL	3,183,505	4,531,583
Amortization Rate (% of pay)	10.46%	15.88%
Total City Contribution Rate	**25.56%**	**31.03%**
Projected Fiscal Payroll	31,824,403	29,780,315
Estimated City Contribution	**$ 8,135,856**	**$ 9,242,173**

Section 5:

Disclosure Information

5.1: GASB Schedules

GASB Statement No. 25 requires preparation of schedules of funding status and employer contributions, as well as the disclosure of plan provisions, actuarial assumptions, and other information. The required schedules are shown below. In each case, we have relied upon information from our files and contained in the reports of other actuaries employed by the employer in completing the schedules.

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
12/31/2001	280,518,000	249,204,000	(31,314,000)	108%	25,751,000	(122%)
12/31/2002	280,686,000	259,282,000	(21,404,000)	104%	26,152,000	(82%)
12/31/2003	277,947,000	267,786,000	(10,161,000)	100%	26,484,000	(38%)
12/31/2004	275,807,000	279,873,000	4,066,000	99%	27,754,000	15%
12/31/2005	275,216,000	290,299,000	15,083,000	95%	27,855,000	54%
12/31/2006	278,839,000	308,193,000	29,354,000	91%	29,582,000	99%
12/31/2007	293,571,000	315,635,000	22,065,000	93%	29,600,000	75%
12/31/2008	287,394,000	326,673,000	39,279,000	88%	30,161,000	130%
12/31/2009	280,342,000	337,315,000	56,973,000	83%	30,443,000	187%
12/31/2010	276,377,041	359,293,016	82,915,974	77%	28,536,056	291%

Schedule of Employer Contributions

Fiscal Year Ending	Annual Required Contribution	Actual Contribution*	Percentage Contributed
6/30/2001	3,561,000	3,561,000	100.0%
6/30/2002	2,665,000	2,665,000	100.0%
6/30/2003	2,637,000	2,637,000	100.0%
6/30/2004	3,287,000	3,277,000	99.7%
6/30/2005	3,334,000	3,344,000	100.3%
6/30/2006	4,659,000	4,659,000	100.0%
6/30/2007	5,386,000	5,386,000	100.0%
6/30/2008	6,521,000	6,521,000	100.0%
6/30/2009	6,094,000	6,484,000	106.4%
6/30/2010	7,179,000	6,791,000	94.6%
6/30/2011	8,240,688	8,240,688	100.0%
6/30/2012	9,242,173		

* estimated based on percentages shown in prior valuation report

Net Pension Obligation/(Asset)

	2010	2011
Net Pension Obligation/(Asset) – Beginning of Year	(388,603)	(9,021)
Annual Required Contribution	7,179,360	8,240,688
Interest on the NPO	(31,088)	(772)
Adjustment to the NPO	22,067	493
Annual Pension Cost	7,170,339	8,240,459
Contributions	(6,790,757)	(8,240,688)
Increase/(Decrease) in NPO	379,582	(229)
Net Pension Obligation/(Asset) – End of Year	(9,021)	(9,250)

5.2: Summary of Valuation Information

The table below summarizes certain information about this actuarial report.

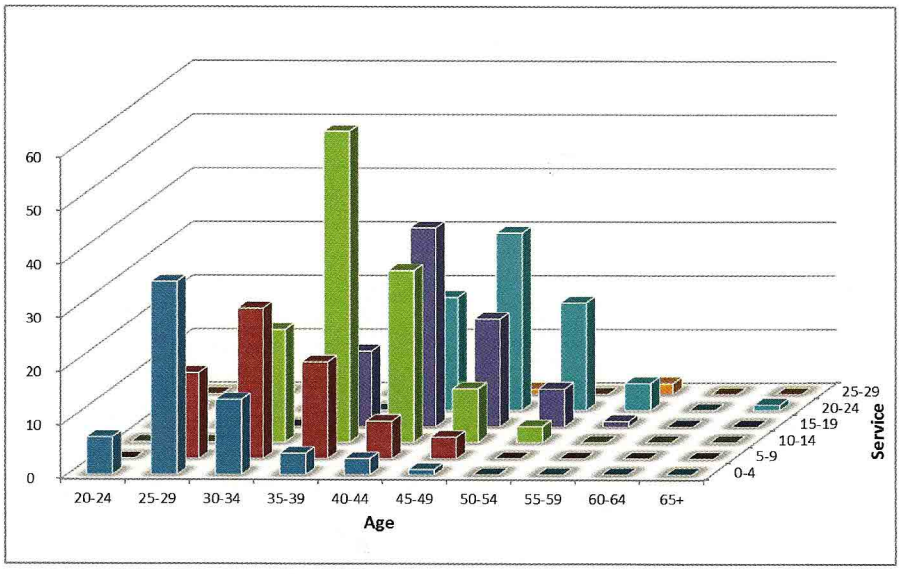
Valuation date	December 31, 2010
Actuarial cost method	Entry Age Normal, Level Percentage of Payroll
Amortization method	Level Percentage of Payroll
Remaining amortization period	30 years
Asset valuation method	Five year closed period smoothing (Market Value vs. Expected Actuarial Value)
Actuarial assumptions:	
Investment rate of return*	8.00%
Projected salary increases*	4.00% - 11.00%, based on age and service
*Includes inflation at	4.00%
Cost of living adjustments	None assumed

Appendix:

Detailed Participant Data

Count of Active Members

Service / Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total
20-24	7							7
25-29	36	16						52
30-34	14	28	21					63
35-39	4	18	58	14				94
40-44	3	7	32	37	21			100
45-49	1	4	10	20	33	1		69
50-54			3	7	20			30
55-59				1	5	2		8
60-64								0
65+					1			1
Total	**65**	**73**	**124**	**79**	**80**	**3**	**0**	**424**



Average Salary of Active Members

Service / Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total
20-24	49,268							49,268
25-29	56,005	61,814						57,792
30-34	56,495	63,885	65,061					62,635
35-39	57,095	66,147	66,175	71,061				66,511
40-44	56,516	65,323	68,288	69,869	76,730			70,085
45-49	62,261	71,706	68,805	72,004	76,362	77,906		73,552
50-54			72,051	68,340	75,535			73,508
55-59				73,212	71,552	95,263		77,687
60-64								0
65+					77,632			**77,632**
Total	**55,572**	**64,555**	**66,886**	**70,528**	**75,967**	**89,477**	**0**	**67,302**

Inactive Participants

Number of

Age	Beneficiaries	Retired	Disabled	Terminated Vested	Total
Under 35	0	0	0	1	1
35-39	1	0	6	2	9
40-44	1	0	8	0	9
45-49	5	25	12	6	48
50-54	7	46	7	8	68
55-59	11	94	8	0	113
60-64	8	97	7	0	112
65-69	19	74	3	0	96
70-74	10	47	0	0	57
75-79	19	32	4	0	55
80+	53	51	4	0	108
Total	**134**	**466**	**59**	**17**	**676**

Average Annual Benefit

Age	Beneficiaries	Retired	Disabled	Terminated Vested	All Groups
30-34	$ 0	$ 0	$ 0	$ 41,373	$ 41,373
35-39	11,213	0	51,078	24,578	26,848
40-44	2,553	0	37,676	0	33,773
45-49	37,903	61,112	81,811	25,521	46,187
50-54	30,481	58,973	74,422	21,723	47,999
55-59	39,833	46,718	40,145	0	43,670
60-64	33,852	41,131	41,758	0	39,488
65-69	21,779	37,899	27,898	0	33,457
70-74	15,637	38,748	0	0	34,694
75-79	13,233	30,287	29,272	0	24,322
80+	12,369	28,799	28,852	0	20,738
Total	**$ 14,618**	**$ 42,243**	**$ 36,113**	**$ 24,556**	**$ 35,787**