



**CITY OF LANSING**  
**EMPLOYEES' RETIREMENT SYSTEM**  
**ACTUARIAL VALUATION**  
**AS OF DECEMBER 31, 2013**

Boomershine Consulting Group  
Executive Center I  
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December, 2014

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December 15, 2014

City of Lansing Employees' Retirement System  
124 W. Michigan Avenue  
8th Floor  
Lansing, MI 48933

### ***Executive Summary***

Members of the Board:

The following report sets forth the Actuarial Valuation of the City of Lansing Employees' Retirement System as of December 31, 2013. The report is based on participant data and asset summary as of December 31, 2013 as submitted by the Plan Administrator and City finance department. We relied on this information without auditing it.

### **INVESTMENT PERFORMANCE:**

The total Market Value of Plan Assets for the plan year ending December 31, 2013 was \$201,818,037. Plan assets exclude from this a reserve for healthcare benefits. The total yield of the fund for the plan year ending December 31, 2013 was 13.5% on the market value of assets and 10.4% on an actuarial basis.

The Plan uses a smoothing method to determine the City's contributions. Under this method, asset gains or losses are spread over a 5-year period. The gains and losses are determined every year by comparing actual investment returns with expected asset performance.

Details of the development of the Actuarial Asset Value are shown on page 4.

### **FUNDING RECOMMENDATIONS:**

The total recommended City contribution for fiscal year 2015 is \$10,547,556. Last year the total recommended contribution was \$9,361,009. This increase is due to the adoption of more conservative assumptions, as well as demographic losses.

### **FUNDING PROGRESS:**

The Actuarial Accrued Liability as of December 31, 2013 is \$313,258,746 compared to the Actuarial Value of Assets of \$172,687,582, resulting in a plan funded ratio of 55.1%. On a market value basis, this ratio is 58.0%.

The 12/31/2013 actuarial liabilities and fiscal year 2015 contributions reflect changes to assumed return and inflation, adopted by the Board. The return and inflation assumptions were decreased from 7.8% and 3.3% to 7.6% and 3.1%, respectively.

This report is prepared in accordance with generally accepted actuarial principles and practices. In the opinion of the City and its actuary, the actuarial assumptions used are reasonably related to Plan experience and expectations.

The undersigned are members of the American Academy of Actuaries, and are qualified to render the actuarial opinions presented in this Report.

The information presented in this report pertains only to the funding of the System. All of the figures related to accounting and disclosure under GASB 67 and 68 are now presented in a separate report.

Respectfully submitted,  
BOOMERSHINE CONSULTING GROUP, L.L.C.

  
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Chief Actuary

**TRUST FUND STATEMENT**  
**AND**  
**DETERMINATION OF VALUATION ASSETS**

**TRUST FUND STATEMENT FOR THE PLAN YEAR ENDING  
DECEMBER 31, 2013**

Market Value of Total Fund as of December 31, 2012 \* \$189,565,077

**Receipts:**

Employer Contribution - Pension Fund	8,992,536
Employer Contribution - Healthcare Reserve	300,000
Member Contributions	1,279,756
Adjustments Investment Income	
Interest	3,668,798
Dividends	723,829
Market Appreciation	20,823,647

Total Additions \$35,788,566

**Disbursements:**

Member Refund	968,348
Distributions to Participants/ Beneficiaries	21,822,174
Administrative Expenses and Other	65,078
Investment Expenses	680,006
Total Disbursements	\$23,535,607

Net Increase/(Decrease) in Assets \$12,252,960

Market Value of Total Fund as of December 31, 2013 \$201,818,037

\* Beginning of year amount includes reduction for funds payable for 911 transfer. Funds were transferred during 2013.

**ALLOCATION OF NET PLAN ASSETS AS OF DECEMBER 31, 2013**

	<u>Market Value</u>	<u>%</u>
Cash and Short Term Investments	20,257,949	10.0%
Equity	102,012,748	50.6%
Fixed Income	72,224,293	35.8%
Real Estate	12,784,293	6.3%
<u>Accounts payable</u>	<u>(5,461,246)</u>	<u>-2.7%</u>
TOTAL ASSETS	\$201,818,037	100.0%
ADJUSTMENT		
TOTAL ASSETS AFTER ADJUSTMENT		

Estimated Rate of Return on Market Value for 2013: 13.49%

**DETERMINATION OF ACTUARIAL VALUE OF ASSETS AS OF DECEMBER 31, 2013**

Market Value of Total Fund as of December 31, 2012			\$189,565,077
Plus: Contributions			9,303,944
Less: Benefit Payments, Transfers			21,822,174
Less: Expenses			65,078
Plus: Expected Return during 2013 (@ 7.8%, prior to assumption change)			13,983,163
Expected Asset Value			\$191,264,932
Market Value of Total Fund as of December 31, 2013			\$201,818,037
Asset Gain/(Loss) for 2013 Plan Year			10,553,104
Less: 80% of 2013 Gain/(Loss)	80% *	10,553,104	8,442,484
Less: 60% of 2012 Gain/(Loss)	60% *	7,932,079	4,759,247
Less: 40% of 2011 Gain/(Loss)	40% *	(10,802,449)	(4,320,980)
Less: 20% of 2010 Gain/(Loss)	20% *	6,246,305	1,249,261
Total Deferred Gain/(Loss)			10,130,012
Actuarial Value of Assets, Total Fund - December 31, 2013			\$191,688,025
as % of Market Value of Assets			95.0%
Healthcare Reserve as of December 31, 2013			\$20,004,547
Adjusted Healthcare Reserve <sup>1</sup>			19,000,443
Actuarial Value of Assets, Pension Plan - December 31, 2013			\$172,687,582

Estimated Rate of Return on the Actuarial Value is 10.41%

<sup>1</sup> Takes into account asset smoothing

**PARTICIPANT SUMMARY**  
**AGE, SERVICE AND COMPENSATION DISTRIBUTION**



City of Lansing  
Employees' Retirement System

Actuarial Valuation  
as of December 31, 2013

**PARTICIPANT SUMMARY AND RECONCILIATION**

	<u>Active Participants</u>	<u>Vested Terminations</u>	<u>Retired**</u>	<u>Disabled</u>	<u>Beneficiary</u>	<u>Total</u>
Participants as of December 31, 2012	406	70	698	21	140	1,335
Corrections						0
Retired	(31)	(7)	38	0	0	0
Terminated Vested	(6)	6	0	0	0	0
Terminated Non-Vested (Member Contributions refunded)	(9)	0	0	0	0	(9)
Disabled	(5)	0	0	5	0	0
Deceased	0	0	(13)	(1)	(9)	(23)
New Beneficiary / EDRO	0	0	0	0	6	6
Rehired	2	(1)	0	0	0	1
Terminated Non-Vested (Member Contributions to be refunded)	0	0	0	0	0	0
Transfers In	0	0	0	0	0	0
Transfers to Police and Fire Plan	0	0	0	0	0	0
New Hires	19	0	0	0	0	19
Data Adjustments	(3)	0	12	0	(12)	(3)
Participants as of December 31, 2013	373	68	735	25	125	1,326

\*\*Separated out the retiree EDROs from the Beneficiary EDROs from 2013 Valuation

<b>Inactive Participants</b>	<b><u>12/31/2012</u></b>	<b><u>12/31/2013</u></b>
Number of Retired Participants	698	735
Average Age	66.3	66.5
Average Annual Benefit	\$26,390	\$26,821
Number of Disabled Participants	21	25
Average Age	62.7	61.4
Average Annual Benefit	\$18,238	\$18,477
Number of Beneficiaries/EDROs	140	125
Average Age	73.2	73.5
Average Annual Benefit	\$12,339	\$12,367
Number of Deferred Vested Participants	70	68
Average Age	51.2	51.1
Average Annual Benefit	\$11,760	\$11,716

**DISTRIBUTION OF ACTIVE PARTICIPANTS AND AVERAGE COMPENSATION  
BY AGE AND SERVICE AS OF DECEMBER 31, 2013**

Nearest Age	-----Years of Credited Service-----									Total
	<1	1	2 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	>29	
<20										
20 - 24		1 32,431								1 32,431
25 - 29	5 17,337	1 27,636								6 19,053
30 - 34	5 16,502		2 47,295	8 48,531	1 42,621					16 37,998
35 - 39	2 25,310			10 49,449	9 48,132					21 46,586
40 - 44	4 41,889	1 36,506	2 69,415	12 48,644	26 54,239	4 52,704	1 44,415			50 51,841
45 - 49	3 27,160	1 38,603	2 47,655	14 57,094	35 51,967	21 55,505	6 57,685			82 52,991
50 - 54	1 54,218		4 39,447	15 54,903	33 55,467	24 48,006	7 55,702	4 77,964		88 53,635
55 - 59			4 62,263	9 60,306	25 51,933	15 58,268	11 54,980	3 63,530	1 92,608	68 56,649
60 - 64				4 45,703	12 51,161	7 57,627	4 58,506	1 55,943		28 53,218
>64				2 96,964	9 50,490	1 63,808	1 65,220			13 59,797
Total	20 26,154	4 33,794	14 52,541	74 54,173	150 52,680	72 53,747	30 56,149	8 69,799	1 92,608	373

	Males	Females	Total
Total Compensation	11,972,941	7,536,859	19,509,800
Average Compensation	54,422	49,261	52,305
Arithmetic Averages:			
Nearest Age	49.6	49.8	49.7
Completed Years of Service	12.5	10.6	11.7
Salary-Weighted Averages:			
Nearest Age	50.3	50.4	50.4
Completed Years of Service	13.1	10.9	12.2
Number of Participants	220	153	373
Percent male / female	59.0%	41.0%	100.0%

## VALUATION SUMMARY

**DEVELOPMENT OF RECOMMENDED CONTRIBUTION**

	<u>12/31/2012</u>	<u>12/31/2013</u>
Total Entry Age Normal Cost	\$ 2,793,216	\$ 2,862,200
<u>Estimated Employee Contributions</u>	<u>1,167,096</u>	<u>1,058,421</u>
Net City Normal Cost	\$ 1,626,120	\$ 1,803,779
Valuation Payroll	\$ 22,838,598	\$ 20,874,143
City Normal Cost Rate (% of pay)	7.1%	8.6%
Actuarial Accrued Liability		
Active Employees	\$ 51,989,946	\$ 55,328,454
Member Benefit Fund	15,814,018	15,621,340
Terminated Vested	6,447,052	5,404,429
<u>Retirees and Beneficiaries</u>	<u>219,723,417</u>	<u>236,904,523</u>
Total Actuarial Accrued Liability	\$ 293,974,433	\$ 313,258,746
Actuarial Value of Assets	167,569,807	172,687,582
Unfunded Actuarial Accrued Liability	126,404,626	140,571,164
Amortization of Unfunded Actuarial Accrued Liability	\$ 7,435,844	\$ 8,426,634
Amortization Rate (% of Pay)	32.6%	40.4%
Total Contribution Rate	39.7%	49.0%
Projected Fiscal Payroll	\$ 23,592,272	\$ 21,521,242
<b>Total City Contribution</b>	<b>\$ 9,361,009</b>	<b>\$ 10,547,556</b>

Estimated Cash Flow for Next Five Years:

<u>Fiscal Year</u>	<u>City Contributions</u>	<u>Member Contributions</u>	<u>Benefit Payments</u>
2016	10,800,000	1,100,000	22,500,000
2017	11,000,000	1,100,000	22,800,000
2018	11,000,000	1,200,000	23,100,000
2019	11,100,000	1,300,000	23,400,000
2020	11,500,000	1,400,000	23,700,000

## **ASSUMPTIONS AND METHODS**

**ASSUMPTIONS AND METHODS**

Funding Method:	Entry Age Normal Actuarial Cost Method. The contribution equals the sum of the normal cost and the amount necessary to amortize the unfunded actuarial liability as a level percent of payroll over a closed period of thirty years, decreasing by 1 year to an ultimate period of 15 years (28 years remaining as of December 31, 2013).		
Asset Smoothing Method:	Investment gains and losses are determined annually and each is spread over a 5-year period. This is done on a total fund basis. The value of the healthcare reserve is then excluded from the valuation assets.		
Investment Return:	7.60% compounded annually, beginning January 1, 2014. The prior assumption was 7.80%.		
Cost of Living (inflation):	The cost of living as measured by the Consumer Price Index (CPI) is assumed to increase at the rate of 3.10% per year. The prior assumption was 3.30%.		
Salary Increases:	Increases in salary are assumed to be 3.10% annually, plus an additional amount that varies based on the service of the member as shown below:		
	<u>Years of Service</u>	<u>UAW</u>	<u>All Others</u>
	0-8	2.00%	1.50%
	9-10	2.00%	0.25%
	11 +	1.00%	0.25%
Mortality:	RP2000 Combined Healthy Tables set back one year for females. For Disabled members, the disabled version of these tables are assumed. Each of these tables is projected to 2008 using Scale BB. Projected improvements in mortality for non disabled members have been accounted for by projecting the table to 2023 using 50% of Scale BB.		
Percent Married:	90% of participants are assumed to be married. Male spouses are assumed to be three years older than their female spouse.		

**ASSUMPTIONS AND METHODS**

(continued)

Disability: Rates of disability vary based on the age of the member as shown below. Half of all disabilities are assumed to be duty related.

Samples rates are shown below.

<u>Age</u>	<u>Rate</u>
20	0.0004
30	0.0004
40	0.0013
50	0.0041
60	0.0090

Termination: Rates of termination vary based on the service of the member.

Samples rates are shown below.

<u>Years of Service</u>	<u>UAW</u>	<u>Others</u>
0	10.0%	20.0%
1	7.0%	10.0%
2	5.0%	4.0%
3	5.0%	4.0%
4	5.0%	4.0%
5	4.0%	3.0%
10	1.0%	1.0%
15	1.0%	1.0%
20+	0.5%	0.5%

Retirement: Rates of retirement vary based on the age of the member as shown below. Rate is applied only if the member is eligible to retire.

<u>Age</u>	<u>UAW</u>	<u>Others</u>
45-49	0.0%	10.0%
50-54	40.0%	10.0%
55-56	40.0%	15.0%
57	20.0%	15.0%
58	10.0%	25.0%
59	10.0%	10.0%
60	20.0%	15.0%
61	35.0%	15.0%
62-64	20.0%	15.0%
65-69	100.0%	50.0%
70 +	100.0%	100.0%

The assumptions above are based on the most recent experience study, covering 2005 through 2011.

The next study is scheduled for 2016.

**Changes in assumptions since the prior valuation:**

The assumed return and inflation assumptions were changed from 7.80% and 3.30% to 7.60% and 3.1%, respectively. An adjusted amount of Healthcare Reserve based on the ratio of the Actuarial Value of Assets to the Market Value of Assets, is now used as part of the asset smoothing determination.

## **HIGHLIGHTS OF PLAN PROVISIONS**



### PLAN PROVISIONS

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

Employee Group Covered: Teamsters, UAW, Exempt, District Court (except Judges), Executive Pay,  
Newly hired elected officials do not become members of this Plan.

Normal Retirement Age (All Members - New Plan): Age 50 with 25 years of service or at age 58 with 8 years of service

Normal Retirement Age (Old Plan): UAW - Age 50 with 25 years of service or at age 58 with 8 years of service. All  
Others - 8 years of service and attainment of the earlier of age 58 or the age at  
which age plus service equals or exceeds 65.

Normal Form of Benefit: Single life annuity

<u>Member Contributions:</u>	<u>Old Plan</u>	<u>New Plan</u>
UAW	2.95%	3.00% effective 10/18/2013
Teamsters 214	3.75%	6.5% (5.00% for hires after September 2012)
Teamsters 580	3.50%	6.35%
District Court Teamsters	3.50%	5.50%
District Court Exempt	4.50%	5.50%
Exempt	3.75%	6.50%
Executive Pay Plan	3.75%	6.50%
Elected Officials	3.25%	No Defined Benefit Plan

Compensation: Member's Salary, wages, and longevity bonus. In addition, Compensation may  
include up to 80 hours of compensatory time for members not eligible for overtime  
pay.

Final Average Compensation: The average of the highest annual compensation paid over 2 consecutive years of  
credited service within the last 10 years of credited service immediately preceding  
a member's termination of employment.

Normal Retirement Benefit Formula (New Plan):

UAW	2.75% of Final Average Compensation times years of credited service; 1.70% of Final Average Compensation times years of credited service for new hires after October 18, 2013.
Teamsters 214 and 580	1.80% of Final Average Compensation times years of credited service; 1.25% of Final Average Compensation times years of credited service for new hires after September 2012 in Teamsters 214.
All Others	1.60% of Final Average Compensation times years of credited service.

**PLAN PROVISIONS**

*(continued)*

**Normal Retirement Benefit Formula (Old Plan):**

UAW and Elected Officials	2.75% of Final Average Compensation times for the first 35 years of credited service, plus 1.5% of Final Average Compensation for the next 5 years of service, plus 1.0% of Final Average Compensation for service in excess of 40 years, with a maximum of 100% of Final Average Compensation.
District Court Teamsters	2.30% of Final Average Compensation times years of credited service.
All Others	2.80% of Final Average Compensation times for the first 35 years of credited service, plus 1.5% of Final Average Compensation for the next 5 years of service, plus 1.0% of Final Average Compensation for service in excess of 40 years, with a maximum of 100% of Final Average Compensation.

**Termination Prior to Retirement**

Eligibility	Vesting is after 8 years of credited service.
Form of Benefit	Benefit is payable as a Life Annuity beginning at age 58 for new Plan Members and at the age at which age plus service equals 65 for Old Plan Members (except UAW).

**Duty Disability**

Eligibility	Members are eligible for Duty Disability Retirement benefits immediately upon employment.
Benefit Amount	Benefit is paid at the effective date of disability retirement as a Life Annuity and is equal to the accrued Retirement Benefit, with additional service granted to age 60. During the worker's compensation period, the disability benefit may not exceed the difference between the member's final compensation and the worker's compensation amount. Upon the attainment of age 60, disabled retirees are transferred to service retirement status.

**Non Duty Disability**

Eligibility	Members are eligible for Non Duty Disability Retirement benefits after completing 10 years of service.
Benefit Amount	Benefit is paid at the effective date of disability retirement as a Life Annuity and is equal to the accrued Retirement Benefit, with a minimum benefit equal to 25% of final average compensation.

**PLAN PROVISIONS**

*(continued)*

**Death incurred in the Line of Duty**

Eligibility	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	Benefit is paid upon termination of the survivor's workers' compensation period as a Life Annuity and is equal to the survivor's weekly workers' compensation converted to an annual basis.

**Non Duty Pre-Retirement Death**

Eligibility	The non duty pre retirement death benefit is payable upon the death of a member after earning 8 years of credited service.
Benefit Amount	Benefit is paid to the surviving spouse as a Joint and Survivor benefit and is computed in the same manner as the Normal Retirement Benefit.

**Optional Benefit Forms**

Prior to retirement, a member may elect to convert the retirement allowance into a benefit of equivalent actuarial value in accordance with one of the optional forms described below.

- a. Cash Refund Annuity - If a member dies before receiving the total value of accumulated member contributions, the remaining member contributions are payable to designated beneficiary(ies) at the time of death.
- b. 50% or 100% Joint and Survivor Annuity.
- c. Social Security Level Income ("Equating Pension") - Any member who retires prior to age 65 may elect to have his retirement allowance actuarially equated to provide an increase retirement allowance to age 65, and a reduced retirement allowance payable thereafter. The increased retirement allowance shall approximate the sum of the member's reduced retirement allowance payable after age 65 and the member's estimated Social Security Primary Insurance Amount.

**Post - Retirement Benefit Adjustments**

One-time post-retirement benefit increases were granted in 1984, 1987 and 1998.

Effective January 1, 1999, and each January 1 thereafter, certain eligible retirees and beneficiaries receive annual benefit increases, financed by the Members' Benefit Fund reserve while it maintains a positive balance. Retirees/Beneficiaries must meet both of the following conditions:

- 1) Has been retired at least 6 months as of the January 1 increase date
- 2) Age 60 as of the January 1 increase date

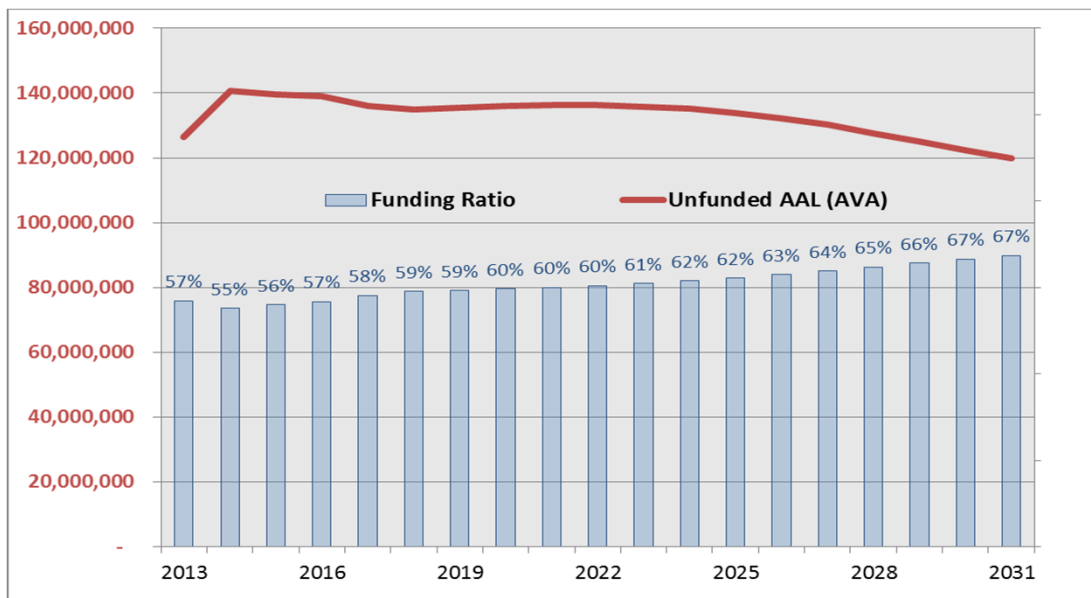
For a retiree/beneficiary who elected a 50% or 100% Joint and Survivor Annuity, the maximum annual increase is equal to \$200 (\$100 for the beneficiary if 50% option is elected) times a ratio of the original Joint and Survivor benefit to the original straight life annuity benefit.

For all other retirees/beneficiaries, the maximum annual increase is \$200.

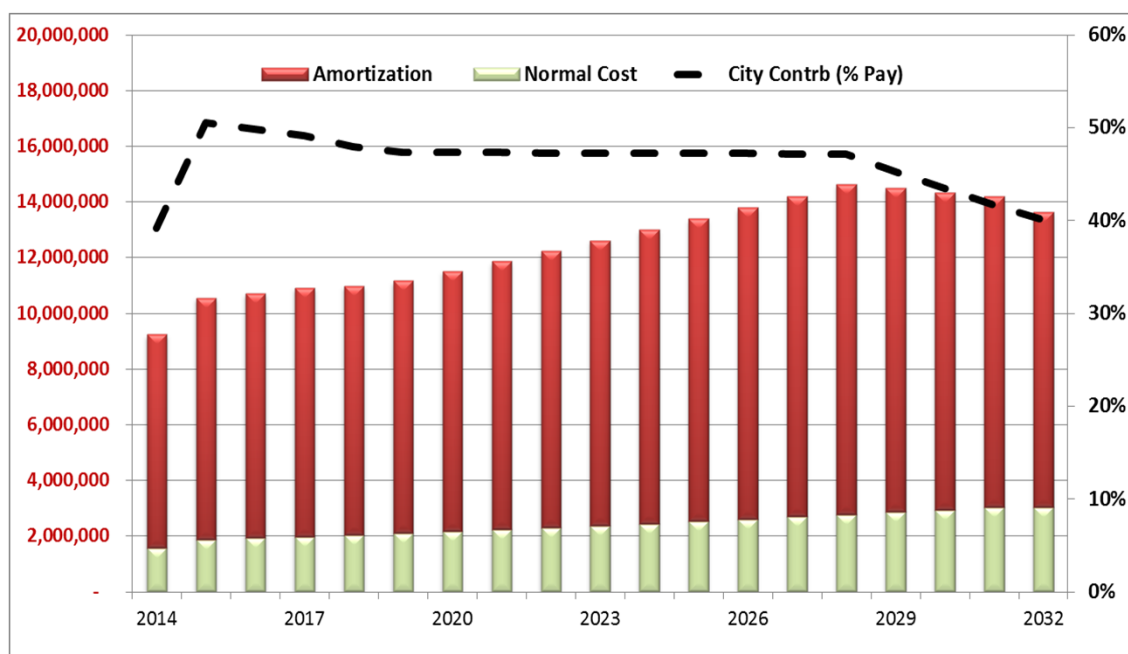
## **APPENDIX I: FUTURE FUNDING AND CONTRIBUTIONS**

The graphs below show a projection of expected funding progress and City contributions to the Fund. The actual funding progress and contributions over this time period will differ from what is shown here, due to the actual experience of the Plan. However, we can see that the Plan is on a path to controlling the unfunded liability (top graph, red line) and improving the funding ratio by about 10%. During this time, the City contribution rate are expected to remain at 40% to 50% of pay.

**Projection of Funding Progress**



**Projection of City Contributions**



## **Appendix II: History of Employer Contributions and Funding Progress**

<u>Fiscal Year Ending</u>	<u>Annual Required Contribution (ARC)</u>	<u>Actual Contribution</u>
6/30/2003	3,566,759	3,498,990
6/30/2004	3,465,937	3,465,937
6/30/2005	4,675,076	4,675,076
6/30/2006	4,901,502	4,901,502
6/30/2007	5,230,668	5,230,668
6/30/2008	6,021,613	6,021,613
6/30/2009	6,047,520	6,476,000 (1)
6/30/2010	6,472,341	6,043,861 (1)
6/30/2011	7,297,083	7,297,083
6/30/2012	7,596,879	7,523,534 (2)
6/30/2013	8,586,536	8,586,536 (3)
6/30/2014	9,361,000	9,361,000
6/30/2015	10,548,000	To Be Determined (4)

(1) The City contributed in excess of its FY 2009 ARC. The City's FY 2010 contribution was reduced by the dollar amount of the FY 2009 overpayment.

(2) The FY 2012 City contribution was reduced by \$73,345 in recognition of additional contributions by United Auto Workers (UAW) employees, which were negotiated and contributed after the establishment of the June 30, 2012 ARC from the December 31, 2010 valuation.

(3) Fiscal year 2013 ARC reflects changes made to actuarial assumptions based on an Experience Study. Changes included a decrease in the assumed rate of return from 8.0% to 7.8%. A closed amortization period was also adopted as of 12/31/2011, beginning at 30 years and decreasing each year until 15 years is reached.

(4) Fiscal year 2015 ARC reflects changes made to assumed return and inflation from 7.8% and 3.3% to 7.6% and 3.1%, respectively.

	<u>Valuation Date</u>	<u>Actuarial Value of Assets (AVA)</u>	<u>Actuarial Accrued Liability (AAL)</u>	<u>Percentage Funded</u>	<u>Unfunded Actuarial Accrued Liability</u>
	12/31/2002	192,920,000	215,405,000	89.6%	22,485,000
	12/31/2003	199,329,000	221,088,000	90.2%	21,759,000
	12/31/2004	206,200,000	231,389,000	89.1%	25,189,000
	12/31/2005	207,881,000	241,882,000	85.9%	34,001,000
	12/31/2006	208,765,000	251,427,000	83.0%	42,662,000
	12/31/2007	208,572,000	254,356,000	82.0%	45,784,000
	12/31/2008	200,600,000	258,331,000	77.7%	57,731,000
	12/31/2009	193,324,000	262,298,000	73.7%	68,974,000
	12/31/2010	187,440,590	269,461,935	69.6%	82,021,345
(5)	12/31/2011	177,100,863	287,306,707	61.6%	110,205,844
	12/31/2012	167,569,807	293,974,433	57.0%	126,404,626
(6)	12/31/2013	172,687,582	313,258,746	55.1%	140,571,164

(5) Reflects changes made to actuarial assumptions, based on Experience Study, including a reduction in the assumed return 8.0% to 7.8%.

(6) Reflects changes made to assumed return and inflation from 7.8% and 3.3% to 7.6% and 3.1%, respectively.