CITY OF LANSING

EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL VALUATION

AS OF DECEMBER 31, 2012

Boomershine Consulting Group
Executive Center I
3300 North Ridge Road, Suite 300
Ellicott City, MD 21043

February, 2014

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February 6, 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, 2012. The report is based on participant data and asset summary as of December 31, 2012 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, 2012 was $189,565,077. Plan assets exclude from this a reserve for healthcare benefits. The total yield of the fund for the plan year ending December 31, 2012 was 12.21% on the market value of assets and 2.46% 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 the plan year ending December 31, 2013 is $9,361,009.
Last year the total recommended contribution was $8,586,536. The increase in the contribution was expected, as it is primarily due to the recognition of the final 20% of the 2008 investment loss.

FUNDING PROGRESS:

The Actuarial Accrued Liability as of December 31, 2012 is $293,974,433 compared to the Actuarial Value of Assets of $167,400,207, resulting in a plan funded ratio of 57.0%.

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

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

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

Sunita K. Bhatia, EA, ASA, ACA, MAAA

Gregory M. Stump, EA, FSA, FCA, MAAA

TRUST FUND STATEMENT

AND

DETERMINATION OF VALUATION ASSETS

BOOMERSHINE CONSULTING GROUP, L.L.C.

ACTUARIAL & RETIREMENT PLAN SOLUTIONS

TRUST FUND STATEMENT FOR THE PLAN YEAR ENDING DECEMBER 31, 2012

Market Value of Total Fund as of December 31, 2011			$180,122,824
Receipts:			
Employer Contribution - Pension Fund	8,303,534		
Employer Contribution - Healthcare Reserve	212,000		
Member Contributions	1,360,774		
Adjustments Investment Income			
Interest	4,015,861		
Dividends	8,948,018		
Market Appreciation	8,879,362		
Total Additions		$31,719,549	
Disbursements:			
Member Refund	9,635		
Distributions to Participants/ Beneficiaries	20,558,500		
Administrative Expenses and Other	46,304		
Investment Expenses	694,856		
Total Disbursements		$21,309,295	
Adjustments (Reserve for 911 transfer)		(968,000)	
Net Increase/(Decrease) in Assets			$9,442,253
Market Value of Total Fund as of December 31, 2012			$189,565,077

ALLOCATION OF NET PLAN ASSETS AS OF DECEMBER 31, 2012

	Market Value	%
Cash and Short Term Investments	8,836,596	4.7%
Equity	97,185,163	51.3%
Fixed Income	72,630,011	38.3%
Real Estate	12,042,984	6.4%
Accounts payable (including Reserve for 911 transfer)	(1,129,677)	-0.6%
TOTAL ASSETS	$189,565,077	100.0%

Estimated Rate of Return on Market Value is 12.21%

DETERMINATION OF ACTUARIAL VALUE OF ASSETS AS OF DECEMBER 31, 2012

Market Value of Total Fund as of December 31, 2011			$180,122,824
Plus: Contributions			9,654,673
Less: Benefit Payments			20,558,500
Less: Expenses			46,304
Plus: Expected Return at	7.80%		13,428,305
Expected Asset Value			$181,632,998
Market Value of Total Fund as of December 31, 2012			$189,565,077
Asset Gain/(Loss) for 2012 Plan Year			7,932,079
Market Value of Total Fund as of December 31, 2012			$189,565,077
Less: 80% of 2012 Gain/(Loss)	80% *	7,932,079	6,345,663
Less: 60% of 2011 Gain/(Loss)	60% *	(10,802,449)	(6,481,469)
Less: 40% of 2010 Gain/(Loss)	40% *	6,246,305	2,498,522
Less: 20% of 2009 Gain/(Loss)	20% *	13,046,152	2,609,230
			4,971,946
Actuarial Value of Assets, Total Fund - December 31, 2012			$184,593,131
as % of Market Value of Assets			97.4%
Healthcare Reserve as of December 31, 2012			$17,192,924
Actuarial Value of Assets, Pension Plan - December 31, 2012			$167,400,207

Estimated Rate of Return on the Actuarial Value is 2.46%

BOOMERSHINE CONSULTING GROUP, L.L.C.
ACTUARIAL & RETIREMENT PLAN SOLUTIONS

PARTICIPANT SUMMARY

AGE, SERVICE AND COMPENSATION DISTRIBUTION

PARTICIPANT SUMMARY AND RECONCILIATION

	Active Participants	Vested Terminations	Retired	Disabled	Beneficiary	Total
Participants as of December 31, 2011	481	67	681	22	141	1,392
Retired	(29)	(7)	36	0	0	0
Terminated Vested	(5)	5	0	0	0	0
Terminated Non-Vested (Member Contributions refunded)	(11)	0	0	0	0	(11)
Disabled	0	0	0	0	0	0
Deceased	0	0	(19)	(1)	(11)	(31)
New Beneficiary / EDRO	0	0	0	0	10	10
Rehired	2	0	0	0	0	2
Terminated Non-Vested (Member Contributions to be refunded)	(35)	0	0	0	0	(35)
Transfers In	0	0	0	0	0	0
Transfers to Police and Fire Plan	(4)	0	0	0	0	(4)
New Hires	7	0	0	0	0	7
Data Adjustments	0	5	0	0	0	5
Participants as of December 31, 2012	406	70	698	21	140	1,335

Inactive Participants	**12/31/2011**	**12/31/2012**
Number of Retired Participants	681	698
Average Age	66.3	66.3
Average Annual Benefit	$26,681	$26,390
Number of Disabled Participants	22	21
Average Age	62.2	62.7
Average Annual Benefit	$17,807	$18,238
Number of Beneficiaries/EDROs	141	140
Average Age	72.0	73.2
Average Annual Benefit	$11,885	$12,339
Number of Deferred Vested Participants	67	70
Average Age	51.2	51.2
Average Annual Benefit	$11,245	$11,760

DISTRIBUTION OF ACTIVE PARTICIPANTS AND AVERAGE COMPENSATION BY AGE AND SERVICE AS OF DECEMBER 31, 2012

Nearest Age	-----Completed Years of Service from Date of Hire-----									
	<1	1	2 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	>29	Total
<20										
20 - 24	1									1
	576									576
25 - 29	3			1						4
	34,901			37,392						35,524
30 - 34	1	3	3	10	1					18
	64,973	49,378	41,644	57,485	42,827					53,095
35 - 39	1		2	19	2					24
	23,767		47,185	53,802	43,112					51,108
40 - 44	2	1	2	35	12	5				57
	14,030	105,446	34,805	59,650	51,401	49,883				55,388
45 - 49		2	3	34	29	12	8	1		89
		36,831	62,422	55,530	50,716	56,740	51,436	48,399		53,488
50 - 54			5	34	23	20	13	7	2	104
			67,263	62,982	53,217	51,999	56,483	71,474	80,434	59,011
55 - 59		2	1	21	14	12	7	4	1	62
		58,224	74,225	60,075	53,661	56,456	58,585	62,366	113,468	58,935
60 - 64				14	5	9	3	2		33
				62,319	49,967	59,027	64,864	55,191		59,349
>64				7	6		1			14
				57,227	68,315		69,364			62,846
Total	8	8	16	175	92	58	32	14	3	406
	27,760	55,461	55,420	58,779	52,735	54,810	56,869	64,897	91,445	56,335

	Males	Females	Total
Total Compensation	$ 14,278,573	$ 8,593,445	$ 22,872,019
Average Compensation	$ 58,519	$ 53,046	$ 56,335
Arithmetic Averages:			
Nearest Age	49.8	49.2	49.6
Completed Years of Service	12.7	10.2	11.7
Salary-Weighted Averages:			
Nearest Age	50.3	49.7	50.1
Completed Years of Service	12.8	10.3	11.9
Number of Participants	244	162	406
Percent male / female	60%	40%	100%

VALUATION SUMMARY

DEVELOPMENT OF RECOMMENDED CONTRIBUTION

	12/31/2011	12/31/2012
Total Entry Age Normal Cost	$ 3,373,862	$ 2,793,216
Estimated Employee Contributions	1,418,955	1,167,096
Net City Normal Cost	$ 1,954,907	$ 1,626,120
Valuation Payroll	$ 26,068,735	$ 22,838,598
City Normal Cost Rate (% of pay)	7.5%	7.1%
Actuarial Accrued Liability		
Active Employees	$ 58,111,273	$ 51,989,946
Member Benefit Fund	15,759,061	15,814,018
Terminated Vested	5,507,600	6,447,052
Retirees and Beneficiaries	207,928,773	219,723,417
Total Actuarial Accrued Liability	$287,306,707	$ 293,974,433
Actuarial Value of Assets	177,100,862	167,569,807
Unfunded Actuarial Accrued Liability	110,205,845	126,404,626
Amortization of Unfunded Actuarial Accrued Liability	$ 6,374,059	$ 7,435,844
Amortization Rate (% of Pay)	24.5%	32.6%
Total Contribution Rate	32.0%	39.7%
Projected Fiscal Payroll	$ 26,874,899	$ 23,592,272
Total City Contribution	**$ 8,586,536**	**$ 9,361,009**

Estimated Cash Flow for Next Five Years:

Fiscal Year	City Contributions	Member Contributions	Benefit Payments
2015	9,900,000	1,200,000	21,400,000
2016	10,100,000	1,200,000	21,800,000
2017	10,500,000	1,300,000	22,300,000
2018	10,700,000	1,300,000	22,700,000
2019	11,100,000	1,400,000	23,200,000

GOVERNMENTAL ACCOUNTING STANDARDS BOARD INFORMATION

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending	Annual Required Contribution (ARC)	Actual Contribution	Percentage of ARC Contributed
6/30/2003	3,566,759	3,498,990	98.1%
6/30/2004	3,465,937	3,465,937	100.0%
6/30/2005	4,675,076	4,675,076	100.0%
6/30/2006	4,901,502	4,901,502	100.0%
6/30/2007	5,230,668	5,230,668	100.0%
6/30/2008	6,021,613	6,021,613	100.0%
6/30/2009	6,047,520	6,476,000	107.1% (1)
6/30/2010	6,472,341	6,043,861	93.4% (1)
6/30/2011	7,297,083	7,297,083	100.0%
6/30/2012	7,596,879	7,523,534	99.0% (2)
6/30/2013	8,586,536	8,586,536	100.0%
6/30/2014	9,361,000	To Be Determined	To Be Determined

(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.

additional contributions by United Auto Workers (UAW) employees, which were negotiated and contributed after the estabishment of the June 30, 2012 ARC from the December 31, 2010 valuation.

Historical amounts and footnotes were provided by the City's Finance office.

GOVERNMENTAL ACCOUNTING STANDARDS BOARD INFORMATION
SCHEDULE OF FUNDING PROGRESS

Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Percentage Funded	Unfunded Actuarial Accrued Liability	Annual Covered Payroll	Unfunded AAL as a % of Covered Payroll
12/31/2002	192,920,000	215,405,000	89.6%	22,485,000	19,098,000	117.7%
12/31/2003	199,329,000	221,088,000	90.2%	21,759,000	30,579,000	71.2%
12/31/2004	206,200,000	231,389,000	89.1%	25,189,000	32,383,000	77.8%
12/31/2005	207,881,000	241,882,000	85.9%	34,001,000	30,851,000	110.2%
12/31/2006	208,765,000	251,427,000	83.0%	42,662,000	31,944,000	133.6%
12/31/2007	208,572,000	254,356,000	82.0%	45,784,000	31,797,000	144.0%
12/31/2008	200,600,000	258,331,000	77.7%	57,731,000	29,688,000	194.5%
12/31/2009	193,324,000	262,298,000	73.7%	68,974,000	30,602,000	225.4%
12/31/2010	187,440,590	269,461,935	69.6%	82,021,345	27,766,628	295.4%
12/31/2011	177,100,863	287,306,707	61.6%	110,205,844	26,068,735	422.8%
12/31/2012	167,569,807	293,974,433	57.0%	126,404,626	22,838,598	553.5%

GASB 27 Pension Cost and Net Pension Obligation (NPO)

Fiscal Year Ending	Annual Required Contribution (ARC)	Interest on NPO	ARC Adjustment	Annual Pension Cost	Contribution By Employer	Change in NPO	NPO End of Year
2009							(428,480)
2010	6,472,349	(34,278)	24,323	6,462,394	(6,043,861)	418,533	(9,947)
2011	7,297,083	(796)	565	7,296,852	(7,297,083)	(231)	(10,178)
2012	7,596,879	(814)	556	7,596,621	(7,523,534)	73,087	62,909
2013	8,586,536	4,907	(3,701)	8,587,742	------- To Be Determined --------		

ASSUMPTIONS AND METHODS

ASSUMPTIONS AND METHODS

No changes in assumptions or methods have been made since the prior valuation, except for a change in the actuarial firm.

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 (29 years remaining as of December 31, 2012).

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.

Interest:

7.80% compounded annually

Cost of Living (inflation):

The cost of living as measured by the Consumer Price Index (CPI) is assumed to increase at the rate of 3.30% per year.

Salary Increases:

Increases in salary are assumed to be 3.30% annually, plus an additional amount that varies based on the service of the member as shown below:

Years of Service	UAW	All Others
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 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.

Age	Rate
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.

Years of Service	UAW	Others
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.

Age	UAW	Others
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.

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 od service or at age 58 with 8 years of service

Normal Retirement Age (Old Plan): UAW - Age 50 with 25 years od 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 excees 65.

Normal Form of Benefit: Single life annuity

Member Contributions:

	Old Plan	New Plan
UAW	2.95%	2.95%
Teamsters 214	3.75%	6.50%
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%
Executuive Pay Plan	3.75%	6.50%
Elected Officials	3.25%	N/A

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
Teamsters 214 and 580	1.80% of Final Average Compensation times years of credited service
All Others	1.60% of Final Average Compensation times years of credited service

PLAN PROVISIONS

(continued)

Normal Retirement Benefit Formula (Old Plar

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 equiavlent 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

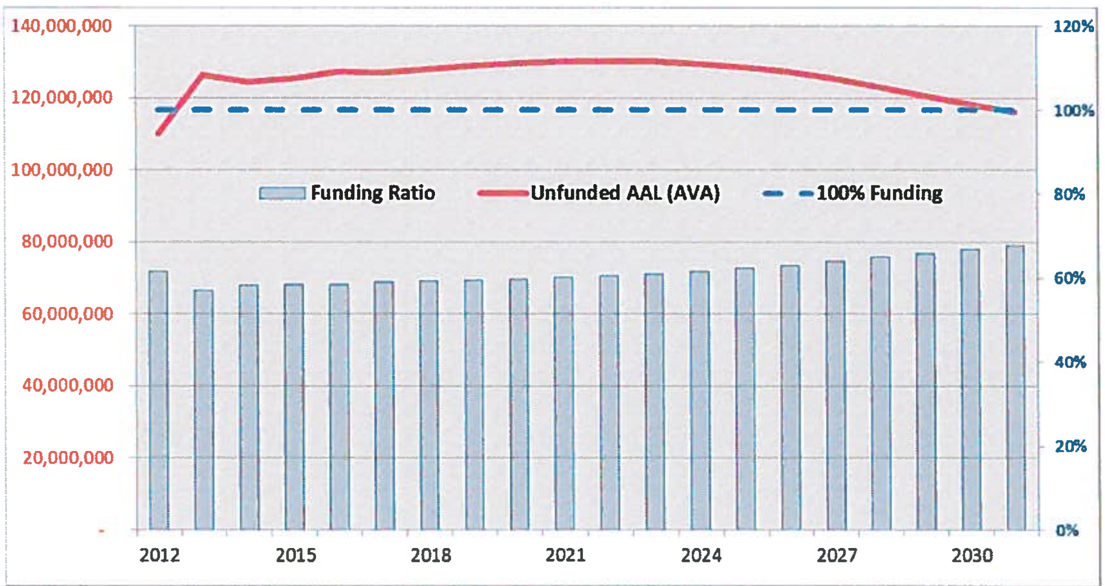
One-time post-retirement benefit increases were granted in 1984, 1987 and 1998.
Effective January 1, 1999, and each January 1 thereafter, eligible retirees and beneficiaries receive annual benefit
1) Has been retired at least 6 months as of the January 1 increase date
2) Age 60 as of the January 1 increase date
In general, the amount of the annual increase in retirement allowance shall be 3% of the annual retirement allowance. 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: 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 to about 70%. During this time, City contributions are expected to increase gradually until eventually leveling.

Projection of Funding Progress



Projection of City Contributions