City of Lansing
Police and Fire Retirement System

Actuarial Valuation of Retiree Healthcare Benefits
as of December 31, 2013

February, 2015

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

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Executive Summary

This report presents the results of an actuarial review and analysis of the City of Lansing Police and Fire Retirement System Retiree Healthcare Benefits Plan (the Plan) as of December 31, 2013.

A comparative summary of the status of the Plan is as follows:

	December 31, 2011~	December 31, 2013
Plan Membership		
Active	362	349
Inactive/Receiving Benefits	686	660
Total Plan Participants	1,048	1,009
Valuation Results ($ millions)*		
Plan Assets	$ 18.7	$ 23.2
Actuarial Accrued Liability (AAL)	421.4	364.9
Unfunded Accrued Liability	$ 402.7	$ 341.7
Funding Ratio	4.4%	6.4%
Annual Required Contribution ($ millions)		
Total ARC (% of Payroll), pay-as-you-go	$ 28.3 (113%)	$ 22.9 (89%)
Total ARC (% of Payroll), statutory pre-funding	$ 27.3 (109%)	$ 21.9 (85%)
Total ARC (% of Payroll), fully prefunded	$ 17.9 (71%)	$ 16.9 (66%)

~ from prior actuarial report

* Statutory prefunding basis

The actuarial liabilities and costs have decreased since the last valuation. This is primarily a result of favorable claims experience over the last few years.

Purpose of the Report

This Report presents the results of an actuarial review and analysis of the Retiree Healthcare Plan as of December 31, 2013. The purposes of this Report are:

- To compute the other post-employment (OPEB) liability and annual employer cost in accordance with GASB Statements 43 and 45;
- To present and discuss other issues associated with funding progress/strategies and Plan costs.

Actuarial Certification

In this study, we conducted an examination of all participant data for reasonableness and consistency, but did not audit such data. Actuarial liabilities and costs are based on the Entry Age Normal Cost Method. Under this method, the employer cost provides for current cost (normal cost) plus an amount to amortize the unfunded actuarial accrued liability (UAAL).

We certify that the valuation was performed in accordance with generally accepted actuarial principles and practices. The first undersigned is a member of the American Academy of Actuaries, and meets the Qualification Standards to provide the actuarial opinions herein.

Respectfully Submitted,

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

Marshal Banks
Senior Consultant

Section 1: Actuarial Computations and GASB Information

1.1: Summary of Actuarial Liabilities

	12/31/2011~			12/31/2013		
	Pay as you go Basis	**Statutory (Partial) Pre-Funded Basis***	**Fully Pre-Funded Basis**	**Pay as you go Basis**	**Statutory (Partial) Pre-Funded Basis***	**Fully Pre-Funded Basis**
Discount Rate	**4.30%**	**4.50%**	**7.80%**	**4.10%**	**4.50%**	**7.60%**
Actuarial Accrued Liability						
Active Members	Not Shown in Report		$ 88,057,170	$ 162,318,288	$ 150,623,112	$ 89,490,137
Inactive Members			164,163,276	225,533,926	214,282,099	152,923,659
Total Actuarial Liability	$ 436,872,255	$ 421,352,941	$ 252,220,446	$ 387,852,214	$ 364,905,211	$ 242,413,796
Normal Cost	12,302,162	11,556,048	4,430,282	7,969,368	7,140,201	3,203,390
Expected Benefit Payments		$ 10,765,768			$ 11,380,867	

~ from prior actuarial report

* Statutory pre-funding requires a 2.48% of payroll contribution to the OPEB trust from the City

There are three scenarios shown above, for both the prior and the current valuation. The only difference in these scenarios is the funding strategy, which impacts the required discount rate. Essentially, the accounting treatment of OPEB takes into consideration the lower liabilities and costs associated with pre-funding of benefits. Each of the three scenarios is explained within Sections 1.2 through 1.4.

1.2: Annual Required Contribution, Pay-as-you-go Basis

The results shown below are based on pay-as-you-go financing. This means that no prefunding for OPEB would be set aside (i.e., $0 additional contributions to the Trust, as noted below), and that all OPEB would be paid from the City's general fund assets. Because these assets are generally invested in short-term fixed income, the discount rate used for this basis is much lower, resulting in higher actuarial liabilities and costs.

	12/31/2011~	**12/31/2013**
Discount Rate	*4.30%*	*4.10%*
	$ millions	
Actuarial Accrued Liability (AAL)	$ 436.9	$ 387,852,214
Plan Assets	18.7	23,197,213
Unfunded AAL	$ 418.2	$ 364,655,001
Amortization of Unfunded AAL	$ 16.0	$ 14,934,467
Employer Normal Cost	12.3	7,969,368
Annual Required Contribution	$ 28.3	$ 22,903,835
Percentage of Payroll	112.5%	89.2%
Expected Benefits to be Paid	$ 10.8	$ 11,380,867
Additional Contributions to trust	$ 0.0	$ 0

~ from prior actuarial report

1.3: Annual Required Contribution, Fully Pre-Funded Basis

The results shown below are based on full pre-funding of OPEB. This means that in addition to the benefits (i.e., claims and premium costs for retirees) for the year, supplemental amounts would be contributed and invested to build up the OPEB Trust, which would eventually be used to finance all benefits. The additional amount is $5.5 million per year; however, this will be updated at the time of each biennial valuation and will fluctuate. Because the assets are generally invested the same as the pension fund, the discount rate used for this basis is the same as the expected return used for pension funding. This results in lower actuarial liabilities and costs.

	12/31/2011~	12/31/2013
Discount Rate	*7.80%*	*7.60%*
	$ millions	
Actuarial Accrued Liability (AAL)	$ 252.2	$ 242,413,796
Plan Assets	18.7	23,197,213
Unfunded AAL	$ 233.5	$ 219,216,583
Amortization of Unfunded AAL	$ 13.5	$ 13,714,656
Employer Normal Cost	4.4	3,203,390
Annual Required Contribution	$ 17.9	$ 16,918,046
Percentage of Payroll	71.4%	65.9%
Expected Benefits to be Paid	$ 10.8	$ 11,380,867
Additional Contributions to trust	$ 7.7	$ 5,537,179

~ from prior actuarial report

1.4: Annual Required Contribution, Statutory (partial) Pre-Funded Basis*

The results shown below are based on partial pre-funding. This means that, in addition to the pay-as-you-go cost, some level of prefunding would be set aside. In this case, the additional amount is currently about $0.6 million, based on our understanding of the statutory pre-funding provisions (footnoted below). Because the funding basis is partway between pay-as-you-go and full pre-funding, the discount rate is between the two rates previously discussed.

	12/31/2011~	12/31/2013
Discount Rate	*4.50%*	*4.50%*
Actuarial Accrued Liability (AAL)	$ 421,352,941	$ 364,905,211
Plan Assets	18,678,699	23,197,213
Unfunded AAL	$ 402,674,242	$ 341,707,998
Amortization of Unfunded AAL	$ 15,790,513	$ 14,752,247
Employer Normal Cost	11,556,048	7,140,201
Annual Required Contribution	$ 27,346,561	$ 21,892,448
Percentage of Payroll	108.8%	85.2%
Expected Benefits to be Paid	$ 10,765,768	$ 11,380,867
Additional Contributions to trust	$ 642,763	$ 637,011

~ from prior actuarial report

* Statutory pre-funding requires a 2.48% of payroll contribution to the OPEB trust from the City

Sensitivities to Healthcare Trend

The following represents the plan liabilities and costs using a healthcare trend assumption of 1% per year higher or lower than the current assumption. The discount rate is 4.50% in each case.

$ millions	Healthcare Trend Rates +1% Per Year	Valuation Assumption	Healthcare Trend Rates -1% Per Year
Actuarial Accrued Liability (AAL)	$ 431.1	$ 364.9	$ 312.8
Plan Assets	23.2	23.2	23.2
Unfunded AAL	$ 407.9	$ 341.7	$ 289.6
Amortization of Unfunded AAL	$ 17.6	$ 14.8	$ 12.5
Employer Normal Cost	9.2	7.1	5.6
Annual Required Contribution	$ 26.8	$ 21.9	$ 18.1

1.5: GASB 43/45 Disclosures

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded AAL (AAL-AVA)	Funded Ratio (AVA ÷ AAL)	Covered Payroll	Unfunded AAL as Percentage of Payroll
12/31/2009	$ 17,477,208	$ 214,899,358	$ 197,422,150	8.2%	$ 31,045,528	636%
12/31/2011	18,678,699	421,352,941	402,674,242	4.4%	25,128,835	1602%
12/31/2013 Statutory Basis	23,197,213	364,905,211	341,707,998	6.4%	25,636,626	1333%
12/31/2013 Full Pre-Funding Basis	*23,197,213*	*242,413,796*	*219,216,583*	*9.6%*	*25,636,626*	*855%*

Schedule of Employer Contributions

Year Ended	Annual OPEB Cost (AOC)	Percentage of AOC Contributed	Net OPEB Obligation/(Asset)
2010	$ 16,563,477	57.9%	$ 12,938,273
2011	16,474,153	59.8%	19,568,200
2012	17,844,115	55.4%	27,523,519
2013	17,489,692	63.9%	33,843,009
2014	21,954,310	54.7%	43,779,441

Net OPEB Obligation (NOO)

	Fiscal Year 2013*	Fiscal Year 2014~
Net OPEB Obligation/(Asset), Beginning of Year	$ 27,523,519	$ 33,843,009
Annual Required Contribution (ARC)	17,413,968	21,892,448
Interest on BOY NOO	1,183,511	1,522,935
Adjustment to the ARC	(1,107,787)	(1,461,073)
Annual OPEB Cost	$ 17,489,692	$ 21,954,310
Employer Contributions towards ARC	(11,170,202)	(12,017,878)
Change in NOO	$ 6,319,490	$ 9,936,432
Net OPEB Obligation/(Asset), End of Year	$ 33,843,009	$ 43,779,441

* Information provided by the City's Finance Office

~ Estimated based on statutory pre-funding

Section 2: Summary of Participant Data

Participant Summary

	December 31, 2011~	December 31, 2013		
	Total	Fire	Police	Total
Active Participants				
Number	362	164	185	349
Average Age	40.9	42.2	40.4	41.3
Average Service	14.5	14.6	14.4	14.5
Inactive Participants				
Number Receiving Benefits	671	304	342	646
Average Age	65.7	65.8	66.1	66.0
Number Terminated Vested	16			15
Average Age	47.3			45.1

~ from prior actuarial report

Retiree Coverage Summary

Level of Coverage	Fire	Police	Total
Single	79	120	199
Dual/Family	225	222	447
Total Retirees Covered	304	342	646

Section 3: Outline of Actuarial Assumptions and Methods

3.1: Actuarial Methods

Actuarial Cost Method

The Entry Age Normal Actuarial Cost Method, with level dollar normal cost, is used for this valuation. The cost 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 30 years, decreasing by 1 year to an ultimate period of 15 years (28 years remaining as of December 31, 2013).

Plan Assets

Plan assets are available in a separate reserve of the Police and Fire Retirement System trust. For this study, assets are used at market value, without any smoothing of investment gains and losses.

Changes in Actuarial Methods since Prior Valuation

There have been no changes in methods since the prior valuation, except for the change in actuarial consulting firm and valuation software. The impact of this change was not material.

3.2: Actuarial Assumptions

Valuation Date — All assets and liabilities are computed as of December 31, 2013.

Investment Return — The annual rate of return on trust fund assets is assumed to be 7.60%. The annual return of non-trust fund assets is assumed to be 4.10%. Each of these is net of expenses and including inflation.

Discount Rate — Per GASB 45, the discount rate basis is dependent upon the level of pre-funding. For the fully pre-funded scenario, the rate is 7.60%. For the pay-as-you-go scenario, the rate is 4.10%. For the statutory (partial) pre-funding scenario, the rate is 4.50%.

Inflation — The underlying annual rate of inflation is assumed to be 3.10%.

The basis for the non-healthcare related assumptions for this study is the analysis conducted for the Retirement System for purposes of the annual actuarial valuation to fund pension benefits.

Mortality — RP2000 Tables, with blue collar adjustments. For Disabled members, the disabled versions of these tables are assumed, with a 5-year setback for males. 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.

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

Years of Service	Assumed Rate - Fire	Assumed Rate – Police
10-24	5%	5%
25	80%	80%
26-29	60%	25%
30+	100%	100%

Termination of Employment

Rates of termination are based of years of service, with sample rates as follows:

Years of Service	Assumed Rate - Fire	Assumed Rate - Police
0	4.0%	5.0%
1	3.2%	4.3%
5	1.3%	2.2%
10	0.4%	1.0%
15	0.1%	0.4%
20+	0.0%	0.0%

Disability

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

Representative rates of disability:

Age	Assumed Rate
20	0. 080%
30	0.400%
40	0.625%
50	0.750%
60	0.000%

Family Composition

90% of Plan members are assumed to be married. Male spouses are assumed to be three years older than their wives. 20% of retirees are assumed to have children covered, up to age 26. Retirees are assumed to be 30 years older than their children.

Healthcare costs

The following represents expected healthcare claims for 2014, based on the age and gender of the retiree and dependents.

Age	Male	Female
45	$ 5,913	$ 7,356
50	7,547	9,388
55	10,144	11,320
60	14,037	13,107
65+	5,158	5,158

Dental claims are expected to be $888 per year for each covered member and spouse. Vision claims are included in total healthcare costs.

Healthcare trend

The following increases are assumed for future healthcare claims and premiums:

Year	Pre-65 Rate	Post-65 Rate
2014	8.5%	5.5%
2015	7.5%	5.0%
2016	6.5%	4.5%
2017	6.0%	4.5%
2018	5.5%	4.5%
2019	5.0%	4.5%
2020+	4.5%	4.5%

Dental and Vision costs are assumed to increase at 4.5% per year.

Participation

100% of eligible members are assumed to elect coverage upon retirement.

Change in Actuarial Assumptions since Prior Valuation

The expected claims costs and healthcare trend rates were updated based on available data and analysis. Assumed return on trust fund assets was decreased from 7.8% to 7.6% and the inflation assumption was decreased from 3.3% to 3.1%.

Section 4: Summary of Plan Provisions

4.1: Fire (IAFF Local 421)

Eligibility for Healthcare, Dental, and Vision Coverage

Normal Retirement Eligibility:

Non - Supervisory

1) 25 or more years of service
2) If hired before 7/1/2010, age 55 with 10 years of service

Deferred Retirement Eligibility:

Hired prior to 7/1/2010: Age 55 if less than 25 years of service; any age with 15 years of service
Hired on or after 7/1/2010: Age 55 if less than 25 years of service; any age with 25 Years with up to 2 years of military service

Disability and Death Retirement (Duty Related):

No age or service requirement – disability benefits payable when member begins to receive disability retirement benefits.

Disability and Death Retirement (Non-Duty Related):

Hired before 7/1/2006: Any age with 10 years of service
Hired on or after 7/1/2006 and before 7/1/2010: Any age with 15 years of service
Hired on or after 7/1/2010: Any age with 25 years of service

Disability benefits payable when member begins to receive disability retirement benefits.

Medicare Coverage Eligibility

City provides Medicare complementary retiree health care benefits at age 65 when retiree becomes Medicare eligible.

Benefits Payable (Healthcare and Dental and Vision):

The City pays 100% of retiree care base coverage for life of retiree.

Spouse Coverage, hired before 5/19/2014:

a. J&S pension elected – City pays 100% of retiree health coverage for life of spouse
b. Straight life pension elected – City pays 100% of retiree health coverage for life of retiree only

Spouse Coverage, hired on or after 5/19/2014: No spouses or dependents covered

Retiree Group Life

Employees who retire on or after 7/1/1983 are covered by a life insurance policy in the amount of $3,000, paid by the City.

Opt Out Benefit

Retirees who opt out of health care coverage are eligible to receive $1,800 in any year in which they did not receive coverage from another source.

Changes in Plan Provisions since Prior Valuation

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

4.2: Police (FOP Lodge No. 141)

Eligibility for Healthcare, Dental, and Vision Coverage

Normal Retirement Eligibility:

Non - Supervisory

1) 25 or more years of service
2) If hired on or before 7/1/2010, age 55 with 15 years of service

Supervisory

1) 25 or more years of service (may include 2 years of military service credit)
2) If hired on or before 7/15/2010, age 55 with 15 years of service

Deferred Retirement Eligibility:

Hired prior to 7/1/2010: Age 55 with 15 years of service; any age with 25 years of service
Hired on or after 7/1/2010: Age 55 with 25 years of service; any age with 25 Years with up to 2 years of military service

Disability and Death Retirement (Duty Related):

No age or service requirement – disability benefits payable when member begins to receive disability retirement benefits.

Disability and Death Retirement (Non-Duty Related):

Hired prior to 7/1/2010: Any age with 15 years of service
Hired on or after 7/1/2010: Any age with 25 years of service

Disability benefits payable when member begins to receive disability retirement benefits.

Medicare Coverage Eligibility

The City provides Medicare complementary retiree health care benefits at age 65 when retiree becomes Medicare eligible.

Benefits Payable for Healthcare, Dental, and Vision

Retirement prior to 7/1/2010 and Non-supervisors:

Retiree – City pays 100% of retiree care base coverage for life of retiree

Retirement on or after 2/1/2010 (not applicable to death and disability retirements):

Retiree contributes lesser of 1% of pension benefit or $500 – single, $500 – 2 party, $650 – family
FOP Supervisors Only: Family annual premium sharing for first 5 years of retirement; premium sharing ceases after 5 years of retirement

If J&S pension is elected, the City pays 100% of retiree health coverage for life of spouse. If straight life pension is elected, the City pays 100% of retiree health coverage for life of retiree only.

Retiree Group Life

Employees who retire on or after 7/1/1982 are covered by a life insurance policy in the amount of $3,000, paid by the city.

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).

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 pay for the plan's obligations.

Annual OPEB Cost (AOC)

The annual accrual amount required by GASB 45, which includes the Annual Required Contribution as well as adjustments if a Net OPEB Obligation/(Asset) exists.

Annual Required Contribution (ARC)

The annual cost of the plan, on an accounting basis. The ARC is the sum of the Normal Cost and the amortization of unfunded actuarial accrued liability.

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.

Net OPEB Obligation/(Asset)

The accumulated shortfall/(surplus) in actual contributions towards the ARC versus the Annual OPEB Cost.

Other Postemployment Benefits (OPEB)

Postemployment benefits other than pensions. OPEB generally takes the form of health insurance and dental, vision, prescription drugs or other healthcare benefits.

Unfunded Actuarial Accrued Liability

When the actuarial value of assets is below the Actuarial Accrued Liability, there is an Unfunded Actuarial Accrued Liability which must be paid off or amortized on a schedule. When the actuarial value of assets is in excess of the Actuarial Accrued Liability, this can lead to a reduction in future contributions on an amortization schedule.