



**City of Lansing  
Police and Fire Retirement System**

**Actuarial Valuation of Retiree Healthcare Benefits  
as of January 1, 2018**

December, 2018

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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 January 1, 2018.

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

	January 1, 2018	January 1, 2016
<b>Plan Membership</b>		
Active	365	346
<u>Inactive/Receiving Benefits</u>	<u>672</u>	<u>689</u>
Total Plan Participants	1,037	1,035
<b>Valuation Results (\$ millions)*</b>		
Actuarial Accrued Liability (AAL)	\$322.0	\$326.1
<u>Plan Assets</u>	<u>\$36.3</u>	<u>28.9</u>
Unfunded Accrued Liability	\$285.7	\$ 297.2
Funding Ratio	11.3%	8.9%
Total ADC (% of Payroll), partial pre-funding	\$ 19.7 (75%)	\$ 19.8 (77%)
Total ADC (% of Payroll), fully prefunded	\$ 15.2 (58%)	\$ 15.5 (61%)

\* Partial prefunding basis

Because the actual pre-funding for this plan (i.e., percentage of pay contributions plus benefits paid directly by the City) is less than the Actuarially Determined Contribution, the partial pre-funding basis is the most appropriate.

## Purpose of the Report

This Report presents the results of an actuarial review and analysis of the Retiree Healthcare Plan as of January 1, 2018. The purposes of this Report are:

- To establish the basis for GASB75, to be implemented as of June 30, 2018, and
- 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 Actuarially Determined Contribution (ADC, or 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,



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



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Marshal Banks  
Senior Consultant

## Section 1: Actuarial Computations

## 1.1: Summary of Actuarial Liabilities

	1/1/2018		1/1/2016	
	Partial Pre-Funded Basis*	Fully Pre-Funded Basis	Partial Pre-Funded Basis*	Fully Pre-Funded Basis
<b>Discount Rate</b>	4.45%	7.25%	4.50%	7.25%
<b>Actuarial Accrued Liability (AAL)</b>				
Active Members	\$ 94,160,871	\$ 56,846,023	\$ 105,217,823	\$ 63,705,536
Inactive Members	<u>227,808,227</u>	<u>165,274,324</u>	<u>220,896,317</u>	<u>160,531,022</u>
<b>Total AAL</b>	\$ 321,969,098	\$ 222,122,347	\$ 326,114,140	\$ 224,236,558
<b>Normal Cost (beginning of year)</b>	\$ 4,560,338	\$ 2,052,189	\$ 4,902,927	\$ 2,242,629
Expected Benefit Payments	\$ 11,703,832		\$ 11,267,987	

\* Statutory pre-funding requires a 2.48% of payroll contribution to the OPEB trust from the City. The rate above is an estimate.

## 1.2: Actuarially Determined 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 increase the funds in the OPEB Trust, which would eventually be used to finance all benefits.

The additional amount is \$3.5 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.

	<b>1/1/2018</b>	<b>1/1/2016</b>
<i>Discount Rate</i>	7.25%	7.25%
Actuarial Accrued Liability (AAL)	\$ 222,122,347	\$ 224,236,558
<u>Plan Assets</u>	<u>36,255,964</u>	<u>28,895,679</u>
Unfunded AAL	\$ 185,866,383	\$ 195,340,879
Funding Ratio	16.3%	12.9%
Amortization of Unfunded AAL	\$ 12,137,146	\$ 12,198,307
Employer Normal Cost	2,052,189	2,242,629
<u>Interest to End of Year</u>	<u>1,028,727</u>	<u>1,046,968</u>
Actuarially Determined Contribution (ADC)	\$15,218,062	\$15,487,904
Percentage of Payroll	58.0%	60.7%
Expected Benefits to be Paid	\$ 11,703,832	\$ 11,267,987
Additional Contributions to trust (ADC, less Benefits Paid)	\$3,514,230	\$4,219,917

### 1.3: Actuarially Determined Contribution, 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 annual amount is currently about \$0.7 million, based on our understanding of the statutory pre-funding provisions (footnoted below). The discount rate for GASB 75 purposes will be determined based on a projection of fund solvency, and will differ from the rate shown below.

	<b>1/1/2018</b>	<b>1/1/2016</b>
<i>Discount Rate</i>	4.45%	4.50%
Actuarial Accrued Liability (AAL)	\$ 321,969,098	\$ 326,114,140
<u>Plan Assets</u>	<u>36,255,964</u>	<u>28,895,679</u>
Unfunded AAL	\$ 285,713,134	\$ 297,218,461
Funding Ratio	11.3%	8.9%
Amortization of Unfunded AAL	\$ 14,284,888	\$ 14,005,706
Employer Normal Cost	4,560,338	4,902,927
<u>Interest to End of Year</u>	<u>838,613</u>	<u>850,888</u>
Actuarially Determined Contribution	\$ 19,683,839	\$ 19,759,521
Percentage of Payroll	75.0%	77.4%
Expected Benefits to be Paid	\$ 11,703,832	\$ 11,267,987
Additional Contributions to trust*	\$ 700,000	\$ 633,226

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



## Section 2: Summary of Participant Data

**Participant Summary**

	January 1, 2018			January 1, 2016		
	Fire	Police	Total	Fire	Police	Total
<b>Active Participants</b>						
Number	168	197	365	160	186	346
Average Age	39.8	37.8	38.8	41.2	38.9	40.0
Average Service	11.7	12.6	12.2	13.3	13.6	13.5
<b>Inactive Participants</b>						
Number Receiving Benefits	328	324	652	340	323	663
Average Age	66.7	67.3	67.0	66.4	66.4	66.4
Number Terminated Vested			20			23
Average Age			47.3			47.5

**Retiree Coverage Summary (2018)**

Level of Coverage	Fire	Police	Total
Single	70	68	138
Dual/Family	250	250	500
Opt Out	8	6	14
<b>Total Retirees Covered</b>	<b>328</b>	<b>324</b>	<b>652</b>

For this study, we relied on the data provided by the City. We did not verify or audit the information, but did review it for reasonableness. There were a number of changes and assumptions made during our review that are reflected in the final valuation database, including the following:

- Multiple retiree records under the same retiree Social Security number were combined into one record. Coverage level was assigned on this basis, rather than the reported coverage level.
- If there was a date of birth discrepancy with the pension data, the pension data date of birth was used.
- Status code for disabled and beneficiary retirees were taken from the pension data.

### **Section 3: Outline of Actuarial Assumptions and Methods**

## 3.1: Actuarial Methods

### Actuarial Cost Method

The Entry Age Normal Actuarial Cost Method, with level percentage of pay 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, decreasing by 1 year to an ultimate period of 15 years (24 years remaining as of January 1, 2018).

### 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.

### 3.2: Actuarial Assumptions

**Valuation Date** All assets and liabilities are computed as of January 1, 2018.

**Investment Return** The annual rate of return on trust fund assets is assumed to be 7.25%. The annual return of non-trust fund assets is assumed to be 3.75%. Each of these is net of expenses and including inflation.

**Inflation** The underlying annual rate of inflation is assumed to be 2.75%.

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. All of the assumptions were updated based on an Experience study conducted in 2016.

**Mortality** RP2000 Tables, with blue collar adjustments. For Disabled members, the disabled versions of these tables are assumed. Each of these tables is projected to 2026 using Scale BB. For pre-retirement deaths, a 50% factor is applied to these tables.

**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	90%	90%
26-29	60%	25%
30+	100%	100%

**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	0.120%
30	0.600%
40	0.940%
50	1.125%
60	0.000%

Termination of Employment

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

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

Age	Assumed Rate - Police
20	15.0%
25	7.5%
30	3.7%
35	1.9%
40	0.9%
45	0.5%
51+	0.0%

Family Composition and Participation

100% of eligible members are assumed to elect coverage upon retirement. All active Plan members are assumed to be married, and to elect dual coverage upon retirement. Male spouses are assumed to be three years older than their wives. 20% of retirees are assumed to have two 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 and expenses for 2018, based on the age and gender of the retiree and dependents.

Age	Male	Female
45	\$6,858	\$8,531
50	8,752	10,887
55	11,764	13,127
60	16,279	15,199
65	4,773	4,773
70	5,534	5,534
75	6,261	6,261
80	6,679	6,679
85+	6,847	6,847

Expected costs for future retirees are adjusted based on plan option.

Healthcare Costs

Dental costs are expected to be \$367 per year (2018 basis) for each covered member and spouse. Vision claims are expected to be \$67.56 per year (2018 basis). The costs above were updated based on recent claims/expense information and standard aging rates.

Medicare Part B Reimbursements are assumed to be \$1,462.80 per year.

Healthcare trend

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

Year	Pre-65 Rate	Post-65 Rate
2018	6.0%	4.5%
2019	5.5%	4.5%
2020	5.0%	4.5%
2021	4.5%	4.5%
2022+	4.5%	4.5%

The basis for these rates is a consolidated version of the Getzen Model. Dental and Vision costs are assumed to increase at 4.5% per year.

## Section 4: Summary of Plan Provisions



## 4.1: Fire (IAFF Local 421)

The following is an outline of the information used as the basis for this actuarial valuation. It does not imply a promise or obligation on behalf of the City, and does not take the place of applicable ordinances and collective bargaining agreements.

<b>Date of Hire</b>	<b>Normal Retirement Eligibility</b>	<b>Deferred Retirement Eligibility</b>	<b>Benefits Payable for Healthcare, Dental, and Vision</b>
On or before 7/1/2006	Age 55 with 10 years of service, or Any age with 25 years of service	Age 55 with 10 years of service  Non Duty Disability/Death: Any age with 10 years of service	<u>Retirement prior to 7/1/2011:</u> the City pays 100% of retiree City-paid health plan coverage for spouse and eligible dependents if Joint & Survivor pension option is elected, but only through the retiree's lifetime if straight life pension option is elected.
From 7/2/2006 to 6/30/2010	Age 55 with 15 years of service or Any age with 25 years of service with up to 2 years of military service credit	Age 55 with 15 years of service  Non Duty Disability/Death: Any age with 15 years of service	<u>Retirement between 7/1/2011 and 6/30/2013:</u> Retiree pays 15% of the cost of the coverage at the date of retirement, for pre-65 coverage, and 10% for post-65.
From 7/1/2010 to 5/18/2014	Any age with 25 years of service with up to 2 years of military service credit	Age 55 with 25 Years of service  Non Duty Disability/Death: Any age with 25 years of service	<u>Retirement on or after 7/1/2013:</u> the City pays the cost of healthcare coverage, up to the State of Michigan annually-determined hard cap amount.
On or after 5/19/2014	Age 50 with 25 years of service with up to 2 years of military service	Age 55 with 25 Years of service	City pays dental, vision, and 100% of retiree City-paid plan coverage for the retiree only, up to the State of Michigan annually-determined hard cap amount. Spouses and dependents are not covered for healthcare, but they are still eligible for dental and vision coverage.

**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):** Disability benefits payable when member begins to receive disability retirement benefits, subject to eligibility shown above.

**Medicare Coverage Eligibility:** City provides Medicare Part B premium reimbursement and retiree health care, dental, and vision benefits supplemental to Medicare coverage when participant becomes Medicare-eligible.

**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.

### 4.2.1: Police (Capital City Lodge Program, formerly FOP Lodge No. 141) Non-Supervisory

The following is an outline of the information used as the basis for this actuarial valuation. It does not imply a promise or obligation on behalf of the City, and does not take the place of applicable ordinances and collective bargaining agreements.

<b>Date of Hire</b>	<b>Normal Retirement Eligibility</b>	<b>Deferred Retirement Eligibility</b>	<b>Benefits Payable for Healthcare, Dental, and Vision</b>
On or before 7/1/2010	Age 55 with 15 years of service, or Any age with 25 years of service	Age 55 with 15 years of service  Non Duty Disability/Death: Any age with 25 years of service	<u>Retirement prior to 10/13/2015:</u> City pays 100% of retiree City-paid health plan coverage for spouse and eligible dependents if Joint & Survivor pension option is elected, but only through the retiree's lifetime if straight life pension option is elected.
From 7/2/2010 to 7/31/2014	Any age with 25 years of service with up to 2 years of military service credit	Age 55 with 25 years of service  Non Duty Disability/Death: Any age with 25 years of service	<u>Retirement on or after 10/13/2015:</u> City pays the cost of healthcare coverage, up to the State of Michigan annually-determined hard cap amount. Retiree contributions toward City-paid plan coverage is capped at 1% of monthly pension benefit.
On or after 8/1/2014	Age 50 with 25 years of service with up to 2 years of military service credit	Age 55 with 25 years of service  Non Duty Disability/Death: Any age with 25 years of service	Spouses and dependents are not covered. City pays the cost of healthcare coverage, up to the State of Michigan annually-determined hard cap amount. Retiree contributions toward City-paid plan coverage is capped at 1% of monthly pension benefit. Retiree dental and vision coverage remains for spouse and eligible dependents.

**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):** Disability benefits payable when member begins to receive disability retirement benefits, subject to eligibility shown above.

**Medicare Coverage Eligibility:** The City provides Medicare Part B premium reimbursement and retiree healthcare, dental, and vision benefits supplemental to Medicare coverage when participants become Medicare-eligible.

**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.

**Opt Out Benefit:** Retirees who opt out of health care coverage are eligible to receive \$1,500 in any year in which they did not receive coverage from another source.

## 4.2.2: Police (Capital City Lodge Program, formerly FOP Lodge No. 141) Supervisory

The following is an outline of the information used as the basis for this actuarial valuation. It does not imply a promise or obligation on behalf of the City, and does not take the place of applicable ordinances and collective bargaining agreements.

<b>Date of Hire</b>	<b>Normal Retirement Eligibility</b>	<b>Deferred Retirement Eligibility</b>	<b>Benefits Payable for Healthcare, Dental, and Vision</b>
Before 7/15/2010	Age 55 with 15 years of service, or Any age with 25 years of service	Age 55 with 15 years of service  Non Duty Disability/Death: Any age with 25 years of service	<u>Retirement prior to 7/15/2010:</u> City pays 100% of retiree City-paid health plan coverage for spouse and eligible dependents if Joint & Survivor pension option is elected, but only through the retiree's lifetime if straight life pension option is elected.
From 7/15/2010 to 7/31/2014	Any age with 25 years of service with up to 2 years of military service credit	Age 55 with 25 years of service  Non Duty Disability/Death: Any age with 25 years of service	<u>Retirement on or after 7/15/2010 and before 10/13/2015:</u> City pays coverage for spouse and eligible dependents if Joint & Survivor pension option is elected, but only through the retiree's lifetime if straight life pension option is elected, subject to \$650 family/\$550 2-person/\$250 single annual premium sharing for pre-Medicare coverage, with the premium sharing limited to five years immediately following retirement.  <u>Retirement on or after 10/13/2015:</u> City pays coverage for spouse and eligible dependents if Joint & Survivor pension option is elected, but only through the retiree's lifetime if straight life pension option is elected, up to the State of Michigan annually-determined hard cap amount. Retiree contributions toward City-paid plan coverage is capped at 1% of monthly pension benefit.
On or after 8/1/2014	Age 50 with 25 years of service with up to 2 years of military service credit	Age 55 with 25 years of service  Non Duty Disability/Death: Any age with 25 years of service	Spouses and dependents are not covered. City pays the cost of healthcare coverage, up to the State of Michigan annually-determined hard cap amount. Retiree contributions toward City-paid plan coverage is capped at 1% of monthly pension benefit. Retiree dental and vision coverage remains for spouse and eligible dependents.

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***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):*** Disability benefits payable when member begins to receive disability retirement benefits, subject to eligibility shown above.

**Medicare Coverage Eligibility:** The City provides Medicare Part B premium reimbursement and retiree healthcare, dental, and vision benefits supplemental to Medicare coverage when participants become Medicare-eligible.

**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.

**Opt Out Benefit:** Retirees who opt out of health care coverage are eligible to receive \$1,500 in any year in which they did not receive coverage from another source.

*The Plan provision summaries shown in this Report were provided by the City and were not independently verified by BCG.*

## 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
- 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.

### Actuarially Determined Contribution (ADC)

The annual cost of the plan, on a funding basis. The ADC 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.

### 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.

## Appendix: Benefit Costs by Group

Employee Group(s)	# Employees	Total Normal Cost*	Normal Cost per Employee
Police NS I	102	\$626,574	\$6,143
Police NS II	52	\$171,183	\$3,292
Police Sup	43	\$244,424	\$5,684
Fire I	116	\$808,731	\$6,972
Fire II	52	\$201,277	\$3,871
<b>All Police and Fire Employees</b>	<b>365</b>	<b>\$2,052,189</b>	<b>\$5,622</b>

\* Beginning of Year, fully prefunded (7.25%) basis

Police NS I: Police, Non-Supervisory hired before 8/1/2014
Police NS II: Police, Non-Supervisory hired on or after 8/1/2014
Police Sup: Police, Supervisory
Fire I: hired before 5/19/2014
Fire II: hired on or after 5/19/2014