



***City of Ludington
Police Retirement System***

Actuarial Valuation as of December 31, 2016



April 14, 2017

The Retirement Board
City of Ludington Police Retirement System
Ludington, Michigan

Dear Board Members:

The purpose of the annual actuarial valuation of the City of Ludington Police Retirement System as of December 31, 2016, is to:

- Compute the liabilities associated with benefits likely to be paid on behalf of current retired and active members of the Retirement System,
- Compare accrued assets with accrued liabilities to assess the funded condition of the Retirement System, and
- Compute the City's recommended contribution rate for the Fiscal Year beginning January 1, 2017.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices. Data concerning active members, retirees, beneficiaries and assets was provided by the City of Ludington. This data has been reviewed for reasonableness, but no attempt has been made to audit such information. The valuation was based on the provisions of the Retirement System as amended through December 31, 2016. Each actuarial assumption used in this valuation is reasonably related to the past experience of the System and represents reasonable expectations of future experience under the System. This valuation has been prepared under the supervision of a Member of the American Academy of Actuaries qualified to render the actuarial opinions contained herein.

Respectfully submitted,

A handwritten signature in black ink that reads 'Denise M. Jones'.

Denise M. Jones
Senior Consultant

A handwritten signature in black ink that reads 'Sandra W. Rodwan'.

Sandra W. Rodwan
Member, American Academy of Actuaries

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Section One:
Valuation Summary



Purpose of Valuation

The purpose of the annual actuarial valuation of the City of Ludington Police Retirement System as of December 31, 2016 is to:

- ❖ Compute the liabilities associated with benefits likely to be paid on behalf of current retired and active members of the retirement system,
- ❖ Compare accrued assets with accrued liabilities to assess the funded condition of the retirement system, and
- ❖ Compute the City's recommended contribution rate for the Fiscal Year beginning January 1, 2017.

Liabilities and Funded Condition of Retirement System

Accrued liabilities of the Retirement System as of December 31, 2016 were computed to be \$7,255,260. The funding value of assets was \$5,342,062. The ratio of the funding value of assets to accrued liabilities was 73.6%.

Funding Value of Assets

A smoothed market value of assets was used for the December 31, 2016 valuation. This method, which is unchanged from prior years, spreads the difference between actual and expected investment return over four years.

City's Computed City Contribution Rate

The City's normal cost contribution rate was computed to be 14.51% of active member payroll (20.51% total normal cost less 6.00% member contributions). The unfunded accrued liabilities were amortized over 20 years as a level percent of payroll. The amortization of the unfunded accrued liabilities was 14.17% of member payroll. The City's total contribution for FY 2017 was therefore computed to be 28.68% of member payroll.

Retirement System Experience

The overall experience of the Retirement System during the year ended December 31, 2016 was generally offsetting.

Benefit Provision Changes

There were no benefit changes used in this valuation.

Assumption and Method Changes

The mortality table changed from the 1971 Group Annuity Table projected to 2000 to the RP 2000 Combined Healthy Mortality Table Projected to 2014. The amortization period and method were also changed from a 15 year open amortization to a 20 year closed amortization.

Participant Data

There was one hire during 2016 and one retired member and one active member were removed.

	<u>12/31/2016</u>	<u>12/31/2015</u>
Active Members	14	14
Active Member Payroll	\$885,272	\$852,255
Retirees and Beneficiaries	13	14
Annual Pensions	\$381,422	\$409,711

Financial Data

	<u>12/31/2016</u>	<u>12/31/2015</u>
Smoothed Valuation Assets	\$5,342,062	\$5,037,857
Market Value of Assets	\$5,058,130	\$4,820,873



Section Two:

***Actuarial Calculations –
Funding***



Computed Contribution Rates for Fiscal Year 2017

The contribution rates shown below are expressed as level percents of active member payroll.

The normal cost can be viewed as the long-term on-going cost of the Retirement System. Accrued liabilities exceeded accrued assets as of December 31, 2016. The unfunded actuarial accrued liability was amortized as a level percent of payroll over 20 years. This amortization payment was added to the normal cost contribution.

Normal Cost	<u>Percents of Payroll</u>
Regular Retirement	14.83%
Pre-retirement Death	0.52
Disability	3.07
Termination Benefits	
Deferred Retirement	1.39
Refunds	<u>0.70</u>
Total Normal Cost	20.51%
Unfunded Actuarial Accrued Liability	14.17
Total Computed Contribution	34.68%
Member portion	6.00
City portion	28.68%
Dollar Amount Based on Valuation Payroll*	\$253,896

* Valuation Payroll was \$885,272 as of December 31, 2016.

Unfunded Actuarial Accrued Liability

	<u>December 31, 2016</u>	<u>December 31, 2015</u>
Actuarial accrued liability	\$7,255,260	\$6,714,137
Assets allocated to funding	<u>5,342,062</u>	<u>5,037,857</u>
Unfunded actuarial accrued liability	\$1,913,198	\$1,676,280

Recommended City Contributions

Valuation Date: December 31	Computed City Dollar Contributions	Percent of Payroll
1995**	\$88,431	19.65%
1996	90,443	18.51
1997	108,419	21.44
1998	99,841	19.14
1999	102,479	18.03
2000	107,480	19.53
2001	136,187	20.05
2002	165,170	23.64
2003	212,534	28.69
2004	222,700	30.27
2005	236,368	30.40
2006	234,150	30.12
2007	244,483	30.31
2008	276,744	30.66
2009	283,358	31.62
2010	301,133	35.25
2011	288,543	38.71
2012#	274,617	33.00
2013	236,203	29.19
2014*	259,963	29.27
2015	252,182	29.59
2016	253,896	28.68

*Valuation date 6/30

**After post-retirement increases.

#After benefit changes.

Note: Results prior to 2000 are based on reports provided by previous actuarial firm.

**History of Assets and Accrued Liabilities
(\$ in Thousands)**

Valuation Date Dec. 31	Valuation Assets	Actuarial Accrued Liabilities	Funded Ratio	Unfunded Actuarial Accrued Liabilities
1980*	584	777	75.2	193
1985	1,418	1,319	107.5	(99)
1990	2,237	2,179	102.6	(58)
1995	3,016	3,129	96.4	113
1996	3,241	3,359	96.5	117
1997	3,128	3,670	85.5	532
1998	3,385	3,700	91.5	315
1999	3,669	3,998	92.0	319
2000	3,824	4,328	88.4	504
2001	3,815	4,482	85.1	667
2002	3,593	4,624	77.7	1,031
2003	3,391	5,005	67.7	1,614
2004	3,246	5,000	64.9	1,754
2005	3,232	5,060	63.9	1,828
2006	3,421	5,099	67.1	1,678
2007	3,614	5,282	68.4	1,668
2008	3,659	5,569	65.7	1,911
2009	3,715	5,705	65.1	1,990
2010	3,726	5,983	62.3	2,257
2011	3,728	5,963	62.5	2,235
2012#	4,015	6,027	66.6	2,012
2013	4,357	5,907	73.8	1,550
2014	4,744	6,472	73.3	1,728
2015	5,038	6,714	75.0	1,676
2016	5,342	7,255	73.6	1,913

Results shown throughout this report, for years prior to 2000, were prepared by the previous actuarial firm.

*Valuation date June 30 prior to 1984 and December 31 thereafter.

#After benefit changes.

Comments and Conclusion

Comment 1: The mortality table was changed to the RP 2000 Combined Healthy Annuitant Mortality Table Projected to 2014, and the amortization of unfunded actuarial accrued liabilities was changed from a 15 year open amortization to a 20 year closed as adopted by the Retirement Board of Trustees.

Conclusion: The Retirement System is being financed in accordance with a sound level percent of payroll funding objective. Over the long term the funded ratio is expected to increase if actual experience is close to assumed experience and contributions are made as recommended.



Section Three:

***Retirement System
Benefit Provisions***



Benefit Provision Summary

Regular Retirement

Eligibility:

Age 50 with 25 or more years of service or age 60 regardless of service. Any age with 25 or more years of service effective December 31, 1993.

Hired on or after January 1, 2015: Age 50 with 25 or more years of service.

Annual Benefit:

Straight life pension equals 2.7% of 3-year average final compensation (AFC) times first 25 years of service plus 1% of AFC times years of service in excess of 25 years.

Hired on or after January 1, 2015: Straight life pension equals 2.5% of 3-year average final compensation (AFC) times first 25 years of service plus 1% of AFC times years of service in excess of 25 years.

Deferred Retirement

Eligibility:

10 or more years of service.

Annual Benefit:

Computed as service retirement but based upon service, AFC and benefit in effect at termination. Benefit begins at date retirement would have occurred had member remained in employment.

Duty Disability Retirement

Eligibility:

Payable upon the total and permanent disability of a member in the line of duty.

Annual Benefit:

To age 55: 50% of FAC.

At age 55: Same as Service Retirement Pension with service credit from date of disability to age 55.

Non-Duty Disability

Eligibility:

Payable upon the total and permanent disability of a member with 5 or more years of service

Annual Benefit:

To Age 55: 1.5% of AFC times years of service.
At Age 55: Same as Service Retirement Pension.

Duty Death in Service Survivor Pension

Eligibility:

Payable upon the expiration of a worker's compensation to the survivors of a member who died in the line of duty.

Annual Benefit:

Same amount that was paid by worker's compensation.

Non-Duty Death in Service Survivor Pension

Eligibility:

Payable to a surviving spouse, if any, upon the death of a member with 20 or more years of service.

Annual Benefit:

Accrued straight life pension actuarially reduced in accordance with an Option I election.

Death After Retirement Survivor Pension

Eligibility:

Payable to a surviving spouse, if any, upon the death of a retired member who was receiving a straight life pension which was effective July 1, 1974 or later.

Annual Benefit:

Spouse's pension equals 60% of the straight life pension the deceased retiree was receiving.

Member Contributions

6% of pay