Village of Morton
Police Pension Fund

May 1, 2018

Actuarial Valuation Report

At the request of the plan sponsor, this report summarizes the Village of Morton Police Pension Fund as of May 1, 2018 . The purpose of this report is to communicate the following results of the valuation:

• Funded Status;
• Recommended Village Contribution;
• Statutory Minimum Contribution;

This report has been prepared in accordance with the applicable Federal and State laws. Consequently, it may not be appropriate for other purposes. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than that explained above. Failure to do so may result in misrepresentation or misinterpretation of this report.

The results in this report were prepared using information provided to us by other parties. The census information has been provided to us by the employer. Asset information has been provided to us by the administrator. We have reviewed the provided data for reasonableness when compared to prior information provided, but have not audited the data. Where relevant data may be missing, we have made assumptions we believe to be reasonable. We are not aware of any significant issues with and have relied on the data provided. Any errors in the data provided may result in a different result than those provided in this report. A summary of the data used in the valuation is included in this report.

The actuarial assumptions and methods were chosen by the employer. In our opinion, all actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following:

• plan experience differing from that anticipated by the economic or demographic assumptions;
• changes in economic or demographic assumptions;
• increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and
• changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement. This report has been prepared in accordance with generally accepted actuarial principles and practice.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States and are available for any questions.

Nyhart

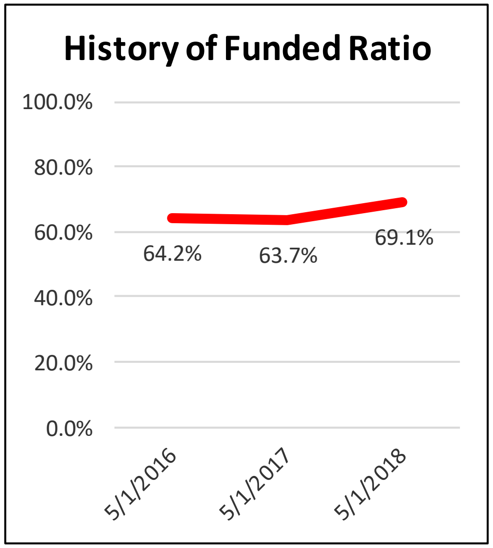
Michael Zurek, EA, FCA, MAAA

October 31, 2018
Date

Summary Results

The actuarial valuation's primary purpose is to produce a scorecard measure displaying the funding progress of the plan toward the ultimate goal of paying benefits at retirement. The Accrued Liability is based on the Projected Unit Credit actuarial cost method.

	May 1, 2017	May 1, 2018
Funded Status Measures		
Accrued Liability	$ 19,139,208	$ 18,733,298
Actuarial Value of Assets	12,185,959	12,946,375
Unfunded Accrued Liability	$ 6,953,249	$ 5,786,923
Funded Percentage (AVA)	63.7%	69.1%
Funded percentage (MVA)	62.1%	69.0%
Cost Measures		
Recommended Total Pension Contribution	$ 839,963	$ 897,409
Expected Employee Contributions	(163,993)	(171,693)
Recommended Net Village Contribution	$ 675,970	$ 725,716
- as a Percentage of Payroll	42.0%	43.1%
Asset Measures		
Market Value of Assets (MVA)	$ 11,884,400	$ 12,918,621
Actuarial Value of Assets (AVA)	$ 12,185,959	$ 12,946,375
Actuarial Value/Market Value	102.5%	100.2%
Participant Information		
Active Participants	22	22
Terminated Vested Participants	1	-
Retirees, Beneficiaries, and Disabled Participants	11	11
Total	34	33
Payroll	$ 1,610,539	$ 1,682,054



Changes since Prior Valuation and Key Notes

There have been no changes to the plan provisions since the last valuation.

The healthy mortality assumption was updated from the RP-2000 mortality table with blue collar adjustment projected to 2025 with improvement scale AA, to the RP-2014 mortality table with blue collar adjustment projected generationally with improvement scale MP-2017 from 2013. The disabled mortality assumption was updated from the RP-2000 disabled mortality table with blue collar adjustment projected to 2025 with improvement scale AA, to 115% of the RP-2014 mortality table with blue collar adjustment projected generationally with improvement scale MP-2017 from 2013. The changes resulted in an increase in benefit obligations and in the recommended contribution.

The retirement, withdrawal, and disability decrement assumptions were changed to the recommended rates in the Illinois Department of Insurance Experience Study published in 2017. These changes resulted in a decrease in benefit obligations and an increase in the recommended contribution.

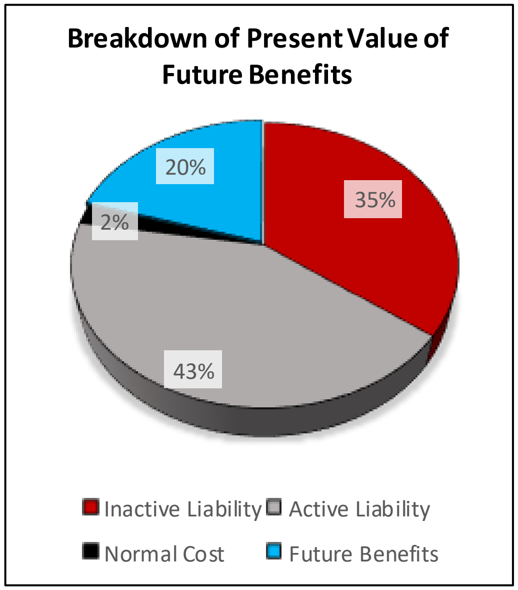
The interest rate assumption was changed from 5.5% to 6.0%. The change resulted in a decrease in benefit obligations and a decrease in the recommended contribution.

The Village's funding policy was changed to determine the Recommended Contribution as the normal cost plus an amortization to fund the plan to 100% by the end of fiscal 2040. The target funding percentage had been 90%. The change resulted in an increase in the recommended contribution.

Present Value of Future Benefits

The Present Value of Future Benefits represents the future benefits payable to the existing participants.

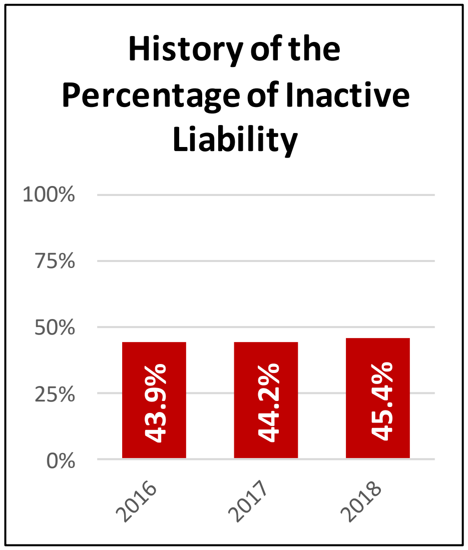
	May 1, 2018
Present Value of Future Benefits	
Active Participants	
Retirement	$ 13,910,233
Disability	1,005,464
Death	242,275
Termination	488,929
Total Active	$ 15,646,901
Inactive participants	
Retired Participants	$ 7,461,203
Beneficiaries	272,465
Disabled Participants	770,644
Terminated Vested Participants	-
Total Inactive	$ 8,504,312
Total	$ 24,151,213
Present Value of Future Payrolls	$ 17,402,078
Present Value of Future Employee Contributions	$ 1,722,215



Accrued Liability

The Funding Liability measures the present value of benefits earned as of the valuation date, using the actuarial assumptions described in the assumption section of this report and the Projected Unit Credit actuarial cost method.

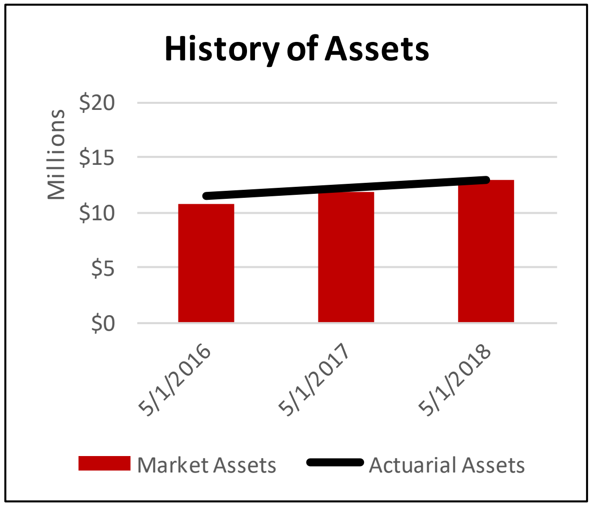
	May 1, 2018
Funding Liabilities	
Active Participants	
Retirement	$ 9,036,540
Disability	665,339
Death	158,102
Termination	369,005
Total Active	$ 10,228,986
Inactive Participants	
Retired Participants	$ 7,461,203
Beneficiaries	272,465
Disabled Participants	770,644
Terminated Vested Participants	-
Total Inactive	$ 8,504,312
Total	$ 18,733,298
Normal Cost	$ 526,190



Asset Information

The amount of assets backing the pension promise is the most significant driver of volatility and future costs within a pension plan. The investment performance of the assets directly offsets the ultimate cost.

	May 1, 2018
Market Value Reconciliation	
Market Value of Assets, Beginning of Prior Year	$ 11,884,400
Contributions	
Employer Contributions	$ 633,804
Member Contributions	160,775
Total	$ 794,579
Investment Income	850,114
Benefit Payments	(599,506)
Administrative Expenses	(10,966)
Market Value of Assets, Beginning of Current Year	$ 12,918,621
Return on Market Value	7.1%
Actuarial value of assets	
Value at Beginning of Current Year	$ 12,946,375



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Asset Information (continued)

Plan Assets are used to develop funded percentages and contribution requirements.

	May 1, 2018
1. Expected Market Value of Assets	
(a) Market Value of Assets, Beginning of Prior Year	$ 11,884,400
(b) Contributions	794,579
(c) Benefit Payments	(599,506)
(d) Administrative Expenses	(10,966)
(e) Expected Return	658,705
(f) Expected Market Value of Assets, Beginning of Current Year	$ 12,727,212
2. Market Value of Assets, Beginning of Current Year	$ 12,918,621
3. Actual Return on Market Value	$ 850,114
4. Amount Subject to Phase-in [(3)-(1e)]	$ 191,409
5. Phase-in of Asset Gain/(Loss)	
(a) Current Year [80% x $ 191,409]	$ 153,127
(b) First Prior Year [60% x $ 201,118]	120,671
(c) Second Prior Year [40% x $ (752,845)]	(301,138)
(d) Third Prior Year [20% x $ (2,068)]	(414)
(e) Total Phase-in	$ (27,754)
6. Actuarial Value of Assets, Beginning of Current Year [(2)-(5e)]	$ 12,946,375
7. Return on Actuarial Value of Assets	4.7%

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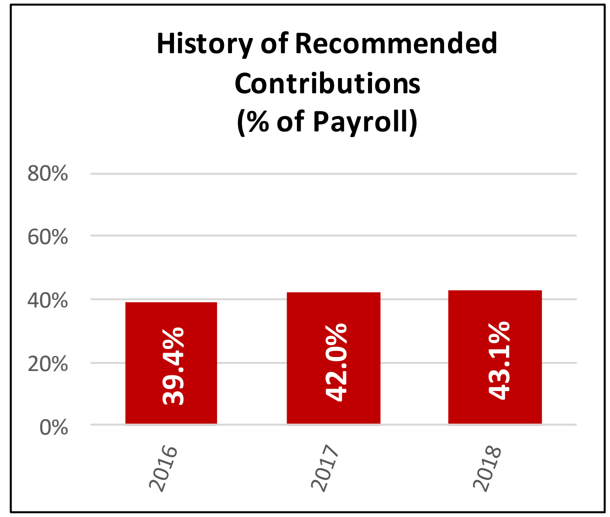
Reconciliation of Gain/Loss

	May 1, 2018
Liability (Gain)/Loss	
Actuarial Liability, Beginning of Prior Year	$ 19,139,208
Normal Cost	546,588
Benefit Payments	(599,506)
Expected Interest	1,066,232
Expected Actuarial Liability, Beginning of Current Year	$ 20,152,522
Actual Actuarial Liability, Before Changes	$ 19,854,504
Liability (Gain)/Loss	$ (298,018)
Asset (Gain)/Loss	
Actuarial Value of Assets, Beginning of Prior Year	$ 12,185,959
Contributions	794,579
Benefit Payments and Administrative Expenses	(610,472)
Expected Return	675,291
Expected Actuarial Value of Assets, Beginning of Current Year	$ 13,045,357
Actual Actuarial Value of Assets, Beginning of Current Year	$ 12,946,375
Asset (Gain)/Loss	$ 98,982
Total (Gain)/Loss	$ (199,036)

Development of Recommended Contribution

The recommended contribution is the annual amount needed to fund the plan to 100% by the end of the 2040 fiscal year as a level percentage of payroll, using the Projected Unit Credit actuarial cost method. The recommended contribution is subject to the State statutory minimum, which is the annual amount needed to fund the plan to 90% by the end of the 2040 fiscal year as a level percentage of payroll, using the Projected Unit Credit actuarial cost method.

	May 1, 2018
Funded Position	
1. Projected Unit Credit Accrued Liability	$ 18,733,298
2. 90% of Projected Unit Credit Accrued Liability	$ 18,733,298
3. Actuarial Value of Assets	12,946,375
4. Unfunded Actuarial Accrued Liability (UAAL) (2 – 3)	$ 5,786,923
Recommended Contribution	
1. Normal Cost	$ 526,190
2. Administrative Expenses	10,966
3. Amortization of UAAL	334,115
4. Applicable Interest	26,138
5. Total Recommended Contribution	$ 897,409
6. Expected Employee Contributions	171,693
7. Net Recommended Village Contribution (5 – 6)	$ 725,716
8. Minimum Contribution (Public Act 096-1495 Tax Levy Requirement)	$ 614,312
9. Final Recommended Contribution [max (7,8)]	$ 725,716
As a Percentage of Expected Payroll	43.1%



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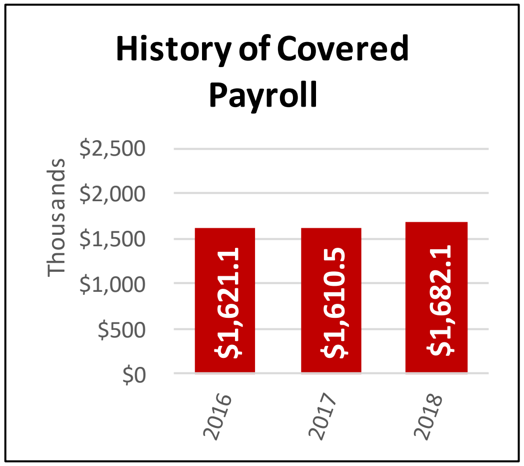
Demographic Information

The foundation of a reliable actuarial report is the participant information provided by the plan sponsor. Monitoring trends in demographic information is crucial for long-term pension planning.

	May 1, 2018
Participant Counts	
Active Participants	22
Retired Participants	9
Beneficiaries	1
Disabled Participants	1
Terminated Vested Participants	-
Total Participants	33
Active Participant Demographics	
Average Age	40.3
Average Service	15.2
Average Compensation	$ 76,457
Covered Payroll	$ 1,682,054



Demographic Information (continued)

	May 1, 2018
Retiree Statistics	
Average Age	69.0
Average Monthly Pension Benefit	$ 4,603
Beneficiary Statistics	
Average Age	78.2
Average Monthly Pension Benefit	$ 2,957
Disabled Participants Statistics	
Average Age	45.3
Average Monthly Pension Benefit	$ 3,242
Terminated Participants Statistics	
Average Age	-
Average Monthly Pension Benefit*	$ -

* Average monthly pension benefit does not include participants eligible for a return of contributions only.

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Participant Reconciliation

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Totals
Prior Year	22	1	1	9	1	34
Active						
To Retired	(1)	0	0	1	0	0
To Disabled	0	0	0	0	0	0
To Terminated Vested	0	0	0	0	0	0
To Death with Beneficiary	0	0	0	0	0	0
Terminated Nonvested (return of employee contributions)	0	0	0	0	0	0
Terminated Vested						
To Retired	0	0	0	0	0	0
To Disabled	0	0	0	0	0	0
Return of employee contributions	0	(1)	0	0	0	(1)
Retired						
To Death with Beneficiary	0	0	0	0	0	0
Death without Beneficiary	0	0	0	(1)	0	(1)
Beneficiaries						
To Death	0	0	0	0	0	0
Additions	1	0	0	0	0	1
Departures	0	0	0	0	0	0
Current Year	22	0	1	9	1	33

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Active Participant Schedule

Active participant information grouped based on age and service.

	Years of Service											
Age Group	**Under 1**	**1 to 4**	**5 to 9**	**10 to 14**	**15 to 19**	**20 to 24**	**25 to 29**	**30 to 34**	**35 to 39**	**40 & Up**	**Total**	**Average Pay**
Under 25											0	
25 to 29	1	1									2	60,430
30 to 34		1	2								3	71,290
35 to 39			2	2	2						6	73,144
40 to 44				1	3	1					5	79,690
45 to 49					1	1	2				4	79,182
50 to 54							1				1	74,843
55 to 59								1			1	118,443
60 to 64											0	
65 to 69											0	
70 & up											0	
Total	1	2	4	3	6	2	3	1	0	0	22	76,457

Eligibility for Participation

Police Officers of the Village of Morton

Accrual of Benefits

For employees hired prior to January 1, 2011, the normal retirement benefit is equal to 50% of the final salary plus 2.5% of any service over 20 years (with a maximum of 30) times the final salary. There is a minimum benefit of $1,000 per month. The benefit is paid as a 100% joint and survivor benefit with the spouse, children under 18, or dependent parents of the participants as the survivor.

For employees hired after or on January 1, 2011, the normal retirement benefit is equal to 2.5% of the final average salary times benefit service (maximum 30 years.) The benefit is paid as a 66.67% joint and survivor benefit with the spouse, children under 18, or dependent parents of the participants as the survivor.

Benefits

Normal Retirement

Eligibility	For employees hired prior to January 1, 2011, the normal retirement date is the first day of the month on or after completion of 20 years of service and attainment of age 50. For employees hired after or on January 1, 2011, the normal retirement date is the first day of the month on or after completion of 10 years of service and attainment of age 55.
Benefit	Unreduced Accrued Benefit payable immediately.

Early Retirement

Eligibility	For employees hired prior to January 1, 2011 and terminating with less than 20 years of service For employees hired after or on January 1, 2011 who has attained age 50 and has 10 years of service.
Benefit	For those hired prior to January 1, 2011 the Accrued Benefit of 2.5% of final salary times service shall be paid at age 60. For those hired after or on January 1, 2011 the Accrued Benefit is reduced by 0.5% for each month prior to age 55

Termination

Eligibility	Participants terminating before 20 years of service.
Benefit	Refund of Contributions

Disability In The Line of Duty

Eligibility	For participants who become disabled in the line of duty.
Benefit	The greater of 65% of the final salary or the accrued benefit

Disability Not In The Line of Duty

Eligibility	For participants who become disabled outside of the line of duty.
Benefit	50% of the final salary

Death In the Line of Duty

Eligibility	For participants who die in the line of duty.
Benefit	The benefit is 100% of final salary paid to the survivor.

Death Not In the Line of Duty

Eligibility	For participants who die outside of the line of duty.
Benefit	For those hired before 1/1/2011 with greater than 20 years of service, a benefit of 100% of the accrued benefit is paid to the survivor. For those with more than 10 years of service, but less than 20 years of service, a benefit of 50% of the final salary is paid to the survivor. For those hired after 1/1/2011 a benefit of 100% of the accrued benefit is paid to the survivor.

Compensation

Final Salary is the salary attached to the rank held on the last day of service, or one year prior to the last day, whichever is greater.

Final Average Salary is the average monthly salary obtained by dividing the total salary of the police office during the 96 consecutive months of service within the last 120 months of service in which the total salary was the highest by the number of months of service in that period. Salary will not exceed $106,800 adjusted from January 1, 2011 with the lesser of 3% and 50% of the CPI on November 1.

Credited Service

For Vesting and Benefit Accrual purposes, pension service credit is based on elapsed time from hire.

Employee Contributions

9.91% of Compensation

COLA

Eligibility	All Participants
Benefit	For employees hired prior to January 1, 2011 a compound COLA of 3% is granted each year after attainment of age 55 and 1 year of payments. For employees hired after or on January 1, 2011 a simple COLA of the lesser of 3% and 50% of the CPI on November 1 is granted each year after attainment of age 60 and 1 year of payments. For disabled employees, a simple COLA is available after attainment of age 60 and 1 year of payments. For employees hired prior to January 1, 2011 the COLA is 3%. For employees hired after January 1, 2011, the COLA is the lesser of 3% and 50% of the CPI on November 1.

Plan Provisions Not Included

We are not aware of any plan provisions not included in the valuation

Adjustments Made for Subsequent Events

We are not aware of any event following the measurement date and prior to the date of this report that would materially impact the results of this report.

Except where otherwise indicated, the following assumptions were selected by the plan sponsor with the concurrence of the actuary. Prescribed assumptions are based on the requirements of the relevant law, the Internal Revenue Code, and applicable regulation. The actuary was not able to evaluate the prescribed assumptions for reasonableness for the purpose of the measurement.

Valuation Date	May 1, 2018
Participant and Asset Information Collected as of	May 1, 2018
Actuarial Cost Method (CO)	Projected Unit Credit Cost Method
Amortization Method – Recommended Contribution (CO)	Closed level percentage of payroll amortization of 100% of the Unfunded Actuarial Accrued Liability using a 3.50% payroll growth assumption over the period ending on April 30, 2040 (22-year amortization in 2018)
Asset Method	5 year smoothing of asset gains and losses
Interest Rates (CO)	6.00%, net of investment expenses
Inflation (FE)	2.50%
Annual Pay Increases (FE)	4.00%
Ad-hoc Cost-of-living Increases	3.0% (1.25% for those hired after 1/1/2011)
Mortality Rates (FE)	
Healthy	RP-2014 Mortality Table with blue collar adjustment, projected generationally from 2013 using Scale MP-2017
Disabled	115% of the healthy mortality table, projected generationally from 2013 using Scale MP-2017
	10% of deaths are assumed to be in the line of duty

Retirement Rates (FE)

Recommended rates from the 2017 IDOI experience study:

Tier I		Tier II	
Age	Rate	Age	Rate
50-51	15%	50-54	5%
52-54	20%	55	40%
55-64	25%	56-64	25%
65-69	40%	65-69	40%
70+	100%	70+	100%

Disability Rates (FE)

Recommended rates from the 2017 IDOI experience study. Sample rates include:

Age	Rate
20	0.000%
30	0.140%
40	0.420%
50	0.710%

60% of disabilities are assumed to be in the line of duty

Termination Rates (FE)

Recommended rates from the 2017 IDOI experience study. Sample rates include:

Age	Rate
20	10.40%
30	5.60%
40	1.90%
50	1.50%

Marital Status and Ages (FE)

80% of participants are assumed to be married with female spouses 3 years younger.

Expense Load

Equal to the administrative expenses paid in the prior year.

Funding Policy

Normal cost, plus an amortization of the unfunded liability as a level percent of payroll to attain 100% funding in fiscal 2040 using the Projected Unit Credit Cost Method.

FE indicates an assumption representing an estimate of future experience
MD indicates an assumption representing observations of estimates inherent in market data
CO indicates as assumption representing a combination of an estimate of future experience and observations of market data

The actuarial report also shows the necessary items required for plan reporting and the any state requirements.

- ✓ Minimum contribution (Public Act 096-1495 Tax Levy Requirement)

Minimum Contribution (Public Act 096-1495 Tax Levy Requirement)

	May 1, 2018
1. Accrued liability using projected unit credit cost method	$ 18,733,298
2. 90% of Accrued liability	$ 16,859,968
3. Actuarial value of assets	12,946,375
4. Unfunded liability to be amortized [(2)-(3)]	$ 3,913,593
5. Total normal cost using projected unit credit cost method	$ 526,190
6. Administrative expenses	10,966
7. 22-year level pay amortization of (4)	225,956
8. Applicable interest	22,893
9. Minimum contribution (5 + 6 + 7 + 8)	$ 786,005
10. Expected employee contributions	171,693
11. Net employer minimum contribution (9 – 10)	$ 614,312

Actuarial Cost Method	Projected Unit Credit
Amortization Method	Closed level percentage of payroll amortization of 90% of Unfunded Actuarial Accrued Liability using a 3.50% payroll growth assumption over the period ending on April 30, 2040 (22-year amortization in 2018)
Asset Method	5 year smoothing of asset gains and losses
Interest Rate	6.00%, net of investment expenses