

City of York Police Pension Fund
Actuarial Valuation
as of January 1, 2017

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
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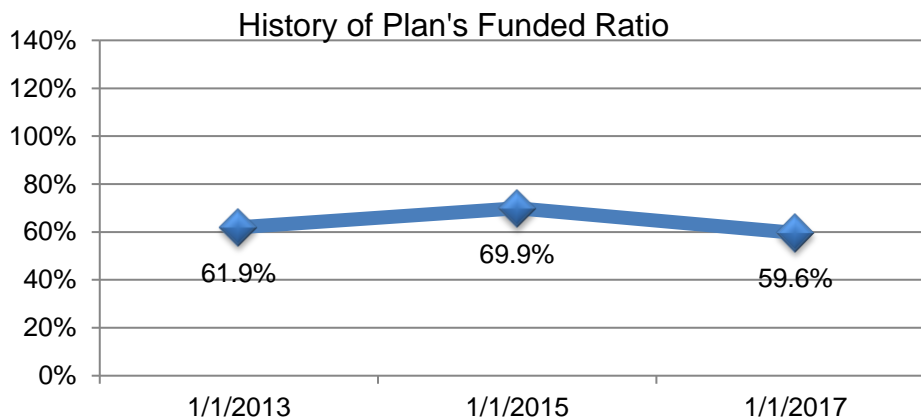
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City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Executive Summary

The purpose of the valuation report is to determine the actuarial status of the Plan and to serve as the basis for satisfying the reporting requirements under Act 205. The actuarial calculations contained in this report will be used to determine future minimum municipal obligations.

The Summary of Principal Plan Benefit Provisions (SPPB) may be found following the Actuarial Certification. This summary represents our understanding of the current plan provisions in effect at January 1, 2017. The only change in the provisions from the prior valuation report is for certain members who retired before January 1, 2013 the pension is increased by 50% of the dollar increase granted to active patrolmen of the highest pay grade. Following the SPPB is a summary of the Actuarial Assumptions and Methods used in this valuation report. Changes to any assumptions from the prior valuation are indicated on the second page which include a change to the mortality assumption.



	<u>1/1/2013</u>	<u>1/1/2015</u>	<u>1/1/2017</u>
Market Value of Assets (MVA)	\$ 43,733,837	\$ 52,027,946	\$ 47,605,589
Actuarial Value of Assets (AVA)	\$ 44,072,678	\$ 53,378,033	\$ 51,821,578
Actuarial Accrued Liability (AAL)	\$ 71,200,977	\$ 76,406,010	\$ 86,982,155
Unfunded Actuarial Accrued Liability (UAAL)	\$ 27,128,299	\$ 23,027,977	\$ 35,160,577
Normal Cost	\$ 1,259,860	\$ 1,205,920	\$ 1,263,760
W-2 Payroll	\$ 6,986,665	\$ 7,164,627	\$ 6,665,819
Percentage of W-2 Payroll	18.0%	16.8%	19.0%
Average Age	39.0	40.7	39.9
<i>Interest</i>	8.00%	8.00%	8.00%
<i>Salary Scale</i>	5.00%	5.00%	5.00%
<i>Average Life Expectancy*</i>	18.38	21.24	23.33
<i>Mortality Basis</i>	UP1984	RP2000	IRS 2017 Small Plan Combined Static
Participant Counts:			
Active	105	100	92
DROP	2	4	6
Vested Former	9	10	8
<u>Receiving Benefits</u>	<u>105</u>	<u>105</u>	<u>114</u>
Total	221	219	220

*Based on a male currently aged 60.

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Section 1

At the beginning of Section 1, there is a summary of the receipts and disbursements for 2015 and 2016. The Plan received contributions of \$328,860 during 2015, and \$1,396,750 during 2016. There were benefit payments to former participants totaling \$3,652,628 during 2015, and \$4,089,708 during 2016. The investment return earned by the plan assets was approximately (2.6%) for 2015, and approximately 7.5% for 2016.

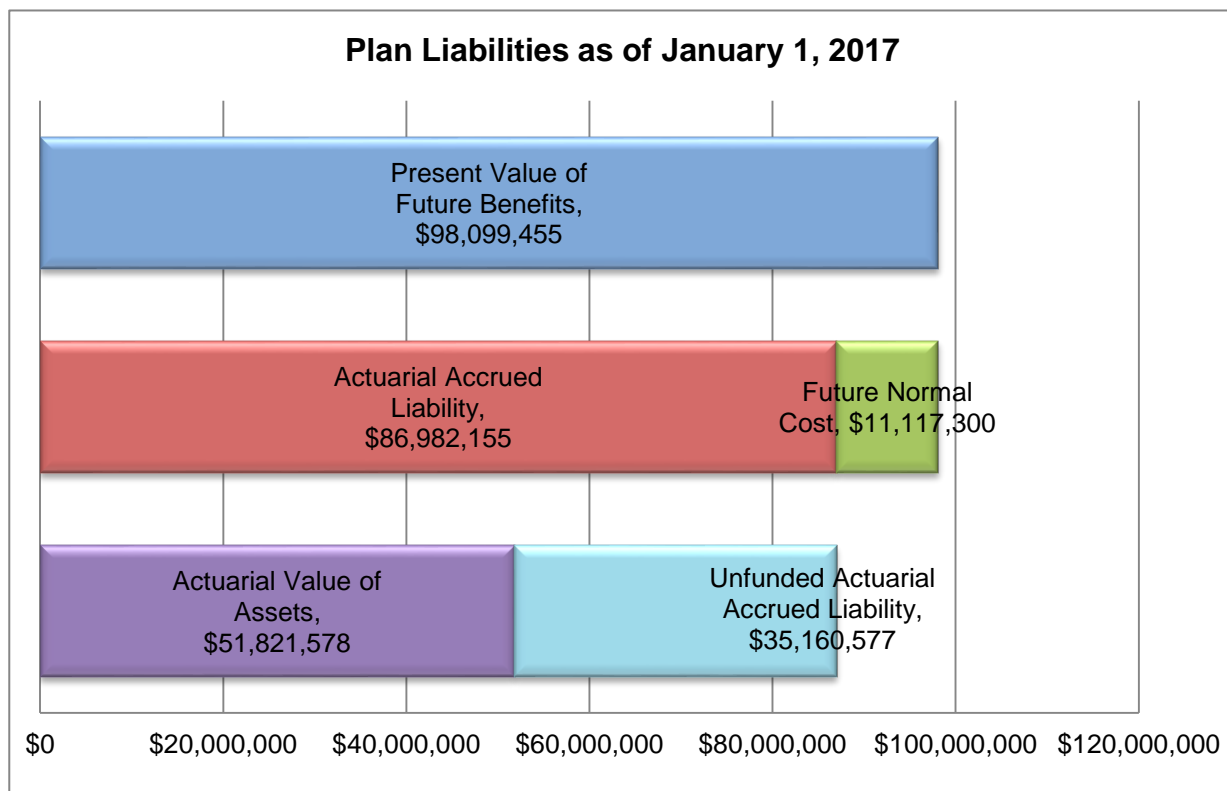
The following is a summary of the net dollar-weighted rates of investment return for the past six calendar years on both a market value and actuarial value basis:

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Market Value of Assets	(2.5%)	12.2%	14.2%	2.3%	(2.6%)	7.5%
Actuarial Value of Assets	0.6%	0.7%	9.8%	7.3%	4.4%	5.2%

Section 2

The Act 205 funding calculations are included in Section 2. The first page shows the development of the actuarial value of assets. As of December 31, 2016, the actuarial value of assets is \$51,821,578.

The actuarial present value of future benefits is \$98,099,455. Since the present value of future normal costs is \$11,117,300, the actuarial accrued liability at January 1, 2017, is \$86,982,155. Subtracting the actuarial value of assets of \$51,821,578 results in an unfunded actuarial accrued liability of \$35,160,577.



City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Executive Summary

Components of Financial Requirements

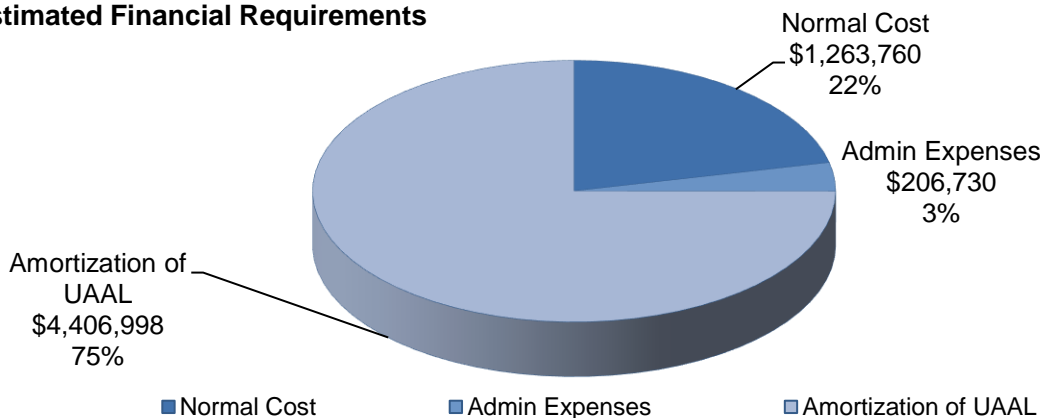
There are three cost components that make up the financial requirement of a Plan's minimum municipal obligation.

1. Normal Cost – This is the cost of pension and other benefits earned during the current year. The normal cost of the Plan is \$1,263,760. The normal cost represents approximately 19.0% of annual payroll.

2. Administrative Expenses – Examples of administrative expenses paid from the plan assets are expenses for: investment advisory services, actuarial services and trustee services. The Plan's estimated annual administrative expenses are \$206,730.

3. Amortization of the Unfunded Actuarial Accrued Liability – The amount of this cost is comprised of the amortization of the various gains and losses, plan amendments, and changes in actuarial assumptions that have occurred in the Plan over time. The Plan had a loss of \$1,908,531 due to the change in benefits. The Plan also had a loss as of January 1, 2017, of \$2,424,071 due to the change in actuarial assumptions. In addition, the Plan had an actuarial loss of \$7,538,984 for the previous two-year period. The amortization of the Unfunded Actuarial Accrued Liability is \$4,406,998.

Estimated Financial Requirements



Please note that the figures shown below are for illustrative purposes only. The actual minimum municipal obligation is determined through the annual budgeting process.

Illustration of Minimum Municipal Obligation

Financial Requirements	
Normal Cost	\$1,263,760
Administrative Expenses	\$206,730
Amortization of Unfunded Actuarial Accrued Liability (UAAL)	\$4,406,998
<hr/>	
Total	\$5,877,488
<hr/>	
Expected Member Contributions	(\$334,395)
<hr/>	
Minimum Municipal Obligation (not less than \$0)	\$5,543,093

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Actuarial Certification

In preparing this report, we have relied upon the data furnished to us. The data with respect to receipts and disbursements and assets of the Plan as well as the data with respect to participants and beneficiaries were furnished by the City of York. The data has been reviewed and has been determined to be reasonable and consistent.

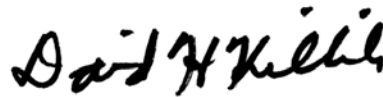
The information as contained in this report is a projection of liabilities based upon stated assumptions and is not an exact statement of the Plan's ultimate benefits and liabilities. Future actuarial measurements may differ significantly from the current measurements presented in this report due to 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 at the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the assignment, an analysis of the potential range of such future measurements was not performed.

I certify that all costs, liabilities, rates of interest, and other factors under the Plan in Section 2 of the report have been determined on the basis of actuarial assumptions and methods, each of which is reasonable (taking into account the experience of the Plan and reasonable expectations) or which, in the aggregate, result in a total contribution equivalent to that which would be determined if each such assumption and method were reasonable, and which, in combination, offer my best estimate of anticipated experience under the Plan.

I am a member of the American Academy of Actuaries, a Fellow of the Society of Actuaries, and an Enrolled Actuary under ERISA, and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.

2/14/2018

Date



David H. Killick, F.S.A.
Consulting Actuary
Enrolled Actuary No. 17-03880

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Summary of Principal Plan Benefit Provisions

Eligibility

All full-time members of the police force are eligible to participate on their dates of employment.

Normal Retirement

For members hired prior to January 1, 2015, the normal retirement requirement is attainment of age 50 and completion of 20 years and six months of service. For members hired on or after January 1, 2015, the normal retirement requirement is attainment of age 55 and completion of 20 years and six months of service.

The normal retirement pension is payable in semi-monthly installments for life with payments continuing after the member's death to the surviving spouse or, if no surviving spouse, to dependent children under the age of 18.

The amount of annual pension is equal to 50% of the yearly salary paid to officers or employees of the same rank the member holds at the time of retirement. An additional incremental pension is provided equal to 1/40 of the annual pension for each complete year of service in excess of 20 (but not beyond age 65) up to a maximum of \$1,200 additional per year. The calculation of salary includes base salary plus longevity increments.

Postretirement Cost-of-Living Increase

Effective January 1, 2013, the pension is increased by 2.5% per year. For certain members who retired between January 1, 2003, and January 15, 2003, the pension is increased by 4.0% per year. For certain members who retired before January 1, 2013, the pension is increased by 50% of the dollar increase granted to active patrolmen of the highest pay grade.

Disability Retirement

A disability benefit is provided due to a service related total and permanent disability. The disability retirement pension is equal to the pension based upon the normal retirement formula.

A disability benefit is provided due to a nonservice related total and permanent disability after completion of ten years of service. The disability retirement pension is equal to 30% of salary at the time of disability plus 2% of salary for each year of service in excess of ten, up to a maximum pension of 50% of salary.

Such disability pension is reduced by Workers' Compensation benefits received.

Preretirement Death Benefits

If a member dies after being eligible to retire, a death benefit is payable to his surviving spouse, or if no surviving spouse, to dependent children under the age of 18 in an amount equal to the benefit the member would have been receiving had he been retired on the day of his death.

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Summary of Principal Plan Benefit Provisions

Deferred Retirement Option Plan (DROP)

Effective January 1, 2007, an active member who has met the eligibility requirements for normal retirement may elect to participate in the deferred retirement option plan (DROP) for a period of not less than one year nor more than three years. His monthly pension shall be calculated as of his date of participation in the DROP and shall be deposited into a self-directed account, or be credited with a fixed rate of return designated by the City at no less than 3.0% per annum, with the monies in such account distributed to the member in a lump sum at retirement.

Vesting

A member may vest his benefits upon termination after completion of 12 years of service. The vested benefit is a deferred pension beginning at normal retirement equal to the benefit accrued to the date of termination.

For members hired prior to January 1, 2015, the member may also vest his benefits upon termination after completion of 20 years and six months of service. The vested benefit is a deferred pension beginning at normal retirement equal to 50% of final salary at the date of termination of employment if the member continues to make contributions to the Plan until attainment of age 50 equal to the amount he was contributing at the date of termination. If the member continues to make contributions to the Plan until attainment of age 50 equal to the amount he would have contributed if he continued in employment until age 50, final salary is based upon his final salary at age 50 if he had continued in employment until age 50.

For members hired on or after January 1, 2015, the member may also vest his benefits upon termination after completion of 20 years and six months of service. The vested benefit is a deferred pension beginning at normal retirement equal to 50% of final salary at the date of termination of employment if the member continues to make contributions to the Plan until attainment of age 55 equal to the amount he was contributing at the date of termination. If the member continues to make contributions to the Plan until attainment of age 55 equal to the amount he would have contributed if he continued in employment until age 55, final salary is based upon his final salary at age 55 if he had continued in employment until age 55.

Accrued Pension

The benefit accrued at any date other than the normal retirement date is equal to the projected normal retirement benefit multiplied by the ratio of the number of years of service to date to the total number of years of service projected at normal retirement.

Employee Contributions

5% of salary plus \$1 per month. Employee contributions are not credited with interest. Contributions are refunded on termination before eligibility for retirement or on death if member is not eligible for widow or children's benefit.

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Actuarial Assumptions and Methods

Interest

8.00%

Salary

5.00% Annual Increase

Withdrawal

Table D-1: Rates of withdrawal at selected ages:

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	5.5000%	35	2.5000%	50	0.0000%
25	5.0000%	40	1.0000%	55	0.0000%
30	4.0000%	45	0.5000%	60	0.0000%

Mortality

IRS 2017 Static Combined Table for Small Plans

Incorporated into the table are rates for annuitants projected 7 years and rates for non-annuitants projected 15 years using Scale AA to reflect mortality improvement.

Disability

SOA 1987 Group LTD Table - Males, 3-month elimination. Sample rates are shown below.

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	0.1444%	35	0.2123%	50	0.7536%
25	0.1534%	40	0.2931%	55	1.2612%
30	0.1708%	45	0.4561%	60	1.8818%

100% of disabilities are assumed to be service-related.

Retirement

It is assumed that all members enter the Deferred Retirement Option Plan (DROP) upon the later of attainment of age 52 (age 55 for members hired on or after January 1, 2015) and age at the completion of 20 years and 6 months of service. It is also assumed that participation in the DROP continues for three years.

Preretirement Death Benefit

Liabilities computed on the assumption that all participants will have spouses of the same age at the date of eligibility for the benefit.

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Actuarial Assumptions and Methods

Expenses

Provision for administrative expenses added to annual contribution requirement, per Act 205 of 1984.

Inflation

Moderate inflation based on long term historical average rates is a component of the actuarial assumptions used herein. Provision is not made for advance funding of sharply higher rates of inflation experienced in some years. The effects of such higher rates are reflected in the funding after their occurrence.

Cost-of-Living Increase

2.50% per year. For certain members who retired between January 1, 2003 and January 15, 2003 - 4.00% per year. For certain members who retired before January 1, 2013 - 5.00% per year.

Actuarial Value of Assets

Each year the investment gain (excess of actual investment income including realized and unrealized appreciation over expected investment income) or loss is recognized over a five-year period. In no event is the actuarial value of assets allowed to be greater than 120% or less than 80% of market value.

Actuarial Cost Method

Entry Age Normal (required by Act 205 of 1984) using level percentage of future payroll amortization of the initial unfunded actuarial accrued liability based on a 4.0% annual increase in covered payroll assumption and using level percentage of future payroll amortization of the increase in the unfunded actuarial accrued liability as of January 1, 2005, attributable to the change in the postretirement cost-of-living increase benefit based upon a 5.0% annual increase in covered payroll assumption.

Changes in Actuarial Assumptions and Methods

	<u>Prior</u>	<u>Current</u>
Mortality	RP2000 Table	See Above

City of York Police Pension Fund
Actuarial Valuation
as of January 1, 2017

Section 1

Summary of Plan Assets and Summary of Plan Membership

City of York Police Pension Fund
 Actuarial Valuation as of January 1, 2017
Receipts and Disbursements - January 1, 2015 to December 31, 2015

Market Value at 1/1/2015		\$ 52,027,946.00
Receipts		
Employer Contributions		
Received	\$ 3,629,065.00	
Receivable at 1/1/2015	(5,466,989.00)	
Receivable at 12/31/2015	1,837,924.00	
Total Employer Contributions	\$ 0.00	
Employee Contributions Received		328,860.00
Investment Income		
Income Received	\$ 965,216.00	
Accrued Income at 1/1/2015	0.00	
Accrued Income at 12/31/2015	0.00	
Total Investment Income	965,216.00	
Change in Market Value	(2,233,313.00)	
Total Receipts		(939,237.00)
Disbursements		
Monthly Benefit Payments	\$ (3,507,241.00)	
Refund of Employee Contributions	(39,495.00)	
Lump Sum DROP Account Payments	(105,892.00)	
Administrative Expenses	(206,275.00)	
Total Disbursements		(3,858,903.00)
Market Value at 12/31/2015		\$ 47,229,806.00
Approximate Net Dollar-Weighted Rate of Investment Return		(2.58%)

City of York Police Pension Fund
 Actuarial Valuation as of January 1, 2017
Receipts and Disbursements - January 1, 2016 to December 31, 2016

Market Value at 1/1/2016 \$ 47,229,806.00

Receipts

Employer Contributions

Received	\$ 2,911,948.00	
Receivable at 1/1/2016	(1,837,924.00)	
Receivable at 12/31/2016	0.00	
Total Employer Contributions		\$ 1,074,024.00

Employee Contributions Received 322,726.00

Investment Income

Income Received	\$ 719,176.00	
Accrued Income at 1/1/2016	0.00	
Accrued Income at 12/31/2016	0.00	
Total Investment Income		719,176.00

Change in Market Value 2,556,749.00

Total Receipts 4,672,675.00

Disbursements

Monthly Benefit Payments \$ (3,810,701.00)

Lump Sum DROP Account Payments (279,007.00)

Administrative Expenses (207,184.00)

Total Disbursements (4,296,892.00)

Market Value at 12/31/2016 \$ 47,605,589.00

Approximate Net Dollar-Weighted Rate of Investment Return 7.24%

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Assets and Liabilities

Assets

Cash	\$	0.00
Mutual Funds		<u>47,605,589.00</u>
Total Assets in Fund		\$ 47,605,589.00
Employer Contributions Receivable		0.00
Accrued Income		<u>0.00</u>
Total Assets		\$ 47,605,589.00

Liabilities

Total Liabilities		<u>0.00</u>
Net Assets		<u><u>\$ 47,605,589.00</u></u>

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Summary of Plan Membership

Active Members	<u>Number of Members</u>	<u>Annual Payroll</u>
Active Members as of 1/1/2015	100	
New Members During the Period	11	
Returned to Active	0	
Members No Longer Active:		
Retired with Disability Benefit	0	
Retired with Service Retirement Benefit	(2)	
Elected DROP Benefit	(6)	
Separated with Deferred Benefit	(6)	
Separated with Refund of Contributions	(4)	
Separated with Neither Deferred Benefit nor Refund of Contributions	0	
Deceased	(1)	
Total	<u>(19)</u>	
Active Members as of 1/1/2017	<u>92</u>	<u>\$ 6,665,819</u>
Vested Former Members	<u>Number of Members</u>	<u>Annual Benefit</u>
Vested Former Members as of 1/1/2015	10	
Separated with Deferred Benefit	6	
Beneficiary of Deceased Participant	0	
Returned to Active	0	
Retired with Service Retirement Benefit	(8)	
Deceased or Paid in Full	<u>0</u>	
Vested Former Members as of 1/1/2017	<u>8</u>	<u>\$ 224,179</u>
DROP Members		
DROP Members as of 1/1/2015	4	
Elected DROP Benefit	6	
Retired from DROP Benefit	(4)	
Deceased	<u>0</u>	
DROP Members as of 1/1/2017	<u>6</u>	<u>\$ 267,196</u>
Retired Members		
Retired Members as of 1/1/2015	64	
Retired with Service Retirement Benefit	14	
Retired from DROP Benefit	0	
Deceased or Paid in Full	<u>(4)</u>	
Retired Members as of 1/1/2017	<u>74</u>	<u>\$ 3,145,801</u>

City of York Police Pension Fund
 Actuarial Valuation as of January 1, 2017
Summary of Plan Membership

Disabled Members	Number of Members	Annual Benefit
Disabled Members as of 1/1/2015	8	
Retired with Disability Benefit	0	
Retired from DROP Benefit	0	
Deceased	(1)	
Disabled Members as of 1/1/2017	7	\$ 245,232

Spouse Beneficiaries of Deceased Members

Spouse Beneficiaries of Deceased Members as of 1/1/2015	33	
Additional Spouse Beneficiaries of Deceased Members	4	
Deceased	(4)	
Spouse Beneficiaries of Deceased Members as of 1/1/2017	33	\$ 767,954

City of York Police Pension Fund
Actuarial Valuation
as of January 1, 2017

Section 2

Act 205 Funding Calculations

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Actuarial Value of Assets

	2013	2014	2015	2016
Market Value at 1/1	\$43,733,837.00	\$50,336,310.00	\$52,027,946.00	\$47,229,806.00
Contributions	4,205,970.00	4,405,327.00	328,860.00	1,396,750.00
Benefit Payments and Expenses	(3,511,245.00)	(3,743,093.00)	(3,858,903.00)	(4,296,892.00)
Expected Investment Income ¹	3,526,496.00	4,053,394.00	4,021,034.00	3,662,379.00
Expected Value at 12/31	\$47,955,058.00	\$55,051,938.00	\$52,518,937.00	\$47,992,043.00
Market Value at 12/31	50,336,310.00	52,027,946.00	47,229,806.00	47,605,589.00
Gain/(Loss): (Market Value less Expected Value)	\$ 2,381,252.00	\$ (3,023,992.00)	\$ (5,289,131.00)	\$ (386,454.00)
Percentage of Gain/(Loss) to be recognized in the future	20%	40%	60%	80%
Gain/(Loss) to be recognized in the future	\$ 476,250.00	\$ (1,209,597.00)	\$ (3,173,479.00)	\$ (309,163.00)
Market Value at 12/31/2016				\$ 47,605,589.00
Total (Gain)/Loss for 2013-2016 to be recognized in the future				<u>4,215,989.00</u>
Actuarial Value of Assets at 12/31/2016				<u><u>\$51,821,578.00</u></u> ²
2015 Approximate Net Dollar-Weighted Rate of Investment Return				4.35%
2016 Approximate Net Dollar-Weighted Rate of Investment Return				5.19%

¹ 8.00% annual interest rate

² Actuarial Value of Assets cannot be greater than 120% nor be less than 80% of the Market Value.

City of York Police Pension Fund
 Actuarial Valuation as of January 1, 2017
Unfunded Actuarial Accrued Liability and Normal Cost

Unfunded Actuarial Accrued Liability

Actuarial Present Value of Future Benefits

Active Members Retirement Pension Benefits	\$	34,185,805
Active Members Vested Withdrawal Benefits		625,629
Active Members Disability Benefits		2,164,297
Active Members Preretirement Death Benefits		54,100
Active Members Refund of Member Contributions		125,476 ¹
Refund of Employee Contributions to Terminated Members		48,507
Vested Former Members Benefits		2,729,339
Retired and DROP Members Benefits		48,728,609
Disabled Members Benefits		3,022,653
Surviving Spouses Benefits		6,046,625
Monies Accumulated in DROP Accounts		<u>368,415</u>
Total	\$	98,099,455
Actuarial Present Value of Future Normal Costs		<u>(11,117,300)</u>
Actuarial Accrued Liability	\$	86,982,155
Actuarial Value of Assets		<u>(51,821,578)</u>
Unfunded Actuarial Accrued Liability	\$	<u><u>35,160,577</u></u>
 Normal Cost		
Normal Cost	\$	<u><u>1,263,760</u></u>
Normal Cost as a Percentage of Annual Payroll		<u>19.0%</u>

¹ Accumulated Member Contributions Without Interest as of 1/1/2017 = \$3,301,552

City of York Police Pension Fund
 Actuarial Valuation as of January 1, 2017
Analysis of the Change in the Unfunded Actuarial Accrued Liability

Unfunded Actuarial Accrued Liability at 1/1/2015	\$	23,027,977
Additions		
Normal Costs	\$ 2,472,136	
Administrative Expenses	413,459	
Interest on Unfunded Actuarial Accrued Liability, Normal Costs, and Administrative Expenses	<u>4,167,518</u>	
Total		7,053,113
Contributions		
Employer Contributions	\$ (1,074,024)	
Employee Contributions	(651,586)	
Interest on Contributions	<u>(96,386)</u>	
Total		(1,821,996)
Adjustment for Funding Deviation		(4,970,103)
Modification in the Benefit Plan		1,908,531
Change in Actuarial Assumptions		2,424,071
Actuarial Loss		
Investment Loss	\$ 3,457,468	
Experience Gain	(888,587)	
Funding Deviation	<u>4,970,103</u>	
Total		<u>7,538,984</u>
Unfunded Actuarial Accrued Liability at 1/1/2017	\$	<u><u>35,160,577</u></u>

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Amortization of Unfunded Actuarial Accrued Liability

Initial Date	Initial Amount	Outstanding Balance	Amortization Amount	Remaining Amortization	Nature
January 1, 2002	\$ 3,278,889	\$ 2,483,077	\$ 259,748	16 Years	Investment Loss
January 1, 2003	(5,388,794)	(2,537,323)	(508,204)	6 Years	Assumption Chg.
January 1, 2003	6,559,017	5,156,978	539,464	16 Years	Investment Loss
January 1, 2003	1,250,255	135,247	135,247	1 Year	Other Actuarial Loss
January 1, 2005	17,134,010	21,452,758	1,498,217	18 Years ¹	COLA Amendment
January 1, 2005	3,000,561	903,417	324,587	3 Years	Actuarial Loss
January 1, 2007	(1,251,418)	(583,741)	(135,373)	5 Years	Assumption Chg.
January 1, 2007	1,446,775	674,869	156,506	5 Years	Actuarial Loss
January 1, 2009	(8,412,443)	(6,457,109)	(793,357)	12 Years	Assumption Chg.
January 1, 2009	15,455,237	11,862,921	1,457,546	12 Years	Actuarial Loss
January 1, 2011	(621,793)	(522,113)	(58,640)	14 Years	Actuarial Gain
January 1, 2013	(7,127,973)	(4,910,784)	(983,591)	6 Years ²	Act. Amend. (NM)
January 1, 2013	5,222,426	4,708,184	492,514	16 Years	Actuarial Loss
January 1, 2015	2,208,539	2,039,352	238,910	13 Years	Assumption Chg.
January 1, 2015	(11,646,088)	(11,116,742)	(1,098,315)	18 Years	Actuarial Gain
January 1, 2017	1,908,531	1,908,531	1,908,531	1 Year ²	Ret. Amend. (NM)
January 1, 2017	2,424,071	2,424,071	262,225	15 Years	Assumption Chg.
January 1, 2017	7,538,984	7,538,984	710,983	20 Years	Actuarial Loss
Total	\$ 32,978,786	\$ 35,160,577	\$ 4,406,998		

Projected plan year in which the unfunded accrued liability is fully amortized is 2028.

Aggregation of Changes in Unfunded Actuarial Accrued Liability

Date of Aggregation	Aggregated Target Date	Outstanding Balance	Amortization Amount	Remaining Amortization
January 1, 2017	2028	<u>\$ 35,160,577</u>	<u>\$ 4,406,998</u>	12 Years

¹ Level Percentage of Future Payroll Amortization

² (NM) represents non-mandated changes and (M) represents mandated changes.

City of York Police Pension Fund
 Actuarial Valuation as of January 1, 2017
Illustration of Minimum Municipal Obligation

Financial Requirements

Normal Cost	\$ 1,263,760	
Administrative Expenses	206,730 ¹	
Amortization of Unfunded Actuarial Accrued Liability	<u>4,406,998</u>	
Total		\$ 5,877,488
Expected Member Contributions		<u>(334,395)</u>
Minimum Municipal Obligation		\$ 5,543,093 ²
Estimated Allocation of General Municipal Pension System State Aid		<u>0</u>
Net Minimum Municipal Obligation		<u><u>\$ 5,543,093</u></u> ²

¹ Total Administrative Expenses for Plan Year 1/1/2015 to 12/31/2015 - \$ 206,275

Total Administrative Expenses for Plan Year 1/1/2016 to 12/31/2016 - \$ 207,184

² This is not an actual MMO. Figures from this report will be used to prepare actual MMOs in future years.

City of York Police Pension Fund
 Actuarial Valuation as of January 1, 2017
Receipts and Disbursements Excluding Bond Issue Assets
January 1, 2015 to December 31, 2015

Market Value at 1/1/2015		\$ 44,134,743.75
Receipts		
Employer Contributions Received	\$ 0.00	
Employee Contributions Received	328,860.00	
Investment Income	818,782.29	
Change in Market Value	<u>(1,894,495.26)</u>	
Total Receipts		(746,852.97)
Disbursements		
Monthly Benefit Payments	\$ (3,507,241.00)	
Refund of Employee Contributions	(39,495.00)	
Lump Sum DROP Account Payments	(105,892.00)	
Administrative Expenses	<u>(206,275.00)</u>	
Total Disbursements		<u>(3,858,903.00)</u>
Market Value at 12/31/2015		<u>\$ 39,528,987.78</u>

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Receipts and Disbursements Excluding Bond Issue Assets
January 1, 2016 to December 31, 2016

Market Value at 1/1/2016		\$ 39,528,987.78
Receipts		
Employer Contributions Received	\$ 1,074,024.00	
Employee Contributions Received	322,726.00	
Investment Income	601,914.38	
Change in Market Value	<u>2,139,871.17</u>	
Total Receipts		4,138,535.55
Disbursements		
Monthly Benefit Payments	\$ (3,810,701.00)	
Lump Sum DROP Account Payments	(279,007.00)	
Administrative Expenses	<u>(207,184.00)</u>	
Total Disbursements		<u>(4,296,892.00)</u>
Market Value at 12/31/2016		<u><u>\$ 39,370,631.33</u></u>

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Assets and Liabilities Excluding Bond Issue Assets

Assets

Total Assets \$ 39,370,631.33

Liabilities

Total Liabilities 0.00

Net Assets \$ 39,370,631.33

City of York Police Pension Fund
 Actuarial Valuation as of January 1, 2017
Actuarial Value of Assets

	2013	2014	2015	2016
Market Value at 1/1	\$35,386,468.22	\$41,712,735.04	\$44,134,743.75	\$39,528,987.78
Contributions	5,057,361.00	5,312,056.00	328,860.00	1,396,750.00
Benefit Payments and Expenses	(3,511,245.00)	(3,743,093.00)	(3,858,903.00)	(4,296,892.00)
Expected Investment Income ¹	2,892,762.10	3,399,777.32	3,389,577.78	3,046,313.34
Expected Value at 12/31	\$39,825,346.32	\$46,681,475.36	\$43,994,278.53	\$39,675,159.12
Market Value at 12/31	41,712,735.04	44,134,743.75	39,528,987.78	39,370,631.33
Gain/(Loss): (Market Value less Expected Value)	\$ 1,887,388.72	\$ (2,546,731.61)	\$ (4,465,290.75)	\$ (304,527.79)
Percentage of Gain/(Loss) to be recognized in the future	20%	40%	60%	80%
Gain/(Loss) to be recognized in the future	\$ 377,477.74	\$ (1,018,692.64)	\$ (2,679,174.45)	\$ (243,622.23)
Market Value at 12/31/2016				\$39,370,631.33
Total (Gain)/Loss for 2013-2016 to be recognized in the future				<u>3,564,011.58</u>
Actuarial Value of Assets at 12/31/2016				<u><u>\$42,934,642.91</u></u> ²
2015 Approximate Net Dollar-Weighted Rate of Investment Return				4.39%
2016 Approximate Net Dollar-Weighted Rate of Investment Return				5.03%

¹ 8.00% annual interest rate

² Actuarial Value of Assets cannot be greater than 120% nor be less than 80% of the Market Value.

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Unfunded Actuarial Accrued Liability Excluding Bond Issue Assets

Actuarial Present Value of Future Benefits	\$ 98,099,455
Actuarial Present Value of Future Normal Costs	<u>(11,117,300)</u>
Actuarial Accrued Liability	\$ 86,982,155
Actuarial Value of Assets	<u>(42,934,643)</u>
Unfunded Actuarial Accrued Liability	<u><u>\$ 44,047,512</u></u>

City of York Police Pension Fund
 Actuarial Valuation as of January 1, 2017
**Analysis of the Change in the Unfunded Actuarial Accrued Liability
 Excluding Bond Issue Assets**

Unfunded Actuarial Accrued Liability at 1/1/2015		\$ 31,080,152
Additions		
Normal Costs	\$ 2,472,136	
Administrative Expenses	413,459	
Interest on Unfunded Actuarial Accrued Liability, Normal Costs, and Administrative Expenses	<u>5,507,400</u>	
Total		8,392,995
Contributions		
Employer Contributions	\$ (1,074,024)	
Employee Contributions	(651,586)	
Interest on Contributions	<u>(96,386)</u>	
Total		(1,821,996)
Adjustment for Funding Deviation		(7,580,780)
Modification in the Benefit Plan		1,908,531
Change in Actuarial Assumptions		2,424,071
Actuarial Loss		
Investment Loss	\$ 2,952,346	
Experience Gain	(888,587)	
Funding Deviation	<u>7,580,780</u>	
Total		<u>9,644,539</u>
Unfunded Actuarial Accrued Liability at 1/1/2017		<u><u>\$ 44,047,512</u></u>

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Amortization of Unfunded Actuarial Accrued Liability Excluding Bond Issue Assets

Initial Date	Initial Amount	Outstanding Balance	Amortization Amount	Remaining Amortization	Nature
January 1, 1985	\$ 13,063,083	\$ 15,183,695	\$ 2,157,912	8 Years ¹	Initial Unfunded
January 1, 2002	1,349,977	1,022,322	106,943	16 Years	Investment Loss
January 1, 2003	(2,434,441)	(1,146,263)	(229,586)	6 Years	Assumption Chg.
January 1, 2003	2,812,689	2,211,463	231,337	16 Years	Investment Loss
January 1, 2003	935,933	101,242	101,242	1 Year	Other Actuarial Loss
January 1, 2005	17,134,010	21,452,758	1,498,217	18 Years ¹	COLA Amendment
January 1, 2005	2,495,605	751,386	269,963	3 Years	Actuarial Loss
January 1, 2007	(512,633)	(154,350)	(55,454)	3 Years	Assumption Chg.
January 1, 2007	678,334	204,234	73,379	3 Years	Actuarial Loss
January 1, 2009	(5,421,823)	(4,161,608)	(511,319)	12 Years	Assumption Chg.
January 1, 2009	9,274,415	7,118,724	874,648	12 Years	Actuarial Loss
January 1, 2011	(1,744,718)	(1,465,029)	(164,540)	14 Years	Actuarial Gain
January 1, 2013	(7,127,973)	(4,910,784)	(983,591)	6 Years ²	Act. Amend (NM)
January 1, 2013	2,553,762	2,302,298	240,839	16 Years	Actuarial Loss
January 1, 2015	2,208,539	2,039,352	238,910	13 Years	Assumption Chg.
January 1, 2015	(10,978,051)	(10,479,069)	(1,035,314)	18 Years	Actuarial Gain
January 1, 2017	1,908,531	1,908,531	1,908,531	1 Year ²	Ret. Amend (NM)
January 1, 2017	2,424,071	2,424,071	262,225	15 Years	Assumption Chg.
January 1, 2017	9,644,539	9,644,539	909,553	20 Years	Actuarial Loss
Total	\$ 38,263,849	\$ 44,047,512	\$ 5,893,895		

Projected plan year in which the unfunded accrued liability is fully amortized is 2027.

Aggregation of Changes in Unfunded Actuarial Accrued Liability

Date of Aggregation	Aggregated Target Date	Outstanding Balance	Amortization Amount	Remaining Amortization
January 1, 2017	2028	<u>\$ 28,863,817</u>	<u>\$ 3,735,983</u>	12 Years

¹ Level Percentage of Future Payroll Amortization

² (NM) represents non-mandated changes and (M) represents mandated changes.

City of York Police Pension Fund
Actuarial Valuation
as of January 1, 2017

Section 3

Supplemental Information

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Supplemental Information

Schedule of Funding Progress

Valuation Date	Market Value of Assets (a)	Entry Age Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Net Position as a % of Total Liability (b-a)/b	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b-a)/c)
1/1/2011	\$ 38,977,924	\$ 76,631,555	\$ 37,653,631	49.1%	50.9%	\$ 6,250,388	602.4%
1/1/2012	38,733,530						
1/1/2013	43,733,837	71,200,977	27,467,140	38.6%	61.4%	6,986,665	393.1%
1/1/2014	50,336,310						
1/1/2015	52,027,946	76,406,010	24,378,064	31.9%	68.1%	7,164,627	340.3%
1/1/2016	47,229,806						
1/1/2017	47,605,589	86,982,155	39,376,566	45.3%	54.7%	6,665,819	590.7%

Schedule of Interest Rate Sensitivity Testing

Interest Rate ¹	Market Value of Assets (a)	Entry Age Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Net Position as a % of Total Liability (b-a)/b	Funded Ratio (a/b)
7.00%	\$ 47,605,589	\$ 98,210,975	\$ 50,605,386	51.5%	48.5%
8.00%	47,605,589	86,982,155	39,376,566	45.3%	54.7%
9.00%	47,605,589	77,732,674	30,127,085	38.8%	61.2%

¹ Valuation interest rate is 8.00%

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Supplemental Information

Schedule of Contributions from the Employer and Other Contributing Entities

Year	Actuarially ¹ Determined Contribution	Contributions ² From Employer	Contribution Deficiency/ (Surplus)
2007	\$ 2,988,309	\$ 2,988,309	\$ 0
2008	3,052,400	3,052,400	0
2009	3,120,388	3,537,531	(417,143)
2010	3,244,829	3,522,714	(277,885)
2011	3,384,038	3,747,680	(363,642)
2012	3,509,807	4,053,050	(543,243)
2013	3,428,955	3,862,258	(433,303)
2014	3,491,221	4,054,722	(563,501)
2015	0	0	0
2016	0	1,074,024	(1,074,024)

¹ Minimum Municipal Obligation under Act 205 of 1984

² Includes general municipal pension system State aid

City of York Police Pension Fund
Actuarial Valuation as of January 1, 2017
Appendix

Supplemental Information for Assumptions for Act 205 Funding Calculations

In accordance with regulations under Act 205 of 1984, all actuarial assumptions are selected jointly by the actuary and the governing body of the pension Plan.

Interest Rates

The interest rate assumption is the long term expected rate of return on pension plan investments. It is based on the Plan's current asset allocation, expected long term inflation, and historical long term expected real rates of return on the Plan's major asset classes.

Salary

Based on expected long term salary increases for active participants, considering the effects of future inflation.

Withdrawal

Historical rates of withdrawal were considered as well as future expectations of withdrawal for the affected population.

Mortality

Based on the most current IRS mortality table for funding purposes.

Disability

Based on the Society of Actuaries Group LTD Table – Males, 3-month elimination (1987).

Retirement

Due to the plan size and design, use of a single retirement age was assumed. The use of retirement rates is not expected to produce materially different results.

Survivor Death Benefit

A conservative assumption was made of percent married compared to current marital statistics for the general population.

Expenses

Expected expenses are determined by averaging the two prior year's expenses.

Inflation

Moderate inflation based on long term historical average rates is a component of the actuarial assumptions used herein.

Cost-of-Living Increase

Based on expected future inflation using long term historical averages, and taking into consideration annual COLA limits per Plan provisions.