

Fairview Township Police Pension Plan  
Actuarial Valuation  
as of January 1, 2016

Fairview Township Police Pension Plan  
Actuarial Valuation as of January 1, 2016  
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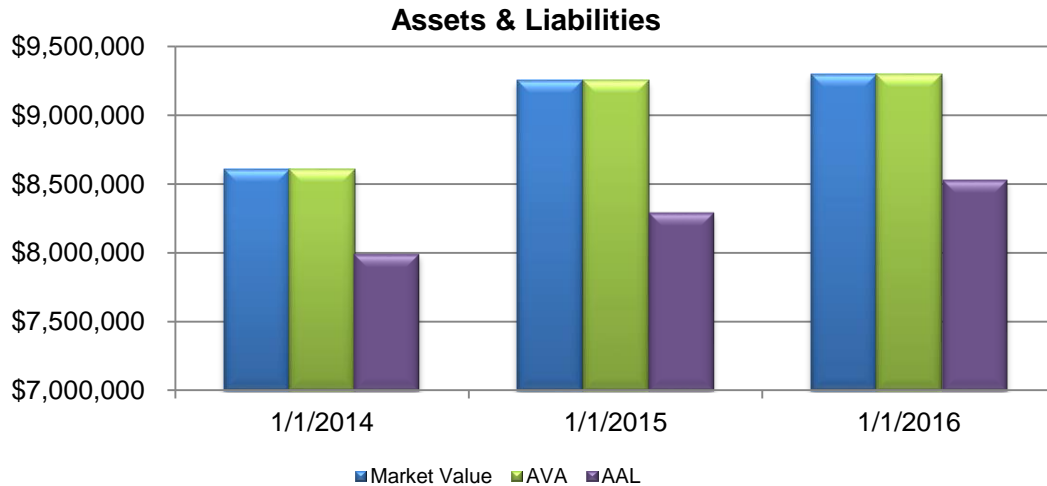
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Fairview Township Police Pension Plan  
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**Executive Summary**

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The purpose of the valuation report is to determine the actuarial status of the Plan.

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, 2016. Following the SPPB is a summary of the Actuarial Assumptions and Methods used in this valuation report.



	<u>1/1/2014</u>	<u>1/1/2015</u>	<u>1/1/2016</u>
Market Value of Assets (MVA)	\$8,608,240	\$9,253,290	\$9,300,796
Actuarial Value of Assets (AVA)	\$8,608,240	\$9,253,290	\$9,300,796
Actuarial Accrued Liability (AAL)	\$7,991,734	\$8,289,274	\$8,526,067
Unfunded Actuarial Accrued Liability (UAAL)	(\$616,506)	(\$964,016)	(\$774,729)
Normal Cost	\$212,994	\$231,464	\$232,645
W-2 Payroll	\$1,043,932	\$1,134,166	\$1,134,341
Percentage of W-2 Payroll	20.4%	20.4%	20.5%
Estimated Minimum Municipal Obligation (MMO)	\$155,126	\$141,322	\$180,643
Participant Counts:			
Active	12	13	13
Vested Former	2	2	2
Receiving Benefits	10	10	10
Total	<u>24</u>	<u>25</u>	<u>25</u>

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**Section 1**

At the beginning of Section 1, there is a summary of the receipts and disbursements for 2015. The Plan received contributions of \$318,430 and there were monthly benefit payments to former participants totaling \$306,084. The investment return earned by the plan assets was approximately 1.1% for 2015.

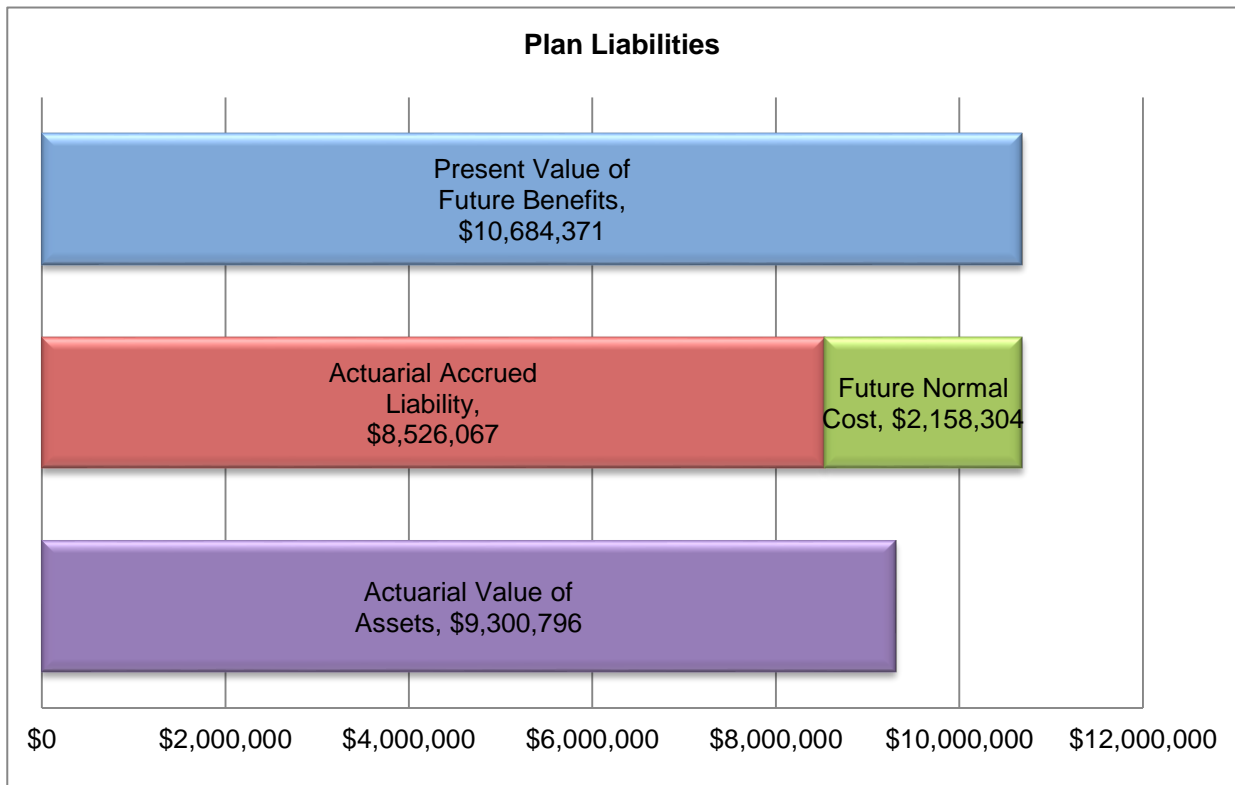
The following is a summary of the net dollar-weighted rates of investment return for the past six calendar years on a market value basis.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
Market Value of Assets	13.1%	0.9%	13.9%	16.5%	8.0%	1.1%

**Section 2**

The Act 205 funding calculations are included in Section 2.

Page 1 of Section 2 shows that the actuarial present value of future benefits is \$10,684,371. Since the present value of future normal costs is \$2,158,304, the actuarial accrued liability at January 1, 2016, is \$8,526,067. Subtracting the actuarial value of assets of \$9,300,796 results in an unfunded actuarial accrued liability of (\$774,729).



Fairview Township Police Pension Plan  
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**Components of Financial Requirements**

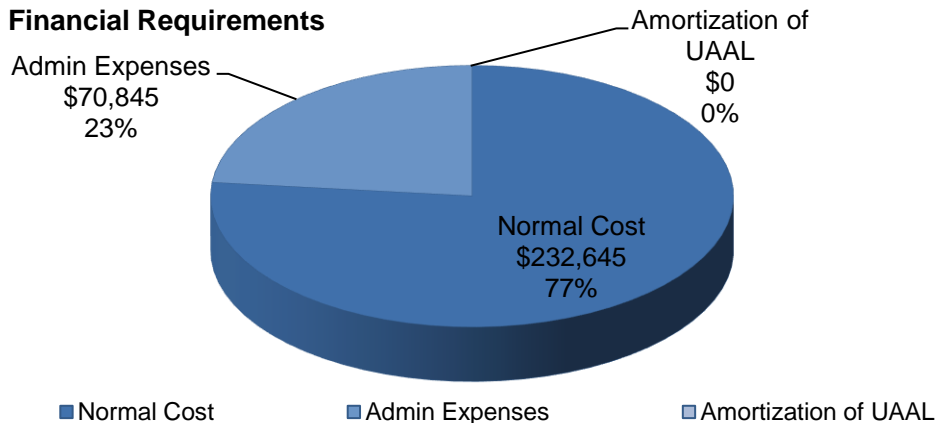
There are three cost components that make up the financial requirement of a Plan's minimum municipal obligation.

1. Normal Cost – This is the cost of pension and other benefits earned during the current year. The normal cost of the Plan is \$232,645. The normal cost represents approximately 20.5% 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 \$70,845.

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 amortization of the Unfunded Actuarial Accrued Liability is \$0 since the Actuarial Value of Assets is greater than the Actuarial Accrued Liability.

**Estimated Financial Requirements**



Page 3 of Section 2 contains an illustration of the annual minimum municipal obligation (MMO). 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	\$232,645
Administrative Expenses	\$70,845
Amortization of Unfunded Actuarial Accrued Liability (UAAL)	\$0
Total	\$303,490
Expected Member Contributions	(\$45,374)
10% Negative Unfunded Actuarial Accrued Liability	(\$77,473)
Minimum Municipal Obligation (not less than \$0)	\$180,643

Fairview Township Police Pension Plan  
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**Actuarial Certification**

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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 was furnished by BNY Mellon, N.A. The data with respect to participants and beneficiaries was furnished by Fairview Township. The data has been reviewed and has been determined to be reasonable and consistent.

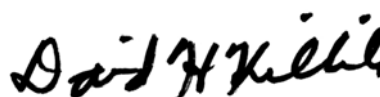
The information as contained in this report is a projection of liabilities based upon stated assumptions and is not an exact statement of the Plan's ultimate benefits and liabilities. Future actuarial measurements may differ significantly from the current measurements presented in this report due to 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.

4/21/2016

Date



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David H. Killick, F.S.A.  
Consulting Actuary  
Enrolled Actuary No. 14-03880

DHK/GGC

Fairview Township Police Pension Plan  
Actuarial Valuation as of January 1, 2016  
**Summary of Principal Plan Benefit Provisions**

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**Eligibility**

All full-time members of the police force join the Plan upon employment.

**Normal Retirement**

A member is eligible for normal retirement after attainment of age 50 and completion of 25 years of vesting service.

The normal retirement pension is payable monthly during the member's lifetime, with payments continuing after the member's death to the surviving spouse, or eligible child, equal to 50% of the amount payable to the member at the time of the member's death.

The amount of monthly pension is equal to 50% of average monthly compensation, plus a service increment of \$100 per month for each completed year of benefit service in excess of 25 years, up to a maximum of \$300 additional per month.

Average monthly compensation is based upon the last 36 months of employment.

**Late Retirement**

If a member continues working after his normal retirement date, his pension does not start until he actually retires. The monthly late retirement pension is equal to the benefit accrued to the late retirement date.

**Early Retirement**

A member is eligible for early retirement after completion of 20 years of vesting service. The monthly early retirement pension is equal to the actuarial equivalent of the benefit accrued at the early retirement date.

**Disability Retirement**

If an active member is disabled in the line of duty, he is eligible for a disability pension. The monthly disability pension is equal to 75% of the member's monthly salary at the time the disability was incurred.

**Deferred Retirement Option Program**

An active member who has met the eligibility requirements for normal retirement may elect to participate in the deferred retirement option program for a period of not less than three months nor more than 24 months. His monthly pension shall be calculated as of his date of participation in the deferred retirement option program and shall be accumulated with interest earned on the DROP account and distributed in a lump sum at retirement.

**Postretirement Cost-of-Living Increase**

An annual cost-of-living increase equal to the percentage increase in the "Wage Earner Index" in the Consumer Price Index during the preceding calendar year is made to retirees, with a maximum total cost-of-living increase of 30%, and a maximum pension benefit of 75% of the compensation used for computing retirement benefits.

Fairview Township Police Pension Plan  
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**Summary of Principal Plan Benefit Provisions**

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**Death Benefits**

If a member is eligible for retirement at the time of death, a monthly death benefit is payable to his surviving spouse, or eligible child, equal to 50% of the monthly benefit the member would have been receiving had he been retired at the time of death.

**Vesting**

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

**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 benefit service to date to the total number of years of benefit service projected at normal retirement.

**Contributions**

Members contribute 4.0% of compensation.

Member contributions are credited with 4.0% annual interest.



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Actuarial Valuation as of January 1, 2016  
**Actuarial Assumptions and Methods**

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**Interest**

7.00%

**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**

RP2000 Table  
(This table does not include projected mortality improvements.)

**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 Program (DROP) upon meeting the eligibility requirements for normal retirement. It is also assumed that participation in the DROP continues for 24 months.

**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.

Fairview Township Police Pension Plan  
Actuarial Valuation as of January 1, 2016  
**Actuarial Assumptions and Methods**

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**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**

3.00% per year

**Actuarial Value of Assets**

Market Value as determined by the trustee.

**Actuarial Cost Method**

Entry Age Normal (required by Act 205 of 1984)

Fairview Township Police Pension Plan  
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Section 1

Summary of Plan Assets and Summary of Plan Membership

Fairview Township Police Pension Plan  
 Actuarial Valuation as of January 1, 2016  
**Receipts and Disbursements**

Market Value at 1/1/2015		\$ 9,253,290.31
<b>Receipts</b>		
Employer Contributions Received	\$ 171,032.30	
Employee Contributions		
Received	\$ 45,505.12	
Receivable at 1/1/2015	(1,727.12)	
Receivable at 12/31/2015	1,677.92	
Total Employee Contributions	45,455.92	
State Contributions Received		101,941.70
Investment Income		
Income Received	\$ 55.76	
Accrued Income at 1/1/2015	(7.25)	
Accrued Income at 12/31/2015	7.64	
Total Investment Income	56.15	
Change in Market Value	105,948.01	
Total Receipts		424,434.08
<b>Disbursements</b>		
Monthly Benefit Payments	\$ (306,084.00)	
Administrative Expenses	(70,844.64)	
Total Disbursements		(376,928.64)
Market Value at 12/31/2015		\$ 9,300,795.75
Approximate Net Dollar-Weighted Rate of Investment Return		1.14%

Fairview Township Police Pension Plan  
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**Assets and Liabilities**

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**Assets**

Cash	\$	0.00
Common Trust Funds		<u>9,299,110.19</u>
Total Assets in Fund		\$ 9,299,110.19
Employee Contributions Receivable		1,677.92
Accrued Income		<u>7.64</u>
Total Assets		\$ 9,300,795.75

**Liabilities**

Total Liabilities		<u>0.00</u>
Net Assets		<u><u>\$ 9,300,795.75</u></u>

Fairview Township Police Pension Plan  
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**Summary of Plan Membership**

<b>Active Members</b>	Number of Members	Annual Payroll
Active Members as of 1/1/2015	13	
New Members During the Period	0	
Returned to Active	0	
Members No Longer Active:		
Retired with Disability Benefit	0	
Retired with Service Retirement Benefit	0	
Separated with Deferred Benefit	0	
Separated with Refund of Contributions	0	
Separated with Neither Deferred Benefit nor Refund of Contributions	0	
Deceased	0	
Total	<u>0</u>	
Active Members as of 1/1/2016	<u>13</u>	<u>\$ 1,134,341</u>
<b>Vested Former Members</b>	Number of Members	Annual Benefit
Vested Former Members as of 1/1/2015	2	
Separated with Deferred Benefit	0	
Beneficiary of Deceased Participant	0	
Returned to Active	0	
Retired with Service Retirement Benefit	0	
Deceased or Paid in Full	<u>0</u>	
Vested Former Members as of 1/1/2016	<u>2</u>	<u>\$ 44,118</u>
<b>Retired Members</b>		
Retired Members as of 1/1/2015	9	
Retired with Service Retirement Benefit	0	
Deceased or Paid in Full	<u>0</u>	
Retired Members as of 1/1/2016	<u>9</u>	<u>\$ 292,065</u>
<b>Spouse Beneficiaries of Deceased Members</b>		
Spouse Beneficiaries of Deceased Members as of 1/1/2015	1	
Additional Spouse Beneficiaries of Deceased Members	0	
Deceased	<u>0</u>	
Spouse Beneficiaries of Deceased Members as of 1/1/2016	<u>1</u>	<u>\$ 14,577</u>

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Section 2

Act 205 Funding Calculations

Fairview Township Police Pension Plan  
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**Unfunded Actuarial Accrued Liability and Normal Cost**

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**Unfunded Actuarial Accrued Liability**

Actuarial Present Value of Future Benefits

Active Members Retirement Pension Benefits	\$	6,019,829
Active Members Vested Withdrawal Benefits		87,050
Active Members Disability Benefits		536,120
Active Members Preretirement Death Benefits		14,743
Active Members Refund of Member Contributions		11,824 <sup>1</sup>
Vested Former Members Benefits		536,836
Retired Members Benefits		3,363,245
Surviving Spouses Benefits		<u>114,724</u>
Total	\$	10,684,371
Actuarial Present Value of Future Normal Costs		<u>(2,158,304)</u>
Actuarial Accrued Liability	\$	8,526,067
Actuarial Value of Assets		<u>(9,300,796)</u>
Unfunded Actuarial Accrued Liability	\$	<u><u>(774,729)</u></u>
 <b>Normal Cost</b>		
Normal Cost	\$	<u><u>232,645</u></u>
Normal Cost as a Percentage of Annual Payroll		<u>20.5%</u>

<sup>1</sup> Accumulated Member Contributions Without Interest as of 1/1/2016 = \$239,407  
 Accumulated Member Contributions With Interest as of 1/1/2016 = \$288,091



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**Analysis of the Change in the Unfunded Actuarial Accrued Liability**

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Unfunded Actuarial Accrued Liability at 1/1/2015	\$	(964,016)
<b>Additions</b>		
Normal Cost	\$	231,464
Administrative Expenses		70,845
Interest on Unfunded Actuarial Accrued Liability, Normal Cost, and Administrative Expenses		<u>(48,799)</u>
Total		253,510
<b>Contributions</b>		
Employer Contributions	\$	(171,032)
Employee Contributions		(45,456)
State Contributions		(101,942)
Interest on Contributions		<u>(19,844)</u>
Total		(338,274)
Modification in the Benefit Plan		0
Change in Actuarial Assumptions		0
<b>Actuarial Loss</b>		
Investment Loss	\$	548,377
Experience Gain		<u>(274,326)</u>
Total		<u>274,051</u>
Unfunded Actuarial Accrued Liability at 1/1/2016	\$	<u><u>(774,729)</u></u>

Fairview Township Police Pension Plan  
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**Illustration of Minimum Municipal Obligation**

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Financial Requirements	
Normal Cost	\$ 232,645
Administrative Expenses	<u>70,845</u> <sup>1</sup>
Total	\$ 303,490
Expected Member Contributions	(45,374)
10% of Negative Unfunded Actuarial Accrued Liability	<u>(77,473)</u>
Minimum Municipal Obligation	\$ 180,643 <sup>2</sup>
Estimated Allocation of General Municipal Pension System State Aid	<u>(101,942)</u>
Net Minimum Municipal Obligation	<u>\$ 78,701</u> <sup>2</sup>

<sup>1</sup> Total Administrative Expenses for Plan Year 1/1/2015 to 12/31/2015 - \$ 70,845

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

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Section 3

Supplemental Information

Fairview Township Police Pension Plan  
Actuarial Valuation as of January 1, 2016  
**Supplemental Information**

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**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	\$ 6,571,653	\$ 7,034,498	\$ 462,845	6.6%	93.4%	\$ 1,129,831	41.0%
1/1/2012	6,650,380	7,407,977	757,597	10.2%	89.8%	1,140,865	66.4%
1/1/2013	7,387,669	7,444,278	56,609	0.8%	99.2%	1,050,246	5.4%
1/1/2014	8,608,240	7,991,734	(616,506)	-7.7%	107.7%	1,043,932	-59.1%
1/1/2015	9,253,290	8,289,274	(964,016)	-11.6%	111.6%	1,134,166	-85.0%
1/1/2016	9,300,796	8,526,067	(774,729)	-9.1%	109.1%	1,134,341	-68.3%

**Schedule of Interest Rate Sensitivity Testing**

Interest Rate <sup>1</sup>	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)
6.00%	\$ 9,300,796	\$ 9,667,858	\$ 367,062	3.8%	96.2%
7.00%	9,300,796	8,526,067	(774,729)	-9.1%	109.1%
8.00%	9,300,796	7,577,239	(1,723,557)	-22.7%	122.7%

<sup>1</sup> Valuation interest rate is 7.00%

Fairview Township Police Pension Plan  
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**Supplemental Information**

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**Schedule of Contributions from the Employer and Other Contributing Entities**

Year	Actuarially <sup>1</sup> Determined Contribution	Contributions <sup>2</sup> From Employer	Contribution Deficiency/ (Surplus)
2006	\$ 97,925	\$ 97,925	\$ 0
2007	104,217	104,217	0
2008	92,234	92,234	0
2009	127,822	127,822	0
2010	139,987	151,643	(11,656)
2011	218,312	284,964	(66,652)
2012	216,035	216,035	0
2013	313,626	313,626	0
2014	279,909	279,909	0
2015	272,974	272,974	0

<sup>1</sup> Minimum Municipal Obligation under Act 205 of 1984

<sup>2</sup> Includes general municipal pension system State aid

Fairview Township Police Pension Plan  
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**Appendix**

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**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**

Future expectations of mortality for the affected population are considered.

**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 using the 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.