

Delaware County & Municipal Police/Firefighters Pension Plan

Actuarial Valuation as of June 30, 2011

**Produced by Cheiron** 

January 2012

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January 25, 2012

Board of Pension Trustees State of Delaware McArdle Building 860 Silver Lake Boulevard, Suite 1 Dover, Delaware 19904

Dear Members of the Board:

At your request, we have conducted the annual actuarial valuation of the Delaware County & Municipal Police/Firefighters Pension Plan as of June 30, 2011. The results of the valuation are contained in this report. The purpose of the valuation is discussed in the Foreword.

This report contains information on Plan assets, as well as analyses which combine asset and liability performance and projections. The report also discloses employer contribution levels, and required disclosures under the Governmental Accounting Standards Board Statement No. 25.

Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions on which our findings are based. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief. The results of this report are only applicable to the employer contributions for Fiscal Year ending 2013 and rely on future plan experience conforming to the underlying assumptions. To the extent that actual plan experience deviates from the underlying assumptions, the results would vary accordingly.

We hereby certify that, to the best of our knowledge, this report and its contents are products of Cheiron, Inc. These work products are complete and accurate and have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This report was prepared solely for the Delaware County & Municipal Police/Firefighters Pension Plan for the purposes described herein, except that the plan auditor may rely on this report solely for the purpose of completing an audit related to the matters herein. This valuation report is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

Sincerely, Cheiron

Flona E. Liston, FSA

Principal Consulting Actuary

Margaret A. Tempkin, FSA Principal Consulting Actuary

www.cheiron.us



#### **FOREWORD**

Cheiron has performed the actuarial valuation of the Delaware County & Municipal Police/Firefighters Pension Plan as of June 30, 2011. The purpose of this report is to:

- 1) **Measure and disclose**, as of the valuation date, the financial condition of the Plan;
- 2) **Indicate trends** in the financial progress of the Plan;
- 3) **Determine the contribution rate** to be paid by the participating employers for Fiscal Year 2013; and
- 4) **Provide specific information** and documentation required by the Governmental Accounting Standards Board (GASB).

An actuarial valuation establishes and analyzes Plan assets and liabilities on a consistent basis, and traces the progress of both from one year to the next. It includes measurement of the Plan's investment performance as well as an analysis of actuarial liability gains and losses.

**Section I** presents a summary containing our findings and disclosing important trends experienced by the Plan in recent years.

**Section II** contains details on various asset measures, together with pertinent performance measurements.

**Section III** shows similar information on Plan liabilities, measured for actuarial, accounting, and government reporting purposes.

**Section IV** develops the employer contribution rate determined using actuarial techniques.

**Section V** includes the required disclosures under GASB Statement number 25.

The appendices to this report contain a summary of the Plan's membership at the valuation date, a summary of the major provisions of the Plan, and the actuarial methods and assumptions used in the valuations.

In preparing our report, we relied without audit, on information (some oral and some written) supplied by the Office of Pension's staff. This information includes, but is not limited to, plan provisions, employee data, and financial information.

The actuarial assumptions reflect our understanding of the likely future experience of the Plan and the assumptions as a whole represent our best estimate for the future experience of the Plan. The results of this report are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the actuarial assumptions, the true cost of the Plan could vary from our results.

Finally, in preparing this report, we have conformed to generally accepted actuarial principles and practices which are consistent with the Code of Professional Conduct, and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board.



#### SECTION I BOARD SUMMARY

#### **General Comments**

The actuarially determined contribution rate increased from 14.53% for FY 2012 to 14.75% for FY 2013.

During the year ended June 30, 2011, the Plan's assets earned 23.4% on a market value basis. However, due to the Plan's asset-smoothing technique and an accumulation of past asset gains, the return on the actuarial asset value was 8.6%. This return was above the assumed rate of return of 8.0% and resulted in an actuarial gain on investments of \$0.85 million. Note that with the assumption change going forward this comparison will be made against the revised 7.5% assumption in future years.

The Plan experienced an actuarial gain of \$0.43 million on Plan liabilities resulting from salary increases different than assumed and members retiring, terminating, and becoming disabled and dying at rates different from the actuarial assumptions. This type of activity is normal in the course of plan experience. The Plan will experience actuarial gains and losses over time because we cannot predict exactly how people will behave. When a plan experiences alternating gains and losses that are small compared to the total actuarial liability, then the plan's actuarial assumptions are reasonable. In addition to the actuarial gain, the plan's liabilities also decreased by \$2.5 million (1.6% of total accrued liability) due to changes in assumptions as recommended in an experience study performed in 2011.

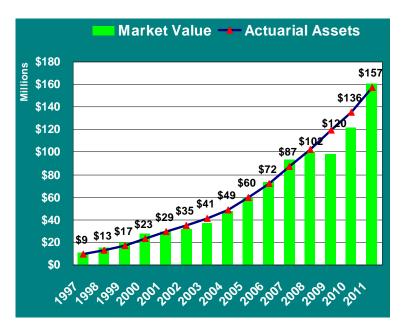
As of the June 30, 2011 actuarial valuation, the Plan's unfunded actuarial liability was \$2.8 million. This is a decrease from last year's unfunded actuarial liability of \$5.7 million.



#### SECTION I BOARD SUMMARY

#### **Trends**

#### Growth in Assets



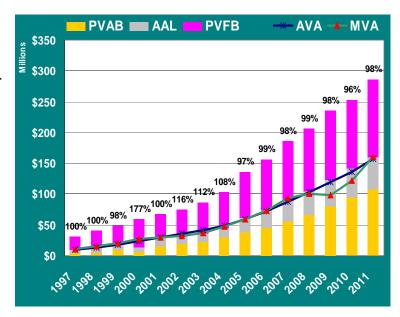
The market value of assets (MVA) returned 23.4% over the last year. The determination of the plan's actuarial value of assets reflects only a portion of the return above 8%, so an additional recognition of the 2008-2009 losses dampened the impact on the actuarial assets.

Over the period July 1, 1997 to June 30, 2011 the Plan's assets returned approximately 8.5% per year measured at actuarial value, compared to a valuation assumption of 8% per year.

### **Assets and Liabilities**

The three colored bars represent the three different measures of liability mentioned in this report. For funding purposes, the target amount is represented by the top of the gray bar. We compare the actuarial value of assets to this measure of liability in developing the funded percent. These are the percentages shown in the graph labels.

The amount represented by the top of the pink bars, the Present Value of Future Benefits (PVFB), is the amount needed to provide all benefits for the current participants and their beneficiaries. If the Plan

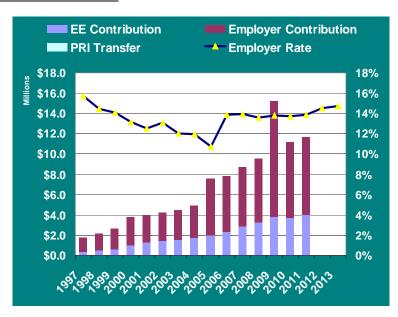


had assets equal to the PVFB no contributions would, in theory, be needed for the current members.



### SECTION I BOARD SUMMARY

#### Contribution Rates



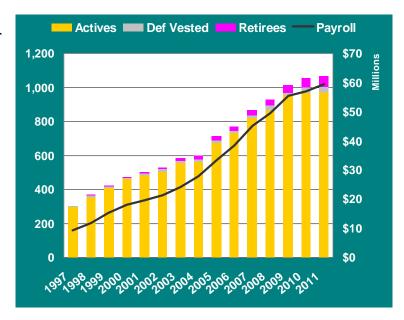
The stacked bars in this graph show the contributions made by the participating employers and the members (left hand scale). The black line shows the employer contribution rate as a percent of payroll (right hand scale).

The increase in employer contribution dollars between 2008 and 2009 represents payment of special past service by some of the participating municipalities.

### Participant Trends

The bars show the number of participants in each category and should be read using the left-hand scale. The black line shows the covered payroll in the plan and is read using the right-hand scale.

The rapid growth seen this decade, due to municipalities electing to join this plan, has leveled off in recent years.

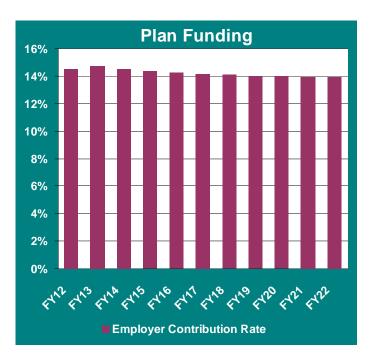




### SECTION I BOARD SUMMARY

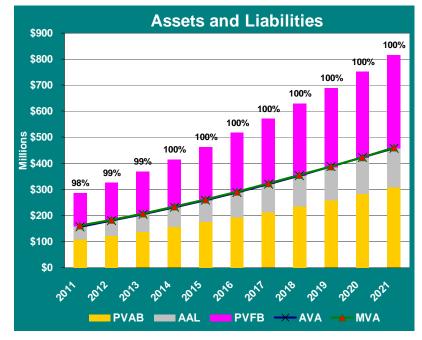
#### **Future Outlook**

#### **Base Line Projections**



These graphs show the expected progress of the Plan over the next ten years assuming the Plan's assets earn 7.5% on their *market value*. The chart entitled "Plan Funding" shows that, after an initial increase developed in this valuation, the employer rate is expected to steadily decrease over the next decade, absent further gains or losses.

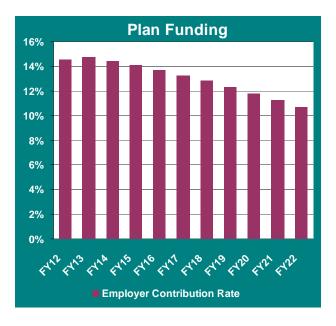
The "Assets and Liabilities" graph shows the projected funding status over the next ten years. The Plan's funded status is projected to reach 100% in the next three years as stored "investment" gains are recognized.





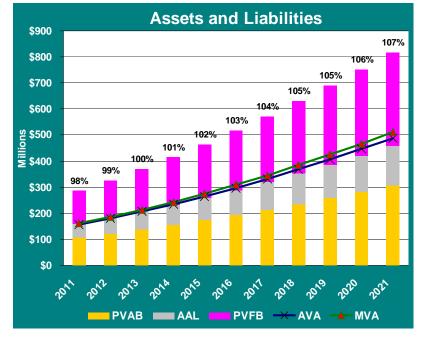
### SECTION I BOARD SUMMARY

### Projections With Asset Returns of 9.0%



The future funding status of this Plan will be influenced by the investment earnings. These charts show what the next ten years would look like with a 9.0% annual return in each year. The Plan has earned an average 7.6% per year over the ten-year period ending June 30, 2011.

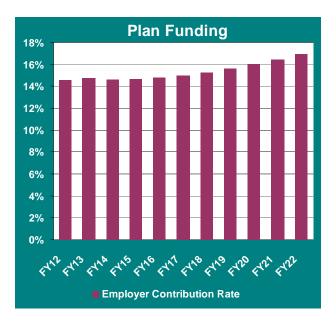
As you can see, the Plan would reach 107% funding by 2021. The contribution rate would decrease rapidly to a level of around 11% of payroll





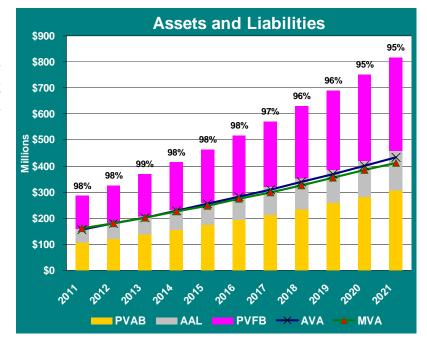
### SECTION I BOARD SUMMARY

### Projections With Asset Returns of 6.0%



To further demonstrate how the future funding of this Plan will be driven by investment earnings, we show next the anticipated plan funding projections if the invested assets earn 6.0% per year over the entire ten-year period.

Under this scenario the employer contribution rate increases to approximately 17% of payroll. The funding status declines but remains in excess of 95% funded.





### SECTION I BOARD SUMMARY

Table I-1							
Delaware County & Municipal Police/Firefighters Pension Plan Summary of Principal Plan Results							
Valuation as of:	· · · · · · · · · · · · · · · · · · ·						
Participant Counts							
Active Participants		967		973	0.62%		
Disabled Participants		12		15	25.00		
Retirees and Beneficiaries		44		52	18.18		
Terminated Vested Participants		19		21	10.53		
Inactive Participants		10		7	(30.00)		
Total		1,052		1,068	1.52%		
Annual Salaries of Active Members*	\$	56,916,500	\$	59,418,100	4.40%		
Annual Retirement Allowances for Retired Members and Beneficiaries	\$	1,601,500	\$	1,932,600	20.67%		
Assets and Liabilities							
Actuarial Accrued Liability (AAL)	\$	141,430,400	\$	160,149,600	13.24%		
Actuarial Value of Assets		135,683,600		157,394,200	16.00		
Unfunded AAL	\$	5,746,800	\$	2,755,400	(52.05%)		
Funded Ratio		95.9%		98.3%			
Present Value of Accrued Benefits (PVAB)	\$	94,737,600	\$	107,250,200	13.21%		
Market Value of Assets		121,573,600		160,776,600	32.25		
Unfunded PVAB	\$	(26,836,000)	\$	(53,526,400)	99.46%		
Accrued Benefit Funding Ratio		128.3%		149.9%			
Contributions as a Percentage of Payroll	Fisc	cal Year 2012	Fisc	cal Year 2013			
Normal Cost Contribution		13.07%		14.00%			
Unfunded Actuarial Liability Contribution		1.16		0.50			
Administrative Expense		0.30		0.25			
Total State Contribution		14.53%		14.75%			

<sup>\*</sup> Assumes one year of payroll projection.



#### SECTION II ASSETS

Pension Plan assets play a key role in the financial operation of the Plan and in the decisions the Trustees may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact upon benefit levels, employer contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on Plan assets including:

- **Disclosure** of Plan assets at June 30, 2010 and June 30, 2011;
- Statement of the **changes** in market values during the year;
- Development of the **Actuarial Value of Assets**;
- An assessment of **investment performance**; and
- A projection of the Plan's expected **cashflows** for the next ten years.

#### **Disclosure**

The market value of assets represents a "snap-shot or cash-out" value which provides the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the marketplace. As a result, market values are usually not suitable for long-range planning.

The actuarial values are market values which have been smoothed to avoid overreacting to any one market event. They are used for evaluating the Plan's ongoing liability to meet its obligations.

Current methods employed by this Plan set the actuarial value equal to the expected value plus 20% of the difference between the expected value of assets and the actual market value where the expected value is equal to the prior year's actuarial value, rolled forward with actual contributions and benefit payments plus interest imputed at 8%. Next year's expected value will be rolled forward at an interest rate of 7.5%.



### SECTION II ASSETS

Table II-1 Changes in Market Values							
Value of Assets – June 30, 2010		\$	121,573,600				
Additions Member Contributions Employer Contributions Investment Return Total Additions	\$ 3,986,300 7,677,600 <u>29,577,800</u> <b>\$ 41,241,700</b>						
Deductions Benefit Payments Administrative Expenses Total Deductions	\$ 1,926,000						
Value of Assets – June 30, 2011		\$	160,776,600				



### SECTION II ASSETS

	Table II-2	
	Development of Actuarial Value of Assets	
1.	Actuarial Value of Assets at June 30, 2010	\$ 135,683,600
2.	Amount in (1) with interest to June 30, 2011	146,538,300
3.	Employer and member contributions for the Plan Year ended June 30, 2011	11,663,900
4.	Interest on contributions assuming payments made uniformly throughout the year to June 30, 2011 at 8.00% per year	466,600
5.	Disbursements from Trust except investment expenses, July 1, 2010 through June 30, 2011	2,038,700
6.	Interest on disbursements to June 30, 2011 at 8.00% per year	81,500
7.	Expected Actuarial Value of Assets at June 30, 2011 $= (2) + (3) + (4) - (5) - (6)$	156,548,600
8.	Actual Market Value of Assets at June 30, 2011	160,776,600
9.	Excess of (8) over (7)	4,228,000
10.	Actuarial Value of Assets at June 30, $2011 = (7) + 20\%$ of (9)	\$ 157,394,200

#### **Actuarial Value of Assets**

The actuarial value of assets represents a "smoothed" value developed by the actuary to reduce, or eliminate, erratic results which could develop from short-term fluctuations in the market value of assets. For this Plan, the actuarial value has been calculated by adding 20% of the difference between market value and expected value to the expected value. The above table illustrates the calculation of actuarial value of assets for the June 30, 2011 valuation.



#### SECTION II ASSETS

#### **Investment Performance**

The market value of assets (MVA) returned 23.40% during 2011, which is more than the assumed 8% return. A return of 8.6% on the actuarial value of assets (AVA) is primarily the result of the asset smoothing method being utilized for the calculation of the actuarial value of assets. Since only 20% of the gain or loss from the performance of the Plan is recognized in a given year, in periods of very good performance, the AVA can lag significantly behind the MVA. In a period of negative returns, the AVA does not decline as rapidly as the MVA.

### **Projection of Cash Flows**

Table II-3 Projection of Plan's Benefit Payments									
Year Beginning July 1,	· · · · · · · · · · · · · · · · · · ·								
2011	\$ 2,570,000	\$ 12,795,000							
2012	2,914,000	13,346,000							
2013	3,329,000	13,780,000							
2014	3,976,000	14,228,000							
2015	4,852,000	14,690,000							
2016	5,815,000	15,167,000							
2017	7,018,000	15,660,000							
2018	8,477,000	16,169,000							
2019	10,251,000	16,695,000							
2020	12,199,000	17,237,000							

<sup>\*</sup> Expected contributions include participating employer contributions and member contributions. For illustration purposes, we have assumed the employer contribution rate will remain level and that payroll will increase at the actuarially assumed rate of 3.25% per year.

Expected benefit payments are projected for the closed group valued at June 30, 2011. Projecting any farther than ten years using a closed-group would not yield reliable predictions due to the omission of new hires.



#### SECTION III LIABILITIES

In this section, we present detailed information on Plan liabilities including:

- **Disclosure** of Plan liabilities at June 30, 2010 and June 30, 2011;
- Statement of **changes** in these liabilities during the year; and

### **Disclosure**

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them.

- **Present Value of Benefits:** Used for analyzing the financial outlook of the Plan, this represents the amount of money needed today to fully pay off all future benefits and expenses of the Plan, assuming participants continue to accrue benefits.
- Actuarial Accrued Liability: Used for funding calculations and GASB disclosures, this
  liability is calculated taking the Present Value of Benefits and subtracting the present value
  of future Member Contributions and future Employer Normal Costs under an acceptable
  actuarial funding method. This method is referred to as the Entry Age Normal funding
  method.
- **Present Value of Accrued Liabilities:** Used for communicating the current level of liabilities, this liability represents the total amount of money needed today to fully pay off the current accrued obligations of the Plan, assuming no future accruals of benefits. These liabilities are also required for accounting purposes (Topic No. 960) and used to assess whether the Plan can meet its current benefit commitments.

The following table discloses each of these liabilities for the current and prior valuations. With respect to each disclosure, a subtraction of the appropriate value of Plan assets yields, for each respective type, a **net surplus** or an **unfunded liability**.



### SECTION III LIABILITIES

Table III-1								
Liabilities/Net (Surplus)/Unfunded June 30, 2010 June 30, 2011								
Present Value of Benefits		/		,				
Active Participant Benefits	\$	233,866,500	\$	262,853,700				
Retiree and Inactive Benefits		19,134,000		23,608,500				
Present Value of Benefits (PVB)	\$	253,000,500	\$	286,462,200				
Market Value of Assets (MVA)	\$	121,573,600	\$	160,776,600				
Future Member Contributions		38,925,400		42,121,200				
Future Employer Contributions		92,501,500		83,564,400				
Total Resources	\$	253,000,500	\$	286,462,200				
Actuarial Accrued Liability								
Present Value of Benefits (PVB)	\$	253,000,500	\$	286,462,200				
Present Value of Future Normal Costs (PVFNC)		72,644,700		84,191,400				
Present Value of Future Member Contributions (PVFEEC)		38,925,400		42,121,200				
Actuarial Accrued Liability (AAL=PVB-PVFNC-PVFEEC)	\$	141,430,400	\$	160,149,600				
Actuarial Value of Assets (AVA)		135,683,600		157,394,200				
Net (Surplus)/Unfunded (AAL – AVA)	\$	5,746,800	\$	2,755,400				
Present Value of Accrued Liability								
Present Value of Benefits (PVB)	\$	253,000,500	\$	286,462,200				
Present Value of Future Benefit Accruals (PVFBA)		158,262,900		179,212,000				
Present Value of Accrued Liability (PVAB=PVB-PVFBA)	\$	94,737,600	\$	107,250,200				
Market Value of Assets (MVA)	\$	121,573,600	\$	160,776,600				
Net Unfunded (PVAB – MVA)	\$	(26,836,000)	\$	(53,526,400)				



#### SECTION III LIABILITIES

### **Changes in Liabilities**

Each of the Liabilities disclosed in the prior table are expected to change at each valuation. The components of that change, depending upon which liability is analyzed, can include:

- New hires since the last valuation
- Benefits accrued since the last valuation
- Plan amendments increasing benefits
- Passage of time which adds interest to the prior liability
- Benefits paid to retirees since the last valuation
- Participants retiring, terminating, or dying at rates different than expected
- A change in actuarial or investment assumptions
- A change in the actuarial funding method

Unfunded liabilities will change because of all of the above, and also due to changes in Plan assets resulting from:

- Employer contributions different than expected
- Investment earnings different than expected
- A change in the method used to measure plan assets

In each valuation, we report on those elements of change which are of particular significance, potentially affecting the long-term financial outlook of the Plan. Below we present key changes in liabilities since the last valuation.

	Table III-2		
	Present Value of Benefits	Actuarial Accrued Liability	Present Value of Accrued Liability
Liabilities June 30, 2010	\$ 253,000,500	\$ 141,430,400	\$ 94,737,600
Liabilities June 30, 2011	286,462,200	160,149,600	107,250,200
Liability Increase (Decrease)	33,461,700	18,719,200	12,512,600
Change Due to:			
Assumption Change	10,154,700	(2,501,600)	(3,955,200)
Actuarial (Gain)/Loss	NC*	(429,600)	NC*
Benefits Accumulated and			
Other Sources	23,307,000	21,650,400	16,467,800

<sup>\*</sup> NC = not calculated



### SECTION III LIABILITIES

	Table III-3 Actuarial Liabilities for Funding							
		Jı	une 30, 2010	Jı	une 30, 2011			
1.	Actuarial Liabilities							
	Retiree and Inactive Benefits	\$	19,134,000	\$	23,608,500			
	Active Members		122,296,400		136,541,100			
	Total Actuarial Liability	\$	141,430,400	\$	160,149,600			
2.	Actuarial Value of Assets	\$	135,683,600	\$	157,394,200			
3.	Unfunded Actuarial Liability	\$	5,746,800	\$	2,755,400			
4.	Allocation of Unfunded Actuarial Liability Unpaid UAL from participating municipalities	\$	413,800	\$	333,300			
5.	Net (Gain)/Loss Base for 10 Year Amort. (3-4)	\$	5,333,000	\$	2,422,100			



#### SECTION IV CONTRIBUTIONS

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly maintain the funding status of the Plan. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

For this Plan, the funding method employed is the **Entry Age Actuarial Cost Method**. Under this method, there are three components to the total contribution: the **normal cost rate**, the **unfunded actuarial liability rate** (UAL rate), and the **administrative expense rate**. The normal cost rate is determined in the following steps. First, for a typical new entrant an individual normal cost rate is determined by taking the value, as of entry age into the plan, of that member's projected future benefits. This value is then divided by the value, also at entry age, of the member's expected future salary. Finally, the total normal cost rate is reduced by the member contribution rate to produce the employer normal cost rate.

The net unfunded actuarial liability (after subtracting payments due from municipalities paying for prior service) as of each valuation date is amortized over a rolling ten year period. All payments are determined assuming total pay increases by the annual inflation rate.

The assumed administrative expense rate is 0.25% of payroll. This rate, when applied to payroll, is intended to provide an allowance above the cost of funding the benefits to pay for the expense of operating the Plan.

The table below presents and compares the employer contribution rates for the Plan for this valuation and the prior one.

Table IV-1 Employer Contribution Rate								
June 30, 2010 June 30, 2011								
Entry Age Normal Cost Rate	13.07%	14.00%						
Amortization Payment	1.16	0.50						
Expense	0.30	0.25						
Actuarially Determined Contribution	14.53%	14.75%						



# SECTION IV CONTRIBUTIONS

	Table IV-2 Development of Plan Cost as of June 30, 2011							
			In Dollars	As % of Payroll				
1.	Present value of projected benefits attributable to: a. Total Normal Cost b. Expected Members Contribution c. Employer Paid Normal Cost (a) – (b)	\$ <del></del>	12,477,800 4,159,300 8,318,500	21.00% 7.00 14.00%				
2.	Amortization of Unfunded Liability, less the unpaid UAL from participating municipalities	\$	299,900	0.50%				
3.	Allowance for Expense	\$	148,500	0.25%				
4.	Total Employer Contribution Rate $(1) + (2) + (3)$	\$	8,766,900	14.75%				



### SECTION V ACCOUNTING STATEMENT INFORMATION

ASC Topic No. 960 of the Financial Accounting Standards Board requires the Plan to disclose certain information regarding its funded status. Statement No. 25 of the Governmental Accounting Standards Board (GASB) establishes standards for disclosure of pension information by public employee retirement systems (PERS) and governmental employers in notes to financial statements and supplementary information.

The FASB ASC Topic No. 960 disclosures provide a quasi "snap shot" view of how the Plan's assets compare to its liabilities if contributions stopped and accrued benefit claims had to be satisfied. However, due to potential legal requirements and the possibility that alternative interest rates would have to be used to determine the liabilities, these values may not be a good indication of the amount of money it would take to buy the benefits for all members if the Plan were to terminate.

The GASB-25 actuarial accrued liability is the same as the actuarial liability amount calculated for funding purposes.

Both the present value of accrued benefits (Topic No. 960) and the actuarial accrued liability (GASB-25) are determined assuming that the Plan is on-going and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 7.5% per annum.

FASB ASC Topic No. 960 specifies that a comparison of the present value of accrued (accumulated) benefits with the market value of the assets as of the valuation date must be provided. GASB Statement No. 25 requires the actuarial accrued liability be compared with the actuarial value of assets for funding purposes. The relevant amounts as of June 30, 2006 are exhibited in Table V-1. Finally, Table V-2 reconciles the Topic No. 960 liabilities determined as of the prior valuation, July 1, 2010, to the liabilities as of June 30, 2011.

Tables V-3 through V-5 are exhibits to be used with the State CAFR report. Table V-3 is the Note to Required Supplementary Information, Table V-4 is a history of gains and losses in Accrued Liability, and Table V-5 is the Solvency Test which shows the portion of Accrued Liability covered by Assets.



# SECTION V ACCOUNTING STATEMENT INFORMATION

		Table V-1							
	Accounting Statement Information  June 30, 2010  June 30, 2011								
A.		ASB ASC Topic No. 960 Basis  Present Value of Benefits Accrued and Vested to Date							
		<ul><li>a. Members Currently Receiving Payments</li><li>b. Former Vested Members</li><li>c. Active Members</li></ul>	\$	18,612,600 521,400 75,603,600	\$	22,870,300 738,200 83,641,700			
	2.	Total Present Value of Accrued Benefits $(1 (a) + 1(b) + 1(c))$	\$	94,737,600	\$	107,250,200			
	3.	Assets at Market Value		121,573,600		160,776,600			
	4.	Unfunded Present Value of Accrued Benefits $(2-3)$	\$	(26,836,000)	\$	(53,526,400)			
	5.	Ratio of Assets to Present Value of Benefits (3 / 2)		128.3%		149.9%			
В.	GA	ASB No. 25 Basis							
	1.	Actuarial Accrued Liabilities for retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	\$	19,134,000	\$	23,608,500			
	2.	Actuarial Accrued Liabilities for current employees		122,296,400		136,541,100			
	3.	Total Actuarial Accrued Liability (1 + 2)	\$	141,430,400	\$	160,149,600			
	4.	Net Actuarial Assets available for benefits		135,683,600		157,394,200			
	5.	Unfunded Actuarial Accrued Liability (3 – 4)	\$	5,746,800	\$	2,755,400			



# SECTION V ACCOUNTING STATEMENT INFORMATION

Table V-2 Statement of Changes in Total Actuarial Present Value of All Accrued Benefits	
	Accumulated Benefit Obligation (FASB ASC Topic No. 960)
Actuarial Present Value of Accrued Benefits at June 30, 2010	\$ 94,737,600
Increase (Decrease) During Years Attributable to:	
Passage of Time	7,502,000
Benefit Paid – FY 2011	(1,926,000)
Assumption Change	(3,955,200)
Benefits Accrued, Other Gains/Losses	10,891,800
Net Increase (Decrease)	\$ 12,512,600
Actuarial Present Value of Accrued Benefits at June 30, 2011	\$ 107,250,200



### SECTION V ACCOUNTING STATEMENT INFORMATION

# Table V-3 Note to Required Supplementary Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows.

Valuation date July 1, 2011

Actuarial cost method Entry age

Amortization method Level percent open

Amortization period Ten years

Asset valuation method 5-Year smoothed market

Actuarial assumptions:

Investment rate of return\* 7.5%
Projected salary increases\* 4.3%-11.8%
Cost-of-living adjustments ad hoc

\*Includes inflation at 3.25%

The actuarial assumptions used have been recommended by the actuary and adopted by the Plan's Board of Trustees based on the most recent review of the Plan's experience, completed in 2011.

The rate of employer contributions to the Plan is composed of the normal cost, amortization of the unfunded actuarial accrued liability and an allowance for administrative expenses. The normal cost is a level percent of payroll cost which, along with member contributions, will pay for projected benefits at retirement for the average plan participant. The actuarial accrued liability is that portion of the present value of projected benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and the funds accumulated as of the same date is the unfunded actuarial accrued liability. The allowance for administrative expenses is based upon the Plan's actual administrative expenses.



## SECTION V ACCOUNTING STATEMENT INFORMATION

# Table V-4 Analysis of Financial Experience

221

Composite Gain (or Loss) During Year

### Gain and Loss in Accrued Liability During Years Ended June 30 Resulting from Differences Between Assumed Experience and Actual Experience

Gain (or Loss) for Year ending June 30, (expressed in thousands)

239

(6,297) \$

(2,121) \$

3,778

				(crep. cosect tr.	 instructs)		
Type of Activity	2	2006	2007	2008	2009	2010	2011
Investment Income on Actuarial Assets	\$	323	\$ 1,465	\$ (612)	\$ (5,360)	\$ (3.528)	\$ 846
Combined Liability Experience		23	 (2,646)	 851	 (937)	 1,407	 430
(Loss)/Gain During Year from Financial Experience	\$	346	\$ (1,181)	\$ 239	\$ (6,297)	\$ (2,121)	\$ 1,276
Non-Recurring Items	-	(125)	 0	 0	 0	 0	 2,502

(1,181) \$

	Table V-5 Solvency Test Aggregate Accrued Liabilities for (expressed in thousands)							
Valuation Date June 30,	Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Member Employer Financed Contributions (3)	Actuarial Value of Reported Assets		n of Accrued Lia red by Reported (2)		
2011	\$ 33,031	\$ 22,870	\$ 104,249	\$ 157,394	100%	100%	97%	
2010	28,585	18,613	94,232	135,684	100	100	94	
2009	24,808	13,383	84,382	119,712	100	100	97	
2008	20,669	10,380	72,862	102,423	100	100	98	
2007	17,135	9,072	62,815	87,395	100	100	97	
2006	13,965	6,992	51,875	72,120	100	100	99	
2005	11,441	6,519	43,375	59,711	100	100	96	



# APPENDIX A MEMBERSHIP INFORMATION

# Delaware County and Municipal Police/Firefighters Pension Plan Distribution of Active Members by Age and Service as of June 30, 2011

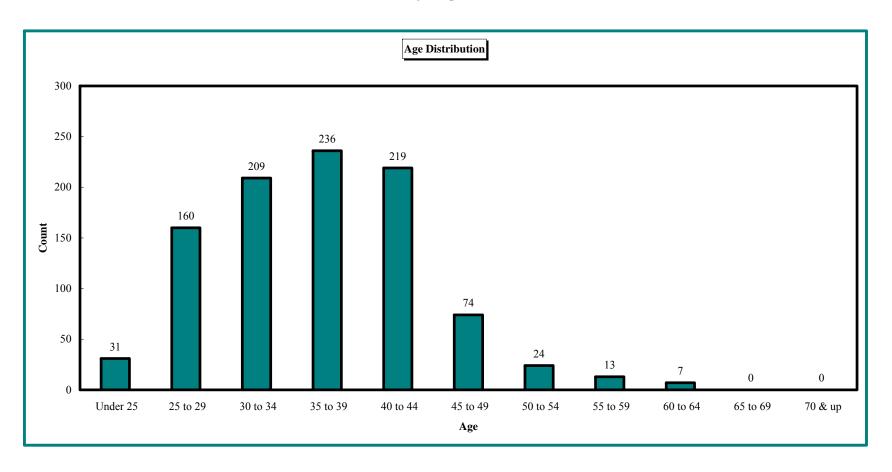
#### COUNTS BY AGE/SERVICE

					Serv	ice					
Age	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
Under 25	19	12	0	0	0	0	0	0	0	0	31
25 to 29	8	114	38	0	0	0	0	0	0	0	160
30 to 34	3	83	106	17	0	0	0	0	0	0	209
35 to 39	1	31	70	117	17	0	0	0	0	0	236
40 to 44	3	24	43	80	66	3	0	0	0	0	219
45 to 49	1	4	10	15	32	12	0	0	0	0	74
50 to 54	0	3	3	3	7	6	2	0	0	0	24
55 to 59	1	3	4	2	1	0	1	1	0	0	13
60 to 64	0	1	2	2	0	0	2	0	0	0	7
65 to 69	0	0	0	0	0	0	0	0	0	0	0
70 & up	0	0	0	0	0	0	0	0	0	0	0
Total	36	275	276	236	123	21	5	1	0	0	973



# APPENDIX A MEMBERSHIP INFORMATION

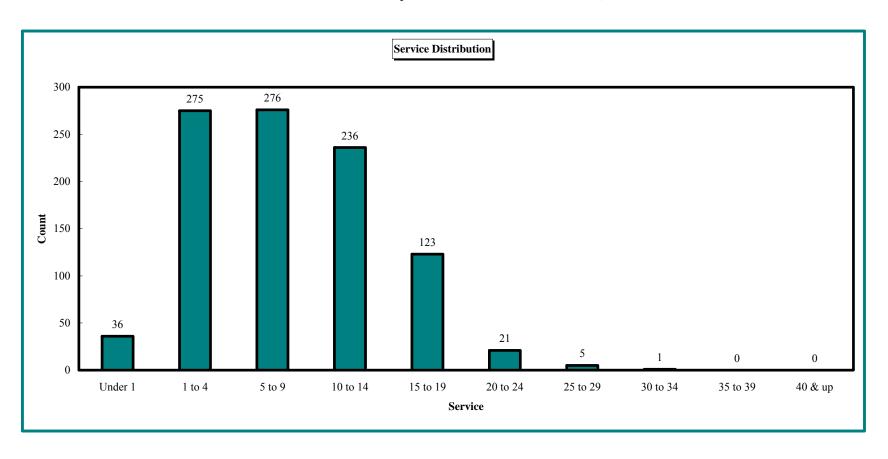
# Delaware County and Municipal Police/Firefighters Pension Plan Distribution of Active Members by Age as of June 30, 2011





# APPENDIX A MEMBERSHIP INFORMATION

# Delaware County and Municipal Police/Firefighters Pension Plan Distribution of Active Members by Service as of June 30, 2011





# APPENDIX A MEMBERSHIP INFORMATION

# Delaware County and Municipal Police/Firefighters Pension Plan Distribution of Active Members by Age and Service as of June 30, 2011

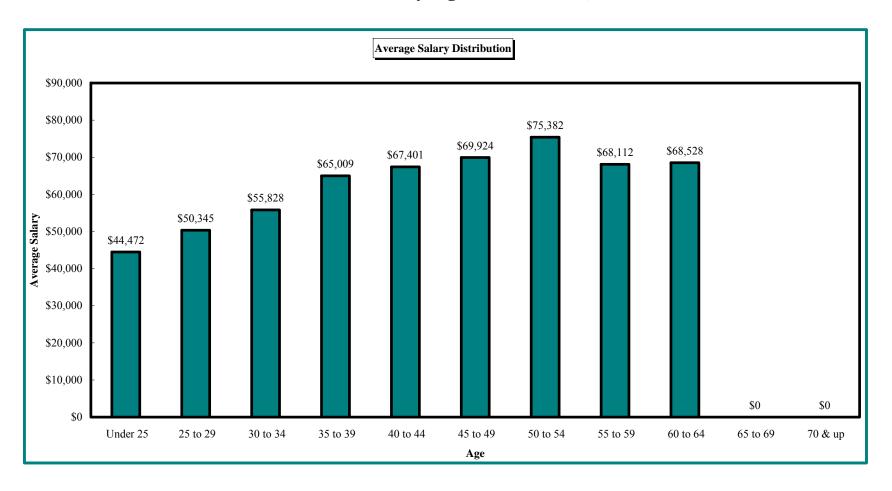
#### AVERAGE SALARY BY AGE/SERVICE

					Ser	vice					
Age	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
Under 25	\$ 42,142 \$	48,162	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 44,472
25 to 29	42,200	49,637	54,185	0	0	0	0	0	0	0	50,345
30 to 34	37,867	50,051	58,829	68,491	0	0	0	0	0	0	55,828
35 to 39	48,116	52,202	60,607	70,000	73,135	0	0	0	0	0	65,009
40 to 44	42,208	52,894	59,904	69,960	74,792	85,252	0	0	0	0	67,401
45 to 49	49,329	54,598	58,010	64,727	74,771	80,251	0	0	0	0	69,924
50 to 54	0	61,574	58,882	81,633	75,548	82,502	89,522	0	0	0	75,382
55 to 59	51,031	63,901	64,210	69,858	87,626	0	94,064	64,479	0	0	68,112
60 to 64	0	51,467	58,081	77,493	0	0	78,542	0	0	0	68,528
65 to 69	0	0	0	0	0	0	0	0	0	0	0
70 & up	0	0	0	0	0	0	0	0	0	0	0
Total	\$ 42,417 \$	50,636	\$ 58,852	\$ 69,753	\$ 74,705	\$ 81,609	\$ 86,038	\$ 64,479	\$ 0	\$ 0	\$ 61,206



## APPENDIX A MEMBERSHIP INFORMATION

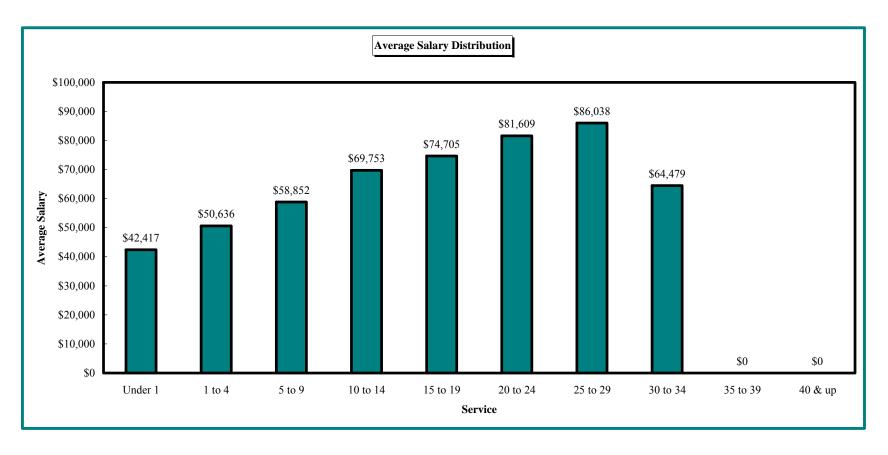
# Delaware County and Municipal Police/Firefighters Pension Plan Distribution of Active Members by Age as of June 30, 2011





## APPENDIX A MEMBERSHIP INFORMATION

# Delaware County and Municipal Police/Firefighters Pension Plan Distribution of Active Members by Service as of June 30, 2011





# APPENDIX A MEMBERSHIP INFORMATION

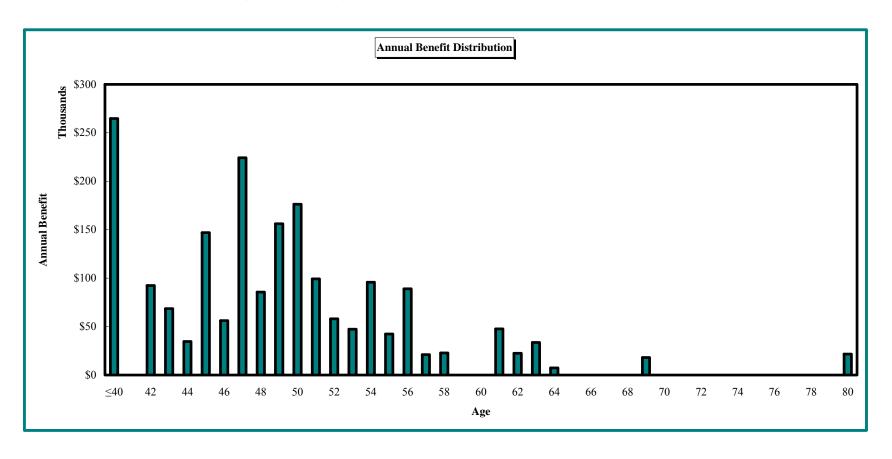
# Delaware County and Municipal Police/Firefighters Pension Plan Distribution of Retired Members, Survivors, and Disabled Members as of June 30, 2011

Age	Count	<b>Annual Benefit</b>	Age	Count	<b>Annual Benefit</b>
<25	2	\$ 30,435	73	0	\$ 0
25	0	0	74	0	0
26	0	0	75	0	0
27	0	0	76	0	0
28	0	0	77	0	0
29	0	0	78	0	0
30	0	0	79	0	0
31	0	0	80	1	21,600
32	0	0	81	0	0
33	0	0	82	0	0
34	0	0	83	0	0
35	1	36,315	84	0	0
36	0	0	85	0	0
37	1	16,258	86	0	0
38	1	36,561	87	0	0
39	3	95,354	88	0	0
40	2	49,853	89	0	0
41	0	0	90	0	0
42	3	92,460	91	0	0
43	2	68,521	92	0	0
44	1	34,626	93	0	0
45	5	147,011	94	0	0
46	2	56,171	95	0	0
47	6	224,340	96	0	0
48	3	85,610	97	0	0
49	4	156,152	98	0	0
50	6	176,306	99	0	0
51	3	99,309	100	0	0
52	2	58,090	101	0	0
53	2	47,357	102	0	0
54	2	95,819	103	0	0
55	1	42,378	103	0	0
56	3	88,993	105	0	0
57	1	21,044	106	0	0
58	1	22,834	107	0	0
59	0	0	108	0	0
60	0	0	109	0	0
61	2	47,673	110	0	0
62	2	22,411	111	0	0
63	2	33,633	112	0	0
64	1	7,343	113	0	0
65	0	0	113	0	0
66	0	0	115	0	0
67	0	0	116	0	0
68	0	0	116	0	0
69	2	18,161		0	0
70	0	18,161	118 119	0	0
70 71	0	0	119	0	0
72	0	0	120	U	U
12	U	U	Totals	67	\$ 1,932,620
			Totals	6/	ş 1,932,020



# APPENDIX A MEMBERSHIP INFORMATION

# Delaware County and Municipal Police/Firefighters Pension Plan Distribution of Retired Members, Survivors, and Disabled Members as of June 30, 2011





# APPENDIX A MEMBERSHIP INFORMATION

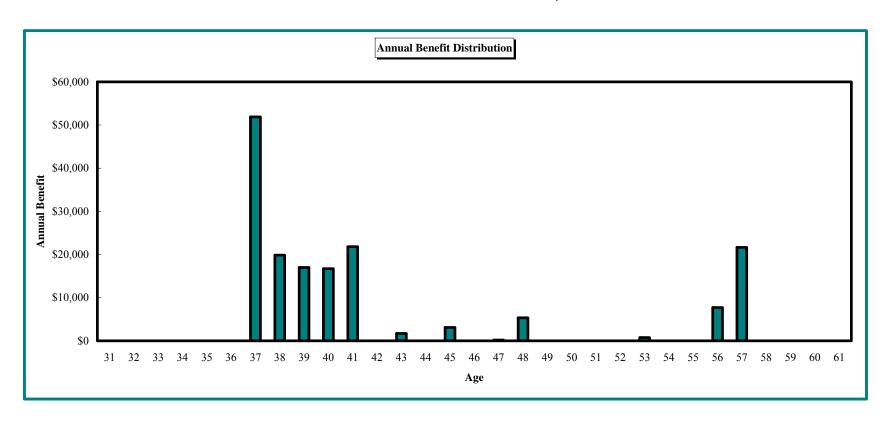
# Delaware County and Municipal Police/Firefighters Pension Plan Distribution of Vested Members as of June 30, 2011

Age	Count	<b>Annual Benefit</b>	Age	Count	<b>Annual Benefit</b>
<25	0	\$ 0	73	0	\$ 0
25	0	0	74	0	0
26	0	0	75	0	0
27	0	0	76	0	0
28	0	0	77	0	0
29	0	0	78	0	0
30	0	0	79	0	0
31	0	0	80	0	0
32	0	0	81	0	0
33	0	0	82	0	0
34	0	0	83	0	0
35	0	0	84	0	0
36	0	0	85	0	0
37	5	51,858	86	0	0
38	1	19,864	87	0	0
39	3	16,987	88	0	0
40	2	16,700	89	0	0
41	1	21,818	90	0	0
42	0	0	91	0	0
43	1	1,698	92	0	0
44	0	0	93	0	0
45	2	3,106	94	0	0
46	0	0	95	0	0
47	1	187	96	0	0
48	1	5,331	97	0	0
49	0	0	98	0	0
50	0	0	99	0	0
51	0	0	100	0	0
52	0	0	101	0	0
53	1	756	102	0	0
54	0	0	103	0	0
55	0	0	104	0	0
56	1	7,708	105	0	0
57	2	21,647	106	0	0
58	0	0	107	0	0
59	0	0	108	0	0
60	0	0	109	0	0
61	0	0	110	0	0
62	0	0	111	0	0
63	0	0	112	0	0
64	0	0	113	0	0
65	0	0	114	0	0
66	0	0	115	0	0
67	0	0	116	0	0
68	0	0	117	0	0
69	0	0	118	0	0
70	0	0	119	0	0
71	0	0	120	0	0
72	0	0	T . 1	21	0 1/7/50
			Totals	21	\$ 167,659



# APPENDIX A MEMBERSHIP INFORMATION

# Delaware County and Municipal Police/Firefighters Pension Plan Distribution of Vested Members as of June 30, 2011





## APPENDIX B ACTUARIAL ASSUMPTIONS AND METHODS

### A. Long-Term Assumptions Used to Determine Plan Costs and Liabilities

### 1. Demographic Assumptions

### a. Healthy Inactive Mortality

With Fully Generational Mortality Improvements (Projection Scale AA)

Male: RP-2000 Mortality Table Female: RP-2000 Mortality Table

	Rates of H	<b>Iealthy Inact</b>	ive Mortalit	y		
	Ra	tes	Projection			
	(Prior to P	Projection)	Scale	e AA		
Age	Male	Female	Male	Female		
50	0.21%	0.17%	1.80%	1.70%		
55	0.36	0.27	1.90	0.80		
60	0.67	0.51	1.60	0.50		
65	1.27	0.97	1.40	0.50		
70	2.22	1.67	1.50	0.50		
75	3.78	2.81	1.40	0.80		
80	6.43	4.59	1.00	0.70		
85	11.08	7.74	0.70	0.60		
90	18.34	13.17	0.40	0.30		

### **b.** Healthy Active Mortality

With Fully Generational Mortality Improvements (Projection Scale AA)

Male: RP-2000 Mortality Table Female: RP-2000 Mortality Table

Rates of Healthy Active Mortality (Prior to Projection)						
Age	Male	Female				
20	0.03%	0.02%				
25	0.04	0.02				
30	0.04	0.02				
35	0.08	0.05				
40	0.11	0.07				
45	0.15	0.11				
50	0.21	0.17				
55	0.36	0.27				
60	0.67	0.51				



# APPENDIX B ACTUARIAL ASSUMPTIONS AND METHODS

### c. Disabled Inactive Mortality

2011 PBGC Disabled Mortality Tables, 50% Social Security Disabled / 50% Non-Social Security Disabled.

Rates o	Rates of Disabled Inactive Mortality					
Age	Male	Female				
40	1.97%	1.06%				
45	2.22	1.24				
50	2.51	1.47				
55	2.88	1.79				
60	3.33	2.21				
65	3.91	2.77				
70	4.78	3.38				
75	6.39	4.53				
80	8.93	6.46				

### d. Rates of Active Disability

Rates of Ac	Rates of Active Disability				
Age	Current				
20	0.02%				
25	0.02				
30	0.07				
35	0.10				
40	0.39				
45	0.78				
50	1.10				
55	1.50				

1/3 of disabilities are partial and 2/3 are total.

1/3 of disabilities are duty-related and 2/3 are non-duty related.



## APPENDIX B ACTUARIAL ASSUMPTIONS AND METHODS

### e. Termination of Employment (Prior to Normal Retirement Eligibility)

10-year Select & Ultimate tables (service-based). Table applies until eligibility for retirement is reached.

Servi	ce
Select:	Rate
0-2	6.50%
3	5.00
4	4.00
5	3.50
6	3.00
7	2.50
8	2.00
9	1.50
Ultimate	0.50

#### f. Retirement

Normal Retirement: 1-year Select & Ultimate (age-based) upon attaining the earlier of:

- a) Completion of 20 years of credited service, or
- b) Attainment of age 62 with ten years of credited service, including immediate retirement at 25 years of credited service

	Normal Retireme	nt
Age	Select	Ultimate
<37	17.00%	0.00%
37-49	17.00	11.00
50-54	17.00	13.50
55-59	17.00	75.00
60+	17.00	100.00



## APPENDIX B ACTUARIAL ASSUMPTIONS AND METHODS

### g. Merit/Seniority Salary Increase (in addition to across-the-board increase)

10-year service-based table includes an annual inflation rate of 3.25%.

Service	Increase
0	11.75%
1	9.75
2	7.75
3	6.25
4	6.00
5	6.00
6	5.75
7	5.50
8	5.25
9	5.00
10	4.28

### h. Family Composition

Female spouses are assumed to be three years younger than males.

80% are assumed married for both male and female employees.

Actual marital characteristics are used for pensioners.

Dependent children eligible for survivor benefits are assumed to have their benefits cease at age 20.

#### 2. Economic Assumptions

Rate of Investment Return:	7.50%
Rate of General Wage Increase:	3.25%
Rate of Increase in Cost of Living	
for Retirees:	0.00%
Rate of Increase in Total Payroll	
(for Amortization):	3.25%
Administrative Expenses as a	
Percentage of Payroll:	0.25%
	Rate of General Wage Increase: Rate of Increase in Cost of Living for Retirees: Rate of Increase in Total Payroll (for Amortization): Administrative Expenses as a

#### 3. Changes Since Last Valuation

As a result of an experience study completed in spring 2011, the following assumptions were changed:

Healthy Inactive, Active and Disabled Mortality

Salary Increase

Rate of Investment Return

Rate of General Wage Increase

Rate of Increase in Total Payroll (for Amortization)

Administrative Expense



# APPENDIX B ACTUARIAL ASSUMPTIONS AND METHODS

#### **B.** Actuarial Methods

### 1. Funding Method

The Entry Age Normal Actuarial Cost method is used to determine costs. Under this funding method, a normal cost rate is determined as a level percent of pay for a typical new entrant. The normal cost rate times payroll equals the normal cost. The normal cost plus member contributions will pay for projected benefits at retirement for the average plan participant.

The actuarial accrued liability is that portion of the present value of projected benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and funds accumulated as of the same date is referred to as the unfunded actuarial liability.

The portion of the actuarial accrued liability in excess of plan assets is funded according to a schedule which is intended to amortize such unfunded actuarial liability fully after a period of years. This is in addition to each year's employer normal cost. Under this cost method, actuarial gains and losses are directly reflected in the size of the unfunded actuarial liability.

The net unfunded actuarial liability (after subtracting payments due from municipalities paying for prior service) is amortized over a rolling ten year period from each valuation date. The payments are determined assuming total pay increases by the annual inflation rate.

#### 2. Actuarial Value of Assets

For purposes of determining the State contribution rate to the plan we use an actuarial value of assets. The asset adjustment method dampens the volatility in asset values that could occur because of fluctuations in market conditions. Use of an asset smoothing method is consistent with the long-term nature of the actuarial valuation process.

The actuarial value of assets is a weighted average giving 20% weight to the current market value and 80% weight to the prior year's actuarial value increased by expected interest and contributions and decreased by benefit payments and expenses. This is mathematically equivalent to recognizing 100% of the actuarially assumed interest rate, plus contribution, less payment each year, and 20% of the portion of each year's returns that have not already been reflected in asset values.

#### 3. Changes Since Last Valuation

None.



### APPENDIX C SUMMARY OF PLAN PROVISIONS

### 1. Membership

The plan covers an individual who is employed on a full-time basis as a police officer by a county or municipality in Delaware or an individual who is employed on a full-time basis as a uniformed firefighter by the City of Wilmington.

#### 2. Member Contributions

7% of compensation.

Interest is credited at the rate of 5% per year.

Member contributions are made through an "employer pick-up" arrangement which results in deferral of taxes on the contributions.

#### 3. Credited Service

All service as a member plus certain claimed and purchased service.

#### 4. Final Average Compensation

Final Average Compensation is the average over the highest 36 consecutive months (or shorter period of total service).

#### 5. Normal Retirement

Eligibility: (i) age 62 with five years of credited service; or (ii) any age with 20 years of credited service; or (iii) ten years of credited service when age plus service equals 75.

Benefit: 2.5% of final average compensation for each year of credited service, up to 20 years, plus 3.5% of final average compensation for each year of credited service over 20 years.

### 6. Duty-Connected Disability Benefit

Eligibility: Disabled in the performance of his or her duties.

Benefit: If member is totally disabled: 75% of final average compensation at the time disability commenced plus 10% for each eligible dependent not to exceed 100%.

If member is partially disabled: the normal retirement benefit based on credited service at date of disability that is not less than 50% of final average compensation at the time disability commences.



### APPENDIX C SUMMARY OF PLAN PROVISIONS

### 7. Ordinary Disability

Eligibility: Five years of credited service.

Benefit: If member is totally disabled: the normal retirement benefit based on credited service at date of disability that is not less than 50% of the final average compensation at the time of disability plus 5% for each eligible dependent to a maximum of 70%.

If member is partially disabled: the normal retirement benefit based on credited service at the date of disability that is not less than 30% of final average compensation at the time of retirement.

#### 8. Survivor's Benefit

Eligibility: Death while active or death after retirement.

Benefit: For eligible survivors of employees who die in active service: 50% of salary, payable to the primary survivor.

For eligible survivors of pensioners who die: 50% of the member's pension at the time of death.

Eligible survivors include: (1) widow or widower; or (2) child or children under 18, or between 18 and 22 and attending school on a full-time basis, or over 18 and permanently disabled before 18; or (3) dependent parent or parents.

#### 9. Vesting

Eligibility: Five years of credited service.

Benefit: Normal retirement benefit payable at age 62 based on final average compensation and service at date of termination. In lieu of a pension, a member may receive a refund of accumulated contributions with interest. Upon application for a refund of contributions, a member's vested right to a monthly benefit shall be forfeited.

#### 10. Withdrawal

Eligibility: Not eligible for other benefits.

Benefit: Accumulated employee contributions with interest.

### 11. Changes Since Last Valuation

None.

