

**Delaware State Volunteer  
Firemen's Pension Plan**

**Actuarial Valuation  
as of June 30, 2010**

**Produced by [Cheiron](#)**

**May 2011**

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May 4, 2011

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 State Volunteer Firemen's Pension Plan as of June 30, 2010. 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.

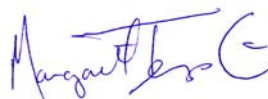
Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions on which our findings are based. Those comments are the basis for our certification 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 contribution for Fiscal Year ending 2011 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 is complete and accurate and has 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, and that as Members of the American Academy of Actuaries, we meet the Qualification Standards to render the opinions contained herein.

Sincerely,  
Cheiron



Fiona E. Liston, FSA  
Principal Consulting Actuary



Margaret A. Tempkin, FSA  
Consulting Actuary



**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**FOREWORD**

Cheiron has performed the actuarial valuation of the Delaware State Volunteer Firemen's Pension Plan as of June 30, 2010. 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 employers for Fiscal Year 2011; 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.

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION I  
BOARD SUMMARY**

**General Comments**

The actuarially determined contribution amount increased from \$1,703,200 for FY 2010 to \$1,761,500 for FY 2011. During the year ended June 30, 2010, the Plan's assets earned 10.0% on a market value basis. However, due to the Plan's asset-smoothing technique which only recognizes 20% of returns below the 8% assumption, the return on the actuarial asset value was a positive 5.4%. This return was less than the assumed rate of return of 8.0% and resulted in an actuarial loss on investments of \$345 thousand.

The Plan also experienced an actuarial gain on Plan liabilities resulting from members retiring, terminating, and becoming disabled and dying at rates different from the actuarial assumptions. The gain reduced the actuarial liability by \$260 thousand. 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.

There was an increase in the Plan's unfunded liability over what would otherwise be expected due to the fact that employers are contributing at less than the actuarially determined amount. The anticipated contribution for the fiscal year ending June 30, 2010 was \$1,604 thousand. Employers made contributions totaling \$1,191 thousand. Until the employer contributions catch up to the actuarially determined amount, this will continue to be a source of loss.

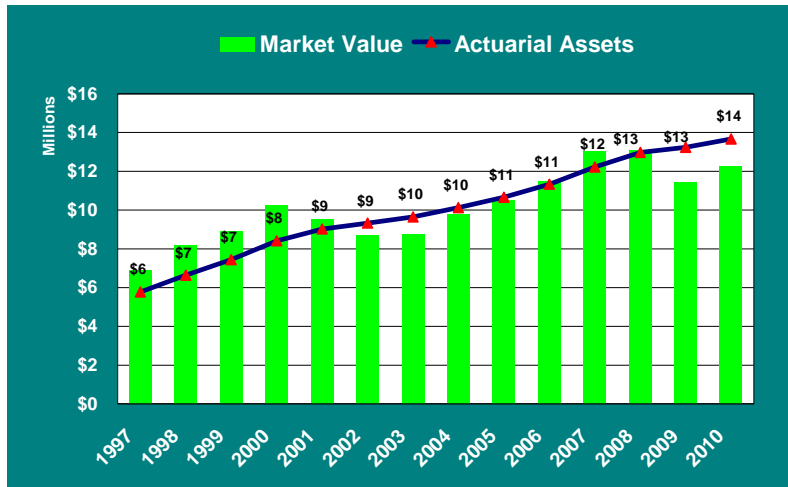
As of the June 30, 2010 actuarial valuation, the Plan's unfunded actuarial liability was \$13.7 million. This is an increase from last year's unfunded actuarial liability (UAL) of \$13.3 million.

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION I  
BOARD SUMMARY**

**Trends**

Growth in Assets

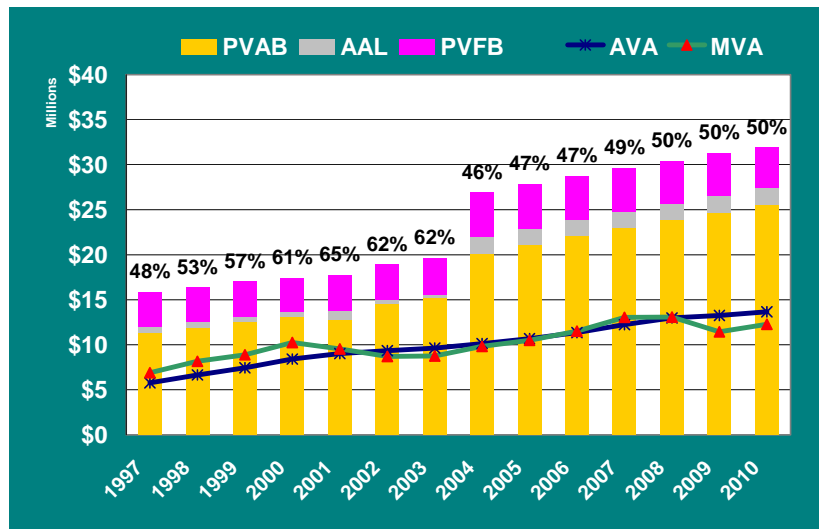


The market value of assets (MVA) returned 10.0% over the last year. The determination of the plan's actuarial value of assets reflects only a portion of the return above 8%, so an additional recognition of the 2008-2009 losses dampened the impact on the actuarial assets.

Over the period July 1, 1997 to June 30, 2010 the Plan's assets returned approximately 9.1% 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.

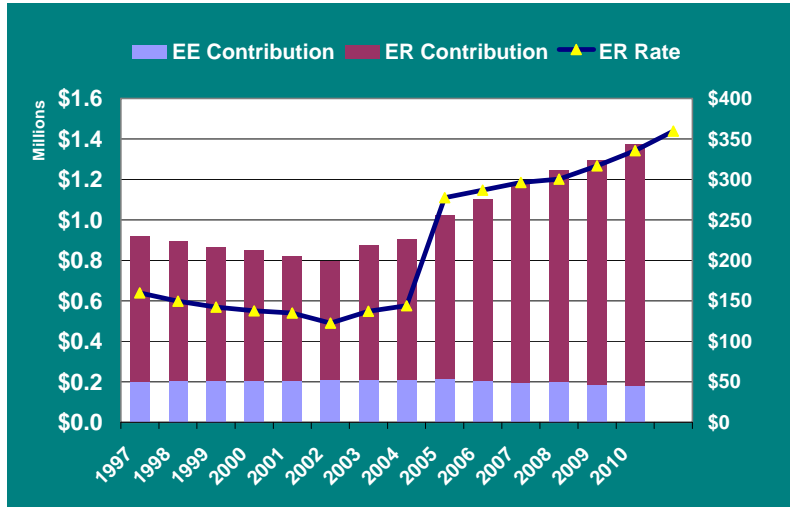


The amount represented by the top of the pink bars, the Present Value of Future Benefits (PVFB), is the amount needed to provide all benefits for the current participants and their beneficiaries. If the Plan had assets equal to the PVFB no contributions would, in theory, be needed for the current members.

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION I  
BOARD SUMMARY**

Contribution Rates

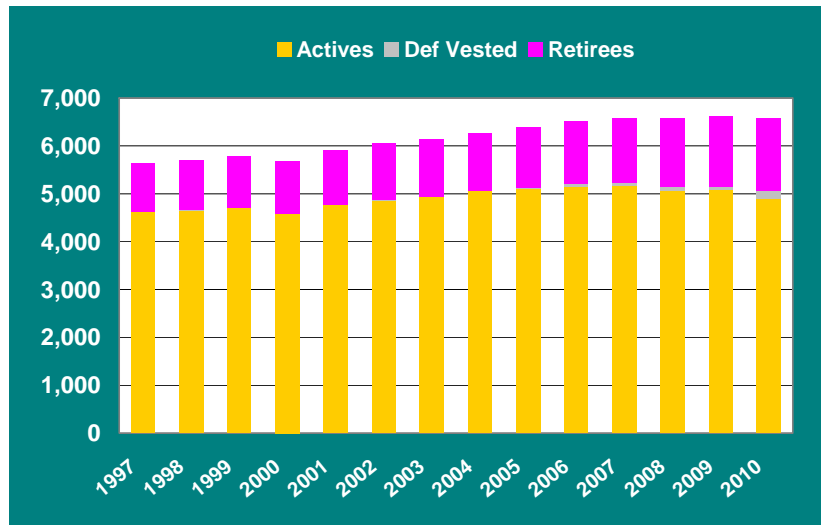


The stacked bars in this graph show the contributions made by the employers and the members (left hand scale). The black line shows the employer's per-head contribution rate (right hand scale).

The member contribution rate is set by State law, depending on which plan the member participates in. The employer contribution rate is set by the actuarial process.

Participant Trends

The graph at the right shows the number of active participants has remained fairly stable. There has been a slight increase in the number of retirees over recent years.

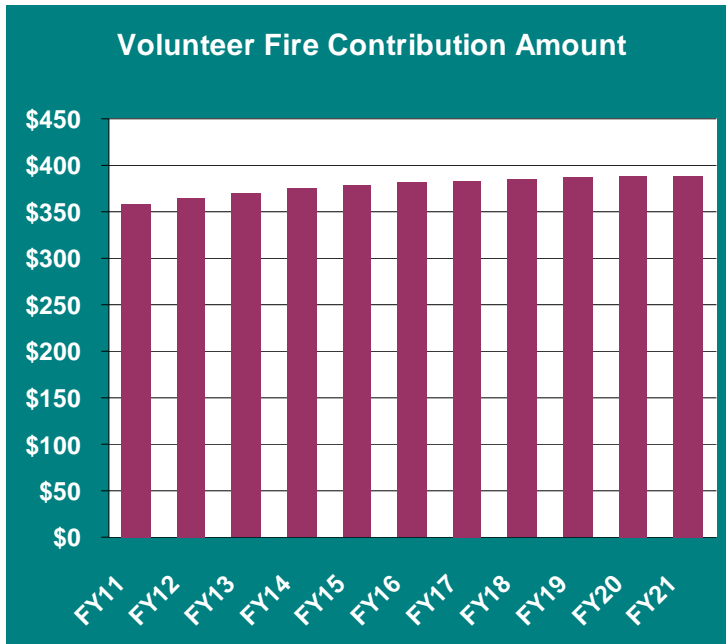


**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION I  
BOARD SUMMARY**

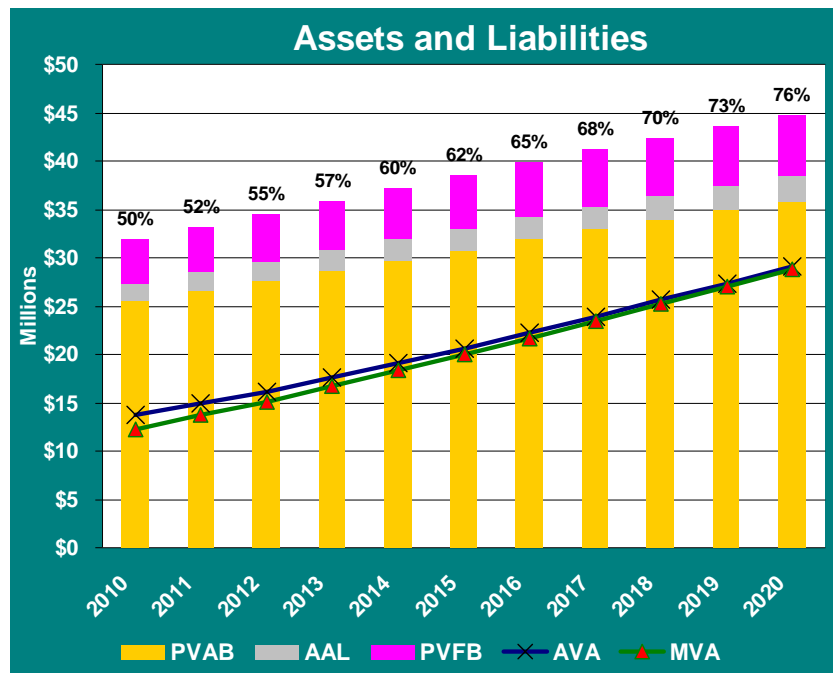
**Future Outlook**

Base Line Projections



The next two graphs show the expected progress of the Plan over the next ten years assuming the Plan's assets earn 8% on their *market value*. The chart entitled "Plan Funding" shows that the employer contribution per head is expected to remain level over the decade. This pattern may be impacted by the phase-in to fully actuarially determined rates.

The "Assets and Liabilities" graph shows the projected funding status over the next ten years. The Plan's funded status is projected to improve annually.

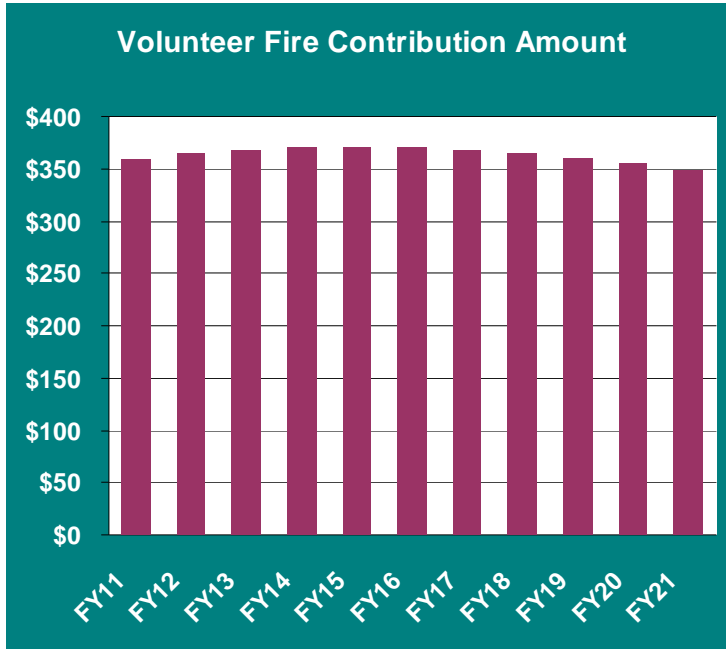




**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

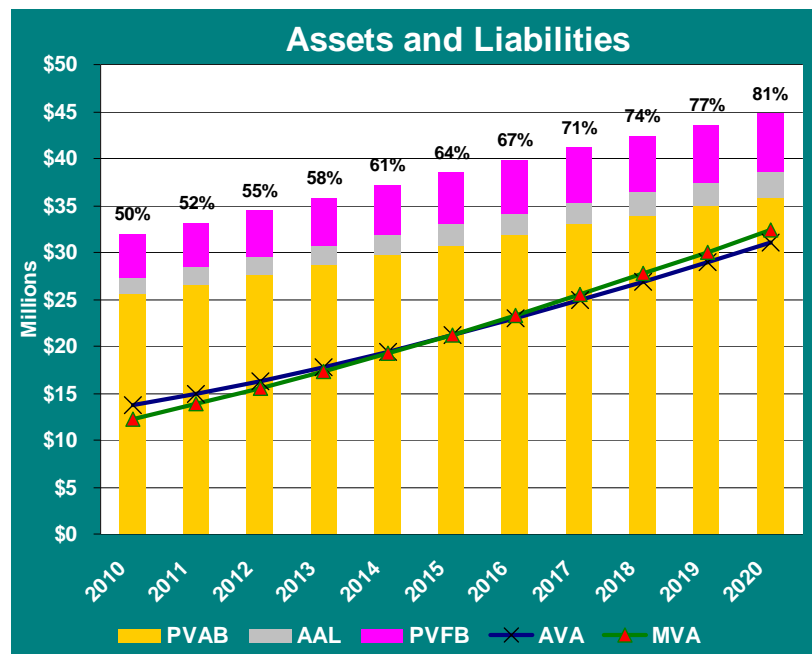
**SECTION I  
BOARD SUMMARY**

Projections With Asset Returns of 9.5%



The future funding status of this Plan will be influenced by the investment earnings. These two charts show what the next ten years would look like with a 9.5% annual return in each year. The Plan has earned an average 7.4% per year over the ten-year period ending June 30, 2010.

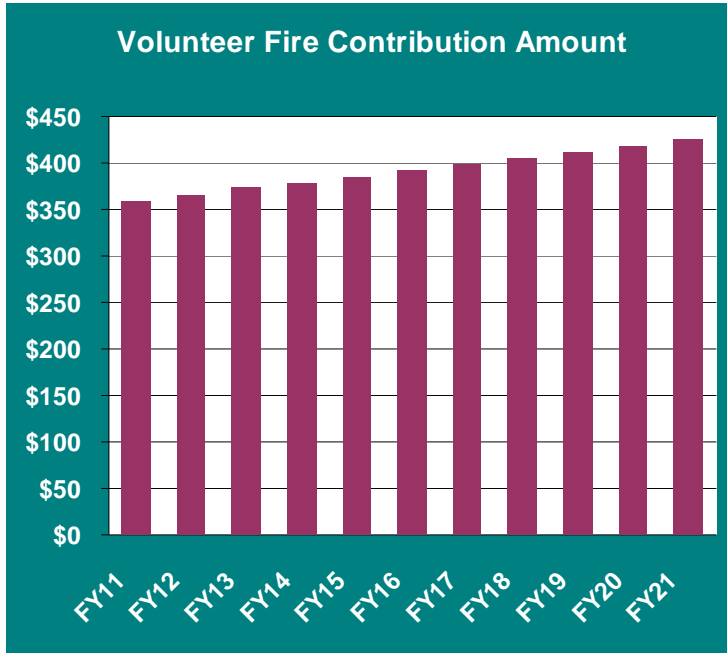
As you can see, the Plan would reach 80% funding by 2020. The contribution rate drops slightly towards the second half of the decade under this scenario.



**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

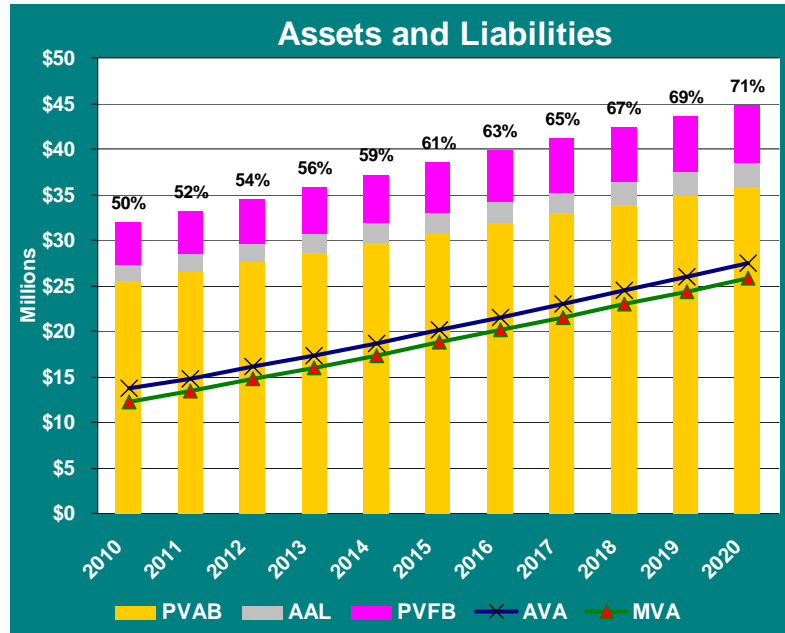
**SECTION I  
BOARD SUMMARY**

Projections With Asset Returns of 6.5%



To further demonstrate how the future funding of this Plan will be influenced by investment earnings, we also show the anticipated plan funding projections if the invested assets earn 6.5% per year over the entire ten-year period. Under this scenario the employer contribution rate increases towards the latter half of the decade.

The projection shows an increase in the Plan's funded status from 50% to 70% by the end of the period. The improvement in funded status is driven by contributions being made towards paying down the unfunded liability.



DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010

SECTION I  
BOARD SUMMARY

<b>Delaware State Volunteer Firemen's Pension Plan Summary of Principal Plan Results</b>			
<b>Valuation as of:</b>	<b>June 30, 2009</b>	<b>June 30, 2010</b>	<b>% Change</b>
<b><u>Participant Counts</u></b>			
Active Participants	5,074	4,898	(3.47%)
Retirees and Beneficiaries	1,468	1,522	3.68%
Terminated Vested Participants	79	153	93.67%
Inactive Participants	<u>5</u>	<u>19</u>	<u>280.00%</u>
<b>Total</b>	<b>6,626</b>	<b>6,592</b>	<b>(0.51%)</b>
Annual Retirement Allowances for Retired Members and Beneficiaries	\$ 1,459,800	\$ 1,532,000	4.95%
<b><u>Assets and Liabilities</u></b>			
Actuarial Accrued Liability (AAL)	\$ 26,561,900	\$ 27,382,000	3.09%
Actuarial Value of Assets	<u>13,240,800</u>	<u>13,662,900</u>	<u>3.19%</u>
Unfunded AAL	\$ 13,321,100	\$ 13,719,100	2.99%
Funded Ratio	49.8%	49.9%	
Present Value of Accrued Benefits (PVAB)	\$ 24,683,800	\$ 25,544,700	3.49%
Market Value of Assets	<u>11,431,800</u>	<u>12,282,000</u>	<u>7.44%</u>
Unfunded PVAB	\$ 13,252,000	\$ 13,262,700	0.08%
Accrued Benefit Funding Ratio	46.3%	48.1%	
<b><u>Contributions</u></b>			
	<b>Fiscal Year 2010</b>	<b>Fiscal Year 2011</b>	
Normal Cost Contribution	\$ 286,200	\$ 276,300	
Unfunded Actuarial Liability Contribution	1,371,800	1,451,500	
Administrative Expense	<u>45,200</u>	<u>33,700</u>	
Total Employer Contribution	\$ 1,703,200	\$ 1,761,500	

## 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, 2009 and June 30, 2010;
- 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 "snap-shot or cash-out" values which provide 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 and are the actuary's best estimate of long-term asset values. 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%.

DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010

SECTION II  
ASSETS

Changes in Market Values		
<b>Value of Assets – June 30, 2009</b>		<b>\$ 11,431,800</b>
<b><u>Additions</u></b>		
Member Contributions	\$ 180,700	
Employer Contributions	1,190,800	
Investment Return	<u>1,130,900</u>	
<b>Total Additions</b>	<b>\$ 2,502,400</b>	
<b><u>Deductions</u></b>		
Benefit Payments	\$ 1,618,500	
Administrative Expenses	<u>33,700</u>	
<b>Total Deductions</b>	<b>\$ 1,652,200</b>	
<b>Value of Assets – June 30, 2010</b>		<b>\$ 12,282,000</b>

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION II  
ASSETS**

<b>Development of Actuarial Value of Assets</b>		
1.	Actuarial Value of Assets at June 30, 2009	\$ 13,240,800
2.	Amount in (1) with interest to June 30, 2010	14,300,100
3.	Employer and member contributions for the Plan Year ended June 30, 2010	1,371,500
4.	Interest on contributions assuming payments made uniformly throughout the year to June 30, 2010 at 8.00% per year	54,800
5.	Disbursements from Trust except investment expenses, July 1, 2009 through June 30, 2010	1,652,200
6.	Interest on disbursements to June 30, 2010 at 8.00% per year	66,100
7.	Expected Actuarial Value of Assets at June 30, 2010 = (2) + (3) + (4) – (5) – (6)	14,008,100
8.	Actual Market Value of Assets at June 30, 2010	12,282,000
9.	Excess of (8) over (7)	(1,726,100)
10.	Actuarial Value of Assets at June 30, 2010 = (7) + 20% of (9)	\$ 13,662,900

**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, 2010 valuation.

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION II  
ASSETS**

**Investment Performance**

The market value of assets (MVA) returned 10.0% during 2010, which is greater than the assumed 8% return. A return of 5.4% 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.

<b>Projection of Plan's Benefit Payments</b>		
<b>Year Beginning July 1,</b>	<b>Expected Benefit Payments</b>	<b>Expected Contributions*</b>
2010	\$ 1,618,000	\$ 2,055,000
2011	1,675,000	2,055,000
2012	1,750,000	2,055,000
2013	1,824,000	2,055,000
2014	1,909,000	2,055,000
2015	2,005,000	2,055,000
2016	2,115,000	2,055,000
2017	2,234,000	2,055,000
2018	2,349,000	2,055,000
2019	2,465,000	2,055,000

\* Expected contributions include employer contributions and member contributions, and do not reflect the continued phase-in to paying the full actuarially calculated amount.

Expected benefit payments are projected for the closed group valued at June 30, 2010. 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, 2009 and June 30, 2010;
- 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**.



DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010

**SECTION III  
LIABILITIES**

<b>Liabilities/Net (Surplus)/Unfunded</b>	<b>June 30, 2009</b>	<b>June 30, 2010</b>
<b><u>Present Value of Benefits</u></b>		
Active Participant Benefits	\$ 18,446,400	\$ 17,828,200
Retiree and Inactive Benefits	12,826,000	14,081,900
<b>Present Value of Benefits (PVB)</b>	<b>\$ 31,272,400</b>	<b>\$ 31,910,100</b>
Market Value of Assets (MVA)	\$ 11,431,800	\$ 12,282,000
Future Member Contributions	2,428,000	2,334,000
Future Employer Contributions	17,412,600	17,294,100
<b>Total Resources</b>	<b>\$ 31,272,400</b>	<b>\$ 31,910,100</b>
<b><u>Actuarial Accrued Liability</u></b>		
Present Value of Benefits (PVB)	\$ 31,272,400	\$ 31,910,100
Present Value of Future Normal Costs (PVFNC)	2,282,500	2,194,100
Present Value of Future Member Contributions (PVFEEC)	2,428,000	2,334,000
<b>Actuarial Accrued Liability (AAL=PVB-PVFNC-PVFEEC)</b>	<b>26,561,900</b>	<b>27,382,000</b>
Actuarial Value of Assets (AVA)	13,240,800	13,662,900
<b>Net (Surplus)/Unfunded (AAL - AVA)</b>	<b>\$ 13,321,100</b>	<b>\$ 13,719,100</b>
<b><u>Present Value of Accrued Liability</u></b>		
Present Value of Benefits (PVB)	\$ 31,272,400	\$ 31,910,100
Present Value of Future Benefit Accruals (PVFBA)	6,588,600	6,365,400
<b>Present Value of Accrued Liability (PVAB=PVB-PVFBA)</b>	<b>24,683,800</b>	<b>25,544,700</b>
Market Value of Assets (MVA)	11,431,800	12,282,000
<b>Net Unfunded (PVAB - MVA)</b>	<b>\$ 13,252,000</b>	<b>\$ 13,262,700</b>

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**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.

(In Thousands)	Present Value of Benefits	Actuarial Accrued Liability	Present Value of Accrued Liability
Liabilities June 30, 2009	\$ 31,272	\$ 26,562	\$ 24,684
Liabilities June 30, 2010	31,910	27,382	25,545
Liability Increase (Decrease)	638	820	861
Change Due to:			
Plan Change	0	0	0
Actuarial (Gain)/Loss	NC *	(260)	NC *
Benefits Accumulated and Other Sources	638	1,080	861

\* NC = not calculated

DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010

**SECTION III  
LIABILITIES**

<b>Actuarial Liabilities for Funding</b>		
	<b>June 30, 2009</b>	<b>June 30, 2010</b>
1. Actuarial Liabilities		
Retiree and Inactive Benefits	\$ 12,826,000	\$ 14,081,900
Active Members	<u>13,735,900</u>	<u>13,300,100</u>
<b>Total Actuarial Liability</b>	<b>\$ 26,561,900</b>	<b>\$ 27,382,000</b>
2. Actuarial Value of Assets	\$ 13,240,800	\$ 13,662,900
3. Unfunded Actuarial Liability	\$ 13,321,100	\$ 13,719,100

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**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**, the amortization of **unfunded actuarial liability**, and the **administrative expense**. The normal cost 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. From this value subtracted the member's annual contribution to produce the employer normal cost.

The unfunded actuarial liability is amortized by annual payments over a 40 year period from July 1, 1987. As of July 1, 2010, there were 17 years remaining.

The assumed administrative expense is equal to the actual administrative expenses charged in the prior year. This amount 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 amounts for the Plan for this valuation and the prior one.

<b>Employer Contribution</b>		
	<b>June 30, 2009</b>	<b>June 30, 2010</b>
Entry Age Normal Cost Rate	\$ 286,200	\$ 276,300
Amortization Payment	1,371,800	1,451,500
Expense	<u>45,200</u>	<u>33,700</u>
Actuarially Determined Contribution	\$ 1,703,200	\$ 1,761,500

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION IV  
CONTRIBUTIONS**

<b>Development of Plan Cost as of June 30, 2010</b>	
	<b>In Dollars</b>
1. Present value of projected benefits attributable to:	
a. Total Normal Cost	\$ 570,200
b. Expected Members Contribution	<u>293,900</u>
c. Employer Paid Normal Cost (a) – (b)	\$ 276,300
2. Amortization of Unfunded Liability	\$ 1,451,500
3. Allowance for Expense	\$ 33,700
4. Total Employer Contribution Rate (1) + (2) + (3)	\$ 1,761,500

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**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 8% 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, 2010 are exhibited in Table V-1. Finally, Table V-2 reconciles the Topic No. 960 liabilities determined as of the prior valuation, July 1, 2009, to the liabilities as of June 30, 2010.

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.

DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010

**SECTION V**  
**ACCOUNTING STATEMENT INFORMATION**

<b>Table V-1</b>		
<b>Accounting Statement Information</b>		
	<b>June 30, 2009</b>	<b>June 30, 2010</b>
<b>A. FASB ASC Topic No. 960 Basis</b>		
1. Present Value of Benefits Accrued and Vested to Date		
a. Members Currently Receiving Payments	\$ 12,049,700	\$ 12,691,500
b. Former Vested Members	776,300	1,390,400
c. Active Members	<u>11,857,800</u>	<u>11,462,800</u>
2. Total Present Value of Accrued Benefits (1 (a) + 1(b) + 1(c))	\$ 24,683,800	\$ 25,544,700
3. Assets at Market Value	<u>11,431,800</u>	<u>12,282,000</u>
4. Unfunded Present Value of Accrued Benefits (2 – 3)	\$ 13,252,000	\$ 13,262,700
5. Ratio of Assets to Present Value of Benefits (3 / 2)	46.3%	48.1%
<b>B. GASB No. 25 Basis</b>		
1. Actuarial Accrued Liabilities for retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	\$ 12,826,000	\$ 14,081,900
2. Actuarial Accrued Liabilities for current employees	<u>13,735,900</u>	<u>13,300,100</u>
3. Total Actuarial Accrued Liability (1 + 2)	\$ 26,561,900	\$ 27,382,000
4. Net Actuarial Assets available for benefits	<u>13,240,800</u>	<u>13,662,900</u>
5. Unfunded Actuarial Accrued Liability (3 – 4)	\$ 13,321,100	\$ 13,719,100

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**SECTION V  
ACCOUNTING STATEMENT INFORMATION**

<b>Table V-2 Statement of Changes in Total Actuarial Present Value of All Accrued Benefits</b>	
	<b>Accumulated Benefit Obligation (FASB ASC Topic No. 960)</b>
Actuarial Present Value of Accrued Benefits at June 30, 2009	\$ 24,683,800
Increase (Decrease) During Years Attributable to:	
Passage of Time	\$ 1,910,000
Benefit Paid – FY 2010	(1,618,500)
Plan Changes	0
Benefits Accrued, Other Gains/Losses	<u>569,400</u>
Net Increase (Decrease)	\$ 860,900
Actuarial Present Value of Accrued Benefits at June 30, 2010	\$ 25,544,700



**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**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, 2010
Actuarial cost method	Entry age
Amortization method	Level dollar closed
Remaining amortization period	17 years
Asset valuation method	5-Year smoothed market
Actuarial assumptions:	
Investment rate of return*	8.0%
Projected salary increases	N/A
*Includes inflation at	3.75%
Cost-of-living adjustments	ad hoc

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 2004.

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 dollar amount 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.

DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010

**APPENDIX A  
MEMBERSHIP INFORMATION**

**Table V-4  
ANALYSIS OF FINANCIAL EXPERIENCE**

**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)*

Type of Activity	2006	2007	2008	2009	2010
Investment Income on Actuarial Assets	\$ 40	\$ 203	\$ 25	\$ (452)	\$ (345)
Combined Liability Experience	<u>125</u>	<u>258</u>	<u>211</u>	<u>238</u>	<u>260</u>
(Loss)/Gain During Year from Financial Experience	\$ 165	\$ 461	\$ 236	\$ (214)	\$ (85)
Non-Recurring Items	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Composite Gain (or Loss) During Year	\$ 165	\$ 461	\$ 236	\$ (214)	\$ (85)

**Table V-5  
SOLVENCY TEST  
Aggregate Accrued Liabilities for  
(expressed in thousands)**

Valuation Date June 30,	Active Member Contributions	Retirants & Beneficiaries	Active Member Employer Financed Contributions	Actuarial Value of Reported Assets	Portion of Accrued Liabilities Covered by Reported Assets		
	(1)		(2)		(3)		
2010	\$ 4,727	\$ 12,692	\$ 9,963	\$ 13,663	100%	70%	--
2009	4,702	12,050	9,810	13,241	100%	71%	--
2008	4,531	11,513	9,675	12,972	100%	73%	--
2007	4,474	10,709	9,626	12,225	100%	72%	--
2006	4,299	9,925	9,701	11,340	100%	71%	--
2005	4,105	9,435	9,373	10,665	100%	70%	--
2004	3,918	8,842	9,190	10,121	100%	70%	--

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX A  
MEMBERSHIP INFORMATION**

**Delaware State Volunteer Firemen's Pension Plan Distribution of Active Members  
by Age and Service as of June 30, 2010**

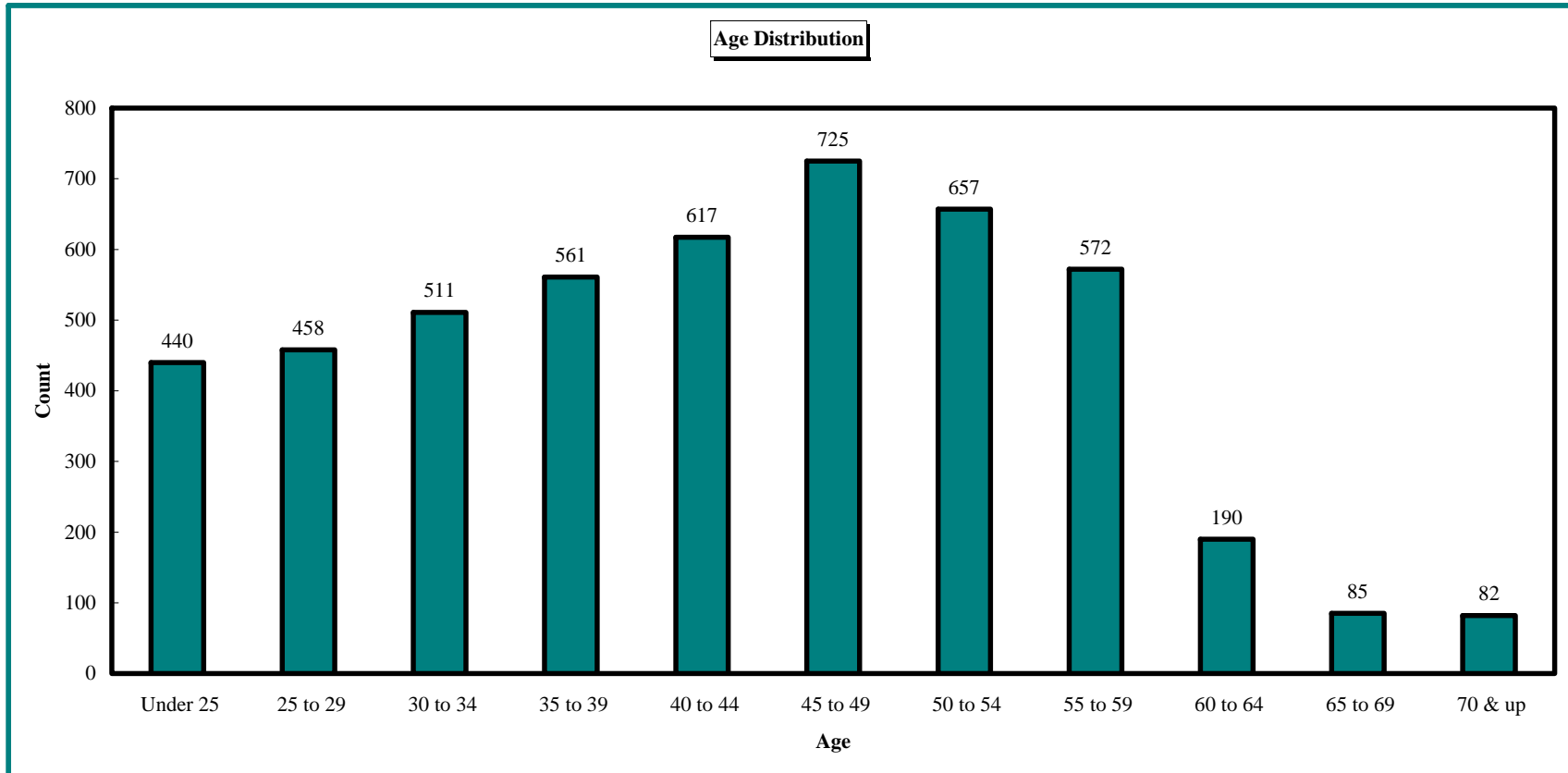
**COUNTS BY AGE/SERVICE**

Age	Service										Total
	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	
Under 25	0	338	99	3	0	0	0	0	0	0	440
25 to 29	0	227	177	53	1	0	0	0	0	0	458
30 to 34	0	186	162	120	42	1	0	0	0	0	511
35 to 39	0	160	146	130	102	23	0	0	0	0	561
40 to 44	0	165	127	128	107	71	19	0	0	0	617
45 to 49	0	156	143	137	104	106	79	0	0	0	725
50 to 54	0	89	142	121	96	102	107	0	0	0	657
55 to 59	0	86	94	114	84	92	102	0	0	0	572
60 to 64	0	47	63	37	18	14	11	0	0	0	190
65 to 69	0	34	33	15	2	1	0	0	0	0	85
70 & up	0	24	54	3	0	1	0	0	0	0	82
<b>Total</b>	0	1,512	1,240	861	556	411	318	0	0	0	4,898

DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX A  
MEMBERSHIP INFORMATION

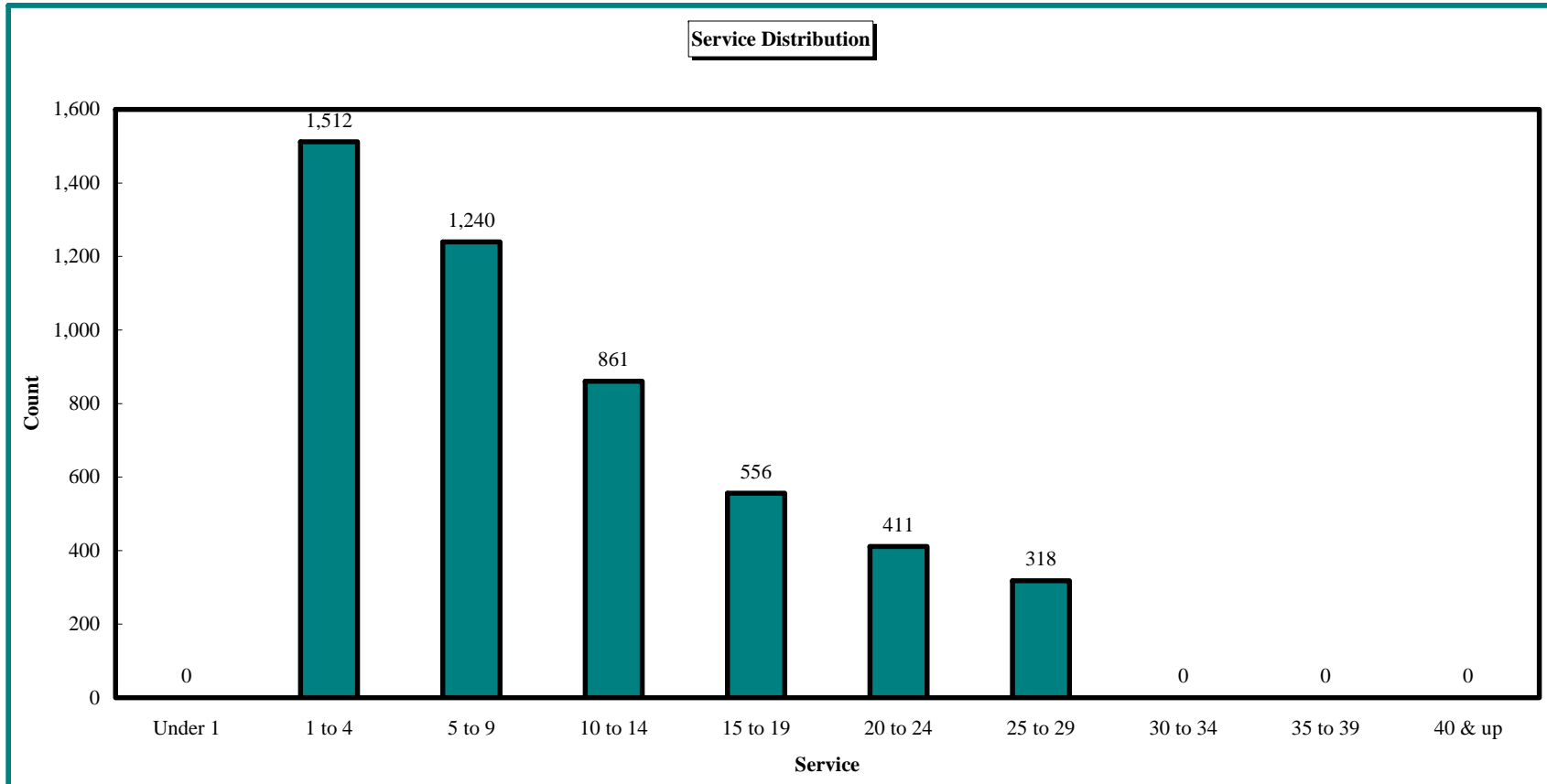
Delaware State Volunteer Firemen's Pension Plan Distribution of Active Members  
by Age as of June 30, 2010



DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX A  
MEMBERSHIP INFORMATION

Delaware State Volunteer Firemen's Pension Plan Distribution of Active Members  
by Service as of June 30, 2010



**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX A  
MEMBERSHIP INFORMATION**

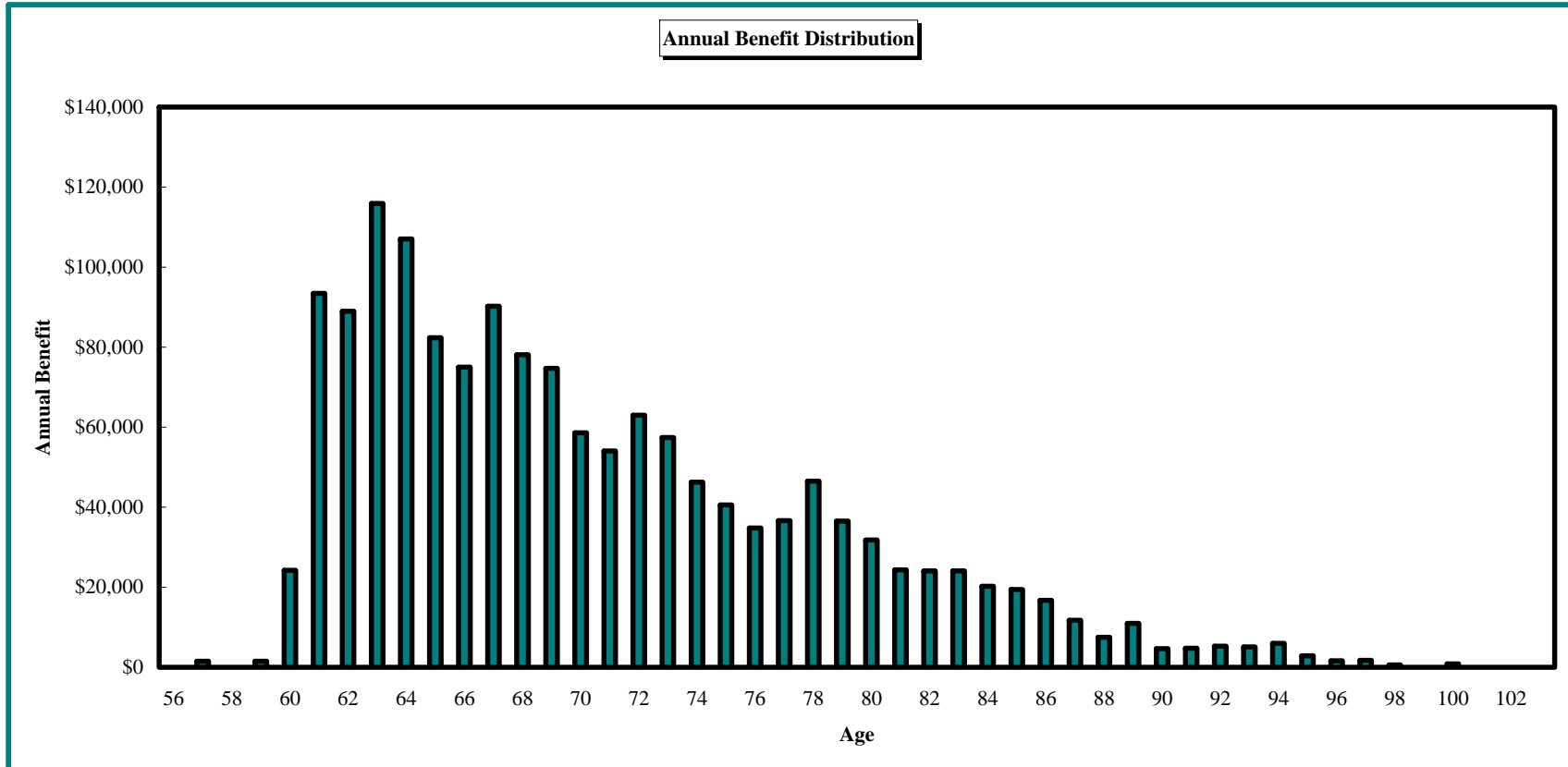
**Delaware State Volunteer Firemen's Pension Plan Distribution of  
Retired Members and Survivors as of June 30, 2010**

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	\$0	73	58	\$57,420
25	0	\$0	74	51	\$46,260
26	0	\$0	75	45	\$40,560
27	0	\$0	76	41	\$34,800
28	0	\$0	77	43	\$36,660
29	0	\$0	78	57	\$46,500
30	0	\$0	79	48	\$36,540
31	0	\$0	80	42	\$31,800
32	0	\$0	81	33	\$24,360
33	0	\$0	82	33	\$24,120
34	0	\$0	83	32	\$24,120
35	0	\$0	84	28	\$20,280
36	0	\$0	85	29	\$19,440
37	0	\$0	86	24	\$16,740
38	0	\$0	87	16	\$11,760
39	0	\$0	88	11	\$7,500
40	0	\$0	89	14	\$10,980
41	0	\$0	90	7	\$4,680
42	0	\$0	91	6	\$4,800
43	0	\$0	92	7	\$5,280
44	0	\$0	93	5	\$5,100
45	0	\$0	94	7	\$6,000
46	0	\$0	95	4	\$2,880
47	0	\$0	96	2	\$1,620
48	0	\$0	97	2	\$1,740
49	0	\$0	98	1	\$600
50	0	\$0	99	0	\$0
51	0	\$0	100	1	\$840
52	0	\$0	101	0	\$0
53	0	\$0	102	0	\$0
54	0	\$0	103	0	\$0
55	0	\$0	104	0	\$0
56	0	\$0	105	0	\$0
57	1	\$1,500	106	0	\$0
58	0	\$0	107	0	\$0
59	1	\$1,500	108	0	\$0
60	19	\$24,240	109	0	\$0
61	73	\$93,420	110	0	\$0
62	76	\$88,980	111	0	\$0
63	96	\$115,920	112	0	\$0
64	89	\$107,040	113	0	\$0
65	67	\$82,380	114	0	\$0
66	65	\$75,000	115	0	\$0
67	75	\$90,240	116	0	\$0
68	68	\$78,120	117	0	\$0
69	68	\$74,700	118	0	\$0
70	55	\$58,560	119	0	\$0
71	56	\$54,060	120	0	\$0
72	66	\$63,000			
			Totals	1,522	\$1,532,040

DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX A  
MEMBERSHIP INFORMATION

Delaware State Volunteer Firemen's Pension Plan Distribution of Retired Members  
and Survivors as of June 30, 2010



**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX A  
MEMBERSHIP INFORMATION**

**Delaware State Volunteer Firemen's Pension Plan Distribution of  
Vested Members as of June 30, 2010**

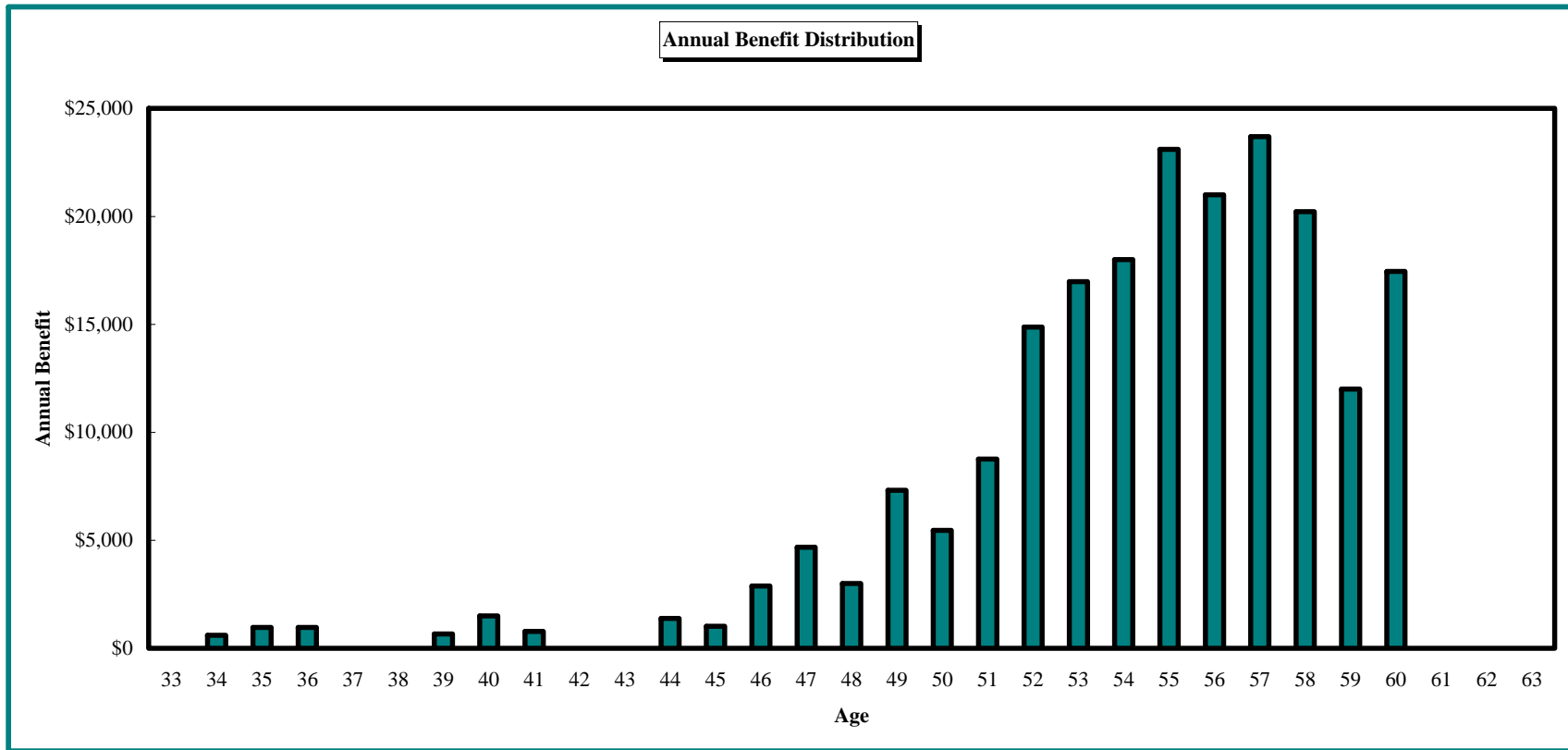
Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	\$0	73	0	\$0
25	0	\$0	74	0	\$0
26	0	\$0	75	0	\$0
27	0	\$0	76	0	\$0
28	0	\$0	77	0	\$0
29	0	\$0	78	0	\$0
30	0	\$0	79	0	\$0
31	0	\$0	80	0	\$0
32	0	\$0	81	0	\$0
33	0	\$0	82	0	\$0
34	1	\$600	83	0	\$0
35	1	\$960	84	0	\$0
36	1	\$960	85	0	\$0
37	0	\$0	86	0	\$0
38	0	\$0	87	0	\$0
39	1	\$660	88	0	\$0
40	2	\$1,500	89	0	\$0
41	1	\$780	90	0	\$0
42	0	\$0	91	0	\$0
43	0	\$0	92	0	\$0
44	2	\$1,380	93	0	\$0
45	1	\$1,020	94	0	\$0
46	3	\$2,880	95	0	\$0
47	4	\$4,680	96	0	\$0
48	2	\$3,000	97	0	\$0
49	6	\$7,320	98	0	\$0
50	4	\$5,460	99	0	\$0
51	6	\$8,760	100	0	\$0
52	11	\$14,880	101	0	\$0
53	12	\$16,980	102	0	\$0
54	12	\$18,000	103	0	\$0
55	16	\$23,100	104	0	\$0
56	15	\$21,000	105	0	\$0
57	17	\$23,700	106	0	\$0
58	14	\$20,220	107	0	\$0
59	9	\$12,000	108	0	\$0
60	12	\$17,460	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			
Totals				153	\$207,300



DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX A  
MEMBERSHIP INFORMATION

Delaware State Volunteer Firemen's Pension Plan Distribution of Vested Members  
as of June 30, 2010



**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**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 Generationally Mortality Improvements (Projection Scale AA)

Male: 85% of RP-2000 MB Mortality Table

Female: 95% of RP-2000 FB Mortality Table

<b>Rates of Healthy Inactive Mortality</b>				
<b>Age</b>	<b>Rates (Prior to Projection)</b>		<b>Projection Scale</b>	
	<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>
50	0.48%	0.21%	1.80%	1.70%
55	0.61%	0.30%	1.90%	0.80%
60	0.90%	0.49%	1.60%	0.50%
65	1.41%	0.79%	1.40%	0.50%
70	2.27%	1.32%	1.50%	0.50%
75	3.67%	2.24%	1.40%	0.80%
80	6.00%	3.75%	1.00%	0.70%
85	9.78%	6.45%	0.70%	0.60%
90	15.45%	10.98%	0.40%	0.30%

**b. Healthy Active Mortality**

Male: 95% of RP-2000 RE Mortality Table

Female: 100% of RP-2000 RE Mortality Table

<b>Rates of Healthy Active Mortality</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
20	0.03%	0.02%
25	0.04	0.02
30	0.04	0.03
35	0.07	0.05
40	0.10	0.07
45	0.14	0.11
50	0.20	0.17
55	0.29	0.25
60	0.46	0.39

**DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010**

**APPENDIX B  
ACTUARIAL ASSUMPTIONS AND METHODS**

**c. Termination of Employment (Prior to Normal Retirement Eligibility)**

10-year Select (age- and service based) & Ultimate (age-based) Tables

<b>AGE</b>	<b>SERVICE</b>										
<b>SELECT:</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>ULTIMATE</b>
<55	50.00%	6.00%	5.50%	5.00%	4.50%	4.00%	4.00%	3.50%	3.50%	1.50%	0.50%
55+	25.00%	6.00%	5.50%	5.00%	4.50%	4.00%	4.00%	3.50%	3.50%	1.50%	0.50%

**d. Retirement**

Normal Retirement: 1-year Select & Ultimate (age-based) upon attaining age 60 with completion of ten years of service:

<b>Male Normal Retirement</b>		
<b>Age</b>	<b>Select</b>	<b>Ultimate</b>
<61	70.00%	0.00%
61-69	40.00	30.00
70-79	100.00	30.00
80+	100.00	100.00

<b>Female Normal Retirement</b>		
<b>Age</b>	<b>Select</b>	<b>Ultimate</b>
<61	70.00%	0.00%
61-64	45.00	35.00
65-69	50.00	35.00
70-79	70.00	35.00
80+	70.00	100.00

DELAWARE STATE VOLUNTEER FIREMEN'S PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2010

APPENDIX B  
ACTUARIAL ASSUMPTIONS AND METHODS

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

Not applicable. Salary is not a component of this Plan.

**2. Economic Assumptions**

- |   |  |
|---|--|
| a. Rate of Investment Return:                               | 8.00%  |
| b. Rate of General Wage Increase:                           | N/A  |
| c. Rate of Increase in Cost of Living<br>for Retirees:      | 0.00%  |
| d. Rate of Increase in Total Payroll<br>(for Amortization): | N/A  |
| e. Administrative Expenses:                                 | Assume following year's expense will equal<br>allocation of administrative expenses made in<br>the prior year. |

**3 Changes Since Last Valuation**

None.

**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 is determined as the level dollar amount for a typical new entrant. 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 if 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 unfunded liability is amortized by annual payments over a 40 year period from July 1, 1987. From July 1, 2010 there are 17 years remaining.

**2. Actuarial Value of Assets**

For purposes of determining the Employer contribution 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 contributions, less payments 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 actively-participating volunteers of one of the state volunteer fire departments, ladies auxiliaries and service organizations providing volunteer ambulance services.

**2. Member Contributions**

\$60.00 per member per year.  
Interest is credited at the rate of 5% per year.

**3. Credited Service**

Service prior to July 1, 1986: one year of service for each three years of service.

Service after June 30, 1986: all service as a volunteer as certified by a fire company.

**4. Normal Retirement**

Eligibility: Age 60 with ten years of credited service.

Benefit: \$5.00 per year of credited service, to a maximum of \$125.00 per month.

**5. Survivor's Benefit**

Eligibility: Death of a member, inactive member, or retired member.

Benefit: Lump sum equal to the excess, if any, of the accumulated member contributions with interest over the total pension payments made, if any.

**6. Vesting**

Eligibility: Ten years of credited service.

Benefit: Normal retirement benefit payable at age 60 based on service at date of termination. In lieu of a pension, a member may receive a refund of accumulated employee contributions with interest. Upon application for a refund of contributions, a member's vested right to a monthly benefit shall be forfeited.

**7. Changes Since Last Valuation**

None.