

**Delaware State Employees'  
Pension Plan**

**Actuarial Valuation  
as of June 30, 2013**

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

**December 2013**

## Table of Contents

Letter of Transmittal .....	i
Foreword .....	ii
Section I Board Summary .....	1
Section II Assets .....	8
Section III Liabilities .....	11
Section IV Contributions.....	15
Section V Accounting Statement Information.....	17
Appendix A Membership Information .....	22
Appendix B Actuarial Assumptions and Methods .....	39
Appendix C Summary of Plan Provisions.....	47

December 30, 2013

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 Employees' Pension Plan as of June 30, 2013. 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.

In preparing our report, we relied on information (some oral and some written) supplied by Office of Pension's staff. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

The results of this report are only applicable to the State contribution for Fiscal Year ending 2015 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.

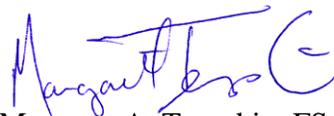
To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards 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 for the Delaware State Employees' Pension Plan for the purposes described herein and for the use by the Plan auditor in 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



Fiona E. Liston, FSA  
Principal Consulting Actuary



Margaret A. Tempkin, FSA  
Principal Consulting Actuary



DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

**FOREWORD**

Cheiron has performed the Actuarial Valuation of the Delaware State Employees' Pension Plan as of June 30, 2013. 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 State for Fiscal Year 2015; 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 governmental reporting purposes.

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

**Section V** includes the required disclosures under GASB Statement No. 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.

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.

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

SECTION I  
BOARD SUMMARY

**General Comments**

The actuarially determined contribution rate increased from 9.50% for FY 2014 to 9.56% for FY 2015.

During the year ended June 30, 2013, the Plan's assets earned 10.9% on a market value basis. However, due to the Plan's asset-smoothing technique which recognizes only a portion of the gains and losses, the return on the actuarial asset value was 7.1%. This return was less than the assumed rate of return of 7.5% for last year and resulted in an actuarial loss on investments of \$31 million.

The Plan experienced an actuarial gain on plan liabilities resulting from salary increases different than assumed and members retiring, terminating, becoming disabled, and dying at rates different from the actuarial assumptions. The gain decreased the actuarial liability by \$72 million (0.9% of total actuarial liability). 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. There was also a change in the application of the Entry Age Normal funding method which redrew the line between past and future service. This change resulted in an increase to actuarial liability of \$84 million and an offsetting decrease in the System's normal cost.

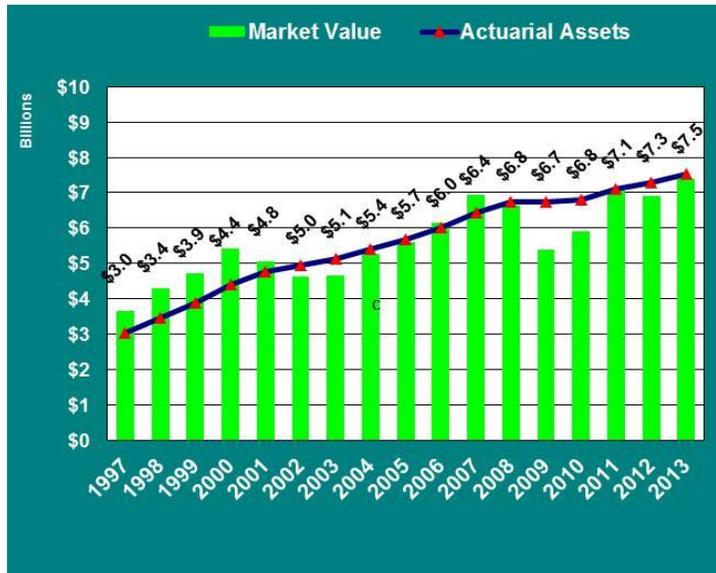
As of the June 30, 2013 actuarial valuation, the Plan's unfunded actuarial liability was \$737 million. This is an increase from last year's unfunded actuarial liability of \$679 million.

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

SECTION I  
BOARD SUMMARY

Trends

Growth in Assets



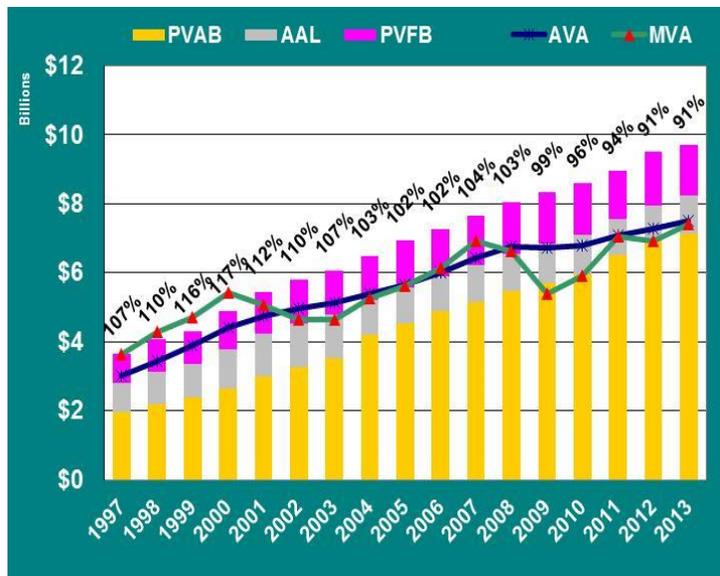
The market value of assets (MVA) returned 10.9% over the last year. The determination of the Plan's actuarial value of assets reflects only a portion of the return above 7.5%, as well as the continued recognition of recent gains and the 2008-2009 losses.

Over the period July 1, 1997 to June 30, 2013, the Plan's assets returned approximately 8.6% per year measured at actuarial value, compared to a valuation assumption of 7.5% 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.

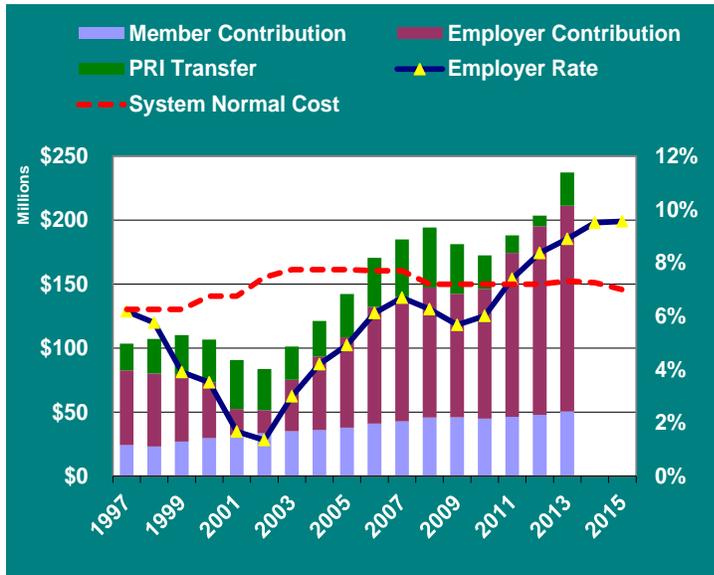
The amount represented by the top of the pink bars, the Present Value of Future Benefits (PVFB), is the amount needed to provide all benefits for the current participants and their beneficiaries. If the Plan had assets equal to the PVFB, no contributions would, in theory, be needed for the current members.



**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**SECTION I  
BOARD SUMMARY**

Contribution Rates



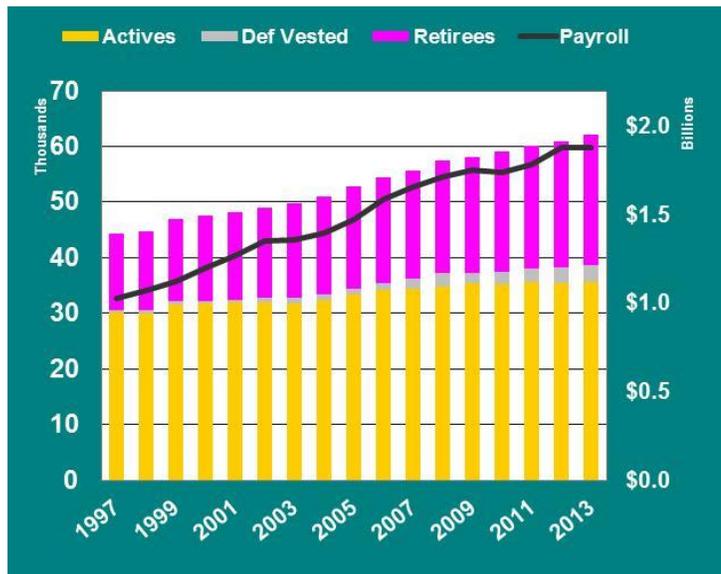
The stacked bars in this graph show the contributions made by the State, the PRI Fund, and the members (left hand scale). The black line shows the State contribution rate as a percent of payroll (right hand scale).

The member contribution rate is set by State law, depending on which Plan the member participates in. The State contribution rate is set by the actuarial process, and PRI Fund transfers depend on the increase granted. Please note there is a lag in the rate shown. For example, the 2013 value is the rate prepared by the 2011 valuation and implemented for the period July 1, 2012 to June 30, 2013.

Participant Trends

The bars show the number of participants in each category and should be read using the left-hand scale. As with any maturing fund, this Plan continues to show growth in the number of retired members. The active-to-inactive ratio has decreased from 2.1 actives to each inactive in 1997 to 1.3 actives for each inactive today.

The black line shows the covered payroll in the Plan and is read using the right-hand scale.

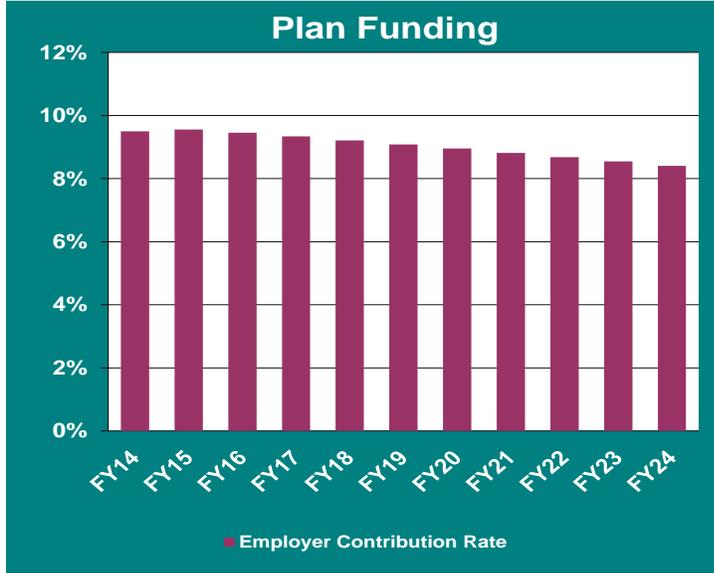


DELAWARE STATE EMPLOYEES' PENSION PLAN  
 ACTUARIAL VALUATION AS OF JUNE 30, 2013

SECTION I  
 BOARD SUMMARY

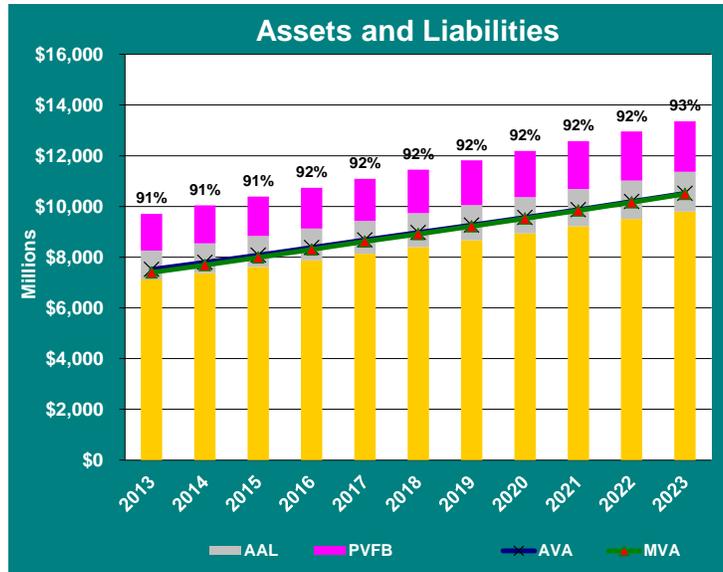
Future Outlook

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 the decrease in the State rate from 9.56% to 8.41% absent further gains or losses, the rate is anticipated to drop slowly.

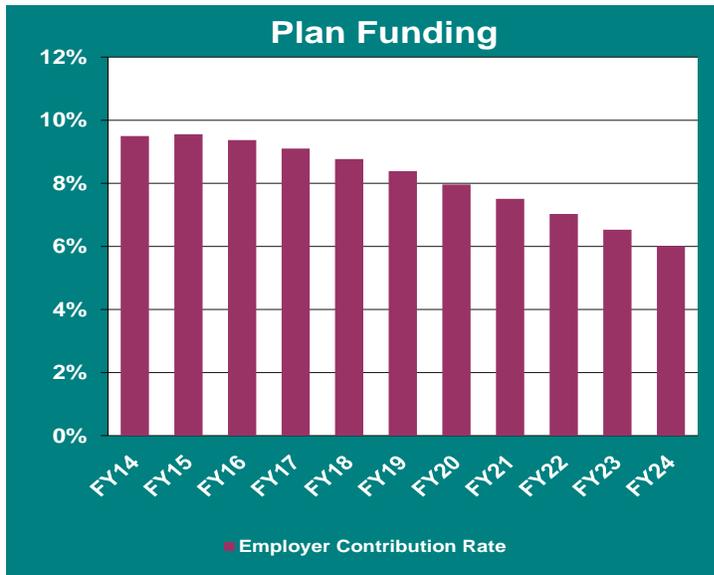
The "Assets and Liabilities" graph shows the projected funding status over the next ten years. The Plan's funded status is projected to grow slowly from 91% to 93%.



**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

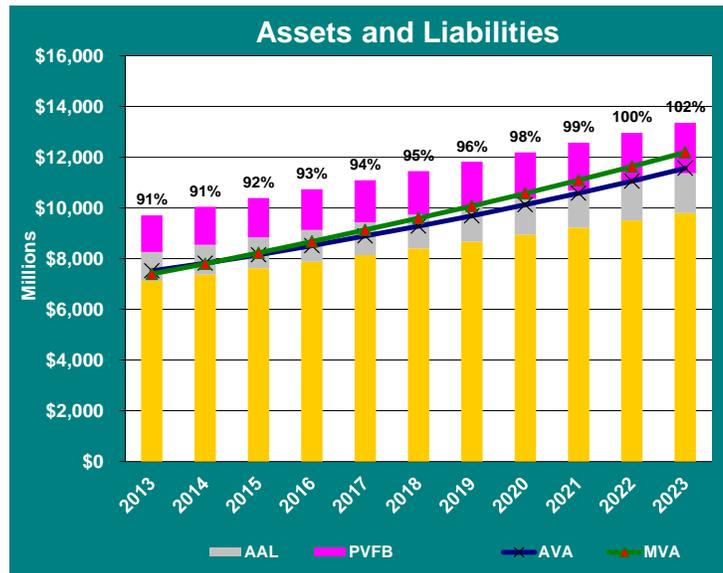
**SECTION I  
BOARD SUMMARY**

Projections with Asset Returns of 9.0%



The future funding status of this Plan will be impacted by investment earnings. These two charts show what the next ten years would look like with a 9.0% annual return in each year. The State contribution rate decreases, dropping to approximately 6.0% of payroll.

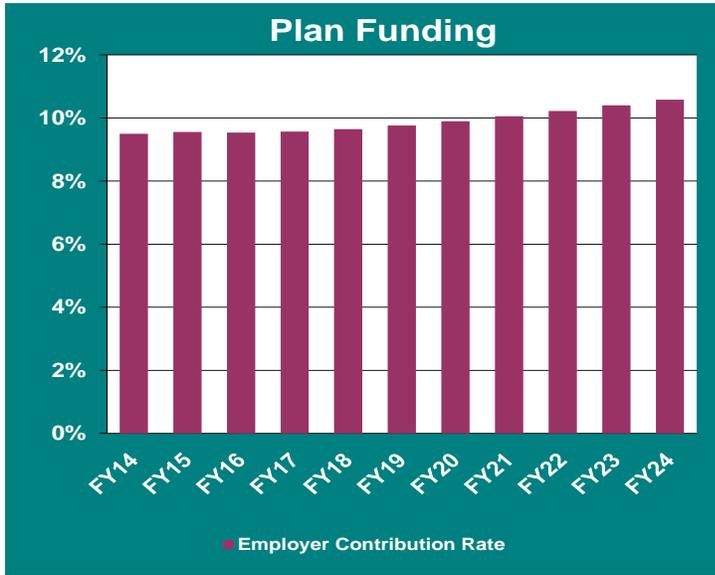
As you can see, the Plan would reach 100% funding by 2022, an improvement over the projected funded level of 93% shown on the previous page.



**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

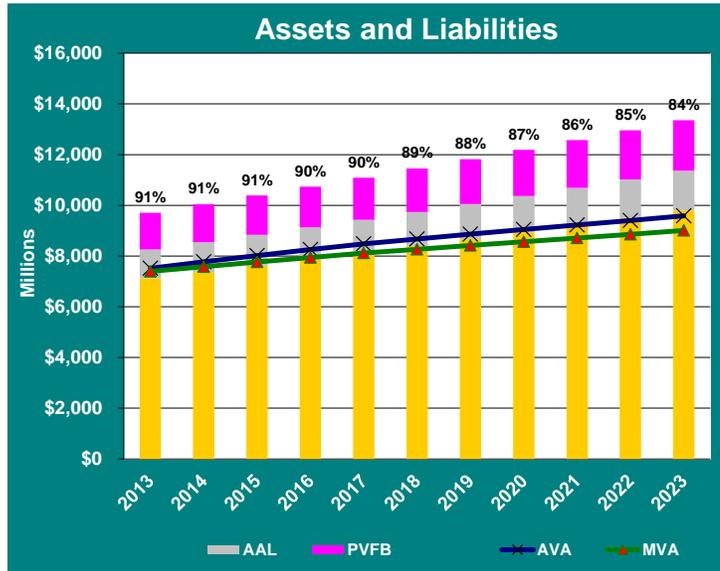
**SECTION I  
BOARD SUMMARY**

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 the anticipated Plan funding projections if the invested assets earn 6.0% per year over the entire ten-year period. This would mean that all remaining investment losses from last year will be recognized, plus additional losses will accrue annually as returns miss the 7.5% mark.

Under this scenario, the State's contribution rate increases to 10.6% of payroll and the funding status declines to around 84% by 2023.



DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

SECTION I  
BOARD SUMMARY

<b>Table I-1</b>			
<b>Delaware State Employees' Pension Plan</b>			
<b>Summary of Principal Plan Results</b>			
<b>Valuation as of:</b>	<b>June 30, 2012</b>	<b>June 30, 2013</b>	<b>% Change</b>
<b><u>Participant Counts</u></b>			
Active Participants	35,427	35,571	0.41%
Disabled Participants	1,882	1,832	(2.66%)
Retirees and Beneficiaries	20,875	21,679	3.85%
Terminated Vested Participants	2,290	2,564	11.97%
Inactive Participants	840	778	(7.38%)
LTD Participants	506	531	4.94%
<b>Total</b>	<b>61,820</b>	<b>62,955</b>	<b>1.84%</b>
Annual Salaries of Active Members*	\$ 1,881,097,000	\$ 1,877,105,000	(0.21%)
Annual Retirement Allowances for Retired Members and Beneficiaries	\$ 456,733,100	\$ 483,005,100	5.75%
<b><u>Assets and Liabilities</u></b>			
Actuarial Accrued Liability (AAL)	\$ 7,949,854,600	\$ 8,257,269,800	3.87%
Actuarial Value of Assets	7,270,430,200	7,519,770,300	3.43%
Unfunded AAL	\$ 679,424,400	\$ 737,499,500	8.55%
Funded Ratio	91.5%	91.1%	
Present Value of Accrued Benefits (PVAB)	\$ 6,900,568,600	\$ 7,120,947,700	3.19%
Market Value of Assets	6,914,823,800	7,395,576,600	6.95%
Unfunded PVAB	\$ (14,255,200)	\$ (274,628,900)	1826.52%
Accrued Benefit Funding Ratio	100.2%	103.9%	
<b><u>Contributions as a Percentage of Payroll</u></b>			
	<b>Fiscal Year 2014</b>	<b>Fiscal Year 2015</b>	
Normal Cost Contribution	6.95%	6.70%	
Unfunded Actuarial Liability Contribution	2.25%	2.56%	
Administrative Expense	0.30%	0.30%	
<b>Total State Contribution</b>	<b>9.50%</b>	<b>9.56%</b>	

\* Assumes one year of payroll projection.

**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**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, State 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, 2012 and June 30, 2013;
- 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 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. The expected value is equal to the prior year's actuarial value, rolled forward with actual contributions and benefit payments plus interest imputed at 7.5%.

<b>Table II-1 Changes in Market Values</b>	
<b>Value of Assets – June 30, 2012</b>	<b>\$ 6,914,823,800</b>
<b><u>Additions</u></b>	
Member Contributions	\$ 50,554,700
Employer Contributions	160,611,700
PRI Fund Transfer	25,949,100
Investment Return	<u>736,072,100</u>
<b>Total Additions</b>	<b>\$ 973,187,600</b>
<b><u>Deductions</u></b>	
Benefit Payments	\$ 486,905,900
Administrative Expenses	<u>5,528,900</u>
<b>Total Deductions</b>	<b>\$ 492,434,800</b>
<b>Value of Assets – June 30, 2013</b>	<b>\$ 7,395,576,600</b>

**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**SECTION II  
ASSETS**

<b>Table II-2 Development of Actuarial Value of Assets</b>	
1. Actuarial Value of Assets at June 30, 2012	\$ 7,270,430,200
2. Amount in (1) with interest to June 30, 2013	7,815,712,500
3. Employer, PRI and member contributions for the Plan Year ended June 30, 2013	237,115,500
4. Interest on contributions assuming payments made uniformly throughout the year to June 30, 2013 at 7.50% per year	8,891,800
5. Disbursements from Trust except investment expenses, June 30, 2012 through June 30, 2013	492,434,800
6. Interest on disbursements to June 30, 2013 at 7.50% per year	18,466,300
7. Expected Actuarial Value of Assets at June 30, 2013 = (2) + (3) + (4) – (5) – (6)	7,550,818,700
8. Actual Market Value of Assets at June 30, 2013	7,395,576,600
9. Excess of (8) over (7)	(155,242,100)
10. Actuarial Value of Assets at June 30, 2013 = (7) + 20% of (9)	7,519,770,300

### **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, 2013 valuation.

### **Investment Performance**

The market value of assets (MVA) returned 10.9% during 2013, which is greater than the assumed 7.5% return. A return of 7.1% 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.

**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**SECTION II  
ASSETS**

**Projection of Cash Flows**

<b>Table II-3 Projection of Plan's Benefit Payments</b>		
<b>Year Beginning July 1,</b>	<b>Expected Benefit Payments</b>	<b>Expected Contributions*</b>
2013	\$ 502,249,000	\$ 263,754,000
2014	523,722,000	273,515,000
2015	545,557,000	282,499,000
2016	567,875,000	281,797,000
2017	591,176,000	269,377,000
2018	614,469,000	278,132,000
2019	637,682,000	287,171,000
2020	660,288,000	296,505,000
2021	683,098,000	306,141,000
2022	704,516,000	316,091,000

\* Expected contributions include State Contributions, Member Contributions, and PRI Transfers. For illustration purposes, we have assumed the State Contribution rate will remain at 9.56% from FYE 2015 forward 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, 2013. 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, 2012 and June 30, 2013; and
- Statement of **changes** in these liabilities during the year.

#### 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 EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

**SECTION III  
LIABILITIES**

**Table III-1  
Liabilities/Net (Surplus)/Unfunded**

	June 30, 2012	June 30, 2013
<b><u>Present Value of Benefits</u></b>		
Active Participant Benefits	\$ 5,004,899,400	\$ 4,971,622,100
Retiree and Inactive Benefits	<u>4,495,237,900</u>	<u>4,737,841,000</u>
<b>Present Value of Benefits (PVB)</b>	<b>\$ 9,500,137,300</b>	<b>\$ 9,709,463,100</b>
Market Value of Assets (MVA)	\$ 6,914,823,800	\$ 7,395,576,600
Future Member Contributions	479,925,700	472,238,500
Future State Contributions & PRI Fund Transfers	<u>2,105,387,800</u>	<u>1,841,648,000</u>
<b>Total Resources</b>	<b>\$ 9,500,137,300</b>	<b>\$ 9,709,463,100</b>
<b><u>Actuarial Accrued Liability</u></b>		
Present Value of Benefits (PVB)	\$ 9,500,137,300	\$ 9,709,463,100
Present Value of Future Normal Costs (PVFNC)	1,070,357,000	979,954,800
Present Value of Future Member Contributions (PVFEEC)	<u>479,925,700</u>	<u>472,238,500</u>
<b>Actuarial Accrued Liability (AAL=PVB-PVFNC-PVFEEC)</b>	<b>\$ 7,949,854,600</b>	<b>\$ 8,257,269,800</b>
Actuarial Value of Assets (AVA)	<u>7,270,430,200</u>	<u>7,519,770,300</u>
<b>Net (Surplus)/Unfunded (AAL - AVA)</b>	<b>\$ 679,424,400</b>	<b>\$ 737,499,500</b>
<b><u>Present Value of Accrued Liability</u></b>		
Present Value of Benefits (PVB)	\$ 9,500,137,300	\$ 9,709,463,100
Present Value of Future Benefit Accruals (PVFBA)	<u>2,599,568,700</u>	<u>2,588,515,400</u>
<b>Present Value of Accrued Liability (PVAB=PVB-PVFBA)</b>	<b>\$ 6,900,568,600</b>	<b>\$ 7,120,947,700</b>
Market Value of Assets (MVA)	\$ 6,914,823,800	\$ 7,395,576,600
<b>Net Unfunded (PVAB - MVA)</b>	<b>\$ (14,255,200)</b>	<b>\$ (274,628,900)</b>

**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**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.

<b>(In Millions)</b>	<b>Table III-2 Present Value of Benefits</b>	<b>Actuarial Accrued Liability</b>	<b>Present Value of Accrued Liability</b>
Liabilities June 30, 2012	\$ 9,500	\$ 7,950	\$ 6,901
Liabilities June 30, 2013	9,709	8,257	7,121
Liability Increase (Decrease)	209	307	220
Change Due to:			
PRI Increase	0	0	0
Actuarial (Gain)/Loss	NC *	(72)	NC *
Method Change	N/A	84	N/A
Benefits Accumulated and Other Sources	209	295	220

\* NC = not calculated.

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

**SECTION III  
LIABILITIES**

<b>Table III-3</b>		
<b>Actuarial Liabilities for Funding</b>		
	<b>June 30, 2012</b>	<b>June 30, 2013</b>
1. Actuarial Liabilities		
Retiree and Inactive Benefits	\$ 4,495,237,900	\$ 4,737,841,000
Active Members	<u>3,454,616,700</u>	<u>3,519,428,800</u>
<b>Total Actuarial Liability</b>	<b>\$ 7,949,854,600</b>	<b>\$ 8,257,269,800</b>
2. Actuarial Value of Assets	\$ 7,270,430,200	\$ 7,519,770,300
3. Unfunded Actuarial Liability	\$ 679,424,400	\$ 737,499,500
4. Outstanding PRI Transfers/(1 – 5 years)	\$ 109,055,200	\$ 90,405,000
<b>5. Net (Gain)/Loss Base for 20 Year Amortization (3-4)</b>	<b>\$ 570,369,200</b>	<b>\$ 647,094,500</b>

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

**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 each active member 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 UAL rate is calculated by amortizing all UAL (except for the present value of scheduled PRI transfers) over an open 20-year period. All payments are determined assuming total pay increases by the annual inflation rate of 3.25%.

The assumed administrative expense rate is 0.30% 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.

<b>Table IV-1</b>		
<b>Employer Contribution Rate</b>		
	<b>June 30, 2012</b>	<b>June 30, 2013</b>
Entry Age Normal Cost Rate	6.95%	6.70%
Amortization Payment	2.25%	2.56%
Expense	<u>0.30%</u>	<u>0.30%</u>
Actuarially Determined Contribution	9.50%	9.56%

**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**SECTION IV  
CONTRIBUTIONS**

<b>Table IV-2 Development of Plan Cost as of June 30, 2013</b>		
	<b>In Dollars</b>	<b>As % of Payroll</b>
1. Present value of projected benefits attributable to:		
a. Total Normal Cost	\$ 183,344,700	9.77%
b. Expected Members Contribution	<u>57,627,100</u>	<u>3.07%</u>
c. Employer Paid Normal Cost (a) – (b)	\$ 125,717,600	6.70%
2. Amortization of Unfunded Liability	48,039,300	2.56%
3. Allowance for Expense	<u>5,631,300</u>	<u>0.30%</u>
4. Total Employer Contribution Rate (1) + (2) + (3)	\$ 179,388,200	9.56%

**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**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 for 2012 and 2013.

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, 2013 are exhibited in Table V-1. Finally, Table V-2 reconciles the Topic No. 960 liabilities determined as of the prior valuation, July 1, 2012, to the liabilities as of June 30, 2013.

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 EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

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

<b>Table V-1</b>		
<b>Accounting Statement Information</b>		
	<b>June 30, 2012</b>	<b>June 30, 2013</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	\$ 4,370,623,000	\$ 4,600,135,100
b. Former Vested Members (and LTDs)	124,614,900	137,705,900
c. Active Members	<u>2,405,330,700</u>	<u>2,383,106,700</u>
2. Total Present Value of Accrued Benefits (1 (a) + 1(b) + 1(c))	\$ 6,900,568,600	\$ 7,120,947,700
3. Assets at Market Value	<u>6,914,823,800</u>	<u>7,395,576,600</u>
4. Unfunded Present Value of Accrued Benefits (2 – 3)	\$ (14,255,200)	\$ (274,628,900)
5. Ratio of Assets to Present Value of Benefits (3 / 2)	100.2%	103.9%
<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	\$ 4,495,237,900	\$ 4,737,841,000
2. Actuarial Accrued Liabilities for current employees	<u>3,454,616,700</u>	<u>3,519,428,800</u>
3. Total Actuarial Accrued Liability (1 + 2)	\$ 7,949,854,600	\$ 8,257,269,800
4. Net Actuarial Assets available for benefits	<u>7,270,430,200</u>	<u>7,519,770,300</u>
5. Unfunded Actuarial Accrued Liability (3 – 4)	\$ 679,424,400	\$ 737,499,500

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

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

<b>Table V-2</b> <b>Statement of Changes in Total Actuarial</b> <b>Present Value of All Accrued Benefits</b> <b>(in millions)</b>		<b>Accumulated Benefit</b> <b>Obligation (FASB ASC</b> <b>Topic No. 960)</b>
Actuarial Present Value of Accrued Benefits at June 30, 2012		\$ 6,901
Increase (Decrease) During Years Attributable to:		
Passage of Time		499
Benefit Paid – FY 2013		(487)
Assumption Change		0
PRI		0
Benefits Accrued, Other Gains/Losses		208
Net Increase (Decrease)		220
Actuarial Present Value of Accrued Benefits at June 30, 2013		\$ 7,121

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

**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, 2013
Actuarial cost method	Entry age
Amortization method	Percentage of Pay Open
Amortization period	20 years
Asset valuation method	5-Year smoothed market
Actuarial assumptions:	
Investment rate of return*	7.5%
Projected salary increases*	3.8%-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 each active member. 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 EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

**SECTION V**  
**ACCOUNTING STATEMENT 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	2008	2009	2010	2011	2012	2013
Investment Income on Actuarial Assets	\$ (27,225)	\$ (337,848)	\$ (224,949)	\$ (8,726)	\$ (88,902)	\$ (31,048)
Combined Liability Experience	<u>(44,449)</u>	<u>31,060</u>	<u>34,271</u>	<u>26,105</u>	<u>(79,091)</u>	<u>71,572</u>
(Loss)/Gain During Year from Financial Experience	\$ (71,674)	\$ (306,788)	\$ (190,678)	\$ 17,379	\$ (167,993)	\$ 40,524
Non-Recurring Items	<u>0</u>	<u>0</u>	<u>0</u>	<u>(173,261)</u>	<u>(39,896)</u>	<u>(84,221)</u>
Composite Gain (or Loss) During Year	\$ (71,674)	\$ (306,788)	\$ (190,678)	\$ (155,882)	\$ (207,889)	\$ (43,697)

**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	Portion of Accrued Liabilities Covered by Reported Assets		
					(1)	(2)	(3)
2013	\$ 606,874	\$ 4,600,135	\$ 3,050,261	\$ 7,519,770	100%	100%	76%
2012	629,639	4,370,623	2,949,593	7,270,430	100	100	77
2011	558,065	4,123,360	2,866,526	7,091,821	100	100	84
2010	527,578	3,873,286	2,695,462	6,808,957	100	100	89
2009	508,790	3,608,850	2,709,366	6,744,050	100	100	97
2008	470,813	3,390,993	2,688,050	6,751,949	100	100	108

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Distribution of Active Members  
by Age and Service as of June 30, 2013

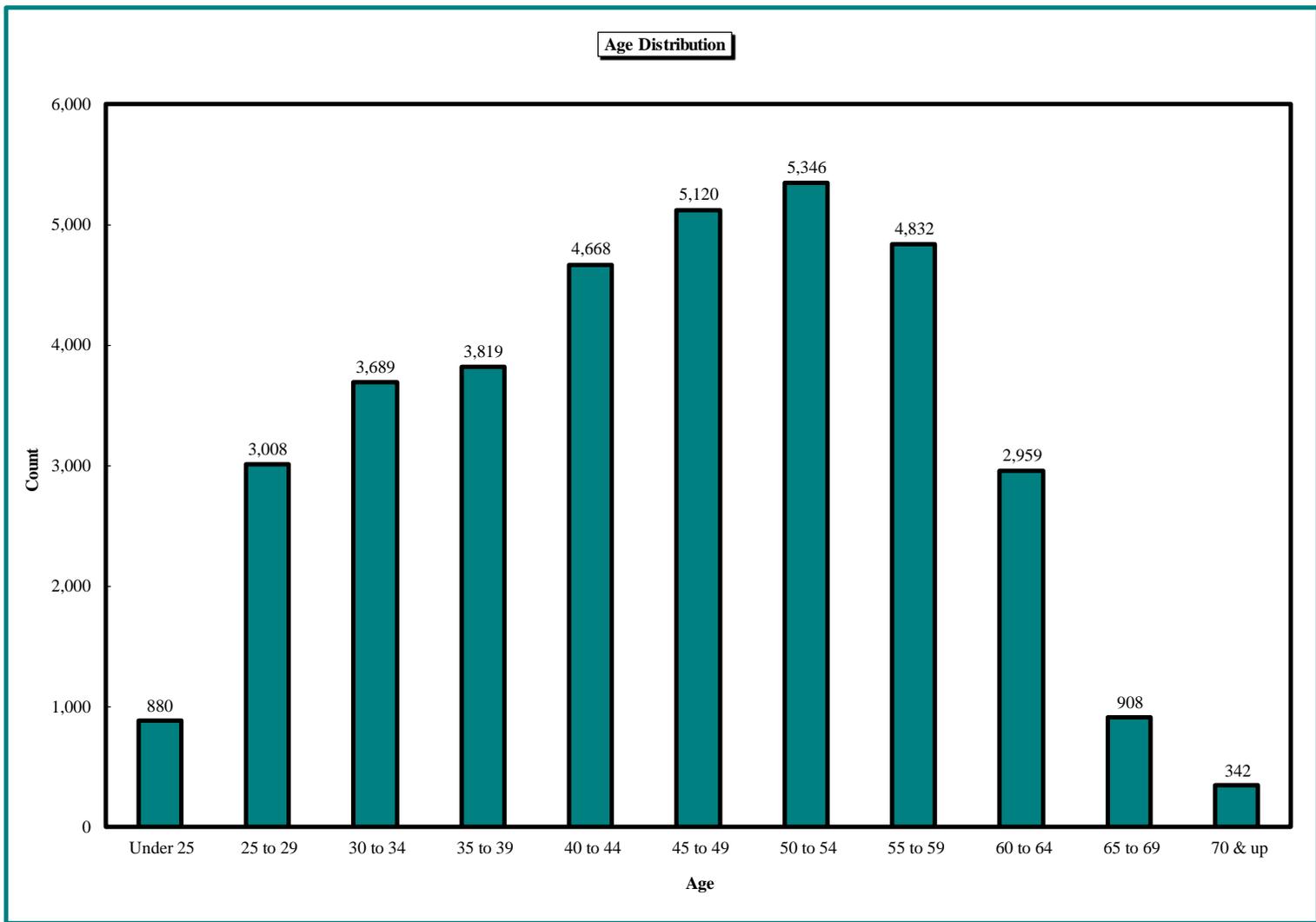
COUNTS BY AGE/SERVICE

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	333	530	17	0	0	0	0	0	0	0	0	880
25 to 29	425	1,836	744	3	0	0	0	0	0	0	0	3,008
30 to 34	282	1,157	1,719	522	9	0	0	0	0	0	0	3,689
35 to 39	220	837	1,220	1,221	311	10	0	0	0	0	0	3,819
40 to 44	212	884	1,173	1,109	890	380	20	0	0	0	0	4,668
45 to 49	194	905	1,147	1,003	691	824	342	14	0	0	0	5,120
50 to 54	134	713	1,105	1,071	789	690	660	180	4	0	0	5,346
55 to 59	109	559	878	905	770	671	510	313	113	4	4	4,832
60 to 64	42	337	509	517	464	436	313	157	135	49	49	2,959
65 to 69	7	107	219	176	125	108	78	42	24	22	22	908
70 & up	4	39	91	75	38	31	32	12	5	15	15	342
Total	1,962	7,904	8,822	6,602	4,087	3,150	1,955	718	281	90	90	35,571

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

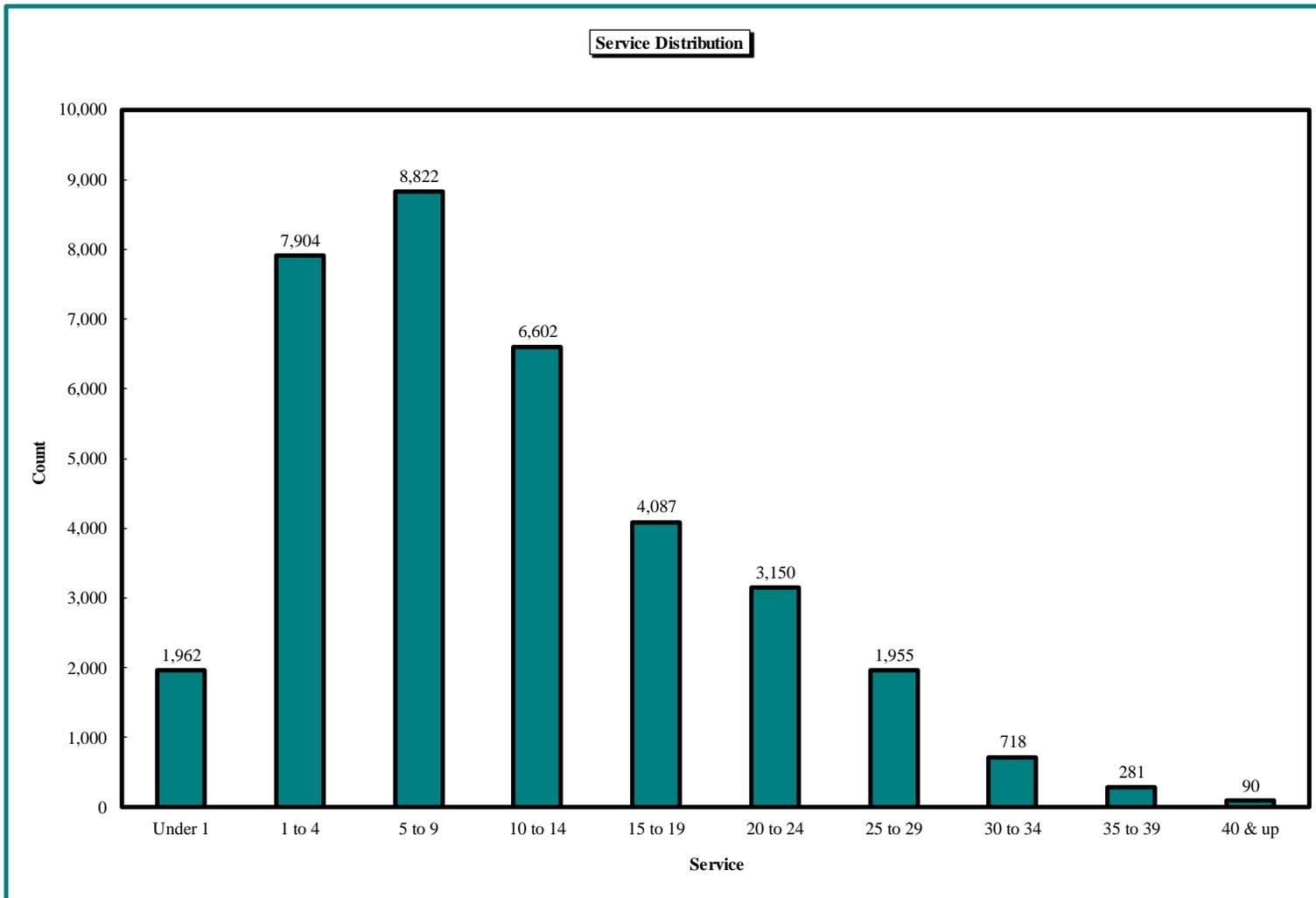
Delaware State Employees' Pension Plan Distribution of Active Members  
by Age as of June 30, 2013



DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Distribution of Active Members  
by Service as of June 30, 2013



DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Distribution of Active Members  
by Age and Service as of June 30, 2013

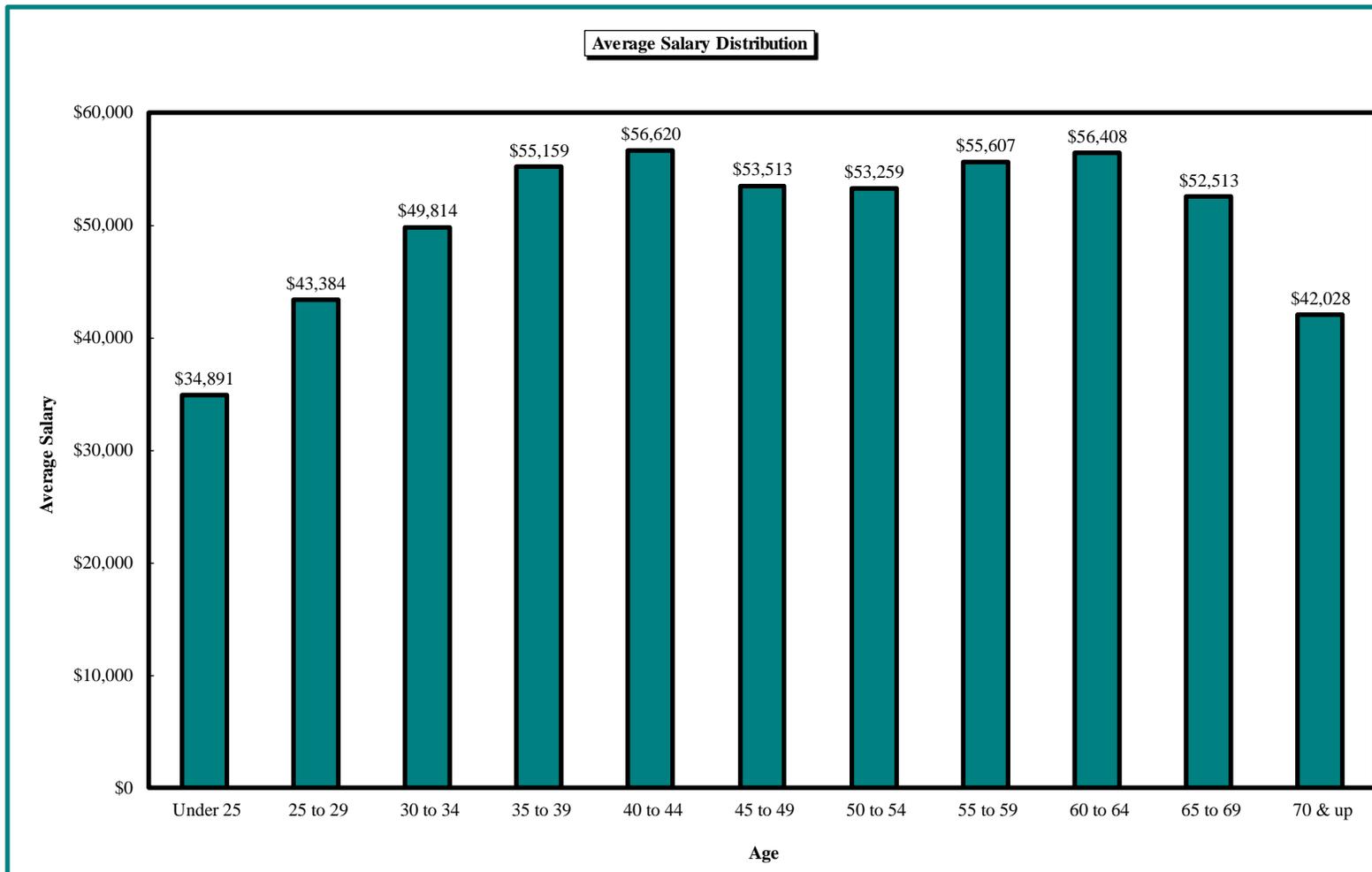
AVERAGE SALARY BY AGE/SERVICE

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	\$30,642	\$37,700	\$30,536	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$34,891
25 to 29	\$36,243	\$43,541	\$47,067	\$45,458	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$43,384
30 to 34	\$36,991	\$45,644	\$52,327	\$57,829	\$42,890	\$0	\$0	\$0	\$0	\$0	\$0	\$49,814
35 to 39	\$41,346	\$47,360	\$53,123	\$62,405	\$65,192	\$63,454	\$0	\$0	\$0	\$0	\$0	\$55,159
40 to 44	\$42,366	\$45,016	\$51,953	\$61,275	\$68,652	\$64,567	\$49,849	\$0	\$0	\$0	\$0	\$56,620
45 to 49	\$40,161	\$41,435	\$47,399	\$55,165	\$60,968	\$66,873	\$61,633	\$49,332	\$0	\$0	\$0	\$53,513
50 to 54	\$37,256	\$41,448	\$46,190	\$53,282	\$55,936	\$60,480	\$69,214	\$57,300	\$53,672	\$0	\$0	\$53,259
55 to 59	\$39,197	\$44,502	\$47,315	\$53,180	\$57,079	\$63,369	\$66,313	\$69,202	\$68,415	\$48,018	\$0	\$55,607
60 to 64	\$38,554	\$42,238	\$47,361	\$53,353	\$59,626	\$61,609	\$66,042	\$67,358	\$76,208	\$67,427	\$0	\$56,408
65 to 69	\$56,355	\$38,517	\$43,609	\$50,640	\$57,135	\$57,341	\$63,428	\$66,887	\$81,780	\$74,931	\$0	\$52,513
70 & up	\$74,606	\$28,062	\$30,013	\$37,455	\$40,610	\$57,885	\$58,992	\$64,487	\$59,699	\$76,190	\$0	\$42,028
Total	\$37,454	\$43,464	\$49,260	\$56,695	\$60,760	\$63,293	\$66,027	\$65,213	\$72,935	\$69,859	\$0	\$52,748

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

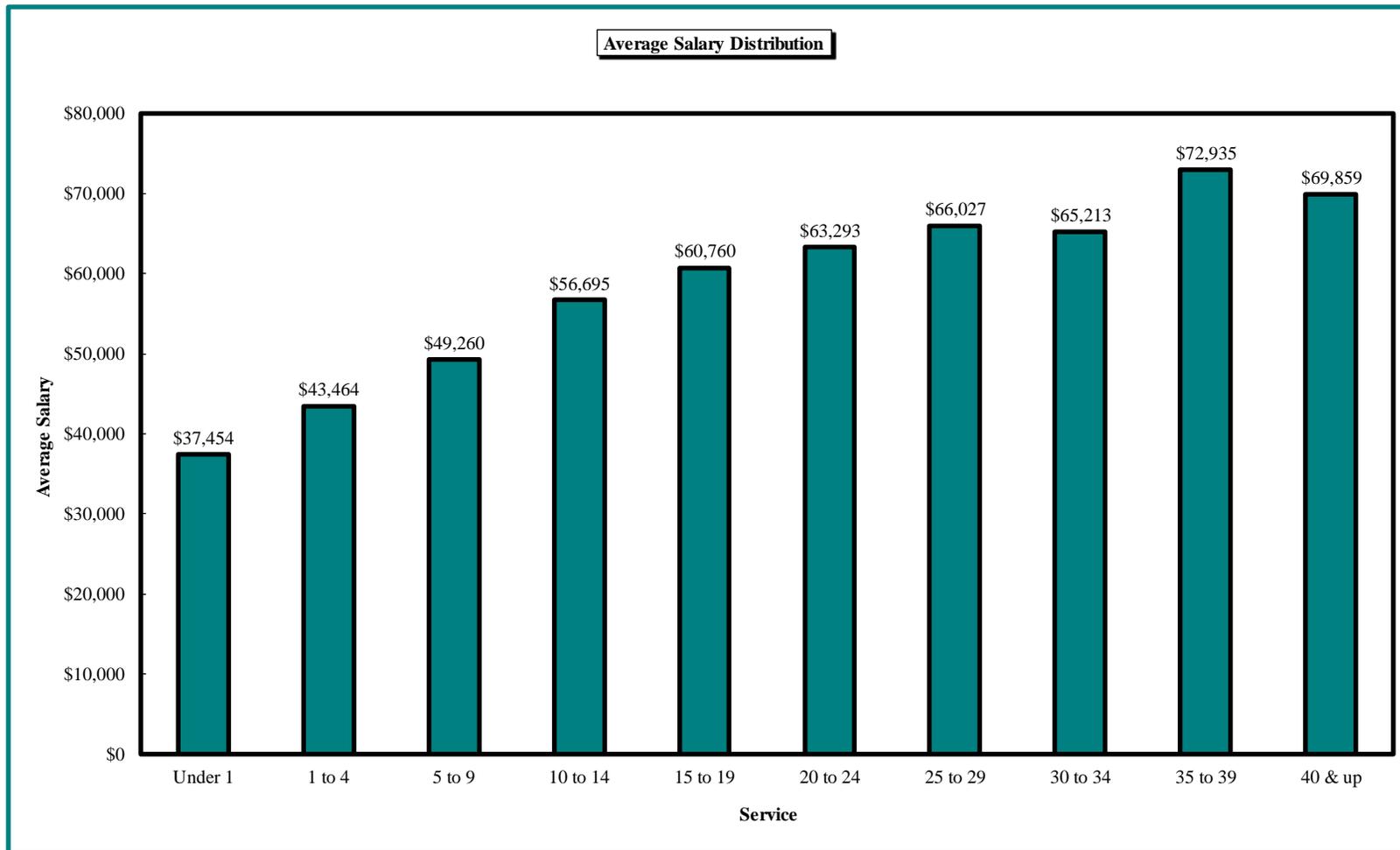
Delaware State Employees' Pension Plan Distribution of Active Members  
by Age as of June 30, 2013



DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Distribution of Active Members  
by Service as of June 30, 2013



**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**APPENDIX A  
MEMBERSHIP INFORMATION**

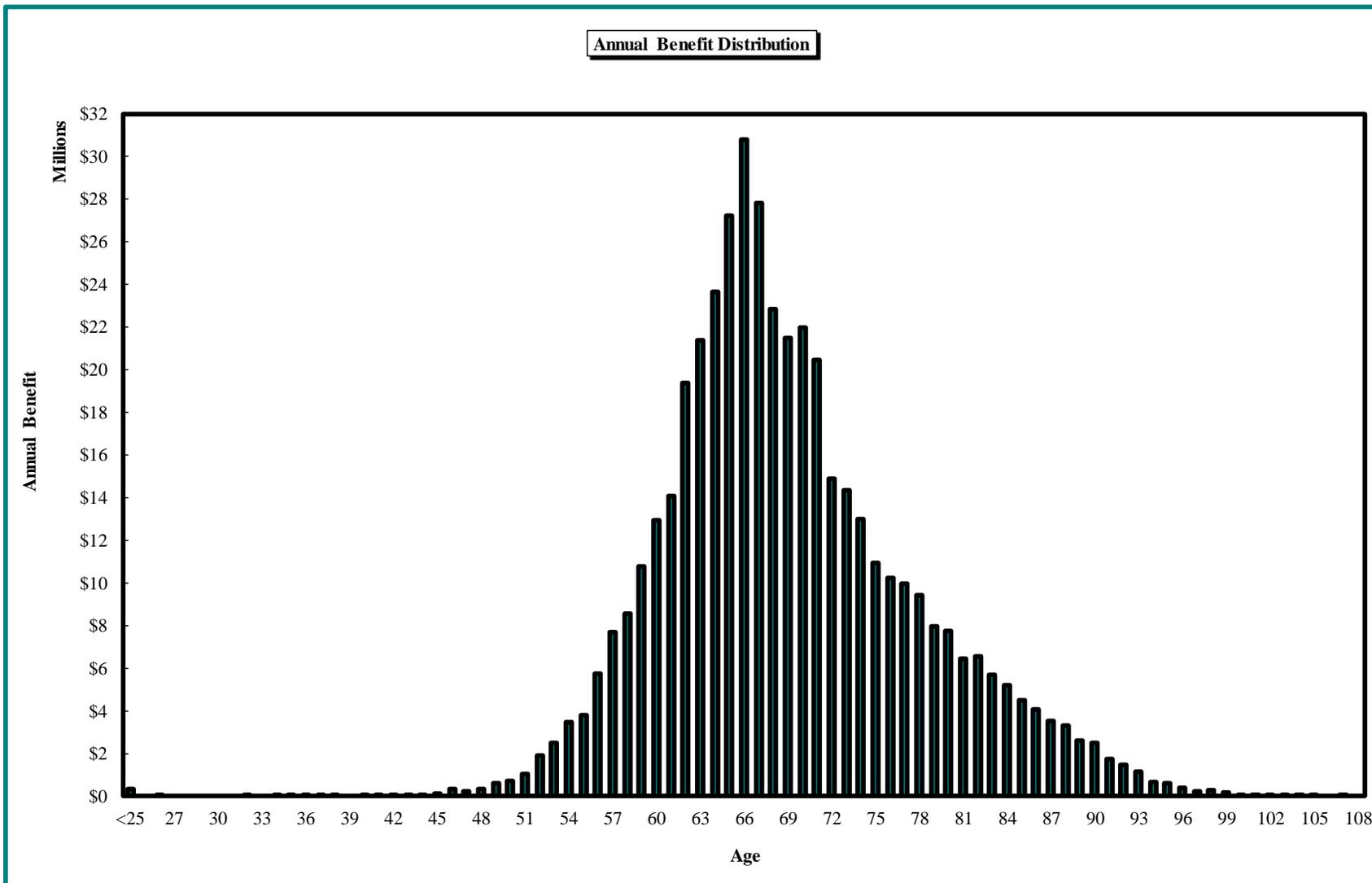
**Delaware State Employees' Pension Plan Distribution of Retired  
Members and Survivors as of June 30, 2013**

<b>Age</b>	<b>Count</b>	<b>Annual Benefit</b>	<b>Age</b>	<b>Count</b>	<b>Annual Benefit</b>
<25	40	\$ 303,958	73	708	\$ 14,326,962
25	0	-	74	658	13,020,143
26	1	3,996	75	600	10,927,263
27	0	-	76	580	10,210,073
28	0	-	77	561	9,939,090
29	0	-	78	579	9,401,931
30	0	-	79	541	7,977,280
31	0	-	80	519	7,763,308
32	1	7,390	81	490	6,456,257
33	0	-	82	481	6,563,295
34	1	1,884	83	439	5,682,495
35	4	15,483	84	400	5,177,451
36	2	5,127	85	355	4,490,185
37	1	1,683	86	359	4,084,128
38	1	14,840	87	298	3,545,241
39	0	-	88	280	3,320,413
40	2	14,064	89	230	2,597,332
41	5	36,662	90	232	2,514,270
42	1	8,243	91	174	1,740,960
43	5	28,245	92	158	1,483,731
44	10	59,355	93	123	1,144,981
45	9	133,667	94	75	633,617
46	22	341,569	95	69	573,302
47	15	219,392	96	41	399,876
48	19	324,825	97	29	243,061
49	34	591,826	98	27	272,645
50	37	700,837	99	16	150,135
51	47	1,017,471	100	10	77,028
52	83	1,911,355	101	10	76,362
53	113	2,492,353	102	2	11,739
54	131	3,444,438	103	2	10,516
55	142	3,787,765	104	2	14,204
56	210	5,753,565	105	4	51,644
57	276	7,703,769	106	0	-
58	298	8,540,123	107	1	7,830
59	362	10,753,546	108	0	-
60	403	12,932,519	109	0	-
61	482	14,097,510	110	0	-
62	660	19,405,359	111	0	-
63	820	21,400,351	112	0	-
64	905	23,682,061	113	0	-
65	995	27,208,812	114	0	-
66	1,166	30,788,915	115	0	-
67	1,071	27,821,129	116	0	-
68	875	22,829,936	117	0	-
69	849	21,476,897	118	0	-
70	932	21,969,701	119	0	-
71	889	20,487,072	120	0	-
72	707	14,913,402			
			<b>Totals</b>	<b>21,679</b>	<b>\$ 462,119,837</b>

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Distribution of Retired Members and Survivors  
as of June 30, 2013



**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**APPENDIX A  
MEMBERSHIP INFORMATION**

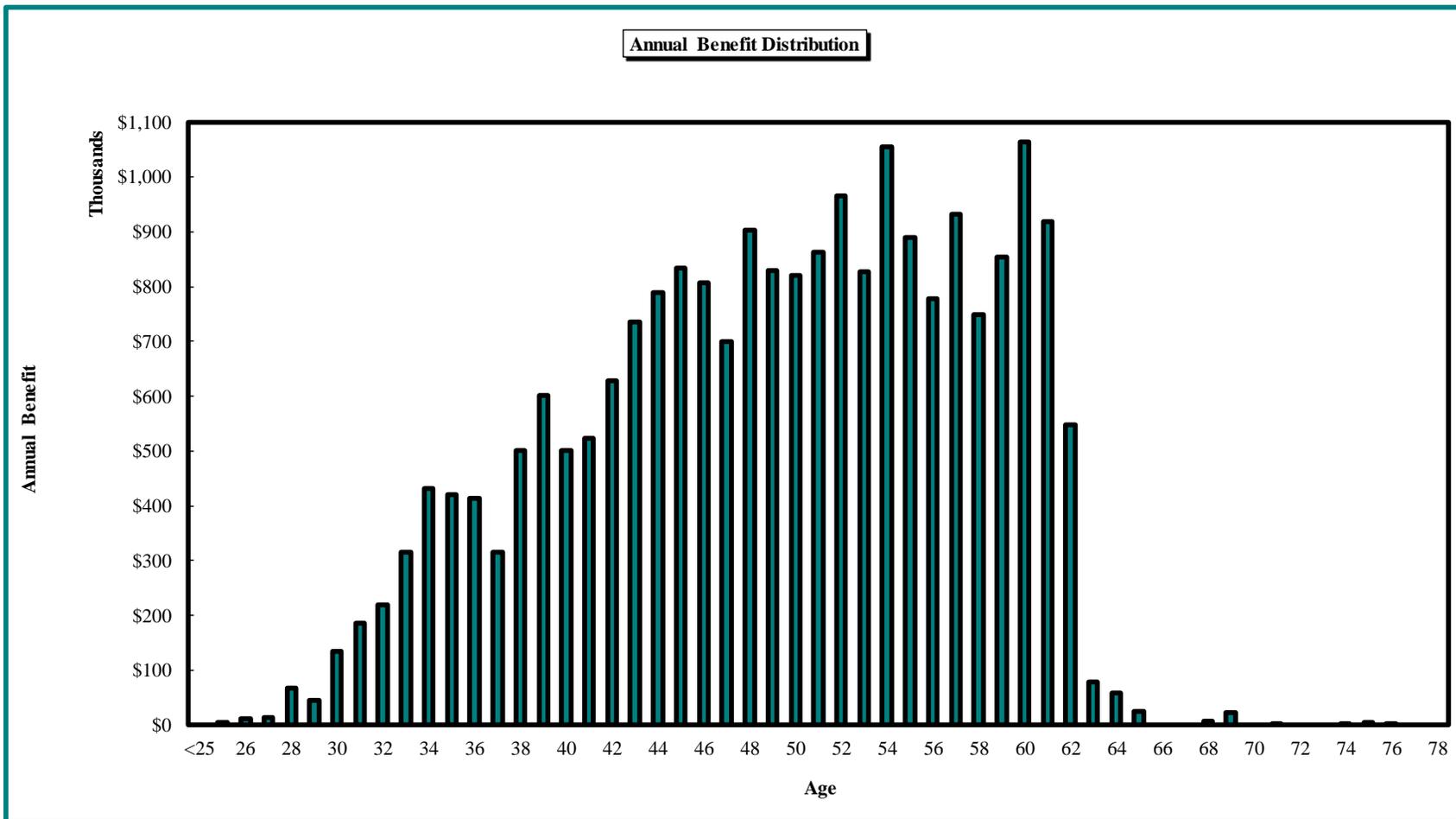
**Delaware State Employees' Pension Plan Distribution of Vested  
Members as of June 30, 2013**

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	\$ -	73	0	\$ -
25	2	4,272	74	1	574
26	3	11,377	75	2	3,501
27	4	13,948	76	1	3,260
28	16	66,197	77	0	-
29	11	43,676	78	0	-
30	26	134,361	79	0	-
31	30	186,208	80	0	-
32	35	218,094	81	0	-
33	52	315,230	82	0	-
34	65	430,630	83	0	-
35	56	420,853	84	0	-
36	60	413,422	85	0	-
37	46	314,463	86	0	-
38	61	500,911	87	0	-
39	70	602,426	88	0	-
40	68	501,767	89	0	-
41	71	523,855	90	0	-
42	69	627,962	91	0	-
43	69	735,324	92	0	-
44	93	789,938	93	0	-
45	91	834,207	94	0	-
46	87	807,082	95	0	-
47	82	699,005	96	0	-
48	97	904,071	97	0	-
49	87	830,138	98	0	-
50	84	820,237	99	0	-
51	100	863,519	100	0	-
52	102	966,050	101	0	-
53	74	826,218	102	0	-
54	98	1,056,173	103	0	-
55	86	889,422	104	0	-
56	87	777,818	105	0	-
57	102	932,822	106	0	-
58	81	748,688	107	0	-
59	90	853,113	108	0	-
60	103	1,065,311	109	0	-
61	105	918,736	110	0	-
62	69	548,738	111	0	-
63	10	77,490	112	0	-
64	6	57,993	113	0	-
65	6	24,063	114	0	-
66	0	-	115	0	-
67	0	-	116	0	-
68	2	7,815	117	0	-
69	3	22,637	118	0	-
70	0	-	119	0	-
71	1	194	120	0	-
72	0	-			
			Totals	2,564	\$ 22,393,787

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Distribution of Vested Members  
as of June 30, 2013



**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**APPENDIX A  
MEMBERSHIP INFORMATION**

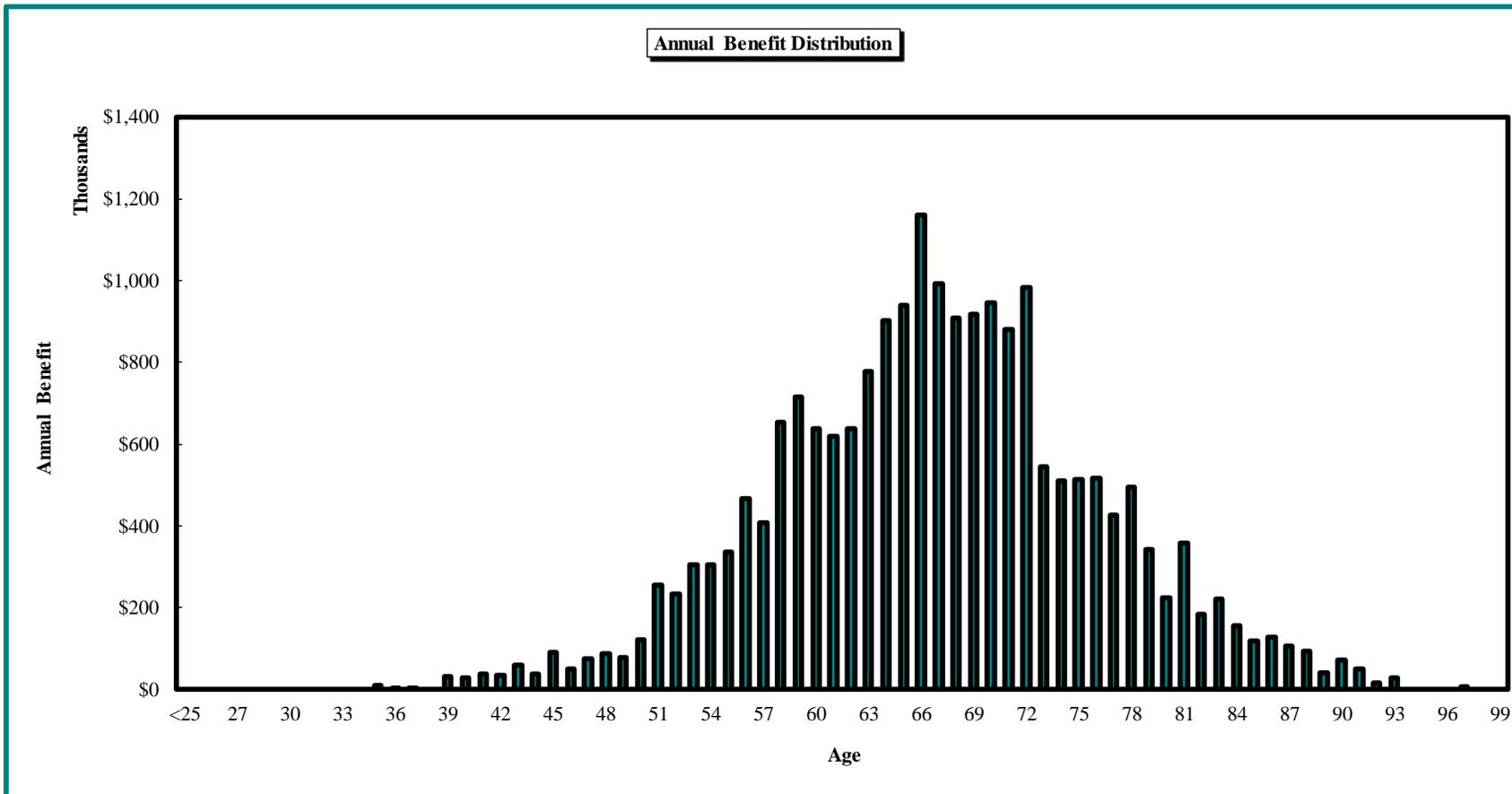
**Delaware State Employees' Pension Plan Distribution of  
Disabled Members as of June 30, 2013**

<b>Age</b>	<b>Count</b>	<b>Annual Benefit</b>	<b>Age</b>	<b>Count</b>	<b>Annual Benefit</b>
<25	0	\$ -	73	40	\$ 545,603
25	0	-	74	50	510,684
26	0	-	75	48	514,810
27	0	-	76	45	516,319
28	0	-	77	39	425,824
29	0	-	78	45	494,721
30	0	-	79	34	342,816
31	0	-	80	27	223,023
32	0	-	81	33	358,688
33	0	-	82	15	182,397
34	0	-	83	25	219,447
35	1	8,236	84	21	155,350
36	1	2,743	85	17	118,684
37	1	4,138	86	15	128,733
38	0	-	87	13	106,779
39	2	32,500	88	13	93,365
40	3	29,283	89	4	40,064
41	4	38,362	90	13	71,892
42	5	34,836	91	6	50,299
43	9	60,384	92	3	16,539
44	2	38,059	93	4	29,526
45	9	91,605	94	0	-
46	8	50,127	95	0	-
47	11	73,406	96	0	-
48	13	86,071	97	1	5,590
49	13	79,146	98	0	-
50	13	122,637	99	0	-
51	22	255,912	100	0	-
52	25	233,336	101	0	-
53	29	303,590	102	0	-
54	32	305,231	103	0	-
55	30	335,518	104	0	-
56	39	467,286	105	0	-
57	44	407,129	106	0	-
58	60	653,725	107	0	-
59	59	714,245	108	0	-
60	53	636,627	109	0	-
61	54	619,700	110	0	-
62	54	637,564	111	0	-
63	61	779,266	112	0	-
64	77	903,082	113	0	-
65	80	938,021	114	0	-
66	84	1,160,544	115	0	-
67	69	992,695	116	0	-
68	71	908,979	117	0	-
69	60	919,168	118	0	-
70	78	945,931	119	0	-
71	74	881,029	120	0	-
72	71	984,042			
			<b>Totals</b>	<b>1,832</b>	<b>\$ 20,885,305</b>

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Distribution of Disabled Members  
as of June 30, 2013



DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

**Delaware State Employees' Pension Plan Distribution of Disabled Members  
as of June 30, 2013**

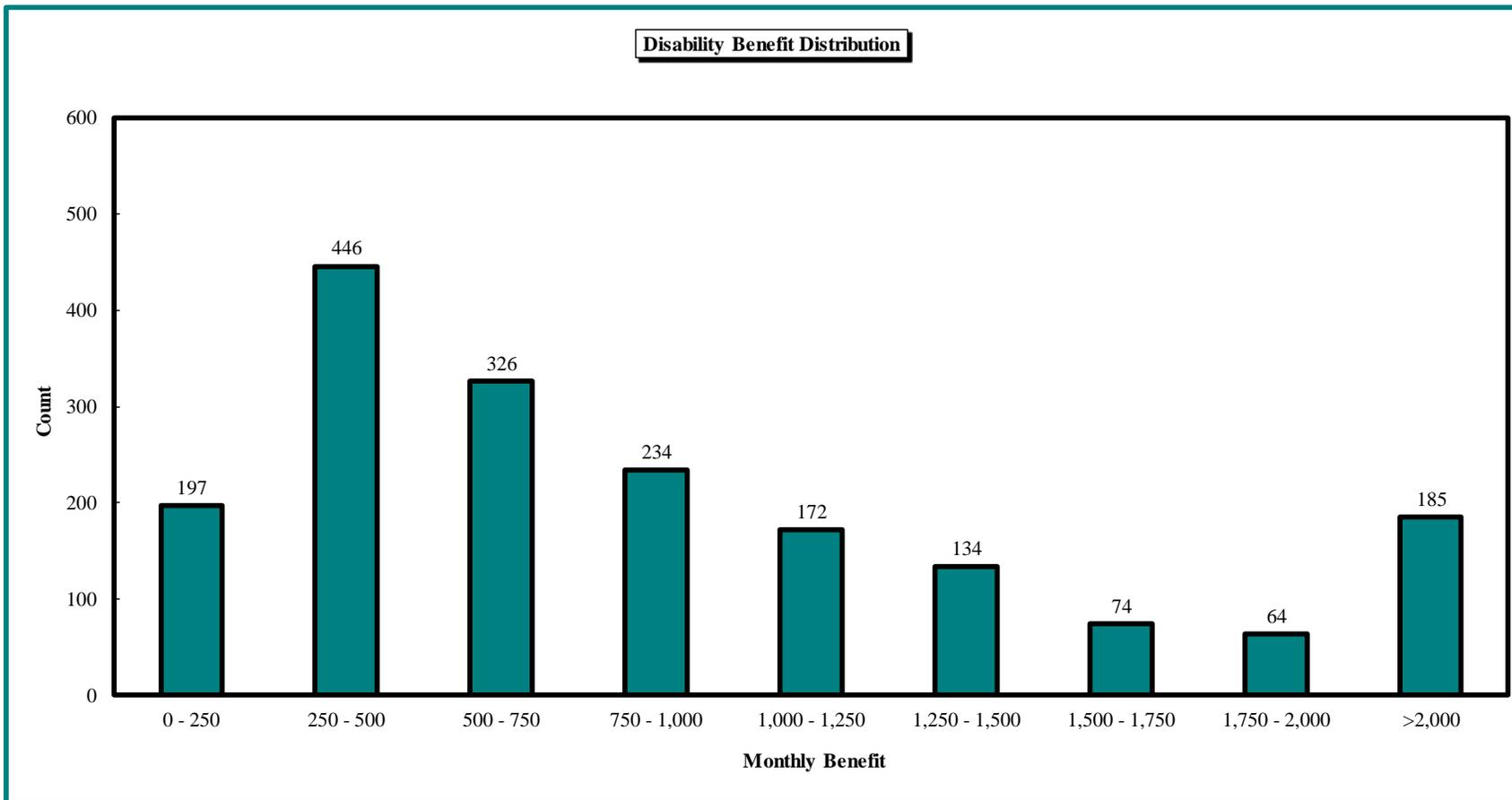
COUNTS BY BENEFIT/SERVICE

Monthly Benefit										Total
	0 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	
0 - 250	0	165	28	4	0	0	0	0	0	197
250 - 500	2	190	183	55	12	4	0	0	0	446
500 - 750	1	33	139	101	44	7	1	0	0	326
750 - 1,000	0	10	48	97	57	17	5	0	0	234
1,000 - 1,250	0	1	23	60	63	19	6	0	0	172
1,250 - 1,500	0	1	15	30	44	32	9	2	1	134
1,500 - 1,750	0	0	4	13	28	23	5	1	0	74
1,750 - 2,000	0	0	2	8	23	23	5	3	0	64
>2,000	0	0	1	9	32	70	50	18	5	185
<b>Total</b>	<b>3</b>	<b>400</b>	<b>443</b>	<b>377</b>	<b>303</b>	<b>195</b>	<b>81</b>	<b>24</b>	<b>6</b>	<b>1,832</b>

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

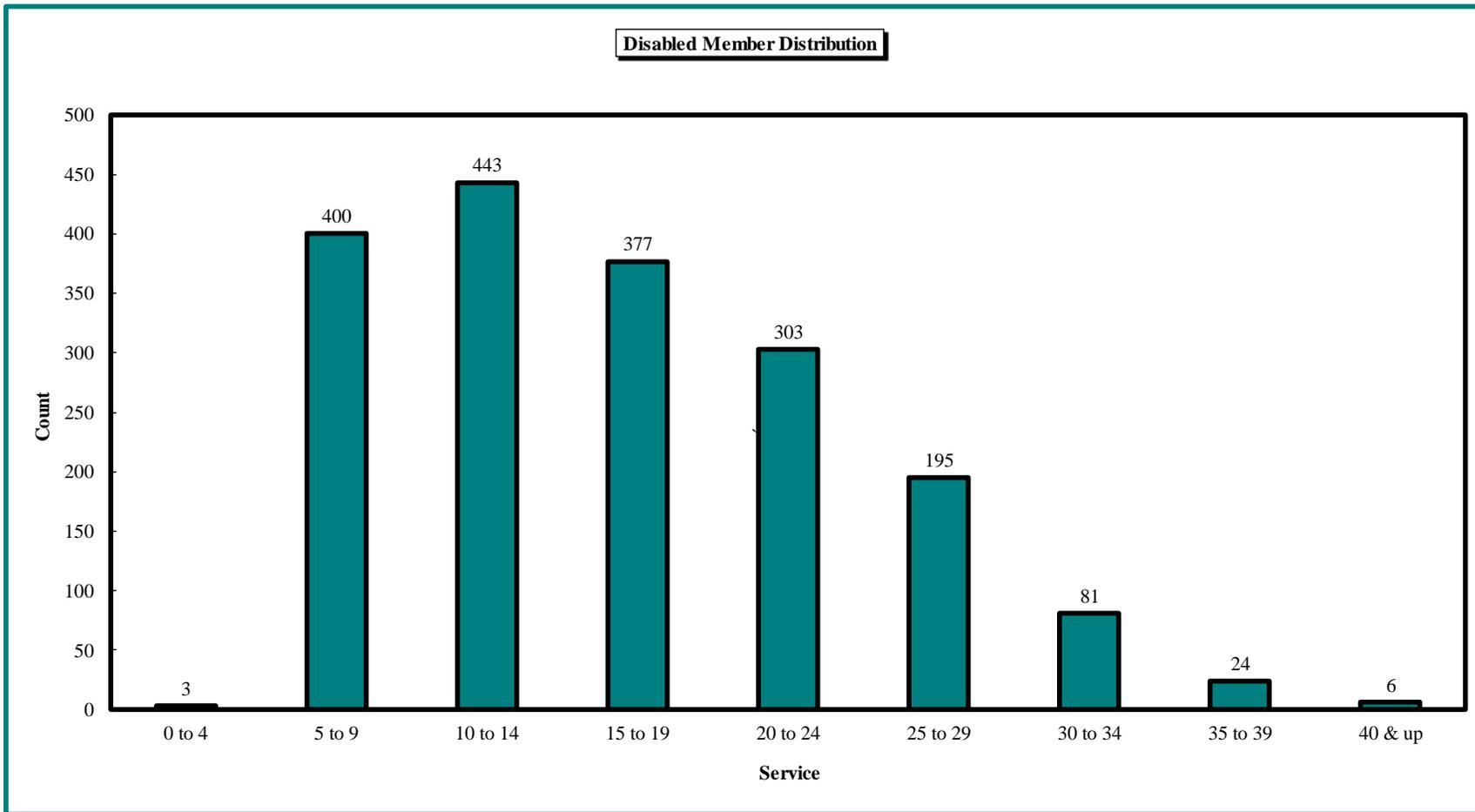
**Delaware State Employees' Pension Plan Distribution of Disabled Members  
as of June 30, 2013**



DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

**Delaware State Employees' Pension Plan Distribution of Disabled Members  
as of June 30, 2013**



**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**APPENDIX A  
MEMBERSHIP INFORMATION**

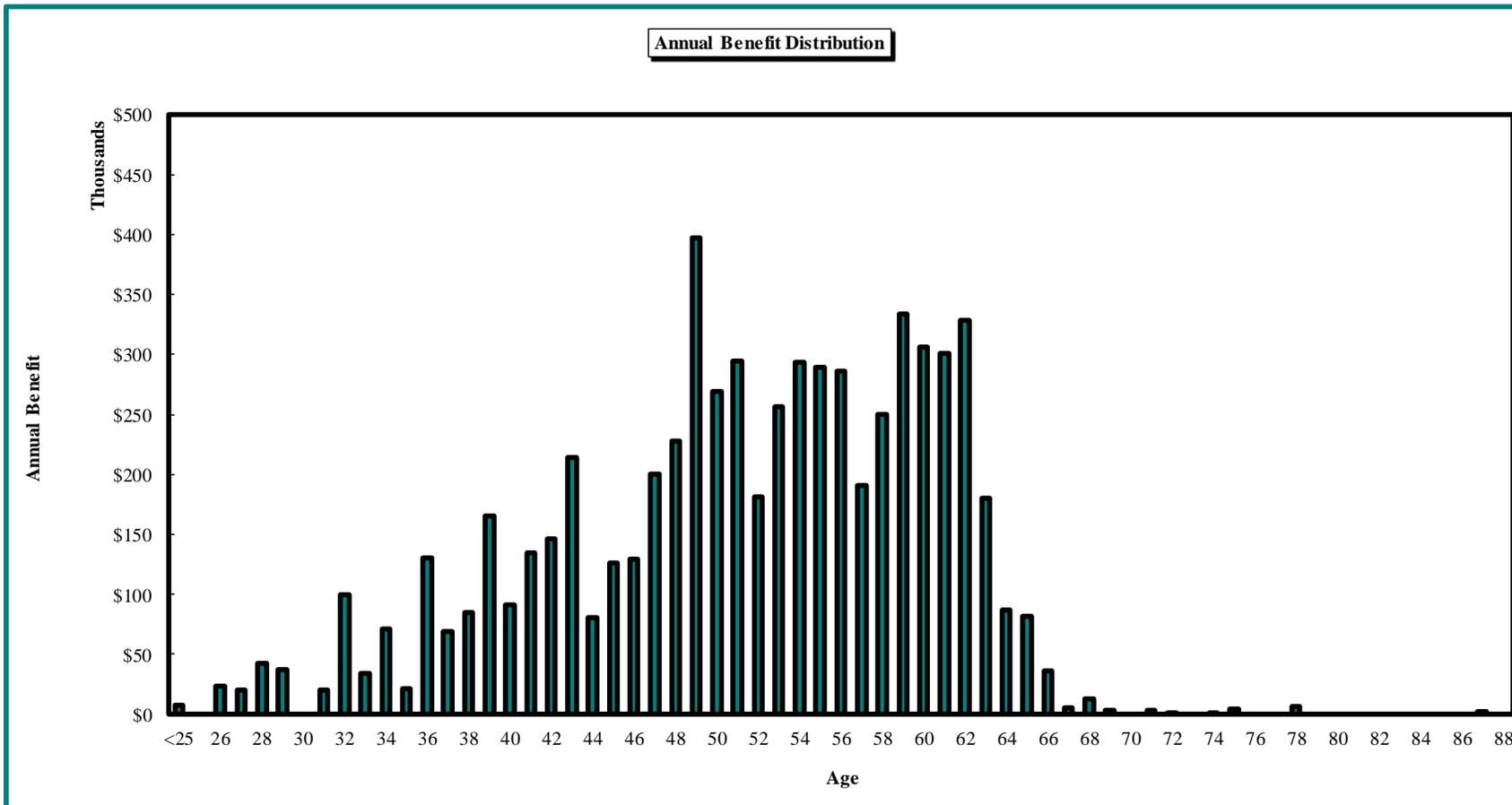
**Delaware State Employees' Pension Plan Distribution of  
Long-Term Disability Members as of June 30, 2013**

<b>Age</b>	<b>Count</b>	<b>Annual Benefit</b>	<b>Age</b>	<b>Count</b>	<b>Annual Benefit</b>
<25	1	\$ 7,931	73	0	\$ -
25	0	-	74	1	1,006
26	1	22,833	75	1	3,945
27	1	20,019	76	0	-
28	2	41,996	77	0	-
29	2	37,030	78	1	5,934
30	0	-	79	0	-
31	3	20,201	80	0	-
32	7	99,743	81	0	-
33	3	33,832	82	0	-
34	3	71,337	83	0	-
35	3	21,433	84	0	-
36	9	130,098	85	0	-
37	5	68,411	86	0	-
38	4	84,912	87	1	2,184
39	7	165,624	88	0	-
40	5	90,831	89	0	-
41	9	134,462	90	0	-
42	8	145,914	91	0	-
43	17	214,331	92	0	-
44	7	79,991	93	0	-
45	7	125,640	94	0	-
46	11	129,593	95	0	-
47	16	199,993	96	0	-
48	16	227,848	97	0	-
49	23	397,057	98	0	-
50	20	269,042	99	0	-
51	25	294,364	100	0	-
52	17	180,647	101	0	-
53	21	256,118	102	0	-
54	19	292,996	103	0	-
55	27	289,675	104	0	-
56	23	285,958	105	0	-
57	24	191,200	106	0	-
58	22	249,755	107	0	-
59	27	334,155	108	0	-
60	21	305,718	109	0	-
61	27	300,670	110	0	-
62	27	328,036	111	0	-
63	20	179,907	112	0	-
64	12	87,072	113	0	-
65	12	81,820	114	0	-
66	6	36,141	115	0	-
67	3	5,820	116	0	-
68	1	12,755	117	0	-
69	1	2,742	118	0	-
70	0	-	119	0	-
71	1	2,886	120	0	-
72	1	748			
			<b>Totals</b>	<b>531</b>	<b>\$ 6,572,355</b>

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX A  
MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Distribution of Long Term Disability Members  
as of June 30, 2013



DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

**APPENDIX B**  
**ACTUARIAL ASSUMPTIONS AND METHODS**

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

**1. Demographic Assumptions**

**a. Healthy Active and Inactive Mortality**

Mortality Improvements Projected to 2015 (Projection Scale AA)

Male: RP-2000 Combined Mortality Table

Female: RP-2000 Combined Mortality Table

<b>Rates of Healthy Active and Inactive Mortality</b>		
<b>Rates (With Projection Scale AA)</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
20	0.03%	0.02%
25	0.03	0.02
30	0.04	0.02
35	0.07	0.04
40	0.09	0.06
45	0.12	0.09
50	0.16	0.13
55	0.27	0.24
60	0.53	0.47
65	1.03	0.90
70	1.77	1.55
75	3.06	2.49
80	5.54	4.13
85	9.97	7.08
90	17.27	12.59

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

**APPENDIX B**  
**ACTUARIAL ASSUMPTIONS AND METHODS**

**b. Disabled Inactive Mortality**

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

<b>Rates of Disabled Inactive Mortality</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
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

**c. Rates of Active Disability**

<b>Rates of Active Disability</b>	
<b>Age</b>	<b>Rates</b>
20	0.05%
25	0.05
30	0.18
35	0.27
40	0.38
45	0.46
50	0.62
55	0.86
60	1.24

<b>Rates of Active Disability for those who opted into the Disability Insurance Program*</b>	
<b>Age</b>	<b>Rates</b>
65	1.74%
70	1.73
75	2.68
80	4.87

\* For those who remained in the Pension Plan for disability purposes, the assumption stops at age 64.

**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**APPENDIX B  
ACTUARIAL ASSUMPTIONS AND METHODS**

**d. Termination of Employment (Prior to Retirement Eligibility)**

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

<b>Age 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>
15-19	20.0%	25.0%	25.0%	10.0%	9.0%	7.5%	5.0%	5.0%	3.5%	3.5%	2.5%
20	20.0	22.5	22.0	10.0	9.0	7.5	5.0	5.0	3.5	3.5	2.5
21	20.0	20.0	18.0	10.0	9.0	7.5	5.0	5.0	3.5	3.5	2.5
22	20.0	17.5	16.0	10.0	9.0	7.5	5.0	5.0	3.5	3.5	2.5
23-32	20.0	17.5	14.0	10.0	9.0	7.5	5.0	5.0	3.5	3.5	2.5
33-35	20.0	15.0	12.0	10.0	8.0	7.5	5.0	5.0	3.5	3.5	2.5
36	19.0	15.0	10.0	10.0	7.0	7.5	5.0	5.0	3.5	3.5	2.5
37	18.0	15.0	10.0	10.0	7.0	6.0	5.0	5.0	3.5	3.5	2.5
38	17.0	15.0	10.0	10.0	7.0	6.0	5.0	5.0	3.5	3.5	2.5
39	16.0	15.0	10.0	10.0	7.0	6.0	5.0	5.0	3.5	3.5	2.5
40	15.0	12.5	10.0	7.0	6.0	6.0	5.0	5.0	3.5	3.5	2.5
41-46	14.0	12.5	10.0	7.0	6.0	5.0	5.0	5.0	3.5	3.5	2.5
47-49	13.0	12.5	10.0	7.0	6.0	5.0	5.0	5.0	3.5	3.5	2.5
50-52	12.5	12.5	10.0	7.0	6.0	5.0	5.0	5.0	3.5	3.5	2.5
53-54	12.0	12.5	10.0	7.0	6.0	5.0	5.0	5.0	3.5	3.5	2.5
55	12.0	12.0	10.0	8.0	6.0	5.0	5.0	5.0	3.5	3.5	2.5
56-59	11.5	11.5	10.0	8.0	6.0	5.0	5.0	5.0	3.5	3.5	2.5
60-65	11.5	11.5	10.0	10.0	6.0	5.0	5.0	5.0	3.5	3.5	2.5
>66	11.5	11.5	10.0	14.0	6.0	5.0	5.0	5.0	3.5	3.5	2.5

**e. Retirement**

Early Retirement:

- i. age 55 with 15 years of credited service
- ii. 25 years of credited service

Pre-2012 hires:

<b>Male Early Retirement</b>	
<b>Age</b>	<b>Rate</b>
< 41	0.00%
42 – 52	10.00
53 – 59	5.00

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

APPENDIX B  
ACTUARIAL ASSUMPTIONS AND METHODS

<b>Female Early Retirement</b>	
<b>Age</b>	<b>Rate</b>
<41	0.00%
42 – 59	10.00

Post-2011 hires:

<b>Unisex Early Retirement</b>	
<b>Age</b>	<b>Rate</b>
<41	0.00%
42 – 59	5.00

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

Pre-2012 hires:

- i. age 62 with five years of credited service
- ii. age 60 with 15 years of credited service
- iii. 30 years of credited service

Post-2011 hires:

- i. age 65 with 10 years of credited service
- ii. age 60 with 20 years of credited service
- iii. 30 years of credited service

**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**APPENDIX B  
ACTUARIAL ASSUMPTIONS AND METHODS**

Pre-2012 hires:

<b>Male Normal Retirement</b>		
<b>Age</b>	<b>Select</b>	<b>Ultimate</b>
< 45	10.00%	0.00%
45 – 46	10.00	7.50
47 – 49	10.00	10.00
50 – 51	20.00	10.00
52	20.00	15.00
53	20.00	14.00
54	20.00	13.00
55	20.00	20.00
56 – 59	20.00	15.00
60 – 61	20.00	20.00
62	20.00	25.00
63	20.00	20.00
64	15.00	20.00
65	15.00	25.00
66 – 69	15.00	20.00
70	15.00	17.00
71	15.00	25.00
72 – 79	15.00	17.00
80	100.00	100.00

**DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013**

**APPENDIX B  
ACTUARIAL ASSUMPTIONS AND METHODS**

Pre-2012 hires:

<b>Female Normal Retirement</b>		
<b>Age</b>	<b>Select</b>	<b>Ultimate</b>
<45	10.00%	0.00%
45 – 49	10.00	6.00
50 – 51	20.00	6.00
52 – 53	20.00	8.00
54	20.00	11.00
55	20.00	15.00
56	20.00	11.00
57 – 58	20.00	15.00
59 – 61	20.00	20.00
62	20.00	25.00
63	20.00	20.00
64	30.00	20.00
65	28.00	20.00
66	26.00	20.00
67 – 69	15.00	20.00
70	15.00	21.00
71 – 79	15.00	20.00
80+	100.00	100.00

Post-2011 hires:

<b>Unisex Normal Retirement</b>		
<b>Age</b>	<b>Select</b>	<b>Ultimate</b>
<45	10.00%	10.00%
45 – 64	10.00	10.00
65	30.00	30.00
66 – 79	20.00	20.00
80	100.00	100.00

DELAWARE STATE EMPLOYEES' PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2013

**APPENDIX B**  
**ACTUARIAL ASSUMPTIONS AND METHODS**

**f. Salary Increase**

30-year Service-based table includes an annual inflation rate of 3.25%.

<b>Service</b>	<b>Increase</b>
0	11.75%
1	9.75
2	7.75
3	6.25
4	6.00
5	6.00
10	4.75
15	4.75
20	4.00
30	3.75

**g. Family Composition**

Female spouses are assumed to be three years younger than males.  
70% are assumed married for both male and female employees.  
Actual marital characteristics are used for pensioners.

**2. Economic Assumptions**

- a. Rate of Investment Return: 7.50%
- b. Rate of General Wage Increase: 3.25%
- c. Rate of Increase in Cost-of-Living  
for Retirees: 0.00%
- d. Rate of Increase in Total Payroll  
(for Amortization): 3.25%
- e. Administrative Expenses as a  
Percentage of Payroll: 0.30%

**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 rate is determined as a level percent of pay for each active member. The normal cost rate times payroll equals the normal cost. The normal cost plus member contributions will pay for projected benefits at retirement for each active 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 amortized to develop an additional cost or savings which is added 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 portion of unfunded liability which is not expected to be paid through transfers from the PRI Fund is amortized over a rolling 20-year period. All 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 contributions, 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**

Slight change in coding the Individual Entry Age Normal method to align benefits and salary amounts used in first year of employment.

**APPENDIX C**  
**SUMMARY OF PLAN PROVISIONS**

**1. Membership**

The Plan covers full-time and regular part-time employees of the State (including elected or appointed officials), the State Department of Public Instruction, a school district which is part of the State School System (the membership includes 19 school districts), the University of Delaware (excluding most faculty and designated professional staff), Delaware State University, Delaware Technical & Community College and any State Agency supported in whole or in part by federal funds granted to the State.

**2. Member Contributions**

Pre - 2012 hires: 3% of compensation in excess of \$6,000 per annum.

Post - 2011 hires: 5% of compensation in excess of \$6,000 per annum.

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 of any 36 months comprised of three periods of 12 consecutive months (or shorter period of total service) of compensation paid to the member, including salary, wage and fees, plus overtime payments and special payments for extra duty. Overtime payments are excluded for Post – 2011 hires.

**5. Normal Retirement**

Eligibility: Pre - 2012 hires: (i) age 62 with five years of credited service, or (ii) age 60 with 15 years of credited service, or (iii) any age with 30 years of credited service.

Post - 2011 hires: (i) age 65 with 10 years of credited service, or (ii) age 60 with 20 years of credited service, or (iii) any age with 30 years of credited service.

Benefit: 2.0% of final average compensation multiplied by years of service prior to January 1, 1997 plus 1.85% of final average compensation multiplied by years of service after January 1, 1997.

**APPENDIX C**  
**SUMMARY OF PLAN PROVISIONS**

**6. Early Retirement**

Eligibility: (i) age 55 with 15 years of credited service, or (ii) any age with 25 years of credited service.

Benefit: Normal retirement benefit calculated using final average compensation and service at early retirement, and reduced by 0.2% (by 0.4% if post - 2011 hire) for each month which retirement age precedes the earlier of age 60 or the attainment of 30 years of service.

**7. Disability Benefit**

Eligibility: Five years of credited service.

Benefit: Normal retirement benefit calculated using service and salary at disability date.

State Plan: Member who opted into the Disability Insurance Program will not receive a benefit from this Plan until they reach normal retirement eligibility. All members hired on or after January 1, 2006 are covered by the Disability Insurance Program.

**8. Survivor's Benefit**

Eligibility: Five years of credited service if active or death after retirement.

Benefit: For eligible survivors of employees who die in active service: 75% of service pension employee would have been eligible to receive at age 62, calculated using final average compensation and credited service accrued to the date of death and reduced by 3% for the form of payment.

For eligible survivors of pensioners who die: 50% of pension received immediately prior to death, or 75%, if the pensioner has so elected by taking a 3% reduction to his benefit.

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. If no eligible survivors, accumulated contributions with interest over aggregate pension payments are payable to the beneficiary.

**9. Burial Benefit**

\$7,000 lump sum

**APPENDIX C**  
**SUMMARY OF PLAN PROVISIONS**

**10. Vesting**

Eligibility: Pre - 2012 hires: Employees who separate from service with at least five years of service.

Post - 2011 hires: Employees who separate from service with at least ten years of service.

Benefit: Accrued normal retirement benefit, payable at age 62 for Pre – 2012 hires and age 65 for Post – 2011 hires. 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.

**11. Withdrawal of Employee Contributions**

Eligibility: Terminates service and is not eligible for other benefits.

Benefit: Accumulated employee contributions with interest.

**12. Form of Payment**

The normal form of payment is a 50% joint and survivor annuity.

A member may elect a 75% joint and survivor form with a 3% reduction in benefits.

**13. Cost-of-Living Adjustment**

Cost-of-Living Adjustments are made only on an ad hoc basis.

**14. Changes Since Last Valuation**

None.