CHEIRON *Classic Values, Innovative Advice*

Delaware State Employees' Pension Plan

Actuarial Valuation as of June 30, 2015

Produced by Cheiron

January 2016

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TABLE OF CONTENTS

January 26, 2016

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 (Plan) as of June 30, 2015. The results of this valuation are contained in this report. The purpose of the valuation is discussed in the Foreword.

This report contains information on plan assets and liabilities, as well as analyses combining asset and liability performance and projections. It also discloses State contribution levels and required disclosures under the Governmental Accounting Standards Board (GASB) Statement No. 67.

In completing the valuation and preparing our report, we relied on information, some oral and some written, supplied by staff of the Office of Pensions. 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 contribution results of this report are only applicable to the State contribution for Fiscal Year (FY) 2017 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 that 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 opinions 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 purpose described herein and for the use by the Plan auditor in completing an audit related to the matters herein. Other users of this valuation report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Sincerely,
Cheiron

Fiona E. Liston, FSA
Principal Consulting Actuary

Elizabeth Wiley, FSA, EA
Consulting Actuary

FOREWORD

Cheiron has performed the annual actuarial valuation of the Delaware State Employees' Pension Plan (Plan) as of June 30, 2015. 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 condition of the Plan;

3) **Determine the contribution rate** to be paid by the State for Fiscal Year (FY) 2017; and

4) **Provide** accounting statement information.

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 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 liabilities, measured for actuarial, accounting, and governmental reporting purposes.

Section IV presents the FY 2017 actuarially determined State contribution.

Section V includes required disclosures under Governmental Accounting Standards Board (GASB) Statement No. 67 and items recommended by the Government Finance Officers Association (GFOA).

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 a summary of the actuarial methods and assumptions used in the valuation.

The actuarial assumptions reflect our understanding of the likely future experience of the Plan, and the assumptions individually and as a whole represent our best estimate for the future experience of the Plan. The results of this report rely on future plan experience conforming to the underlying assumptions and methods outlined in this report. To the extent that the actual plan experience deviates from the underlying assumptions and methods, or there are any changes in plan provisions, the true cost of the Plan would vary from our results.

SECTION I – BOARD SUMMARY

General Comments

The actuarially determined contribution (ADC) was calculated to be 9.58% for both FY 2016 and FY 2017.

During the year ended June 30, 2015, the Plan's assets earned 3.6% on a market value basis. However, due to the Plan's asset smoothing method, which recognizes only a portion of investment gains and losses, the return on an actuarial value basis was 6.4%. This return was less than the assumed investment rate of return of 7.2% for last year, resulting in an actuarial loss on investments of $68 million.

The Plan experienced an actuarial gain on plan liabilities resulting from salary increases different from those assumed and members retiring, terminating, becoming disabled, and dying at rates different from the actuarial assumptions. This liability gain decreased the actuarial liability by $24 million, 0.3% of the total actuarial liability. This type of relatively small gain or loss is normal in the course of plan experience, as we cannot predict exactly how people will behave.

The liability increased by $44 million due to a Post-Retirement Increase and by $10 million for the prior service portion of the benefit increase granted to Correctional Officers. Please see Appendix C for a more complete description of these changes.

In the 2014 valuation, $138 million of investment gains was recognized in addition to the gains that flowed through the standard asset smoothing method. In this valuation, $78 million of those gains are being returned to the balance of unrecognized gains. The amount of the payback was determined in such a way that the State contribution rate is stable for the year.

This valuation report also contains information to be reported in the June 30, 2015 Comprehensive Annual Financial Report (CAFR) of the Delaware Public Employees' Retirement System (Delaware PERS) under GASB Statement No. 67 as well as additional disclosure information recommended by the Government Finance Officers Association (GFOA). The GASB disclosures are based on the use of updated procedures to roll forward the 2014 actuarial valuation liability results. The calculation of net pension liability in Section V is shown as disclosed for the plan year ending June 30, 2015, based on the 2014 actuarial valuation liability results. We also present a projection of the June 30, 2016 disclosure in Section V, assuming all actuarial assumptions are met over the coming year, which is based on the 2015 actuarial valuation liability results.

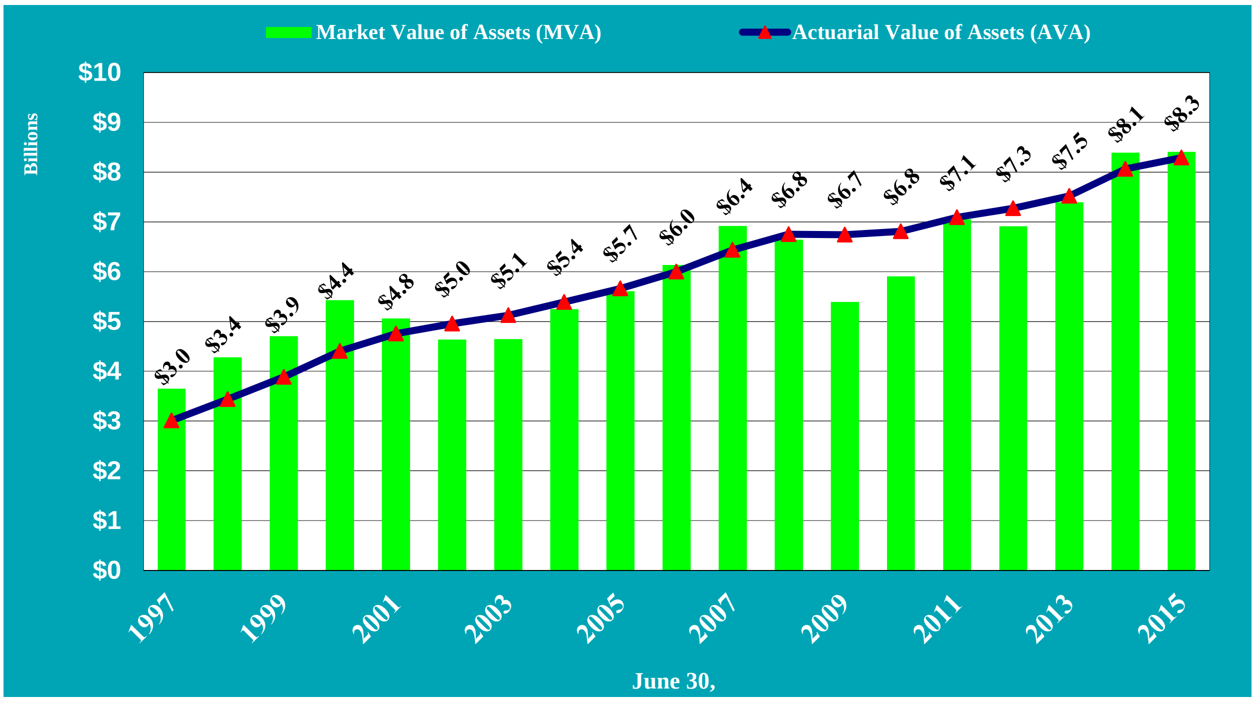
As of the June 30, 2015 actuarial valuation, the Plan's unfunded actuarial liability (UAL) was $761 million. This is an increase from the $673 million UAL in the funding valuation for the prior year.

SECTION I – BOARD SUMMARY

Trends

Growth in Assets

The graph below shows measurements of the Plan's assets over the last 19 years based on both market values and actuarial values. The green bars represent the market value measurements, while the blue line shows the actuarial value measurements. The black numbers are the actuarial value of asset measurements as of the valuation date for each year, in billions of dollars.



The market value of assets (MVA) returned 3.6% over the last year. The determination of the Plan's actuarial value of assets (AVA) for the current year reflects a portion of the return below the 7.2% assumed for the year, after excluding recognition of $78 million of gains as elected by the Board of Trustees on October 30, 2015, and continued recognition of prior years' gains and losses.

Over the period July 1, 1997 to June 30, 2015, the Plan's assets returned approximately 7.2% per year measured on an actuarial value basis, compared to the current valuation assumption of 7.2%.

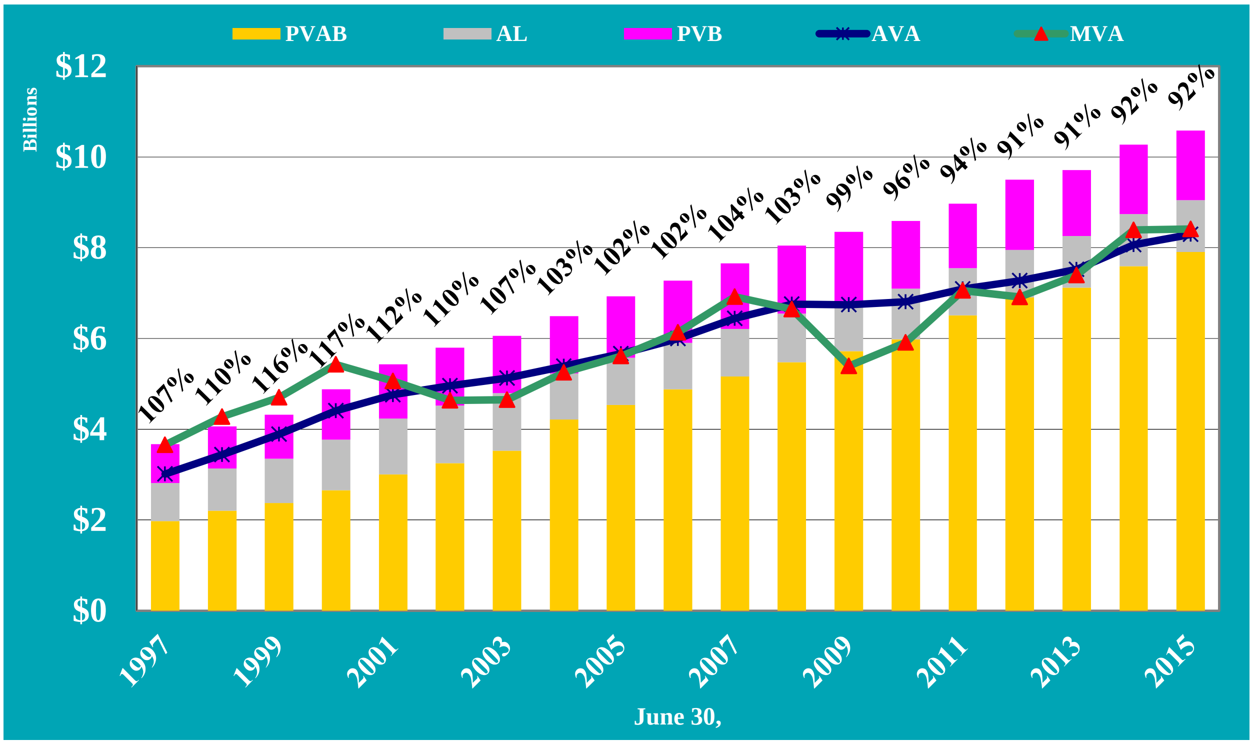
SECTION I – BOARD SUMMARY

Assets and Liabilities

The three colored bars below represent the three different measures of liability discussed in this report. The first measure is given by the yellow bars, the present value of accrued benefits (PVAB). The PVAB values represent the value of all benefits earned by current members through the valuation date. These values do not reflect any future additional service or salary increases for current members.

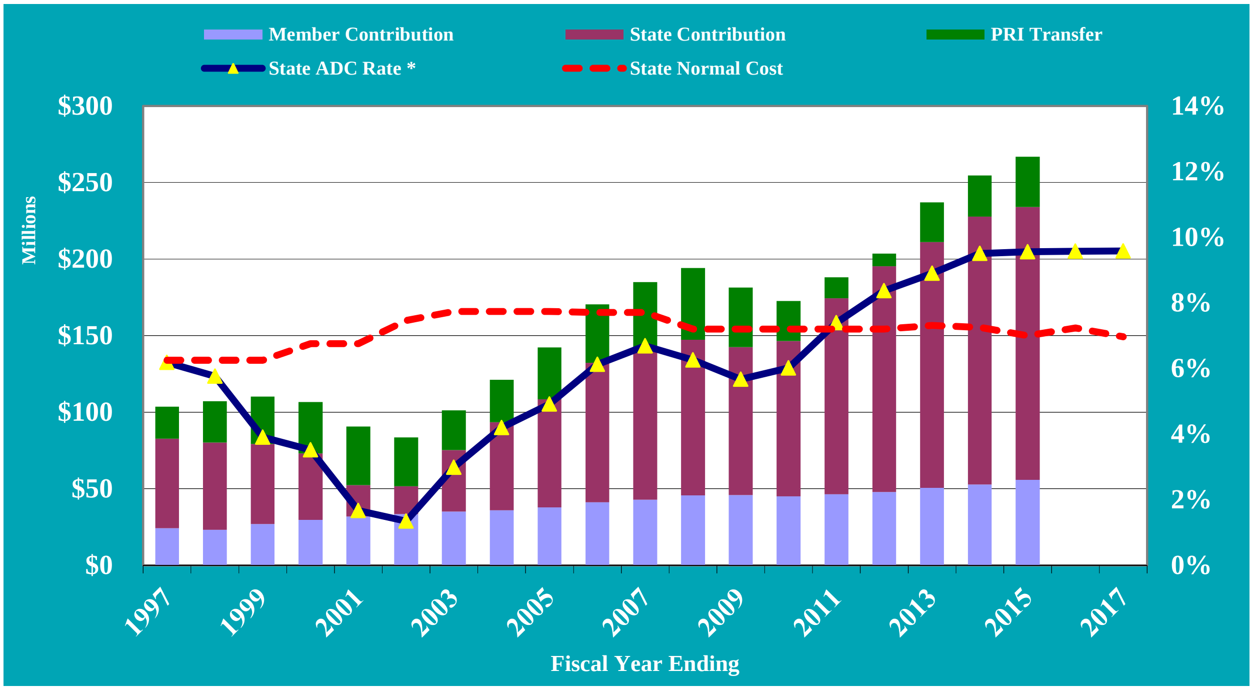
The second liability measure is the one currently used for the Plan's funding target, the actuarial liability (AL). These target amounts are represented by the top of the gray bars. The funded ratios reported by the Plan are the percentages shown above the bars and are developed by comparing these target measurements of liability to the actuarial value of assets at each valuation date. This measurement is also the basis of the liability measure used in GASB 67.

The amount represented by the top of the pink bars, the present value of future benefits (PVB), is the amount needed to provide all benefits for the current members and their beneficiaries, including reflection of assumed future service and pay increases. If the Plan had assets equal to the PVB as of a certain date, no additional contributions would, in theory, be needed for the current members if all assumptions were exactly met from that point forward.



SECTION I – BOARD SUMMARY

Contribution Rates



* Formerly known as Actuarially Required Contribution (ARC), GASB No. 67/68 redefined the term for calculated contributions to Actuarially Determined Contribution (ADC).

The stacked bars in the graph above show the contributions made by the State, the Post-Retirement Increase Fund (PRI), and the members for each fiscal year, and are read using the left-hand scale. The blue line shows the State ADC rate for each fiscal year as a percentage of payroll (right-hand scale). The red line shows the level of the State normal cost rate, which measures the value of benefits being accrued each year, offset by the portion paid through member contributions, also read with the right-hand scale.

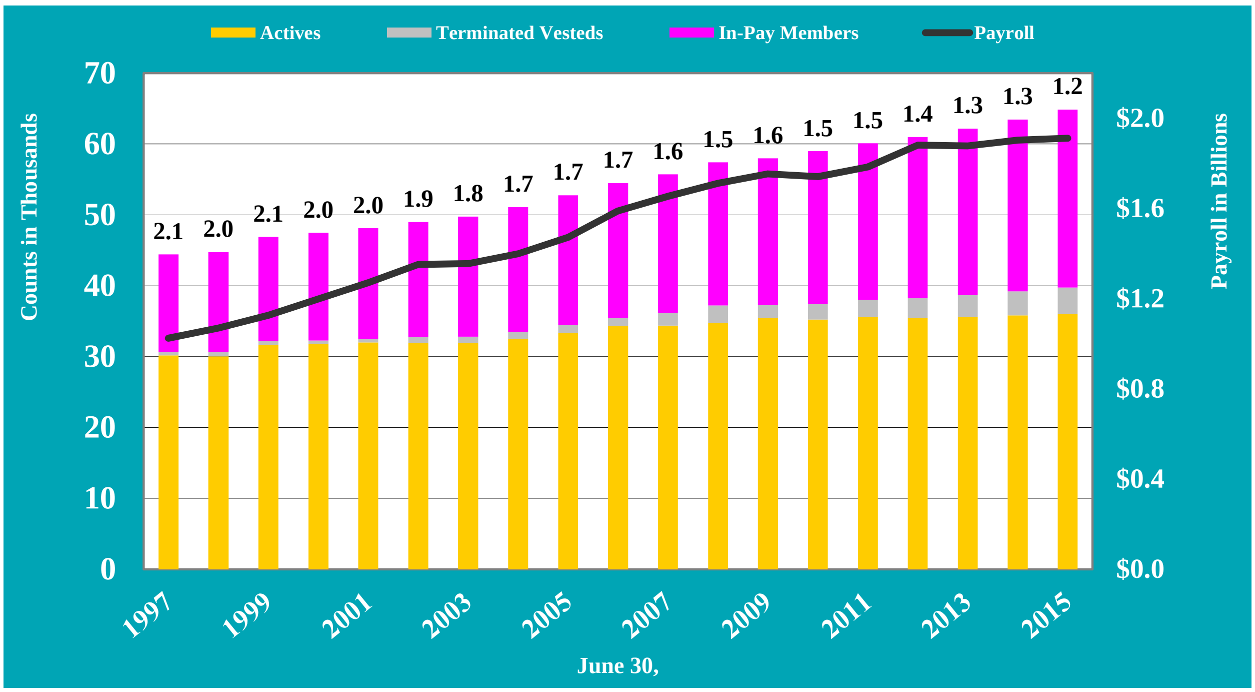
The member contribution rate is set by State law, based on the Plan in which the member participates. The State contribution rate is set by the actuarial process, while the PRI transfer amounts depend on the increases granted by the State legislature. Please note that there is a lag in the State contribution rates shown. For example, the value shown for the Fiscal Year 2015 is the rate prepared by the June 30, 2013 valuation and implemented for the period July 1, 2014 to June 30, 2015.

SECTION I – BOARD SUMMARY

Participant Trends

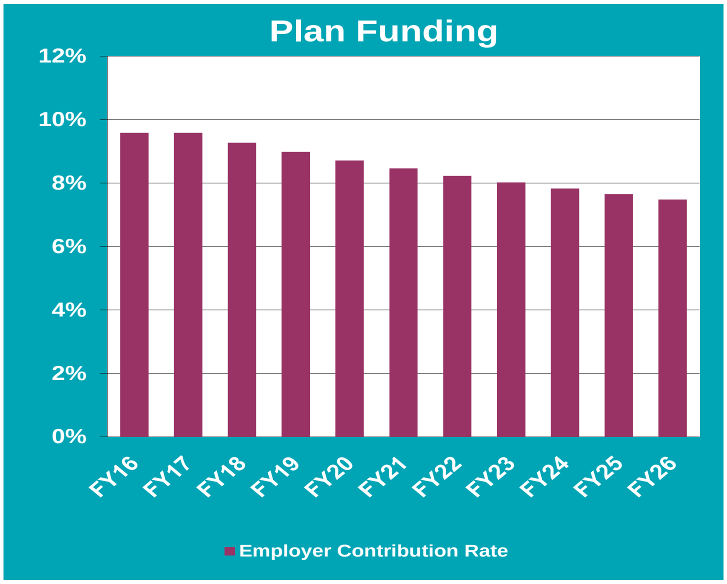
The bars below show the number of members as of each valuation date, divided between active members, terminated vested members, and retirees/beneficiaries. These bars are read using the left-hand scale. As with most maturing funds, this Plan continues to show growth in the number of inactive members. The numbers that appear above each bar represent the ratio of active members to inactive members (retirees, beneficiaries, and terminated vested members) at each valuation date. This active-to-inactive ratio has decreased from 2.1 actives to each inactive in 1997 to 1.2 actives for each inactive in 2015.

The black line shows the covered payroll for the Plan as of each valuation date and is read using the right-hand scale.



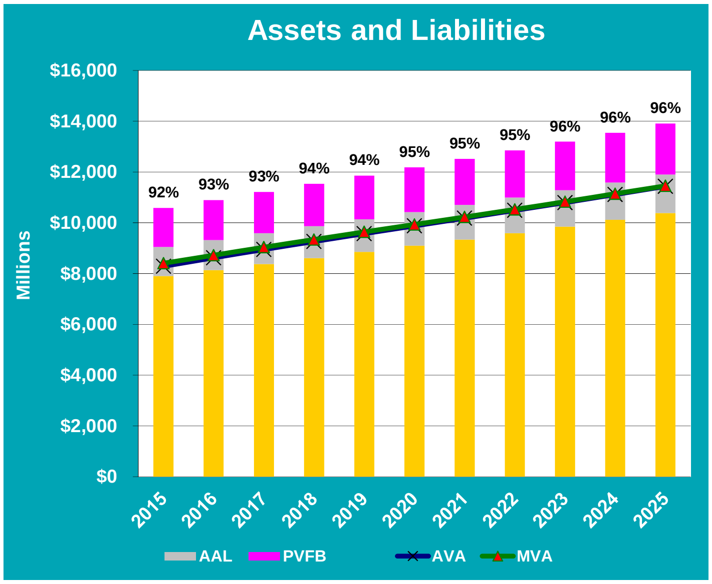
Future Outlook

Baseline Projections



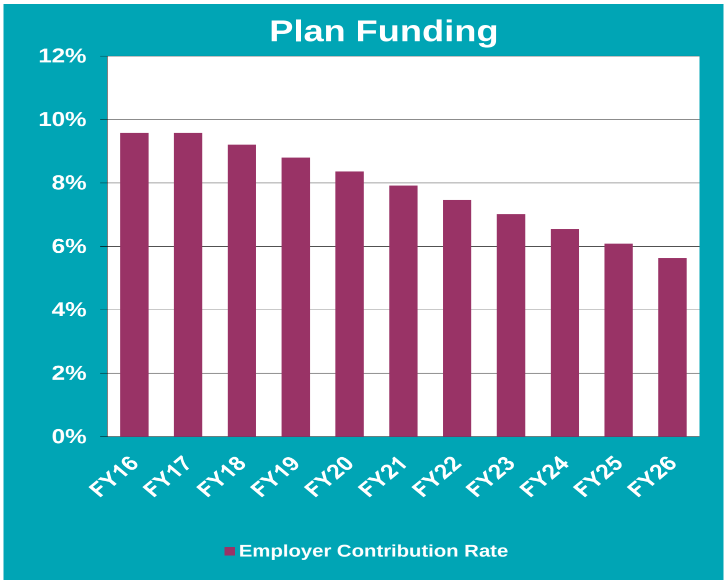
These graphs show the expected progress of the Plan over the next ten years, assuming the Plan's assets earn 7.2% on a *market value* basis and assuming all assumptions are exactly met, including that the ADC amounts are made in full. The chart entitled "Plan Funding" shows a decrease in the State ADC rate from 9.58% in FY 2017, determined by the current valuation, to 7.48% at the end of this period, absent further gains or losses.

The "Assets and Liabilities" graph shows the projected funded ratios of the Plan over the next ten years. The Plan's funded status is projected to grow steadily from 92% to 96%, assuming all assumptions are exactly met.



SECTION I – BOARD SUMMARY

Projections with Asset Returns of 8.2%

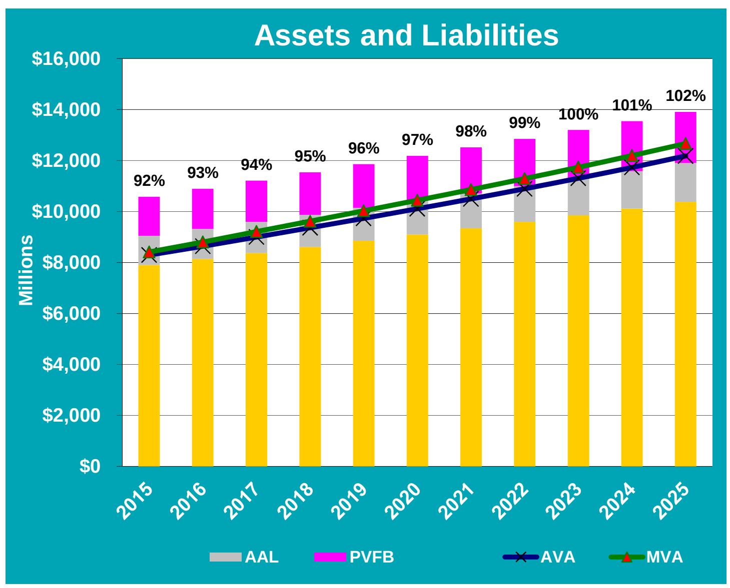


The Plan's investment earnings will affect the future funding status of the Plan. These two graphs show what the next ten years would be expected to look like if the Plan's investment performance is 8.2% each year, 1.0% higher than the valuation investment rate of return assumption.

These two graphs assume all other assumptions are exactly met, including State contributions equal to the full actuarially determined amounts.

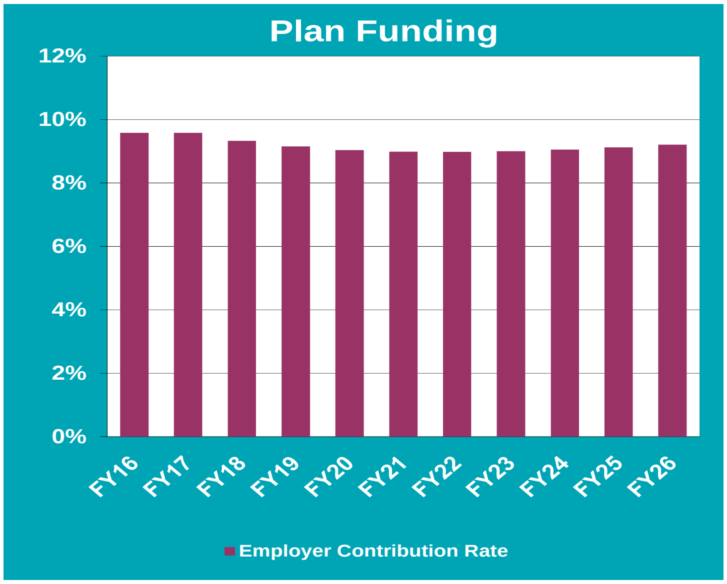
The "Plan Funding" graph shows that the State ADC rate under this scenario decreases even more than the baseline scenario, dropping to approximately 5.6% of payroll at the end of the projected period.

The "Assets and Liabilities" graph shows that the Plan would reach a 102% funded ratio by 2025 under this scenario, an improvement over the baseline scenario's 96%.



SECTION I – BOARD SUMMARY

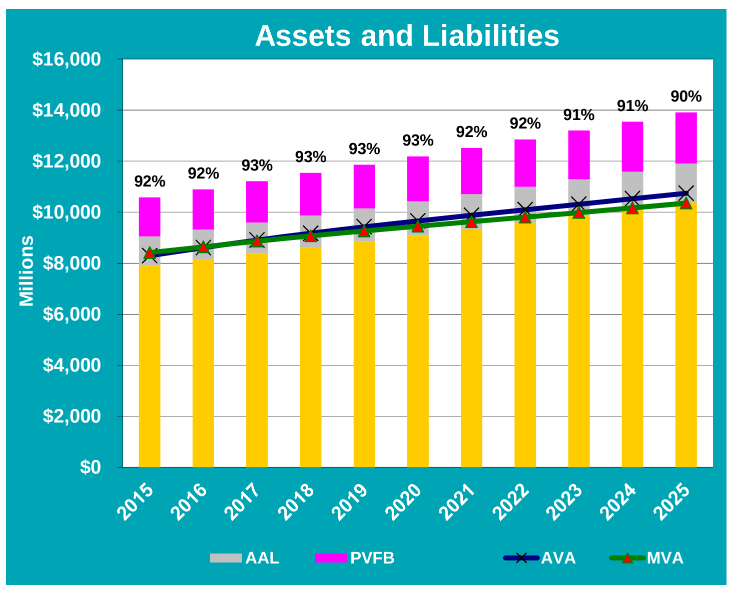
Projections with Asset Returns of 6.2%



The graphs on this page show projections of the Plan's funding status assuming the Plan's investment performance is 6.2% each year of the projection, 1.0% lower than the valuation investment rate of return assumption. While the current remaining unrecognized gains would cushion the new annual losses for a period, eventually the new losses would result in the funded ratio dropping and the required contributions increasing compared to the baseline scenario. This effect demonstrates the importance of investment earnings on the Plan's future funding needs.

Note that these projections assume all other assumptions are exactly met, including payment of State contributions equal to the full actuarially determined contribution.

Under this scenario, the State's ADC rate decreases to approximately 9.2% of payroll, compared to 7.5% in the baseline, and the funded ratio as of 2025 decreases to 90%, compared to 96% in the baseline scenario.



SECTION I – BOARD SUMMARY

Table I-1
Summary of Principal Plan Results

Valuation as of:	June 30, 2014	June 30, 2015	% Change
Member Counts			
Active Members	35,825	35,998	0.48%
Disabled Members	1,769	1,702	(3.79%)
Retirees and Beneficiaries	22,498	23,390	3.96%
Terminated Vested Members	2,830	3,184	12.51%
Terminated Non-Vested Members	741	809	9.18%
Long-term Disability Members	544	583	7.17%
Total	**64,207**	**65,666**	**2.27%**
Covered Payroll of Active Members*	$ 1,902,292,800	$ 1,911,643,500	0.49%
Annual Benefit Payments for Retirees, Disabled Members, and Beneficiaries	$ 506,851,700	$ 538,479,900	6.24%
Assets and Liabilities			
Actuarial Liability (AL)	$ 8,740,071,700	$ 9,051,033,500	3.56%
Actuarial Value of Assets (AVA)	8,067,032,000	8,289,879,300	2.76%
Unfunded AL (UAL)	$ 673,039,700	$ 761,154,200	13.09%
Funded Ratio AVA Basis (AVA/AL)	92.3%	91.6%	
Funded Ratio on MVA Basis (MVA/AL)	96.0%	92.9%	
Present Value of Accrued Benefits (PVAB)	$ 7,589,855,500	$ 7,900,569,100	4.09%
Market Value of Assets (MVA)	8,389,764,700	8,409,335,500	0.23%
Unfunded PVAB	$ (799,909,200)	$ (508,766,400)	36.40%
Accrued Benefit Funded Ratio	110.5%	106.4%	
State Contribution Rate	**Fiscal Year 2016**	**Fiscal Year 2017**	
Entry Age Normal Cost	6.93%	6.66%	
UAL Amortization Payment	2.35%	2.62%	
Administrative Expense	0.30%	0.30%	
Actuarially Determined Contribution (ADC)	9.58%	9.58%	

* Assumes one year of payroll increase projection, representing payroll beginning on each valuation date.

SECTION II – ASSETS

Pension plan assets play a key role in the financial operation of the plan and in the decisions that 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 affect benefit levels, State actuarially determined contributions, and the ultimate security of members' benefits.

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

- **Disclosure** of the Plan's assets at June 30, 2014 and June 30, 2015;
- 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 **cash flows** for the next ten years.

Market Value of Assets Disclosure

The market values of assets represent "snap-shot" or "cash-out" values that provide the principal basis for measuring financial performance from one year to the next. However, market values can fluctuate widely with swings in the marketplace, and as such are usually not suitable for budgeting and long-range planning.

Table II-1 below shows the market values as of June 30, 2014 and June 30, 2015, along with the changes between the two.

Table II-1
Changes in Market Value of Assets

Market Value of Assets – June 30, 2014		**$ 8,389,764,700**
Additions		
Member Contributions	$ 55,782,100	
State Contributions	178,293,000	
PRI Transfers	32,654,000	
Investment Returns	299,824,800	
Total Additions	**$ 566,553,900**	
Deductions		
Benefit Payments	$ 539,630,300	
Administrative Expenses	7,352,800	
Total Deductions	**$ 546,983,100**	
Market Value of Assets – June 30, 2015		**$ 8,409,335,500**

Actuarial Value of Assets

The actuarial value of assets represents a "smoothed" value developed by the actuary to reduce, or eliminate, erratic results that could develop from short-term fluctuations in the market value of assets. The actuarial value for this plan equals the expected actuarial value of assets, developed from the immediately prior valuation, plus 20% of the difference between the actual market value of assets and that expected actuarial value of assets at the valuation date. For the June 30, 2015 valuation, the Board of Trustees elected to exclude recognition of $78 million of gains in developing the actuarial value of assets. The table below illustrates the calculation of the actuarial value of assets as of June 30, 2015.

Table II-2
Development of Actuarial Value of Assets

1.	Actuarial Value of Assets at June 30, 2014	$ 8,067,032,000
2.	Amount in (1) with interest to June 30, 2015 at 7.20% per year	$ 8,647,858,400
3.	State, PRI and member contributions for the Plan Year ended June 30, 2015	266,729,100
4.	Interest on contributions assuming payments made uniformly throughout the year to June 30, 2015 at 7.20% per year	9,602,200
5.	Disbursements from Trust except investment expenses, June 30, 2014 through June 30, 2015	546,983,100
6.	Interest on disbursements to June 30, 2015 at 7.20% per year	19,691,400
7.	Expected Actuarial Value of Assets at June 30, 2015 = (2) + (3) + (4) – (5) – (6)	$ 8,357,515,200
8.	Actual Market Value of Assets at June 30, 2015	$ 8,409,335,500
9.	Excess of (8) over (7)	51,820,300
10.	Amount of past Gains excluded from Recogniton	(78,000,000)
11.	Actuarial Value of Assets at June 30, 2015 = (7) + 20% of (9) + (10)	$ 8,289,879,300

Investment Performance

The market value of assets (MVA) returned 3.6% during 2015, which is less than the assumed 7.2% investment rate of return. The actuarial value of assets (AVA) returned 6.4% over this same year, reflecting the Board of Trustees election to exclude $78 million of gains from recognition for the June 30, 2015 valuation and the standard asset smoothing method being utilized by the Plan for the measurement of the actuarial value of assets. Since only 20% of the gain or loss from the performance of the Plan is typically recognized in a given year under the asset smoothing method, in periods of very good performance, the AVA can lag significantly behind the MVA, and in a period of negative returns, the AVA does not decline as rapidly as the MVA.

Projection of Cash Flows

Table II-3
Cash Flow Projections

Year Beginning July 1,	Expected Benefit Payments	Expected Contributions*
2015	$ 559,179,000	$ 287,217,000
2016	579,855,000	286,056,000
2017	601,705,000	273,174,000
2018	623,626,000	281,396,000
2019	645,595,000	278,198,000
2020	666,914,000	286,544,000
2021	688,139,000	295,140,000
2022	707,755,000	303,995,000
2023	727,678,000	313,115,000
2024	747,551,000	322,508,000

* Expected contributions include State contributions, member contributions, and PRI transfers. For illustration purposes, we have assumed the State contribution rate will remain at 9.58% from FYE 2017 forward and that payroll will increase at the actuarially assumed rate of 3.00% per year.

Expected benefit payments are projected for the closed group valued at June 30, 2015. Projecting any further than ten years using a closed group would not yield reliable projections due to the omission of new hires in the benefit payments, compounded by their inclusion in the expected contributions.

SECTION III – LIABILITIES

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

- **Disclosure** of the Plan's liabilities at June 30, 2014 and June 30, 2015; and
- Statement of **changes** in these liabilities during the year.

Disclosure

Three liability measurements are calculated and presented in this report. Each type is distinguished by the purpose, or purposes, for which they are used.

- **Present Value of Benefits (PVB):** Used for analyzing the financial outlook of plans, this represents the amount of money needed today to fund all future benefits and expenses of a plan, assuming current members continue to accrue benefits and there are no new entrants, and that all actuarial assumptions are met.

- **Actuarial Liability (AL):** Used for funding calculations and GASB disclosures, this liability is calculated by taking the present value of benefits (PVB) and subtracting the present value of future member contributions (PVFEEC) and the present value of future State normal costs (PVFNC) under an acceptable actuarial funding method. This Plan uses the **Entry Age Normal** funding method.

- **Present Value of Accrued Benefits (PVAB):** Used for communicating the current level of liabilities, this liability represents the total amount of money needed today to fund the current accrued obligations of a plan, assuming no future accruals of benefits. These liabilities are also required for some accounting purposes (Topic No. 960) and are sometimes used as part of assessing whether a plan can meet its current benefit commitments. Note that this also assumes that all actuarial assumptions are met, including the assets earning 7.2% per year.

Note that none of the liability amounts disclosed in this report is appropriate for measuring a settlement of the plan's liabilities.

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

SECTION III – LIABILITIES

Table III-1
Liabilities and Net (Surplus)/Unfunded Amounts

	June 30, 2014	June 30, 2015
Present Value of Benefits		
Active Member Benefits	$ 5,216,382,800	$ 5,234,868,800
Retiree, Beneficiary, Disabled, and Terminated Members Benefits	5,055,166,500	5,347,168,200
Present Value of Benefits (PVB)	**$ 10,271,549,300**	**$ 10,582,037,000**
Market Value of Assets (MVA)	$ 8,389,764,700	$ 8,409,335,500
Future Member Contributions	496,700,800	529,176,400
Future State Contributions & PRI Fund Transfers	1,385,083,800	1,643,525,100
Total Resources	**$ 10,271,549,300**	**$ 10,582,037,000**
Actuarial Liability		
Present Value of Benefits (PVB)	$ 10,271,549,300	$ 10,582,037,000
Present Value of Future State Normal Costs (PVFNC)	1,034,776,800	1,001,827,100
Present Value of Future Member Contributions (PVFEEC)	496,700,800	529,176,400
Actuarial Liability (AL=PVB–PVFNC–PVFEEC)	**$ 8,740,071,700**	**$ 9,051,033,500**
Actuarial Value of Assets (AVA)	8,067,032,000	8,289,879,300
Net (Surplus)/Unfunded AL (AL – AVA)	**$ 673,039,700**	**$ 761,154,200**
Present Value of Accrued Benefits		
Present Value of Benefits (PVB)	$ 10,271,549,300	$ 10,582,037,000
Present Value of Future Benefit Accruals (PVFBA)	2,681,693,800	2,681,467,900
Present Value of Accrued Benefits (PVAB=PVB–PVFBA)	**$ 7,589,855,500**	**$ 7,900,569,100**
Market Value of Assets (MVA)	$ 8,389,764,700	$ 8,409,335,500
Net (Surplus)/Unfunded PVAB (PVAB – MVA)	**$ (799,909,200)**	**$ (508,766,400)**

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 entrants 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 assumptions
- A change in actuarial methods

Unfunded liabilities (or surpluses) will change because of all of the above as well as due to changes in plan assets resulting from:

- State 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 that are of particular significance, potentially affecting the long-term financial outlook of the Plan. Below we present key changes in liabilities since the last valuation.

Table III-2
Liability Changes

(In Millions)	Present Value of Benefits	Actuarial Liability	Present Value of Accrued Benefits
Liabilities June 30, 2014	$ 10,272	$ 8,740	$ 7,590
Liabilities June 30, 2015	10,582	9,051	7,901
Liability Increase (Decrease)	310	311	311
Change Due to:			
PRI	44	44	44
Actuarial (Gain)/Loss	NC *	(24)	NC *
Benefit Changes	10	10	10
Benefits Accumulated and Other Sources	256	281	257

* NC = not calculated.

SECTION III – LIABILITIES

Table III-3 below provides additional information about the liability measurements for funding purposes as of both the current and the immediately prior valuations.

Table III-3
Actuarial Liabilities for Funding

		June 30, 2014	June 30, 2015
1.	Actuarial Liabilities		
	Retiree, Beneficiary, Disabled, and Terminated Members Benefits	$ 5,055,166,500	$ 5,347,168,200
	Active Members	3,684,905,200	3,703,865,300
	Total Actuarial Liability	**$ 8,740,071,700**	**$ 9,051,033,500**
2.	Actuarial Value of Assets	$ 8,067,032,000	$ 8,289,879,300
3.	Unfunded Actuarial Liability (UAL)	$ 673,039,700	$ 761,154,200
4.	Present Value of Outstanding PRI Transfers	$ 69,396,200	$ 82,175,400
5.	**Net Base for 20-Year UAL Amortization (3-4)**	**$ 603,643,500**	$ **678,978,800**

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 are 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 fairly stable and predictable.

For this Plan, the funding method employed is the **Entry Age Normal** actuarial funding method. Under this method, there are three components to the total contribution: the **normal cost contribution**, the **unfunded actuarial liability contribution** (UAL contribution), and the **administrative expense contribution**.

The normal cost contribution 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 and dividing it by the value, also at entry age, of the member's expected future salary. Then, this total normal cost rate is reduced by the member contribution rate to produce the State normal cost rate for each member. The State normal cost rate times payroll for each active member equals the State normal cost. The sum of the State normal cost amounts for all active members is then divided by the covered payroll to produce the State normal cost contribution rate.

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

The UAL contribution rate is calculated by amortizing this UAL, after subtracting the present value of scheduled PRI transfers as well, over an open 20-year period. All payments are determined assuming total pay increases by the annual inflation rate of 3.00%.

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 State contribution rates for the Plan for this valuation and the immediately prior one.

Table IV-1
State Contribution Rate

	June 30, 2014 Fiscal Year 2016	June 30, 2015 Fiscal Year 2017
Entry Age Normal Cost Rate	6.93%	6.66%
UAL Amortization Payment	2.35%	2.62%
Administrative Expense	0.30%	0.30%
Actuarially Determined Contribution	9.58%	9.58%

SECTION IV – CONTRIBUTIONS

Table IV-2 below provides additional detail about the development of the State contribution rate as well as the expected dollar amounts these rates will result in for FY 2017.

Table IV-2
Expected FY 2017
State Contributions

	In Dollars	As % of Payroll
1. Present Value of Projected Benefits Attributable to:		
a. Total Normal Cost	$ 191,355,600	10.01%
b. Expected Member Contributions	64,040,100	3.35%
c. State Normal Cost (a) – (b)	$ 127,315,500	6.66%
2. Amortization of Unfunded Liability	50,043,500	2.62%
3. Allowance for Administrative Expense	5,734,900	0.30%
4. Total State Actuarially Determined Contribution Rate (1) + (2) + (3)	$ 183,093,900	9.58%

SECTION V – ACCOUNTING STATEMENT INFORMATION

ASC Topic No. 960 of the Financial Accounting Standards Board (FASB) requires plans subject to it to disclose certain information regarding its funded status. Statement No. 67 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.

Disclosures based on FASB ASC Topic No. 960 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.

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. The relevant amounts as of June 30, 2014 and June 30, 2015 are exhibited in Table V-1, which also includes a reconciliation of liabilities determined as of the prior valuation, July 1, 2014, to the liabilities as of June 30, 2015.

This valuation contains information reported in the June 30, 2015 Comprehensive Annual Financial Report (CAFR) of Delaware PERS under GASB Statement No. 67. Disclosures are based on the use of updated procedures to roll forward the 2014 valuation results. The calculation of Net Pension Liability in Table V-2 shows the amounts disclosed for the plan year June 30, 2015, based on the 2014 liability valuation, as well as a projection of the anticipated June 30, 2016 disclosures, based on 2015 liability valuations, assuming all actuarial assumptions are met over the coming year.

Tables V-3 through V-5 are exhibits to be used for the State's CAFR. 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. The Government Finance Officers Association (GFOA) has named this exhibit the Solvency Test. None of the liabilities or assets shown are appropriate for settlement purposes. Furthermore, the Solvency Test does not accurately depict a Plan's future financial condition but rather is a test developed by the GFOA to assess the level of funding that relies on the payroll for future hires to pay for the benefits that have already been accrued by the current population. This valuation does not contain any information reported based on the new GASB Statement No. 68 that will be effective for the State beginning in its Fiscal Year 2015 CAFR.

SECTION V – ACCOUNTING STATEMENT INFORMATION

Table V-1
Accounting Statement Disclosure and Reconciliation of Present Value of Accrued Benefits

	June 30, 2014	June 30, 2015
FASB ASC Topic No. 960 Basis		
1. Present Value of Accrued Benefits		
a. Members Currently Receiving Payments	$ 4,901,957,100	$ 5,172,569,500
b. Former Vested Members (and LTDs)	153,209,400	174,598,700
c. Active Members	2,534,689,000	2,553,400,900
2. Total Present Value of Accrued Benefits (1 (a) + 1(b) + 1(c))	$ 7,589,855,500	$ 7,900,569,100
3. Assets at Market Value	8,389,764,700	8,409,335,500
4. Unfunded Present Value of Accrued Benefits (2 – 3)	$ (799,909,200)	$ (508,766,400)
5. Ratio of Assets to Present Value of Benefits (3 / 2)	110.5%	106.4%
Reconciliation of Present Value of Accrued Benefits		
Actuarial Present Value of Accrued Benefits at June 30, 2014		$ 7,589,855,500
Increase (Decrease) During Year Attributable to:		
Passage of Time		527,042,900
Benefits Paid – FY 2015		(539,630,300)
Benefit Change		10,570,000
PRI		43,621,000
Benefits Accrued, Other Gains/Losses		269,110,000
Net Increase (Decrease)		310,713,600
Actuarial Present Value of Accrued Benefits at June 30, 2015		$ 7,900,569,100

SECTION V – ACCOUNTING STATEMENT INFORMATION

Table V-2
GASB No. 67 Disclosures

	June 30, 2015	Estimated June 30, 2016
Total Pension Liability		
Service cost	**$ 192,046,000**	**$ 191,356,000**
Interest	627,925,000	645,671,000
Changes in benefit terms	54,191,000	0
Differences between expected and actual experience	(17,908,000)	(23,571,000)
Changes in assumptions	0	0
Benefit payments, including refunds of member contributions	(539,630,000)	(559,179,000)
Net change in Total Pension Liability	**$ 316,624,000**	**$ 254,277,000**
Total Pension Liability - beginning	**$ 8,757,980,000**	**$ 9,074,604,000**
Total Pension Liability - ending (a)	**$ 9,074,604,000**	**$ 9,328,881,000**
Plan Fiduciary Net Position		
Contributions - State	$ 178,293,000	$ 183,135,000
Contributions - Non-employer	32,654,000	40,042,000
Contributions - Member	55,782,000	64,040,000
Net investment income	299,825,000	595,649,000
Benefit payments, including refunds of member contributions	(539,630,000)	(559,179,000)
Administrative expenses	(7,353,000)	(5,735,000)
Net change in Plan Fiduciary Net Position	**$ 19,571,000**	**$ 317,952,000**
Plan Fiduciary Net Position - beginning	**$ 8,389,765,000**	**$ 8,409,336,000**
Plan Fiduciary Net Position - ending (b)	**$ 8,409,336,000**	**$ 8,727,288,000**
Plan Net Pension Liability (Asset) - ending [(a)-(b)]	**$ 665,268,000**	**$ 601,593,000**

Items printed in red will be replaced with actual amounts once known at the end of FY 2016.

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, 2015
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*	7.2%
Projected salary increases*	3.5%-11.5%
Cost-of-living adjustments	ad hoc
* Includes inflation at	3.00%

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 Board of Trustees further modified the investment rate of return and inflation assumptions for the 2014 Plan Year.

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

SECTION V – ACCOUNTING STATEMENT INFORMATION

Table V-4
Analysis of Financial Experience

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	2010	2011	2012	2013	2014	2015
Investment Income on Actuarial Assets	$ (224,949)	$ (8,726)	$ (88,902)	$ (31,048)	$ 115,262	$ 10,364
Combined Liability Experience	34,271	26,105	(79,091)	71,572	17,908	23,571
(Loss)/Gain During Year from Financial Experience	$ (190,678)	$ 17,379	$ (167,993)	$ 40,524	$ 133,170	$ 33,935
Non-Recurring Items	0	(173,261)	(39,896)	(84,221)	(98,842)	(132,191)
Composite Gain (or Loss) During Year	$ (190,678)	$ (155,882)	$ (207,889)	$ (42,697)	$ 34,328	$ (98,256)

Table V-5
Solvency Test
Aggregate Accrued Liabilities for

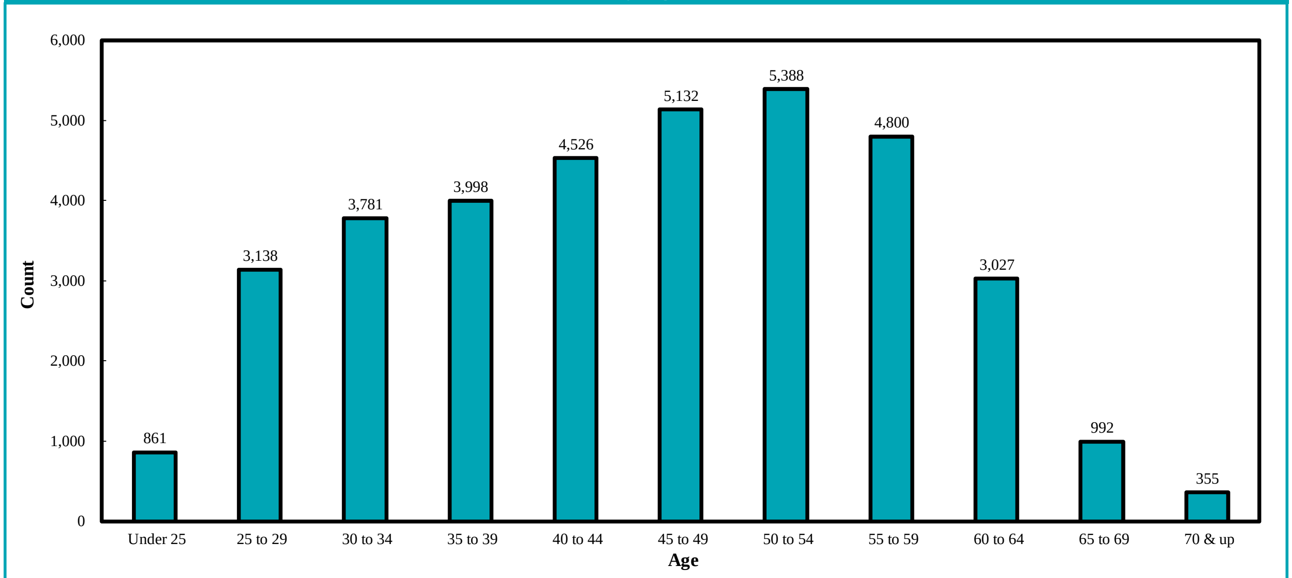
Valuation Date June 30,	(expressed in thousands) Active Member Contributions (1)	Retirees & Beneficiaries (2)	Active Member State Financed Contributions (3)	Actuarial Value of Reported Assets	Portion of Accrued Liabilities Covered by Reported Assets (1)	(2)	(3)
2015	$ 657,050	$ 5,172,570	$ 3,221,414	$ 8,289,879	100%	100%	76%
2014	633,353	4,901,957	3,204,762	8,067,032	100	100	79
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

APPENDIX A – MEMBERSHIP INFORMATION

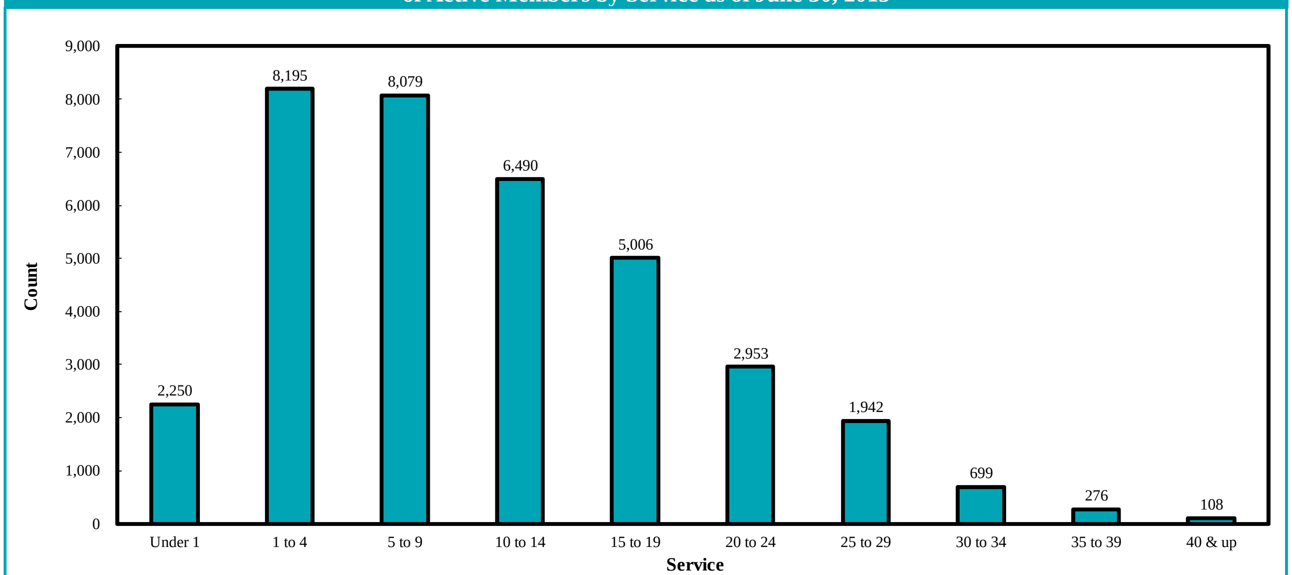
Delaware State Employees' Pension Plan Population Distribution of Active Members by Age and Service as of June 30, 2015											
Counts By Age/Service											
	Service										
Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	**Total**
Under 25	394	464	3	0	0	0	0	0	0	0	861
25 to 29	524	1,889	711	14	0	0	0	0	0	0	3,138
30 to 34	307	1,269	1,622	569	14	0	0	0	0	0	3,781
35 to 39	232	970	1,117	1,249	421	9	0	0	0	0	3,998
40 to 44	217	858	1,021	1,021	1,104	286	19	0	0	0	4,526
45 to 49	206	920	1,052	948	881	806	309	10	0	0	5,132
50 to 54	155	778	969	1,027	912	680	670	186	11	0	5,388
55 to 59	138	551	794	845	921	627	516	293	109	6	4,800
60 to 64	59	334	503	544	518	416	324	158	121	50	3,027
65 to 69	14	122	204	195	175	106	78	38	26	34	992
70 & up	4	40	83	78	60	23	26	14	9	18	355
Total	2,250	8,195	8,079	6,490	5,006	2,953	1,942	699	276	108	35,998

APPENDIX A – MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Population Distribution of Active Members by Age as of June 30, 2015



Delaware State Employees' Pension Plan Population Distribution of Active Members by Service as of June 30, 2015

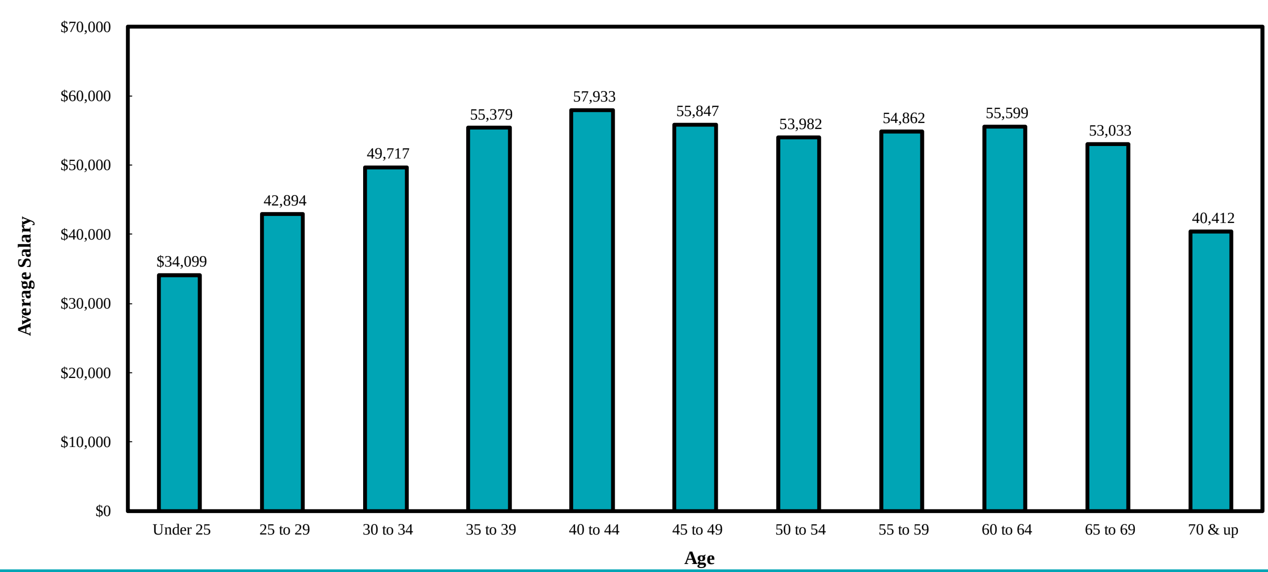


APPENDIX A – MEMBERSHIP INFORMATION

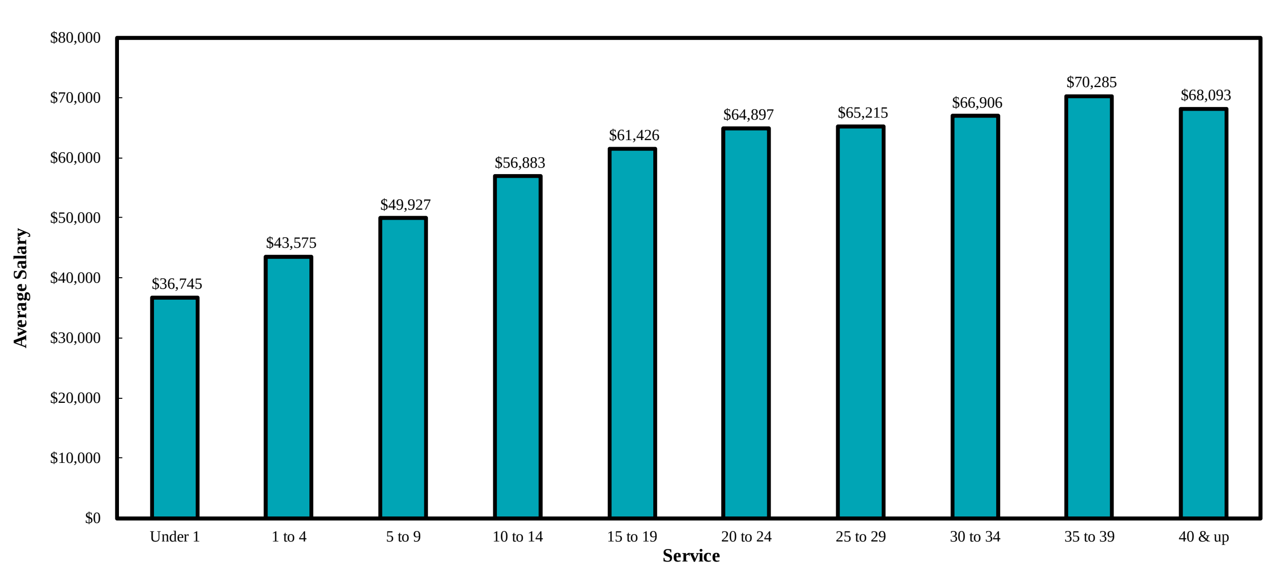
Delaware State Employees' Pension Plan Salary Distribution of Active Members by Age and Service as of June 30, 2015											
Average Salary by Age/Service											
	Service										
Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
Under 25	$ 31,481	$ 36,342	$ 30,961	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 34,099
25 to 29	34,889	43,152	48,276	34,326	0	0	0	0	0	0	42,894
30 to 34	36,911	46,004	52,497	57,148	43,002	0	0	0	0	0	49,717
35 to 39	39,084	46,362	54,133	63,305	64,959	53,988	0	0	0	0	55,379
40 to 44	39,027	45,847	52,976	61,605	70,560	65,203	45,577	0	0	0	57,933
45 to 49	41,774	43,293	48,955	56,139	63,789	71,017	62,939	56,528	0	0	55,847
50 to 54	37,500	42,346	46,774	53,362	56,134	63,030	67,757	64,311	50,578	0	53,982
55 to 59	39,918	43,178	46,277	52,725	56,516	62,289	65,710	68,355	67,203	62,540	54,862
60 to 64	40,275	40,549	47,577	53,294	57,319	61,368	65,147	68,682	73,267	68,227	55,599
65 to 69	52,487	40,427	44,941	49,745	56,588	63,397	57,759	65,970	78,375	70,609	53,033
70 & up	21,405	24,729	30,943	37,661	43,523	47,926	54,517	60,968	68,237	64,821	40,412
Total	$ 36,745	$ 43,575	$ 49,927	$ 56,883	$ 61,426	$ 64,897	$ 65,215	$ 66,906	$ 70,285	$ 68,093	$ 53,103

APPENDIX A – MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Salary Distribution of Active Members by Age as of June 30, 2015



Delaware State Employees' Pension Plan Salary Distribution of Active Members by Service as of June 30, 2015



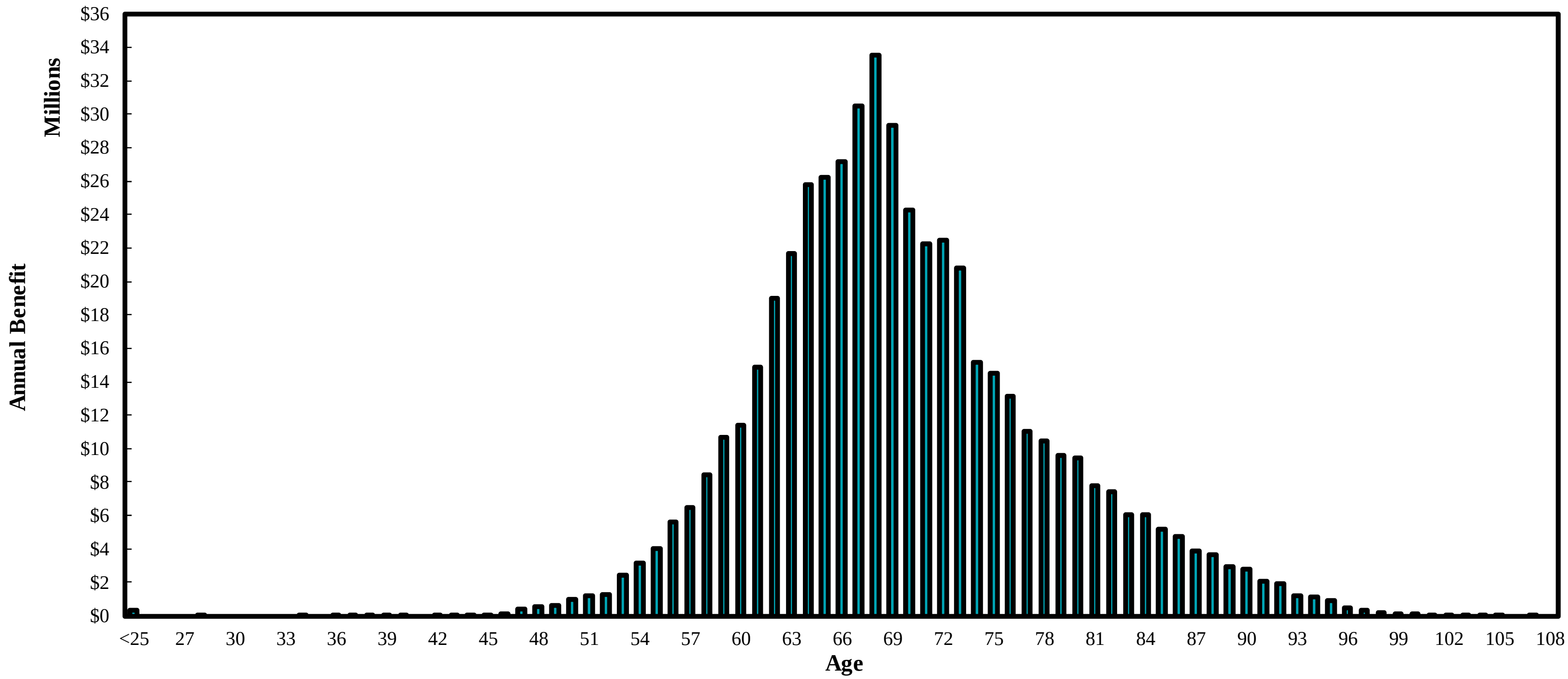
APPENDIX A – MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Annual Benefit Distribution by Age of Retired Members and Beneficiaries as of June 30, 2015

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	40	$ 321,379	73	896	$ 20,782,120
25	0	-	74	723	15,130,743
26	0	-	75	710	14,495,062
27	0	-	76	650	13,104,879
28	1	5,381	77	605	11,063,578
29	0	-	78	578	10,487,470
30	0	-	79	540	9,577,332
31	0	-	80	564	9,414,315
32	0	-	81	521	7,771,454
33	0	-	82	497	7,444,996
34	2	7,335	83	459	6,053,781
35	0	-	84	438	6,073,664
36	2	11,960	85	403	5,146,825
37	6	30,730	86	359	4,727,482
38	3	5,865	87	313	3,896,218
39	3	36,805	88	313	3,646,188
40	1	14,989	89	245	2,957,199
41	0	-	90	236	2,770,995
42	3	20,403	91	185	2,100,839
43	6	49,068	92	172	1,900,152
44	3	43,085	93	128	1,217,483
45	8	65,395	94	112	1,124,380
46	15	110,182	95	88	914,660
47	21	396,185	96	54	508,946
48	31	556,959	97	40	340,969
49	33	655,620	98	19	220,663
50	44	989,661	99	14	102,586
51	59	1,234,480	100	12	140,754
52	60	1,254,549	101	7	51,548
53	95	2,414,954	102	3	26,132
54	124	3,179,394	103	4	26,411
55	162	4,040,544	104	1	7,056
56	207	5,632,568	105	1	4,884
57	234	6,465,569	106	0	-
58	298	8,461,401	107	1	8,058
59	370	10,674,386	108	0	-
60	393	11,384,154	109	0	-
61	500	14,846,847	110	0	-
62	616	18,961,291	111	0	-
63	835	21,688,932	112	0	-
64	941	25,819,913	113	0	-
65	1,011	26,239,347	114	0	-
66	1,055	27,185,921	115	0	-
67	1,147	30,467,330	116	0	-
68	1,296	33,517,956	117	0	-
69	1,134	29,290,369	118	0	-
70	919	24,260,133	119	0	-
71	875	22,271,573	120	0	-
72	946	22,447,524			
			Totals	23,390	$ 518,299,958

APPENDIX A – MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Annual Benefit Distribution by Age of Retired Members and Beneficiaries as of June 30, 2015



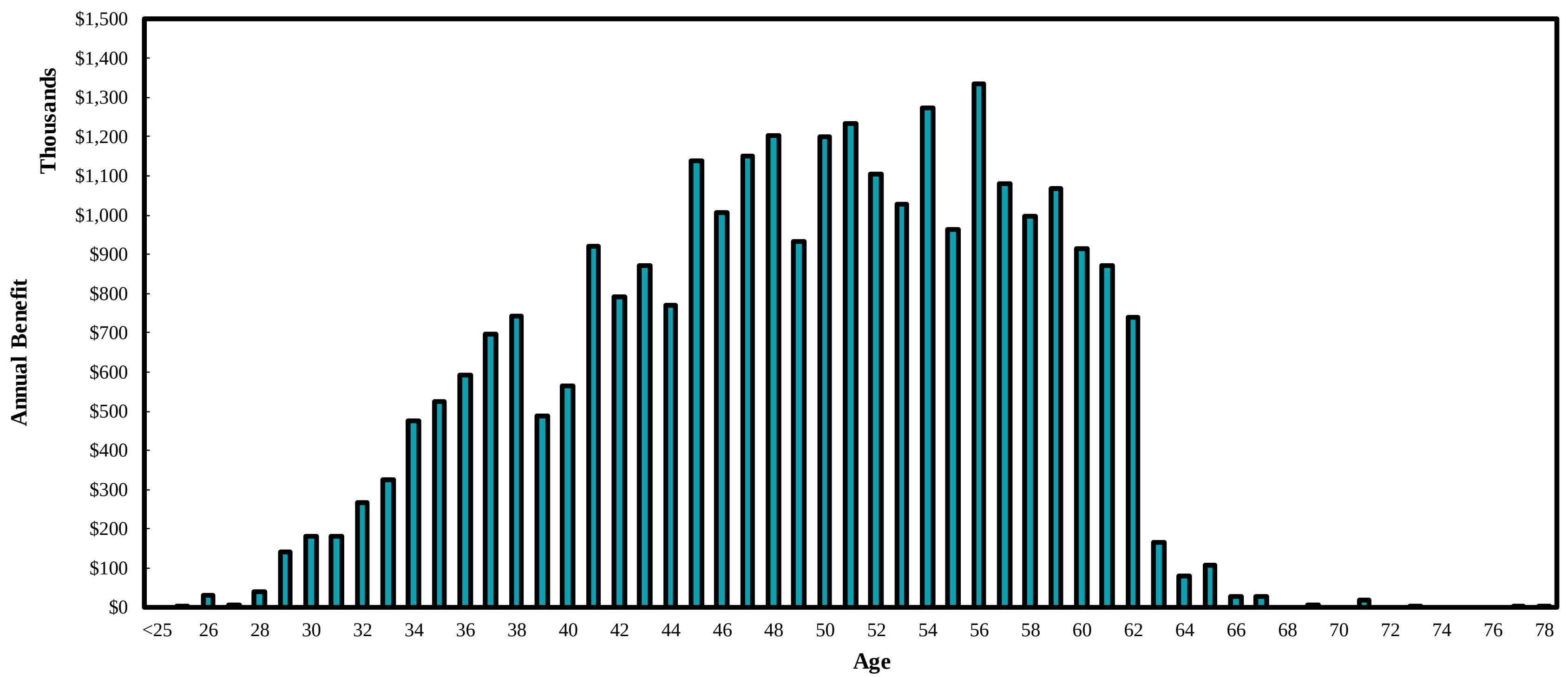
APPENDIX A – MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Annual Benefit Distribution by Age of Vested Members as of June 30, 2015

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	$ -	73	2	$ 2,813
25	1	2,264	74	0	-
26	3	30,577	75	0	-
27	3	7,730	76	0	-
28	11	38,668	77	2	3,501
29	26	139,968	78	1	3,260
30	38	181,213	79	0	-
31	29	181,171	80	0	-
32	49	268,537	81	0	-
33	50	325,705	82	0	-
34	65	474,399	83	0	-
35	82	525,553	84	0	-
36	81	592,653	85	0	-
37	84	697,327	86	0	-
38	89	743,127	87	0	-
39	64	488,542	88	0	-
40	72	563,506	89	0	-
41	98	920,469	90	0	-
42	97	790,424	91	0	-
43	106	870,499	92	0	-
44	90	770,127	93	0	-
45	99	1,136,774	94	0	-
46	113	1,006,140	95	0	-
47	111	1,149,997	96	0	-
48	120	1,201,174	97	0	-
49	113	932,964	98	0	-
50	122	1,198,410	99	0	-
51	116	1,232,811	100	0	-
52	107	1,105,962	101	0	-
53	119	1,028,807	102	0	-
54	122	1,272,162	103	0	-
55	97	962,564	104	0	-
56	122	1,335,353	105	0	-
57	115	1,080,109	106	0	-
58	110	996,821	107	0	-
59	120	1,068,147	108	0	-
60	101	913,728	109	0	-
61	99	870,945	110	0	-
62	81	739,601	111	0	-
63	14	164,393	112	0	-
64	12	80,107	113	0	-
65	12	107,583	114	0	-
66	5	28,613	115	0	-
67	6	27,535	116	0	-
68	0	-	117	0	-
69	2	7,551	118	0	-
70	0	-	119	0	-
71	3	19,098	120	0	-
72	0	-			
			Totals	3,184	$ 28,289,381

APPENDIX A – MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Annual Benefit Distribution by Age of Vested Members as of June 30, 2015



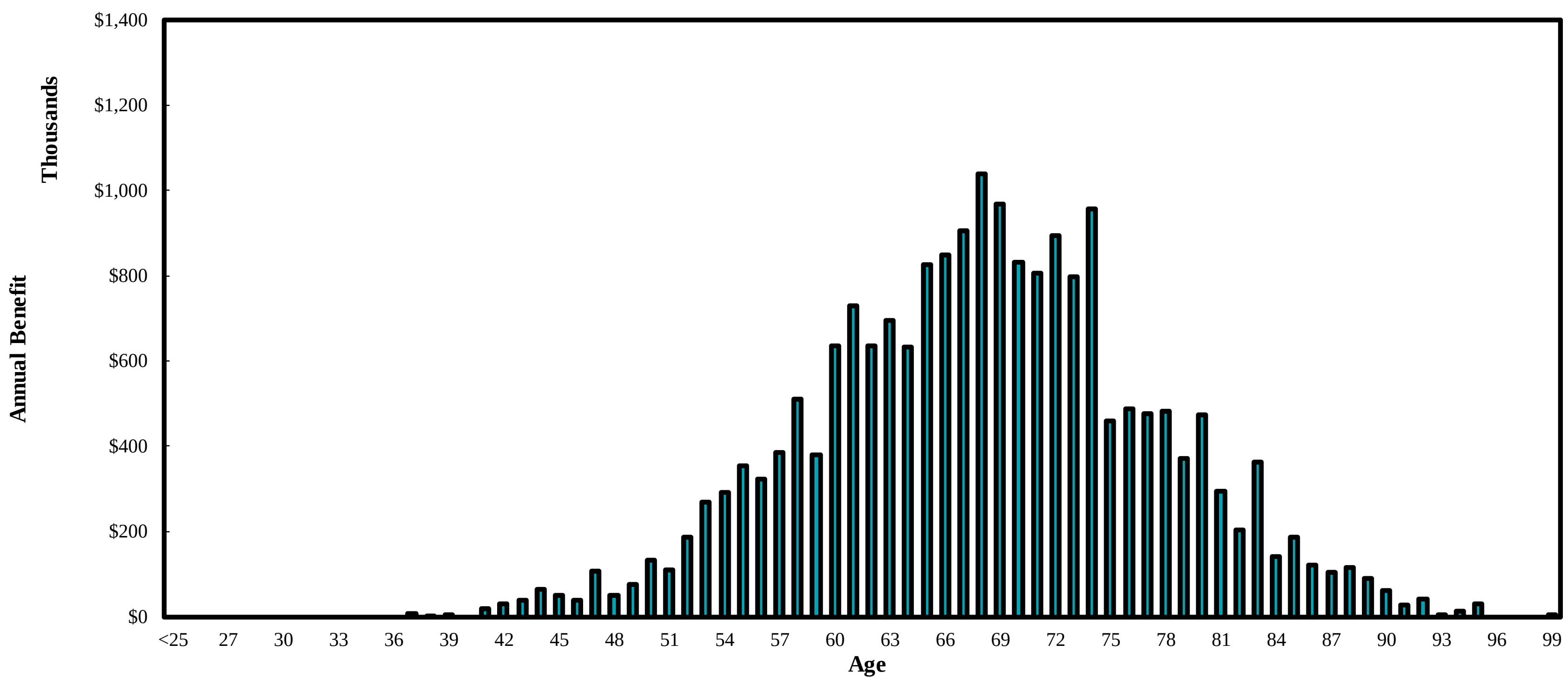
APPENDIX A – MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Annual Benefit Distribution by Age of Disabled Members as of June 30, 2015

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	$ -	73	66	$ 798,598
25	0	-	74	67	957,806
26	0	-	75	32	459,782
27	0	-	76	44	486,122
28	0	-	77	42	476,606
29	0	-	78	41	482,841
30	0	-	79	34	370,788
31	0	-	80	40	472,508
32	0	-	81	27	294,127
33	0	-	82	24	203,276
34	0	-	83	33	362,275
35	0	-	84	9	142,039
36	0	-	85	19	187,107
37	1	8,318	86	16	120,212
38	1	2,770	87	14	103,407
39	1	4,179	88	14	114,837
40	0	-	89	8	89,275
41	2	17,831	90	7	62,294
42	3	29,576	91	2	26,333
43	4	38,745	92	8	42,739
44	7	65,388	93	1	3,880
45	8	50,486	94	2	11,599
46	2	38,440	95	4	29,821
47	10	106,624	96	0	-
48	8	50,628	97	0	-
49	11	74,140	98	0	-
50	16	131,061	99	1	5,646
51	15	108,822	100	0	-
52	17	185,814	101	0	-
53	23	269,189	102	0	-
54	27	292,669	103	0	-
55	31	354,874	104	0	-
56	33	323,542	105	0	-
57	29	386,606	106	0	-
58	39	511,068	107	0	-
59	41	379,254	108	0	-
60	56	636,574	109	0	-
61	58	728,077	110	0	-
62	54	633,957	111	0	-
63	59	693,585	112	0	-
64	53	633,466	113	0	-
65	62	826,986	114	0	-
66	72	849,556	115	0	-
67	76	904,932	116	0	-
68	73	1,038,593	117	0	-
69	67	968,716	118	0	-
70	65	831,380	119	0	-
71	53	806,245	120	0	-
72	70	893,889			
			Totals	1,702	$ 20,179,898

APPENDIX A – MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Annual Benefit
Distribution by Age of Disabled Members as of June 30, 2015

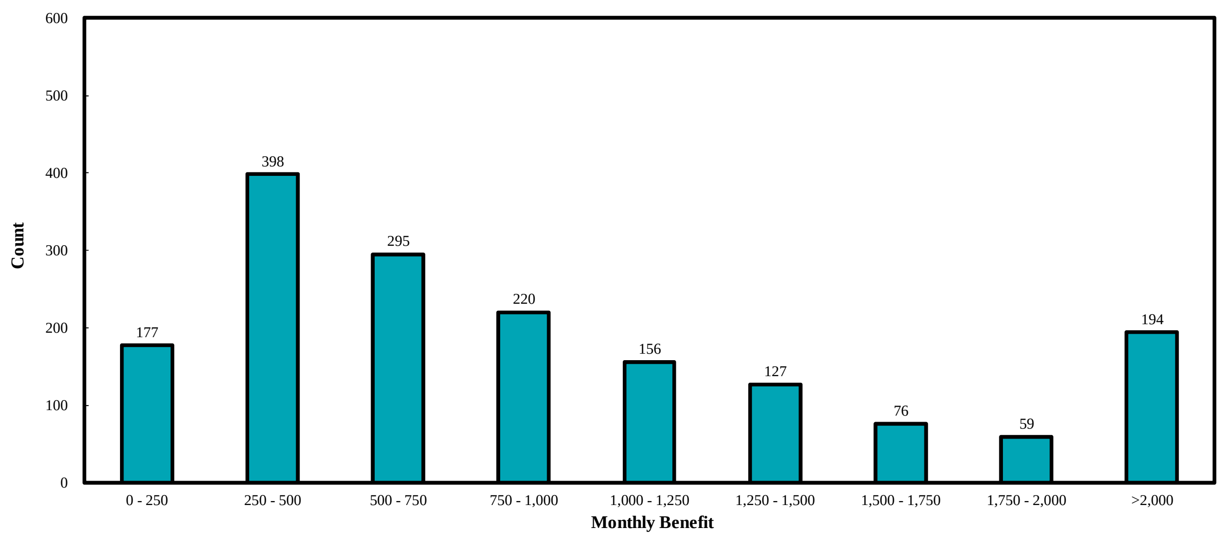


APPENDIX A – MEMBERSHIP INFORMATION

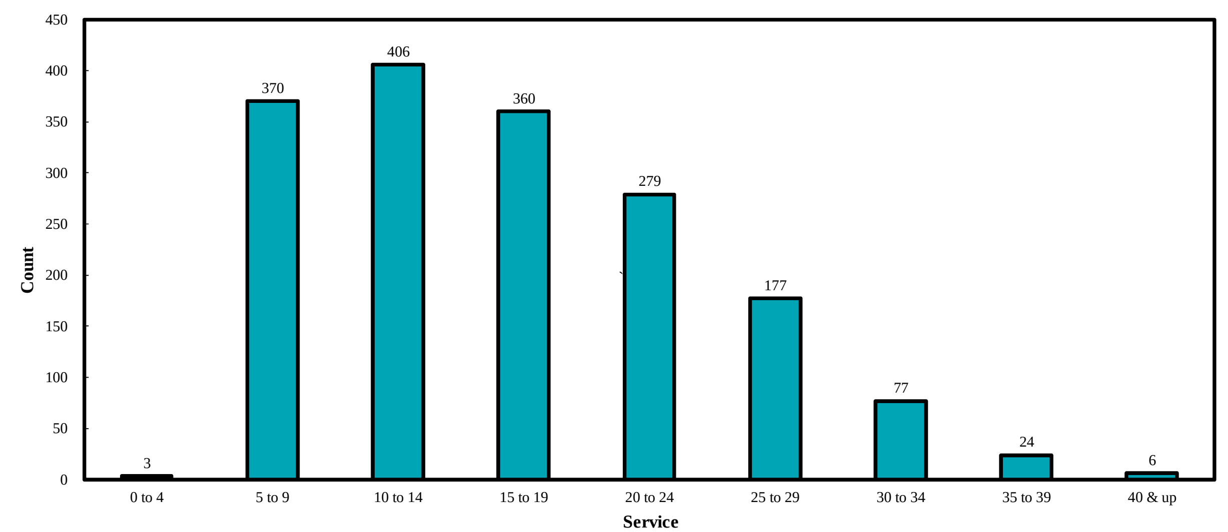
Delaware State Employees' Pension Plan Annual Benefit Distribution by Service of Disabled Members as of June 30, 2015										
Counts By Benefit/Service										
Monthly	Service									
Benefit	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
0 - 250	0	153	22	2	0	0	0	0	0	177
250 - 500	2	173	160	50	11	2	0	0	0	398
500 - 750	1	32	132	88	35	7	0	0	0	295
750 - 1,000	0	10	48	96	49	12	5	0	0	220
1,000 - 1,250	0	1	22	56	55	17	5	0	0	156
1,250 - 1,500	0	1	12	35	45	24	7	2	1	127
1,500 - 1,750	0	0	7	14	27	22	5	1	0	76
1,750 - 2,000	0	0	1	7	23	20	5	3	0	59
>2,000	0	0	2	12	34	73	50	18	5	194
Total	3	370	406	360	279	177	77	24	6	1,702

APPENDIX A – MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Annual Benefit Distribution of Disabled Members as of June 30, 2015



Delaware State Employees' Pension Plan Annual Benefit Distribution by Service of Disabled Members as of June 30, 2015



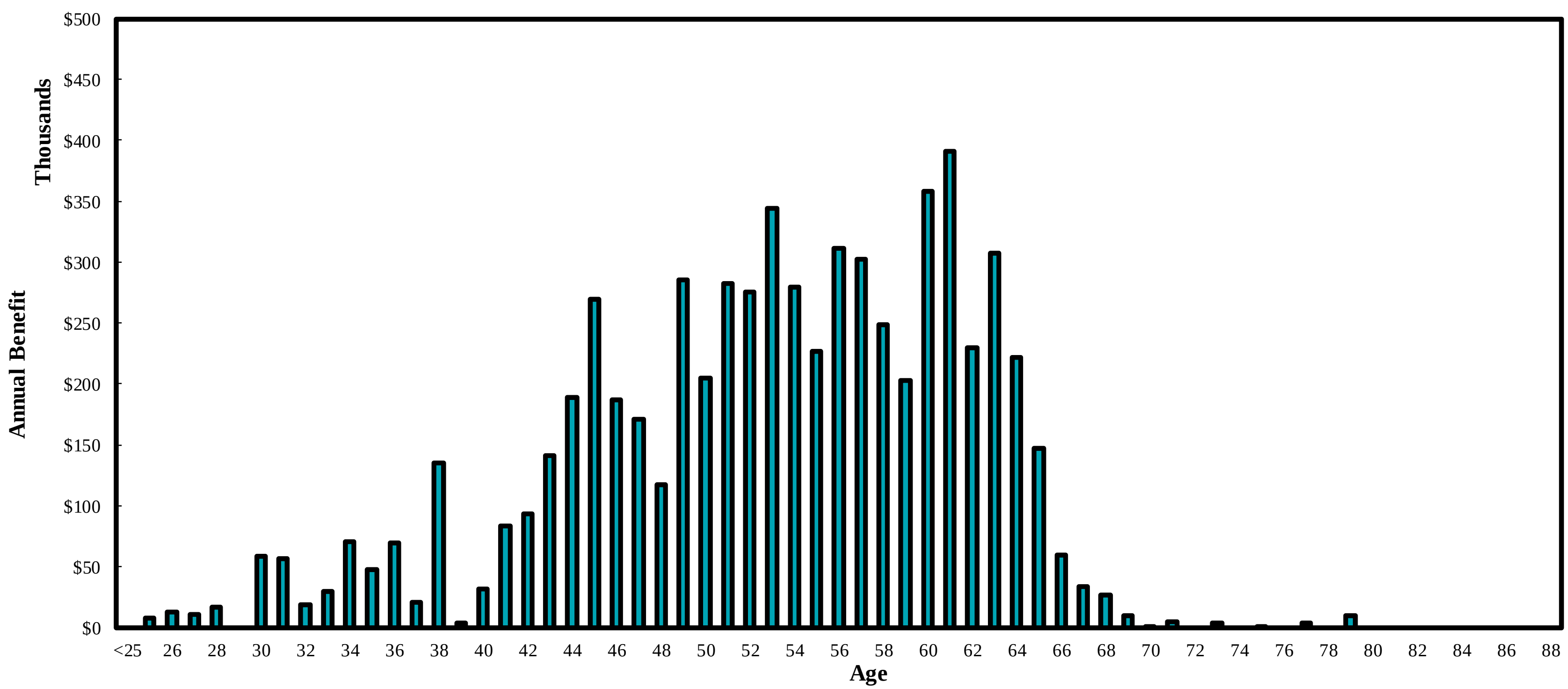
APPENDIX A – MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Annual Benefit Distribution by Age of Long-Term Disability Members as of June 30, 2015

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	$ -	73	2	$ 4,168
25	1	7,931	74	0	-
26	1	13,150	75	1	449
27	1	10,719	76	0	-
28	1	17,058	77	1	4,251
29	0	-	78	0	-
30	2	58,229	79	1	9,813
31	5	56,984	80	0	-
32	2	18,965	81	0	-
33	2	29,998	82	0	-
34	3	70,008	83	0	-
35	2	47,453	84	0	-
36	4	68,993	85	0	-
37	2	20,744	86	0	-
38	7	135,485	87	0	-
39	2	4,080	88	0	-
40	3	31,634	89	0	-
41	7	82,956	90	0	-
42	6	93,508	91	0	-
43	10	141,250	92	0	-
44	13	188,507	93	0	-
45	20	269,260	94	0	-
46	12	186,868	95	0	-
47	15	171,205	96	0	-
48	9	117,758	97	0	-
49	20	285,419	98	0	-
50	19	204,383	99	0	-
51	25	282,593	100	0	-
52	18	275,905	101	0	-
53	32	344,635	102	0	-
54	29	279,707	103	0	-
55	25	226,420	104	0	-
56	23	311,325	105	0	-
57	29	302,359	106	0	-
58	24	249,162	107	0	-
59	24	202,415	108	0	-
60	30	358,655	109	0	-
61	28	390,983	110	0	-
62	25	230,020	111	0	-
63	33	307,001	112	0	-
64	26	221,362	113	0	-
65	14	147,322	114	0	-
66	10	59,837	115	0	-
67	5	33,240	116	0	-
68	4	26,261	117	0	-
69	2	9,553	118	0	-
70	1	191	119	0	-
71	2	5,061	120	0	-
72	0	-			
			Totals	583	$ 6,615,231

APPENDIX A – MEMBERSHIP INFORMATION

Delaware State Employees' Pension Plan Annual Benefit Distribution by Age of Long Term Disability Members as of June 30, 2015



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

Rates of Healthy Active and Inactive Mortality Rates (With Projection Scale AA)		
Age	**Male**	**Female**
20	0.03%	0.02%
25	0.03	0.02
30	0.04	0.02
35	0.07	0.04
40	0.10	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

Mortality table was set in conjunction with the 2011 experience study to include a static projection to 2015. The System is embarking on a new experience study in 2016 which will determine whether the margin for future mortality improvements remains and to propose revised tables.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

b. Disabled Inactive Mortality

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

Rates of Disabled Inactive Mortality		
Age	**Male**	**Female**
40	1.97%	1.06%
45	2.22	1.24
50	2.51	1.47
55	2.88	1.79
60	3.33	2.21
65	3.91	2.77
70	4.78	3.38
75	6.39	4.54
80	8.93	6.46

c. Rates of Active Disability

Rates of Active Disability	
Age	**Rates**
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

Rates of Active Disability for those who opted into the Disability Insurance Program*	
Age	**Rates**
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.

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.

Age Select:	0	1	2	3	4	5	6	7	8	9	Ultimate
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:

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

Female Early Retirement	
Age	**Rate**
<41	0.00%
42 – 59	10.00

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Post-2011 hires:

Unisex Early Retirement	
Age	**Rate**
<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

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Pre-2012 hires:

Male Normal Retirement		
Age	**Select**	**Ultimate**
< 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

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Pre-2012 hires:

Female Normal Retirement		
Age	**Select**	**Ultimate**
<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:

Unisex Normal Retirement		
Age	**Select**	**Ultimate**
<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

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

f. Salary Increase

30-year service-based table includes an annual inflation rate of 3.00%.

Service	Increase
0	11.48%
1	9.48
2	7.49
3	5.99
4	5.74
5	5.74
10	4.50
15	4.50
20	3.75
30	3.50

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.	Investment Rate of Return:	7.20%
b.	General Wage Increase Rate:	3.00%
c.	Annual Cost-of-Living Increase Rate for Retirees:	0.00%
d.	Total Payroll Increase Rate (for Amortization):	3.00%
e.	Administrative Expenses as a Percentage of Covered Payroll:	0.30%

3. Rationale for Assumptions

The assumptions were adopted by the Board of Trustees as a result of the latest experience study performed in 2011 and covering the period July 1, 2005 through June 30, 2010.

The Board continually reviews the investment return assumption and adopted a reduced rate of 7.20% effective with the 2014 valuation, at the advice of its investment consultant.

4. Changes Since Last Valuation

None.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

1. Funding Method

The Entry Age Normal funding 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 for each active member. The normal cost plus member contributions will pay for projected benefits at retirement for each active plan participant.

The actuarial liability is that portion of the present value of projected benefits that will not be paid by future State 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 liability in excess of plan assets is amortized to develop an additional cost or savings that is added to each year's State 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 not expected to be paid through PRI transfers is amortized over a rolling 20-year period. PRI transfers are made to pay for each PRI as granted over a five-year period. These transfers are treated as a receivable for purposes of developing the state rate. All payments are determined assuming total payroll increases by the annual inflation rate. Use of a rolling amortization period means that the UAL amount is never anticipated to be fully paid off. This method was chosen to provide for a more level contribution rate over time.

2. Actuarial Value of Assets

For purposes of determining the State contribution rate to the Plan, we use an actuarial value of assets. This asset smoothing 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.

For the 2015 valuation, the Board of Trustees elected to exclude recognition of $78 million of gains in developing the actuarial value of assets.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

3. Changes Since Last Valuation and Rationale for Change

The Board of Trustees elected on October 30, 2015 to exclude recognition of $78 million of gains in developing the actuarial value of assets for the June 30, 2015 valuation. This is a partial offset to the action taken in 2014 to recognize more investment gains than would normally be done under the smoothing method. The offset was performed to stabilize the State's contribution rate to this Plan.

APPENDIX C – S SUMMARY OF PLAN PROVISIONS

1. Membership

The Plan covers full-time and regular part-time employees of the State of Delaware, which includes:

- State Department of Public Education;
- School districts' part of the State School System (the membership includes 19 school districts);
- Delaware Department of Finance, State Lottery Office;
- Delaware Department of Transportation;
- Delaware Solid Waste Authority (1986);
- Delaware State University;
- Delaware Technical & Community College;
- University of Delaware (excluding most faculty and designated professional staff); and
- State Agencies supported wholly 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 that results in deferral of taxes on the contributions.

Correctional Officers pay an additional 2% of compensation in excess of $6,000 per annum.

3. Credited Service

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

4. Final Average Compensation

Final average compensation (FAC) 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.

APPENDIX C – S SUMMARY OF PLAN PROVISIONS

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.

Correctional Officers receive a benefit of 2.45% of final average compensation in lieu of the 1.85% multiplier for years of service greater than 25.

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.

Correctional Officers receive an early retirement benefit with no reduction if they have at least 25 years of State service, including at least 20 years as a Correctional Officer.

7. Disability Benefit

Eligibility: Five years of credited service and eligible disability.

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

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 and thus will not receive a benefit from this Plan until they reach normal retirement eligibility.

8. Survivor's Benefit

Eligibility: Five years of credited service and death while active.

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. If the surviving spouse has not yet attained age 50, the benefit will be actuarially reduced for each month he or she is under 50. However, this actuarial reduction will not apply for any period in which the survivor has a dependent child.

Eligible survivors include: (1) spouse (legally married/civil union), or (2) child or children under 18, 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

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.

As an alternative to the normal form, a member may elect one of the following optional forms of payment upon service retirement or disability:

- 66 2/3% joint and survivor form with a 2% reduction in benefits;
- 75% joint and survivor form with a 3% reduction in benefits; or
- 100% joint and survivor form with a 6% reduction in benefits.

The 66 2/3% and 100% options are only available for retirement on or after January 1, 2015.

13. Cost-of-Living Adjustment

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

APPENDIX C – S SUMMARY OF PLAN PROVISIONS

14. Changes Since Last Valuation

A Post-Retirement Increase (PRI) was granted effective January 1, 2015 to those retired prior to July 1, 2013 in the amount of 1%.

The provisions of House Bill 207 from the 2013 Legislature were first effective this year. The bill provided unreduced benefits at 25 years of service to Correctional Officers. For service after 25 years they receive a higher benefit multiplier and they must pay an additional 2% of annual compensation in excess of $6,000.