# Delaware State Employees' Pension Plan 

Actuarial Valuation as of June 30, 2007

Produced by Cheiron

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December 14, 2007
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, 2007. The results of the valuation are contained in this report. The purpose of the valuation is discussed in the Foreword.

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

Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions on which our findings are based. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief. The results of this report are only applicable to the State contribution for Fiscal Year ending 2009 and rely on future plan experience conforming to the underlying assumptions. To the extent that actual plan experience deviates from the underlying assumptions, the results would vary accordingly.

We hereby certify that, to the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board, and that as Members of the American Academy of Actuaries, we meet the Qualification Standards to render the opinions contained herein.

Sincerely,
Cheiron


Fiona E. Liston, FSA
Consulting Actuary


Margaret A. Tempkin, FSA
Actuary

## DELAWARE STATE EMPLOYEES' PENSION PLAN

## FOREWORD

Cheiron has performed the actuarial valuation of the Delaware State Employees’ Pension Plan as of June 30, 2007. 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 2009; and
4) Provide specific information and documentation required by the Governmental Accounting Standards Board (GASB).

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

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

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

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

Section IV develops the State contribution rate determined using actuarial techniques.
Section V includes the required disclosures under GASB Statement number 25.
The appendices to this report contain a summary of the Plan's membership at the valuation date, a summary of the major provisions of the Plan, and the actuarial methods and assumptions used in the valuations.

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

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

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

# DELAWARE STATE EMPLOYEES' PENSION PLAN 

## SECTION I <br> BOARD SUMMARY

## General Comments

The actuarially determined contribution rate decreased from 6.26\% for FY 2008 to 5.67\% for FY 2009. The actual contribution paid in FY 2008 was $6.06 \%$, reflecting a change in the amortization methods which was legislated after the 2006 valuation report was produced. During the year ended June 30, 2007, the Plan's assets earned $15.6 \%$ on a market value basis. However, due to the Plan's asset-smoothing technique which recognizes only a portion of the gains, the return on the actuarial asset value was $10.0 \%$. This return was above the assumed rate of return of $8.0 \%$ and resulted in an actuarial gain on investments of $\$ 121$ million.

The plan also experienced an actuarial loss 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 loss added $\$ 19$ million to the 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. When a plan experiences alternating gains and losses that are small compared to the total actuarial liability, then the plan's actuarial assumptions are reasonable.

As of the June 30, 2007 actuarial valuation, the Plan's unfunded actuarial liability/(surplus) was (\$230) million. This is an increase from last year's unfunded actuarial liability/(surplus) of (\$98) million. Components of the increase in surplus include a $\$ 121$ million gain on Plan assets, a $\$ 19$ million loss on Plan liabilities, and continued amortization of past benefit improvements.

# DELAWARE STATE EMPLOYEES’ PENSION PLAN 

## SECTION I <br> BOARD SUMMARY

## Trends

Growth in Assets


The market value of assets (MVA) grew substantially over the last year, returning over $15 \%$. The determination of the plan's actuarial value of assets reflects only a portion of the return in excess of 8\%.

Over the period July 1, 1996 to June 30, 2007 the Plan's assets returned approximately $11.4 \%$ per year measured at actuarial value, compared to a valuation assumption of $8 \%$ per year.

## Assets and Liabilities

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

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

# DELAWARE STATE EMPLOYEES' PENSION PLAN 

## SECTION I <br> 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 2007 value is the rate prepared by the 2005 valuation and implemented for the period July 1, 2006 to June 30, 2007.

## 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 2.2 actives to each inactive in 1995 to 1.6 actives for each inactive today.

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


# SECTION I <br> 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 $8 \%$ on their market value. The chart entitled "Plan Funding" shows that the State rate is expected to decline as excluded investment gains are recognized by the smoothing method.

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


## SECTION I <br> BOARD SUMMARY

Projections With Asset Returns of 9.5\%


The future funding status of this Plan will be largely driven by the investment earnings. Due to the size of assets, as compared to liabilities, the Plan is in a highly leveraged position. This means that relatively minor changes in market returns can have significant effects on the Plan's status. These two charts show what the next ten years would look like with a $9.5 \%$ annual return in each year. The Plan has earned an average $11.4 \%$ per year over the ten-year period ending June 30, 2007.

As you can see, the Plan would reach $119 \%$ funding by 2017. The contribution rate would decrease in each of the next nine years at a faster rate than if the Plan earned $8 \%$.


## SECTION I <br> BOARD SUMMARY

Projections With Asset Returns of 6.5\%


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 $6.5 \%$ per year over the entire ten-year period.

Under this scenario the State's contribution rate still drops for a few years since the unrecognized gains act as a cushion against returns less than $8 \%$. Once the cushion has been exhausted the rate increases and the funding status declines.


## SECTION I <br> BOARD SUMMARY

| Delaware State Employees' Pension Plan Summary of Principal Plan Results |  |  |  |
| :---: | :---: | :---: | :---: |
| Valuation as of: | June 30, 2006 | June 30, 2007 | \% Change |
| Participant Counts |  |  |  |
| Active Participants | 34,313 | 34,374 | 0.18\% |
| Disabled Participants | 2,266 | 2,195 | (3.13\%) |
| Retirees and Beneficiaries | 16,786 | 17,388 | 3.59\% |
| Terminated Vested Participants | 1,127 | 1,079 | (4.26\%) |
| Inactive Participants | 93 | 109 | 17.20\% |
| LTD Participants | N/A | 688 | N/A |
| Total | 54,585 | 55,833 | 1.03\% |
| Annual Salaries of Active Members* | \$ 1,589,185,200 | \$ 1,654,609,400 | 4.12\% |
| Annual Retirement Allowances for Retired Members and Beneficiaries** | \$ 309,234,700 | \$ 330,202,600 | 6.78\% |
| Assets and Liabilities |  |  |  |
| Actuarial Accrued Liability (AAL) | \$ 5,901,072,200 | \$ 6,208,024,700 | 5.20\% |
| Actuarial Value of Assets | 5,998,745,700 | 6,437,916,400 | 7.32\% |
| Unfunded AAL | $(97,673,500)$ | (229,891,700) | 135.37\% |
| Funded Ratio | 101.7\% | 103.7\% |  |
| Present Value of Accrued Benefits (PVAB) | \$ 4,877,351,800 | \$ 5,159,937,800 | 5.79\% |
| Market Value of Assets | 6,133,143,900 | 6,920,607,900 | 12.84\% |
| Unfunded PVAB | $(1,255,792,100)$ | (1,760,670,100) | 40.20\% |
| Accrued Benefit Funding Ratio | 125.7\% | 134.1\% |  |
| Contributions as a Percentage of Payroll | Fiscal Year 2008 | Fiscal Year 2009 |  |
| Normal Cost Contribution | 6.85\% | 6.85\% |  |
| Unfunded Actuarial Liability Contribution | (0.94\%) | (1.53\%) |  |
| Administrative Expense | 0.35\% | 0.35\% |  |
| Total State Contribution | 6.26\% | 5.67\% |  |

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# DELAWARE STATE EMPLOYEES' PENSION PLAN 

## 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, 2006 and June 30, 2007;
- Statement of the changes in market values during the year;
- Development of the Actuarial Value of Assets;
- An assessment of investment performance; and
- A projection of the Plan's expected cashflows for the next ten years.


## Disclosure

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

The actuarial values are market values which have been smoothed and are the actuary's best estimate of long-term asset values. They are used for evaluating the Plan's ongoing liability to meet its obligations.

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

## SECTION II

 ASSETS| Changes in Market Values |  |  |
| :--- | ---: | ---: |
| Value of Assets - June 30, 2006 |  | $\mathbf{\$ 6 , 1 3 3 , 1 4 3 , 9 0 0}$ |
|  |  |  |
| Additions | $\$ 42,856,200$ |  |
| Member Contributions | $96,999,900$ |  |
| Employer Contributions | $45,110,100$ |  |
| PRI Fund Transfer | $942,658,100$ |  |
| Investment Return | $\$ 1,127,624,300$ |  |
| Total Additions |  |  |
|  |  |  |
| Deductions | $\mathbf{\$ 3 3 5 , 1 2 9 , 9 0 0}$ |  |
| Benefit Payments | $5,030,400$ |  |
| Administrative Expenses | $\mathbf{\$ 3 4 0 , 1 6 0 , 3 0 0}$ |  |
| Total Deductions |  | $\mathbf{\$ 6 , 9 2 0 , 6 0 7 , 9 0 0}$ |
| Value of Assets - June 30, 2007 |  |  |

## SECTION II

 ASSETS| Development of Actuarial Value of Assets |  |  |
| :---: | :---: | :---: |
| 1. | Actuarial Value of Assets at June 30, 2006 | \$ 5,998,745,700 |
| 2. | Amount in (1) with interest to June 30, 2007 | 6,478,645,400 |
| 3. | Employer, PRI and member contributions for the Plan Year ended June 30, 2007 | 184,966,200 |
| 4. | Interest on contributions assuming payments made uniformly throughout the year to June 30, 2007 at $8.00 \%$ per year | 7,398,600 |
| 5. | Disbursements from Trust except investment expenses, June 30, 2006 through June 30, 2007 | 340,160,300 |
| 6. | Interest on disbursements to June 30, 2007 at 8.00\% per year | 13,606,400 |
| 7. | Expected Actuarial Value of Assets at June 30, 2007 $=(2)+(3)+(4)-(5)-(6)$ | 6,317,243,500 |
| 8. | Actual Market Value of Assets at June 30, 2007 | 6,920,607,900 |
| 9. | Excess of (8) over (7) | 603,364,400 |
| 10. | Actuarial Value of Assets at June 30, $2007=(7)+20 \%$ of (9) | \$ 6,437,916,400 |

## 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, 2007 valuation.

# DELAWARE STATE EMPLOYEES’ PENSION PLAN 

## SECTION II

ASSETS

## Investment Performance

The market value of assets (MVA) returned $15.57 \%$ during 2007, which is greater than the assumed $8 \%$ return. A return of $10.04 \%$ on the actuarial value of assets (AVA) is primarily the result of the asset smoothing method being utilized for the calculation of the actuarial value of assets. Since only $20 \%$ of the gain or loss from the performance of the Plan is recognized in a given year, in periods of very good performance, the AVA can lag significantly behind the MVA. In a period of negative returns, the AVA does not decline as rapidly as the MVA.

| Projection of Plan's Benefit Payments |  |  |
| :---: | :---: | :---: |
| Year Beginning July 1, | Expected Benefit Payments | Expected Contributions* |
| 2007 | $\$ 343,848,000$ | $\$ 185,777,000$ |
| 2008 | $359,132,000$ | $182,940,000$ |
| 2009 | $376,096,000$ | $175,104,000$ |
| 2010 | $394,677,000$ | $168,215,000$ |
| 2011 | $415,736,000$ | $160,540,000$ |
|  |  |  |
| 2012 | $438,215,000$ | $166,561,000$ |
| 2013 | $462,366,000$ | $172,807,000$ |
| 2014 | $487,042,000$ | $179,287,000$ |
| 2015 | $512,776,000$ | $186,010,000$ |
| 2016 | $539,919,000$ | $192,986,000$ |

Expected benefit payments are projected for the closed group valued at June 30, 2007. Projecting any farther than ten years using a closed-group would not yield reliable predictions due to the omission of new hires.

* Expected contributions include State Contributions, Member Contributions, and PRI Transfers. For illustration purposes, we have assumed the State Contribution rate will remain level and that payroll will increase at the actuarially assumed rate of 3.75\% per year.


## SECTION III <br> LIABILITIES

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

- Disclosure of Plan liabilities at June 30, 2006 and June 30, 2007; 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 (FAS 35) and used to assess whether the Plan can meet its current benefit commitments.

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

## SECTION III <br> LIABILITIES

## Liabilities/Net (Surplus)/Unfunded <br> June 30, 2006 <br> June 30, 2007

| Present Value of Benefits |  |  |
| :---: | :---: | :---: |
| Active Participant Benefits | \$ 4,250,657,000 | \$ 4,355,330,500 |
| Retiree and Inactive Benefits | 3,026,492,500 | 3,298,727,100 |
| Present Value of Benefits (PVB) | \$ 7,277,149,500 | \$ 7,654,057,600 |
| Market Value of Assets (MVA) | \$ 6,133,143,900 | \$ 6,920,607,900 |
| Future Member Contributions | 389,468,500 | 409,267,900 |
| Future State Contributions \& PRI Fund Transfers | 754,537,100 | 324,181,800 |
| Total Resources | \$ 7,277,149,500 | \$ 7,654,057,600 |
| Actuarial Accrued Liability |  |  |
| Present Value of Benefits (PVB) | \$ 7,277,149,500 | \$ 7,654,057,600 |
| Present Value of Future Normal Costs (PVFNC) | 986,608,800 | 1,036,765,000 |
| Present Value of Future Member Contributions (PVFEEC) | 389,468,500 | 409,267,900 |
| Actuarial Accrued Liability (AAL=PVB-PVFNC-PVFEEC) | 5,901,072,200 | 6,208,024,700 |
| Actuarial Value of Assets (AVA) | 5,998,745,700 | 6,437,916,400 |
| Net (Surplus)/Unfunded (AAL - AVA) | \$ $(97,673,500)$ | \$ (229,891,700) |
| Present Value of Accrued Liability |  |  |
| Present Value of Benefits (PVB) | \$ 7,277,149,500 | \$ 7,654,057,600 |
| Present Value of Future Benefit Accruals (PVFBA) | 2,399,797,700 | 2,494,119,800 |
| Present Value of Accrued Liability (PVAB=PVB-PVFBA) | 4,877,351,800 | 5,159,937,800 |
| Market Value of Assets (MVA) | 6,133,143,900 | 6,920,607,900 |
| Net Unfunded (PVAB - MVA) | \$(1,255,792,100) | \$(1,760,670,100) |

# DELAWARE STATE EMPLOYEES' PENSION PLAN 

## SECTION III <br> 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.

|  | Present <br> Value of <br> Benefits | Actuarial <br> Accrued <br> Liability | Present Value <br> of Accrued <br> Liability |
| :--- | :---: | :---: | :---: |
| (In Thousands) | $\$ 7,277$ | $\$ 2,901$ | $\$ 4,877$ |
| Liabilities June 30, 2006 | 7,654 | 6,208 | 5,160 |
| Liabilities June 30, 2007 | 377 | 307 | 283 |
| Liability Increase (Decrease) |  |  | 0 |
| Change Due to: | 0 | 0 | 0 |
| PRI Increase | 0 | 19 | 0 |
| Disability Carveout | $\mathrm{NC} *$ | $\mathrm{NC} *$ |  |
| Actuarial (Gain)/Loss | 377 | 288 | 283 |
| Benefits Accumulated and |  |  |  |
| Other Sources |  |  |  |

* $\mathrm{NC}=$ not calculated.


## SECTION III <br> LIABILITIES

## Actuarial Liabilities for Funding

June 30, 2006
June 30, 2007

| Actuarial Liabilities for Funding |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1. Actuarial Liabilities |  |  |  |  |  |
|  | Retiree and Inactive Benefits |  | ,026,492,500 | \$ | 3,298,727,100 |
|  | Active Members |  | ,874,579,700 |  | 2,909,297,600 |
|  | Total Actuarial Liability |  | ,901,072,200 | \$ | 6,208,024,700 |
|  | Actuarial Value of Assets |  | ,998,745,700 | \$ | 6,437,916,400 |
|  | Unfunded Actuarial Liability | \$ | $(97,673,500)$ | \$ | $(229,891,700)$ |
|  | Allocation of Unfunded Actuarial Liability (Amortization Period as of July 1, 2006) |  |  |  |  |
|  | a. Outstanding PRI Transfers/(1-5 years) | \$ | 147,138,500 | \$ | 111,781,200 |
|  | b. 1991 Early Retirement Option/(9 years) |  | 76,620,200 |  | N/A |
|  | c. Social Security Decoupling/(9 years) |  | 68,426,400 |  | N/A |
|  | d. Final Average Compensation/(9 years) |  | 90,715,500 |  | N/A |
|  | e. \$6K Life Insurance \& Reduced ERF/(9 years) |  | 14,095,800 |  | N/A |
|  | f. Increase Multiplier to 1.8\%/(24 years) |  | 193,217,400 |  | N/A |
|  | g. Assumption Change/(13 years) |  | 87,222,600 |  | N/A |
|  | h. Disability Carveout /(15 years) |  | $(53,500,700)$ |  | N/A |
|  | i. Recombined Bases /(20 years as of July 1, 2007) |  | N/A |  | $(341,672,900)$ |
|  | j. Total of Allocated Bases | \$ | 623,935,700 | \$ | (229,891,700) |
|  | Net Gain Base for 15 Year Amortization (3-4j) |  | (721,609,200) |  | N/A |

# DELAWARE STATE EMPLOYEES' PENSION PLAN 

## SECTION IV <br> CONTRIBUTIONS

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

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

Prior to this 2007 valuation, the UAL rate was calculated as follows. Increases to the unfunded actuarial liability, due to benefit improvements, are amortized over their remaining periods if established prior to July 1, 2000. Those increases established on or after July 1, 2000 will be amortized over 30 years if they improve benefits to active members or five years if they improve benefits solely to retirees. The cumulative actuarial gain/loss measured as of each valuation date will be amortized over a rolling 15 year period. All payments are determined assuming total pay increases by the annual inflation rate.

For this valuation, the UAL rate calculation methodology was changed to amortize 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 $3.75 \%$.

The assumed administrative expense rate is $0.35 \%$ 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.

| Employer Contribution Rate |  |  |
| :--- | :---: | :---: |
|  | June 30, 2006 | June 30, 2007 |
| Entry Age Normal Cost Rate | $6.85 \%$ | $6.85 \%$ |
| Amortization Payment | $(0.94 \%)$ | $(1.53 \%)$ |
| Expense | $\underline{0.35 \%}$ | $\underline{0.35 \%}$ |
| Actuarially Determined Contribution | $6.26 \%$ | $5.67 \%$ |

## SECTION IV CONTRIBUTIONS

| Development of Plan Cost as of June 30, 2007 |  |  |
| :---: | :---: | :---: |
|  | In Dollars | As \% of Payroll |
| 1. Present value of projected benefits attributable to: |  |  |
| a. Total Normal Cost | \$ 158,015,200 | 9.55\% |
| b. Expected Members Contribution | 44,674,500 | 2.70\% |
| c. Employer Paid Normal Cost (a) - (b) | \$ 113,340,700 | 6.85\% |
| 2. Amortization of Unfunded Liability | \$ (25,388,800) | (1.53\%) |
| 3. Allowance for Expense | \$ 5,791,100 | 0.35\% |
| 4. Total Employer Contribution Rate (1) + (2) + (3) | \$ 93,743,000 | 5.67\% |

# DELAWARE STATE EMPLOYEES' PENSION PLAN 

## SECTION V <br> ACCOUNTING STATEMENT INFORMATION

Statement No. 35 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-35 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 (FASB-35) and the actuarial accrued liability (GASB25) are determined assuming that the Plan is on-going and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of $8 \%$ per annum.

FASB Statement No. 35 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, 2007 are exhibited in Table V-1. Finally, Table V-2 reconciles the FASB-35 liabilities determined as of the prior valuation, July 1, 2006, to the liabilities as of June 30, 2007.

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

# SECTION V <br> ACCOUNTING STATEMENT INFORMATION 

## Table V-1 <br> Accounting Statement Information

June 30, 2006
June 30, 2007
A. FASB No. 35 Basis

1. Present Value of Benefits Accrued and Vested to Date
a. Members Currently Receiving Payments
b. Former Vested Members (and LTDs)
c. Active Members

| $\$ 2,982,470,900$ | $\$ 3,182,382,400$ |
| ---: | ---: |
| $44,021,600$ | $116,344,700$ |
| $1,850,859,300$ | $1,861,210,700$ |

2. Total Present Value of Accrued Benefits
(1 (a) +1 (b) +1 (c))
\$ 4,877,351,800
\$ 5,159,937,800
3. Assets at Market Value
$\underline{6,133,143,900} \quad 6,920,607,900$
4. Unfunded Present Value of Accrued Benefits $(2-3)$
$\$(1,255,792,100) \quad \$(1,760,670,100)$
5. Ratio of Assets to Present Value of Benefits (3 / 2)
125.7\%
B. GASB No. 25 Basis
6. Actuarial Accrued Liabilities for retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits
\$ 3,026,492,500
\$ 3,298,727,100
7. Actuarial Accrued Liabilities for current employees
$\underline{2,874,579,700} \quad \underline{2,909,297,600}$
8. Total Actuarial Accrued Liability $(1+2)$
\$ 5,901,072,200 \$ 6,208,024,700
9. Net Actuarial Assets available for benefits

5,998,745,700
6,437,916,400
5. Unfunded Actuarial Accrued Liability (3-4) \$ $\quad(97,673,500) \quad \$ \quad(229,891,700)$

## SECTION V <br> ACCOUNTING STATEMENT INFORMATION

| Table V-2 <br> Statement of Changes in Total Actuarial <br> Present Value of All Accrued Benefits <br> (in millions) |  |
| :---: | :---: |
|  | Accumulated Benefit <br> Obligation (FASB 35) |
| Actuarial Present Value of Accrued Benefits at June 30, 2006 | 4,877 |
| Increase (Decrease) During Years Attributable to: |  |
| Passage of Time | 377 |
| Benefit Paid - FY 2007 | $(335)$ |
| Disability Carveout | 0 |
| PRI | 0 |
| Benefits Accrued, Other Gains/Losses | 241 |
| Net Increase (Decrease) | 283 |
| Actuarial Present Value of Accrued Benefits at June 30, 2007 | 5,160 |

# SECTION V <br> ACCOUNTING STATEMENT INFORMATION 

## Table V-3 <br> 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, 2007
Actuarial cost method
Entry age
Amortization method
Open
Remaining amortization period
20 years
Asset valuation method
5-Year smoothed market

Actuarial assumptions:
Investment rate of return* $\quad 8.0 \%$
Projected salary increases* 4.3\%-10.1\%
*Includes inflation at 3.75\%
Cost-of-living adjustments ad hoc
The actuarial assumptions used have been recommended by the actuary and adopted by the Plan's Board of Trustees based on the most recent review of the Plan's experience, completed in 2004.

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

## SECTION V

ACCOUNTING STATEMENT INFORMATION

## Table V-4 <br> 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,

Type of Activity
Investment Income on Actuarial Assets
Combined Liability Experience
(Loss)/Gain During Year from Financial Experience
Non-Recurring Items
Composite Gain (or Loss) During Year

2004

| $\$ \quad(34,720)$ |  |
| :--- | ---: |
|  | $(53,146)$ |
| $\$ \quad(87,866)$ |  |
| $\quad(137,125)$ |  |
| $\$(224,991)$ |  |

(expressed in thousands)
2005
\$ $(12,887)$
\$ $(24,417)$
\$ $(28,173)$

2006
2007
\$ 33,600

|  |
| ---: | | $(11,330)$ |
| ---: |
| 1,923 |

120,673

| 120,6723 |
| ---: |

\$ $(9,407) \quad \$ \quad 101,250$


APPENDIX A
MEMBERSHIP INFORMATION
Delaware State Employees' Pension Plan Distribution of Active Members
by Age and Service as of June 30, 2007

| 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 | 345 | 764 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,135 |
| 25 to 29 | 384 | 1,883 | 776 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 3,051 |
| 30 to 34 | 272 | 1,210 | 1,510 | 326 | 9 | 0 | 0 | 0 | 0 | 0 | 3,327 |
| 35 to 39 | 236 | 1,173 | 1,312 | 927 | 443 | 24 | 0 | 0 | 0 | 0 | 4,115 |
| 40 to 44 | 252 | 1,144 | 1,214 | 776 | 895 | 408 | 22 | 0 | 0 | 0 | 4,711 |
| 45 to 49 | 212 | 1,085 | 1,290 | 824 | 756 | 736 | 408 | 13 | 0 | 0 | 5,324 |
| 50 to 54 | 189 | 835 | 1,113 | 819 | 891 | 683 | 699 | 278 | 11 | 0 | 5,518 |
| 55 to 59 | 134 | 551 | 718 | 675 | 751 | 558 | 414 | 354 | 171 | 5 | 4,331 |
| 60 to 64 | 49 | 330 | 379 | 301 | 361 | 254 | 175 | 137 | 132 | 31 | 2,149 |
| 65 to 69 | 15 | 72 | 103 | 62 | 81 | 56 | 36 | 28 | 20 | 10 | 483 |
| 70 \& up | 3 | 38 | 69 | 35 | 25 | 14 | 19 | 16 | 3 | 8 | 230 |
| Total | 2,091 | 9,085 | 8,510 | 4,753 | 4,212 | 2,733 | 1,773 | 826 | 337 | 54 | 34,374 |

Delaware State Employees' Pension Plan Distribution of Active Members by Age as of June 30, 2007


Delaware State Employees' Pension Plan Distribution of Active Members
by Service as of June 30, 2007


APPENDIX A
MEMBERSHIP INFORMATION

## Delaware State Employees' Pension Plan Distribution of Active Members by Age and Service as of June 30, 2007

|  | Service |  |  |  |  |  |  |  |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 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 |  |
| Under 25 | \$25,566 | \$34,049 | \$29,433 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$31,365 |
| 25 to 29 | \$30,492 | \$39,633 | \$44,893 | \$38,190 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$39,817 |
| 30 to 34 | \$31,423 | \$41,816 | \$49,066 | \$53,871 | \$49,217 | \$0 | \$0 | \$0 | \$0 | \$0 | \$45,458 |
| 35 to 39 | \$34,273 | \$40,859 | \$49,096 | \$56,599 | \$55,279 | \$42,294 | \$0 | \$0 | \$0 | \$0 | \$48,214 |
| 40 to 44 | \$27,796 | \$38,392 | \$45,639 | \$51,914 | \$58,477 | \$55,200 | \$43,680 | \$0 | \$0 | \$0 | \$47,216 |
| 45 to 49 | \$28,526 | \$38,960 | \$45,274 | \$50,517 | \$54,370 | \$62,365 | \$54,439 | \$52,721 | \$0 | \$0 | \$48,507 |
| 50 to 54 | \$32,214 | \$41,573 | \$46,412 | \$49,322 | \$54,982 | \$61,785 | \$64,965 | \$65,195 | \$52,469 | \$0 | \$52,220 |
| 55 to 59 | \$32,633 | \$42,749 | \$48,590 | \$52,763 | \$54,729 | \$60,005 | \$60,642 | \$70,917 | \$68,539 | \$67,201 | \$54,325 |
| 60 to 64 | \$31,848 | \$38,929 | \$44,670 | \$51,680 | \$53,433 | \$59,667 | \$61,846 | \$67,965 | \$75,142 | \$61,466 | \$52,720 |
| 65 to 69 | \$14,950 | \$28,713 | \$34,897 | \$43,631 | \$50,597 | \$56,614 | \$56,979 | \$57,121 | \$72,664 | \$62,040 | \$44,688 |
| 70 \& up | \$22,245 | \$28,298 | \$26,340 | \$36,815 | \$48,996 | \$40,117 | \$54,082 | \$63,507 | \$73,958 | \$73,041 | \$38,628 |
| Total | \$29,904 | \$39,584 | \$46,627 | \$52,136 | \$55,336 | \$60,010 | \$60,682 | \$67,604 | \$70,894 | \$63,818 | \$48,135 |

Delaware State Employees' Pension Plan Distribution of Active Members
by Age as of June 30, 2007


Delaware State Employees' Pension Plan Distribution of Active Members by Service as of June 30, 2007


## APPENDIX A <br> MEMBERSHIP INFORMATION

## Delaware State Employees' Pension Plan Distribution of Retired Members and Survivors as of June 30, 2007

| Age | Count | Annual Benefit | Age | Count | Annual Benefit |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $<25$ | 47 | \$232,730 | 73 | 575 | \$8,594,873 |
| 25 | 0 | \$0 | 74 | 546 | \$7,799,483 |
| 26 | 1 | \$7,174 | 75 | 540 | \$6,863,370 |
| 27 | 0 | \$0 | 76 | 557 | \$7,489,430 |
| 28 | 1 | \$1,829 | 77 | 524 | \$6,735,380 |
| 29 | 1 | \$4,808 | 78 | 478 | \$6,240,058 |
| 30 | 0 | \$0 | 79 | 442 | \$5,488,640 |
| 31 | 0 | \$0 | 80 | 471 | \$5,158,555 |
| 32 | 0 | \$0 | 81 | 431 | \$4,730,956 |
| 33 | 0 | \$0 | 82 | 392 | \$4,160,124 |
| 34 | 1 | \$5,278 | 83 | 343 | \$3,634,603 |
| 35 | 2 | \$11,867 | 84 | 354 | \$3,595,056 |
| 36 | 0 | \$0 | 85 | 277 | \$2,751,967 |
| 37 | 0 | \$0 | 86 | 299 | \$2,696,625 |
| 38 | 3 | \$22,629 | 87 | 282 | \$2,449,606 |
| 39 | 3 | \$7,703 | 88 | 207 | \$1,746,500 |
| 40 | 5 | \$16,585 | 89 | 171 | \$1,387,014 |
| 41 | 1 | \$5,310 | 90 | 125 | \$1,129,932 |
| 42 | 4 | \$13,147 | 91 | 117 | \$1,028,770 |
| 43 | 6 | \$32,498 | 92 | 86 | \$772,562 |
| 44 | 9 | \$65,350 | 93 | 82 | \$755,282 |
| 45 | 5 | \$41,473 | 94 | 51 | \$365,920 |
| 46 | 12 | \$176,248 | 95 | 54 | \$528,747 |
| 47 | 28 | \$291,294 | 96 | 26 | \$227,175 |
| 48 | 27 | \$385,117 | 97 | 22 | \$210,606 |
| 49 | 41 | \$644,760 | 98 | 14 | \$147,696 |
| 50 | 53 | \$947,650 | 99 | 18 | \$224,232 |
| 51 | 68 | \$1,257,313 | 100 | 2 | \$13,671 |
| 52 | 78 | \$1,605,628 | 101 | 9 | \$73,676 |
| 53 | 107 | \$2,096,568 | 102 | 2 | \$16,823 |
| 54 | 122 | \$2,999,684 | 103 | 1 | \$16,908 |
| 55 | 153 | \$3,744,212 | 104 | 0 | \$0 |
| 56 | 271 | \$7,335,375 | 105 | 1 | \$6,170 |
| 57 | 303 | \$8,301,351 | 106 | 0 | \$0 |
| 58 | 350 | \$9,854,461 | 107 | 0 | \$0 |
| 59 | 397 | \$11,716,732 | 108 | 0 | \$0 |
| 60 | 520 | \$14,879,330 | 109 | 0 | \$0 |
| 61 | 518 | \$14,796,434 | 110 | 0 | \$0 |
| 62 | 503 | \$13,539,069 | 111 | 0 | \$0 |
| 63 | 588 | \$14,516,078 | 112 | 0 | \$0 |
| 64 | 718 | \$16,874,126 | 113 | 0 | \$0 |
| 65 | 745 | \$16,658,942 | 114 | 0 | \$0 |
| 66 | 633 | \$12,671,537 | 115 | 0 | \$0 |
| 67 | 645 | \$12,734,816 | 116 | 0 | \$0 |
| 68 | 626 | \$12,350,548 | 117 | 0 | \$0 |
| 69 | 594 | \$10,612,544 | 118 | 0 | \$0 |
| 70 | 570 | \$9,648,733 | 119 | 0 | \$0 |
| 71 | 555 | \$9,736,494 | 120 | 0 | \$0 |
| 72 | 575 | \$9,277,518 |  |  |  |
|  |  |  |  | 17,388 | \$307,161,348 |

Delaware State Employees' Pension Plan Distribution of Retired Members and Survivors as of June 30, 2007


## APPENDIX A <br> MEMBERSHIP INFORMATION

## Delaware State Employees' Pension Plan Distribution of Vested Members as of June 30, 2007



Delaware State Employees' Pension Plan Distribution of Vested Members as of June 30, 2007


# APPENDIX A <br> MEMBERSHIP INFORMATION 

## Delaware State Employees' Pension Plan Distribution of Disabled Members as of June 30, 2007

| Age | Count | Annual Benefit | Age | Count | Annual Benefit |
| :---: | :---: | :---: | :---: | :---: | :---: |
| <25 | 0 | \$0 | 73 | 50 | \$476,256 |
| 25 | 0 | \$0 | 74 | 36 | \$265,962 |
| 26 | 0 | \$0 | 75 | 46 | \$454,983 |
| 27 | 0 | \$0 | 76 | 25 | \$262,010 |
| 28 | 0 | \$0 | 77 | 31 | \$265,747 |
| 29 | 0 | \$0 | 78 | 35 | \$298,168 |
| 30 | 1 | \$2,663 | 79 | 29 | \$182,760 |
| 31 | 1 | \$4,017 | 80 | 29 | \$233,803 |
| 32 | 0 | \$0 | 81 | 26 | \$211,657 |
| 33 | 3 | \$10,830 | 82 | 24 | \$177,250 |
| 34 | 1 | \$3,267 | 83 | 22 | \$136,764 |
| 35 | 2 | \$11,151 | 84 | 24 | \$151,368 |
| 36 | 4 | \$18,272 | 85 | 14 | \$97,977 |
| 37 | 5 | \$25,978 | 86 | 11 | \$69,771 |
| 38 | 1 | \$2,977 | 87 | 13 | \$70,369 |
| 39 | 6 | \$43,914 | 88 | 3 | \$15,592 |
| 40 | 10 | \$62,029 | 89 | 9 | \$51,090 |
| 41 | 9 | \$64,152 | 90 | 3 | \$16,087 |
| 42 | 12 | \$68,228 | 91 | 7 | \$61,614 |
| 43 | 15 | \$102,446 | 92 | 1 | \$8,576 |
| 44 | 11 | \$95,621 | 93 | 1 | \$9,259 |
| 45 | 19 | \$137,906 | 94 | 1 | \$7,434 |
| 46 | 22 | \$173,325 | 95 | 0 | \$0 |
| 47 | 31 | \$311,197 | 96 | 0 | \$0 |
| 48 | 29 | \$236,546 | 97 | 0 | \$0 |
| 49 | 29 | \$271,634 | 98 | 0 | \$0 |
| 50 | 41 | \$362,582 | 99 | 0 | \$0 |
| 51 | 43 | \$409,776 | 100 | 0 | \$0 |
| 52 | 59 | \$556,396 | 101 | 0 | \$0 |
| 53 | 61 | \$640,933 | 102 | 0 | \$0 |
| 54 | 51 | \$616,754 | 103 | 0 | \$0 |
| 55 | 57 | \$589,882 | 104 | 0 | \$0 |
| 56 | 65 | \$798,166 | 105 | 0 | \$0 |
| 57 | 60 | \$724,601 | 106 | 0 | \$0 |
| 58 | 79 | \$880,899 | 107 | 0 | \$0 |
| 59 | 88 | \$1,091,994 | 108 | 0 | \$0 |
| 60 | 85 | \$1,181,079 | 109 | 0 | \$0 |
| 61 | 79 | \$975,966 | 110 | 0 | \$0 |
| 62 | 89 | \$1,114,311 | 111 | 0 | \$0 |
| 63 | 72 | \$1,006,606 | 112 | 0 | \$0 |
| 64 | 85 | \$953,352 | 113 | 0 | \$0 |
| 65 | 96 | \$1,187,346 | 114 | 0 | \$0 |
| 66 | 88 | \$1,157,744 | 115 | 0 | \$0 |
| 67 | 48 | \$606,743 | 116 | 0 | \$0 |
| 68 | 58 | \$553,984 | 117 | 0 | \$0 |
| 69 | 62 | \$661,569 | 118 | 0 | \$0 |
| 70 | 69 | \$664,551 | 119 | 0 | \$0 |
| 71 | 51 | \$553,499 | 120 | 0 | \$0 |
| 72 | 58 | \$581,876 |  |  |  |
|  |  |  | Totals | 2,195 | \$23,041,260 |

Delaware State Employees' Pension Plan Distribution of Disabled Members as of June 30, 2007


APPENDIX A
MEMBERSHIP INFORMATION
Delaware State Employees' Pension Plan Distribution of Disabled Members as of June 30, 2007

| Monthly 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 | 213 | 47 | 9 | 1 | 0 | 0 | 0 | 0 | 270 |
| 250-500 | 0 | 231 | 248 | 90 | 17 | 4 | 0 | 0 | 0 | 590 |
| 500-750 | 0 | 37 | 139 | 143 | 61 | 12 | 1 | 0 | 0 | 393 |
| 750-1,000 | 1 | 6 | 37 | 107 | 89 | 27 | 9 | 0 | 0 | 276 |
| 1,000-1,250 | 0 | 0 | 18 | 65 | 78 | 31 | 5 | 0 | 1 | 198 |
| 1,250-1,500 | 0 | 0 | 12 | 31 | 42 | 42 | 12 | 3 | 1 | 143 |
| 1,500-1,750 | 0 | 0 | 2 | 12 | 27 | 26 | 6 | 1 | 0 | 74 |
| 1,750-2,000 | 0 | 0 | 1 | 5 | 22 | 21 | 12 | 6 | 0 | 67 |
| 2,000< | 0 | 0 | 0 | 8 | 29 | 73 | 50 | 20 | 4 | 184 |
| Total | 1 | 487 | 504 | 470 | 366 | 236 | 95 | 30 | 6 | 2,195 |

Delaware State Employees' Pension Plan Distribution of Disabled Members as of June 30, 2007


Delaware State Employees' Pension Plan Distribution of Disabled Members as of June 30, 2007


# APPENDIX A <br> MEMBERSHIP INFORMATION 

## Delaware State Employees' Pension Plan Distribution of Long Term Disability Members <br> as of June 30, 2007

| Age | Count | Annual Benefit |
| :---: | :---: | :---: |
| <25 | 12 | \$277,288 |
| 25 | 14 | \$381,759 |
| 26 | 7 | \$179,711 |
| 27 | 8 | \$233,243 |
| 28 | 9 | \$255,650 |
| 29 | 11 | \$346,875 |
| 30 | 9 | \$264,634 |
| 31 | 3 | \$81,934 |
| 32 | 8 | \$236,440 |
| 33 | 8 | \$237,013 |
| 34 | 7 | \$172,115 |
| 35 | 8 | \$190,145 |
| 36 | 18 | \$495,905 |
| 37 | 12 | \$409,495 |
| 38 | 7 | \$279,647 |
| 39 | 7 | \$142,816 |
| 40 | 8 | \$144,815 |
| 41 | 14 | \$428,915 |
| 42 | 7 | \$117,393 |
| 43 | 9 | \$192,439 |
| 44 | 8 | \$166,482 |
| 45 | 12 | \$228,869 |
| 46 | 9 | \$185,241 |
| 47 | 10 | \$265,381 |
| 48 | 17 | \$350,032 |
| 49 | 14 | \$397,738 |
| 50 | 15 | \$296,835 |
| 51 | 13 | \$308,956 |
| 52 | 17 | \$373,433 |
| 53 | 25 | \$944,764 |
| 54 | 18 | \$711,384 |
| 55 | 24 | \$829,460 |
| 56 | 33 | \$1,171,147 |
| 57 | 24 | \$666,642 |
| 58 | 25 | \$864,005 |
| 59 | 39 | \$1,449,970 |
| 60 | 49 | \$1,635,561 |
| 61 | 33 | \$1,064,030 |
| 62 | 39 | \$1,059,163 |
| 63 | 23 | \$624,538 |
| 64 | 15 | \$397,688 |
| 65 | 10 | \$168,084 |
| 66 | 11 | \$276,524 |
| 67 | 4 | \$194,364 |
| 68 | 2 | \$88,055 |
| 69 | 3 | \$38,901 |
| 70 | 2 | \$78,582 |
| 71 | 3 | \$37,121 |
| 72 | 0 | \$0 |



Delaware State Employees' Pension Plan Distribution of Long Term Disability Members as of June 30, 2007


## APPENDIX B

ACTUARIAL ASSUMPTIONS AND METHODS

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

## 1. Demographic Assumptions

## a. Healthy Inactive Mortality

With Mortality Improvements (Projection Scale)
Male: $85 \%$ of RP-2000 MB Mortality Table
Female: $87 \%$ of RP-2000 FW Mortality Table

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

## b. Healthy Active Mortality

With Mortality Improvements (Projection Scale)
Male: $95 \%$ of RP-2000 RE Mortality Table
Female: 80\% of RP-2000 RE Mortality Table

| Rates of Healthy Active Mortality |  |  |
| :---: | :---: | :---: |
| Male | Female |  |
| 20 | $0.03 \%$ | $0.02 \%$ |
| 25 | 0.04 | 0.02 |
| 30 | 0.04 | 0.02 |
| 35 | 0.07 | 0.04 |
| 40 | 0.10 | 0.06 |
| 45 | 0.14 | 0.09 |
| 50 | 0.20 | 0.13 |
| 55 | 0.29 | 0.20 |
| 60 | 0.46 | 0.31 |

# APPENDIX B <br> ACTUARIAL ASSUMPTIONS AND METHODS 

## c. Disabled Inactive Mortality

Male: $\quad 63 \%$ of 1965 Railroad Retirement Board Disabled Mortality Female: 92\% of 1981 PBGC Disabled Mortality with Social Security

| Rates of Disabled Inactive Mortality |  |  |
| :---: | :---: | :---: |
| Age | Male | Female |
| 40 | $2.78 \%$ | $1.92 \%$ |
| 45 | $2.82 \%$ | $2.06 \%$ |
| 50 | $3.06 \%$ | $2.36 \%$ |
| 55 | $3.73 \%$ | $2.71 \%$ |
| 60 | $4.57 \%$ | $3.05 \%$ |
| 65 | $5.46 \%$ | $3.40 \%$ |
| 70 | $6.53 \%$ | $3.78 \%$ |
| 75 | $7.96 \%$ | $4.53 \%$ |
| 80 | $9.73 \%$ | $6.86 \%$ |

## d. Rates of Active Disability

| Rates of Active Disability |  |
| :---: | :---: |
| Age | Current |
| 20 | $0.05 \%$ |
| 25 | 0.05 |
| 30 | 0.18 |
| 35 | 0.27 |
| 40 | 0.38 |
| 45 | 0.46 |
| 50 | 0.62 |
| 55 | 0.95 |
| 60 | 1.57 |

# DELAWARE STATE EMPLOYEES' PENSION PLAN 

## APPENDIX B <br> ACTUARIAL ASSUMPTIONS AND METHODS

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

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

| Age <br> Select: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Ultimate |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| <35 | 19\% | 16\% | 12\% | 10\% | 8\% | 6\% | 6\% | 5\% | 4\% | 4\% | 3\% |
| 35-39 | 19 | 16 | 12 | 10 | 8 | 6 | 6 | 5 | 4 | 4 | 2 |
| 40-54 | 15 | 11 | 8 | 7 | 5 | 5 | 4 | 4 | 3 | 3 | 1.5 |
| 55-59 | 17 | 14 | 10 | 8 | 6 | 5 | 5 | 4 | 3 | 3 | 1.5 |
| 60-65 | 23 | 17 | 14 | 10 | 8 | 6 | 5 | 4 | 4 | 3 | 1.5 |
| >65 | 23 | 21 | 16 | 14 | 10 | 8 | 5 | 4 | 4 | 3 | 1.5 |

f. Retirement

Early Retirement: 1-year Select \& Ultimate (age-based) upon attaining the earliest of:
a) age 55 with 15 years of credited service
b) 25 years of credited service

Normal Retirement: 1-year Select \& Ultimate (age-based) upon attaining the earliest of:
a) age 62 with five years of credited service
b) age 60 with 15 years of credited service
c) 30 years of credited service

| Male Early Retirement <br> Select |  |  |
| :---: | :---: | :---: |
| $<41$ | $1.00 \%$ | Ultimate |
| $41-44$ | 1.00 | $0.00 \%$ |
| $45-46$ | 3.00 | 0.50 |
| $47-49$ | 3.00 | 2.00 |
| $50-51$ | 3.00 | 3.00 |
| $52-59$ | 3.00 | 5.00 |

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

| Male Normal Retirement |  |  |
| :---: | :---: | :---: |
| Age | Select | Ultimate |
| $<45$ | $13.00 \%$ | $0.00 \%$ |
| $45-56$ | 13.00 | 11.00 |
| 57 | 13.00 | 15.00 |
| $58-60$ | 10.00 | 15.00 |
| 61 | 10.00 | 26.00 |
| 62 | 20.00 | 26.00 |
| 63 | 10.00 | 20.00 |
| 64 | 16.00 | 20.00 |
| $65-66$ | 16.00 | 26.00 |
| 67 | 16.00 | 20.00 |
| $68-79$ | 16.00 | 16.00 |
| $80+$ | 100.00 | 100.00 |


| Female Early Retirement <br> Select |  |  |
| :---: | :---: | :---: |
| $<41$ | $1.50 \%$ | Ultimate |
| $41-48$ | 1.50 | $0.00 \%$ |
| $49-50$ | 2.00 | 2.00 |
| $51-52$ | 2.00 | 3.00 |
| $53-54$ | 5.00 | 3.00 |
| 55 | 5.00 | 5.00 |
| $56-57$ | 6.00 | 5.00 |
| $58-59$ | 7.00 | 5.00 |

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

| Female Normal Retirement <br> Select |  |  |
| :---: | :---: | :---: |
| Age | $15.00 \%$ | $0.00 \%$ |
| $<45$ | 15.00 | 6.00 |
| $45-51$ | 15.00 | 8.00 |
| $52-53$ | 15.00 | 11.00 |
| 54 | 20.00 | 11.00 |
| $55-57$ | 20.00 | 14.00 |
| $58-59$ | 12.00 | 14.00 |
| 60 | 21.00 | 24.00 |
| $61-62$ | 10.00 | 24.00 |
| 63 | 10.00 | 17.00 |
| 64 | 26.00 | 24.00 |
| 65 | 15.00 | 24.00 |
| 66 | 15.00 | 21.00 |
| $67-70$ | 15.00 | 12.00 |
| $71-79$ | 100.00 | 100.00 |
| $0+$ |  |  |

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

10-year Select (service-based) \& Ultimate (age-based) merit tables plus an annual inflation rate of $3.75 \%$ (rates shown below exclude amount for inflation).

## Select

| Service (years) |  |
| :---: | :---: |
| $0-1$ |  |
| 2 | Increase |
| $3-9$ | 4.25 |
|  | 2.66 |

Ultimate

| $\frac{\text { Age }}{<40}$ | Increase |
| :---: | :---: |
| $40-49$ | 1.50 |
| $50+$ | 1.00 |
|  | 0.50 |

## h. 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.

## APPENDIX B <br> ACTUARIAL ASSUMPTIONS AND METHODS

## 2. Economic Assumptions

a. Rate of Investment Return: 8.00\%
b. Rate of General Wage Increase: 3.75\%
c. Rate of Increase in Cost of Living: $0.00 \%$
d. Rate of Increase in Total Payroll (for Amortization):
3.75\%
e. Administrative Expenses as a

Percentage of Payroll:
0.35\%
3. Changes Since Last Valuation

None.

# DELAWARE STATE EMPLOYEES' PENSION PLAN 

## APPENDIX B <br> ACTUARIAL ASSUMPTIONS AND METHODS

## B. Actuarial Methods

## 1. Funding Method

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

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

The portion of the actuarial accrued liability in excess of plan assets is 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 contribution, less payment each year, and $20 \%$ of the portion of each year's returns that have not already been reflected in asset values.

## 3. Changes Since Last Valuation

The amortization period was changed through legislation.

# DELAWARE STATE EMPLOYEES' PENSION PLAN 

## APPENDIX C <br> 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, Wilmington Federal Credit Union and any State Agency supported in whole or in part by federal funds granted to the State.

## 2. Member Contributions

$3 \%$ of compensation which exceeds $\$ 6,000$ 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.
5. Normal Retirement

Eligibility: (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.

Benefit: $\quad 2.0 \%$ 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.

# DELAWARE STATE EMPLOYEES' PENSION PLAN 

## APPENDIX C <br> 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 $0.2 \%$ 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.

## 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.

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.

# DELAWARE STATE EMPLOYEES' PENSION PLAN 

## APPENDIX C <br> SUMMARY OF PLAN PROVISIONS

## 10. Vesting

Eligibility: Employees who separate from service with at least five years of service.
Benefit: Accrued normal retirement benefit, payable at age 62. 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 life 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.


[^0]:    * Assumes one year of payroll projection.
    ** The 2006 number reflects the PRI granted as of July 1, 2006. No PRI was granted in 2007.

