Public Employees' Retirement System of the State of Montana

Actuarial Valuation as of June 30, 2011

Produced by Cheiron

September 2011

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September 15, 2011

Public Employees' Retirement Board
100 North Park, Suite 200
Helena, Montana 59620

Dear Members of the Board:

At your request, we have conducted the annual actuarial valuation of the Public Employees' Retirement System as of June 30, 2011. The results of the valuation are contained in this report. The purpose of the valuation is discussed in the Foreword.

This report contains information on System 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. The results of this report are only applicable for Fiscal Year ending 2011 and rely on future System experience conforming to the underlying assumptions. To the extent that actual System experience deviates from the underlying assumptions, the results would vary accordingly.

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

Cheiron's report was prepared exclusively for the Public Employees' Retirement System for a specific and limited purpose. It is not for use or benefit of any third party for any purpose.

Sincerely,
Cheiron

Stephen T. McElhaney, FSA
Principal Consulting Actuary

Margaret Tempkin, FSA
Consulting Actuary

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FOREWORD

Cheiron has performed the actuarial valuation of the Public Employees' Retirement System as of June 30, 2011. The purpose of this report is to:

1) **Measure and disclose**, as of the valuation date, the financial condition of the System;

2) **Indicate trends** in the financial progress of the System;

3) **Determine the sufficiency of the statutory contribution rate** paid by the employers for Fiscal Year 2011; and

4) **Provide specific information** and documentation required by the Governmental Accounting Standards Board (GASB).

An actuarial valuation establishes and analyzes System assets and liabilities on a consistent basis, and traces the progress of both from one year to the next. It includes measurement of the System'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 System in recent years.

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

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

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

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

The appendices to this report contain a summary of the System's membership at the valuation date, a summary of the major provisions of the System, 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 staff of the Public Employee Retirement Administration. 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 System and the assumptions as a whole represent our best estimate for the future experience of the System. 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 System could vary from our results.

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

SECTION I
BOARD SUMMARY

General Comments

This is the third valuation of the Public Employees' Retirement System performed by Cheiron.

As of June 30, 2010 valuation the statutory contribution rates were not sufficient to amortize the unfunded actuarial accrued liability. As of June 30, 2011 the statutory contribution rates are again not sufficient to amortize the unfunded actuarial accrued liability. During the year ended June 30, 2011, the System's assets gained 21.70% on a market value basis. However, due to the System's asset-smoothing technique which recognizes only a portion of the gains and losses, the return on the actuarial asset value was a negative 0.08%. This return was below the assumed rate of return of 7.75% and resulted in an actuarial loss on investments of $301 million.

The System experienced an actuarial gain on System liabilities resulting from salary increases different than assumed and members retiring, terminating, becoming disabled, and dying at rates different from the actuarial assumptions. The gain deducted $91 million from the actuarial liability. This type of activity is normal in the course of System experience. The System 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. . A significant portion of the gain was a gain from salary increases being less than expected which was influenced by fewer pay periods for state employees in the year ending June 30, 2011 compared to the prior year.

The actuarial liability was also decreased by legislative changes to reduce early retirement subsidies. This plan amendment reduced the actuarial liability by $36 million. A new plan was introduced for those hired on or after July 1, 2011. This change had no immediate impact on plan costs or liabilities.

As of the June 30, 2011 actuarial valuation, the System's unfunded actuarial liability was $1,609 million. This is an increase from last year's unfunded actuarial liability of $1,352 million. The funded ratio decreased from 74% at the prior valuation to 70% at June 30, 2011.

Montana Code Annotated (MCA) 19-2-407 requires an analysis of how market performance is affecting the actuarial funding of the Retirement System. The market value at June 30, 2011 was $139 million greater than actuarial value. If market value were used rather than actuarial value, the funded ratio on the valuation date would be 73%, and the statutory contribution rates are not sufficient to amortize the unfunded actuarial liability.

The valuation also includes calculations related to the Plan Choice Rate (PCR). The PCR is the percent of the employer contribution allocated to the Defined Benefit Retirement Plan for members who choose the Defined Contribution Retirement Plan or the Optional Retirement Plan. The calculations show that the amortization of the PCR UAL is 5.9 years, which is within the acceptable range.

SECTION I
BOARD SUMMARY

The following table compares the results at June 30, 2011 before and after the plan amendment, and compared to the June 30, 2010 valuation results.

Table I-1
Montana Public Employees' Retirement System
Summary of Plan Changes

Valuation as of:	June 30, 2010	Before Amendment June 30, 2011	After Amendment June 30, 2011
Actuarial Accrued Liability (AL)	$ 5,241,818,794	$ 5,445,830,765	$ 5,410,144,412
Actuarial Value of Assets (AVA)	3,889,890,145	3,800,478,810	3,800,478,810
Unfunded AL	$ 1,351,928,649	$ 1,645,351,955	$ 1,609,665,602
Funded Ratio	74.21%	69.79%	70.25%
Amortization period for statutory funding rate	Does not amortize	Does not amortize	Does not amortize
30-year Level Funding Rate	19.08%	20.87%	20.43%
Statutory Rate	14.07%	14.07%	14.07%
Shortfall (surplus) from statutory rate	5.01%	6.80%	6.36%

SECTION I
BOARD SUMMARY

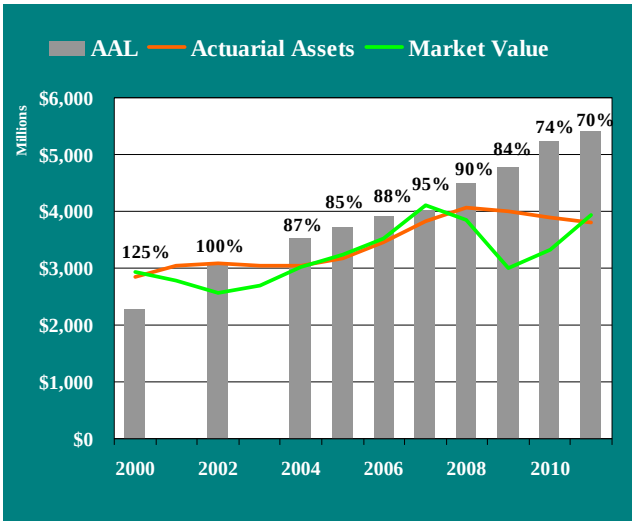
Trends

Assets and Liabilities

The market value of assets (MVA) increased over last year, returning 21.70% from the value at the prior valuation. The determination of the System's actuarial value of assets reflects only a portion of the amount by which the return differs from the assumed rate of 7.75%.

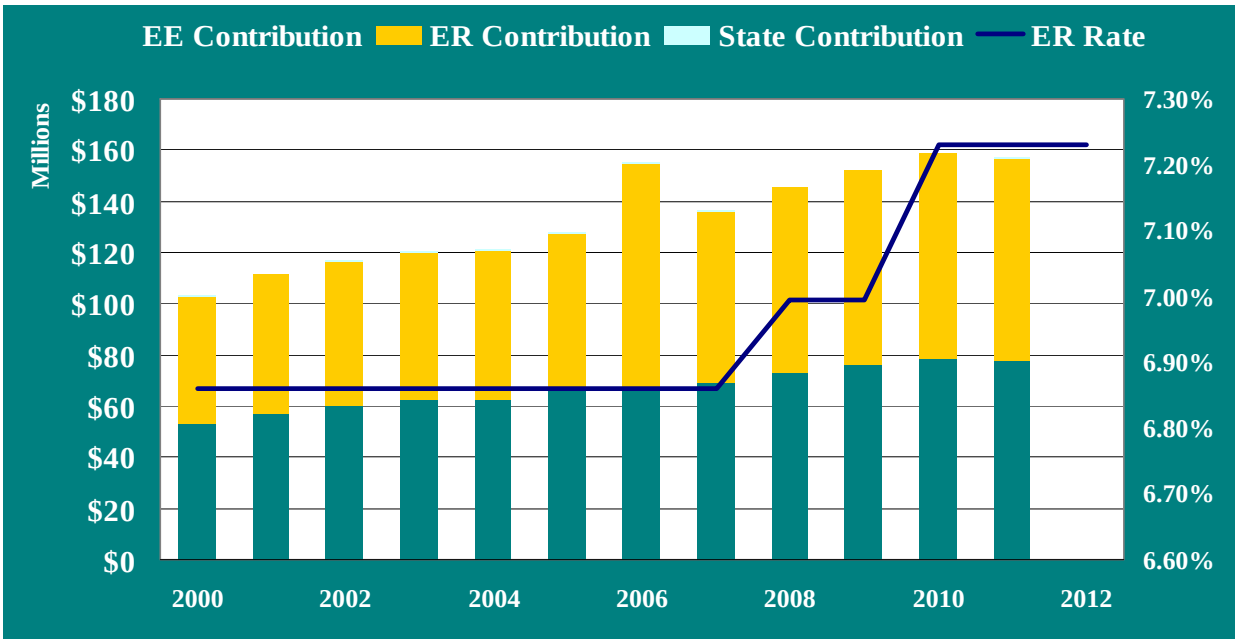
Over the period July 1, 2006 to June 30, 2011 the System's assets returned approximately 3.6% per year measured at actuarial value, compared to a current valuation assumption of 7.75% per year.

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.



SECTION I
BOARD SUMMARY

Contribution Rates



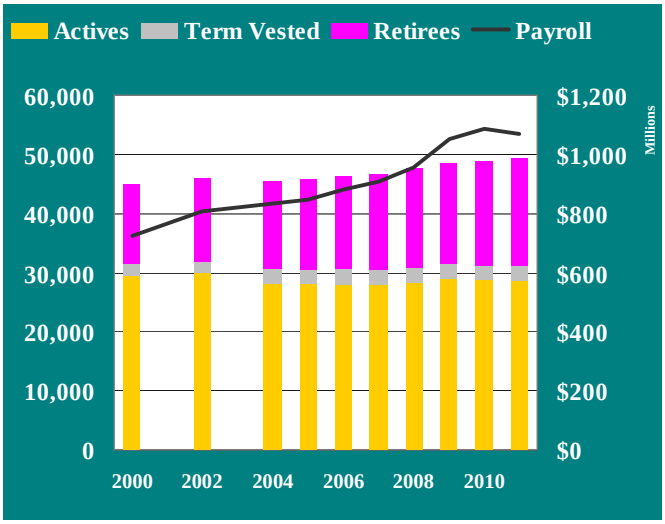
The stacked bars in this graph show the contributions made by members, employers, and the State (left hand scale). The black line shows the employer contribution rate as a percent of payroll (right hand scale).

The employer and member contribution rates are set by State law. The actuarial valuation determines the extent to which the statutory contributions will meet the requirements of funding the System.

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 System continues to show growth in the number of retired members. The active-to-inactive ratio has decreased from 1.9 actives for each inactive in 2000 to 1.4 actives for each inactive today.

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



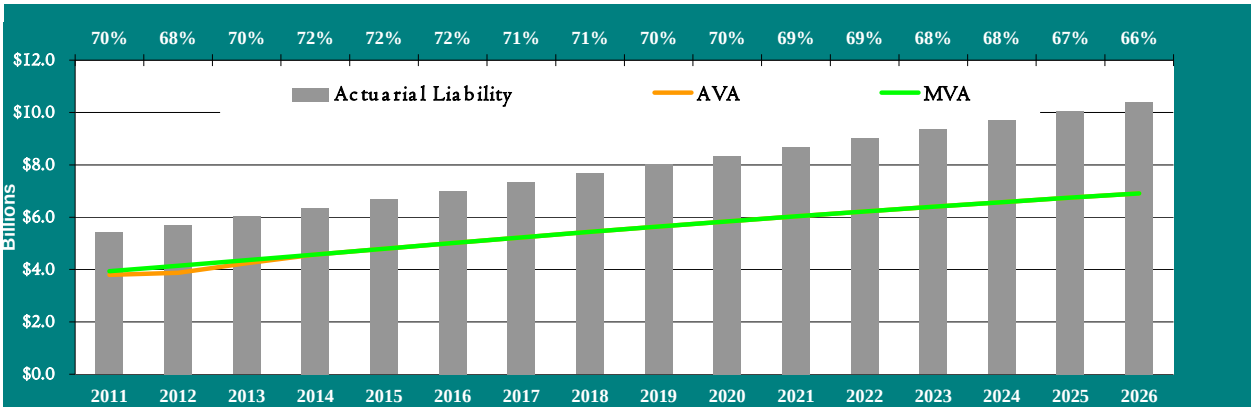
SECTION I
BOARD SUMMARY

Future Outlook

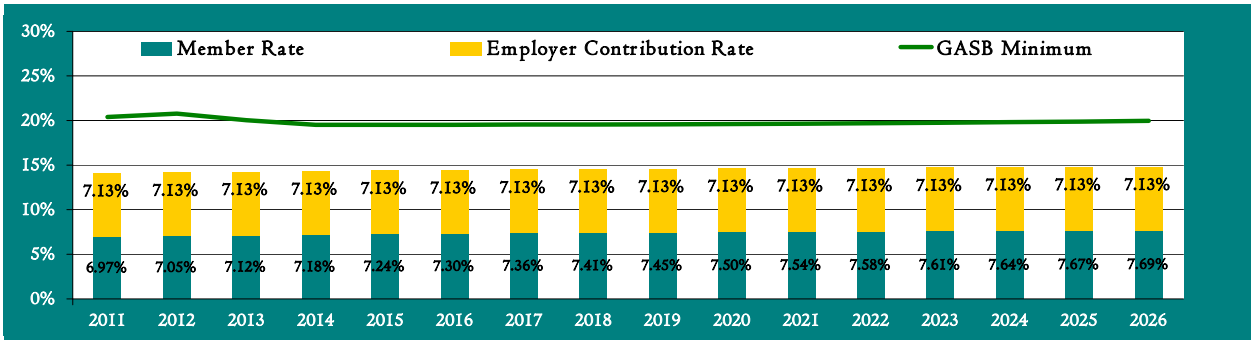
Base Line Projections

These graphs show the expected progress of the System over the next fifteen years assuming the System's assets earn 7.75% on their *market value*, and that contributions continue to be made at the current statutory rates.

The chart below shows the funded status of the plan is expected to decrease next year as excluded investment losses are recognized by the smoothing method. The funded status will then increase slightly before starting to decrease gradually over the remainder of the fifteen years. The projections indicate that the statutory contribution rates will need to be increased to maintain the current level of benefits.



The chart below shows that the total contribution computed on a GASB Minimum basis will remain steady at about 20% of payroll over the fifteen-year period. Under current accounting standards this means continued increases in the State's Net Pension Obligation (NPO).

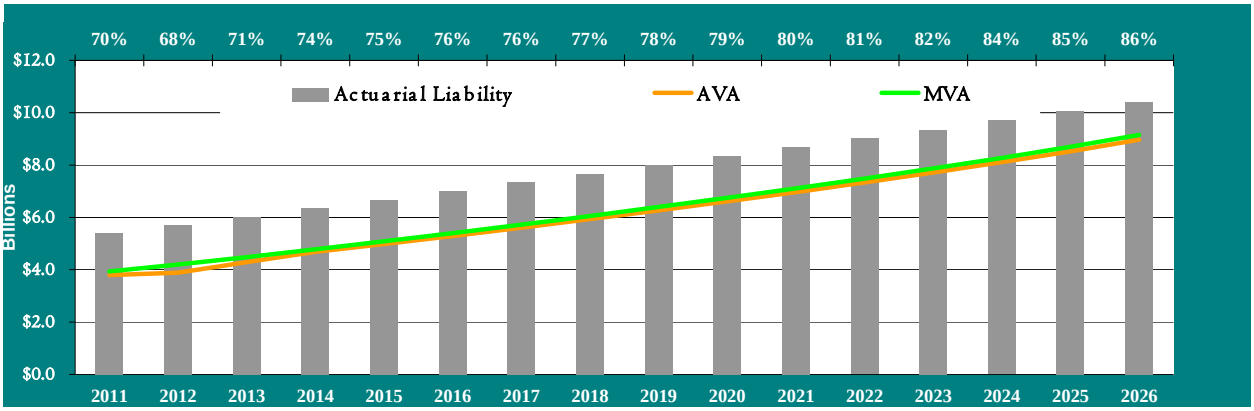


These projections as well as all of the projections that follow, reflect the plan changes which apply to employees hired on or after July 1, 2011.

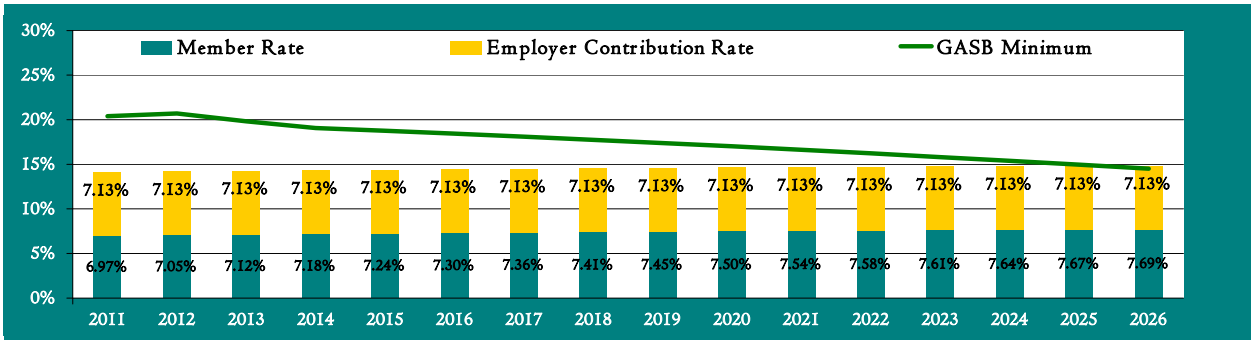
SECTION I
BOARD SUMMARY

Projections with Asset Returns of 9.25%

The future funding status of this System will be impacted by the investment earnings. While improved investment performance can help in meeting funding needs, this projection shows the funded level is still projected to decline without further action. These two charts below show what the next fifteen years would look like with a 9.25% annual return in each year (i.e. 1.5% greater than the assumed rate of return).



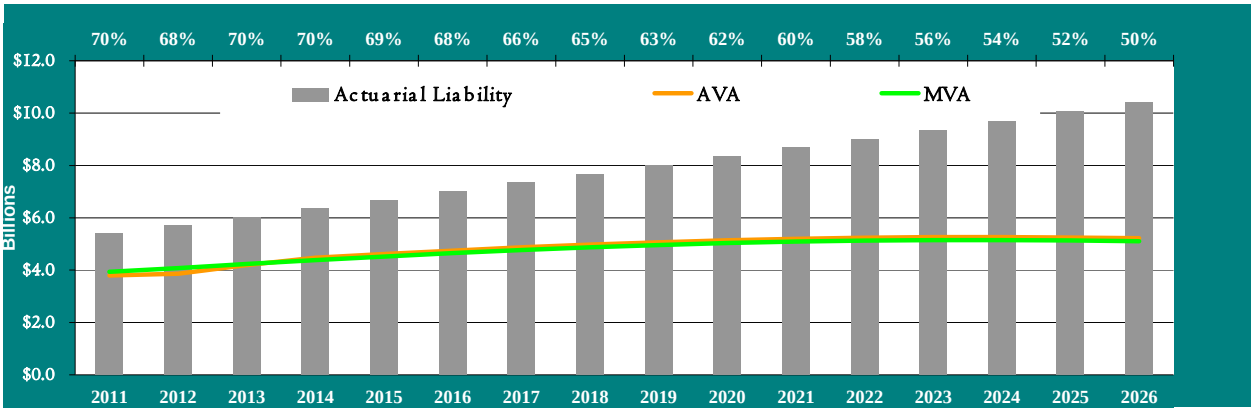
Compared to the baseline projections, the funded status gradually improves after a decrease next year. The GASB Minimum contribution decreases gradually and is less than the statutory contribution rate in 2026.



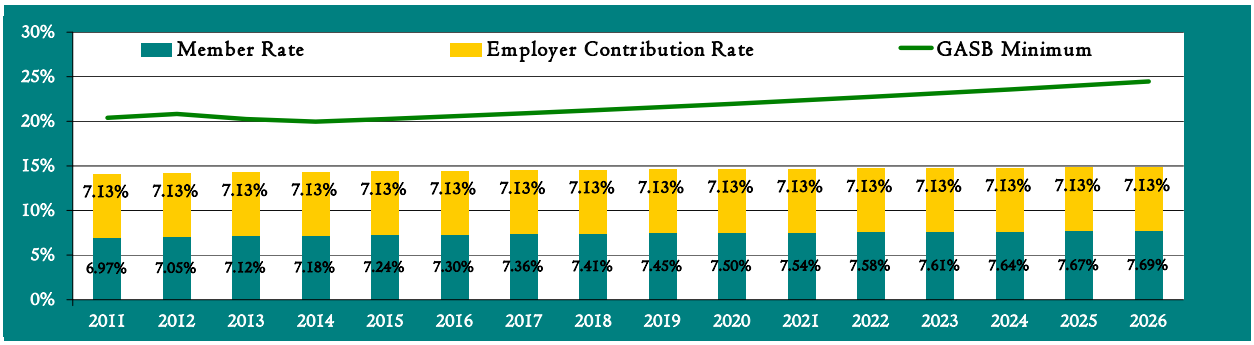
SECTION I
BOARD SUMMARY

Projections with Asset Returns of 6.25%

To further demonstrate how fluctuations in the earnings rate can impact funding, we show the anticipated System funding projections if the invested assets earn 6.25% per year over the entire fifteen-year period (i.e., 1.5% less than the assumed rate of return).



Under this scenario the funded status declines substantially during the fifteen-year period and the GASB Minimum contribution increases to almost 25% of pay.



SECTION I
BOARD SUMMARY

Table I-2
Montana Public Employees' Retirement System
Summary of Principal System Results

Valuation as of:	June 30, 2010	June 30, 2011	% Change
Participant Counts			
Active Members	28,834	28,659	(0.6%)
Disabled Members*	261	231	(11.5%)
Retirees and Beneficiaries*	17,251	17,892	3.7%
Terminated Vested Members	2,471	2,535	2.6%
Terminated Non-Vested Members	5,402	5,787	7.1%
Total**	54,219	55,104	1.6%
Annual Salaries of Active Members	$ 1,085,206,645	$ 1,067,494,701	(1.6%)
Average Annual Salary	$ 37,636	$ 37,248	(1.0%)
Annual Retirement Allowances for Retired Members and Beneficiaries	$ 216,968,572	$ 238,460,803	9.9%
Assets and Liabilities			
Actuarial Accrued Liability (AAL)	$ 5,241,818,794	$ 5,410,144,412	3.2%
Actuarial Value of Assets (AVA)	3,889,890,145	3,800,478,810	(2.3%)
Unfunded AAL (AVA/AAL)	$ 1,351,928,649	$ 1,609,665,602	19.1%
Less: PCR-UAL	14,687,168	12,929,768	(12.0%)
Net Unfunded AAL	$ 1,337,241,481	$ 1,596,735,834	19.4%
Funded Ratio	74.21%	70.25%	
Present Value of Accrued Benefits (PVAB)	$ 4,449,382,259	$ 4,691,634,455	5.4%
Market Value of Assets	3,315,905,638	3,939,875,986	18.8%
Unfunded PVAB	$ 1,133,476,621	$ 751,758,469	(33.7%)
Accrued Benefit Funding Ratio	74.53%	83.98%	
Ratio of Actuarial Value to Market Value	117.31%	96.46%	
Contributions as a Percentage of Payroll			
Statutory Funding Rate	14.070%	14.070%	
Less: Transfer to DB Ed Fund	0.040%	0.040%	
Net Statutory Funding Rate	14.030%	14.030%	
Normal Cost Rate	12.610%	12.590%	
Available for Amortization of UAL	1.420%	1.440%	
Period to Amortize	Does not amortize	Does not amortize	
Projected 30-year Level Funding Rate	19.080%	20.430%	
Projected Shortfall (Surplus)	5.010%	6.360%	

* Based on PERA categorization for the annual report. For actuarial valuation purposes, 782 members in 2010 and 753 members in 2011 were valued as disabled members with offsetting reductions to the number of retired members.

** The total number of members processed in the 2011 valuation was 55,024 compared to 55,104 above being used for the annual report. A reconciliation of this difference appears at the beginning of Appendix A.

SECTION II
ASSETS

Pension Plan assets play a key role in the financial operation of the System 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 System assets including:

- **Disclosure** of System assets at June 30, 2010 and June 30, 2011;
- Statement of the **changes** in market values during the year;
- Development of the **Actuarial Value of Assets**;
- An assessment of **investment performance**; and
- A projection of the System'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.

The actuarial values are market values which have been smoothed and are used for evaluating the System's ongoing liability to meet its obligations.

The actuarial value of assets is the current market value, adjusted by a four-year smoothing of gains and losses on a market value basis. Each year's gain or loss is determined difference between the actual market return and the expected market return using the assumed rate of investment return.

SECTION II
ASSETS

Table II-1
Changes in Market Values

Value of Assets – June 30, 2010		**$ 3,315,905,638**
Additions		
Member Contributions	$ 77,797,639	
Employer Contributions	78,656,685	
State Contributions	545,643	
Investment Return	713,389,244	
Other	159,716	
Total Additions	**$ 870,548,927**	
Deductions		
Benefit Payments	$ 243,507,352	
Administrative Expenses	3,071,227	
Total Deductions	**$ 246,578,579**	
Value of Assets – June 30, 2011		**$ 3,939,875,986**

SECTION II
ASSETS

Actuarial Value of Assets (AVA)

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 System, the actuarial value has been calculated by taking the market value of assets less 75% of the investment gain (loss) during the preceding year, less 50% of the investment gain (loss) during the second preceding year, and less 25% of the investment gain (loss) during the third preceding year. The tables below illustrate the calculation of actuarial value of assets for the June 30, 2011 valuation.

Table II-2
Market Value Gain/(Loss)

Value of Assets – June 30, 2010	$ 3,315,905,638
Employer, State, and Member Contributions	$ 157,159,683
Benefit Payments	(243,507,352)
Expected Return at 7.75%	253,699,146
Expected Value at June 30, 2011	$ 3,483,257,115
Actual Value at June 30, 2011	$ 3,939,875,986
Investment Gain/(Loss)	$ 456,618,871

Table II-3
Develop Excluded Gain/(Loss)

	Total Gain/(Loss)	Excluded Portion
Exclude 75% of 2011 Gain/(Loss)	$ 456,618,871	$ 342,464,153
Exclude 50% of 2010 Gain/(Loss)	$ 145,496,211	$ 72,748,105
Exclude 25% of 2009 Gain/(Loss)	$ (1,103,260,330)	$ (275,815,083)
Total Excluded Gain/(Loss) for AVA Calculation		$ 139,397,176

Table II-4
Actuarial Value of Assets

Market Value of Assets – June 30, 2011	$ 3,939,875,986
Total Gain/(Loss) excluded	139,397,176
Actuarial Value of Assets – June 30, 2011	$ 3,800,478,810

SECTION II
ASSETS

Investment Performance

The market value of assets (MVA) returned 21.70% during 2011, which is greater than the assumed 7.75% return. A return of (0.08%) 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 25% of the gain or loss from the performance of the System 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.

Table II-5
Annual Rates of Return

Year Ending June 30,	Market Value	Actuarial Value
2005	8.03%	5.32%
2006	8.98%	9.25%
2007	17.92%	11.94%
2008	(4.91%)	7.62%
2009	(20.85%)	(0.16%)
2010	12.91%	(1.18%)
2011	21.70%	(0.08%)

SECTION II
ASSETS

Table II-6
Projection of System's Benefit Payments and Contributions

Year Beginning July 1,	Expected Benefits and Expenses	Expected Contributions*	Net Cash Flow
2011	$ 283,996,554	$ 158,900,697	$ (125,095,857)
2012	289,966,506	166,983,498	(122,983,008)
2013	312,417,418	176,330,864	(136,086,553)
2014	336,710,021	186,992,000	(149,718,022)
2015	361,256,983	199,022,543	(162,234,440)
2016	387,343,264	212,494,918	(174,848,346)
2017	415,451,596	227,505,018	(187,946,578)
2018	443,643,439	244,136,683	(199,506,756)
2019	472,056,704	262,470,450	(209,586,254)
2020	499,832,649	282,590,410	(217,242,239)

* Expected contributions include Employer Contributions, State Contributions and Member Contributions. For illustration purposes, we have assumed that all contribution rates will remain level (except for the additional 1% member contribution rate for future members) and that payroll will increase at the actuarially assumed rate of 4.00% per year.

Expected benefit payments are projected for the closed group valued at June 30, 2011. Projecting any farther than ten years using a closed-group would not yield reliable predictions due to the omission of new hires. Expenses are assumed to be 1.50% of benefit payments. (The expense assumption is only for purposes of the cash flow projections in the above table.)

SECTION III
LIABILITIES

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

- **Disclosure** of System liabilities at June 30, 2010 and June 30, 2011;
- Statement of **changes** in these liabilities during the year;
- Details on the source of actuarial gains and losses between this valuation and the last;
- Development of actuarial unfunded liability on a market value basis as required under MCA 12-2-407; and
- Development of the Plan Choice Rate unfunded liability and rate.

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 System, this represents the amount of money needed today to fully pay off all future benefits and expenses of the System, 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** (EAN) 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 System, assuming no future accruals of benefits. These liabilities are also required for accounting purposes (FASB ASC Topic No. 960) and used to assess whether the System 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 System assets yields, for each respective type, a **net surplus** or an **unfunded liability**.

SECTION III
LIABILITIES

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

	June 30, 2010	June 30, 2011
Present Value of Benefits		
Active Participant Benefits	$ 3,623,392,805	$ 3,508,104,121
Retiree and Inactive Benefits	2,636,877,759	2,889,696,155
Present Value of Benefits (PVB)	**$ 6,260,270,564**	**$ 6,397,800,276**
Market Value of Assets (MVA)	$ 3,315,905,638	$ 3,939,875,986
Future Member Contributions	573,452,477	559,806,286
Future Employer Contributions	592,567,560	578,466,496
Funding Shortfall/(Surplus)	1,778,344,889	1,319,651,508
Total Resources	**$ 6,260,270,564**	**$ 6,397,800,276**
Actuarial Accrued Liability		
Present Value of Benefits (PVB)	$ 6,260,270,564	$ 6,397,800,276
Present Value of Future Normal Costs (PVFNC)	1,018,451,770	987,655,864
Actuarial Accrued Liability (AAL=PVB–PVFNC)	**5,241,818,794**	**5,410,144,412**
Actuarial Value of Assets (AVA)	3,889,890,145	3,800,478,810
Net (Surplus)/Unfunded (AAL – AVA)	**$ 1,351,928,649**	**$ 1,609,665,602**
Present Value of Accrued Liability		
Present Value of Benefits (PVB)	$ 6,260,270,564	$ 6,397,800,276
Present Value of Future Benefit Accruals (PVFBA)	1,810,888,305	1,706,165,821
Present Value of Accrued Liability (PVAB=PVB–PVFBA)	**$ 4,449,382,259**	**$ 4,691,634,455**
Market Value of Assets (MVA)	$ 3,315,905,638	$ 3,939,875,986
Net Unfunded (PVAB – MVA)	**$ 1,133,476,621**	**$ 751,758,469**

SECTION III
LIABILITIES

Changes in Liabilities

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

- New hires since the last valuation
- Benefits accrued since the last valuation
- System 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 System assets resulting from:

- Employer contributions different than expected
- Investment earnings different than expected
- A change in the method used to measure System 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 System. Below we present key changes in liabilities since the last valuation. On the next page we provide more detail on the sources of the actuarial (gain)/loss as measured on the basis of actuarial accrued liability.

Table III-2

(In Thousands)	Present Value of Benefits	Actuarial Accrued Liability	Present Value of Accrued Liability
Liabilities June 30, 2010	$ 6,260,270,564	$ 5,241,818,794	$ 4,449,382,259
Liabilities June 30, 2011	6,397,800,276	5,410,144,412	4,691,634,455
Liability Increase (Decrease)	137,529,712	168,325,618	242,252,196
Change Due to:			
Actuarial (Gain)/Loss	NC*	(90,607,235)	NC*
Plan Changes	(57,855,946)	(35,686,353)	(28,182,900)
Benefits Accumulated and Other Sources	195,385,658	294,619,206	270,435,096

* NC = not calculated.

SECTION III
LIABILITIES

Table III-3
Summary of Actuarial Gains and Losses as of June 30, 2011

Actuarial Liabilities as of July 1, 2010	$ 5,241,818,794
Normal Cost	131,156,819
Actual Benefit Payments	(243,507,352)
Expected Earnings	406,969,739
Expected Actuarial Liability as of July 1, 2011	5,536,438,000
Actual Liability as of July 1, 2011 (before plan changes)	$ 5,445,830,765
Liability (Gain)/Loss	$ (90,607,235)
Sources of Liability (Gain)/Loss	
Salary (Gain)/Loss	$ (117,942,616)
New Participant (Gain)/Loss	5,743,809
Active Retirements (Gain)/Loss	2,946,991
Active Terminations (Gain)/Loss	4,343,323
Active Deaths (Gain)/Loss	1,072,067
Active Disability (Gain)/Loss	(1,407,298)
Inactive Decrements (Gain)/Loss	14,636,489
Actual Liability as of July 1, 2011 (after plan changes)	$ 5,410,144,412
Liability (Gain)/Loss due to plan changes	$ (35,686,353)
Actuarial Value of Assets as of July 1, 2010	$ 3,889,890,145
Net Cash Flow	(86,347,669)
Expected Earnings	298,182,946
Expected Actuarial Value of Assets as of July 1, 2011	4,101,725,422
Actual Actuarial Value of Assets as of July 1, 2011	$ 3,800,478,810
Investment (Gain)/Loss	$ 301,246,612
Total Liability (Gain)/Loss	(126,293,588)
Total Actuarial (Gain)/Loss	$ 174,953,024

SECTION III
LIABILITIES

Table III-4 shows the actuarial liabilities as of the prior and current valuation dates. The unfunded actuarial liability is the difference between the actuarial liability and the actuarial value of assets. The funded ratio is the ratio of the actuarial value of assets to the actuarial liability.

Table III-4
Actuarial Liabilities for Funding

	June 30, 2010	June 30, 2011
1. Actuarial Liabilities		
Retiree and Inactive Benefits	$ 2,636,877,759	$ 2,889,696,155
Active Member Benefits	2,604,941,035	2,520,448,257
Total Actuarial Liability	**$ 5,241,818,794**	**$ 5,410,144,412**
2. Actuarial Value of Assets	$ 3,889,890,145	$ 3,800,478,810
3. Unfunded Actuarial Liability	$ 1,351,928,649	$ 1,609,665,602
4. Funded Ratio	74.21%	70.25%

Montana Code Annotated (MCA) 19-2-407 requires an analysis of how market performance is affecting the actuarial funding of the System. Table III-5 presented below shows the same information as in Table III-4 above, but using market value of assets rather than actuarial value of assets.

Table III-5
Actuarial Liabilities on Market Value Basis (MCA 19-2-407)

	June 30, 2010	June 30, 2011
1. Actuarial Liabilities		
Retiree and Inactive Benefits	$ 2,636,877,759	$ 2,889,696,155
Active Member Benefits	2,604,941,035	2,520,448,257
Total Actuarial Liability	**$ 5,241,818,794**	**$ 5,410,144,412**
2. Market Value of Assets	$ 3,315,905,638	$ 3,939,875,986
3. Unfunded Actuarial Liability	$ 1,925,913,156	$ 1,470,268,426
4. Funded Ratio	63.26%	72.82%

SECTION III
LIABILITIES

Table III-6 shows the development of the portion of the unfunded actuarial liability allocated to PERS members who are in alternative defined contribution plans. This liability is funded by the Plan Choice Rate (PCR) contributions.

Table III-6
Plan Choice Rate Unfunded Liability

	June 30, 2011
1. PCR-UAL as of June 30, 2010	$ 14,687,168
2. Assumed Interest at 7.75% per year	1,138,256
3. Less: PCR Contributions to DBRP reduced by Normal Cost	(2,787,635)
4. Interest at 7.75% on line 3	(108,021)
5. PCR – UAL as of June 30, 2011	$ 12,929,768

Table III-7 determines the sufficiency of the Plan Choice Rate (PCR), which is used to determine the contributions made to the System for purposes of funding the PCR unfunded liability.

Table III-7
Plan Choice Rate

		June 30, 2011
PCR – Normal Cost Rate		
Normal Cost Rate		
DBRP Members Only		12.590%
Including DCRP and ORP members		12.580%
Difference	(A)	0.010%
Payroll as of June 30, 2011		
DBRP Members Only	(B)	$ 1,021,291,755
DCRP and ORP members	(C)	$ 97,380,527
PCR – Normal Cost Rate	(A) X (B) ÷ (C)	0.100%
PCR – UAL Amortization		
PCR – UAL as of June 30, 2011		$ 12,929,768
PCR Available for Amortization		
Current PCR Amortization Rate		2.640%
Less: PCR – Normal Cost Rate		0.100%
PCR Available for Amortization - 2011		2.540%
Years to Amortize PCR – UAL from June 30, 2011		5.9 years
Maximum Years for Amortization		16.75 years
Sufficient or Insufficient		Sufficient

SECTION IV
CONTRIBUTIONS

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

For this System, the funding method employed is the **Entry Age Actuarial Cost Method**. Under this method, there are two components to the total contribution: the **normal cost rate** and the **unfunded actuarial liability rate** (UAL rate). The normal cost rate is determined by taking the value, as of entry age into the plan, of each member's projected future benefits. This value is then divided by the value, also at entry age, of each member's expected future salary. The normal cost rate is multiplied by current salary to determine each member's normal cost rate. Finally, the total normal cost rate is reduced by the member contribution to produce the employer normal cost rate. The difference between the EAN actuarial liability and the actuarial value of assets is the unfunded actuarial liability.

For purposes of determining the adequacy of the statutory funding rate, the UAL rate is calculated by subtracting the normal cost rate from the statutory rate. A calculation is then made to determine the period over which the UAL rate will amortize the unfunded actuarial liability. A second UAL rate is calculated based upon a 30-year amortization of the UAL, which is the maximum amortization period permitted under GASB Statement No. 25, but which should not necessarily be construed as a recommended contribution level. All UAL payments are determined as a level percentage of pay, assuming that total pay increases by the annual inflation rate of 4.00%.

SECTION IV
CONTRIBUTIONS

The tables below present and compare the contribution rates for the System for this valuation and the prior one.

Table IV-1
Statutory Basis

	June 30, 2010	June 30, 2011
Statutory Funding Rates		
Members	6.900%	6.900%
Employers and State[1]	7.170%	7.170%
Total	14.070%	14.070%
Transfer to Education Fund	0.040%	0.040%
Net Contribution to DBRP	14.030%	14.030%
Normal Cost Rate	12.610%	12.590%[2]
Funding Rate Available for Amortization	1.420%	1.440%
Unfunded Actuarial Liability (Surplus)	$ 1,351,928,649	$ 1,609,665,602
Less: PCR-UAL	14,687,168	12,929,768
UAL Funded by DBRP	1,337,241,481	1,596,735,834
Years to Amortize	Does not amortize	Does not amortize

[1] Rates shown are for the fiscal year following the valuation date. The allocation of the rate between Employers and the State is described in Appendix C, item 2.

[2] The normal cost rate is projected to be 10.12% for members eligible after July 1, 2011. It is expected that the average normal cost rate will decrease over the next generation of active plan members.

Table IV-2
Years to Amortize Unfunded Actuarial Liability
Under Alternate Assumptions

	June 30, 2010	June 30, 2011
Years to Amortize		
Using Market Value of Assets	Does not amortize	Does not amortize
Excluding additional contributions under HB131		
Using Actuarial Value of Assets	Does not amortize	Does not amortize
Using Market Value of Assets	Does not amortize	Does not amortize

SECTION IV
CONTRIBUTIONS

Table IV-3
Calculated Contribution Basis

	June 30, 2010	June 30, 2011
Normal Cost Rate	12.610%	12.590%
Educational Fund	0.040%	0.040%
Amortization Payment (30-years)	6.430%	7.800%
Total Calculated Contribution Rate	19.080%	20.430%
Less Statutory Rate	14.070%	14.070%
Shortfall (Surplus) in Statutory Rate	5.010%	6.360%

Table IV-4
Calculated Contribution on Market Value (MCA 19-2-407)

	June 30, 2010	June 30, 2011
Normal Cost Rate	12.610%	12.590%
Educational Fund	0.040%	0.040%
Amortization Payment (30-years)	9.190%	7.120%
Total Calculated Contribution Rate	21.840%	19.750%
Less Statutory Rate	14.070%	14.070%
Shortfall (Surplus) in Statutory Rate	7.770%	5.680%

The following table shows the expected results for the next five valuations (assuming all assumptions are met, including 7.75% return).

Table IV-5
Projected Calculated Contribution Rates

Valuation Year	Rate
2012	20.77%
2013	20.03%
2014	19.52%
2015	19.52%
2016	19.52%

SECTION V
ACCOUNTING STATEMENT INFORMATION

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

The FASB ASC Topic No. 960 disclosures provide a quasi "snap shot" view of how the System'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 System 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 ASC Topic No. 960) and the actuarial accrued liability (GASB-25) are determined assuming that the System is on-going and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 7.75% per annum.

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

Tables V-2 through V-5 are exhibits to be used with the State CAFR report. Table V-2 is the Note to Required Supplementary Information, Table V-3 is a history of gains and losses in Accrued Liability, Table V-4 is the Schedule of Funding Progress, and V-5 is the Solvency Test which shows the portion of Accrued Liability covered by Assets.

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-1
Accounting Statement Information

	June 30, 2010	June 30, 2011
A. FASB ASC Topic No. 960 Basis		
1. Present Value of Benefits Accrued and Vested to Date		
a. Members Currently Receiving Payments	$ 2,481,533,819	$ 2,728,686,667
b. Former Vested Members	155,343,940	161,009,488
c. Active Members	1,812,504,500	1,801,938,300
2. Total Present Value of Accrued Benefits (1 (a) + 1(b) + 1(c))	$ 4,449,382,259	$ 4,691,634,455
3. Assets at Market Value	3,315,905,638	3,939,875,986
4. Unfunded Present Value of Accrued Benefits (2 – 3)	$ 1,133,476,621	$ 751,758,469
5. Ratio of Assets to Present Value of Accrued Benefits (3 / 2)	74.53%	83.98%
B. GASB No. 25 Basis		
1. Actuarial Accrued Liabilities for retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	$ 2,636,877,759	$ 2,889,696,155
2. Actuarial Accrued Liabilities for current employees	2,604,941,035	2,520,448,257
3. Total Actuarial Accrued Liability (1 + 2)	$ 5,241,818,794	$ 5,410,144,412
4. Net Actuarial Assets available for benefits	3,889,890,145	3,800,478,810
5. Unfunded Actuarial Accrued Liability (3 – 4)	$ 1,351,928,649	$ 1,609,665,602

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-2
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	June 30, 2011
Actuarial cost method	Entry age
Amortization method	Open
Remaining amortization period for Annual Required Contribution	30 years
Asset valuation method	4-Year smoothed market
Actuarial assumptions:	
Investment rate of return*	7.75%
General wage growth*	4.00%
Merit salary increases	0.0% - 6.0%
*Includes inflation at	3.00%

The actuarial assumptions used have been recommended based on the most recent review of the System's experience (completed in 2010) and adopted by the Retirement Board.

The rate of employer contributions to the System is composed of the normal cost and amortization of the unfunded actuarial accrued liability. The normal cost is a level percent of payroll cost which will pay for projected benefits at retirement for each participant. The actuarial accrued liability is that portion of the present value of projected benefits that will not be paid by future normal costs. The difference between this liability and the funds accumulated as of the same date is the unfunded actuarial accrued liability.

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-3
ANALYSIS OF FINANCIAL EXPERIENCE*

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

Type of Activity	*Gain (or Loss) for Year ending June 30, (expressed in thousands)* 2006	2007	2008	2009	2010	2011
Investment Income on Actuarial Assets	$ 39,882	$ 136,012	$(14,160)	$ (329,471)	$(364,392)	$ (301,247)
Combined Liability Experience	33,734	(40,640)	(47,012)	(14,731)	(10,001)	90,607
(Loss)/Gain During Year from Financial Experience	$ 73,616	$ 95,372	$(61,172)	$ (344,202)	$(374,393)	$ (210,640)
Non-Recurring Items	0	0	0	0	(156,543)	35,686
Composite Gain (or Loss) During Year	$ 73,616	$ 95,372	$(61,172)	$ (344,202)	$(530,936)	$ (174,954)

* Years prior to 2009 were taken from reports prepared by prior actuary.

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-4
SCHEDULE OF FUNDING PROGRESS*
(expressed in thousands)

Valuation Date June 30,	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Funded Ratio	Unfunded AAL (UAAL)	Covered Payroll	UAAL as a Percentage of Covered Payroll
2011	$ 3,800,479	5,410,144	70	$ 1,609,665	1,071,376	150
2010	3,889,890	5,241,819	74	1,351,929	1,083,780	125
2009	4,002,212	4,792,819	84	790,607	1,003,215	79
2008	4,065,307	4,504,743	90	439,436	955,113	46
2007	3,825,234	4,201,251	91	376,017	907,424	41
2006	3,459,084	3,919,313	88	460,229	880,708	52

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

Valuation Date June 30,	Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Member Employer Financed Contributions (3)	Actuarial Value of Reported Assets	Portion of Accrued Liabilities Covered by Reported Assets (1)	(2)	(3)
2011	$ 840,762	2,728,687	$ 1,840,696	$ 3,800,479	100	100	13
2010	848,756	2,481,534	1,911,529	3,889,890	100	100	29
2009	828,390	2,272,582	1,691,847	4,002,212	100	100	53
2008	783,801	2,232,148	1,488,794	4,065,307	100	100	70
2007	749,000	2,051,107	1,401,143	3,825,234	100	100	73
2006	718,260	1,895,838	1,305,215	3,459,084	100	100	65

* Years prior to 2009 were taken from reports prepared by prior actuary.

APPENDIX A
MEMBERSHIP INFORMATION

Reconciliation of Participant Counts

	Active	Disabled	Retirees and Beneficiaries	Terminated Vested Members	Terminated Non-Vested Members	Total
Participant counts used for valuation	28,659	753	17,290	2,535	5,787	55,024
Disabled members having attained normal retirement age		(522)	522			0
Beneficiaries of Disabled Members						0
Beneficiaries with less than one year of certain payments remaining			80			80
Other Adjustments	-			-	-	-
Participant counts shown in Annual Financial Report	28,659	231	17,892	2,535	5,787	55,104

This chart is presented for informational purposes only. The counts shown in the valuation line were used for preparation of the liabilities disclosed within this report. The counts disclosed for the Annual Financial Report and the Board Summary (page 8) match the CAFR reports at the request of the Board. The differences between the counts have no material effect upon the liability calculation.

The salaries used in the tables and charts which follow are different than the salaries used for the Board Summary on page 8. For this Appendix A, the valuation projected salaries to be paid for the following fiscal year, whereas for the Board Summary, salaries are as of the valuation date.

The benefits for retirees and beneficiaries used for the tables and charts which follow are different than the benefits used for the Board Summary on page 8. For this Appendix A, the valuation projected benefits to be paid for the following fiscal year (including GABA where applicable), whereas for the Board Summary, annual benefits are as of the valuation date.

APPENDIX A
MEMBERSHIP INFORMATION

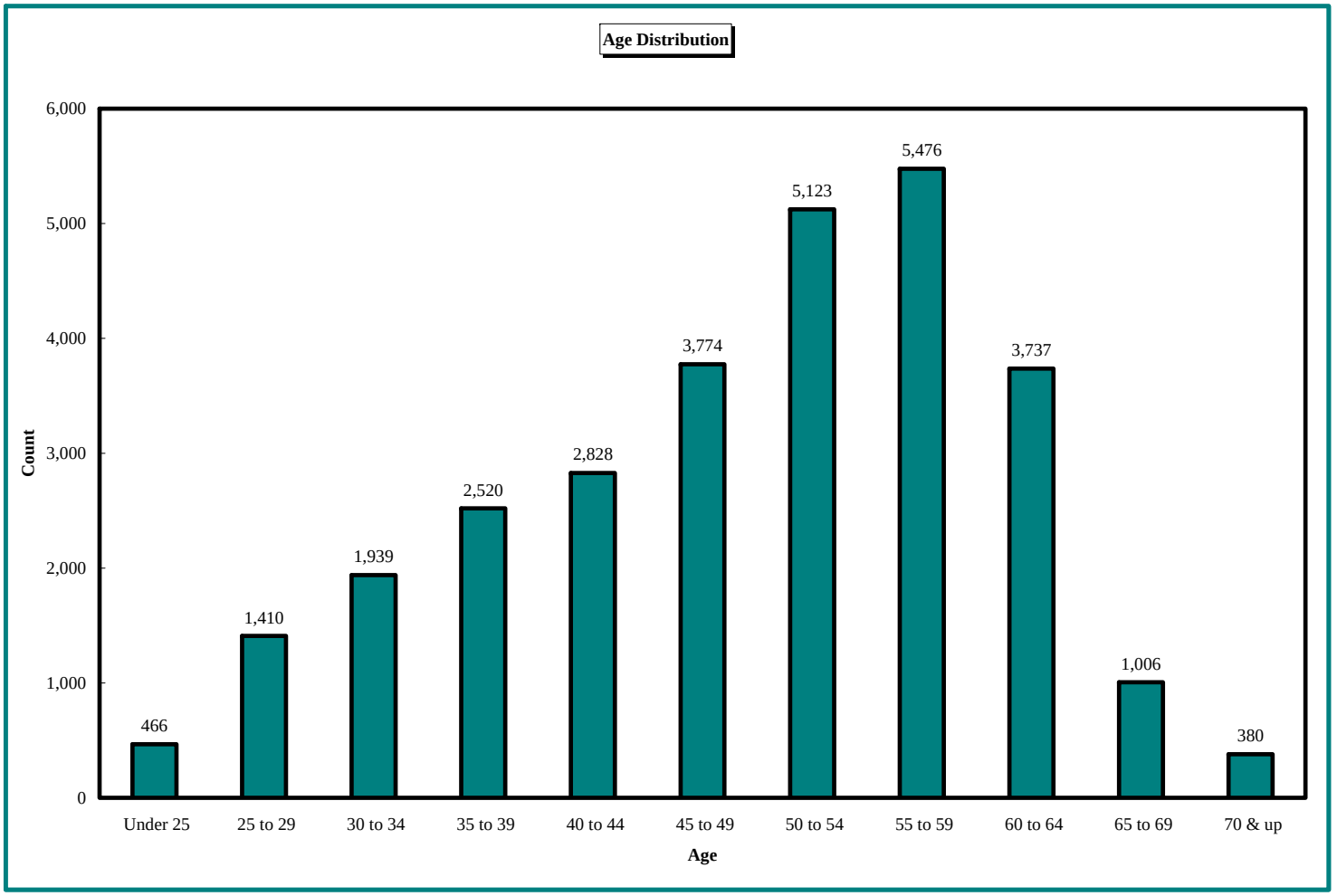
Montana Public Employees' Retirement System Distribution of Active Members by Age and Service as of June 30, 2011

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	282	181	3	0	0	0	0	0	0	0	466
25 to 29	477	796	133	4	0	0	0	0	0	0	1,410
30 to 34	439	882	530	88	0	0	0	0	0	0	1,939
35 to 39	687	877	587	294	75	0	0	0	0	0	2,520
40 to 44	461	912	616	444	310	82	3	0	0	0	2,828
45 to 49	410	1,010	811	592	421	402	125	3	0	0	3,774
50 to 54	435	1,128	1,011	805	620	583	368	164	9	0	5,123
55 to 59	366	983	973	834	733	643	505	324	112	3	5,476
60 to 64	210	623	624	600	524	491	315	202	117	31	3,737
65 to 69	66	203	195	172	125	109	60	43	24	9	1,006
70 & up	30	99	84	46	43	29	26	10	6	7	380
Total	3,863	7,694	5,567	3,879	2,851	2,339	1,402	746	268	50	28,659

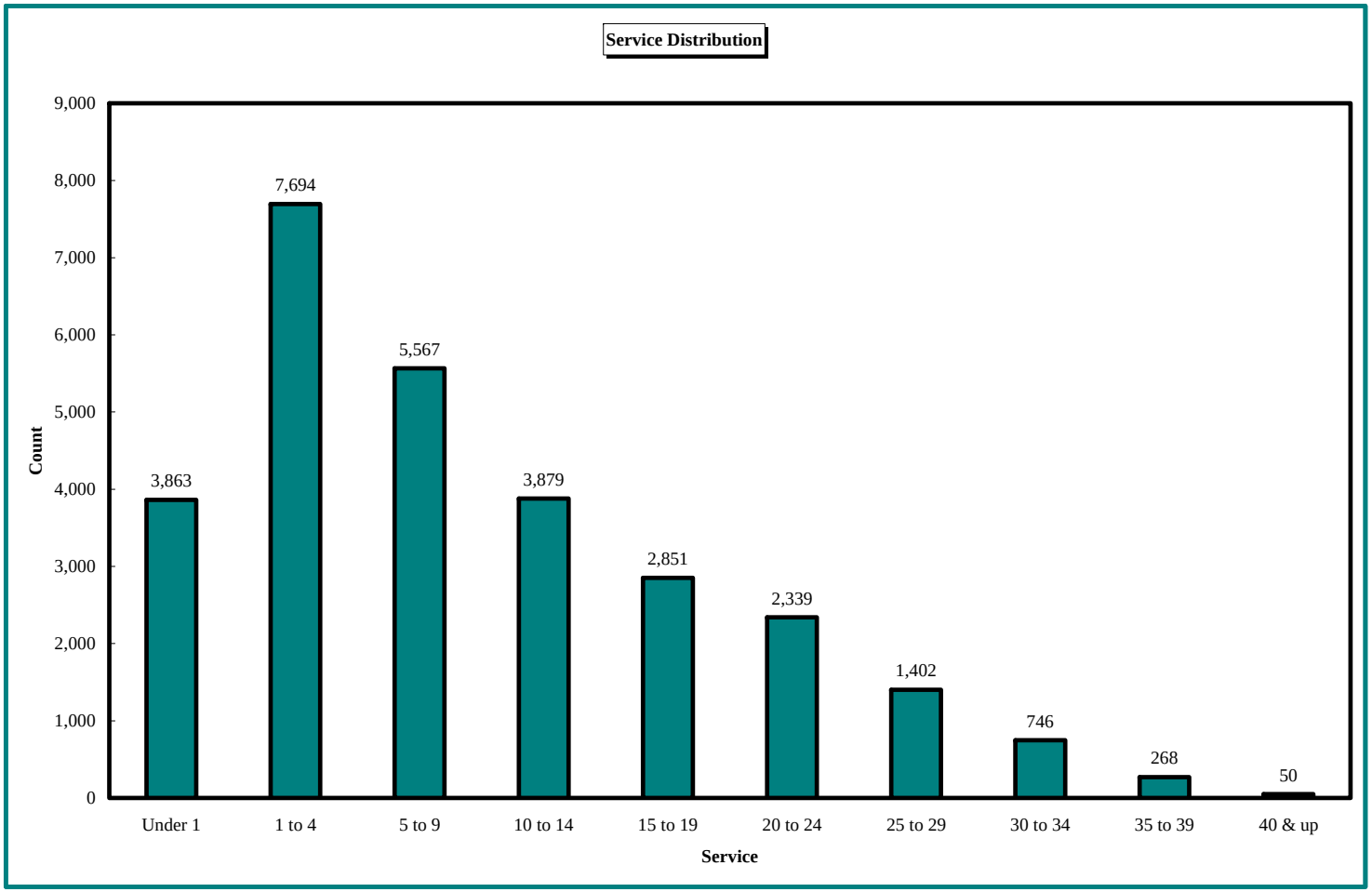
APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Active Members by Age as of June 30, 2011



APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Active Members by Service as of June 30, 2011



APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Active Members by Age and Service as of June 30, 2011

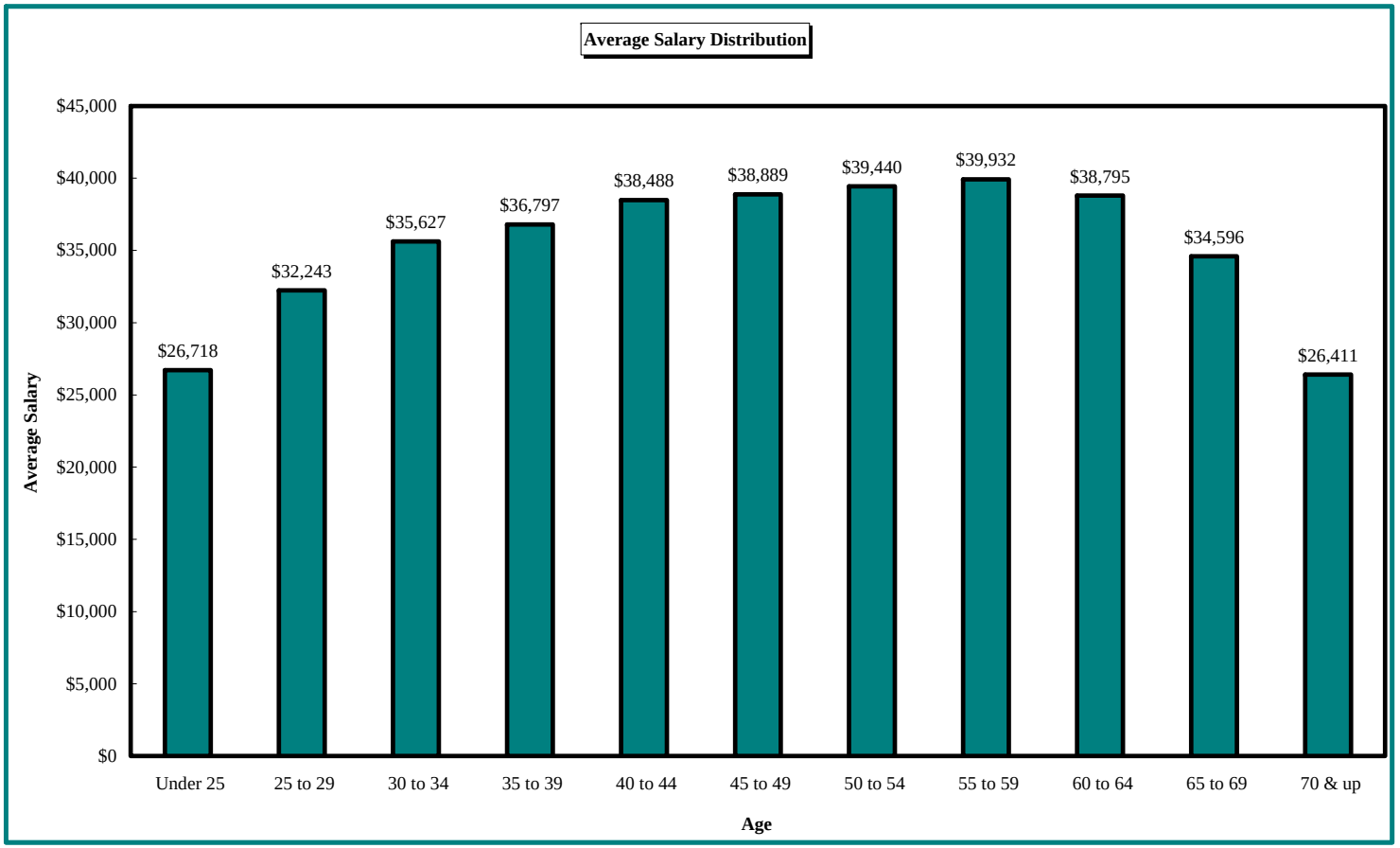
AVERAGE SALARY BY AGE/SERVICE

	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	$26,080	$27,713	$26,724	$0	$0	$0	$0	$0	$0	$0	$26,718
25 to 29	$31,261	$32,111	$36,308	$40,549	$0	$0	$0	$0	$0	$0	$32,243
30 to 34	$31,585	$34,115	$40,304	$42,777	$0	$0	$0	$0	$0	$0	$35,627
35 to 39	$30,845	$33,370	$41,895	$47,525	$49,431	$0	$0	$0	$0	$0	$36,797
40 to 44	$29,602	$33,216	$38,436	$46,471	$52,424	$51,443	$41,976	$0	$0	$0	$38,488
45 to 49	$28,904	$31,852	$36,427	$42,533	$48,831	$51,600	$52,426	$56,372	$0	$0	$38,889
50 to 54	$27,788	$31,447	$34,987	$40,418	$46,206	$49,926	$52,484	$55,055	$54,083	$0	$39,440
55 to 59	$27,458	$30,699	$34,332	$38,151	$41,913	$48,038	$53,846	$55,168	$56,841	$57,823	$39,932
60 to 64	$27,035	$28,992	$33,908	$36,717	$41,088	$44,424	$47,641	$53,285	$60,471	$59,978	$38,795
65 to 69	$22,285	$23,340	$31,039	$37,497	$35,316	$43,285	$48,543	$53,946	$51,770	$53,954	$34,596
70 & up	$24,579	$17,803	$22,302	$25,106	$30,956	$31,773	$39,171	$38,732	$74,384	$57,647	$26,411
Total	$29,211	$31,532	$36,275	$40,655	$44,603	$48,058	$51,443	$54,347	$58,272	$58,438	$37,889

The salary shown in the above chart was used for valuation purposes and assumes pay increases for the year.

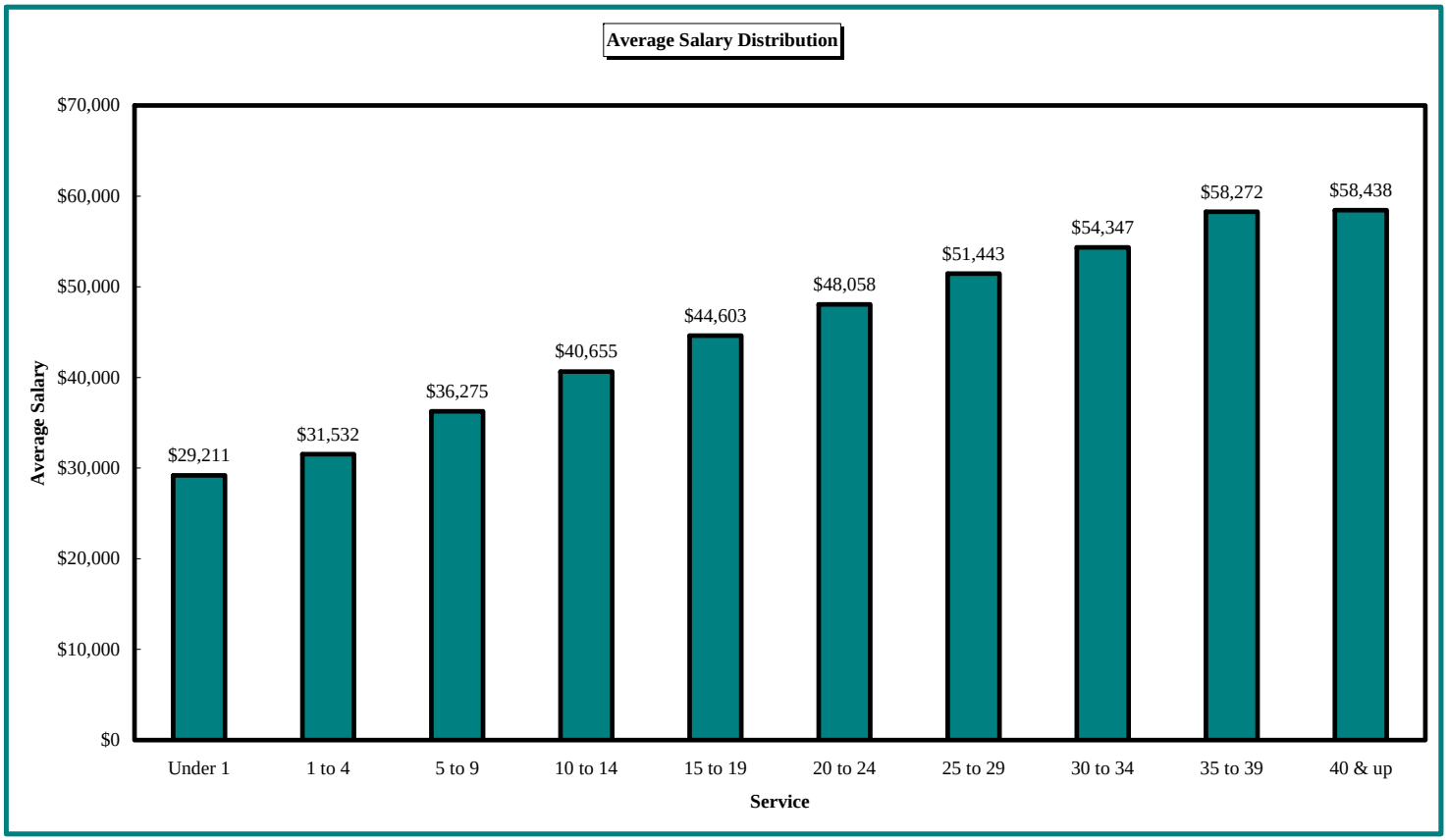
APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Active Members by Age as of June 30, 2011



APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Active Members by Service as of June 30, 2011



APPENDIX A
MEMBERSHIP INFORMATION

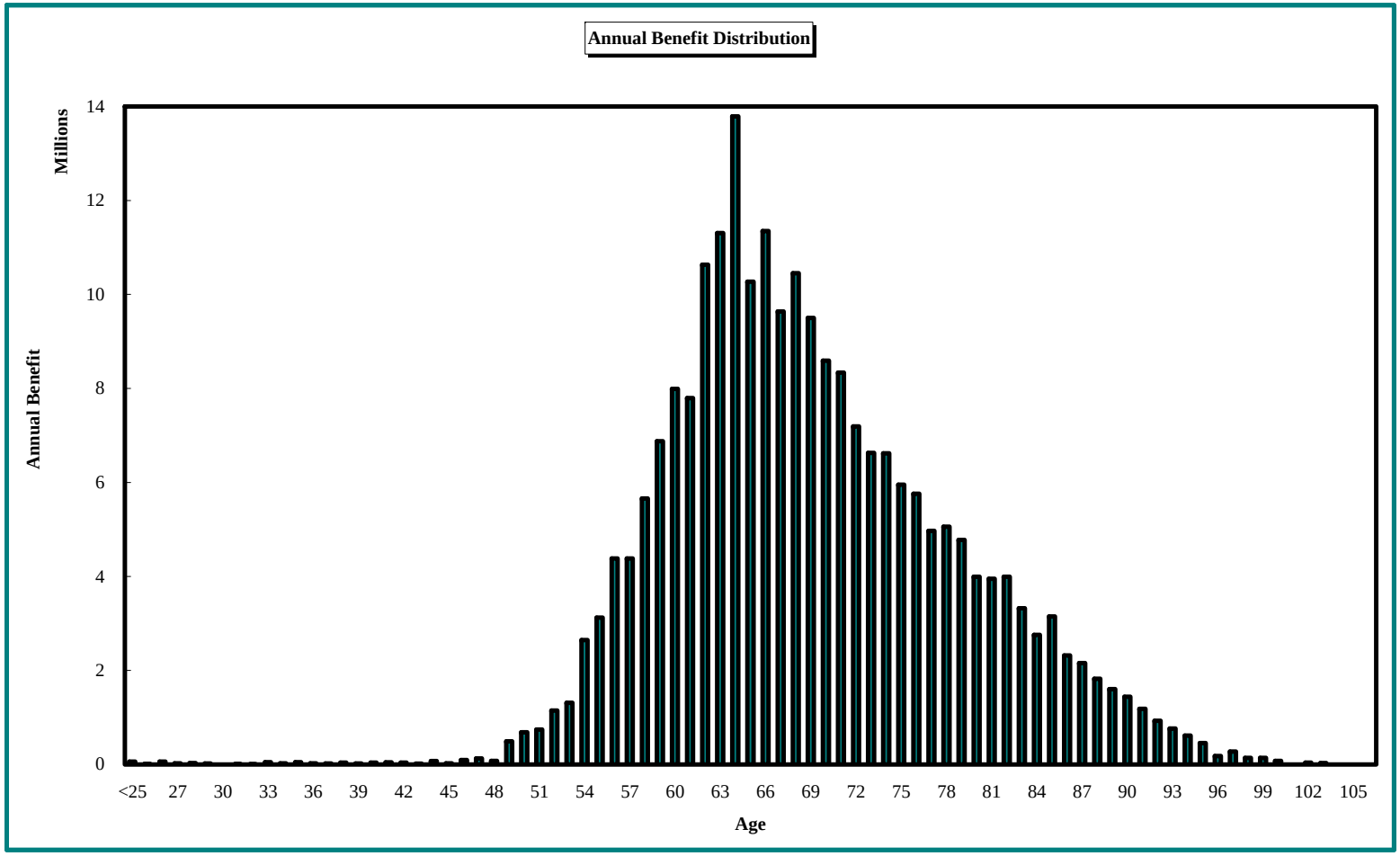
Montana Public Employees' Retirement System Distribution of Retired Members and Survivors as of June 30, 2011

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	10	$60,346	73	557	$6,628,224
25	2	$12,996	74	536	$6,620,889
26	3	$59,304	75	503	$5,952,383
27	2	$24,028	76	512	$5,756,294
28	4	$27,283	77	462	$4,972,273
29	4	$20,232	78	459	$5,060,131
30	0	$0	79	456	$4,776,635
31	2	$6,022	80	405	$3,995,406
32	2	$5,413	81	402	$3,951,816
33	5	$48,696	82	385	$3,994,438
34	4	$22,623	83	362	$3,322,445
35	3	$46,658	84	283	$2,756,541
36	5	$24,010	85	329	$3,146,893
37	2	$21,641	86	270	$2,316,129
38	7	$39,066	87	248	$2,156,039
39	4	$17,881	88	214	$1,823,758
40	6	$38,043	89	190	$1,602,401
41	8	$44,316	90	169	$1,439,900
42	6	$41,160	91	150	$1,182,833
43	4	$17,699	92	118	$930,780
44	7	$70,867	93	89	$762,200
45	5	$24,963	94	73	$612,841
46	9	$96,749	95	51	$456,094
47	10	$127,228	96	26	$176,415
48	9	$74,143	97	26	$272,009
49	25	$492,049	98	14	$138,767
50	36	$683,832	99	13	$139,644
51	42	$743,238	100	8	$75,957
52	67	$1,147,227	101	0	$0
53	75	$1,314,842	102	4	$39,116
54	123	$2,645,016	103	2	$27,768
55	152	$3,124,421	104	0	$0
56	195	$4,381,597	105	0	$0
57	236	$4,380,337	106	0	$0
58	272	$5,660,535	107	0	$0
59	329	$6,876,036	108	0	$0
60	417	$7,993,680	109	0	$0
61	454	$7,796,882	110	0	$0
62	600	$10,634,632	111	0	$0
63	654	$11,305,772	112	0	$0
64	797	$13,789,878	113	0	$0
65	637	$10,270,244	114	0	$0
66	735	$11,348,767	115	0	$0
67	694	$9,637,455	116	0	$0
68	750	$10,454,380	117	0	$0
69	678	$9,500,623	118	0	$0
70	648	$8,588,012	119	0	$0
71	659	$8,335,092	120	0	$0
72	576	$7,194,843			
			Totals	17,290	$234,357,771

The chart above reflects the counts and benefits used for valuation purposes as a result of data processing. The benefit amounts shown have been projected using a half year COLA assumption.

APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Retired Members and Survivors as of June 30, 2011



APPENDIX A
MEMBERSHIP INFORMATION

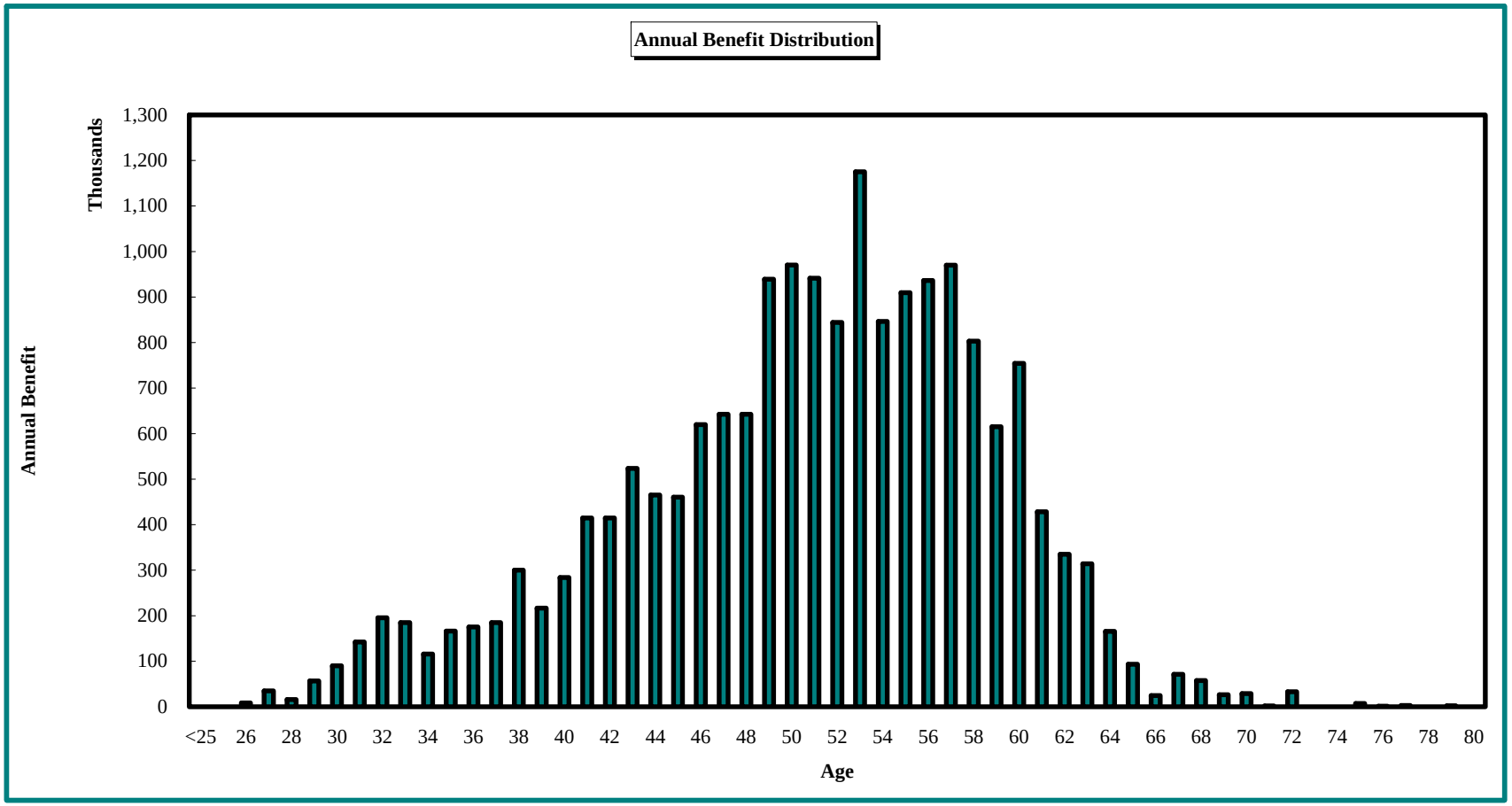
Montana Public Employees' Retirement System Distribution of Vested Members as of June 30, 2011

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	$0	73	0	$0
25	0	$0	74	0	$0
26	1	$8,163	75	2	$7,081
27	4	$34,885	76	1	$1,322
28	2	$15,946	77	1	$2,666
29	7	$56,838	78	0	$0
30	11	$89,949	79	1	$2,372
31	14	$142,214	80	0	$0
32	18	$195,490	81	0	$0
33	18	$184,844	82	0	$0
34	14	$115,570	83	0	$0
35	18	$166,481	84	0	$0
36	21	$175,362	85	0	$0
37	19	$184,933	86	0	$0
38	30	$300,108	87	0	$0
39	25	$216,691	88	0	$0
40	34	$283,847	89	0	$0
41	45	$414,685	90	0	$0
42	47	$414,702	91	0	$0
43	60	$523,635	92	0	$0
44	63	$465,197	93	0	$0
45	55	$460,324	94	0	$0
46	77	$619,779	95	0	$0
47	82	$642,613	96	0	$0
48	81	$642,512	97	0	$0
49	117	$939,329	98	0	$0
50	123	$970,378	99	0	$0
51	130	$941,351	100	0	$0
52	110	$843,950	101	0	$0
53	158	$1,174,938	102	0	$0
54	135	$846,489	103	0	$0
55	131	$909,645	104	0	$0
56	141	$936,433	105	0	$0
57	142	$970,064	106	0	$0
58	125	$802,973	107	0	$0
59	107	$615,337	108	0	$0
60	100	$754,296	109	0	$0
61	65	$428,343	110	0	$0
62	59	$334,909	111	0	$0
63	49	$314,222	112	0	$0
64	30	$165,646	113	0	$0
65	15	$93,498	114	0	$0
66	6	$24,570	115	0	$0
67	14	$71,388	116	0	$0
68	11	$57,565	117	0	$0
69	7	$26,483	118	0	$0
70	7	$28,874	119	0	$0
71	1	$1,747	120	0	$0
72	1	$33,117			
			Totals	2,535	$18,653,755

The chart above reflects the counts and benefits used for valuation purposes as a result of data processing.

APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Vested Members as of June 30, 2011



APPENDIX A
MEMBERSHIP INFORMATION

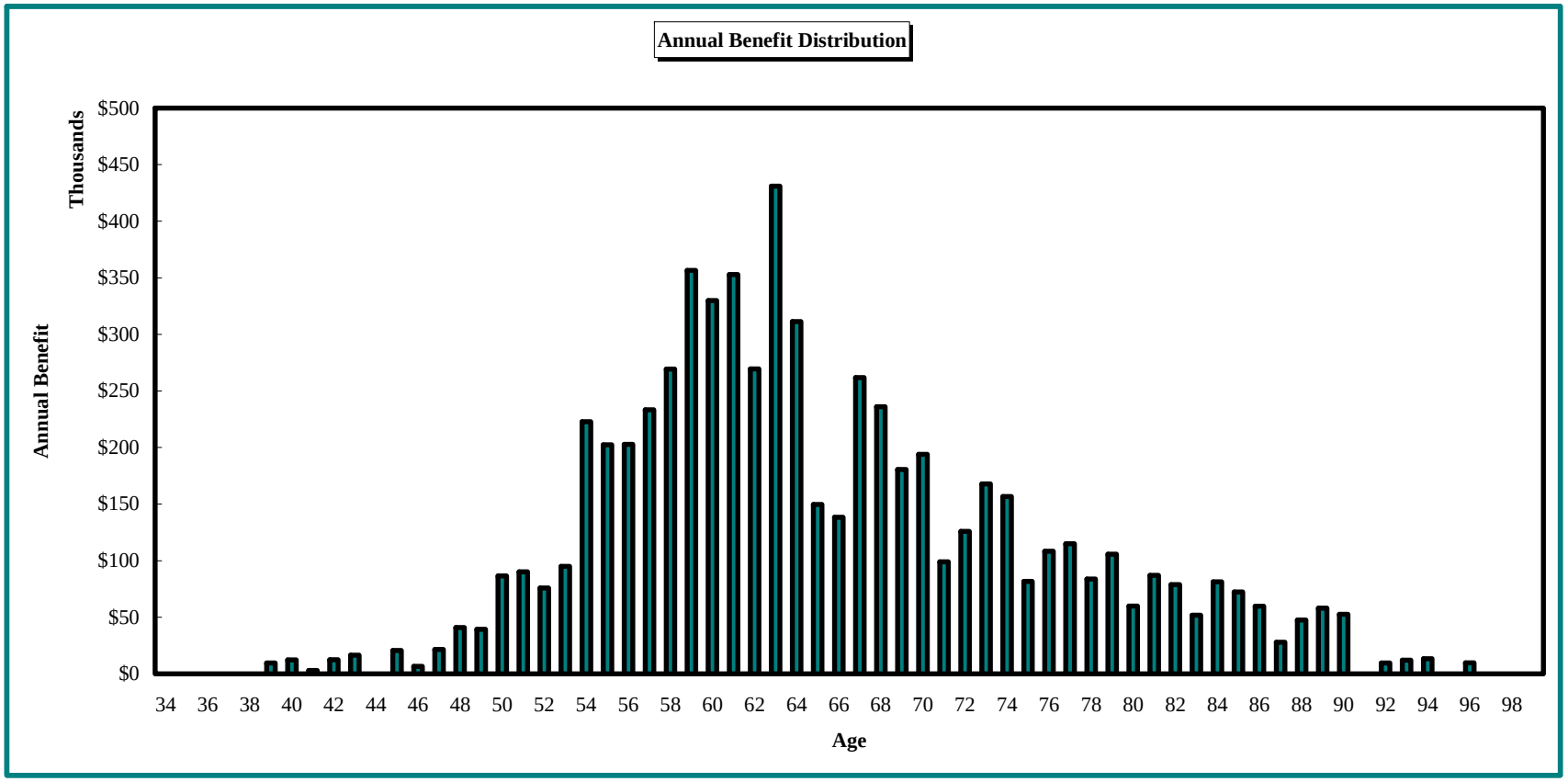
Montana Public Employees' Retirement System Distribution of Disabled Members as of June 30, 2011

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	$0	73	22	$167,981
25	0	$0	74	22	$156,714
26	0	$0	75	12	$81,733
27	0	$0	76	14	$108,419
28	0	$0	77	16	$115,077
29	0	$0	78	11	$83,845
30	0	$0	79	12	$105,800
31	0	$0	80	9	$59,862
32	0	$0	81	11	$87,143
33	0	$0	82	8	$78,747
34	0	$0	83	6	$51,733
35	0	$0	84	9	$81,363
36	0	$0	85	8	$72,371
37	0	$0	86	7	$59,754
38	0	$0	87	3	$27,965
39	1	$9,615	88	6	$47,602
40	1	$12,354	89	6	$58,017
41	1	$2,966	90	4	$52,486
42	2	$12,491	91	0	$0
43	2	$16,501	92	1	$9,579
44	0	$0	93	1	$12,062
45	3	$20,543	94	1	$13,488
46	1	$6,608	95	0	$0
47	3	$21,441	96	1	$9,706
48	5	$41,021	97	0	$0
49	5	$39,246	98	0	$0
50	9	$86,437	99	0	$0
51	10	$90,171	100	0	$0
52	8	$75,922	101	0	$0
53	8	$94,876	102	0	$0
54	21	$222,895	103	0	$0
55	21	$202,420	104	0	$0
56	25	$202,708	105	0	$0
57	26	$233,208	106	0	$0
58	29	$269,197	107	0	$0
59	39	$356,561	108	0	$0
60	32	$329,980	109	0	$0
61	37	$352,911	110	0	$0
62	30	$269,534	111	0	$0
63	40	$430,842	112	0	$0
64	32	$311,385	113	0	$0
65	19	$149,623	114	0	$0
66	19	$138,311	115	0	$0
67	31	$261,754	116	0	$0
68	29	$236,126	117	0	$0
69	21	$180,611	118	0	$0
70	24	$194,029	119	0	$0
71	11	$98,917	120	0	$0
72	18	$125,897			
			Totals	753	$6,638,552

The chart above reflects the counts and benefits used for valuation purposes as a result of data processing. The benefit amounts shown have been projected using a half year COLA assumption.

APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Disabled Members as of June 30, 2011



APPENDIX A
MEMBERSHIP INFORMATION

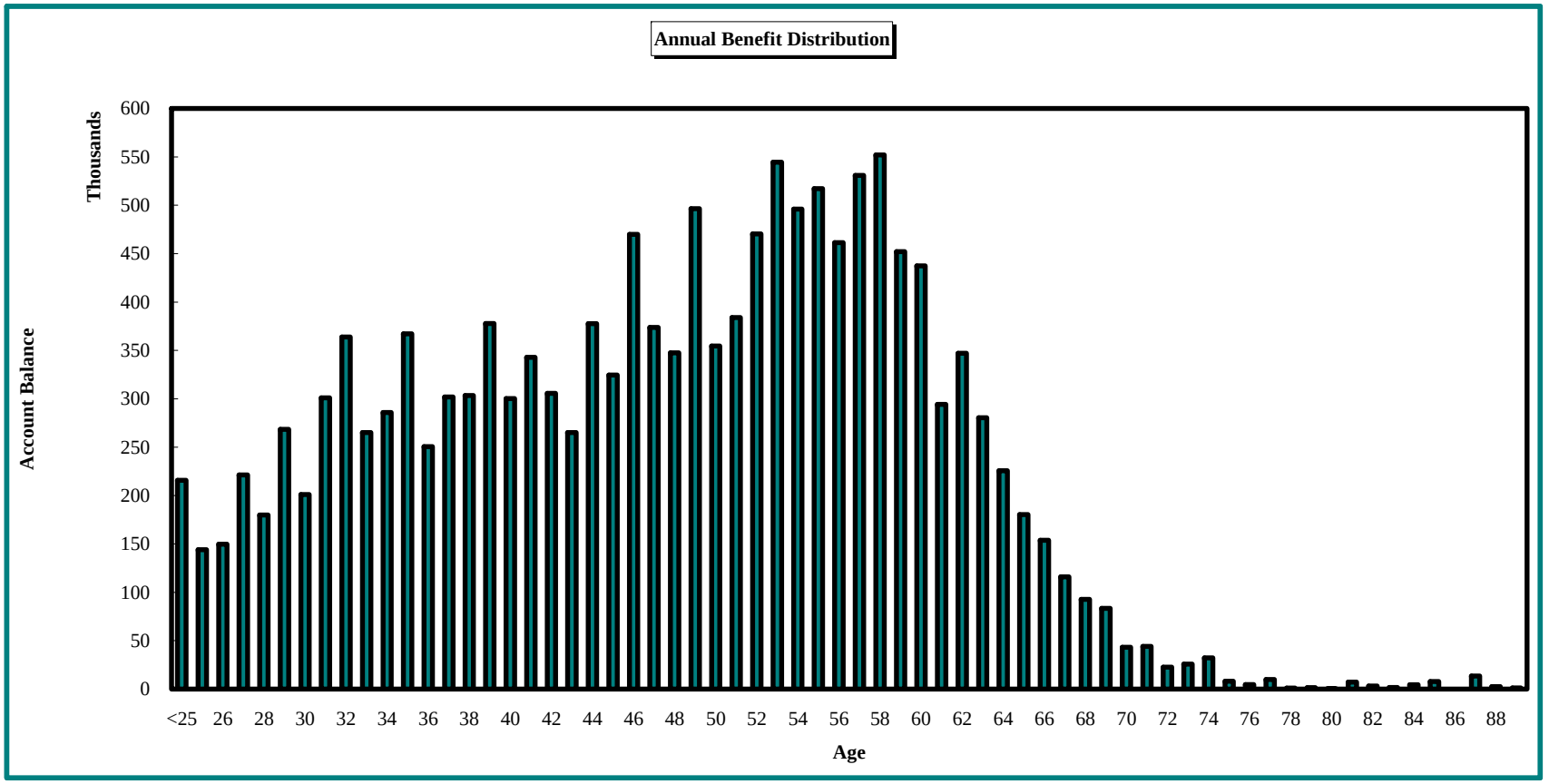
Montana Public Employees' Retirement System Distribution of Non-Vested Members as of June 30, 2011

Age	Count	Account Balance	Age	Count	Account Balance
<25	237	$215,869	73	11	$25,902
25	94	$144,009	74	10	$32,299
26	89	$149,769	75	9	$8,100
27	109	$221,187	76	6	$4,637
28	95	$179,884	77	4	$10,003
29	121	$268,285	78	2	$968
30	95	$201,218	79	2	$1,571
31	128	$301,038	80	2	$498
32	137	$363,838	81	3	$7,247
33	110	$265,103	82	2	$3,215
34	114	$285,794	83	1	$1,609
35	124	$367,225	84	4	$4,555
36	118	$250,578	85	3	$7,836
37	135	$301,999	86	1	$95
38	131	$303,341	87	4	$13,578
39	142	$377,860	88	1	$2,637
40	150	$300,261	89	2	$1,192
41	117	$342,911	90	0	$0
42	149	$305,819	91	1	$791
43	106	$265,225	92	1	$830
44	126	$377,686	93	1	$758
45	112	$324,642	94	0	$0
46	145	$469,849	95	0	$0
47	123	$373,850	96	2	$3,686
48	129	$347,528	97	2	$4,074
49	152	$496,378	98	0	$0
50	115	$354,476	99	0	$0
51	122	$384,002	100	1	$2,663
52	129	$470,332	101	5	$1,391
53	139	$544,721	102	1	$2,142
54	138	$496,061	103	0	$0
55	152	$517,150	104	0	$0
56	123	$461,507	105	0	$0
57	119	$530,756	106	0	$0
58	146	$551,979	107	0	$0
59	131	$452,173	108	0	$0
60	107	$437,402	109	0	$0
61	74	$294,285	110	2	$5,677
62	85	$347,202	111	502	$242,713
63	70	$280,526	112	0	$0
64	64	$225,758	113	0	$0
65	36	$180,342	114	0	$0
66	36	$153,728	115	0	$0
67	28	$115,984	116	0	$0
68	32	$92,791	117	0	$0
69	23	$83,467	118	0	$0
70	17	$43,182	119	0	$0
71	14	$44,070	120	0	$0
72	14	$22,607			
			Totals	5,787	$15,276,314

The chart above reflects the counts and benefits used for valuation purposes as a result of data processing.

APPENDIX A
MEMBERSHIP INFORMATION

Montana Public Employees' Retirement System Distribution of Non-Vested Members as of June 30, 2011



APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

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

1. Demographic Assumptions

a. Healthy Retirees, Beneficiaries and Non-Retired Members

RP-2000 Combined Healthy Male and Female Mortality Tables projected to 2015 with scale AA. The projection to year 2015 is to reflect potential future mortality improvement.

Sample Rates of Healthy Mortality		
Age	**Male**	**Female**
50	0.163%	0.130%
55	0.241%	0.241%
60	0.530%	0.469%
65	1.031%	0.900%
70	1.770%	1.553%
75	3.062%	2.492%
80	5.536%	4.129%
85	9.968%	7.076%
90	17.271%	12.588%

b. Disabled Inactive Mortality

RP-2000 Combined Healthy Male and Female Mortality Tables with no projections. No future mortality improvement is assumed.

Sample Rates of Disabled Inactive Mortality		
Age	**Male**	**Female**
50	0.241%	0.168%
55	0.362%	0.272%
60	0.675%	0.506%
65	1.274%	0.971%
70	2.221%	1.674%
75	3.783%	2.811%
80	6.437%	4.588%
85	11.076%	7.745%
90	18.341%	13.168%

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

c. Rates of Active Disability

Sample Rates of Active Disability	
Age	**Rate**
22	0.00%
27	0.01%
32	0.01%
37	0.04%
42	0.10%
47	0.13%
52	0.25%
57	0.36%
62	0.00%

All disabilities are assumed to be permanent and without recovery.

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

Service	Rate
0	25%
1	20%
2	15%
3	10%
4	10%
5-9	5%
10-14	5%
15 & over	2%

No terminations are assumed after age 50 with five years of service for either male or female.

e. Probability of Electing a Refund of Member Contributions upon Termination

Probability of Electing Refund		
Age at Term.	**Non-Vested**	**Vested**
Under 35	100%	60%
35-39	100%	50%
40-44	100%	45%
45-49	100%	35%
50 & Over	100%	30%

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

f. Retirement

Annual Retirement Rates		
Age	**<30 years**	**30 years or more and age 60 with 25 years**
<50	0.00%	10.00%
50 – 54	3.00	10.00
55	3.00	15.00
56	4.00	15.00
57	5.00	15.00
58	5.00	15.00
59	6.00	15.00
60	8.00	15.00
61	15.00	15.00
62	25.00	25.00
63	15.00	15.00
64	15.00	15.00
65	30.00	30.00
66	30.00	30.00
67	25.00	25.00
68	25.00	25.00
69	25.00	25.00
70 & Over	100.00	100.00

Vested terminations are assumed to retire at their earliest unreduced eligibility.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

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

Service based table plus an annual inflation rate of 4.00% (rates shown below exclude amount for inflation).

Service	Annual Increase
1	6.0%
2	4.9
3	3.9
4	3.1
5	2.4
6	1.8
7	1.4
8	1.0
9	0.7
10	0.5
11-15	0.3
16-20	0.1
21 & over	0.0

h. Family Composition

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

100% of non-retired members are assumed married for both male and female members.

Actual marital characteristics are used for pensioners.

i. Vested Benefits for Terminated Members

Vested benefits for members who terminated during years ending June 30, 2009 and later were estimated based upon compensation and service information in the census data. For members who terminated prior to June 30, 2008, vested benefits valued were the same as had been calculated by the prior actuary for the June 30, 2008 actuarial valuation.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

2. Economic Assumptions

a.	Rate of Investment Return:	7.75% (net of expenses)
b.	Rate of Wage Inflation:	4.00% (3.00% inflation plus 1.00% real wage growth)
c.	Interest on Member Contributions:	3.50%
d.	Rate of Increase in Total Payroll (for Amortization):	4.00%

3. Changes Since Last Valuation

None.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

1. Funding Method

The Entry Age Normal Actuarial Cost method is used to determine costs. Under this funding method, a normal cost is determined as a level percent of pay individually for each active member.

The actuarial accrued liability is that portion of the present value of projected benefits that will not be paid by future normal costs. 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.

2. Actuarial Value of Assets

For purposes of determining the unfunded actuarial accrued liability, 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 the current market value, adjusted by a four-year smoothing of gains and losses on a market value basis. Each year's gain or loss is determined as the difference between the actual market return and the expected market return using the assumed rate of investment return.

3. Amortization Method

The unfunded actuarial accrued liability is amortized as a level percentage of future payroll. The valuation determines the period over which the statutory contributions will fully amortize the unfunded actuarial accrued liability.

4. Changes Since Last Valuation

None.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

C. Plan Choice Rate Calculations

The current employer Plan Choice Rate for members of the Defined Contribution Retirement Plan (DCRP) and the Optional Retirement Plan (ORP) who would have been in PERS is determined as follows:

	Percent of Salary
Plan Choice Rate to DBRP (PCR)	2.370%
Additional PCR Contribution	
FY2008 (July 1, 2007)	0.135
FY2010 (July 1, 2009)	0.135
Total Plan Choice Contribution Rate	**2.640%**

The Plan Choice Rate (PCR) is the percent of the employer contribution allocated to the Defined Benefit Retirement Plan for members who choose the Defined Contribution Retirement Plan or the Optional Retirement Plan. The PCR is required by statute and actuarially determined to maintain the financial stability of the Defined Benefit Retirement Plan (DBRP).

Without the PCR, there are two reasons the DBRP costs could potentially increase; one is the financing of the Unfunded Actuarial Liability (UAL) at the time of the transfers, and the other is the potential for an increase in the Normal Cost Rate.

1. The PCR provides that the amortization of the DBRP UAL at the time of the transfer is financed over the sum of payroll of the DBRP and DCRP members. This method ensures a continuation of the amortization schedule that was in place just prior to the transfers. The legislation provided a starting point for this element of the PCR equal to 2.37% of the payroll of DCRP members and the ORP members who would have been in the DBRP.

2. Compared to the members who remain in the DBRP, if the transferring DCRP and ORP members are, on average, either younger at the time of hire, or have a shorter career, the DBRP Normal Cost Rate could increase. The dollar amount of the increase in the DBRP Normal Cost is financed as a percentage of DCRP and ORP payroll. Therefore, the employers whose employees choose the DCRP and ORP will fund any increase in the Normal Cost of the DBRP. This rate is known as the PCR Normal Cost Rate (PCR-NCR).

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Amortization Test: The current PCR, less the PCR-NCR, will be available to amortize the remaining PCR-UAL. The initial amortization period was set at 12.75 years as of June 30, 1998. The amortization period will decline by one year each biennium, but the PCR will not change unless the amortization period is more than 10 years different than the scheduled amortization period.

Amortization of PCR-UAL

	Baseline	Acceptable Range	
1998 Valuation	12.75	2.75	22.75
2000 Valuation	11.75	1.75	21.75
2002 Valuation	10.75	0.75	20.75
2004 Valuation	9.75	n/a*	19.75
2006 Valuation	8.75	n/a*	18.75
2008 Valuation	7.75	n/a*	17.75
2010 Valuation	6.75	n/a*	16.75
2012 Valuation	5.75	n/a*	15.75
2014 Valuation	4.75	n/a*	14.75
2016 Valuation	3.75	n/a*	13.75
2018 Valuation	2.75	n/a*	12.75
2020 Valuation	1.75	n/a*	11.75
2022 Valuation	0.75	n/a*	10.75

*Assumes immediate amortization of PCR UAL.
Lower end only applies after 2002 if the PCR UAL is fully amortized.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

1. Membership

The Plan is a multiple-employer cost sharing plan that covers employees of the State, local governments, and certain employees of the university system and school districts, who are not covered by a separate retirement system governed by Title 19 of Montana Code Annotated.

2. Member Contributions

Members contribute 6.9% of their compensation. Interest is credited at rates determined by the Board.

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

Employers contribute 6.9% of each member's compensation, increased to 7.035% on July 1, 2007 and 7.17% on July 1, 2009. This is offset by a 0.1% of compensation from the State for local governments and school districts. For school districts, this offset increased to 0.235% on July 1, 2007 and 0.37% on July 1, 2009. These increased contributions and offsets as of 2007 and 2009 will terminate if an actuarial valuation shows that the period required to amortize the system's unfunded liabilities is less than 25 years, and that the termination of those increases would not cause the amortization to increase beyond 25 years.

3. Service Credit

Service used to determine the amount of retirement benefit. One month of service credit is earned for each month where the member is paid for 160 hours. This includes certain transferred and purchased service.

4. Membership Service

Service used to determine eligibility for vesting, retirement or other PERS benefits. One month of membership service is earned for any month member contributions are made to PERS, regardless of the number of hours worked.

5. Highest Average Compensation

Highest Average Compensation is the average of the highest 36 consecutive months (or shorter period of total service) of compensation paid to the member. Compensation generally means all remuneration paid, excluding certain allowances, benefits and lump sum payments.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

6. Normal Retirement

Eligibility: (i) age 60 with five years of membership service; or (ii) age 65 regardless of service; or (iii) any age with 30 years of membership service.

Benefit: (i) If less than 25 years of membership service, the greater of (a) 1/56 of highest average compensation multiplied by years of service credit, or (b) the actuarial equivalent of double the member's regular contributions plus interest plus the actuarial equivalent of any additional contributions plus interest.

(ii) If 25 years of membership service or more (a) 1/50 of highest average compensation multiplied by years of service credit, or (b) above.

7. Early Retirement

Eligibility: (i) age 50 with 5 years of membership service; or (ii) any age with 25 years of membership service.

Benefit: Normal retirement benefit calculated using highest average compensation and service at early retirement, and reduced for each month which retirement age precedes the earlier of age 60 or the attainment of 30 years of service by 0.5% for the first 60 months and 0.3% for the next 60 months.

8. Disability Benefit

Eligibility: Five years of membership service

Benefit: (i) If hired on or before February 24, 1991, the greater of (a) or (b):

(a) Less than 25 years of membership service: 90% of 1/56 of highest average compensation multiplied by service credit.

At least 25 years of membership service: 90% of 1/50 of highest average compensation multiplied by service credit, or

(b) 25% of highest average compensation.

(ii) If hired after February 24, 1991:

90% is replaced by 100% in the above formulas, but there is no 25% minimum benefit.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

9. Survivor's Benefit

Eligibility: Member's status at time of death: (i) active, (ii) within 6 months after severance, (iii) receiving disability benefit for less than 6 months, (iv) continuously disabled without receiving a disability benefit, or (v) inactive.

Benefit: The sum of (i) accumulated contributions plus (ii) monthly compensation multiplied by the lesser of years of service credit or six, plus (iii) interest. However an inactive member's survivor will receive only accumulated contributions.

For the survivor of an active member who had completed five years of membership service, the benefit will be the actuarial equivalent of the accrued retirement benefit at the time of death subject to the minimum in the above paragraph.

A beneficiary may elect to receive the payment as an annuity that is the actuarial equivalent of the amount of benefit.

For retired members receiving the normal form of annuity, a payment will be made equal to the accumulated contributions reduced by any retirement benefits already paid.

10. Vesting

Eligibility: Five years of membership service.

Benefit: Accrued normal retirement benefit, payable at age 60. In lieu of a pension, a member may receive a refund of accumulated contributions. Upon receipt of a refund of contributions a member's vested right to a monthly benefit is forfeited.

11. Withdrawal of Employee Contributions

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

Benefit: Accumulated employee contributions.

12. Form of Payment

The normal form of payment is a life annuity with a refund of any remaining account balance to a designated beneficiary. (Option 1)

APPENDIX C
SUMMARY OF PLAN PROVISIONS

Optional benefits: (i) Option 2, a joint and 100% survivor benefit, (ii) Option 3, a joint and 50% survivor benefit, and (iii) Option 4, a life annuity with a period certain. If a retiring member selects Option 2 or 3 and the designated beneficiary predeceases the member, the benefit may revert to the higher Option 1 benefit available at retirement if the retiree provides notification within 18 months.

13. Post Retirement Benefit Increases

For retired members who have been retired at least 12 months, a Guaranteed Annual Benefit Adjustment (GABA) will be made each year equal to (i) 3% for members hired before July 1, 2007 and (ii) 1.5% for members hired on or after July 1, 2007.

14. Changes Since Last Valuation

House Bill 70, effective July 1, 2011

- Clarifies that "termination of service" requires that there will be "no written or verbal agreement between a retiree and employer that the retiree will return to covered employment in the future."

- Clarifies that the disability benefit of a disabled member who continues purchasing service or chooses to purchase service following termination of employment will not start until the service purchase is completed. §19-2-908(3)(b), MCA

- PERS retirees must be terminated from employment for **at least 90 days** prior to returning to a PERS-covered position as a working retiree. §19-3-1106, MCA

- PERS DCRP Members - The compounded annual interest rate credited to the contributions transferred from the defined benefit plan to the member's Defined Contribution Retirement Plan (DCRP) will be 7.75% beginning July 1st, 2011. Additional service credit is not an option available to a DCRP member who is subject to a reduction in force. Service credit purchases are not available to members of a defined contribution retirement plan.

House Bill 122, varying effective dates

- Current PERS Members Early retirement – Current PERS members remain eligible for early retirement at age 50 or after 25 years of membership service. However, beginning **October 1st, 2011**, a current PERS member's early retirement benefit will be calculated using existing actuarial factors. The existing factors reflect PERS's most recent experience study and take into account the fact that people are living longer.

- Working Retirees Starting **July 1st, 2011**: For a working retiree who has returned to work for one employer in two positions, with one position subject to PERS and the other

not, the earnings from **both** positions will count toward the working retiree limit. If the employer fails to report the member timely or accurately – the member and the employer are liable for repayment of the retirement benefits received inappropriately.

- New Members Hired On Or After **July 1, 2011**

  - Employee contribution to PERS will be 7.9% of salary.
  - Eligibility for early retirement changes to age 55 with a minimum of five years of membership service.
  - Normal retirement age changes to age 65 with five years of service.
  - The Highest Average Compensation (HAC) used to calculate the retirement benefit will be based on a time period of 60 months.
  - The multiplier used to calculate the retirement benefit will be:

    - 1.5% per year if service is less than 10 years,
    - 1.785% per year if service is greater than or equal to 10 years but less than 30 years,
    - 2% per year if service is greater than or equal to 30 years

APPENDIX D
GLOSSARY

1. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disability, and retirement; changes in compensation; inflation; rates of investment earnings, and asset appreciation or depreciation; and other relevant items.

2. Actuarial Cost Method

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a Normal Cost and an Actuarial Liability.

3. Actuarial Gain (Loss)

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

4. Actuarial Liability

The portion of the Actuarial Present Value of Projected Benefits which will not be paid by future Normal Costs. It represents the value of the past Normal Costs with interest to the valuation date.

5. Actuarial Present Value (Present Value)

The value as of a given date of a future amount or series of payments. The Actuarial Present Value discounts the payments to the given date at the assumed investment return and includes the probability of the payment being made. As a simple example: assume you owe $100 to a friend one year from now. Also, assume there is a 1% probability of your friend dying over the next year, in which case you won't be obligated to pay him. If the assumed investment return is 10%, the actuarial present value is:

Amount		Probability of Payment	1/(1+Investment Return)		
$100	x	(1 - .01)	1/(1+.1)	=	$90

6. Actuarial Valuation

The determination, as of a specified date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

APPENDIX D
GLOSSARY

7. Actuarial Value of Assets

The value of cash, investments and other property belonging to a pension plan as used by the actuary for the purpose of an Actuarial Valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values. This way long-term costs are not distorted by short-term fluctuations in the market.

8. Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of actuarial assumptions.

9. Amortization Payment

The portion of the pension plan contribution which is designed to pay interest and principal on the Unfunded Actuarial Liability in order to pay for that liability in a given number of years.

10. Entry Age Normal Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages.

11. Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

12. Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets.

13. Projected Benefits

Those pension plan benefit amounts which are expected to be paid in the future under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and increases in future compensation and service credits.

14. Funded Percentage

The ratio of the Actuarial Liabilities to the Actuarial Value of Assets.

APPENDIX D
GLOSSARY

15. Mortality Table

A set of percentages which estimate the probability of death at a particular point in time. Typically, the rates are annual and based on age and sex.

16. Investment Return Assumption

The assumed interest rate used for projecting dollar related values in the future.

17. Inflation (CPI)

The assumed increase in dollar related values in the future due to the general increase in the cost-of-living. The usual measure for inflation is the Consumer Price Index (CPI).