**Judges' 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 Judges' 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.
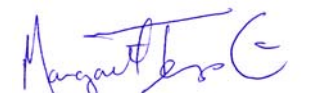
We hereby certify that, to the best of our knowledge, this report and its contents, which are work products of Cheiron, Inc., are complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. 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 Judges' 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 Judges' 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 Judges' Retirement System performed by Cheiron.

Because the System continues to have a surplus of assets in excess of actuarial liability, there is no period to amortize the unfunded actuarial liability. During the year ended June 30, 2011, the System's assets gained 21.65% 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 continues to reflect prior year investment losses resulting in a return of 0.42%. This return was below the assumed rate of return of 7.75% and resulted in an actuarial loss on investments of $4.5 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 $1.4 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 in the year ending June 30, 2011 compared to the prior year.

As of the June 30, 2011 actuarial valuation, the System's unfunded actuarial liability was ($17.9) million. This is an increase from last year's unfunded actuarial liability of ($18.8) million. The funded ratio decreased from 144% at the prior valuation to 141% 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 $2.4 million greater than actuarial value. If market value were used rather than actuarial value, the funded ratio on the valuation date would be 147%, and the amortization period for the unfunded actuarial liability would be zero years.
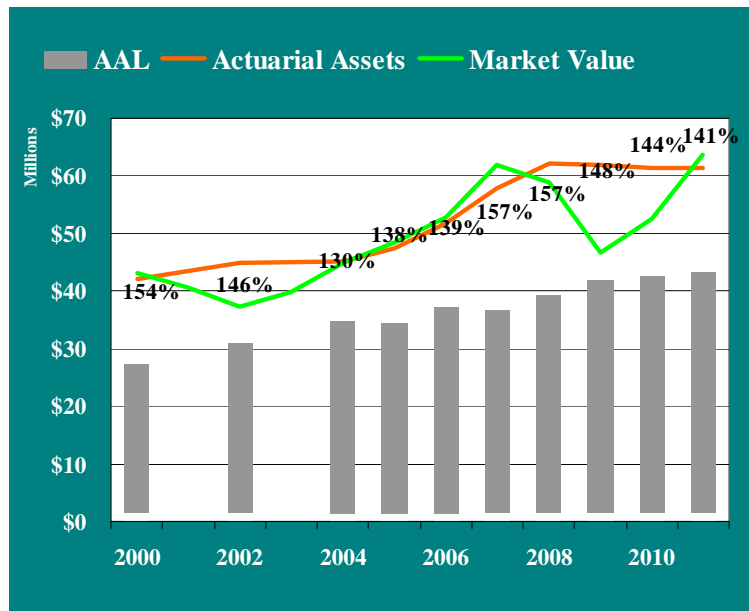
SECTION I
BOARD SUMMARY

Trends

Assets and Liabilities

The market value of assets (MVA) increased over last year, due to investment earnings of 21.65% over the past year. The determination of the System's actuarial value of assets reflects only a portion of the amount by which the return was above the assumed rate of 7.75%.

Over the period July 1, 2006 to June 30, 2011 the System's assets returned approximately 3.8% per year measured at actuarial value, compared to a current valuation assumption of 7.75% per year.
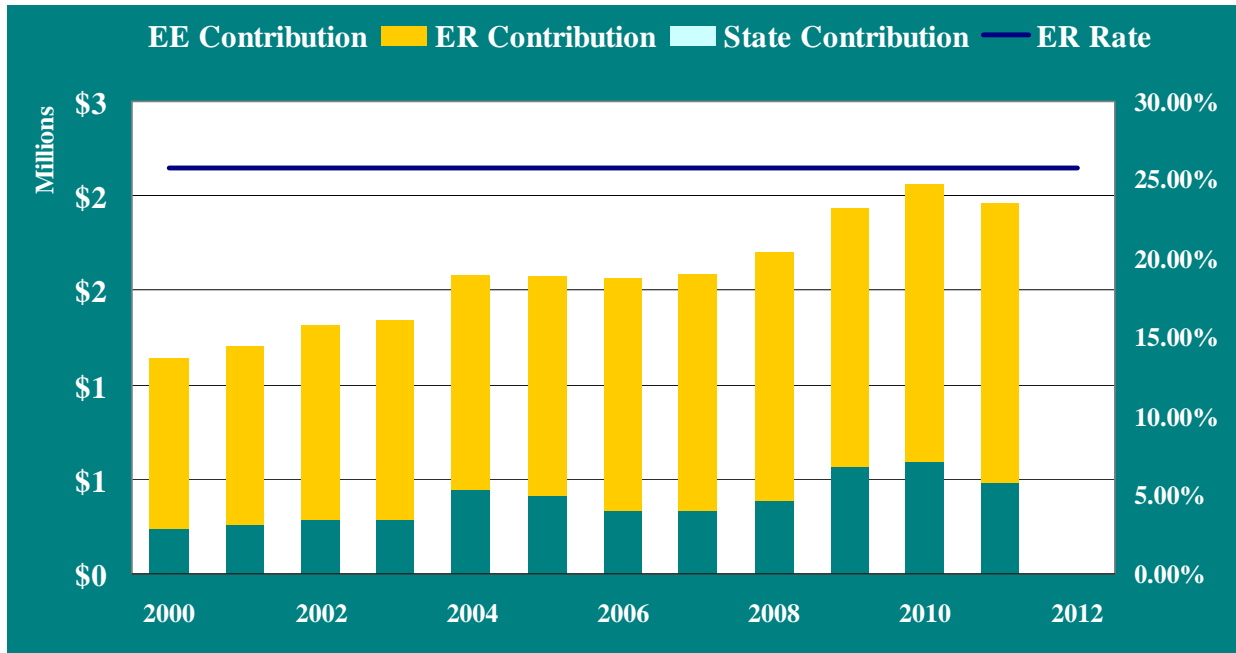
For funding purposes, the target amount or actuarial accrued liability (AAL) is represented by the top of the gray bar. We compare the actuarial value of assets to this measure of liability in developing the funded percent. These are the percentages shown in the graph labels.

SECTION I
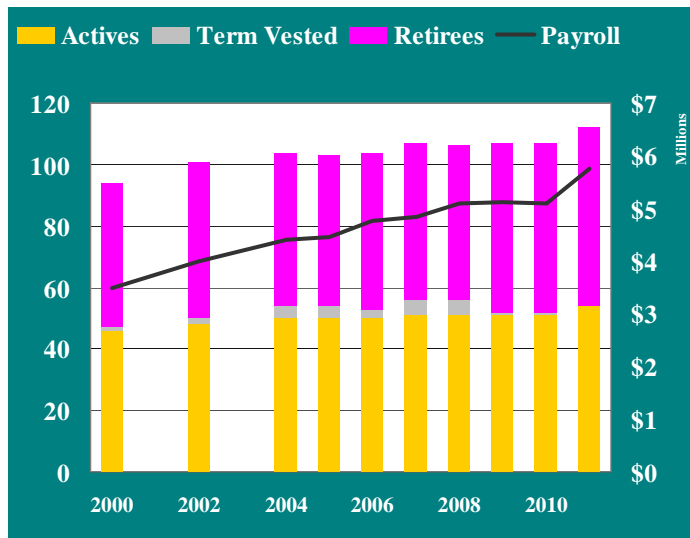**BOARD SUMMARY**

Contribution Rates

The stacked bars in this graph show the contributions made by members and employers. (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 1.0 actives to each inactive in 2000 to 0.9 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*, all other assumptions are exactly realized 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 slightly next year as excluded investment losses are recognized by the smoothing method. The funded status will then increase gradually over the remainder of the fifteen years.
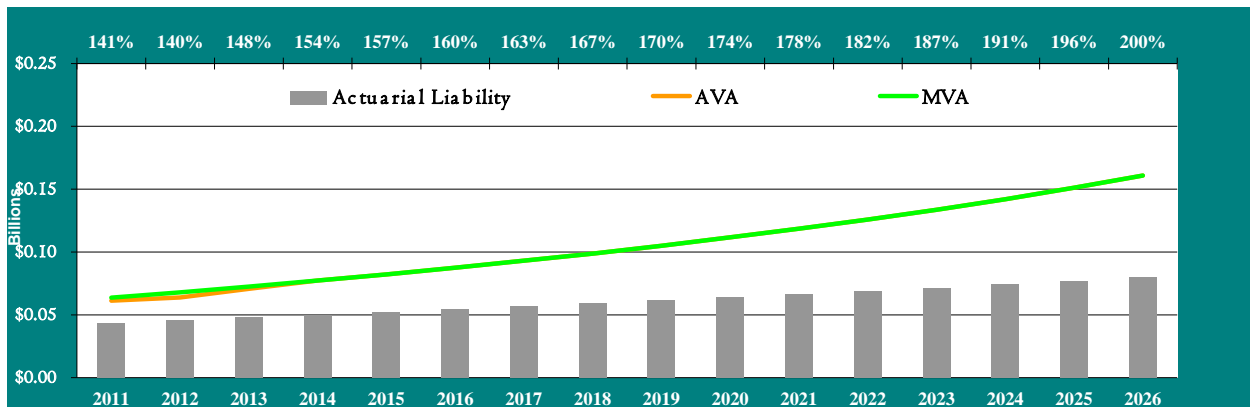
The chart below shows that the employer portion of the GASB Minimum Contribution will drop to zero by 2013.
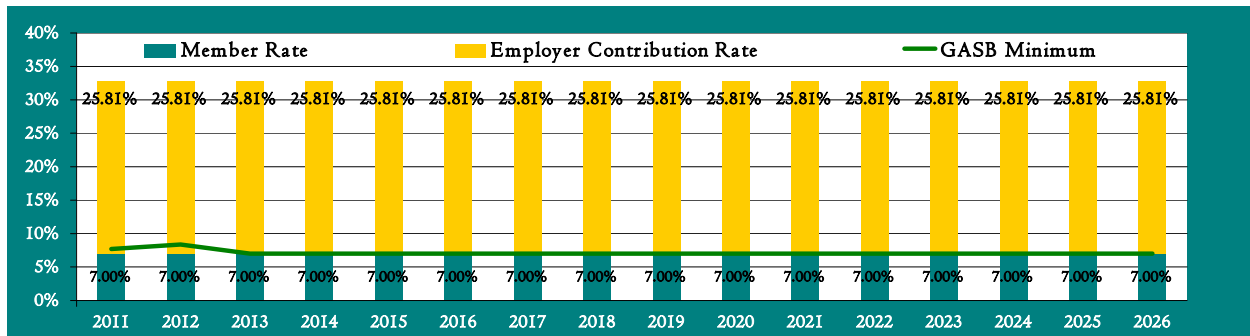
SECTION I
BOARD SUMMARY

Projections with Asset Returns of 9.25%

The future funding status of this System will be largely driven by the investment earnings. Due to the size of assets, as compared to liabilities, the System is in a highly leveraged position. This means that relatively minor changes in market returns can have significant effects on the System's status. 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).
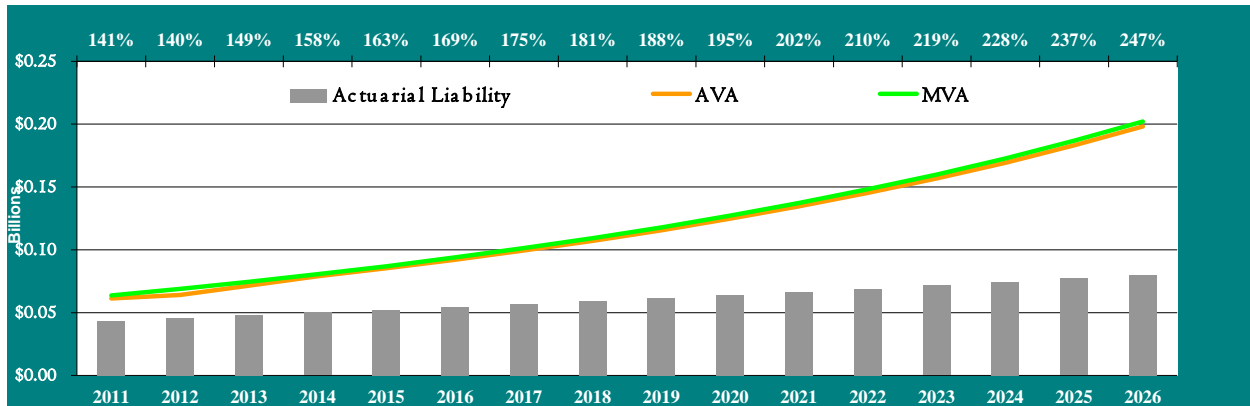
Compared to the baseline projections, the funded status begins to improve more quickly approaching 250% by the end of the fifteen-year period. The employer portion of the GASB Minimum contribution drops to zero by 2013.
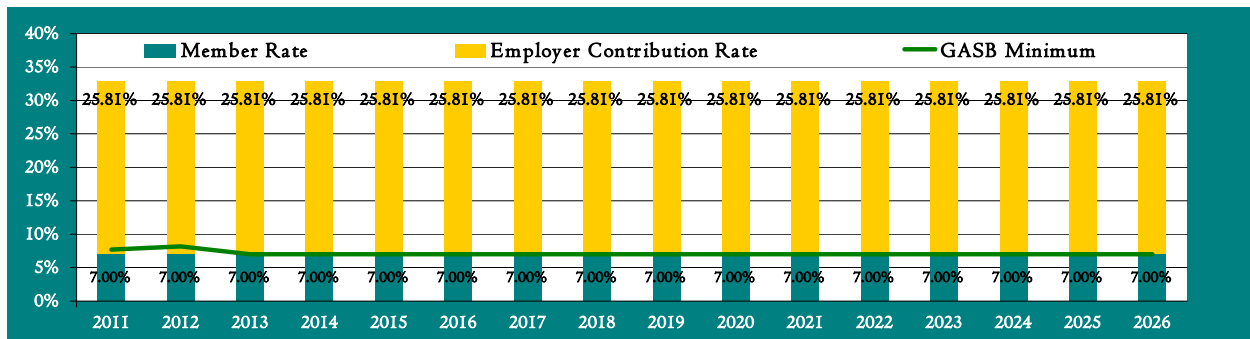
SECTION I
BOARD SUMMARY

Projections With Asset Returns of 6.25%

To further demonstrate how the future funding of this System will be driven by investment earnings, 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).
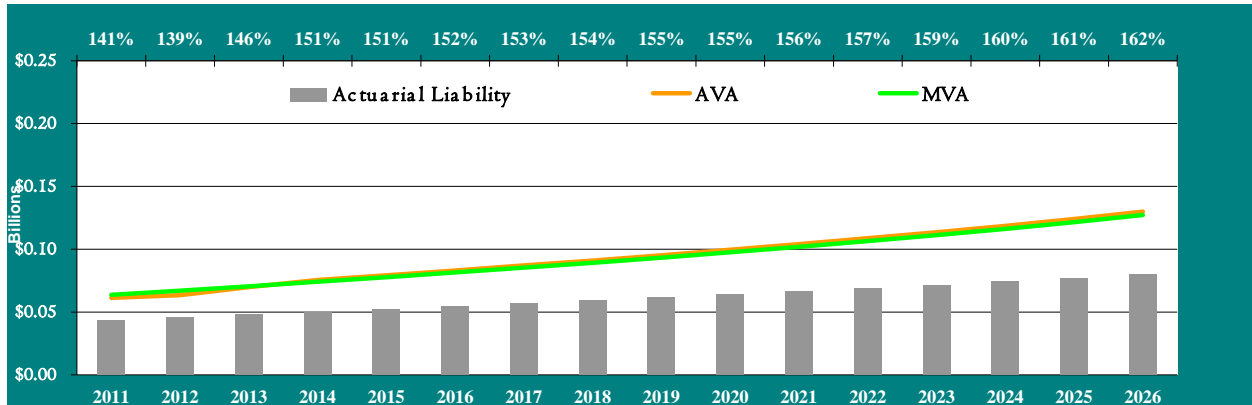
Under this scenario the funded status still increases but at a lower rate than the baseline and would exceed 160% in fifteen years. The employer portion of the GASB Minimum contribution drops to zero by 2013.
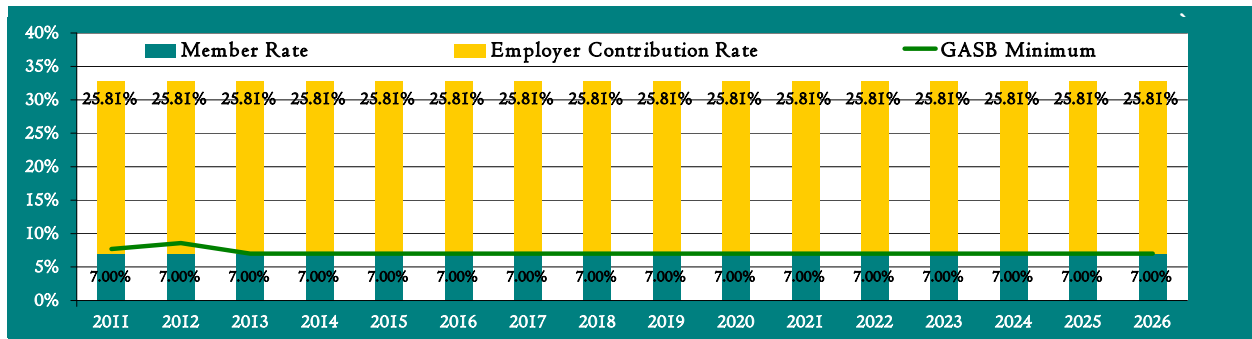
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SECTION I
BOARD SUMMARY

Table I-1 Judges' Retirement System Summary of Principal System Results			
Valuation as of:	**June 30, 2010**	**June 30, 2011**	**% Change**
Participant Counts			
Active Members	51	54	5.9%
Disabled Members*	2	0	N/A
Retirees and Beneficiaries*	53	58	9.4%
Terminated Vested Members	1	0	(100.0%)
Terminated Non-Vested Members	-	0	N/A
Total**	107	112	4.7%
Annual Salaries of Active Members	$ 5,684,250	$ 5,764,213	1.4%
Average Annual Salary	$ 111,456	$ 106,745	(4.2%)
Annual Retirement Allowances for Retired Members and Beneficiaries	$ 2,159,809	$ 2,318,560	7.4%
Assets and Liabilities			
Actuarial Accrued Liability (AAL)	$ 42,512,725	$ 43,413,516	2.1%
Actuarial Value of Assets (AVA)	61,277,322	61,273,727	(0.0%)
Unfunded AAL	$ (18,764,597)	$ (17,860,211)	(4.8%)
Funded Ratio (AVA/AAL)	144.14%	141.14%	
Present Value of Accrued Benefits (PVAB)	$ 42,374,062	$ 40,574,964	(4.2%)
Market Value of Assets	52,564,722	63,658,785	21.1%
Unfunded PVAB	$ (10,190,660)	$ (23,083,821)	126.5%
Accrued Benefit Funding Ratio	124.05%	156.89%	
Ratio of Actuarial Value to Market Value	116.57%	96.25%	
Contributions as a Percentage of Payroll			
Statutory Funding Rate	32.810%	32.810%	
Normal Cost Rate	23.040%	24.130%	
Available for Amortization of UAL	9.770%	8.680%	
Period to Amortize	0.0 years	0.0 years	
Projected 30-year Level Funding Rate	5.520%	7.680%	
Projected Shortfall (Surplus)	(27.290%)	(25.130%)	

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

** A reconciliation of participant counts 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 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.
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SECTION II
ASSETS

Table II-1		
Changes in Market Values		
Value of Assets – June 30, 2010		$ 52,564,722
Additions		
Member Contributions	$ 478,963	
Employer Contributions	1,476,728	
State Contributions	0	
Investment Return	11,392,120	
Other	24,551	
Total Additions	$ 13,372,362	
Deductions		
Benefit Payments	$ 2,239,603	
Administrative Expenses	38,696	
Total Deductions	$ 2,278,299	
Value of Assets – June 30, 2011		$ 63,658,785

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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	$ 52,564,722
Employer and Member Contributions	$ 1,980,242
Benefit Payments	(2,239,603)
Expected Return at 7.75%	4,063,903
Expected Value at June 30, 2011	$ 56,369,264
Actual Value at June 30, 2011	$ 63,658,785
Investment Gain/(Loss)	$ 7,289,521

Table II-3 Develop Excluded Gain/(Loss)		
	Total Gain/(Loss)	**Excluded Portion**
Exclude 75% of 2011 Gain/(Loss)	$ 7,289,521	$ 5,467,141
Exclude 50% of 2010 Gain/(Loss)	$ 2,244,741	$ 1,122,371
Exclude 25% of 2009 Gain/(Loss)	$ (16,817,812)	$ (4,204,453)
Total Excluded Gain/(Loss) for AVA Calculation		$ 2,385,058

SECTION II
ASSETS

Table II-4 Actuarial Value of Assets	
Market Value of Assets – June 30, 2011	$ 63,658,785
Total Gain/(Loss) excluded	2,385,058
Actuarial Value of Assets – June 30, 2011	$ 61,273,727

Investment Performance

The market value of assets (MVA) returned 21.65% during fiscal year end 2011, which is greater than the assumed 7.75% return. A return of 0.42% 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	8.10%	5.49%
2006	8.97%	9.38%
2007	17.94%	11.92%
2008	(4.83%)	7.62%
2009	(20.61%)	(0.11%)
2010	12.82%	(0.96%)
2011	21.65%	0.42%

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	$ 2,607,256	$ 1,966,888	$ (640,368)
2012	2,810,772	2,045,563	(765,209)
2013	2,988,002	2,127,386	(860,616)
2014	3,308,535	2,212,481	(1,096,053)
2015	3,391,015	2,300,981	(1,090,034)
2016	3,649,980	2,393,020	(1,256,960)
2017	3,975,269	2,488,741	(1,486,529)
2018	4,089,921	2,588,290	(1,501,631)
2019	4,172,090	2,691,822	(1,480,268)
2020	4,547,550	2,799,495	(1,748,055)

* Expected contributions include Employer Contributions and Member Contributions. For illustration purposes, we have assumed that all contribution rates will remain level 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 0.45% 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; and
- Development of actuarial unfunded liability on a market value basis as required under MCA 12-2-407.

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	$	28,691,548	$	28,036,723
Retiree and Inactive Benefits		22,790,662		24,691,864
Present Value of Benefits (PVB)	**$**	**51,482,210**	**$**	**52,728,587**
Market Value of Assets (MVA)	$	52,564,722	$	63,658,785
Future Member Contributions		2,818,768		2,827,476
Future Employer Contributions		10,393,200		10,425,308
Funding Shortfall/(Surplus)	$	(14,294,480)	$	(24,182,982)
Total Resources	**$**	**51,482,210**	**$**	**52,728,587**
Actuarial Accrued Liability				
Present Value of Benefits (PVB)	$	51,482,210	$	52,728,587
Present Value of Future Normal Costs (PVFNC)		8,969,000		9,315,071
Actuarial Accrued Liability (AAL=PVB–PVFNC)		**42,513,210**		**43,413,516**
Actuarial Value of Assets (AVA)		61,277,322		61,273,727
Net (Surplus)/Unfunded (AAL – AVA)	**$**	**(18,764,112)**	**$**	**(17,860,211)**
Present Value of Accrued Benefit Liability				
Present Value of Benefits (PVB)	$	51,482,210	$	52,728,587
Present Value of Future Benefit Accruals (PVFBA)		9,108,148		12,153,623
Present Value of Accrued Liability (PVAB=PVB–PVFBA)	**$**	**42,374,062**	**$**	**40,574,964**
Market Value of Assets (MVA)		52,564,722		63,658,785
Net Unfunded (PVAB – MVA)	**$**	**(10,190,660)**	**$**	**(23,083,821)**

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	$ 51,482,210	$ 42,512,725	$ 42,374,062
Liabilities June 30, 2011	52,728,587	43,413,516	40,574,964
Liability			
Increase (Decrease)	1,246,377	900,791	(1,799,098)
Change Due to:			
Actuarial (Gain)/Loss	NC*	(1,397,984)	NC*
Plan Changes	0	0	0
Benefits Accumulated			
and Other Sources	1,246,377	2,298,775	(1,799,098)

* 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	$	42,512,725
Normal Cost		1,234,752
Actual Benefit Payments		(2,239,603)
Expected Earnings		3,303,626
Expected Actuarial Liability as of July 1, 2011		44,811,500
Actual Liability as of July 1, 2011 (before plan changes)	$	43,413,516
Liability (Gain)/Loss	$	(1,397,984)
Sources of Liability (Gain)/Loss		
Salary (Gain)/Loss	$	(1,275,312)
New Participant (Gain)/Loss		81,801
Active Retirements (Gain)/Loss		161,624
Active Terminations (Gain)/Loss		0
Active Deaths (Gain)/Loss		(59,982)
Active Disability (Gain)/Loss		(8,108)
Inactive Decrements (Gain)/Loss		(298,007)
Actual Liability as of July 1, 2011 (after plan changes)	$	43,413,516
Liability (Gain)/Loss due to plan changes	$	0
Actuarial Value of Assets as of July 1, 2010	$	61,277,322
Net Cash Flow		(259,361)
Expected Earnings		4,739,130
Expected Actuarial Value of Assets as of July 1, 2011		65,757,091
Actual Actuarial Value of Assets as of July 1, 2011	$	61,273,727
Investment (Gain)/Loss	$	4,483,364
Total Liability (Gain)/Loss		(1,397,984)
Total Actuarial (Gain)/Loss	$	3,085,380

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	$	22,790,662	$	24,691,864
Active Member Benefits		19,722,063		18,721,652
Total Actuarial Liability	**$**	**42,512,725**	**$**	**43,413,516**
2. Actuarial Value of Assets	$	61,277,322	$	61,273,727
3. Unfunded Actuarial Liability	$	(18,764,597)	$	(17,860,211)
4. Funded Ratio		144.14%		141.14%

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	$	22,790,662	$	24,691,864
Active Member Benefits		19,722,063		18,721,652
Total Actuarial Liability	**$**	**42,512,725**	**$**	**43,413,516**
2. Market Value of Assets	$	52,564,722	$	63,658,785
3. Unfunded Actuarial Liability	$	(10,051,997)	$	(20,245,269)
4. Funded Ratio		123.64%		146.63%

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	7.000%	7.000%
Employers	25.810%	25.810%
Total	32.810%	32.810%
Normal Cost Rate	23.040%	24.130%
Funding Rate Available for Amortization	9.770%	8.680%
Unfunded Actuarial Liability (Surplus)	$ (18,764,597)	$ (17,860,211)
Years to Amortize*	0.0 years	0.0 years

* On a market value basis, the Years to Amortize the Unfunded Actuarial Liability were 0.0 years at June 30, 2010 and 0.0 years at June 30, 2011.

SECTION IV
CONTRIBUTIONS

Table IV-2		
Calculated Contribution Basis		
	June 30, 2010	**June 30, 2011**
Normal Cost Rate	23.040%	24.130%
Amortization Payment (30-years)	(17.520%)	(16.450%)
Total Calculated Contribution Rate	5.520%	7.680%
Less Statutory Rate	32.810%	32.810%
Shortfall (Surplus) in Statutory Rate	(27.290%)	(25.130%)

Table IV-3		
Calculated Contribution on Market Value (MCA 19-2-407)		
	June 30, 2010	**June 30, 2011**
Normal Cost Rate	23.040%	24.130%
Amortization Payment (30-years)	(9.390%)	(18.640%)
Total Calculated Contribution Rate	13.650%	5.490%
Less Statutory Rate	32.810%	32.810%
Shortfall (Surplus) in Statutory Rate	(19.160%)	(27.320%)

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

Table IV-4	
Projected Calculated Contribution Rates	
Valuation Year	**Rate**
2012	8.36%
2013	7.00%*
2014	7.00%*
2015	7.00%*
2016	7.00%*

*Member contribution rate only.

SECTION V
ACCOUNTING STATEMENT INFORMATION

Accounting 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	$ 22,278,747	$ 24,691,864
b. Former Vested Members	511,915	0
c. Active Members	19,583,400	15,883,100
2. Total Present Value of Accrued Benefits (1 (a) + 1(b) + 1(c))	$ 42,374,062	$ 40,574,964
3. Assets at Market Value	52,564,722	63,658,785
4. Unfunded Present Value of Accrued Benefits (2 − 3)	$ (10,190,660)	$ (23,083,821)
5. Ratio of Assets to Present Value of Benefits (3 / 2)	124.05%	156.89%
B. GASB No. 25 Basis		
1. Actuarial Accrued Liabilities for retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	$ 22,790,662	$ 24,691,864
2. Actuarial Accrued Liabilities for current employees	19,722,063	18,721,652
3. Total Actuarial Accrued Liability (1 + 2)	$ 42,512,725	$ 43,413,516
4. Net Actuarial Assets available for benefits	61,277,322	61,273,727
5. Unfunded Actuarial Accrued Liability (3 − 4)	$ (18,764,597)	$ (17,860,211)

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%
*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
Gain (or Loss) for Year ending June 30,
(expressed in thousands)

Type of Activity	2006	2007	2008	2009	2010	2011
Investment Income on Actuarial Assets	$ 640	$ 2,017	$ (227)	$ (5,032)	$ (5,548)	$ (4,483)
Combined Liability Experience	(541)	2,644	(311)	102	(1,557)	1,398
(Loss)/Gain During Year from Financial Experience	$ 99	$ 4,661	$ (538)	$ (4,930)	$ (7,105)	$ (3,085)
Non-Recurring Items	0	0	0	0	3,215	0
Composite Gain (or Loss) During Year	$ 99	$ 4,661	$ (538)	$ (4,930)	$ (3,890)	$ (3,085)

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	$ 61,274	43,414	141	$ (17,860)	5,645	(316)
2010	61,277	42,513	144	(18,764)	5,687	(330)
2009	61,929	41,848	148	(20,081)	5,110	(393)
2008	62,040	39,435	157	(22,605)	5,096	(444)
2007	57,778	36,863	157	(20,915)	4,841	(432)
2006	51,808	37,158	139	(14,650)	4,762	(308)

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

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SECTION V
ACCOUNTING STATEMENT INFORMATION

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	$ 5,115	24,692	$ 13,607	$ 61,274	100	100	231
2010	5,207	22,279	15,027	61,277	100	100	225
2009	4,790	21,624	15,433	61,929	100	100	230
2008	4,431	20,682	14,323	62,040	100	100	258
2007	3,863	20,446	12,554	57,778	100	100	267
2006	3,690	20,362	13,107	51,808	100	100	212

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

APPENDIX A
MEMBERSHIP INFORMATION

	Active	Disabled	Retirees and Beneficiaries	Terminated Vested Members	Terminated Non-Vested Members	Total
Reconciliation of Participant Counts						
Participant counts used for valuation	54	-	58	-	0	112
Disabled members having attained normal retirement age		-	-			0
Beneficiaries of Disabled Members						0
Beneficiaries with less than one year of certain payments remaining			-			0
Other Adjustments						0
Participant counts shown in Annual Financial Report	54	0	58	-	0	112

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 7) 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 7. 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.

APPENDIX A
MEMBERSHIP INFORMATION

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 7. 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.

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

COUNTS BY AGE/SERVICE

Age	Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	0	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	1	0	0	0	0	0	0	1
45 to 49	1	0	1	0	0	0	0	0	0	0	2
50 to 54	1	4	4	4	0	1	0	0	0	0	14
55 to 59	1	1	1	2	3	0	0	0	0	0	8
60 to 64	1	2	1	5	4	1	2	0	0	0	16
65 to 69	2	1	0	3	2	0	2	0	0	0	10
70 & up	0	0	0	1	0	0	2	0	0	0	3
Total	6	8	7	16	9	2	6	0	0	0	54

APPENDIX A
MEMBERSHIP INFORMATION

Judges' Retirement System Distribution of Active Members
by Age as of June 30, 2011

Age Distribution

APPENDIX A
MEMBERSHIP INFORMATION

Judges' Retirement System Distribution of Active Members
by Service as of June 30, 2011

Service Distribution

Chart — bar graph titled "Service Distribution", Count (y-axis) vs Service (x-axis):

Service	Count
Under 1	6
1 to 4	8
5 to 9	7
10 to 14	16
15 to 19	9
20 to 24	2
25 to 29	6
30 to 34	0
35 to 39	0
40 & up	0

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APPENDIX A
MEMBERSHIP INFORMATION

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

AVERAGE SALARY BY AGE/SERVICE

Age	Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
25 to 29	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
30 to 34	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
35 to 39	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
40 to 44	$0	$0	$0	$106,870	$0	$0	$0	$0	$0	$0	$106,870
45 to 49	$107,618	$0	$113,963	$0	$0	$0	$0	$0	$0	$0	$110,791
50 to 54	$106,870	$93,302	$106,870	$108,643	$0	$106,870	$0	$0	$0	$0	$103,500
55 to 59	$107,618	$106,870	$106,870	$106,870	$106,870	$0	$0	$0	$0	$0	$106,964
60 to 64	$107,618	$114,566	$106,870	$108,288	$106,870	$106,870	$106,870	$0	$0	$0	$108,322
65 to 69	$107,618	$106,870	$0	$106,870	$110,416	$0	$106,870	$0	$0	$0	$107,729
70 & up	$0	$0	$0	$106,870	$0	$0	$106,870	$0	$0	$0	$106,870
Total	$107,494	$102,010	$107,884	$107,757	$107,658	$106,870	$106,870	$0	$0	$0	$106,745

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

APPENDIX A
MEMBERSHIP INFORMATION

Judges' Retirement System Distribution of Active Members
by Age as of June 30, 2011

Average Salary Distribution

Age	Average Salary
Under 25	$0
25 to 29	$0
30 to 34	$0
35 to 39	$0
40 to 44	$106,870
45 to 49	$110,791
50 to 54	$103,500
55 to 59	$106,964
60 to 64	$108,322
65 to 69	$107,729
70 & up	$106,870

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Judges' Retirement System Distribution of Active Members
by Service as of June 30, 2011

Average Salary Distribution

Service	Average Salary
Under 1	$107,494
1 to 4	$102,010
5 to 9	$107,884
10 to 14	$107,757
15 to 19	$107,658
20 to 24	$106,870
25 to 29	$106,870
30 to 34	$0
35 to 39	$0
40 & up	$0

APPENDIX A
MEMBERSHIP INFORMATION

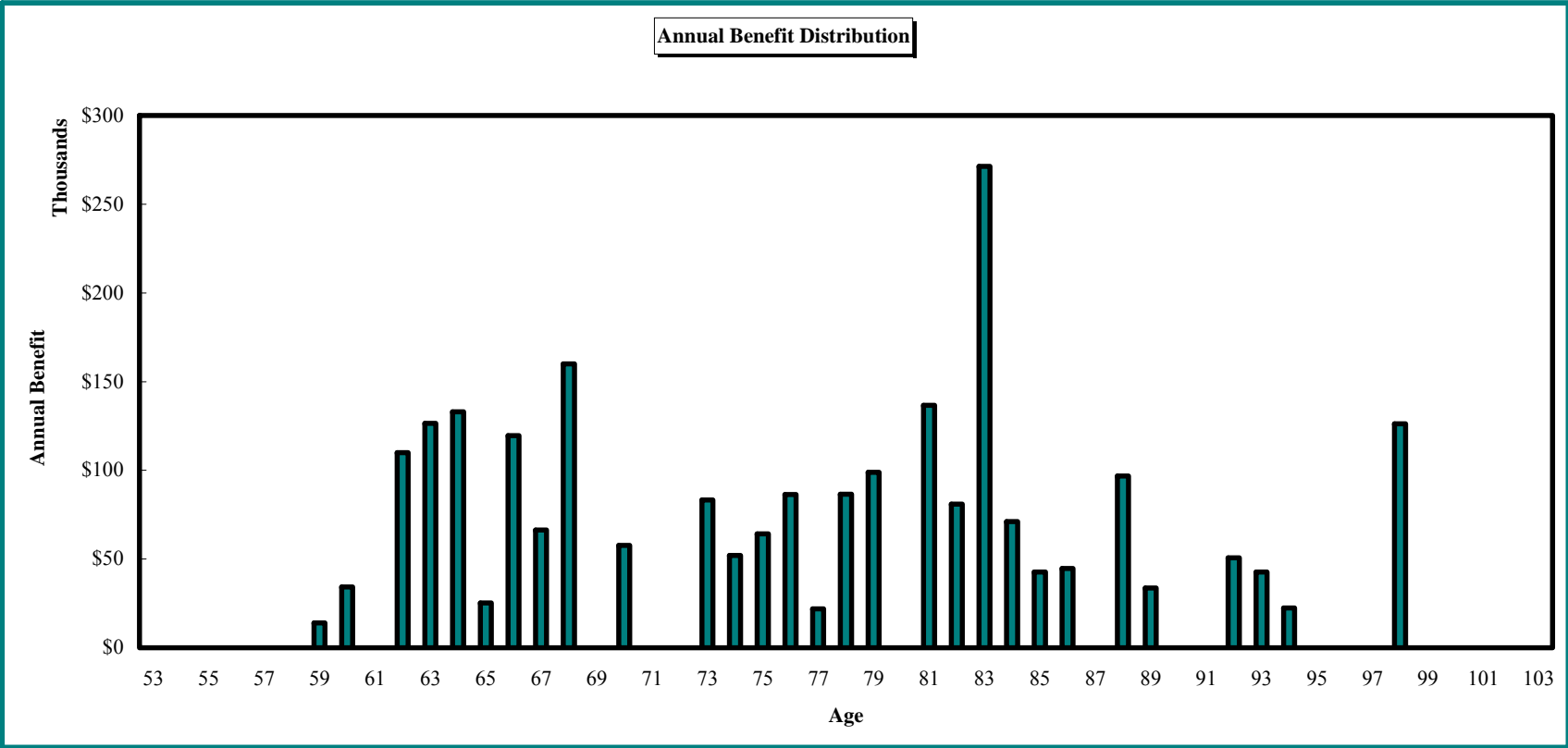# Judges' Retirement System Distribution of Retired Members, Survivors, and Disabled Members as of June 30, 2011

Age	Count	Annual Benefit	Age	Count	Annual Benefit
<25	0	$0	73	2	$83,360
25	0	$0	74	1	$52,064
26	0	$0	75	1	$64,237
27	0	$0	76	2	$86,423
28	0	$0	77	1	$21,912
29	0	$0	78	2	$86,491
30	0	$0	79	2	$98,841
31	0	$0	80	0	$0
32	0	$0	81	4	$136,714
33	0	$0	82	2	$80,952
34	0	$0	83	6	$271,324
35	0	$0	84	2	$71,127
36	0	$0	85	2	$42,691
37	0	$0	86	2	$44,738
38	0	$0	87	0	$0
39	0	$0	88	2	$96,882
40	0	$0	89	1	$33,687
41	0	$0	90	0	$0
42	0	$0	91	0	$0
43	0	$0	92	1	$50,693
44	0	$0	93	1	$42,641
45	0	$0	94	1	$22,425
46	0	$0	95	0	$0
47	0	$0	96	0	$0
48	0	$0	97	0	$0
49	0	$0	98	2	$126,278
50	0	$0	99	0	$0
51	0	$0	100	0	$0
52	0	$0	101	0	$0
53	0	$0	102	0	$0
54	0	$0	103	0	$0
55	0	$0	104	0	$0
56	0	$0	105	0	$0
57	0	$0	106	0	$0
58	0	$0	107	0	$0
59	1	$13,957	108	0	$0
60	1	$34,207	109	0	$0
61	0	$0	110	0	$0
62	4	$109,943	111	0	$0
63	3	$126,413	112	0	$0
64	3	$132,986	113	0	$0
65	1	$25,227	114	0	$0
66	3	$119,629	115	0	$0
67	1	$66,327	116	0	$0
68	3	$159,999	117	0	$0
69	0	$0	118	0	$0
70	1	$57,751	119	0	$0
71	0	$0	120	0	$0
72	0	$0			
			Totals	58	$2,359,921

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

Judges' Retirement System Distribution of Retired Members, Survivors, and Disabled Members as of June 30, 2011

APPENDIX A
MEMBERSHIP INFORMATION

Judges' 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	0	$0		75	0	$0
27	0	$0		76	0	$0
28	0	$0		77	0	$0
29	0	$0		78	0	$0
30	0	$0		79	0	$0
31	0	$0		80	0	$0
32	0	$0		81	0	$0
33	0	$0		82	0	$0
34	0	$0		83	0	$0
35	0	$0		84	0	$0
36	0	$0		85	0	$0
37	0	$0		86	0	$0
38	0	$0		87	0	$0
39	0	$0		88	0	$0
40	0	$0		89	0	$0
41	0	$0		90	0	$0
42	0	$0		91	0	$0
43	0	$0		92	0	$0
44	0	$0		93	0	$0
45	0	$0		94	0	$0
46	0	$0		95	0	$0
47	0	$0		96	0	$0
48	0	$0		97	0	$0
49	0	$0		98	0	$0
50	0	$0		99	0	$0
51	0	$0		100	0	$0
52	0	$0		101	0	$0
53	0	$0		102	0	$0
54	0	$0		103	0	$0
55	0	$0		104	0	$0
56	0	$0		105	0	$0
57	0	$0		106	0	$0
58	0	$0		107	0	$0
59	0	$0		108	0	$0
60	0	$0		109	0	$0
61	0	$0		110	0	$0
62	0	$0		111	0	$0
63	0	$0		112	0	$0
64	0	$0		113	0	$0
65	0	$0		114	0	$0
66	0	$0		115	0	$0
67	0	$0		116	0	$0
68	0	$0		117	0	$0
69	0	$0		118	0	$0
70	0	$0		119	0	$0
71	0	$0		120	0	$0
72	0	$0				
				Totals	0	$0

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

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	0.00%
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 non-duty-related. All disabilities are assumed to be permanent and without recovery.

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

No terminations are assumed other than for retirement, death or disability

e. Retirement

Annual Retirement Rates	
Age	Rate
60	15.00%
61 – 64	5.00%
65	15.00%
66 – 69	5.00%
70 & over	100.00%

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

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

Salary increases based upon an annual inflation rate of 4.00% with no increases assumed for merit or seniority.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

g. Family Composition

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

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

Actual marital characteristics are used for pensioners.

h. Vested Benefits for Terminated Members

Vested benefits for members who terminated during the 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.

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 increase)
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 employee.

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 C
SUMMARY OF PLAN PROVISIONS

1. Membership

The Plan is a single-employer defined benefit plan that covers judges of district courts, justices of the supreme court, and the chief water judge.

2. Member Contributions

Members contribute 7% 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.

The Employer contributes 25.81% of each member's compensation.

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 JRS benefits. One month of membership service is earned for any month employees contributions are made to JRS, regardless of the number of hours worked.

5. Current Salary or Highest Average Compensation (HAC)

For members hired prior to July 1, 1997 and who have not elected GABA, benefits are calculated using current salary which means the current compensation of the office retired from.

For members hired on or after July 1, 1997, and those who elected GABA, benefits are calculated using HAC which is the average of the highest 36 consecutive months (or shorter period of total service) of compensation paid to the member. Compensation is specifically defined in law for JRS.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

6. Normal Retirement

Eligibility: Age 60 and five years of membership service.

Benefit: $3\frac{1}{3}$% per year of current salary or highest average compensation for the first 15 years of service credit and 1.785% per year of current salary or highest average compensation for service credit over 15 years.

7. Disability Benefit

Eligibility: Any active member.

Benefit: For duty-related disability, 50% of current salary or HAC.

For regular disability, the actuarial equivalent of the normal retirement benefit.

8. Survivor's Benefit

Eligibility: Active or retired member.

Benefit: For duty-related deaths, the member's service retirement benefit on the date of death.

For non-duty-related active deaths, a refund of the member's accumulated contributions or actuarial equivalent of involuntary retirement benefits .

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

For retired members without a contingent annuitant, a payment will be made to the member's designated beneficiary equal to the accumulated contributions reduced by any retirement benefits already paid.

9. **Vesting**

   Eligibility: Five years of membership service.

   Benefit: Accrued normal retirement benefit, payable when eligible for retirement. 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 shall be forfeited.

10. **Withdrawal of Employee Contributions**

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

    Benefit: Accumulated employee contributions.

11. **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)

    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 member retires and has selected 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 over 18 months.

12. **Post Retirement Benefit Increases**

    For retired members who became active members on and after July 1, 1997 and those who elected to be covered under this provision, and who have been retired at least 12 months, a Guaranteed Annual Benefit Adjustment (GABA) will be made each year equal to 3%.

    For retired members who were hired prior to July 1, 1997 and who did not elect GABA, the current salary of an active member in the same position is used to recalculate the monthly benefit.

13. 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.

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.

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).