

ROUTE OF THE HIAWATHA



The Route of the Hiawatha Rail-Trail represents a unique opportunity to take in some of the most breathtaking scenery in North Idaho. Located near the Idaho/Montana border, half way between Spokane, Washington and Missoula, Montana, the abandoned railroad was opened as a scenic, non-motorized recreation trail in 1998. The original stretch of the trail runs thirteen miles, including several open tunnels and high train trestles. The trail is operated by a private concessionaire under a United States Forest Service special use permit, and is open from late-May through September each year.



Helping Idaho public employees
build a secure retirement.

ACTUARIAL SECTION





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October 30, 2014

Retirement Board
Public Employee Retirement System
State of Idaho
P.O. Box 83720
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Members of the Board:

Milliman has performed annual actuarial valuations for the Public Employee Retirement System of Idaho (PERSI) since the System's inception. It is anticipated that future actuarial valuations will be performed every year with the next valuation to be as of July 1, 2015. Various benefit increases have occurred since the System was established in 1965. The most recent significant benefit changes were effective July 1, 2000.

Contribution Rates

The financing objective of the System is to establish contribution rates that will tend to remain level as percentages of payroll. From 1993 to 2014, the total contribution rate has been between 15.82% and 18.75%; year by year detail including employer and member rates is shown in the table on the following page.

At July 1, 2002, the combined overall contribution rate was 15.78%. Our July 1, 2002 valuation found that the contribution rates were not sufficient to amortize the unfunded actuarial accrued liability within 25 years of the valuation date, as required by Section 59-1322, Idaho Code. Therefore, in November 2002, the Board approved three 1% contribution rate increases to take effect on July 1, 2004, July 1, 2005, and July 1, 2006. Effective July 1, 2003, the contribution rate for Fire and Police employers was also increased by 0.1% to offset the cost of the \$100,000 duty related death benefit. The July 1, 2004 contribution rate increase took effect as scheduled. Due to investment gains, the other two increases were deferred and ultimately in October 2007 the Board cancelled the scheduled contribution rate increases.

The July 1, 2009 valuation found that the contribution rates were insufficient to amortize the unfunded actuarial accrued liability within 25 years of the valuation date. Therefore, in December 2009, the Board approved three contribution rate increases to take effect: 1.5% on July 1, 2011, 1.5% on July 1, 2012, and 2.28% on July 1, 2013. In December 2010, these scheduled rate increases were each delayed one year. In December 2011, these scheduled rate increases were again each delayed one year. On July 1, 2013, the first contribution rate increase went into effect as scheduled. In October 2013, the remaining two scheduled rate increases were each delayed one year; in September 2014 these increases were cancelled altogether.

Actuarial Section

The historical changes in contribution rates since 1993 are shown in the table below. Note that weighted total values may change even if rates by group do not change.

Year of Change	Total Rate	Weighted Total		Fire & Police		General/Teachers	
		Member Rate	Employer Rate	Member Rate	Employer Rate	Member Rate	Employer Rate
1993	17.16%	6.51%	10.65%	7.82%	10.87%	6.38%	10.63%
1994	18.75	7.12	11.63	8.53	11.85	6.97	11.61
1998	17.78	6.75	11.03	8.10	11.25	6.60	11.01
2000	15.78	5.98	9.80	7.21	10.01	5.86	9.77
2003	15.82	6.01	9.81	7.21	10.11	5.86	9.77
2004	16.84	6.41	10.43	7.65	10.73	6.23	10.39
2008	16.88	6.44	10.44	7.65	10.73	6.23	10.39
2009	16.89	6.45	10.44	7.69	10.73	6.23	10.39
2013	18.39	7.03	11.36	8.36	11.66	6.79	11.32

Contribution rate increases were scheduled for July 1, 2015 (1.5%) and July 1, 2016 (2.28%) but have each been cancelled.

Our July 1, 2014 actuarial valuation found that the System's current rates are sufficient to pay the System's normal cost rate of 14.34%. As of July 1, 2014, there is an unfunded actuarial liability of \$1,052.3 million. The current rates, including the cancelled rate increases, in effect at July 1, 2014 are sufficient to amortize the Unfunded Actuarial Accrued Liability (UAAL) in 11.6 years.

Funding Status

Based on the July 1, 2014 actuarial valuation, the unfunded actuarial accrued liability was decreased by \$1,146.6 million due to an asset gain recognized as of July 1, 2014. Specifically, the System's assets earned a gross return before expenses of 17.20%, which is 9.70% above the actuarial assumption of 7.50%. All other actuarial experience gains and losses further decreased the actuarial accrued liability by \$122.6 million. Thus, the total experience gain for the year was \$1,269.2 million.

Also, the unfunded actuarial accrued liability was decreased by \$1.3 million due to the one year delay in the scheduled rate increases. The UAAL increased by \$76.2 million because of the update to the mortality assumptions. Also, the UAAL increased by \$23.6 million because actual contributions plus assumed investment returns were less than the normal cost and the interest on the unfunded actuarial accrued liability. The impact of the March 2015 discretionary COLA, including the Restoration of Purchasing Power pieces, was an increase in the UAAL of \$159.2 million. Finally, the cancellation of future rate increases decreased the UAAL by \$10.3 million.

All of these items resulted in a total actuarial gain of \$1,021.8 million and a change in funding status from an 85.3% funding ratio on July 1, 2013 to 92.9% on June 30, 2014. The funding ratio is the ratio of the actuarial value of the assets over the value of the actuarial accrued liability.

Comparison to GASB Statement No. 67 Liabilities

The long-term expected rate of return on investments is 7.50%, including 0.40% for expected investment expenses and 0.10% for expected administrative expenses. For purposes of determining the System's funding status and Unfunded Actuarial Accrued Liability (UAAL), we use a discount rate that is net of all expenses (7.00%). The figures shown in this report have been calculated using this discount rate.

This is in contrast to the discount rate used to determine the Total Pension Liability (TPL) and Net Pension Liability (NPL) for purposes of GASB reporting. According to GASB Statement 67, the discount rate used to calculate TPL and NPL must be net of investment expenses but not administrative expenses. Therefore, TPL and NPL have been determined using a discount rate of 7.10%. Results and further details on these items can be found in our forthcoming GASB 67 Report.

Assumptions

Our July 1, 2014 actuarial valuation report presented summaries of the actuarial assumptions and methods used in the valuation. The last major experience study, completed in May 2014, covered the period July 1, 2009 through June 30, 2013. The next major experience study, to be completed in 2016, will cover the period July 1, 2011 through June 30, 2015.

Certification Statement

In preparing this letter, we relied, without audit, on information (some oral and some in writing) supplied by PERSI's staff. This information includes, but is not limited to, statutory provisions, member census data, and financial information. We found this information to be reasonably consistent and comparable with data used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer our best estimate of anticipated experience affecting the System. Further, in our opinion, each actuarial assumption used is reasonably related to the experience of the System and to reasonable expectations which, in combination, represent our best estimate of anticipated experience under the System.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Retirement Board has the final decision regarding the appropriateness of the assumptions and actuarial cost methods.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. Actuarial computations under GASB Statements No. 27 are for purposes of fulfilling financial accounting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed exhibits have been made on a basis consistent with our understanding of the System's funding requirements and goals and of GASB Statement No. 27. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of the System. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s):

(a) The System may provide a copy of Milliman's work, in its entirety, to the System's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the System.

(b) The System may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this letter is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and Fellows of the Society of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The enclosed Exhibits 1 through 9 provide further related information. Milliman is completely responsible for these exhibits. Specifically, they are:

- Exhibit 1 Summary of Actuarial Assumptions and Methods
- Exhibit 2 Schedule of Active Member Valuation Data
- Exhibit 3 Schedule of Retiree and Beneficiary Valuation Data
- Exhibit 4 Schedule of Funding Progress
- Exhibit 5 Solvency Test
- Exhibit 6 Analysis of Actuarial Gains or Losses
- Exhibit 7 Schedule of Contributions from the Employer and All Other Contributing Entities
- Exhibit 8 Schedule of Contributions from the Employer Expressed as a Percentage of Payroll
- Exhibit 9 Provisions of Governing Law

We would like to express our appreciation to Don Drum, Executive Director of the System, and to members of his staff, who gave substantial assistance in supplying the data on which this report is based.

Respectfully submitted,

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MCO/JDB/pap

**Public Employee Retirement
System of Idaho****EXHIBIT 1: SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS EFFECTIVE
JULY 1, 2014**

1. Investment Return (Adopted July 1, 2012)

The annual rate of investment return on the assets of the System is assumed to be 7.50% (including 0.50% for expenses) compounded annually.

2. Actuarial Value of Assets (Adopted July 1, 1994)

All assets are valued at market as of the valuation date.

3. Actuarial Assumptions

The actuarial assumptions and methods were adopted by the Board based upon recommendations from the retained actuary. The actuarial assumptions are based on periodic studies of the System's actual experience.

4. Mortality (Adopted July 1, 2014)***Contributing Members, Service Retirement Members, and Beneficiaries*****• Teachers**

Males RP-2000 Combined Table for Healthy Individuals for males,
set back three years.

Females RP-2000 Combined Table for Healthy Individuals for females,
set back three years.

• Fire & Police

Males RP-2000 Combined Table for Healthy Individuals for males,
with no offset.

Females RP-2000 Combined Table for Healthy Individuals for females,
set forward one year.

10% of Fire and Police active member deaths are assumed to be duty related.
This assumption was adopted July 1, 2008.

• General Employees and All Beneficiaries

Males RP-2000 Combined Table for Healthy Individuals for males,
set back one year.

Females RP-2000 Combined Table for Healthy Individuals for females,
set back one year.

All mortality tables are adjusted with generational mortality adjustments using projection scale AA as shown in Table A-11B of the July 1, 2014 valuation report. The projection scale is applied from the year 2000 to the year in which the mortality assumption is being applied.

Disabled Members

For disabled members, the mortality rates used in the valuation are the rates from the RP-2000 table for disabled individuals for respective sexes, with a one-year setback for males and a one-year set forward for females.

All mortality tables are adjusted with generational mortality adjustments using projection scale AA as shown in Table A-11B of the July 1, 2014 valuation report. The projection scale is applied from the year 2000 to the year in which the mortality assumption is being applied.

5. Service Retirement (Adopted July 1, 2012)

Annual rates of retirement assumed to occur among persons eligible for a service retirement are illustrated in the following table:

Age	Fire & Police		General Employees			
	First Year Eligible	Thereafter	Male		Female	
			First Year Eligible	Thereafter	First Year Eligible	Thereafter
55	21%	18%	22%	10%	26%	18%
60	17	22	26	17	26	18
65	40	40	33	55	37	49
70	*	*	18	18	18	18

Age	Teachers			
	Male		Female	
	First Year Eligible	Thereafter	First Year Eligible	Thereafter
55	19%	5%	10%	10%
60	30	18	26	18
65	36	46	49	49
70	*	*	*	*

* For all ages older than the age indicated, retirement is assumed to occur immediately.

6. Early Retirement (Adopted July 1, 2012)

Annual rates of retirement assumed to occur among persons eligible for a reduced early retirement benefit are illustrated in the following table:

Age	Fire & Police	General Employees		Teachers	
		Male	Female	Male	Female
50	5%	*	*	*	*
55	5	3%	3%	7%	6%
60		5	6	11	12

* For all ages younger than the age indicated, withdrawal is assumed to occur (see Section 7).

7. Other Terminations of Employment (Adopted July 1, 2012)

Assumed annual rates of termination are illustrated below. Rates are based only on years of service.

Years of Service	Fire and Police	General Employees		Teachers	
		Male	Female	Male	Female
5	7.7%	10.9%	11.8%	6.3%	6.8%
10	4.6	5.6	6.7	3.3	3.6
15	2.7	3.8	4.3	2.1	2.0
20	1.8	2.6	3.1	1.4	1.4
25	1.5	1.8	2.5	1.2	1.2
30	1.5	1.5	2.5	1.2	1.2

8. Disability Retirement (Adopted July 1, 2012)

Annual rates assumed for disability retirement are illustrated in the following table:

Age	Fire & Police	General Employees		Teachers	
		Male	Female	Male	Female
25	.01%	.01%	.01%	.01%	.05%
35	.03	.03	.01	.02	.04
45	.10	.11	.10	.07	.07
55	.43	.38	.28	.27	.27

25% of Fire and Police active member disabilities are assumed to be duty related. This assumption was adopted July 1, 2009.

9. Future Salaries (Adopted July 1, 2012)

In general, the total annual rates at which salaries are assumed to increase include 3.75% per annum for increase in the general wage level of the membership plus increases due to promotions and longevity. The general wage level increases are due to inflation and increases in productivity. The total ultimate rates assumed are illustrated below.

Years of Service	Fire and Police	General Employees		Teachers	
		Male	Female	Male	Female
5	7.43%	6.24%	6.74%	7.12%	7.85%
10	5.77	5.31	5.67	6.03	6.24
15	5.00	4.68	4.77	4.99	4.68
20	4.53	4.42	4.42	4.27	4.27

10. Vesting (Adopted July 1, 2012)

The following table illustrates the assumed probability that vested terminating members will elect to receive deferred benefits instead of withdrawing accumulated contributions.

Age	Fire and Police	General Employees		Teachers	
		Male	Female	Male	Female
25	48%	51%	63%	75%	94%
35	53	69	70	76	84
45	70	76	74	82	85
55	--	--	--	--	--

11. Growth in Membership (Adopted July 1, 2012)

In general, the combined effects of stable active membership and salary levels are assumed to produce a 3.75% average annual expansion in the payroll of covered members.

12. Interest on Employee Contributions (Adopted July 1, 2012)

The credited interest rate on employee contributions is assumed to be 8.00%.

13. Postretirement Benefit Increases (Cost of Living Adjustments)

A nondiscretionary postretirement increase of 1% per year is assumed for the valuation. See Exhibit 3 for total discretionary and nondiscretionary increases granted by the Board for the past ten years.

14. Actuarial Cost Method

The individual entry age actuarial cost method is used. The normal cost rates used in this valuation were calculated based on all current active members as of July 1, 2014, for each sex and type of employee in the valuation. The normal costs and projected fiscal year 2015 salaries for all active members were calculated. The ratio of the two is the aggregate normal cost rate. The current normal cost rate was adopted in October, 2014 in conjunction with the July 1, 2014 actuarial valuation.

The unfunded actuarial accrued liability (UAAL) created by this method, including gains and losses, is amortized as a level percentage of the System's projected payroll.

Commencing July 1, 2007, 1.49% of the payroll of higher education faculty covered by the Optional Retirement Program (ORP) is payable to PERSI until July 1, 2025. Commencing July 1, 1997, 3.83% of the payroll of community college and post-secondary vocational educational institutions covered by the ORP was payable to PERSI until July 1, 2011. The difference between the future ORP contributions and the actuarial accrued liability computed under the actuarial cost method is the portion of the actuarial accrued liability used to determine the UAAL, or funding reserve, for PERSI.

15. Experience Studies

The last experience study was completed in 2014 for the period July 1, 2009 through June 30, 2013 and reviewed all economic assumptions and mortality. Other demographic assumptions and all economic assumptions will be studied in 2016 for the period from July 1, 2011 through June 30, 2015. Assumptions were adopted as noted.

16. Recent Changes

At the September 2014 Board meeting, the scheduled contribution rate increases on July 1, 2015 and July 1 2016, were each cancelled.

Also at the September 2014 Board meeting, the March 2015 total discretionary COLA of 3.0% was approved.

**Public Employee Retirement
System of Idaho**

EXHIBIT 2: SCHEDULE OF ACTIVE MEMBER VALUATION DATA

Valuation Date July 1	Number	Annual Salaries *		
		Annual Valuation Payroll	Average Annual Pay	% Increase in Average Annual Pay
2005	64,391	\$2,197,385,000	\$34,126	1.8%
2006	64,762	2,294,317,000	35,427	3.8
2007	65,800	2,397,470,000	36,436	2.8
2008	66,765	2,540,568,000	38,052	4.4
2009	67,813	2,644,665,000	38,999	2.5
2010	67,020	2,622,461,000	39,130	0.3
2011	65,798	2,572,044,000	39,090	-0.1
2012	65,270	2,567,659,000	39,339	0.6
2013	65,535	2,634,566,000	40,201	2.2
2014	66,223	2,676,344,000	40,414	0.5

* Actuarial valuation payroll is computed as the sum of the annualized salaries for all active members, and differs from the actual payroll shown in the financial section of the annual report.

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EXHIBIT 3: SCHEDULE OF RETIREE AND BENEFICIARY VALUATION DATA ⁽¹⁾

Valuation Date July 1	Number			COLA Percentage Increases Granted Previous March 1
	Total	Added	Removed	
2005	27,246	1,959	756	2.7% +100% Restoration
2006	28,438	2,073	881	3.6
2007	29,619	2,101	920	3.8
2008	30,912	2,160	867	2.0
2009	32,197	2,235	950	1.0
2010	33,625	2,335	907	-1.48% +2.48% Partial Restoration
2011	35,334	2,652	943	1.0
2012	37,150	2,769	953	1.0
2013	38,947	2,815	1,018	1.0
2014	40,776	2,852	1,023	1.0

Valuation Date July 1	Annual Benefits				
	Total Rolls End of Year	Added to Rolls ⁽²⁾	Removed from Rolls	Average	% Increase in Average
2005	\$343,077,000	\$42,022,000	\$6,355,000	\$12,592	6.7%
2006	381,677,000	46,085,000	7,485,000	13,421	6.6
2007	422,196,000	49,182,000	8,663,000	14,254	6.2
2008	459,077,000	45,072,000	8,191,000	14,851	4.2
2009	491,946,000	42,698,000	9,829,000	15,279	2.9
2010	526,020,000	43,382,000	9,308,000	15,644	2.4
2011	567,933,000	51,647,000	9,734,000	16,073	2.7
2012	611,045,000	53,184,000	10,072,000	16,448	2.3
2013	651,466,000	51,630,000	11,209,000	16,727	1.7
2014	694,946,000	54,963,000	11,483,000	17,043	1.9

(1) Information regarding the number of retirees and beneficiaries added to, and removed from, the rolls was not used in the actuarial valuations.

(2) Includes postretirement increases.

**Public Employee Retirement
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**EXHIBIT 4: SCHEDULE OF FUNDING PROGRESS
(ALL DOLLAR AMOUNTS IN MILLIONS)**

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liabilities (AAL) ⁽¹⁾	Present Value of Future ORP Contributions	Unfunded Actuarial Accrued Liabilities (UAAL) ⁽²⁾	Funded Ratio ⁽³⁾	Covered Payroll ⁽⁴⁾	UAAL as a Percentage of Covered Payroll
July 1, 2005	\$8,208.8	\$8,778.7	\$61.3	\$508.6	94.2%	\$2,208.7	23.0%
July 1, 2006	9,177.1	9,699.0	60.2	461.7	95.2	2,343.5	19.7
July 1, 2007	10,945.8	10,431.9	59.5	(573.4)	105.5	2,421.0	(23.7)
July 1, 2008	10,402.0	11,211.8	60.9	748.9	93.3	2,578.9	29.0
July 1, 2009	8,646.0	11,732.2	59.6	3,026.6	74.1	2,683.5	112.8
July 1, 2010	9,579.8	12,187.9	52.3	2,555.8	78.9	2,684.4	95.2
July 1, 2011	11,360.1	12,641.2	48.5	1,232.6	90.2	2,627.9	46.9
July 1, 2012	11,306.2	13,396.7	47.0	2,043.5	84.7	2,619.6	78.0
July 1, 2013	12,053.5	14,172.9	45.3	2,074.1	85.3	2,697.6	76.9
July 1, 2014	13,833.1	14,928.1	42.7	1,052.3	92.9	2,702.9	38.9

(1) Actuarial present value of benefits less actuarial present value of future normal costs based on entry age actuarial cost method.

(2) Actuarial accrued liabilities less actuarial value of assets and present value of future ORP contributions. Amounts reported in this table do not include the value of any discretionary COLA or Gain Sharing allocations granted after the valuation date. If negative, amount is referred to as a funding reserve.

(3) Funded Ratio is the ratio of the actuarial value of assets over the actuarial accrued liabilities less the present value of future ORP contributions.

(4) Covered Payroll includes compensation paid to all active employees on which contributions are calculated. Covered Payroll differs from the Active Member Valuation Payroll shown in Exhibit 2 which is an annualized compensation of only those members who were active on the actuarial valuation date.

**Public Employee Retirement
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**EXHIBIT 5: SOLVENCY TEST
(ALL DOLLAR AMOUNTS IN MILLIONS)**

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liabilities For			Portion of Actuarial Accrued Liabilities Covered by Assets		
		Active Member Contributions (A)	Retirees and Beneficiaries (B)	Active Members (Employer Financed Portion) (C)	(A)	(B)	(C)
July 1, 2005	\$8,208.8	\$1,875.1	\$3,606.7	\$3,296.9	100.0%	100.0%	82.7%
July 1, 2006	9,177.1	2,142.5	4,088.9	3,467.6	100.0	100.0	84.9
July 1, 2007	10,945.8	2,335.6	4,582.9	3,513.4	100.0	100.0	100.0
July 1, 2008	10,402.0	2,642.0	5,022.9	3,546.9	100.0	100.0	77.2
July 1, 2009	8,646.0	2,867.7	5,396.2	3,468.3	100.0	100.0	11.0
July 1, 2010	9,579.8	2,813.7	5,820.0	3,554.2	100.0	100.0	26.6
July 1, 2011	11,360.1	2,838.9	6,284.8	3,517.5	100.0	100.0	63.6
July 1, 2012	11,306.2	3,114.9	6,925.0	3,356.8	100.0	100.0	37.7
July 1, 2013	12,053.5	3,304.1	7,425.2	3,443.6	100.0	100.0	38.5
July 1, 2014	13,833.1	3,268.7	8,125.8	3,533.6	100.0	100.0	69.0

**Public Employee Retirement
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EXHIBIT 6: ANALYSIS OF ACTUARIAL GAINS OR LOSSES
(ALL DOLLAR AMOUNTS IN MILLIONS)

	Gain(Loss) for Period		
	2011-2012	2012-2013	2013-2014
Investment Income			
Investment income was greater (less) than expected.	\$ (669.0)	\$ 179.8	\$ 1,146.6
Pay Increases			
Pay increases were less (greater) than expected.	171.3	49.4	155.9
Membership Growth			
(Additional) liability for new members.	(8.1)	(15.2)	(16.9)
Return to Employment			
Less (more) reserves were required for terminated members returning to work.	(10.5)	(9.9)	(10.7)
Death After Retirement			
Retirees died younger (lived longer) than expected.	(9.2)	(6.9)	10.2
Cost of Living Adjustment (COLA)			
Different Automatic COLA than expected.	NA	NA	NA
Other			
Miscellaneous gains (and losses) resulting from other causes. ⁽¹⁾	<u>7.1</u>	<u>(14.0)</u>	<u>(15.9)</u>
Total Gain (Loss) During the Period From Actuarial Experience	\$ (518.4)	\$ 183.2	\$ 1,269.2
Contribution Income			
Actual contributions were greater (less) than the normal cost and interest on the Unfunded Actuarial Accrued Liability.	(31.5)	(70.3)	(23.6)
Non-Recurring Items			
Changes in actuarial assumptions caused a gain (loss) ⁽²⁾	(255.0)	None	(76.2)
Changes in actuarial methods caused a gain (loss) ⁽³⁾	None	(143.5)	None
Changes in plan provisions caused a gain (loss) ⁽⁴⁾	None	None	(159.2)
Changes to Contribution Rate Increase Schedule	<u>(6.0)</u>	<u>0.0</u>	<u>11.6</u>
Composite Gain (Loss) During the Period	\$ (810.9)	\$ (30.6)	\$ 1,021.8

Note: Effects related to losses are shown in parentheses. Numerical results are expressed as a decrease (increase) in the actuarial accrued liability.

(1) Reflects losses on active and inactive member experience.

(2) For 2011-2012, this reflects changes made to the demographic and economic assumptions adopted according to the 2012 Active Member Experience Study. For 2013-2014, this reflects changes made to the mortality assumptions adopted according to the 2014 Experience Study.

(3) For 2012-2013, this reflects the change from Aggregate Entry Age Cost Method to Individual Entry Age Cost Method.

(4) For 2013-2014, this reflects the 0.70% discretionary and 2.30% retroactive COLA, effective March 1, 2015.

**Public Employee Retirement
System of Idaho**

**EXHIBIT 7: SCHEDULE OF CONTRIBUTIONS FROM THE EMPLOYER AND ALL OTHER
CONTRIBUTING ENTITIES (ALL DOLLAR AMOUNTS IN MILLIONS)**

Fiscal Year Ending	Covered Employee Payroll ⁽¹⁾	Actual PERSI Employer Contributions Dollar Amount ⁽²⁾	Actual ORP Contributions Dollar Amount	Total Actual Employer Contributions	Annual Required Contribution (ARC) ⁽³⁾	Percentage of ARC Dollars Contributed
6/30/07	\$2,421.0	\$252.8	\$6.7	\$259.5	\$235.4	110%
6/30/08	2,578.9	269.2	4.1	273.3	251.4	109
6/30/09	2,683.5	280.2	4.4	284.6	232.0	123
6/30/10	2,684.4	280.2	4.7	284.9	260.3	109
6/30/11	2,627.9	274.3	4.8	279.1	326.5	85
6/30/12	2,619.6	273.5	3.7	277.2	327.9	84
6/30/13	2,697.6	281.6	3.8	285.4	295.5	97
6/30/14	2,702.9	307.1	3.9	311.0	325.0 ⁽⁴⁾	96

- (1) Computed as the dollar amount of the actual PERSI employer contribution made as a percentage of payroll divided by the Actual PERSI contribution rate expressed as a percentage of payroll.
- (2) The actual PERSI employer contributions are expressed as a percentage of payroll. Employer contributions are made as a percentage of actual payroll in accordance with statute and the Board's Funding Policy. Thus, the actual employer contributions set by both statute and the Board's Funding Policy may differ from the computed ARC employer contribution rate for GASB disclosure purposes. Dollar amounts shown exclude additional receipts due to merger of retirement systems.
- (3) For PERSI employers, the Annual Required Contribution (ARC) is equal to the normal cost rate plus a 25-year amortization of any Unfunded Actuarial Accrued Liability or minus a 25-year amortization of any Funding Reserve amount. The ARC determined as of the valuation date is applicable for employer fiscal years commencing July 1 of the calendar year following the valuation date. For Optional Retirement Plan (ORP) employers, the ARC is equal to 1.49% of salaries of university members in the ORP until 2025 and 3.83% of salaries of junior college members in the ORP until 2011.
- (4) The ARC for the PERSI fiscal year ending June 30, 2014 is based on 11.88% of covered payroll as computed in the 2012 valuation. For valuations prior to 2012, the ARC determined as of the valuation date was applicable for employer fiscal years commencing October 1 of the calendar year following the valuation date.

**Public Employee Retirement
System of Idaho**

EXHIBIT 8: SCHEDULE OF CONTRIBUTIONS FROM THE EMPLOYER EXPRESSED AS A PERCENTAGE OF PAYROLL

Fiscal Year Ending	Actual PERSI Employer Contribution % ⁽¹⁾	Annual Required Contribution (ARC) % ⁽²⁾	Percentage of ARC Contributed
6/30/07	10.44%	9.448%	110%
6/30/08	10.44	9.588	109
6/30/09	10.44	8.483	123
6/30/10	10.44	9.523	109
6/30/11	10.44	12.243	85
6/30/12	10.44	12.375	84
6/30/13	10.44	10.813	97
6/30/14	11.36	11.880 ⁽³⁾	96

- (1) *The actual PERSI employer contributions are expressed as a percentage of payroll. Employer contributions are made as a percentage of actual payroll in accordance with statute and the Board's Funding Policy. Thus, the actual employer contributions set by both statute and the Board's Funding Policy may differ from the computed ARC employer contribution rate for GASB disclosure purposes. Dollar amounts shown exclude additional receipts due to merger of retirement systems.*
- (2) *For PERSI employers, the Annual Required Contribution (ARC) is equal to the normal cost rate plus a 25-year amortization of any Unfunded Actuarial Accrued Liability or minus a 25-year amortization of any Funding Reserve amount. The ARC determined as of the valuation date is applicable for employer fiscal years commencing July 1 of the calendar year following the valuation date. For Optional Retirement Plan (ORP) employers, the ARC is equal to 1.49% of salaries of university members in the ORP until 2025 and 3.83% of salaries of junior college members in the ORP until 2011.*
- (3) *The ARC for the PERSI fiscal year ending June 30, 2014 is based on 11.88% of covered payroll as computed in the 2012 valuation. For valuations prior to 2012, the ARC determined as of the valuation date was applicable for employer fiscal years commencing October 1 of the calendar year following the valuation date.*

**Public Employee Retirement
System of Idaho**

EXHIBIT 9: PROVISIONS OF GOVERNING LAW



All actuarial calculations are based on our understanding of the statutes governing the Public Employee Retirement System of Idaho, as contained in Sections 59-1301 through 59-1399, inclusive, of the Idaho Code, with amendments effective through July 1, 2014. The benefit and contribution provisions of this law are summarized briefly below, along with corresponding references to the Idaho Code. This summary does not attempt to cover all the detailed provisions of the law. Only those benefits in effect through July 1, 2014 are considered in this valuation. The items in parentheses are the provisions applicable to firefighters and police officers.

Effective Date

The effective date of the Retirement System was July 1, 1965.

**Member Contribution
Rate**

The member contribution rate effective July 1, 2014 is 6.79% (8.36%) of salary. As described earlier, there are currently no scheduled rate increases.

The member contribution rate is fixed at 60% (72%) of the employer contribution rate. For firefighters and police officers, the 72% adjustment is applied after reducing the employer rate by 0.10% for the 2003 addition of a \$100,000 death benefit for fire and police members who die in the line of duty. After the 72% is applied, the resulting rate is increased by 0.04% for the lump sum duty disability benefit. Member contributions have been “picked up” on a pre-tax basis by the employer since June 30, 1983 (Sections 59-1331 and 59-1332).

**Employer
Contribution Rate**

The employer contribution rate is set by the Retirement Board (Section 59-1322). As described in our 7/1/2014 Actuarial Valuation, there are no longer any future scheduled rate increases. The current rates are reflected in this report.

**Service Retirement
Allowance**

Eligibility

Age 65 (60) with five years of service including six months of membership service (Section 59-1341).

Amount of Allowance

For each year of credited service, the annual service retirement allowance is 2.0% (2.3%) of the highest 42-month average salary (Section 59-1342).

Minimum Benefit

\$60 (\$72) annual allowance for each year of service. The dollar amounts increase after 1974 according to the rate of cost of living increases in retirement allowances (Section 59-1342).

Maximum Benefit

In no case may a member's regular retirement benefit exceed the highest three-year average salary of the member (Section 59-1342).

Normal Form

Straight life retirement allowance plus any death benefit (Section 59-1351).

Optional Form

Actuarial equivalent of the normal form under the options available, according to the mortality and interest basis adopted by the Board (Section 59-1351).

Early Retirement Allowance***Eligibility***

Age 55 (50) with five years of service, including six months of membership service (contributing members only) (Section 59-1345).

Amount of Allowance

Full accrued service retirement allowance if age plus service equals 90 (80); otherwise, the accrued service retirement allowance, reduced by 3% for each of the first five years by which the early retirement date precedes the date the member would be eligible to receive the full accrued benefit, and by 5.75% for each additional year (Section 59-1346).

Vested Retirement Allowance***Eligibility***

Former contributing members with five years of membership service are entitled to receive benefits after attaining age 55 (50) (Section 59-1345).

Amount of Allowance

Same as early retirement allowance (Section 59-1345).

Disability Retirement Allowance***Eligibility***

Five years of membership service. For a police officer or a firefighter hired after July 1, 1993, who is disabled from an occupational cause, there is no service requirement (Section 59-1352).

Amount of Allowance

Projected service retirement allowance based on accrued service plus service projected to age 65 (60) (latter limited to excess of 30 years over accrued service) less any amount payable under workers' compensation law (Section 59-1353).

Normal Form

Temporary annuity to age 65 (60) plus any death benefit. Service retirement allowance becomes payable at age 65 (60) (Section 59-1354).

Safety Member Lump Sum Duty Disability Benefit

Fire and Police members who are disabled in the line of duty are eligible for a \$100,000 lump sum benefit, in addition to the annuity benefits discussed above (Section 59-1352A).

Death Benefits

After Retirement

Under the normal form of the retirement allowance, the excess, if any, of the member's accumulated contributions with interest at retirement over all payments received. Otherwise, payable according to the option elected (Section 59-1361).

Before Retirement

A. An automatic joint and survivor option applied to the actuarial equivalent of the member's accrued service retirement allowance is paid to the surviving spouse of a member with at least five years of service who dies while:

- i. contributing;
- ii. not contributing, but eligible for benefits; or
- iii. retired for disability,

or

B. If a member with at least five years of service has no spouse, a lump sum payment is made equal to twice the accumulated contributions with interest (Section 59-1361).

or

C. If a member with at least five years of service has no spouse, a lump sum payment is made equal to twice the accumulated contributions with interest (Section 59-1361).

Fire and police members are entitled to an additional \$100,000 payment if death occurs in the line of duty. (Section 59-1361 A).

Withdrawal Benefits

Accumulated contributions with interest (Section 59-1358). The interest rate is determined by the Board (Section 59-1301(26)).

**Postretirement
Increases**

Postretirement benefit increases are based on changes in the Consumer Price Index. The measurement period for changes in the CPI-U is August to August. The COLA changes are implemented effective on the March 1 following the measurement period.

If the CPI-U increases by at least 1%, the COLA is at least 1%. If the CPI-U increases by more than 1%, an additional postretirement increase of up to 5% each year (but not more than the increase in the CPI-U) may be authorized by the Board, subject to the approval of the Legislature, if it finds that the System's assets are no less in value than its actuarial liabilities, including those created by the additional increase.

If the CPI-U increases by less than 1% or decreases, the COLA is automatic, based on the change in the CPI. If a negative COLA is applicable, the negative COLA cannot decrease benefits by more than 6%. Additionally, a negative COLA cannot decrease a member's benefit below the amount of the benefit at the initial benefit date.

If a COLA is implemented that is less than the increase in the CPI-U, members' benefits will not retain their full inflation adjusted purchasing power. In such cases, the Board may implement a Restoration of Purchasing Power (ROPP) COLA at a later date to bring those members closer to 100% of inflation adjusted purchasing power. As with a discretionary COLA, a ROPP is subject to approval of the Legislature and requires that the System's assets are no less in value than its actuarial liabilities, including those created by the additional increase. (Section 59-1355).

Gain Sharing

Beginning in 2000, under Section 59-1309, Idaho Code, the Board may allocate all or a portion of "extraordinary gains" to active and retired members and employers as Gain Sharing.

Extraordinary gains are defined as the excess, if any, at the close of the fiscal year of the Assets over Actuarial Accrued Liabilities plus an amount necessary to absorb a one standard deviation market event without increasing contribution rates, as determined by the Board. Under the Board's current investment policy, assets in excess of a 113% funded ratio are considered extraordinary gains. The Board has the authority to rescind the Gain Sharing up to the date of distribution.



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October 30, 2014

Retirement Board
Public Employee Retirement System
State of Idaho
P.O. Box 83720
Boise, ID 83720

Members of the Board:

Milliman has performed annual actuarial valuations of the Idaho Firefighters' Retirement Fund (FRF) from 1981 through 1988 and biennial valuations from July 1, 1990 to July 1, 2000. Starting with the July 1, 2001 valuation, actuarial valuations occurred annually through the July 1, 2007 valuation. From July 1, 2007 through July 1, 2013 the valuations were again biennial. Beginning with the July 1, 2014 valuation they will be performed annually once again. The next actuarial valuation is scheduled for July 1, 2015.

Contribution Rates

FRF covers a closed group of firefighters who were hired before October 1, 1980 and who receive benefits in excess of those provided under the Public Employee Retirement System of Idaho (PERSI). The cost of these excess benefits is paid by member contributions, employer contributions, and receipts from a fire insurance premium tax. Employer contributions comprise two elements: 8.65% of the salaries of covered members and an additional rate applied to the salaries of all firefighters of the employer. The additional rate is designed to meet the costs of the Fund not covered by other resources. Idaho Code Section 59-1394 requires the cost of the excess benefits to be retired by the schedule of contributions over a given period of time not to exceed 50 years.

On September 16, 2014 the PERSI Board moved to reduce the Additional Employer Contribution Rate from the current 17.24% to 5.00%. In accordance with this decision, the additional employer contribution rate for excess benefits (shown in Exhibit 8) will be reduced to a rate of 5.00% of payroll, effective January 1, 2015.

FRF benefits were offset by PERSI benefits effective October 1, 1980. Effective July 1, 1990, all members hired after June 30, 1978 are to receive the same FRF benefits as members hired earlier.

Effective October 1, 1994, the PERSI benefits and contributions were increased. The FRF additional contribution rate to fund the excess benefits was decreased to 15.40% and the total employer contributions for FRF members remained fixed at 35.90% for Class A & B firefighters and 27.25% for Class D firefighters.

The Retirement Board lowered the PERSI contribution rates starting October 31, 1997 and made the reduction permanent as of April 25, 2000. The FRF excess contribution rate was increased to 17.24% since the total employer contributions for FRF members remained fixed at the 35.90%/ 27.25% rates.

The Retirement Board raised the PERSI contribution rates, with the first increase effective July 1, 2004, and additional increases effective July 1, 2005 and July 1, 2006 an additional 0.1% contribution was added to provide for a \$100,000 death benefit for duty related deaths. The FRF excess contribution rate was maintained at 17.24%. The July 1, 2004 rate increase took effect as scheduled, but the other two rate increases were delayed by the Board to July 1, 2006 and July 1, 2007.

After the July 1, 2006 PERSI and FRF valuation reports were completed, the PERSI Board delayed the effective date of the scheduled contribution rate increases to July 1, 2008 and July 1, 2009. In October 2007, the Board cancelled the remaining scheduled contribution rate increases.

After the July 1, 2009 PERSI and FRF valuation reports were completed, the PERSI Board approved three new contribution rate increases scheduled for July 1, 2011, July 1, 2012, and July 1, 2013. These were adopted in December 2009 due to a significant drop in funded status because of investment losses in the year ending June 30, 2009,

Due to the 12.01% investment return in the year ending June 30, 2010, in December 2010, the PERSI Board delayed the scheduled contribution rate increases for July 1, 2011, July 1, 2012, and July 1, 2013, to July 1, 2012, July 1, 2013, and July 1, 2014, respectively.

Due to the 20.25% investment return in the year ending June 30, 2011, in December 2011, the Board delayed the scheduled contribution rate increases for July 1, 2012, July 1, 2013, and July 1, 2014, to July 1, 2013, July 1, 2014, and July 1, 2015, respectively.

On July 1, 2013, the first of three scheduled contribution rate increases went into effect. This raised the member contribution for Class D Firefighters from 7.69% to 8.36%. It also increased the PERSI Rate employer contribution from 10.73% to 11.66% for all firefighter groups.

In December 2013, the Board delayed the scheduled contribution rate increases for July 1, 2014 and July 1, 2015, to July 1, 2015 and July 1, 2016, respectively

In September 2014 the scheduled contribution rate increases scheduled for July 1, 2015 and July 1, 2016 were cancelled.

On January 1, 2015, the additional employer contribution rate will decrease from 17.24% to 5.00%.

Funding Status

Based on the July 1, 2014 actuarial valuation, there is no longer an Unfunded Actuarial Accrued Liability to amortize. This is consistent with the expected amortization period based on the July 1, 2013 valuation. It is shorter than the Fund's original funding goal, which is to amortize the liabilities over four years or by June 30, 2018 (40 years from July 1, 1978). The current amortization period is less than the statutory maximum of 50 years.

The unfunded actuarial accrued liability (UAAL) was decreased by \$29.7 million due to an asset gain recognized as of July 1, 2014. Specifically, the Fund's assets earned an annual average net return after expenses of 16.71% for the 2014 plan year which was greater than the actuarial assumption of 7.00%. All experience gains and losses (including the asset gain) over the one-year period since the prior valuation resulted in the UAAL being decreased by \$35.3 million. The actuarial accrued liability was decreased by \$13.7 million because actual contributions plus assumed investment returns were more than the normal cost and the interest on the unfunded actuarial accrued liability. The UAAL was further

reduced by \$2.1 million due to the PERSI Restoration of Purchasing Power and March 1, 2015 discretionary COLA approved by the Board at the September Board Meeting.

The funding status increased from a 95.5% funding ratio on July 1, 2013, to 111.6% on June 30, 2014. The funding ratio is the ratio of the actuarial value of the assets over the value of the actuarial accrued liability.

Comparison to GASB Statement No. 67 Liabilities

The long-term expected rate of return on investments is 7.50%, including 0.40% for expected investment expenses and 0.10% for expected administrative expenses. For purposes of determining the Fund's funding status and Unfunded Actuarial Accrued Liability (UAAL), we use a discount rate that is net of all expenses (7.00%). The figures shown in this report have been calculated using this discount rate.

This is in contrast to the discount rate used to determine the Total Pension Liability (TPL) and Net Pension Liability (NPL) for purposes of GASB reporting. According to GASB Statement 67, the discount rate used to calculate TPL and NPL must be net of investment expenses but not administrative expenses. Therefore, TPL and NPL have been determined using a discount rate of 7.10%. Results and further details on these items can be found in our forthcoming GASB 67 Report.

Assumptions

Our July 1, 2014 actuarial valuation report presented summaries of the actuarial assumptions and methods used in the valuation. The FRF assumptions generally reflect the assumptions used for the PERSI Fire and Police members, but are modified to reflect the characteristics expected of the closed group of FRF members.

The wage growth and inflation assumption were changed on July 1, 2010. The mortality assumptions for the plan were changed on July 1, 2014, in conjunction with changes to the assumptions for the PERSI base plan, as described in Appendix A of the July 1, 2014 valuation. The wage growth and inflation assumption were again changed on July 1, 2012, as was the investment return assumption. As of July 1, 2013, the assumption for future Cost of Living Adjustments to the PERSI offset benefit was changed.

The next major PERSI experience study, to be completed in 2016, will cover the period July 1, 2011 through June 30, 2015.

Certification Statement

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the PERSI staff. This information includes, but is not limited to; benefit descriptions, employee data, and financial information. In our examination of such data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing or if our assumptions regarding incomplete data are incorrect. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

All costs, liabilities rates of interest, and other factors have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the Fund and reasonable expectations) and which in combination, offer our best estimate of anticipated experience affecting the Fund. The Retirement Board has the final decision regarding the appropriateness of the assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the Fund. Actuarial computations under GASB Statements No. 27 are for purposes of fulfilling financial accounting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed exhibits have been made on a basis consistent with our understanding of the Fund's funding requirements and goals and of GASB Statement No. 27. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of the Fund. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s):

- (a) The Fund may provide a copy of Milliman's work, in its entirety, to the System's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the System.
- (b) The Fund may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this letter is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and Fellows of the Society of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

 **Actuarial Section** 

The enclosed Exhibits 1 through 9 provide further related information. Milliman is completely responsible for these exhibits. Specifically, they are:

Exhibit 1	Summary of Actuarial Assumptions and Methods
Exhibit 2	Schedule of Active Member Valuation Data
Exhibit 3	Schedule of Retiree and Beneficiary Valuation Data
Exhibit 4	Schedule of Funding Progress
Exhibit 5	Solvency Test
Exhibit 6	Analysis of Actuarial Gains or Losses
Exhibit 7	Schedule of Contributions from the Employer and All Other Contributing Entities
Exhibit 8	Contribution Rates as a Percent of Pay
Exhibit 9	Provisions of Governing Law

Respectfully submitted,

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MCO/JDB/mji

Idaho Firefighters' Retirement Fund

**EXHIBIT 1: SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS
EFFECTIVE JULY 1, 2014**

1. Investment Return (Adopted July 1, 2012)

The annual rate of investment return on the assets of the Fund is assumed to be 7.50% (including 0.50% for expenses), compounded annually.

2. Actuarial Value of Assets (Adopted September 2014)

For the July 1, 2014 valuation all assets are valued at market as of the valuation date. Use of 3-year smoothing to calculate the actuarial value of plan assets will be implemented prospectively: the July 1, 2015 valuation will use a 2-year smoothing and all subsequent valuations will use a 3-year smoothing.

3. Actuarial Assumptions

The actuarial assumptions and methods were adopted by the PERSI Board based upon recommendations from the retained actuary. The actuarial assumptions are based on periodic studies of the PERSI total fund's actual experience.

4. Service Retirement (Adopted July 1, 1992)

Annual rates of retirement assumed to occur among persons eligible for a service retirement are illustrated in the following table:

Years Since Becoming Eligible to Retire ⁽¹⁾	Age	Probability of Service Retirement ⁽¹⁾
0 - 4	N/A	10.0%
5+	35 - 49	40.0
	50 - 59	40.0
	60	60.0
	61	30.0
	62	65.0
	63	40.0
	64	40.0
	65 - 69	60.0
	70	<i>Immediate retirement is assumed at age 70</i>

(1) Eligibility occurs after 20 years of service, or attained age 60 with five years of service.

5. Mortality (Adopted July 1, 2014)

The mortality rates used for all members of the Fund, active and retired, are from the RP-2000 Combined Mortality Table for males with generational mortality adjustments with ages unadjusted. The mortality rates assumed for spouses are from the RP-2000 Combined Mortality Table for females with generational mortality adjustments; with ages set back one year. For disabled members, the mortality rates used in the valuation are from the RP-2000 Mortality Table for disabled males with generational mortality adjustments, set back one year. These tables are illustrated in Table A-4A of the July 1, 2014 valuation report.

The Generational mortality adjustments provide a margin for future mortality improvements. The adjustments are applied from the base year of the tables (2000) to the year in which the mortality assumption is applied. The adjustments are done using the standard RP-2000 projection scale (Scale AA). These tables are illustrated in Tables A-4A and A-4B of the July 1, 2014 valuation report.

6. Disability Retirement (Adopted July 1, 1996)

Annual rates assumed for disability retirement are illustrated in the following table:

Age	Duty-Related	Non-Duty Related
25	.030%	.015%
35	.030	.015
45	.100	.100
55	.400	.400

7. Other Terminations of Employment (Adopted July 1, 2002)

Assumed annual rates of termination for persons who are not eligible for service retirement are illustrated below:

Years of Service	Annual Rate
5	8.0%
10	4.0
15	2.5
20	2.0

8. Future Salaries (Adopted July 1, 2012)

In general, the total annual rates at which salaries are assumed to increase include 3.75% per year for increases in the general wage level of membership. The general wage level increases are due to inflation and increases in productivity. Due to the closed group and the aging of the membership, the general wage assumption is assumed to adequately cover any additional increases due to promotions and longevity.

9. Replacement of Terminated Members

The Firefighters' Retirement Fund is a closed group. No new members are permitted. The total number of firefighters in PERSI (including those hired October 1, 1980 and later) is assumed to remain unchanged from year to year.

**10. Postretirement Benefit Increases (Cost of Living Adjustments)
(Adopted July 1, 2013)**

FRF benefits are based on paid salary and are assumed to increase at the same rate as the average paid firefighter's salary, or 3.75% per year. For members whose FRF benefits are offset by their PERSI benefits, the PERSI benefits are assumed to have post-retirement benefit increases of 1.00% per year. The assumptions regarding PERSI future post-retirement benefit increases is part of the funding policy for the FRF.

11. Probability of Marriage

It is assumed that there is an 85% probability that the member has an eligible spouse. The spouse's age is assumed to be three years younger than the member's.

12. Fire Insurance Premiums (Adopted July 1, 2004)

The fire insurance premiums received for the plan year ending June 30, 2014, amounted to \$3,311,094 or approximately 5.31% of all firefighters' covered compensation during the same period. Future fire insurance premiums are expected to provide contributions as a decreasing percentage of compensation, due to the assumption that the firefighters' covered compensation (including Class D members) will increase at the rate of 3.75% per year, but future fire insurance premiums are assumed to increase at a rate of only 3.25% per year. The rate for the increase for covered compensation was adopted July 1, 2012. The rate for the increase of fire insurance premiums was adopted July 1, 2010.

13. Actuarial Cost Method (Adopted July 1, 1996) – Funding Policy

The actuarial present value of future benefits not provided by PERSI, less the actuarial value of the assets and the present value of future statutory contributions for Class A & B members, is amortized as a level percentage of covered compensation, which includes the Class D firefighters. This can be considered a modified aggregate cost method.

14. Actuarial Cost Method (Adopted July 1, 1998) – GASB Disclosures

For GASB disclosure purposes, costs are determined based on the entry age normal cost method. The actuarial present value of future benefits not provided by PERSI less the present value of future normal costs equals the actuarial accrued liability. The unfunded actuarial accrued liability (UAAL) is equal to the actuarial accrued liability less the actuarial value of the assets. The UAAL is amortized as a level dollar amount over a fixed amortization period. The current amortization period is based on an open 30-year period from July 1, 2014.

The ARC is then the total of the normal cost allocated to the current plan year plus the amortization payment on the UAAL. Prior to July 1, 2006, the UAAL was amortized over a closed 40-year period from July 1, 1996. This assumption was adopted July 1, 1998, but applied retroactively to the July 1, 1996 valuation.

15. Experience Studies

The last experience study was for the period July 1, 2009, through June 30, 2013, and reviewed all economic and mortality assumptions. All demographic assumptions, other than mortality, and all economic assumptions will be studied in 2016 for the period from July 1, 2011, through June 30, 2015. Some mortality assumptions were updated July 1, 2014, to reflect the findings in the most recent experience study. The FRF assumptions generally reflect the assumptions used for the PERSI Fire and Police members, but are modified to reflect the characteristics expected of the closed group of FRF members.

16. Recent Changes

The mortality assumptions were modified as of July 1, 2014, in conjunction with changes to the mortality assumptions for the PERSI base plan, as described in Appendix A of the July 1, 2014 valuation report.

The results also reflect the PERSI Restoration of Purchasing Power and March 1, 2015 Discretionary COLA approved at the September 2014 Board Meeting.

Idaho Firefighters' Retirement Fund

EXHIBIT 2: SCHEDULE OF ACTIVE MEMBER VALUATION DATA

Valuation Date July 1	Number	Annual Salaries		Annual Increase in Average
		Total ⁽¹⁾	Average	
2002	81	\$ 4,981,492	\$ 61,500	9.8%
2003	57	3,750,432	65,797	7.0
2004	42	2,840,572	67,633	2.8
2005	20	1,526,466	76,323	12.8
2006	13	1,034,693	79,592	4.3
2007	10	791,125	79,113	(0.6)
2009	5	437,818	87,564	5.2
2011	4	368,842	92,211	2.6
2013	3	307,849	102,616	5.5
2014	2	198,646	99,323	(3.2)

(1) Annualized average salaries for covered members for the 12-month period commencing October 1 of the previous calendar year. For years ending after June 30, 2003, the 12-month period is the period from July 1 to June 30 of the previous calendar year.

Idaho Firefighters' Retirement Fund

EXHIBIT 3: SCHEDULE OF RETIREE AND BENEFICIARY VALUATION DATA ⁽¹⁾

Valuation Date July 1	Number			COLA
	Total	Added	Removed	Increases Granted Previous January 1
2002	558	41	9	1.51%
2003	576	27	9	4.41
2004	582	21	15	2.56
2005	599	25	8	4.33
2006	597	10	12	4.36
2007	590	5	12	2.42
2009	573	6	23	5.10
2011	566	14	21	3.30
2013	551	3	18	2.18
2014	545	3	9	2.48

Valuation Date July 1	Annual Benefits				Annual
	Total ⁽²⁾	Added ⁽³⁾	Removed	Average	Increases in Average
2002	\$17,834,237	\$1,458,868	\$232,384	\$31,961	1.2%
2003	19,329,902	1,725,487	229,822	33,559	5.0
2004	20,095,076	1,148,461	383,287	34,528	2.9
2005	21,699,127	1,833,685	229,634	36,226	4.9
2006	22,636,930	1,320,848	383,045	37,918	4.7
2007	22,992,269	754,703	399,364	38,970	2.8
2009	24,598,935	2,442,928	836,262	42,930	5.0
2011	25,998,263	2,147,165	747,837	45,933	3.4
2013	26,499,035	1,255,415	754,643	48,093	2.3
2014	26,856,909	784,008	426,134	49,279	2.5

(1) Information regarding the number of retirees and beneficiaries added to, and removed from, the rolls was not used in the actuarial valuations.

(2) Combined annual benefits from FRF and PERSI. The FRF benefits comprised \$19,921,805 of the 2014 total.

(3) Includes postretirement increases.

Idaho Firefighters' Retirement Fund

EXHIBIT 4: SCHEDULE OF FUNDING PROGRESS (All Dollar Amounts in Millions)

Actuarial Valuation Date July 1	Actuarial Value of Assets	Actuarial Accrued Liabilities (AAL) ⁽¹⁾	Unfunded Actuarial Accrued Liabilities (UAAL) ⁽²⁾	Funded Ratio	Covered Payroll ⁽³⁾	UAAL as a Percentage of Covered Payroll
2002	\$181.5	\$300.3	\$118.8	60.4%	\$34.4	345.3%
2003	182.7	310.7	128.0	58.8	37.0	345.9
2004	210.4	302.6	92.2	69.5	39.8	231.7
2005	227.2	309.1	81.9	73.5	42.2	194.1
2006	248.8	312.3	63.5	79.7	45.0	141.1
2007	291.5	314.8	23.3	92.6	47.6	48.9
2009	225.3	325.3	100.0	69.3	55.7	179.5
2011	290.4	311.5	21.1	93.2	59.3	35.6
2013	307.0	321.5	14.5	95.5	63.0	23.0
2014	352.2	315.6	(36.6)	111.6	63.0	(58.1)

(1) Actuarial present value of future excess benefits less actuarial present value of excess statutory contributions over amounts required by PERSI, for years prior to 1996. For years after 1996, the excess of the actuarial present value of future excess benefits less the present value of future normal cost contributions under the entry age cost method.

(2) Actuarial accrued liabilities less actuarial value of assets.

(3) Covered Payroll includes compensation paid to all active firefighters for whom contributions were made to FRF. Covered Payroll differs from the Active Member Valuation Payroll shown in Exhibit 2, which is an annualized compensation of only those members hired prior to October 1, 1980, who were active on the actuarial valuation date. For years prior to 1996, Covered Payroll is estimated. See footnote to Exhibit 7.

Idaho Firefighters' Retirement Fund

EXHIBIT 5: SOLVENCY TEST (All Dollar Amounts in Millions)

Actuarial Valuation Date July 1	Actuarial Value of Assets	Actuarial Liabilities ⁽¹⁾ for			Portion of Actuarial Liabilities Covered by Assets		
		(A)	(B)	(C)	(A)	(B)	(C)
		Active Member Contributions	Retirees and Beneficiaries	Active Members (Employer Financed Portion)			
2002	\$181.5	\$0.2	\$270.5	\$30.4	100.0%	67.0%	0.0%
2003	182.7	0.2	289.4	21.5	100.0	63.1	0.0
2004	210.4	0.1	287.7	15.2	100.0	73.1	0.0
2005	227.2	0.1	301.6	7.4	100.0	75.3	0.0
2006	248.8	0.0	308.1	4.2	100.0	80.8	0.0
2007	291.5	0.0	312.0	2.8	100.0	93.4	0.0
2009	225.3	0.0	324.0	1.3	100.0	69.5	0.0
2011	290.4	0.0	310.7	0.8	100.0	93.5	0.0
2013	307.0	0.0	320.4	1.1	100.0	95.8	0.0
2014	352.2	0.0	314.9	0.7	100.0	100.0	100.0

(1) Computed based on funding policy methods and assumptions.

Idaho Firefighters' Retirement Fund

EXHIBIT 6: ANALYSIS OF ACTUARIAL GAINS OR LOSSES (All Dollar Amounts in Millions)

	Gain (Loss) for Period		
	2009-2011	2011-2013	2013-2014
Investment Income Investment income was greater (less) than expected.	\$ 42.7	\$ (12.9)	\$ 29.7
Pay Increases Pay increases and COLAs were less (greater) than expected.	(0.3)	8.1	4.8
Death After Retirement Retirees died younger (lived longer) than expected.	-	-	-
Other Miscellaneous gains (and losses) resulting from other causes.	(1.9)	0.2	0.8
Total Gain (Loss) During the Period From Actuarial Experience	\$ 40.5	\$ (4.6)	\$ 35.3
Contribution Income Actual contributions plus assumed investment returns were greater (less) than the normal cost and interest on the Unfunded Actuarial Accrued Liability.	17.1	26.6	13.7
Non-Recurring Items Changes in actuarial assumptions and benefits caused a gain (loss). PERSI Restoration of Purchasing Power and Discretionary COLA	21.3 None	(15.4) None	None 2.1
Composite Gain (Loss) During the Period	\$ 78.9	\$ 6.6	\$ 51.1

Note: Effects related to losses are shown in parentheses. Numerical results are expressed as a decrease (increase) in the actuarial accrued liability.

Idaho Firefighters' Retirement Fund

EXHIBIT 7: SCHEDULE OF CONTRIBUTIONS FROM THE EMPLOYER AND ALL OTHER CONTRIBUTING ENTITIES (Actual Dollar Amounts)

Fiscal Year Ending	Covered Employee Payroll ⁽¹⁾	Statutory Employer Contributions ⁽²⁾	Additional Employer Contributions ⁽²⁾	Insurance Premium Payment from the State	Total Employer Contributions	Annual Required Contribution (ARC) ⁽³⁾	Percentage of ARC Contributed
2005	\$ 42,198,856	\$ 181,916	\$ 7,275,080	\$ 4,268,619	\$11,725,615	\$7,225,585	162.3%
2006	45,012,038	106,814	7,760,075	4,155,314	12,022,203	6,455,083	186.2
2007	47,638,976	78,450	8,212,960	3,827,763	12,119,173	5,033,291	240.8
2008	52,097,173	54,297	8,981,553	3,834,553	12,870,403	1,826,307	704.7
2009	55,747,655	41,362	9,610,896	3,563,731	13,215,989	1,826,307	723.6
2010	58,146,207	36,937	10,024,405	3,480,989	13,542,331	7,959,238	170.1
2011	59,337,447	31,616	10,229,773	3,052,326	13,313,715	7,959,238	167.3
2012	59,883,692	25,532	10,323,948	3,136,829	13,486,309	1,666,127	809.4
2013	62,969,139	25,617	10,855,876	3,345,821	14,227,314	1,666,127	853.9
2014	63,017,405	25,032	10,864,197	3,311,094	14,200,323	1,119,619	1,268.3

- (1) Computed as the dollar amount of the actual employer contribution made as a percentage of payroll divided by the contribution rate, expressed as a percentage of payroll.
- (2) Employer contributions are made as a percentage of actual payroll rather than as a dollar amount. The Statutory Employer FRF contributions in excess of PERSI required contributions are payable only on Class A & B active member payroll. The Additional Employer FRF contributions are payable on Class A & B and Class D active member payrolls.
- (3) Starting July 1, 1996, the Annual Required Contributions (ARC) are computed as a dollar amount based on the entry age cost method and future payroll contributions from Class A & B members only. The ARC is computed for GASB reporting purposes only. The actual employer contributions as a percentage of payroll varied from those determined by the actuarial valuation based on the funding policy as shown in Table D-2 of the actuarial valuation report. Thus, as long as the actual contributions are made as a percentage of payroll under the current funding policy methods and assumptions, as required by the most recent actuarial valuation, the actual dollar amount of the employer contributions will differ from the dollar amount of the Annual Required Contributions (ARC).

Idaho Firefighters' Retirement Fund

EXHIBIT 8: CONTRIBUTION RATES AS A PERCENT OF PAY

Year ⁽¹⁾	State Contributions	Employer Contributions				Total Employer Contributions For Members	
	Fire Insurance Premium Tax ⁽²⁾	PERSI Rate	Statutory FRF Rate	Additional Rate	Social Security	Hired Before 10/1/80 ⁽³⁾	Hired After 9/30/80 ⁽⁴⁾
Effective Date:	July 1	October 1	January 1	October 1	January 1	October 1	October 1
2002	7.60%	10.01%	8.65%	17.24%	7.65%	35.90%	34.90%
2003	7.60	10.11	8.65	17.24	7.65	36.00	35.00
2004	6.60	10.73	8.65	17.24	7.65	36.62	35.62
2005	6.70	10.73	8.65	17.24	7.65	36.62	35.62
2006	6.60	10.73	8.65	17.24	7.65	36.62	35.62
2007	6.90	10.73	8.65	17.24	7.65	36.62	35.62
2009	5.20	10.73	8.65	17.24	7.65	36.62	35.62
2011	5.10	10.73	8.65	17.24	7.65	36.62	35.62
2013	5.30	11.66	8.65	17.24	7.65	37.55	36.55
2014	5.20	11.66	8.65	17.24 ⁽⁵⁾	7.65	37.55	36.55

(1) Rates become effective on dates shown in given year. Biennial valuations were performed 1988-2000.

(2) Rate expressed as a percentage of the value of future fire insurance premium taxes over the value of future covered compensation.

(3) PERSI rate plus Statutory FRF rate plus additional rate.

(4) PERSI rate plus additional rate plus Social Security.

(5) Effective January 1, 2015, the Additional Employer Contribution Rate will decrease from 17.24% to 5.00%.

Idaho Firefighters' Retirement Fund

EXHIBIT 9: PROVISIONS OF GOVERNING LAW

This exhibit outlines our understanding of the laws governing the Firefighters' Retirement Fund (FRF), compared with the provisions that apply to firefighters of the Public Employee Retirement System of Idaho (PERSI), as contained in Sections 59-1301 through 59-1399 for PERSI and Sections 72-1401 through 72-1472 for FRF, inclusive of the Idaho Code through July 1, 2014. Each currently active firefighter hired before October 1, 1980, is entitled to receive the larger of (a) a benefit based on the FRF provisions, considering all of his service as a firefighter, and (b) a PERSI benefit, based on membership service beginning October 1, 1980, plus prior service rendered before July 1, 1965. Firemen hired October 1, 1980 and later (Class D members) are not entitled to FRF benefits.

In 1990, the law was changed to provide benefits to all members of FRF equally. Prior to the change, members hired after July 1, 1978, and before October 1, 1980, (Class C members) received a lower level of benefits. Class A members are members hired prior to July 1, 1976, who chose Option 1, where contributions are calculated on the basis of statewide average paid firefighter's salary. Benefits are based on the statewide average salary in effect at the date of retirement. Class B members are all Option 2 members hired prior to July 1, 1978, where contributions are calculated on the basis of the individual's annual average salary, but benefits are based on actual pay.

Retirement Provisions Affecting Firefighters In Idaho

July 1, 2014

	<u>Public Employee Retirement System</u>	<u>Firefighters' Retirement Fund</u>
Member Contribution Rate	8.36% of salary.	11.45% of salary. ⁽¹⁾
Service Retirement Allowance		
Eligibility	Age 60 with five years of service, including six months of membership service.	20 years of service. ⁽²⁾
Amount of Annual Allowance	2.30% of the highest 3.5-year average salary for each year of credited service.	40% of final five-year average salary ⁽¹⁾ plus 5.00% of average salary for each year of service in excess of 20 years.
Maximum Benefit	100% highest three-year average salary.	65% of final five-year average salary. ⁽¹⁾
Minimum Benefit	For retirement during or prior to 1974, \$72 annual allowance for each year of service, increasing in subsequent years at the rate of cost-of-living increases in retirement allowances.	None.

(1) *For firefighters employed prior to July 1, 1976, who chose Option 1, contributions are calculated on the basis of the statewide average paid firefighter's salary. Benefits are based on the statewide average salary in effect at the date of retirement.*

For firefighters employed prior to July 1, 1976, who chose Option 2, contributions are based on the individual members' salaries for the prior year. Benefits are based on actual pay.

(2) *Completed years of service. No partial years of service are recognized.*

Public Employee Retirement System

Firefighters' Retirement Fund

Non-Duty Disability Retirement Allowance

Eligibility	Five years of membership service.	Five years of service. ⁽²⁾
Amount of Annual Allowance	Projected service retirement allowance based on accrued service plus service projected to age 60 (projected service is limited to excess of 30 years over accrued service), less any amount payable under workers' compensation law.	2.00% of final five-year average salary ⁽¹⁾ times years of service ²⁾ , or same as service retirement benefit if eligible.
Normal Form	Temporary annuity to age 60 plus any death benefit.	Payable for firefighter's lifetime, with 100% of benefit continued to eligible surviving spouse or children.

Duty Disability Retirement Allowance

Eligibility	If hired after July 1, 1993, no service requirement, otherwise same as non-duty disability retirement.	No age or service requirements.
Amount of Annual Allowance	Same as non-duty disability retirement.	65% of final five-year average salary.
Normal Form	Same as non-duty disability retirement.	Same as non-duty disability retirement.

Special Disability Benefit

Eligibility	Firefighters hired after October 1, 1980 and prior to July 1, 1993, with less than 10 years of service.	None.
Benefit	Same as FRF disability benefit.	None.

(1) For firefighters employed prior to July 1, 1976, who chose Option 1, contributions are calculated on the basis of the statewide average paid firefighter's salary. Benefits are based on the statewide average salary in effect at the date of retirement.

For firefighters employed prior to July 1, 1976, who chose Option 2, contributions are based on the individual members' salaries for the prior year. Benefits are based on actual pay.

(2) Completed years of service. No partial years of service are recognized.

Public Employee Retirement System

Firefighters' Retirement Fund

Death Benefits Before Retirement

Eligibility	Five years of service for surviving spouse's benefit.	Non-duty death: Five years of service. ⁽²⁾ Duty death: No service requirement. Benefits are payable to surviving spouse or, if no eligible surviving spouse, to unmarried children under 18.
Amount of Benefit	1. Accumulated contribution with interest, or 2. The surviving spouse of a member with five years of service who dies while: <ul style="list-style-type: none"> i. contributing; ii. noncontributing, but eligible for benefits; or iii. retired for disability receives an automatic joint and survivor option applied to the actuarial equivalent of the member's accrued service retirement allowance.	100% of the benefit the firefighter would have received as a duty or non-duty disability allowance, depending on cause of his death.
Normal Form	Payable for member's lifetime, with death benefit determined by option selected at retirement.	Payable for firefighter's lifetime, with 100% of benefit continued to eligible surviving spouse or children.
Optional Form	Actuarial equivalent of the normal form under the options available according to the mortality and interest basis adopted by the Board.	None.

Death Benefits After Retirement

Eligibility	Designated beneficiary or estate.	Surviving spouse or, if no eligible surviving spouse, unmarried children under 18.
Amount of Benefit	Under the normal form of the retirement allowance, the excess, if any, of the member's accumulated contributions with interest at retirement over all payments received. Otherwise payable according to the option elected.	100% of firefighter's retirement allowance.

(2) Completed years of service. No partial years of service are recognized.

Public Employee Retirement System

Firefighters' Retirement Fund

Early Retirement Allowance

Eligibility	Age 50 with five years of service including six months of membership service (contributing members only).	None.
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Amount of Allowance	Full accrued service retirement allowance if age plus service equals 80; otherwise, the accrued service retirement allowance reduced by 3.00% for each of the first five years by which the early retirement date precedes the date the member would be eligible to receive his full accrued benefit, and by 5.75% for each additional year.	None.
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Vested Retirement Allowance

Eligibility	Former contribution members with five years of membership service are entitled to receive benefits after attaining age 50.	Firefighters who terminate after five years of service ⁽²⁾ are entitled to receive benefits beginning at age 60.
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Amount of Allowance	Same as early retirement allowance.	2.00% of final five-year average salary times years of service ⁽²⁾ .
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Withdrawal Benefit	Accumulated contributions with interest.	Accumulated contributions with interest.
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(2) Completed years of service. No partial years of service are recognized.

Public Employee Retirement System

Firefighters' Retirement Fund

**Post-Retirement
Increases**

Amount of
Adjustment

Increases are based on a cost-of-living factor reflecting the changes in the Consumer Price Index, subject to a maximum total increase or decrease of 6.00% in any year.

Benefits increase or decrease by the same percentage by which the average paid firefighter's salary increases or decreases. The change for the year is effective each February.

If the Consumer Price Index increases by at least 1% from August to August, a 1.00% annual postretirement increase is effective the following March. An additional postretirement increase of up to 5.00% each year may be authorized by the Board if it finds that the value of the System's assets are no less than its actuarial liabilities, including those created by the additional increase.

If the CPI-U increases by less than 1% or decreases, the COLA is automatically equal to the change in the CPI-U. A decrease cannot be more than 6%. Member benefits cannot decrease below the amount at the initial benefit date.

April 8, 2014

Retirement Board
Public Employee Retirement System of Idaho
607 North 8th Street
Boise, Idaho 83702

Dear Board Members:

As a matter of policy, the Public Employee Retirement System of Idaho (PERSI) periodically engages a third party actuary to conduct a review (or audit) of the annual actuarial valuations and experience study work performed by the retained actuary, Milliman. Gabriel, Roeder, Smith & Company (GRS) was selected to provide an independent third party review and provide opinions regarding the July 1, 2013 actuarial valuation results and the actuarial assumptions and methods recommended in the 2010 and 2012 experience studies. The results of our review are presented in this report. This report should not be relied upon for any other purpose. This report may be provided to parties other than the Retirement Board only in its entirety and only with the permission of the Board.

This report includes an executive summary in Section A. Our review, comments and recommendations on the experience studies are included in Section B. The results of our replication of the 2013 actuarial valuation of PERSI are included in Section C. Our review and valuation of PERSI was based on information provided by Milliman and PERSI, including the 2010 and 2012 experience study reports, and the 2013 actuarial valuation report. The data used in our work was provided by Milliman. Although we reviewed the data for reasonability, the data was not audited by GRS.

We wish to thank Don Drum, the PERSI staff and Milliman without whose willing cooperation this review could not have been completed.

Louise Gates, Mark Buis and James Anderson are independent of the plan sponsor, are Members of the American Academy of Actuaries and meet the qualification standards of the Academy to render the actuarial opinions contained herein.

Respectfully submitted

Louise M. Gates, ASA, MAAA James D. Anderson, FSA, EA, MAAA Mark Buis, FSA, EA, MAAA

LMG:mrB