
II. Actuarial Exhibits





Office of the State Actuary

"Securing tomorrow's pensions today."

Actuarial Certification Letter Report of the Combined Actuarial Valuation As of June 30, 2014

September 2015

This report documents the results of an actuarial valuation of the retirement plans defined under Chapters 41.26, 41.32, 41.35, 41.37, 41.40, and 43.43 of the Revised Code of Washington. The primary purpose of this valuation is to determine contribution requirements for the retirement plans as of the June 30, 2014, valuation date consistent with the prescribed funding policies. These contribution requirements are purely informational since, according to state law, this "off-cycle" valuation is not used to determine contribution rates. This valuation also provides information on the funding progress and developments in the plans over the past year. This valuation report should not be used for other purposes. Please replace this report with a more recent report when available.

The valuation results summarized in this report involve calculations that require assumptions about future economic and demographic events. We believe that the assumptions and methods used in the underlying valuation are reasonable and appropriate for the primary purpose stated above. The use of another set of assumptions and methods, however, could also be reasonable and could produce materially different results. Actual results may vary from our expectations.

The assumptions used in this valuation for investment return, inflation, salary growth, and membership growth were prescribed by the Legislature. Please see our latest *Economic Experience Study* report for further information on the economic assumptions. We developed the demographic assumptions used in this valuation during the *2007-2012 Demographic Experience Study*. The Legislature was responsible for the selection of the actuarial cost and asset valuation methods. In our opinion, all methods, assumptions, and calculations are reasonable and are in conformity with generally accepted actuarial principles and standards of practice as of the date of this publication.

The Department of Retirement Systems (DRS) provided us with member and beneficiary data. We checked the data for reasonableness as appropriate based on the purpose of the valuation. The Washington State Investment Board (WSIB) and DRS provided financial and asset information. An audit of the financial and participant data was not performed. We relied on all the information provided as complete and accurate. In our opinion, this information is adequate and substantially complete for purposes of this valuation.

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The asset smoothing method adopted during the 2003 Legislative Session (Chapter 11, Laws of 2003, E1) was intended to address the volatility of contribution rates under the aggregate funding method when used in combination with the existing asset allocation policy of WSIB. The combination of the current asset smoothing method with any other funding method or asset allocation policy may not be appropriate. The Legislature may need to revisit the application of the current asset smoothing method with the Plan 1 funding method as the duration of liabilities in those plans becomes shorter.

Under legislation enacted in 2009 (Chapter 561, Laws of 2009), the Unfunded Actuarial Accrued Liability (UAAL) in the Public Employees' Retirement System (PERS) and the Teachers' Retirement System (TRS) Plans 1 must be amortized over a rolling ten-year period, as a level percentage of projected system payroll. The projected payroll includes pay from current members of PERS and TRS Plans 2/3, as well as projected payroll from future new members. For PERS, the projected payroll includes payroll from retirement systems previously covered under PERS. This is a non-standard amortization method since it includes payroll outside the plan. Additionally, the funding method includes minimum contribution rates effective at the beginning of the 2015-17 Biennium. All contributions required under this method are necessary to fully amortize the UAAL in these plans near the previous target date of June 30, 2024. Failure to make all future required contributions may result in premature plan insolvency.

The undersigned, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. While this report is intended to be complete, we are available to offer extra advice and explanations as needed.

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Contribution Rates

Member and Employer Rate Summary				
	Plan 1		Plan 2/3	
	2014	2013	2014	2013
PERS				
Member*	6.00%	6.00%	7.26%	7.00%
Employer (Normal Cost)	7.37%	7.11%	7.37%	7.11%
Employer (Plan 1 UAAL)	5.11%	5.18%	5.11%	5.18%
Total Employer	12.48%	12.29%	12.48%	12.29%
TRS				
Member*	6.00%	6.00%	6.92%	6.79%
Employer (Normal Cost)	7.69%	7.56%	7.69%	7.56%
Employer (Plan 1 UAAL)	7.09%	6.91%	7.09%	6.91%
Total Employer	14.78%	14.47%	14.78%	14.47%
SERS				
Member*	N/A	N/A	6.96%	6.70%
Employer (Normal Cost)	N/A	N/A	7.96%	7.70%
Employer (PERS Plan 1 UAAL)	N/A	N/A	5.11%	5.18%
Total Employer	N/A	N/A	13.07%	12.88%
PSERS				
Member	N/A	N/A	6.81%	6.89%
Employer (Normal Cost)	N/A	N/A	6.81%	6.89%
Employer (PERS Plan 1 UAAL)	N/A	N/A	5.11%	5.18%
Total Employer	N/A	N/A	11.92%	12.07%
LEOFF				
Member	0.00%	0.00%	7.91%	7.97%
Employer	0.00%	0.00%	4.74%	4.78%
State (Normal Cost)	0.00%	0.00%	3.17%	3.19%
State (Plan 1 UAAL)	0.00%	0.00%	0.00%	0.00%
Total State	0.00%	0.00%	3.17%	3.19%
WSPRS				
Member	7.34%	7.19%	7.34%	7.19%
Employer (State)	10.82%	8.79%	10.82%	8.79%

Note: Employer rates exclude administrative expense rate.
 *Plan 3 members do not contribute to the defined benefit plan.

Development of 2014 Employer/State Rates									
	PERS		TRS		SERS	PSERS	LEOFF		WSPRS
	Plan 1	Plan 2/3	Plan 1	Plan 2/3	Plan 2/3	Plan 2	Plan 1	Plan 2	
a. Total Normal Cost	13.37%	14.63%	13.69%	14.61%	14.92%	13.62%	0.00%	15.82%	18.16%
b. Member Normal Cost*	6.00%	7.26%	6.00%	6.92%	6.96%	6.81%	0.00%	7.91%	7.34%
c. Employer Contribution (a-b)	7.37%	7.37%	7.69%	7.69%	7.96%	6.81%	0.00%	7.91%	10.82%
d. Cost to Amortize UAAL	5.11%	5.11%	7.09%	7.09%	5.11%	5.11%	0.00%	0.00%	N/A
e. Total Employer Rate (c+d)**	12.48%	12.48%	14.78%	14.78%	13.07%	11.92%	0.00%	4.74%	10.82%

Note: Employer rates exclude administrative expense rate.
 *Plan 3 members do not contribute to the defined benefit plan.
 **The state pays 20% of the total normal cost for LEOFF 2. This reduces the total employer contribution rate from 7.91% to 4.74%.

TRS Plan 2 Maximum Member Contribution Rates				
Valuation Year	Prior Max	Supplemental	Source	New Max
2014	8.64%	0.00%	N/A	8.64%
2012	8.64%	0.00%	N/A	8.64%
2011	8.64%	0.00%	N/A	8.64%
2010	8.63%	0.01%	C 5 L 11	8.64%
2009	8.63%	0.00%	N/A	8.63%
2008	8.63%	0.00%	N/A	8.63%
2007	8.55%	0.08%	C 101 L 08	8.63%
2006	7.76%	0.79%	C 50 L 07	8.55%
2005	7.75%	0.01%	C 33 L 06	7.76%
2004	7.75%	0.00%	N/A	7.75%
2003	7.75%	0.00%	N/A	7.75%
2002	7.75%	0.00%	N/A	7.75%
2001	7.75%	0.00%	N/A	7.75%
2000	7.75%	0.00%	N/A	7.75%
1999	6.59%	1.16%	C 247 L 00	7.75%
1998	6.59%	0.00%	N/A	6.59%
1997	N/A	N/A	N/A	6.59%

Note: Maximum member contribution rates change each year by 50% of the total supplemental contribution rates shown in the previous valuation.

WSPRS Plan 1/2 Maximum Member Contribution Rates				
Valuation Year	Prior Max	Supplemental	Source	New Max
2014	7.19%	0.15%	C 78 L 15	7.34%
2012	7.19%	0.00%	N/A	7.19%
2011	7.19%	0.00%	N/A	7.19%
2010	7.19%	0.00%	N/A	7.19%
2009	7.18%	0.01%	C 261 L 10	7.19%
2008	6.95%	0.23%	C 522 L 09	7.18%
2007	6.95%	0.00%	N/A	6.95%
2006*	N/A	N/A	N/A	6.95%

Note: Maximum member contribution rates change each year by 50% of the total supplemental contribution rates shown in the previous valuation.

**The original maximum contribution rate of 7% was decreased by 0.05% for C 87 L 07.*

The following tables show the development of the normal cost rates. Consistent with current funding policy, the normal cost rates include minimum contribution rates to provide stable and adequate contribution rates over time. The minimum rates are a percent of the normal cost calculated under the Entry Age Normal (EAN) funding method. The percent varies by plan. Please see the **Glossary** for a more detailed explanation of EAN.

Development of Normal Cost Rates						
(Dollars in Millions)	PERS 2/3	TRS 2/3	SERS 2/3	PSERS 2	LEOFF 2	WSPRS
1. Calculation of Member Normal Cost Rate						
a. Future Value of Fully Projected Benefits	\$260,288	\$125,576	\$31,198	\$10,084	\$89,832	\$7,295
b. Present Value of Fully Projected Benefits	\$36,119	\$13,131	\$4,881	\$672	\$11,171	\$1,182
c. Valuation Assets	26,386	9,193	3,624	278	8,638	1,044
d. Unfunded Fully Projected Benefits (b - c)	9,733	3,938	1,257	394	2,533	138
e. Past Liability Balance	48	190	54	0	0	9
f. Adjusted Unfunded (d - e)	\$9,685	\$3,748	\$1,202	\$394	\$2,533	\$128
Present Value of Projected Salaries to Current Members (PVS)						
g. Plan 1 PVS	N/A	N/A	N/A	N/A	N/A	\$339
h. Plan 2 PVS	58,764	9,126	5,127	2,892	18,122	436
i. Plan 3 PVS	15,877	35,950	7,027	N/A	N/A	N/A
j. Weighted PVS (2g + 2h + i)	\$133,406	\$54,202	\$17,280	\$5,785	\$36,244	\$1,550
k. Employee Normal Cost (f / j)	7.26%	6.92%	6.96%	6.81%	6.99%	8.27%
l. Employee Minimum Contribution Rate	4.20%	4.99%	4.38%	5.57%	7.81%	6.64%
m. Prior Year Employee Maximum Contribution Rate*	N/A	8.64%	N/A	N/A	N/A	7.19%
n. Employee Contribution Rate with Max/Min	7.26%	6.92%	6.96%	6.81%	7.81%	7.19%
o. Change In Plan Provisions (Laws of 2015)	0.00%	0.00%	0.00%	0.00%	0.10%	0.15%
p. Employee Contribution Rate (n + o)**	7.26%	6.92%	6.96%	6.81%	7.91%	7.34%
2. Calculation of Employer Normal Cost Rate						
a. Present Value of Fully Projected Benefits	\$36,119	\$13,131	\$4,881	\$672	\$11,171	\$1,182
b. Valuation Assets	26,386	9,193	3,624	278	8,638	1,044
c. Unfunded Benefits (a - b)	9,733	3,938	1,257	394	2,533	138
d. Present Value of Employee Contributions	4,266	631	357	197	1,266	64
e. Past Liability Balance	48	190	54	0	0	9
f. Employer Responsibility (c - d - e)	\$5,419	\$3,117	\$846	\$197	\$1,266	\$64
Present Value of Projected Salaries to Current Members (PVS)						
g. Plan 1 PVS	N/A	N/A	N/A	N/A	N/A	339
h. Plan 2 PVS	58,764	9,126	5,127	2,892	18,122	436
i. Plan 3 PVS	15,877	35,950	7,027	N/A	N/A	N/A
j. Total PVS (g + h + i)	\$74,641	\$45,076	\$12,153	\$2,892	\$18,122	\$775
k. Employer Normal Cost (f / j)	7.26%	6.92%	6.96%	6.81%	6.99%	8.27%
l. Employer Minimum Contribution Rate	4.20%	4.99%	4.38%	5.57%	7.81%	6.64%
m. Employer Contribution Rate with Minimum	7.26%	6.92%	6.96%	6.81%	7.81%	8.27%
n. Excess Employer Rate ¹	N/A	0.00%	N/A	N/A	N/A	1.08%
o. Rate to Amortize Past Liability Balance***	0.11%	0.77%	1.00%	N/A	N/A	1.32%
p. Change In Plan Provisions (Laws of 2015)	0.00%	0.00%	0.00%	0.00%	0.10%	0.15%
q. Employer Contribution Rate (m + n + o + p)	7.37%	7.69%	7.96%	6.81%	7.91%	10.82%
3. Normal Cost Rates Adopted for 2015-17¹						
a. Employee Contribution Rate ²	6.12%	5.95%	5.63%	6.59%	8.41%	6.69%
b. Employer Contribution Rate ²	6.23%	6.72%	6.63%	6.59%	5.05%	8.01%
c. State Contribution Rate ²	N/A	N/A	N/A	N/A	3.36%	N/A
d. Total Contribution Rate (a + b + c)	12.35%	12.67%	12.26%	13.18%	16.82%	14.70%

Note: Totals may not agree due to rounding.

*WSPRS and TRS 2 employees pay 50% of the total normal cost, not to exceed an adjusted cap. The employer pays the excess.

**Plan 3 members do not contribute to the defined benefit plan.

***WSPRS liability is attributable to past costs for improved survivor benefits. PERS, TRS, and SERS liability is attributable to past Plan 3 gain-sharing.

¹ LEOFF 2 rates adopted by LEOFF 2 Board; all others adopted by PFC.

² LEOFF 2 rate: 50% Employee, 30% Employer, 20% State.

II. Actuarial Exhibits

Amortization of the Plan 1 Unfunded Actuarial Accrued Liability (UAAL)			
<i>(Dollars in Millions)</i>			
	PERS 1	TRS 1	LEOFF 1
a. Future Value of Fully Projected Benefits	\$30,052	\$21,674	\$11,022
b. Present Value of Fully Projected Benefits (PVFB)	\$12,833	\$9,297	\$4,332
c. Valuation Assets	\$7,761	\$6,353	\$5,499
d. Actuarial Present Value of Future Normal Costs	\$121	\$52	\$0
e. Balance of Plan 1 Benefit Improvements After 2009	\$121	\$54	N/A
f. UAAL (b - c - d - e)	\$4,830	\$2,838	(\$1,168)
g. Expected UAAL Contributions to 2017	N/A	N/A	\$0
h. Remaining UAAL (f - g)	\$4,830	\$2,838	(\$1,168)
i. Amortization Date	N/A	N/A	6/30/2024
j. Present Value of Projected Salaries*	\$97,159	\$40,877	\$10,206
k. Contribution Rate Before Adjustments (h / j)	4.97%	6.94%	(11.44%)
l. Minimum Contribution Rate	3.50%	5.75%	N/A
m. Preliminary Contribution Rate**	4.97%	6.94%	(11.44%)
n. Plan 1 Benefit Improvements After 2009	0.14%	0.15%	N/A
o. Change In Plan Provisions (Laws of 2015)	0.00%	0.00%	0.00%
p. Contribution Rate to Amortize the UAAL (m + n + o)**	5.11%	7.09%	(11.44%)
Plan 1 UAAL Contribution Rates Adopted by PFC			
Contribution Rate Adopted for 2015-17	4.77%	6.23%	0.00%

Note: Totals may not agree due to rounding.

**Measured under the plan's amortization method.*

***No LEOFF 1 UAAL contributions are required when the plan is fully funded under current methods and assumptions.*

Actuarial Liabilities

Present Value of Fully Projected Benefits												
<i>(Dollars in Millions)</i>												
	PERS			TRS			SERS	PSERS	LEOFF			WSPRS
	Plan 1	Plans 2/3	Total	Plan 1	Plans 2/3	Total	Plans 2/3	Plan 2	Plan 1	Plan 2	Total	
Active Members												
Retirement	\$1,409	\$24,477	\$25,886	\$752	\$9,806	\$10,558	\$3,116	\$576	\$141	\$8,033	\$8,174	\$465
Termination	1	833	834	0	327	327	179	39	0	147	147	3
Death	10	240	250	4	81	86	33	4	2	105	106	5
Disability	1	141	142	0	10	10	13	4	0	370	370	2
Return of Contributions on Termination	1	277	277	0	26	26	27	20	0	92	92	2
Return of Contributions on Death	23	226	249	9	22	31	19	8	0	137	138	2
Total Active	\$1,446	\$26,194	\$27,639	\$766	\$10,272	\$11,038	\$3,388	\$651	\$143	\$8,883	\$9,027	\$479
Inactive Members												
Terminated	\$153	\$2,442	\$2,595	\$44	\$846	\$890	\$474	\$17	\$2	\$177	\$179	\$13
Service Retired	10,462	7,084	17,546	8,046	1,954	10,000	978	4	1,855	1,891	3,746	634
Disability Retired	118	132	250	84	11	95	15	0	1,760	143	1,903	6
Survivors	654	268	922	356	47	403	26	0	572	76	648	50
Total Inactive	\$11,388	\$9,925	\$21,313	\$8,530	\$2,859	\$11,389	\$1,493	\$21	\$4,189	\$2,287	\$6,476	\$703
Laws of 2015	0	0	0	0	0	0	0	0	0	35	35	2
2014 Total	\$12,833	\$36,119	\$48,952	\$9,297	\$13,131	\$22,427	\$4,881	\$672	\$4,332	\$11,205	\$15,537	\$1,184
2013 Total	\$13,012	\$33,404	\$46,416	\$9,491	\$12,025	\$21,516	\$4,495	\$595	\$4,420	\$10,314	\$14,734	\$1,132

Note: Totals may not agree due to rounding.

Entry Age Normal Accrued Liability*												
(Dollars in Millions)	PERS			TRS			SERS	PSERS	LEOFF		WSPRS	
	Plan 1	Plans 2/3	Total	Plan 1	Plans 2/3	Total	Plans 2/3	Plan 2	Plan 1	Plan 2	Total	
Active Members												
Retirement	\$1,317	\$18,864	\$20,181	\$713	\$6,804	\$7,517	\$2,383	\$254	\$138	\$5,405	\$5,543	\$332
Termination	(4)	285	281	(4)	96	92	56	13	(1)	33	32	1
Death	9	182	191	4	55	59	24	2	1	46	47	2
Disability	(2)	75	73	(1)	4	3	6	1	(5)	206	201	1
Return of Contributions on Termination	(10)	(163)	(173)	(2)	(9)	(11)	(9)	(4)	0	(26)	(26)	(1)
Return of Contributions on Death	21	154	176	9	11	20	13	3	0	84	84	1
Total Active	\$1,333	\$19,396	\$20,729	\$720	\$6,961	\$7,680	\$2,472	\$269	\$134	\$5,747	\$5,881	\$337
Inactive Members												
Terminated	\$153	\$2,442	\$2,595	\$44	\$846	\$890	\$474	\$17	\$2	\$177	\$179	\$13
Service Retired	10,462	7,084	17,546	8,046	1,954	10,000	978	4	1,855	1,891	3,746	634
Disability Retired	118	132	250	84	11	95	15	0	1,760	143	1,903	6
Survivors	654	268	922	356	47	403	26	0	572	76	648	50
Total Inactive	\$11,388	\$9,925	\$21,313	\$8,530	\$2,859	\$11,389	\$1,493	\$21	\$4,189	\$2,287	\$6,476	\$703
Laws of 2015	0	0	0	0	0	0	0	0	0	35	35	2
2014 Total	\$12,720	\$29,321	\$42,042	\$9,250	\$9,819	\$19,069	\$3,965	\$291	\$4,323	\$8,069	\$12,392	\$1,042
2013 Total	\$12,874	\$26,540	\$39,413	\$9,429	\$8,794	\$18,223	\$3,581	\$218	\$4,409	\$7,220	\$11,628	\$987

Note: Totals may not agree due to rounding.
 *Calculated using the Entry Age Normal (EAN) cost method. This method was not used to determine contribution requirements.

Projected Unit Credit Accrued Liability*												
(Dollars in Millions)	PERS			TRS			SERS	PSERS	LEOFF		WSPRS	
	Plan 1	Plans 2/3	Total	Plan 1	Plans 2/3	Total	Plans 2/3	Plan 2	Plan 1	Plan 2	Total	
Active Members												
Retirement	\$1,305	\$15,246	\$16,551	\$722	\$5,733	\$6,455	\$1,949	\$172	\$133	\$4,769	\$4,901	\$296
Termination	1	488	489	0	176	176	102	16	0	88	88	2
Death	10	159	169	4	50	55	21	1	2	72	73	4
Disability	1	85	86	0	5	5	8	2	0	242	242	1
Return of Contributions on Termination	1	137	138	0	10	10	13	9	0	53	53	1
Return of Contributions on Death	21	132	153	9	11	19	12	3	0	83	83	1
Total Active	\$1,339	\$16,247	\$17,585	\$736	\$5,985	\$6,720	\$2,105	\$203	\$135	\$5,307	\$5,441	\$305
Inactive Members												
Terminated	\$153	\$2,442	\$2,595	\$44	\$846	\$890	\$474	\$17	\$2	\$177	\$179	\$13
Service Retired	10,462	7,084	17,546	8,046	1,954	10,000	978	4	1,855	1,891	3,746	634
Disability Retired	118	132	250	84	11	95	15	0	1,760	143	1,903	6
Survivors	654	268	922	356	47	403	26	0	572	76	648	50
Total Inactive	\$11,388	\$9,925	\$21,313	\$8,530	\$2,859	\$11,389	\$1,493	\$21	\$4,189	\$2,287	\$6,476	\$703
Laws of 2015	0	0	0	0	0	0	0	0	0	35	35	2
2014 Total	\$12,727	\$26,172	\$38,898	\$9,266	\$8,843	\$18,109	\$3,598	\$225	\$4,323	\$7,629	\$11,952	\$1,011
2013 Total	\$12,884	\$23,798	\$36,682	\$9,449	\$8,016	\$17,465	\$3,273	\$180	\$4,410	\$6,859	\$11,269	\$959

Note: Totals may not agree due to rounding.
 *Calculated using the Projected Unit Credit (PUC) cost method. This method was not used to determine contribution requirements.

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Fully Projected Benefit Payments											
PERS - Plan 1											
(Dollars in Millions)	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value
2014	\$1,225	\$1,180	2039	\$571	\$84	2064	\$14	\$0	2089	\$1	\$0
2015	1,227	1,096	2040	528	72	2065	12	0	2090	1	0
2016	1,228	1,018	2041	486	62	2066	11	0	2091	1	0
2017	1,225	942	2042	444	52	2067	10	0	2092	1	0
2018	1,216	868	2043	402	44	2068	9	0	2093	1	0
2019	1,203	796	2044	361	37	2069	8	0	2094	0	0
2020	1,186	728	2045	322	30	2070	7	0	2095	0	0
2021	1,166	664	2046	284	25	2071	7	0	2096	0	0
2022	1,144	604	2047	249	20	2072	6	0	2097	0	0
2023	1,119	548	2048	216	16	2073	6	0	2098	0	0
2024	1,093	497	2049	186	13	2074	5	0	2099	0	0
2025	1,066	449	2050	159	10	2075	5	0	2100	0	0
2026	1,038	406	2051	134	8	2076	4	0	2101	0	0
2027	1,008	366	2052	113	6	2077	4	0	2102	0	0
2028	978	329	2053	94	5	2078	3	0	2103	0	0
2029	946	295	2054	78	4	2079	3	0	2104	0	0
2030	913	264	2055	65	3	2080	3	0	2105	0	0
2031	879	236	2056	54	2	2081	2	0	2106	0	0
2032	844	210	2057	44	2	2082	2	0	2107	0	0
2033	808	187	2058	37	1	2083	2	0	2108	0	0
2034	771	165	2059	30	1	2084	2	0	2109	0	0
2035	733	146	2060	25	1	2085	1	0	2110	0	0
2036	694	128	2061	21	1	2086	1	0	2111	0	0
2037	654	112	2062	18	0	2087	1	0	2112	0	0
2038	\$612	\$97	2063	\$16	\$0	2088	\$1	\$0	2113	\$0	\$0
Total										\$30,052	\$12,833

Fully Projected Benefit Payments											
PERS - Plans 2/3											
(Dollars in Millions)	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value
2014	\$799	\$769	2039	\$5,434	\$800	2064	\$3,982	\$90	2089	\$226	\$1
2015	895	800	2040	5,566	761	2065	3,795	79	2090	179	1
2016	1,049	870	2041	5,686	721	2066	3,606	70	2091	139	0
2017	1,213	933	2042	5,794	681	2067	3,416	61	2092	107	0
2018	1,386	989	2043	5,889	642	2068	3,225	54	2093	81	0
2019	1,569	1,038	2044	5,966	604	2069	3,034	47	2094	60	0
2020	1,763	1,082	2045	6,023	565	2070	2,844	41	2095	44	0
2021	1,964	1,118	2046	6,057	527	2071	2,654	35	2096	32	0
2022	2,168	1,145	2047	6,069	490	2072	2,466	30	2097	23	0
2023	2,373	1,163	2048	6,058	454	2073	2,280	26	2098	16	0
2024	2,579	1,172	2049	6,028	419	2074	2,097	22	2099	11	0
2025	2,785	1,174	2050	5,978	385	2075	1,917	19	2100	7	0
2026	2,992	1,170	2051	5,909	353	2076	1,742	16	2101	5	0
2027	3,200	1,161	2052	5,822	323	2077	1,572	13	2102	3	0
2028	3,406	1,146	2053	5,720	294	2078	1,408	11	2103	2	0
2029	3,611	1,127	2054	5,605	268	2079	1,252	9	2104	1	0
2030	3,814	1,104	2055	5,477	243	2080	1,104	7	2105	1	0
2031	4,016	1,079	2056	5,338	219	2081	965	6	2106	1	0
2032	4,216	1,051	2057	5,190	198	2082	836	5	2107	0	0
2033	4,413	1,020	2058	5,034	178	2083	717	4	2108	0	0
2034	4,607	988	2059	4,871	160	2084	608	3	2109	0	0
2035	4,793	953	2060	4,702	143	2085	511	2	2110	0	0
2036	4,968	917	2061	4,527	128	2086	424	2	2111	0	0
2037	5,134	879	2062	4,349	114	2087	348	1	2112	0	0
2038	\$5,289	\$840	2063	\$4,167	\$101	2088	\$283	\$1	2113	\$0	\$0
Total										\$260,288	\$36,119

Fully Projected Benefit Payments												
TRS - Plan 1												
(Dollars in Millions)	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value	
2014	\$908	\$874	2039	\$421	\$62	2064	\$9	\$0	2089	\$1	\$0	
2015	910	813	2040	391	53	2065	8	0	2090	1	0	
2016	907	752	2041	361	46	2066	8	0	2091	1	0	
2017	900	692	2042	330	39	2067	7	0	2092	1	0	
2018	889	634	2043	299	33	2068	7	0	2093	1	0	
2019	875	579	2044	268	27	2069	6	0	2094	1	0	
2020	858	527	2045	238	22	2070	6	0	2095	1	0	
2021	840	478	2046	209	18	2071	6	0	2096	1	0	
2022	820	433	2047	181	15	2072	5	0	2097	1	0	
2023	799	391	2048	156	12	2073	5	0	2098	0	0	
2024	777	353	2049	132	9	2074	5	0	2099	0	0	
2025	755	318	2050	111	7	2075	5	0	2100	0	0	
2026	732	286	2051	93	6	2076	4	0	2101	0	0	
2027	709	257	2052	77	4	2077	4	0	2102	0	0	
2028	687	231	2053	63	3	2078	4	0	2103	0	0	
2029	664	207	2054	52	2	2079	3	0	2104	0	0	
2030	642	186	2055	42	2	2080	3	0	2105	0	0	
2031	620	167	2056	34	1	2081	3	0	2106	0	0	
2032	597	149	2057	28	1	2082	3	0	2107	0	0	
2033	575	133	2058	23	1	2083	3	0	2108	0	0	
2034	552	118	2059	19	1	2084	2	0	2109	0	0	
2035	528	105	2060	16	0	2085	2	0	2110	0	0	
2036	503	93	2061	14	0	2086	2	0	2111	0	0	
2037	477	82	2062	12	0	2087	2	0	2112	0	0	
2038	\$449	\$71	2063	\$10	\$0	2088	\$2	\$0	2113	\$0	\$0	
										Total	\$21,674	\$9,297

Fully Projected Benefit Payments												
TRS - Plans 2/3												
(Dollars in Millions)	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value	
2014	\$208	\$200	2039	\$2,109	\$311	2064	\$2,429	\$55	2089	\$191	\$1	
2015	245	219	2040	2,205	301	2065	2,354	49	2090	150	0	
2016	299	248	2041	2,302	292	2066	2,275	44	2091	117	0	
2017	355	273	2042	2,400	282	2067	2,192	39	2092	89	0	
2018	411	293	2043	2,499	273	2068	2,104	35	2093	67	0	
2019	470	311	2044	2,591	262	2069	2,014	31	2094	49	0	
2020	530	325	2045	2,671	251	2070	1,920	28	2095	35	0	
2021	592	337	2046	2,740	239	2071	1,823	24	2096	25	0	
2022	657	347	2047	2,798	226	2072	1,723	21	2097	18	0	
2023	723	354	2048	2,845	213	2073	1,621	19	2098	12	0	
2024	791	359	2049	2,882	200	2074	1,517	16	2099	8	0	
2025	862	363	2050	2,907	187	2075	1,412	14	2100	5	0	
2026	935	366	2051	2,921	175	2076	1,305	12	2101	4	0	
2027	1,010	366	2052	2,926	162	2077	1,198	10	2102	2	0	
2028	1,089	366	2053	2,922	150	2078	1,091	9	2103	1	0	
2029	1,171	365	2054	2,908	139	2079	986	7	2104	1	0	
2030	1,255	363	2055	2,887	128	2080	882	6	2105	1	0	
2031	1,343	361	2056	2,857	117	2081	781	5	2106	0	0	
2032	1,434	357	2057	2,821	108	2082	685	4	2107	0	0	
2033	1,528	353	2058	2,779	98	2083	593	3	2108	0	0	
2034	1,623	348	2059	2,733	90	2084	508	3	2109	0	0	
2035	1,721	342	2060	2,681	82	2085	429	2	2110	0	0	
2036	1,818	336	2061	2,625	74	2086	358	2	2111	0	0	
2037	1,915	328	2062	2,564	67	2087	294	1	2112	0	0	
2038	\$2,012	\$319	2063	\$2,499	\$61	2088	\$239	\$1	2113	\$0	\$0	
										Total	\$125,576	\$13,131

II. Actuarial Exhibits

Fully Projected Benefit Payments											
SERS - Plans 2/3											
(Dollars in Millions)	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value
2014	\$104	\$100	2039	\$712	\$105	2064	\$396	\$9	2089	\$25	\$0
2015	124	111	2040	721	98	2065	374	8	2090	20	0
2016	146	121	2041	727	92	2066	352	7	2091	16	0
2017	170	131	2042	733	86	2067	331	6	2092	12	0
2018	196	140	2043	736	80	2068	311	5	2093	9	0
2019	224	148	2044	737	75	2069	291	5	2094	7	0
2020	253	155	2045	736	69	2070	272	4	2095	5	0
2021	283	161	2046	733	64	2071	253	3	2096	4	0
2022	314	166	2047	727	59	2072	235	3	2097	3	0
2023	346	169	2048	719	54	2073	217	2	2098	2	0
2024	377	171	2049	708	49	2074	201	2	2099	1	0
2025	407	172	2050	696	45	2075	184	2	2100	1	0
2026	437	171	2051	681	41	2076	168	2	2101	1	0
2027	466	169	2052	664	37	2077	153	1	2102	0	0
2028	495	166	2053	646	33	2078	138	1	2103	0	0
2029	522	163	2054	626	30	2079	124	1	2104	0	0
2030	548	159	2055	606	27	2080	111	1	2105	0	0
2031	573	154	2056	584	24	2081	98	1	2106	0	0
2032	596	149	2057	561	21	2082	86	1	2107	0	0
2033	618	143	2058	537	19	2083	75	0	2108	0	0
2034	639	137	2059	513	17	2084	64	0	2109	0	0
2035	659	131	2060	489	15	2085	55	0	2110	0	0
2036	675	125	2061	466	13	2086	46	0	2111	0	0
2037	690	118	2062	442	12	2087	38	0	2112	0	0
2038	\$702	\$111	2063	\$419	\$10	2088	\$31	\$0	2113	\$0	\$0
Total										\$31,198	\$4,881

Fully Projected Benefit Payments											
PSERS - Plan 2											
(Dollars in Millions)	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value
2014	\$4	\$4	2039	\$126	\$19	2064	\$243	\$5	2089	\$17	\$0
2015	4	3	2040	136	19	2065	237	5	2090	13	0
2016	4	4	2041	147	19	2066	231	4	2091	9	0
2017	5	4	2042	159	19	2067	225	4	2092	7	0
2018	6	5	2043	171	19	2068	217	4	2093	5	0
2019	8	5	2044	183	18	2069	210	3	2094	4	0
2020	10	6	2045	195	18	2070	202	3	2095	2	0
2021	12	7	2046	206	18	2071	193	3	2096	2	0
2022	15	8	2047	218	18	2072	183	2	2097	1	0
2023	18	9	2048	228	17	2073	173	2	2098	1	0
2024	21	10	2049	237	16	2074	163	2	2099	0	0
2025	25	10	2050	244	16	2075	152	1	2100	0	0
2026	29	11	2051	251	15	2076	141	1	2101	0	0
2027	34	12	2052	256	14	2077	129	1	2102	0	0
2028	39	13	2053	259	13	2078	117	1	2103	0	0
2029	45	14	2054	262	12	2079	105	1	2104	0	0
2030	52	15	2055	263	12	2080	93	1	2105	0	0
2031	59	16	2056	264	11	2081	82	1	2106	0	0
2032	66	16	2057	263	10	2082	71	0	2107	0	0
2033	73	17	2058	262	9	2083	60	0	2108	0	0
2034	81	17	2059	260	9	2084	51	0	2109	0	0
2035	89	18	2060	258	8	2085	42	0	2110	0	0
2036	98	18	2061	255	7	2086	34	0	2111	0	0
2037	107	18	2062	252	7	2087	27	0	2112	0	0
2038	\$116	\$18	2063	\$247	\$6	2088	\$21	\$0	2113	\$0	\$0
Total										\$10,084	\$672

Fully Projected Benefit Payments											
LEOFF - Plan 1											
(Dollars in Millions)	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value
2014	\$358	\$344	2039	\$244	\$36	2064	\$5	\$0	2089	\$0	\$0
2015	364	325	2040	227	31	2065	4	0	2090	0	0
2016	370	307	2041	210	27	2066	3	0	2091	0	0
2017	375	288	2042	192	23	2067	3	0	2092	0	0
2018	378	270	2043	175	19	2068	2	0	2093	0	0
2019	381	252	2044	158	16	2069	2	0	2094	0	0
2020	383	235	2045	141	13	2070	2	0	2095	0	0
2021	384	219	2046	125	11	2071	1	0	2096	0	0
2022	385	203	2047	110	9	2072	1	0	2097	0	0
2023	384	188	2048	96	7	2073	1	0	2098	0	0
2024	383	174	2049	83	6	2074	1	0	2099	0	0
2025	381	160	2050	72	5	2075	1	0	2100	0	0
2026	378	148	2051	61	4	2076	1	0	2101	0	0
2027	374	136	2052	52	3	2077	0	0	2102	0	0
2028	369	124	2053	44	2	2078	0	0	2103	0	0
2029	363	113	2054	36	2	2079	0	0	2104	0	0
2030	356	103	2055	30	1	2080	0	0	2105	0	0
2031	347	93	2056	25	1	2081	0	0	2106	0	0
2032	338	84	2057	21	1	2082	0	0	2107	0	0
2033	328	76	2058	17	1	2083	0	0	2108	0	0
2034	316	68	2059	14	0	2084	0	0	2109	0	0
2035	304	60	2060	11	0	2085	0	0	2110	0	0
2036	290	54	2061	9	0	2086	0	0	2111	0	0
2037	276	47	2062	8	0	2087	0	0	2112	0	0
2038	\$260	\$41	2063	\$6	\$0	2088	\$0	\$0	2113	\$0	\$0
Total										\$11,022	\$4,332

Fully Projected Benefit Payments											
LEOFF - Plan 2											
(Dollars in Millions)	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value
2014	\$171	\$165	2039	\$1,781	\$282	2064	\$1,604	\$42	2089	\$50	\$0
2015	203	182	2040	1,850	272	2065	1,530	37	2090	37	0
2016	239	200	2041	1,915	262	2066	1,453	33	2091	27	0
2017	279	216	2042	1,974	251	2067	1,374	29	2092	19	0
2018	321	232	2043	2,027	240	2068	1,294	25	2093	13	0
2019	367	246	2044	2,074	228	2069	1,214	22	2094	9	0
2020	416	260	2045	2,114	217	2070	1,133	19	2095	6	0
2021	468	272	2046	2,147	205	2071	1,052	16	2096	4	0
2022	524	283	2047	2,173	193	2072	971	14	2097	3	0
2023	584	294	2048	2,191	181	2073	890	12	2098	2	0
2024	646	302	2049	2,201	169	2074	811	10	2099	1	0
2025	712	310	2050	2,204	157	2075	733	9	2100	1	0
2026	780	316	2051	2,199	146	2076	657	7	2101	0	0
2027	851	320	2052	2,187	135	2077	584	6	2102	0	0
2028	924	324	2053	2,168	125	2078	513	5	2103	0	0
2029	999	326	2054	2,143	115	2079	446	4	2104	0	0
2030	1,075	326	2055	2,112	105	2080	383	3	2105	0	0
2031	1,154	325	2056	2,074	96	2081	325	2	2106	0	0
2032	1,233	324	2057	2,031	87	2082	272	2	2107	0	0
2033	1,313	321	2058	1,983	79	2083	224	1	2108	0	0
2034	1,394	316	2059	1,930	72	2084	182	1	2109	0	0
2035	1,474	311	2060	1,873	65	2085	146	1	2110	0	0
2036	1,554	305	2061	1,811	58	2086	115	1	2111	0	0
2037	1,632	298	2062	1,745	52	2087	89	0	2112	0	0
2038	\$1,708	\$290	2063	\$1,676	\$47	2088	\$67	\$0	2113	\$0	\$0
Total										\$89,832	\$11,205

II. Actuarial Exhibits

Fully Projected Benefit Payments											
WSPRS - Plans 1/2											
(Dollars in Millions)	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value	Year	Future Value	Present Value
2014	\$50	\$49	2039	\$144	\$21	2064	\$113	\$3	2089	\$4	\$0
2015	53	48	2040	146	20	2065	108	2	2090	3	0
2016	57	47	2041	148	19	2066	103	2	2091	2	0
2017	61	47	2042	150	18	2067	97	2	2092	2	0
2018	64	46	2043	151	16	2068	91	2	2093	1	0
2019	67	44	2044	152	15	2069	85	1	2094	1	0
2020	70	43	2045	153	14	2070	79	1	2095	1	0
2021	74	42	2046	153	13	2071	74	1	2096	0	0
2022	78	41	2047	154	12	2072	68	1	2097	0	0
2023	82	40	2048	154	12	2073	62	1	2098	0	0
2024	86	39	2049	153	11	2074	57	1	2099	0	0
2025	91	38	2050	153	10	2075	51	1	2100	0	0
2026	95	37	2051	152	9	2076	46	0	2101	0	0
2027	99	36	2052	151	8	2077	41	0	2102	0	0
2028	104	35	2053	150	8	2078	37	0	2103	0	0
2029	107	34	2054	148	7	2079	32	0	2104	0	0
2030	111	32	2055	146	6	2080	28	0	2105	0	0
2031	115	31	2056	144	6	2081	24	0	2106	0	0
2032	119	30	2057	142	5	2082	20	0	2107	0	0
2033	123	28	2058	139	5	2083	17	0	2108	0	0
2034	127	27	2059	135	4	2084	14	0	2109	0	0
2035	130	26	2060	132	4	2085	12	0	2110	0	0
2036	134	25	2061	128	4	2086	9	0	2111	0	0
2037	138	24	2062	123	3	2087	7	0	2112	0	0
2038	\$141	\$22	2063	\$118	\$3	2088	\$6	\$0	2113	\$0	\$0
Total										\$7,295	\$1,184

Plan Assets

Cash: Highly liquid, very safe investments that can be easily converted into cash, such as Treasury Bills and money-market funds.

Fixed Income: Securities representing debt obligations and usually having fixed payments and maturities. Different types of fixed income securities include government and corporate bonds, mortgage-backed securities, asset-backed securities, convertible issues, and may also include money-market instruments.

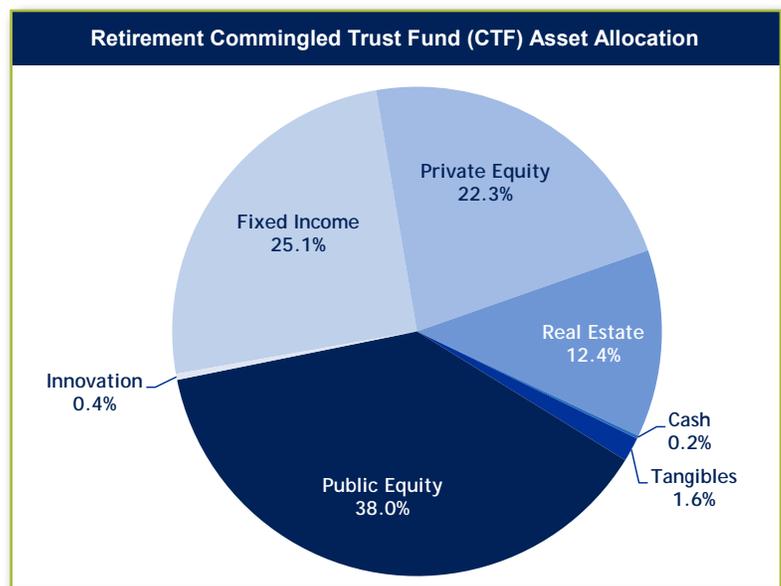
Innovation: Fund that provides the ability to invest in a broad range of assets that fall outside the traditional asset classes or management style of existing asset classes.

Public Equity: Shares of U.S. and non-U.S. corporations that trade on public exchanges or “over-the-counter.” The ownership of a corporation is represented by shares that are claimed on the corporation’s earnings and assets.

Private Equity: The infusion of equity capital into a private company (one that is not available on the public markets). Private equity investments include securities that are not listed on a public exchange and are not easily accessible to most individuals. These investments range from initial capital in start-up enterprises to leveraged buyouts of mature corporations.

Real Estate: An externally-managed selection of partnership investments with the majority of the partnerships invested in high-quality real estate leased to third parties.

Tangibles: The tangible asset portfolio invests in sectors such as infrastructure, timber, agriculture, natural resources, commodities, or other sectors consistent with the goals of the asset class.



II. Actuarial Exhibits

Change in Market Value of Assets						
(Dollars in Millions)	PERS			TRS		
	Plan 1	Plan 2/3*	Total	Plan 1	Plan 2/3*	Total
	Fund 631	Fund 641		Fund 632	Fund 642	
2013 Market Value	\$7,347	\$23,459	\$30,806	\$6,127	\$8,109	\$14,237
Revenue						
Contributions						
Employee	19	346	365	9	41	50
Employer/State	449	430	879	201	249	450
Total Contributions	468	777	1,244	210	290	500
Investment Return	1,312	4,445	5,757	1,080	1,540	2,620
Restorations	9	22	31	6	3	9
Transfers In	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0
Total Revenue	\$1,789	\$5,244	\$7,033	\$1,295	\$1,833	\$3,128
Disbursements						
Monthly Benefits**	\$1,189	\$566	\$1,755	\$926	\$150	\$1,075
Refunds	4	35	39	2	2	4
Total Benefits	1,194	601	1,795	928	152	1,080
Transfers Out	0	2	2	0	0	0
Expenses	1	1	1	0	0	0
Total Disbursements	\$1,194	\$604	\$1,798	\$928	\$152	\$1,080
Payables	\$0	\$0	\$0	\$0	\$0	\$0
2014 Market Value	\$7,942	\$28,099	\$36,040	\$6,494	\$9,790	\$16,285
2014 Actuarial Value	\$7,761	\$26,386	\$34,148	\$6,353	\$9,193	\$15,546
Ratio (AV/MV)	98%	94%	95%	98%	94%	95%

Note: Totals may not agree due to rounding.
 *Defined Benefit portion only.
 **TRS Plan 1 value includes annuity cashouts.

Change in Market Value of Assets							
(Continued)							
(Dollars in Millions)	SERS	PSERS	LEOFF		WSPRS	Total	
	Plan 2/3*	Plan 2	Plan 1	Plan 2	Total	Fund 615	
	Fund 633	Fund 635	Fund 819	Fund 829			
2013 Market Value	\$3,212	\$226	\$5,140	\$7,637	\$12,777	\$956	\$62,213
Revenue							
Contributions							
Employee	31	17	0	141	141	5	610
Employer/State	89	17	0	141	141	7	1,583
Total Contributions	120	34	0	282	282	12	2,193
Investment Return	608	45	934	1,456	2,390	177	11,597
Restorations	1	0	1	10	11	1	52
Transfers In	0	0	0	0	0	1	1
Miscellaneous	0	0	0	0	0	0	0
Total Revenue	\$729	\$80	\$935	\$1,749	\$2,684	\$191	\$13,844
Disbursements							
Monthly Benefits	81	0	356	125	481	47	3,440
Refunds	3	2	0	9	9	0	58
Total Benefits	84	2	356	134	490	48	3,498
Transfers Out	1	0	0	0	0	0	3
Expenses	0	0	0	1	1	0	3
Total Disbursements	\$84	\$2	\$356	\$135	\$491	\$48	\$3,504
Payables	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2014 Market Value	\$3,856	\$303	\$5,719	\$9,251	\$14,970	\$1,098	\$72,553
2014 Actuarial Value	\$3,624	\$278	\$5,499	\$8,638	\$14,137	\$1,044	\$68,777
Ratio (AV/MV)	94%	92%	96%	93%	94%	95%	95%

Note: Totals may not agree due to rounding.
 *Defined Benefit portion only.

Calculation of Actuarial Value of Assets								
<i>(Dollars in Millions)</i>		PERS 1	PERS 2/3*	TRS 1	TRS 2/3*	SERS 2/3*		
a.	Market Value at 6/30/2014	\$7,942	\$28,099	\$6,494	\$9,790	\$3,856		
b.	Deferred Gains and (Losses)							
Plan Year Ending	Years Deferred	Years Remaining						
6/30/2014	8	7	\$670	\$2,284	\$551	\$792	\$313	
6/30/2013	5	3	189	551	157	190	75	
6/30/2012	7	4	(300)	(748)	(252)	(255)	(102)	
6/30/2011	8	4	477	1,080	401	366	148	
6/30/2010	6	1	69	122	57	41	17	
6/30/2009	8	2	(799)	(1,371)	(667)	(467)	(189)	
9/30/2008	8	1	(126)	(205)	(106)	(71)	(29)	
Total Deferral		\$180	\$1,713	\$141	\$597	\$232		
c.	Market Value less Deferral (a-b)	\$7,761	\$26,386	\$6,353	\$9,193	\$3,624		
d.	70% of Market Value of Assets	\$5,559	\$19,669	\$4,546	\$6,853	\$2,699		
e.	130% of Market Value of Assets	\$10,324	\$36,528	\$8,443	\$12,728	\$5,013		
f.	Actuarial Value of Assets**	\$7,761	\$26,386	\$6,353	\$9,193	\$3,624		

Note: Totals may not agree due to rounding.
 *Defined Benefit portion only.
 **Actuarial Value of Assets can never be less than 70% or greater than 130% of the market value of assets.

Calculation of Actuarial Value of Assets								
<i>(Continued)</i>								
<i>(Dollars in Millions)</i>		PSERS 2	LEOFF 1	LEOFF 2	WSPRS	Total		
a.	Market Value at 6/30/2014	\$303	\$5,719	\$9,251	\$1,098	\$72,553		
b.	Deferred Gains and (Losses)							
Plan Year Ending	Years Deferred	Years Remaining						
6/30/2014	8	7	\$23	\$478	\$768	\$91	\$5,970	
6/30/2013	5	3	5	128	193	23	1,512	
6/30/2012	7	4	(5)	(191)	(223)	(33)	(2,109)	
6/30/2011	8	4	6	293	350	49	3,170	
6/30/2010	3, 5, 6*	0, 0, 1*	0	39	0	6	350	
6/30/2009	8	2	(3)	(456)	(413)	(71)	(4,436)	
9/30/2008	8	1	(0)	(71)	(61)	(11)	(681)	
Total Deferral		\$25	\$220	\$613	\$54	\$3,776		
c.	Market Value less Deferral (a-b)	\$278	\$5,499	\$8,638	\$1,044	\$68,777		
d.	70% of Market Value of Assets	\$212	\$4,003	\$6,476	\$769	\$50,787		
e.	130% of Market Value of Assets	\$394	\$7,434	\$12,026	\$1,428	\$94,318		
f.	Actuarial Value of Assets**	\$278	\$5,499	\$8,638	\$1,044	\$68,777		

Note: Totals may not agree due to rounding.
 *PSERS Plan 2 = 3 years deferred, 0 years remaining; LEOFF Plan 2 = 5 years deferred, 0 years remaining; all other plans = 6 years deferred, 1 year remaining.
 **Actuarial Value of Assets can never be less than 70% or greater than 130% of the market value of assets.

Investment Gains and (Losses) for Prior Year						
<i>(Dollars in Millions)</i>		PERS 1	PERS 2/3*	TRS 1	TRS 2/3*	SERS 2/3*
a.	2013 Market Value (at WSIB)	\$7,349	\$23,411	\$6,131	\$8,078	\$3,199
b.	Total Cash Flow	(721)	177	(717)	128	30
c.	2014 Market Value (at WSIB)	7,941	28,037	6,495	9,749	3,838
d.	Actual Return (c - b - a)	\$1,313	\$4,449	\$1,081	\$1,542	\$609
e.	Weighted Asset Amount	\$6,977	\$23,450	\$5,750	\$8,120	\$3,205
f.	Expected Return (7.8% x e)	544	1,829	448	633	250
g.	Investment Gain/(Loss) for Prior Year (d - f)	766	2,610	630	906	358
h.	Dollar-Weighted Rate of Return	18.76%	18.94%	18.73%	18.96%	18.96%

Note: Totals may not agree due to rounding.
 *Defined Benefit portion only.

II. Actuarial Exhibits

Investment Gains and (Losses) for Prior Year (Continued)					
(Dollars in Millions)	PSERS 2	LEOFF 1	LEOFF 2	WSPRS	Total
a. 2013 Market Value (at WSIB)	\$224	\$5,139	\$7,617	\$955	\$62,103
b. Total Cash Flow	32	(357)	152	(34)	(1,311)
c. 2014 Market Value (at WSIB)	301	5,718	9,226	1,098	72,400
d. Actual Return (c - b - a)	\$45	\$935	\$1,456	\$177	\$11,608
e. Weighted Asset Amount	\$239	\$4,953	\$7,678	\$936	\$61,307
f. Expected Return (7.8% x e)*	19	386	576	73	4,759
g. Investment Gain/(Loss) for Prior Year (d - f)	26	546	877	104	6,823
h. Dollar-Weighted Rate of Return	18.91%	18.82%	18.93%	18.87%	18.89%

Note: Totals may not agree due to rounding.
*The expected return for LEOFF 2 is (7.5% x e).

Funded Status

In our actuarial valuation report, we calculate a plan's funded status by comparing (a) the plan's current assets, determined under an asset valuation method, to (b) the present value of accrued (or earned) pensions of its members calculated under an actuarial cost method. Funded status can vary significantly from plan to plan, depending on the purpose of the measurement and the assumptions and methods used to determine the funded status.

Based on the purpose of the measurement, actuaries can select from several acceptable actuarial cost methods when measuring a plan's funded status. The cost methods vary in the manner they allocate benefits to past and future time periods. Generally speaking, benefits allocated to past service are considered accrued (or earned). Please see the Glossary for an explanation of the actuarial cost methods we use in this actuarial valuation.

For prior actuarial valuation reports, we relied on the Projected Unit Credit (PUC) actuarial cost method when reporting funded status. Due to changes in financial reporting from the Governmental Accounting Standards Board (GASB), we will report funded status using the Entry Age Normal (EAN) actuarial cost method and discontinue use of the PUC method after this year's report. We believe this change will lessen the confusion that can result from the reporting of multiple funded status measurements in various reports. However, the funded status measures we share in this report may still vary from those presented in the Department of Retirement Systems (DRS) Comprehensive Annual Financial Report (CAFR). These differences occur because the assumptions and methods that apply for determining contribution requirements (under a funding valuation) may not apply for financial reporting under GASB accounting standards (an accounting valuation). Put another way, these measurements still represent distinct measurements for distinct purposes and the results may vary between the two reports.

To determine the present value (today's value) of accrued benefits we discount future benefits to the valuation date using the valuation interest rate. The valuation interest rate is prescribed by the Legislature under RCW 41.45.035 and is consistent with the long-term expected return under the plan's funding policy. (Note: This discount rate may vary from the rate used for financial reporting under GASB accounting standards).

In addition to the valuation interest rate, we use the same long-term assumptions to develop the funded status measure in this report as we use for determining the contribution requirements of the plan. We don't expect the assumptions to match actual experience over short-term periods. However, we do expect these assumptions to reasonably approximate average annual experience over long-term periods. This measure of funded status is consistent

with the state’s current funding policy and financing plan for future retirement benefits.

For reporting funding status and calculating contribution requirements, we also use an asset valuation method to determine the actuarial value of assets (AVA). This asset valuation method smooths the inherent volatility in the Market Value of Assets (MVA) by deferring a portion of annual investment gains or losses for a certain number of years. Investment gains and losses occur when the annual return on investments varies from the long-term assumed rate. To determine the 2014 investment gains or losses, we used an investment return assumption of 7.8 percent (7.5 percent for the Law Enforcement Officers’ and Fire Fighters’ Retirement System [LEOFF] Plan 2). The AVA provides a more stable measure of the plan’s assets on an ongoing basis.

With this background in mind, we display the funded status on an “actuarial value” basis for each plan in the tables below. For the actuarial basis, we use the assumed long-term rate of return and actuarial value of assets consistent with the plan’s funding policy.

It’s also reasonable and acceptable to report funded status using other assumptions and methods. The resulting funded status will change with the use of assumptions and methods that vary from what we present in this report. Please visit our website: [Funded Status Tables](#) for funded status measures that vary by interest rate assumptions and asset valuation methods.

Entry Age Normal Funded Status on an Actuarial Value Basis*										
(Dollars in Millions)	PERS		TRS		SERS	PSERS	LEOFF		WSPRS	Total
	Plan 1	Plan 2/3	Plan 1	Plan 2/3	Plan 2/3	Plan 2	Plan 1	Plan 2		
EAN Liability	\$12,720	\$29,321	\$9,250	\$9,819	\$3,965	\$291	\$4,323	\$8,069	\$1,042	\$78,800
Valuation Assets	\$7,761	\$26,386	\$6,353	\$9,193	\$3,624	\$278	\$5,499	\$8,638	\$1,044	\$68,777
Unfunded Liability	\$4,959	\$2,935	\$2,897	\$626	\$341	\$13	(\$1,177)	(\$569)	(\$2)	\$10,023
Funded Ratio										
2014	61%	90%	69%	94%	91%	96%	127%	107%	100%	87%

Note: Totals may not agree due to rounding.

*Liabilities valued using the EAN cost method at an interest rate of 7.8% (7.5% for LEOFF 2). All assets have been valued under the actuarial asset method.

II. Actuarial Exhibits

Projected Unit Credit Funded Status on an Actuarial Value Basis*										
(Dollars in Millions)	PERS		TRS		SERS	PSERS	LEOFF		WSPRS	Total
	Plan 1	Plan 2/3	Plan 1	Plan 2/3	Plan 2/3	Plan 2	Plan 1	Plan 2		
PUC Liability	\$12,727	\$26,172	\$9,266	\$8,843	\$3,598	\$225	\$4,323	\$7,629	\$1,011	\$73,793
Valuation Assets	\$7,761	\$26,386	\$6,353	\$9,193	\$3,624	\$278	\$5,499	\$8,638	\$1,044	\$68,777
Unfunded Liability	\$4,965	(\$214)	\$2,913	(\$350)	(\$26)	(\$54)	(\$1,176)	(\$1,009)	(\$33)	\$5,016
Funded Ratio										
2014	61%	101%	69%	104%	101%	124%	127%	113%	103%	93%
2013 **	63%	102%	71%	105%	102%	124%	125%	115%	105%	94%
2012	69%	111%	79%	114%	110%	134%	135%	119%	114%	101%
2011 **	71%	112%	81%	113%	110%	132%	135%	119%	115%	101%
2010 ***	74%	113%	84%	116%	113%	129%	127%	119%	118%	102%
2009 **	70%	116%	75%	118%	116%	128%	125%	128%	119%	99%
2008 **	71%	119%	77%	125%	121%	127%	128%	133%	121%	100%
2007 **	71%	120%	76%	130%	126%	120%	123%	129%	118%	99%
2006 **	74%	121%	80%	133%	125%	99%	117%	116%	114%	100%
2005 **	74%	127%	80%	134%	122%	N/A	114%	114%	113%	99%
2004	81%	134%	88%	153%	137%	N/A	109%	117%	118%	105%
2003	82%	142%	89%	155%	138%	N/A	112%	125%	123%	107%
2002	92%	158%	98%	182%	169%	N/A	119%	137%	135%	118%
2001 **	97%	179%	100%	197%	197%	N/A	129%	154%	147%	126%
2000 **	98%	190%	100%	196%	170%	N/A	136%	161%	152%	131%
1999	93%	189%	93%	188%	N/A	N/A	125%	154%	159%	124%
1998	86%	191%	86%	185%	N/A	N/A	117%	160%	147%	116%
1997 **	83%	187%	82%	181%	N/A	N/A	108%	155%	140%	109%
1996	73%	157%	70%	144%	N/A	N/A	89%	130%	128%	92%
1995	68%	150%	65%	136%	N/A	N/A	80%	126%	119%	85%
1994 **	67%	142%	65%	130%	N/A	N/A	68%	124%	110%	80%
1993	70%	142%	62%	126%	N/A	N/A	68%	127%	110%	79%
1992	67%	139%	59%	127%	N/A	N/A	65%	128%	108%	75%
1991	67%	149%	59%	131%	N/A	N/A	66%	154%	106%	75%
1990	66%	154%	60%	140%	N/A	N/A	65%	153%	105%	74%
1989 **	65%	162%	58%	144%	N/A	N/A	65%	158%	103%	73%
1988	66%	165%	59%	143%	N/A	N/A	66%	153%	102%	72%
1987	71%	175%	58%	135%	N/A	N/A	69%	157%	95%	74%
1986	63%	162%	50%	125%	N/A	N/A	57%	142%	87%	63%

Note: Totals may not agree due to rounding.

*Liabilities valued using the PUC cost method at an interest rate of 7.8% (7.5% for LEOFF 2). All assets have been valued under the actuarial asset method.

**Assumptions changed.

***LEOFF 2 values for 2010 were updated after the 2010 AVR was published.

Actuarial Gains/Losses

The next three tables display actuarial gains and losses, expressed as contribution rate changes. Actuaries use gain/loss analysis to compare actual changes to assumed changes in assets, liabilities, and salaries from various sources. We also use this analysis to determine:

- The accuracy of our valuation model and annual processing.
- Why contribution rates changed.
- The reasonableness of the actuarial assumptions.

Actuarial gains will reduce contribution rates; actuarial losses will increase contribution rates. Under a reasonable set of actuarial assumptions, actuarial gains and losses will offset over long-term experience periods.

Change in Employer and State Contribution Rate by Source						
Change in Employer Rate	PERS	TRS	SERS*	PSERS*	LEOFF**	WSPRS
2013 Contribution Rate Before Laws of 2014	12.29%	14.47%	12.88%	12.07%	(5.48%)	8.79%
Remove Rate Floor / Ceiling	0.00%	0.00%	0.00%	0.00%	(0.40%)	0.00%
Remove Plan 1 Benefit Improvements After 2009	(0.14%)	(0.15%)	(0.14%)	(0.14%)	N/A	N/A
Remove Prior Liability and LEOFF 1 Funding Method Changes	(0.11%)	(0.77%)	(1.00%)	0.00%	(2.49%)	(1.46%)
2013 Adjusted Contribution Rate	12.04%	13.55%	11.74%	11.93%	(8.37%)	7.33%
Liability Gains/Losses	0.69%	0.69%	0.80%	0.63%	(0.36%)	0.72%
Asset Gains/Losses	0.61%	1.08%	0.41%	(0.02%)	0.64%	0.67%
Present Value of Future Salaries Gains/Losses	(1.05%)	(1.43%)	(0.85%)	(0.64%)	(0.27%)	(0.36%)
Incremental Changes	0.03%	0.02%	0.00%	0.00%	0.00%	0.00%
Other Gains/Losses	(0.09%)	(0.05%)	(0.17%)	(0.12%)	(0.28%)	(0.09%)
Total Change	0.19%	0.31%	0.19%	(0.15%)	(0.27%)	0.94%
2014 Preliminary Contribution Rate	12.23%	13.86%	11.93%	11.78%	(8.64%)	8.27%
Increase from Applied Rate Floor	0.00%	0.00%	0.00%	0.00%	0.33%	0.00%
Decrease from Applied Rate Ceiling	0.00%	0.00%	0.00%	0.00%	0.00%	N/A
Increase from Plan 1 Benefit Improvements After 2009	0.14%	0.15%	0.14%	0.14%	N/A	N/A
Rate to Amortize Prior Liability	0.11%	0.77%	1.00%	0.00%	0.00%	1.32%
Excess Member Rate	N/A	0.00%	N/A	N/A	N/A	1.08%
Laws of 2015	0.00%	0.00%	0.00%	0.00%	0.04%	0.15%
2014 Adjusted Contribution Rate	12.48%	14.78%	13.07%	11.92%	(8.27%)	10.82%

*The SERS and PSERS rates include the UAAL rate for PERS Plan 1. The "Other Gains/Losses" category includes the "Total Change" for the PERS 1 UAAL rate in those systems.

**The LEOFF contribution rate is the state's portion for Plan 2 (20% of the Normal Cost) plus the UAAL rate for Plan 1.

II. Actuarial Exhibits

Change in Employer and State Plan 2/3 Normal Cost Rate by Source						
Change in Normal Costs	PERS	TRS	SERS	PSERS	LEOFF*	WSPRS**
2013 Normal Cost Before Laws of 2014	7.11%	7.56%	7.70%	6.89%	3.19%	8.79%
Remove Rate Floor / Ceiling	0.00%	0.00%	0.00%	0.00%	(0.40%)	0.00%
Remove Prior Employer Liability	(0.11%)	(0.77%)	(1.00%)	0.00%	0.00%	(1.46%)
2013 Adjusted Normal Cost Rate	7.00%	6.79%	6.70%	6.89%	2.79%	7.33%
Liabilities						
Salaries	(0.05%)	(0.30%)	(0.06%)	(0.12%)	(0.01%)	0.09%
Termination	(0.09%)	(0.31%)	(0.17%)	(0.13%)	(0.01%)	(0.19%)
Retirement	0.03%	0.05%	0.04%	0.00%	0.00%	(0.25%)
Disability	0.01%	0.00%	0.01%	0.01%	0.00%	0.02%
Mortality	0.03%	0.03%	0.04%	0.01%	0.00%	0.10%
Growth / Return to Work	0.56%	1.14%	0.81%	0.82%	0.22%	0.43%
Other Liabilities	0.15%	0.09%	0.13%	0.04%	0.04%	0.52%
Total Liability Gains/Losses	0.64%	0.70%	0.80%	0.63%	0.24%	0.72%
Asset Gains/Losses	0.26%	0.25%	0.41%	(0.02%)	(0.10%)	0.67%
Present Value of Future Salaries Gains/Losses	(0.58%)	(0.76%)	(0.85%)	(0.64%)	(0.14%)	(0.36%)
Incremental Changes						
Plan Change	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Method Change	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Assumption Change	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Correction Change	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Experience Study Change	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Incremental Changes Gains/Losses	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other Gains/Losses	(0.06%)	(0.06%)	(0.10%)	(0.05%)	0.01%	(0.09%)
Total Change	0.26%	0.13%	0.26%	(0.08%)	0.01%	0.94%
2014 Preliminary Normal Cost	7.26%	6.92%	6.96%	6.81%	2.80%	8.27%
Increase from Applied Rate Floor	0.00%	0.00%	0.00%	0.00%	0.33%	0.00%
Rate to Amortize Prior Employer Liability	0.11%	0.77%	1.00%	0.00%	0.00%	1.32%
Excess Member Rate	N/A	0.00%	N/A	N/A	N/A	1.08%
Laws of 2015	0.00%	0.00%	0.00%	0.00%	0.04%	0.15%
2014 Adjusted Normal Cost	7.37%	7.69%	7.96%	6.81%	3.17%	10.82%

*The LEOFF contribution rate is the state's portion only (20% of the Plan 2 Normal Cost).

**The WSPRS normal cost contribution rate applies to Plans 1 and 2.

Change in Employer and State Plan 1 UAAL Rate by Source						
Change in UAAL Rate	PERS	TRS	SERS*	PSERS*	LEOFF**	WSPRS
2013 UAAL Rate Before Laws of 2014	5.18%	6.91%	5.18%	5.18%	(8.67%)	N/A
Remove Rate Floor / Ceiling	0.00%	0.00%	0.00%	0.00%	0.00%	N/A
Remove Plan 1 Benefit Improvements After 2009	(0.14%)	(0.15%)	(0.14%)	(0.14%)	N/A	N/A
LEOFF 1 Roll Forward Funding Method	N/A	N/A	N/A	N/A	(2.49%)	N/A
2013 Adjusted UAAL Rate	5.04%	6.76%	5.04%	5.04%	(11.16%)	N/A
Liabilities						
Salaries	0.00%	(0.01%)	N/A	N/A	(0.04%)	N/A
Termination	0.00%	0.00%	N/A	N/A	0.00%	N/A
Retirement	(0.01%)	(0.01%)	N/A	N/A	(0.02%)	N/A
Disability	0.00%	0.00%	N/A	N/A	0.00%	N/A
Mortality	0.00%	0.02%	N/A	N/A	(0.04%)	N/A
Return to Work	0.00%	0.00%	N/A	N/A	0.01%	N/A
Inflation (CPI)	0.00%	0.00%	N/A	N/A	(0.72%)	N/A
Other Liabilities	0.06%	(0.01%)	N/A	N/A	0.21%	N/A
Total Liability Gains/Losses	0.05%	(0.01%)	N/A	N/A	(0.60%)	N/A
Asset Gains/Losses	0.35%	0.83%	N/A	N/A	0.74%	N/A
Present Value of Future Salaries Gains/Losses	(0.47%)	(0.67%)	N/A	N/A	(0.13%)	N/A
Incremental Changes						
Plan Change	0.00%	0.00%	N/A	N/A	0.00%	N/A
Method Change	0.00%	0.00%	N/A	N/A	0.00%	N/A
Assumption Change	0.00%	0.00%	N/A	N/A	0.00%	N/A
Correction Change	0.03%	0.02%	N/A	N/A	0.00%	N/A
Experience Study Change	0.00%	0.00%	N/A	N/A	0.00%	N/A
Total Incremental Changes Gains/Losses	0.03%	0.02%	N/A	N/A	0.00%	N/A
Other Gains/Losses	(0.03%)	0.01%	N/A	N/A	(0.29%)	N/A
Total Change	(0.07%)	0.18%	(0.07%)	(0.07%)	(0.28%)	N/A
2014 Preliminary UAAL Rate	4.97%	6.94%	4.97%	4.97%	(11.44%)	N/A
Increase from Applied Rate Floor	0.00%	0.00%	0.00%	0.00%	N/A	N/A
Decrease from Applied Rate Ceiling	0.00%	0.00%	0.00%	0.00%	0.00%	N/A
Increase from Plan 1 Benefit Improvements After 2009	0.14%	0.15%	0.14%	0.14%	N/A	N/A
Laws of 2015	0.00%	0.00%	0.00%	0.00%	0.00%	N/A
2014 Adjusted UAAL Rate	5.11%	7.09%	5.11%	5.11%	(11.44%)	N/A

*The SERS and PSERS rates are to fund the PERS Plan 1 UAAL.

**The LEOFF contribution rate is the UAAL rate for plan 1. The plan has a surplus of assets over liabilities, so no rate is currently payable.