

April 27, 2017

Ms. Ruth Ryerson
Executive Director
Wyoming Retirement System
6101 Yellowstone Road, Suite 500
Cheyenne, WY 82009

Subject: Actuarial Projections for the Wyoming Retirement System

Dear Ruth:

We are providing 30-year projections for each plan in the Wyoming Retirement System (“WRS”) as of January 1, 2017 estimating the future Funded Ratio and Annual Required Contribution (“ARC”) for each plan.

Analysis

The sets of 30-year baseline projections for each plan incorporate data as of January 1, 2017. Contributions based on the plan’s individual funding source, if applicable, are assumed to be made annually. Please note that these projections are estimates only and are based upon the current set of actuarial assumptions as adopted by the WRS Board of Trustees on February 22, 2013.

The results of these future projections are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ as actual future experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods.

Summary and Conclusions

The 30th-year projected funded ratios have improved slightly for some of the plans, primarily due to the liability gain this year from the smaller than expected individual pay increases for 2016.

- 1) The 30th year projected funded ratio for the State plan decreased, from 86.4% to 85.4%. This is primarily due to the decrease in the population from 2016 to 2017 and the decrease in the total payroll. The smaller payroll means fewer future contributions when compared to last year’s projection, will be coming into the plan each year.
- 2) Fire A: With no funding source for the plan, trust assets are projected to be depleted in approximately 2027 (last year this was 2028).
- 3) Wardens: The plan is projected to be 83.7% funded in 30 years (last year the projection showed 83.1% in 30 years).
- 4) Fire B: This plan is projected to be 90.0% funded in 30 years (last year the projection showed 86.0% in 30 years)

- 5) The three plans of Judges, Law Enforcement and Guard Fire are still projected to be above 100% in 30 years.

A summary of the results is as follows for each WRS plan:

Plan	Funded Ratio		Actuarially Determined Contribution	
	2017	2047	2017	2047
State	78.1%	85.4%	9.37%	4.98%
Judges	109.5%	158.8%	8.21%	0.00%
Law Enforcement	94.0%	107.1%	7.26%	3.88%
Wardens	79.5%	83.7%	16.41%	15.76%
Guard Fire	87.2%	163.0%	0.29%	0.00%
Fire B	99.4%	90.0%	11.89%	16.46%
Fire A (depletion)	60.4%	N/A (2027)	\$11,734k	N/A

Assumptions and Methods

- All calculations incorporate data, provisions, and assumptions used in the January 1, 2017 actuarial valuations, including:
 - Future investment returns are assumed to equal the discount rate of 7.75% each year.
 - A second tier of benefits for participants who are hired after September 1, 2012 for the State plan;
 - No post-retirement cost-of-living adjustment (“COLA”) is reflected, with the exception of the Fire A plan;
- The Actuarially Determined Contribution “ADC” is based upon an “open” amortization period over the same number of years as specified in the January 1, 2017 actuarial valuation.
- The Guard Fire plan faces an uncertain future regarding its funding from Federal sources which are assumed to continue in these projections.

The calculations are based upon assumptions regarding future events, which may or may not materialize. Please bear in mind that actual results could deviate significantly from our projections which will move the projected “fully funded” year up in time if actual future experience is favorable or back in time if actual future experience is not favorable. In addition, note that these results show projections based upon a limited set of assumptions and contribution scenarios and are to be viewed as rough estimates only.

Closing

All of the work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. The actuaries submitting this statement are members of the American Academy of Actuaries and meet all of the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion

contained herein. In addition, the undersigned are experienced in performing actuarial valuations for other large public retirement systems.

If you require any additional or clarifying information, please do not hesitate to contact the undersigned.

Respectfully submitted,

Gabriel, Roeder, Smith & Company



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Wyoming Retirement System - Public Employees' Pension Plan ("State")
Projection Results Based on January 1, 2017 Actuarial Valuation - Baseline

Discount Rate: 7.75%

Valuation as of January 1,	Market Return for FY Beginning on Valuation Date	Contribution Rate for Fiscal Year Following Valuation Date		Projected Payroll (in Millions)	Employer Contributions (in Millions)	Actuarial Accrued Liability (AAL, in Millions)	Actuarial Value of Assets (AVA, in Millions)	Unfunded Actuarial Accrued Liability (UAAL, in Millions)	Funded Ratio	Funding Shortfall/ (Surplus)	30-Year Employer ARC	Employer Normal Cost (NC)	30-Year Amortization Payment	Assumed Expenses
		Employee	Employer											
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2017	7.75%	8.250%	8.370%	\$1,852	\$155	\$9,039	\$7,063	\$1,976	78.1%	1.00%	9.37%	3.30%	5.72%	0.35%
2018	7.75%	8.250%	8.370%	1,925	161	9,391	7,232	2,159	77.0%	1.13%	9.50%	3.14%	6.01%	0.35%
2019	7.75%	8.250%	8.370%	1,999	167	9,742	7,338	2,404	75.3%	1.44%	9.81%	3.01%	6.45%	0.35%
2020	7.75%	8.250%	8.370%	2,076	174	10,094	7,480	2,614	74.1%	1.63%	10.00%	2.89%	6.75%	0.35%
2021	7.75%	8.250%	8.370%	2,155	180	10,446	7,738	2,708	74.1%	1.50%	9.87%	2.78%	6.74%	0.35%
2022	7.75%	8.250%	8.370%	2,238	187	10,798	8,003	2,795	74.1%	1.36%	9.73%	2.68%	6.70%	0.35%
2023	7.75%	8.250%	8.370%	2,324	195	11,151	8,269	2,882	74.2%	1.21%	9.58%	2.58%	6.65%	0.35%
2024	7.75%	8.250%	8.370%	2,414	202	11,504	8,536	2,968	74.2%	1.06%	9.43%	2.49%	6.59%	0.35%
2025	7.75%	8.250%	8.370%	2,509	210	11,860	8,806	3,053	74.3%	0.90%	9.27%	2.40%	6.52%	0.35%
2026	7.75%	8.250%	8.370%	2,609	218	12,220	9,082	3,137	74.3%	0.75%	9.12%	2.32%	6.45%	0.35%
2027	7.75%	8.250%	8.370%	2,713	227	12,585	9,365	3,220	74.4%	0.59%	8.96%	2.25%	6.36%	0.35%
2028	7.75%	8.250%	8.370%	2,822	236	12,966	9,665	3,301	74.5%	0.43%	8.80%	2.18%	6.27%	0.35%
2029	7.75%	8.250%	8.370%	2,937	246	13,356	9,977	3,379	74.7%	0.27%	8.64%	2.12%	6.17%	0.35%
2030	7.75%	8.250%	8.370%	3,056	256	13,757	10,302	3,455	74.9%	0.10%	8.47%	2.06%	6.06%	0.35%
2031	7.75%	8.250%	8.370%	3,181	266	14,170	10,643	3,527	75.1%	-0.07%	8.30%	2.00%	5.94%	0.35%
2032	7.75%	8.250%	8.370%	3,312	277	14,597	11,003	3,595	75.4%	-0.25%	8.12%	1.95%	5.82%	0.35%
2033	7.75%	8.250%	8.370%	3,448	289	15,040	11,383	3,658	75.7%	-0.42%	7.95%	1.91%	5.69%	0.35%
2034	7.75%	8.250%	8.370%	3,590	301	15,501	11,786	3,715	76.0%	-0.61%	7.76%	1.87%	5.55%	0.35%
2035	7.75%	8.250%	8.370%	3,738	313	15,981	12,215	3,767	76.4%	-0.79%	7.58%	1.83%	5.40%	0.35%
2036	7.75%	8.250%	8.370%	3,893	326	16,481	12,670	3,811	76.9%	-0.98%	7.39%	1.79%	5.25%	0.35%
2037	7.75%	8.250%	8.370%	4,054	339	17,003	13,157	3,846	77.4%	-1.17%	7.20%	1.76%	5.09%	0.35%
2038	7.75%	8.250%	8.370%	4,222	353	17,548	13,675	3,873	77.9%	-1.37%	7.00%	1.73%	4.92%	0.35%
2039	7.75%	8.250%	8.370%	4,398	368	18,118	14,229	3,889	78.5%	-1.58%	6.79%	1.70%	4.74%	0.35%
2040	7.75%	8.250%	8.370%	4,580	383	18,715	14,822	3,893	79.2%	-1.78%	6.59%	1.68%	4.56%	0.35%
2041	7.75%	8.250%	8.370%	4,771	399	19,339	15,454	3,884	79.9%	-2.00%	6.37%	1.66%	4.37%	0.35%
2042	7.75%	8.250%	8.370%	4,970	416	19,992	16,131	3,861	80.7%	-2.22%	6.15%	1.64%	4.17%	0.35%
2043	7.75%	8.250%	8.370%	5,178	433	20,677	16,856	3,821	81.5%	-2.44%	5.93%	1.62%	3.96%	0.35%
2044	7.75%	8.250%	8.370%	5,395	452	21,396	17,633	3,763	82.4%	-2.67%	5.70%	1.61%	3.74%	0.35%
2045	7.75%	8.250%	8.370%	5,621	471	22,152	18,466	3,685	83.4%	-2.90%	5.47%	1.60%	3.52%	0.35%
2046	7.75%	8.250%	8.370%	5,858	490	22,945	19,360	3,585	84.4%	-3.14%	5.23%	1.59%	3.28%	0.35%
2047	7.75%	8.250%	8.370%	6,105	511	23,779	20,319	3,460	85.4%	-3.39%	4.98%	1.59%	3.04%	0.35%

Wyoming Retirement System - Judicial Retirement System ("Judges")
Projection Results Based on January 1, 2017 Actuarial Valuation - Baseline

Discount Rate: 7.75%

Valuation as of January 1,	Market Return for FY Beginning on Valuation Date	Contribution Rate for Fiscal Year Following Valuation Date		Projected Payroll (in Thousands)	Employer Contributions (in Thousands)	Actuarial Accrued Liability (AAL, in Thousands)	Actuarial Value of Assets (AVA, in Thousands)	Unfunded Actuarial Accrued Liability (UAAL, in Thousands)	Funded Ratio	Funding Shortfall/ (Surplus)	30-Year Employer ARC	Employer Normal Cost (NC)	30-Year Amortization Payment	Assumed Expenses
		Employee	Employer											
		(3)	(4)											
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2017	7.75%	9.22%	14.50%	\$6,625	\$961	\$24,459	\$26,773	(\$2,314)	109.5%	-6.29%	8.21%	9.84%	-1.98%	0.35%
2018	7.75%	9.22%	14.50%	6,866	996	26,571	28,893	(2,322)	108.7%	-6.29%	8.21%	9.78%	-1.92%	0.35%
2019	7.75%	9.22%	14.50%	7,117	1,032	28,761	30,942	(2,181)	107.6%	-6.14%	8.36%	9.75%	-1.74%	0.35%
2020	7.75%	9.22%	14.50%	7,367	1,068	31,017	33,230	(2,212)	107.1%	-6.15%	8.35%	9.70%	-1.71%	0.35%
2021	7.75%	9.22%	14.50%	7,615	1,104	33,281	35,982	(2,701)	108.1%	-6.54%	7.96%	9.63%	-2.01%	0.35%
2022	7.75%	9.22%	14.50%	7,879	1,142	35,525	38,799	(3,274)	109.2%	-6.99%	7.51%	9.52%	-2.36%	0.35%
2023	7.75%	9.22%	14.50%	8,160	1,183	37,680	41,592	(3,912)	110.4%	-7.42%	7.08%	9.46%	-2.72%	0.35%
2024	7.75%	9.22%	14.50%	8,474	1,229	39,792	44,407	(4,615)	111.6%	-7.89%	6.61%	9.35%	-3.09%	0.35%
2025	7.75%	9.22%	14.50%	8,800	1,276	41,847	47,246	(5,399)	112.9%	-8.35%	6.15%	9.29%	-3.48%	0.35%
2026	7.75%	9.22%	14.50%	9,139	1,325	43,825	50,089	(6,263)	114.3%	-8.73%	5.77%	9.31%	-3.89%	0.35%
2027	7.75%	9.22%	14.50%	9,460	1,372	45,797	53,010	(7,213)	115.7%	-9.18%	5.32%	9.30%	-4.33%	0.35%
2028	7.75%	9.22%	14.50%	9,823	1,424	47,744	55,995	(8,251)	117.3%	-9.69%	4.81%	9.23%	-4.77%	0.35%
2029	7.75%	9.22%	14.50%	10,205	1,480	49,746	59,139	(9,393)	118.9%	-10.18%	4.32%	9.19%	-5.23%	0.35%
2030	7.75%	9.22%	14.50%	10,606	1,538	51,876	62,523	(10,647)	120.5%	-10.69%	3.81%	9.16%	-5.70%	0.35%
2031	7.75%	9.22%	14.50%	11,029	1,599	54,130	66,152	(12,022)	122.2%	-11.30%	3.20%	9.04%	-6.19%	0.35%
2032	7.75%	9.22%	14.50%	11,462	1,662	56,441	69,980	(13,539)	124.0%	-11.90%	2.60%	8.95%	-6.71%	0.35%
2033	7.75%	9.22%	14.50%	11,890	1,724	58,871	74,080	(15,208)	125.8%	-12.49%	2.01%	8.92%	-7.26%	0.35%
2034	7.75%	9.22%	14.50%	12,338	1,789	61,499	78,533	(17,034)	127.7%	-13.09%	1.41%	8.90%	-7.84%	0.35%
2035	7.75%	9.22%	14.50%	12,798	1,856	64,274	83,302	(19,028)	129.6%	-13.71%	0.79%	8.88%	-8.44%	0.35%
2036	7.75%	9.22%	14.50%	13,280	1,926	67,200	88,405	(21,205)	131.6%	-14.38%	0.12%	8.84%	-9.07%	0.35%
2037	7.75%	9.22%	14.50%	13,778	1,998	70,296	93,877	(23,582)	133.5%	-15.05%	-0.55%	8.81%	-9.72%	0.35%
2038	7.75%	9.22%	14.50%	14,291	2,072	73,473	99,648	(26,175)	135.6%	-15.74%	-1.24%	8.81%	-10.40%	0.35%
2039	7.75%	9.22%	14.50%	14,827	2,150	76,735	105,732	(28,998)	137.8%	-16.47%	-1.97%	8.78%	-11.10%	0.35%
2040	7.75%	9.22%	14.50%	15,387	2,231	80,141	112,213	(32,073)	140.0%	-17.21%	-2.71%	8.77%	-11.83%	0.35%
2041	7.75%	9.22%	14.50%	15,982	2,317	83,608	119,026	(35,417)	142.4%	-17.93%	-3.43%	8.80%	-12.58%	0.35%
2042	7.75%	9.22%	14.50%	16,585	2,405	87,099	126,150	(39,052)	144.8%	-18.71%	-4.21%	8.81%	-13.37%	0.35%
2043	7.75%	9.22%	14.50%	17,206	2,495	90,693	133,693	(43,000)	147.4%	-19.53%	-5.03%	8.80%	-14.19%	0.35%
2044	7.75%	9.22%	14.50%	17,842	2,587	94,403	141,693	(47,290)	150.1%	-20.36%	-5.86%	8.83%	-15.05%	0.35%
2045	7.75%	9.22%	14.50%	18,507	2,684	98,197	150,139	(51,942)	152.9%	-21.23%	-6.73%	8.86%	-15.94%	0.35%
2046	7.75%	9.22%	14.50%	19,207	2,785	102,111	159,098	(56,986)	155.8%	-22.13%	-7.63%	8.86%	-16.85%	0.35%
2047	7.75%	9.22%	14.50%	19,945	2,892	106,155	168,613	(62,458)	158.8%	-23.05%	-8.55%	8.88%	-17.78%	0.35%

Wyoming Retirement System - Law Enforcement Retirement Fund ("Law Enforcement")
Projection Results Based on January 1, 2017 Actuarial Valuation - Baseline

Discount Rate: 7.75%

Valuation as of January 1,	Market Return for FY Beginning on Valuation Date	Contribution Rate for Fiscal Year Following Valuation Date		Projected Payroll (in Thousands)	Employer Contributions (in Thousands)	Actuarial Accrued Liability (AAL, in Thousands)	Actuarial Value of Assets (AVA, in Thousands)	Unfunded Actuarial Accrued Liability (UAAL, in Thousands)	Funded Ratio	Funding Shortfall/ (Surplus)	30-Year Employer ARC	Employer Normal Cost (NC)	30-Year Amortization Payment	Assumed Expenses
		Employee	Employer											
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2017	7.75%	8.60%	8.60%	\$160,073	\$13,766	\$628,085	\$590,466	\$37,619	94.0%	-1.34%	7.26%	5.66%	1.26%	0.34%
2018	7.75%	8.60%	8.60%	166,285	14,300	664,964	618,726	46,237	93.0%	-1.18%	7.42%	5.59%	1.49%	0.34%
2019	7.75%	8.60%	8.60%	172,934	14,872	703,045	643,591	59,453	91.5%	-0.87%	7.73%	5.55%	1.84%	0.34%
2020	7.75%	8.60%	8.60%	179,758	15,459	742,414	672,910	69,505	90.6%	-0.68%	7.92%	5.51%	2.07%	0.34%
2021	7.75%	8.60%	8.60%	186,933	16,076	783,047	713,063	69,983	91.1%	-0.78%	7.82%	5.48%	2.01%	0.34%
2022	7.75%	8.60%	8.60%	194,297	16,710	825,039	755,430	69,609	91.6%	-0.89%	7.71%	5.45%	1.92%	0.34%
2023	7.75%	8.60%	8.60%	202,124	17,383	868,480	799,536	68,944	92.1%	-1.00%	7.60%	5.43%	1.83%	0.34%
2024	7.75%	8.60%	8.60%	210,252	18,082	913,515	845,576	67,938	92.6%	-1.11%	7.49%	5.41%	1.73%	0.34%
2025	7.75%	8.60%	8.60%	218,790	18,816	960,229	893,653	66,576	93.1%	-1.23%	7.37%	5.40%	1.63%	0.34%
2026	7.75%	8.60%	8.60%	227,686	19,581	1,008,688	943,876	64,813	93.6%	-1.34%	7.26%	5.39%	1.53%	0.34%
2027	7.75%	8.60%	8.60%	236,945	20,377	1,058,953	996,346	62,607	94.1%	-1.46%	7.14%	5.38%	1.42%	0.34%
2028	7.75%	8.60%	8.60%	246,634	21,211	1,111,581	1,051,663	59,918	94.6%	-1.58%	7.02%	5.38%	1.30%	0.34%
2029	7.75%	8.60%	8.60%	256,678	22,074	1,165,941	1,109,251	56,691	95.1%	-1.70%	6.90%	5.37%	1.18%	0.34%
2030	7.75%	8.60%	8.60%	267,174	22,977	1,222,122	1,169,239	52,883	95.7%	-1.83%	6.77%	5.37%	1.06%	0.34%
2031	7.75%	8.60%	8.60%	278,190	23,924	1,280,163	1,231,716	48,447	96.2%	-1.96%	6.64%	5.37%	0.93%	0.34%
2032	7.75%	8.60%	8.60%	289,665	24,911	1,340,162	1,296,854	43,308	96.8%	-2.09%	6.51%	5.37%	0.80%	0.34%
2033	7.75%	8.60%	8.60%	301,705	25,947	1,402,180	1,364,775	37,405	97.3%	-2.23%	6.37%	5.36%	0.66%	0.34%
2034	7.75%	8.60%	8.60%	314,255	27,026	1,466,306	1,435,648	30,658	97.9%	-2.37%	6.23%	5.36%	0.52%	0.34%
2035	7.75%	8.60%	8.60%	327,373	28,154	1,532,674	1,509,686	22,988	98.5%	-2.52%	6.08%	5.36%	0.38%	0.34%
2036	7.75%	8.60%	8.60%	341,089	29,334	1,601,461	1,587,155	14,305	99.1%	-2.67%	5.93%	5.36%	0.22%	0.34%
2037	7.75%	8.60%	8.60%	355,503	30,573	1,672,770	1,668,246	4,524	99.7%	-2.83%	5.77%	5.36%	0.07%	0.34%
2038	7.75%	8.60%	8.60%	370,560	31,868	1,746,885	1,753,360	(6,474)	100.4%	-2.99%	5.61%	5.36%	-0.09%	0.34%
2039	7.75%	8.60%	8.60%	386,272	33,219	1,823,941	1,842,747	(18,806)	101.0%	-3.16%	5.44%	5.36%	-0.26%	0.34%
2040	7.75%	8.60%	8.60%	402,665	34,629	1,904,138	1,936,731	(32,592)	101.7%	-3.33%	5.27%	5.36%	-0.43%	0.34%
2041	7.75%	8.60%	8.60%	419,793	36,102	1,987,614	2,035,583	(47,969)	102.4%	-3.51%	5.09%	5.36%	-0.61%	0.34%
2042	7.75%	8.60%	8.60%	437,643	37,637	2,074,534	2,139,619	(65,085)	103.1%	-3.70%	4.90%	5.36%	-0.80%	0.34%
2043	7.75%	8.60%	8.60%	456,294	39,241	2,164,980	2,249,075	(84,095)	103.9%	-3.89%	4.71%	5.36%	-0.99%	0.34%
2044	7.75%	8.60%	8.60%	475,727	40,913	2,259,265	2,364,441	(105,176)	104.7%	-4.09%	4.51%	5.36%	-1.19%	0.34%
2045	7.75%	8.60%	8.60%	495,980	42,654	2,357,587	2,486,100	(128,513)	105.5%	-4.29%	4.31%	5.36%	-1.39%	0.34%
2046	7.75%	8.60%	8.60%	517,081	44,469	2,460,055	2,614,362	(154,308)	106.3%	-4.50%	4.10%	5.36%	-1.60%	0.34%
2047	7.75%	8.60%	8.60%	539,059	46,359	2,566,811	2,749,589	(182,778)	107.1%	-4.72%	3.88%	5.36%	-1.82%	0.34%

Wyoming Retirement System - State Highway Patrol, Game & Fish Warden and Criminal Investigator Retirement Fund ("Wardens")
Projection Results Based on January 1, 2017 Actuarial Valuation - Baseline

Discount Rate: 7.75%

Valuation as of January 1,	Market Return for FY Beginning on Valuation Date	Contribution Rate for Fiscal Year Following Valuation Date			Projected Payroll (in Thousands)	Employer Contributions (in Thousands)	Actuarial Accrued Liability (AAL, in Thousands)	Actuarial Value of Assets (AVA, in Thousands)	Unfunded Actuarial Accrued Liability (UAAL, in Thousands)	Funded Ratio	Funding Shortfall/(Surplus)	30-Year Employer ARC	Employer Normal Cost (NC)	30-Year Amortization Payment	Assumed Expenses
		Employee	Employer	HP Game & Fish Commission											
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2017	7.75%	14.56%	14.88%	0.23%	\$24,646	\$3,724	\$169,252	\$134,609	\$34,643	79.5%	1.53%	16.41%	8.37%	7.54%	0.50%
2018	7.75%	14.56%	14.88%	0.18%	25,904	3,901	177,883	139,694	38,189	78.5%	1.91%	16.79%	8.38%	7.91%	0.50%
2019	7.75%	14.56%	14.88%	0.16%	27,220	4,094	186,847	143,884	42,963	77.0%	2.45%	17.33%	8.37%	8.46%	0.50%
2020	7.75%	14.56%	14.88%	0.13%	28,658	4,302	196,245	149,118	47,127	76.0%	2.82%	17.70%	8.38%	8.82%	0.50%
2021	7.75%	14.56%	14.88%	0.11%	30,163	4,521	206,195	157,000	49,195	76.1%	2.75%	17.63%	8.38%	8.75%	0.50%
2022	7.75%	14.56%	14.88%	0.09%	31,719	4,748	216,766	165,583	51,183	76.4%	2.65%	17.53%	8.38%	8.65%	0.50%
2023	7.75%	14.56%	14.88%	0.08%	33,362	4,991	228,094	174,859	53,235	76.7%	2.56%	17.44%	8.38%	8.56%	0.50%
2024	7.75%	14.56%	14.88%	0.06%	35,026	5,233	240,089	184,754	55,335	77.0%	2.48%	17.36%	8.39%	8.47%	0.50%
2025	7.75%	14.56%	14.88%	0.05%	36,724	5,483	252,695	195,200	57,494	77.2%	2.40%	17.28%	8.39%	8.39%	0.50%
2026	7.75%	14.56%	14.88%	0.04%	38,531	5,749	265,960	206,236	59,723	77.5%	2.32%	17.20%	8.39%	8.31%	0.50%
2027	7.75%	14.56%	14.88%	0.04%	40,414	6,030	279,970	217,952	62,018	77.8%	2.23%	17.11%	8.38%	8.23%	0.50%
2028	7.75%	14.56%	14.88%	0.03%	42,364	6,317	294,754	230,383	64,371	78.2%	2.16%	17.04%	8.39%	8.15%	0.50%
2029	7.75%	14.56%	14.88%	0.02%	44,384	6,613	310,324	243,536	66,788	78.5%	2.08%	16.96%	8.39%	8.07%	0.50%
2030	7.75%	14.56%	14.88%	0.02%	46,453	6,921	326,676	257,408	69,267	78.8%	2.01%	16.89%	8.39%	8.00%	0.50%
2031	7.75%	14.56%	14.88%	0.01%	48,652	7,244	343,890	272,071	71,819	79.1%	1.94%	16.82%	8.40%	7.92%	0.50%
2032	7.75%	14.56%	14.88%	0.01%	50,858	7,573	361,989	287,564	74,424	79.4%	1.86%	16.74%	8.39%	7.85%	0.50%
2033	7.75%	14.56%	14.88%	0.01%	53,216	7,924	380,978	303,872	77,105	79.8%	1.78%	16.66%	8.39%	7.77%	0.50%
2034	7.75%	14.56%	14.88%	0.01%	55,575	8,275	400,855	321,022	79,833	80.1%	1.71%	16.59%	8.39%	7.70%	0.50%
2035	7.75%	14.56%	14.88%	0.01%	58,062	8,645	421,612	338,978	82,634	80.4%	1.64%	16.52%	8.39%	7.63%	0.50%
2036	7.75%	14.56%	14.88%	0.00%	60,538	9,008	443,204	357,719	85,484	80.7%	1.60%	16.48%	8.41%	7.57%	0.50%
2037	7.75%	14.56%	14.88%	0.00%	63,153	9,397	465,623	377,206	88,418	81.0%	1.54%	16.42%	8.41%	7.51%	0.50%
2038	7.75%	14.56%	14.88%	0.00%	65,841	9,797	488,940	397,524	91,416	81.3%	1.47%	16.35%	8.41%	7.44%	0.50%
2039	7.75%	14.56%	14.88%	0.00%	68,667	10,218	513,214	418,724	94,490	81.6%	1.42%	16.30%	8.42%	7.38%	0.50%
2040	7.75%	14.56%	14.88%	0.00%	71,542	10,645	538,468	440,846	97,622	81.9%	1.36%	16.24%	8.42%	7.32%	0.50%
2041	7.75%	14.56%	14.88%	0.00%	74,601	11,101	564,732	463,897	100,835	82.1%	1.30%	16.18%	8.43%	7.25%	0.50%
2042	7.75%	14.56%	14.88%	0.00%	77,736	11,567	592,111	488,005	104,106	82.4%	1.23%	16.11%	8.43%	7.18%	0.50%
2043	7.75%	14.56%	14.88%	0.00%	81,044	12,059	620,647	513,200	107,447	82.7%	1.16%	16.04%	8.43%	7.11%	0.50%
2044	7.75%	14.56%	14.88%	0.00%	84,401	12,559	650,343	539,509	110,834	83.0%	1.09%	15.97%	8.43%	7.04%	0.50%
2045	7.75%	14.56%	14.88%	0.00%	87,946	13,086	681,225	566,938	114,287	83.2%	1.02%	15.90%	8.43%	6.97%	0.50%
2046	7.75%	14.56%	14.88%	0.00%	91,571	13,626	713,312	595,527	117,785	83.5%	0.96%	15.84%	8.44%	6.90%	0.50%
2047	7.75%	14.56%	14.88%	0.00%	95,408	14,197	746,627	625,284	121,343	83.7%	0.88%	15.76%	8.44%	6.82%	0.50%

Wyoming Air Guard Firefighters Retirement System ("Guard Fire")
Projection Results Based on January 1, 2017 Actuarial Valuation - Baseline

Discount Rate: 7.75%

Valuation as of January 1, (1)	Market Return for FY Beginning on Valuation Date (2)	Contribution Rate for Fiscal Year Following Valuation Date		Projected Payroll (in Thousands) (5)	Employer Contributions (in Thousands) (6)	Actuarial Accrued Liability (AAL, in Thousands) (7)	Actuarial Value of Assets (AVA, in Thousands) (8)	Unfunded Actuarial Accrued Liability (UAAL, in Thousands) (9)	Funded Ratio (10)	Funding Shortfall/ (Surplus) (11)	30-Year Employer ARC (12)	Employer Normal Cost (NC) (13)	30-Year Amortization Payment (14)	Assumed Expenses (15)
		Employee (3)	Employer (4)											
		(3)	(4)											
2017	7.75%	16.650%	7.120%	\$2,060	\$147	\$7,798	\$6,801	\$997	87.2%	-6.83%	0.29%	-2.60%	2.60%	0.29%
2018	7.75%	16.650%	7.120%	2,163	154	8,287	7,310	976	88.2%	-7.07%	0.05%	-2.66%	2.42%	0.29%
2019	7.75%	16.650%	7.120%	2,266	161	8,816	7,835	981	88.9%	-7.23%	-0.11%	-2.72%	2.32%	0.29%
2020	7.75%	16.650%	7.120%	2,375	169	9,375	8,443	932	90.1%	-7.49%	-0.37%	-2.77%	2.10%	0.29%
2021	7.75%	16.650%	7.120%	2,486	177	9,977	9,225	752	92.5%	-8.03%	-0.91%	-2.82%	1.62%	0.29%
2022	7.75%	16.650%	7.120%	2,596	185	10,610	10,075	536	95.0%	-8.59%	-1.47%	-2.86%	1.11%	0.29%
2023	7.75%	16.650%	7.120%	2,716	193	11,285	10,994	291	97.4%	-9.15%	-2.03%	-2.89%	0.57%	0.29%
2024	7.75%	16.650%	7.120%	2,843	202	11,999	11,985	14	99.9%	-9.72%	-2.60%	-2.92%	0.03%	0.29%
2025	7.75%	16.650%	7.120%	2,975	212	12,755	13,053	(298)	102.3%	-10.31%	-3.19%	-2.94%	-0.54%	0.29%
2026	7.75%	16.650%	7.120%	3,109	221	13,549	14,198	(649)	104.8%	-10.91%	-3.79%	-2.96%	-1.12%	0.29%
2027	7.75%	16.650%	7.120%	3,244	231	14,378	15,422	(1,043)	107.3%	-11.54%	-4.42%	-2.98%	-1.72%	0.29%
2028	7.75%	16.650%	7.120%	3,389	241	15,238	16,720	(1,482)	109.7%	-12.17%	-5.05%	-2.99%	-2.35%	0.29%
2029	7.75%	16.650%	7.120%	3,542	252	16,135	18,106	(1,971)	112.2%	-12.81%	-5.69%	-3.00%	-2.98%	0.29%
2030	7.75%	16.650%	7.120%	3,700	263	17,079	19,593	(2,514)	114.7%	-13.49%	-6.37%	-3.01%	-3.64%	0.29%
2031	7.75%	16.650%	7.120%	3,862	275	18,068	21,185	(3,117)	117.3%	-14.18%	-7.06%	-3.02%	-4.33%	0.29%
2032	7.75%	16.650%	7.120%	4,035	287	19,114	22,897	(3,783)	119.8%	-14.89%	-7.77%	-3.03%	-5.03%	0.29%
2033	7.75%	16.650%	7.120%	4,210	300	20,216	24,737	(4,521)	122.4%	-15.63%	-8.51%	-3.04%	-5.76%	0.29%
2034	7.75%	16.650%	7.120%	4,393	313	21,374	26,708	(5,334)	125.0%	-16.39%	-9.27%	-3.04%	-6.51%	0.29%
2035	7.75%	16.650%	7.120%	4,583	326	22,595	28,825	(6,230)	127.6%	-17.17%	-10.05%	-3.05%	-7.29%	0.29%
2036	7.75%	16.650%	7.120%	4,781	340	23,859	31,077	(7,218)	130.3%	-17.98%	-10.86%	-3.06%	-8.09%	0.29%
2037	7.75%	16.650%	7.120%	4,993	356	25,185	33,488	(8,302)	133.0%	-18.81%	-11.69%	-3.07%	-8.92%	0.29%
2038	7.75%	16.650%	7.120%	5,213	371	26,591	36,085	(9,494)	135.7%	-19.67%	-12.55%	-3.08%	-9.77%	0.29%
2039	7.75%	16.650%	7.120%	5,439	387	28,076	38,878	(10,803)	138.5%	-20.57%	-13.45%	-3.09%	-10.65%	0.29%
2040	7.75%	16.650%	7.120%	5,676	404	29,634	41,871	(12,237)	141.3%	-21.49%	-14.37%	-3.10%	-11.56%	0.29%
2041	7.75%	16.650%	7.120%	5,918	421	31,261	45,071	(13,810)	144.2%	-22.45%	-15.33%	-3.10%	-12.51%	0.29%
2042	7.75%	16.650%	7.120%	6,171	439	32,959	48,489	(15,531)	147.1%	-23.44%	-16.32%	-3.11%	-13.49%	0.29%
2043	7.75%	16.650%	7.120%	6,433	458	34,734	52,147	(17,413)	150.1%	-24.47%	-17.35%	-3.12%	-14.51%	0.29%
2044	7.75%	16.650%	7.120%	6,709	478	36,587	56,056	(19,469)	153.2%	-25.52%	-18.40%	-3.13%	-15.56%	0.29%
2045	7.75%	16.650%	7.120%	6,996	498	38,522	60,238	(21,716)	156.4%	-26.61%	-19.49%	-3.14%	-16.65%	0.29%
2046	7.75%	16.650%	7.120%	7,295	519	40,540	64,708	(24,168)	159.6%	-27.73%	-20.61%	-3.14%	-17.76%	0.29%
2047	7.75%	16.650%	7.120%	7,608	542	42,639	69,480	(26,842)	163.0%	-28.89%	-21.77%	-3.14%	-18.92%	0.29%

Wyoming Paid Firemen's Retirement Fund Plan B ("Fire B")
Projection Results Based on January 1, 2017 Actuarial Valuation - Baseline

Discount Rate: 7.75%

Valuation as of January 1,	Market Return for FY Beginning on Valuation Date	Contribution Rate for Fiscal Year Following Valuation Date		Projected Payroll (in Thousands)	Employer Contributions (in Thousands)	Actuarial Accrued Liability (AAL, in Thousands)	Actuarial Value of Assets (AVA, in Thousands)	Unfunded Actuarial Accrued Liability (UAAL, in Thousands)	Funded Ratio	Funding Shortfall/ (Surplus)	30-Year Employer ARC	Employer Normal Cost (NC)	30-Year Amortization Payment	Assumed Expenses
		Employee	Employer											
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2017	7.75%	9.245%	12.000%	\$29,409	\$3,529	\$135,235	\$134,451	\$784	99.4%	-0.11%	11.89%	11.35%	0.14%	0.40%
2018	7.75%	9.245%	12.000%	30,643	3,677	146,795	143,667	3,128	97.9%	0.21%	12.21%	11.26%	0.55%	0.40%
2019	7.75%	9.245%	12.000%	31,977	3,837	158,885	152,393	6,492	95.9%	0.72%	12.72%	11.23%	1.09%	0.40%
2020	7.75%	9.245%	12.000%	33,369	4,004	171,574	162,327	9,246	94.6%	1.10%	13.10%	11.22%	1.49%	0.40%
2021	7.75%	9.245%	12.000%	34,821	4,178	184,854	174,866	9,988	94.6%	1.16%	13.16%	11.22%	1.54%	0.40%
2022	7.75%	9.245%	12.000%	36,309	4,357	198,742	188,107	10,635	94.6%	1.20%	13.20%	11.23%	1.57%	0.40%
2023	7.75%	9.245%	12.000%	37,886	4,546	213,274	201,899	11,375	94.7%	1.25%	13.25%	11.24%	1.61%	0.40%
2024	7.75%	9.245%	12.000%	39,481	4,738	228,460	216,294	12,166	94.7%	1.30%	13.30%	11.25%	1.65%	0.40%
2025	7.75%	9.245%	12.000%	41,131	4,936	244,260	231,244	13,017	94.7%	1.37%	13.37%	11.27%	1.70%	0.40%
2026	7.75%	9.245%	12.000%	42,819	5,138	260,693	246,758	13,934	94.7%	1.44%	13.44%	11.30%	1.74%	0.40%
2027	7.75%	9.245%	12.000%	44,602	5,352	277,787	262,854	14,933	94.6%	1.52%	13.52%	11.33%	1.80%	0.40%
2028	7.75%	9.245%	12.000%	46,414	5,570	295,559	279,544	16,015	94.6%	1.62%	13.62%	11.37%	1.85%	0.40%
2029	7.75%	9.245%	12.000%	48,222	5,787	313,921	296,734	17,188	94.5%	1.73%	13.73%	11.42%	1.91%	0.40%
2030	7.75%	9.245%	12.000%	50,054	6,006	332,769	314,298	18,471	94.4%	1.86%	13.86%	11.49%	1.98%	0.40%
2031	7.75%	9.245%	12.000%	51,912	6,229	351,999	332,120	19,879	94.4%	2.00%	14.00%	11.55%	2.05%	0.40%
2032	7.75%	9.245%	12.000%	53,855	6,463	371,623	350,193	21,430	94.2%	2.14%	14.14%	11.60%	2.13%	0.40%
2033	7.75%	9.245%	12.000%	55,893	6,707	391,685	368,551	23,135	94.1%	2.28%	14.28%	11.66%	2.22%	0.40%
2034	7.75%	9.245%	12.000%	57,924	6,951	412,133	387,133	25,000	93.9%	2.44%	14.44%	11.73%	2.31%	0.40%
2035	7.75%	9.245%	12.000%	60,093	7,211	432,929	405,874	27,056	93.8%	2.60%	14.60%	11.78%	2.41%	0.40%
2036	7.75%	9.245%	12.000%	62,342	7,481	454,095	424,785	29,309	93.5%	2.75%	14.75%	11.83%	2.52%	0.40%
2037	7.75%	9.245%	12.000%	64,752	7,770	475,653	443,869	31,785	93.3%	2.91%	14.91%	11.88%	2.63%	0.40%
2038	7.75%	9.245%	12.000%	67,261	8,071	497,634	463,143	34,491	93.1%	3.07%	15.07%	11.92%	2.75%	0.40%
2039	7.75%	9.245%	12.000%	69,976	8,397	520,154	482,697	37,456	92.8%	3.22%	15.22%	11.95%	2.87%	0.40%
2040	7.75%	9.245%	12.000%	72,769	8,732	543,262	502,577	40,684	92.5%	3.38%	15.38%	11.98%	3.00%	0.40%
2041	7.75%	9.245%	12.000%	75,749	9,090	566,981	522,773	44,208	92.2%	3.54%	15.54%	12.01%	3.13%	0.40%
2042	7.75%	9.245%	12.000%	78,900	9,468	591,427	543,384	48,044	91.9%	3.69%	15.69%	12.03%	3.27%	0.40%
2043	7.75%	9.245%	12.000%	82,224	9,867	616,692	564,478	52,213	91.5%	3.84%	15.84%	12.04%	3.41%	0.40%
2044	7.75%	9.245%	12.000%	85,720	10,286	642,874	586,135	56,739	91.2%	4.00%	16.00%	12.05%	3.55%	0.40%
2045	7.75%	9.245%	12.000%	89,384	10,726	670,046	608,401	61,645	90.8%	4.15%	16.15%	12.05%	3.70%	0.40%
2046	7.75%	9.245%	12.000%	93,219	11,186	698,301	631,341	66,960	90.4%	4.31%	16.31%	12.05%	3.85%	0.40%
2047	7.75%	9.245%	12.000%	97,235	11,668	727,717	655,004	72,713	90.0%	4.46%	16.46%	12.05%	4.01%	0.40%

Wyoming Paid Firemen's Retirement Fund Plan A ("Fire A")
Projection Results Based on January 1, 2017 Actuarial Valuation - Baseline

Discount Rate: 7.75%

Valuation as of January 1,	Market Return for FY Beginning on Valuation Date	Contribution Rate for Fiscal Year Following Valuation Date		Projected Payroll (in Thousands)	Actuarial Accrued Liability (AAL, in Thousands)	Actuarial Value of Assets (AVA, in Thousands)	Unfunded Actuarial Accrued Liability (UAAL, in Thousands)	Funded Ratio	Funding Shortfall/ (Surplus)	10-Year Employer ARC (in Thousands)	Employer Normal Cost (NC, in Thousands)	10-Year Amortization Payment (in Thousands)	Assumed Expenses (in Thousands)	Benefit Payments (in Thousands)
		Employee	Employer											
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2017	7.75%	-	-	\$195	\$205,953	\$124,435	\$81,518	60.4%	\$11,734	\$11,734.4	\$41.2	\$11,569.2	\$124.0	\$15,543
2018	7.75%	-	-	49	205,811	115,495	90,316	56.1%	12,957	12,956.6	14.8	12,817.8	124.0	15,944
2019	7.75%	-	-	38	205,214	104,102	101,112	50.7%	14,481	14,480.7	6.7	14,350.1	124.0	16,258
2020	7.75%	-	-	0	204,237	92,512	111,725	45.3%	15,980	15,980.3	0.0	15,856.3	124.0	16,534
2021	7.75%	-	-	0	202,890	82,204	120,686	40.5%	17,252	17,252.1	0.0	17,128.1	124.0	16,760
2022	7.75%	-	-	0	201,204	71,048	130,156	35.3%	18,596	18,596.0	0.0	18,472.0	124.0	16,956
2023	7.75%	-	-	-	199,184	58,825	140,360	29.5%	20,044	20,044.2	-	19,920.2	124.0	17,123
2024	7.75%	-	-	-	196,835	45,481	151,354	23.1%	21,605	21,604.5	-	21,480.5	124.0	17,261
2025	7.75%	-	-	-	194,160	30,959	163,201	15.9%	23,286	23,285.8	-	23,161.8	124.0	17,372
2026	7.75%	-	-	-	191,162	15,197	175,965	8.0%	25,097	25,097.3	-	24,973.3	124.0	17,456
2027	7.75%	-	-	-	187,845	(1,499)	189,344	-0.8%	26,996	26,996.1	-	26,872.1	124.0	17,514
2028	7.75%	-	-	-	184,211	(16,262)	200,473	-8.8%	28,576	28,575.5	-	28,451.5	124.0	17,545
2029	7.75%	-	-	-	180,262	(32,195)	212,457	-17.9%	30,276	30,276.4	-	30,152.4	124.0	17,550
2030	7.75%	-	-	-	176,003	(49,366)	225,370	-28.0%	32,109	32,109.0	-	31,985.0	124.0	17,526
2031	7.75%	-	-	-	171,439	(67,849)	239,288	-39.6%	34,084	34,084.3	-	33,960.3	124.0	17,473
2032	7.75%	-	-	-	166,575	(87,721)	254,296	-52.7%	36,214	36,214.2	-	36,090.2	124.0	17,389
2033	7.75%	-	-	-	161,422	(109,062)	270,484	-67.6%	38,512	38,511.7	-	38,387.7	124.0	17,273
2034	7.75%	-	-	-	155,990	(131,961)	287,951	-84.6%	40,991	40,990.7	-	40,866.7	124.0	17,122
2035	7.75%	-	-	-	150,294	(156,510)	306,804	-104.1%	43,666	43,666.3	-	43,542.3	124.0	16,933
2036	7.75%	-	-	-	144,353	(182,804)	327,157	-126.6%	46,555	46,554.8	-	46,430.8	124.0	16,706
2037	7.75%	-	-	-	138,187	(210,947)	349,134	-152.7%	49,674	49,673.9	-	49,549.9	124.0	16,439
2038	7.75%	-	-	-	131,821	(241,050)	372,871	-182.9%	53,043	53,042.7	-	52,918.7	124.0	16,129
2039	7.75%	-	-	-	125,283	(273,228)	398,511	-218.1%	56,682	56,681.6	-	56,557.6	124.0	15,777
2040	7.75%	-	-	-	118,605	(307,608)	426,212	-259.4%	60,613	60,613.0	-	60,489.0	124.0	15,380
2041	7.75%	-	-	-	111,821	(344,322)	456,143	-307.9%	64,861	64,860.9	-	64,736.9	124.0	14,940
2042	7.75%	-	-	-	104,969	(383,516)	488,485	-365.4%	69,451	69,450.9	-	69,326.9	124.0	14,456
2043	7.75%	-	-	-	98,089	(425,346)	523,434	-433.6%	74,411	74,411.0	-	74,287.0	124.0	13,929
2044	7.75%	-	-	-	91,222	(469,980)	561,202	-515.2%	79,771	79,771.0	-	79,647.0	124.0	13,360
2045	7.75%	-	-	-	84,414	(517,601)	602,015	-613.2%	85,563	85,563.3	-	85,439.3	124.0	12,751
2046	7.75%	-	-	-	77,711	(568,407)	646,118	-731.4%	91,823	91,822.5	-	91,698.5	124.0	12,103
2047	7.75%	-	-	-	71,162	(622,612)	693,774	-874.9%	98,586	98,586.0	-	98,462.0	124.0	11,421