Monitoring the Cost-Basis of the K-12 Wyoming Funding Model

Prepared by the
LSO School Finance Section

Prepared for
Joint Education Committee &
Joint Appropriations Committee

Final Report – October 2013

Report Purpose

The 2010 recalibration of the Wyoming education resource block grant funding model determined funding for K-12 education exceeded the cost-basis of providing the statutorily required educational program to Wyoming school children. Although the 2011 Legislature forwarded K-12 funding at levels above those specified within the 2010 recalibration report as cost-based, it also recognized a need for a more robust or sophisticated process to monitor the cost-basis of the block grant model as it converges over time with Legislative funding levels. This monitoring process was established by law to provide the Legislature with a series of reports designed to enable informed decisions on model funding in the context of the overall statewide budget process.

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2013 MONITORING REPORT

The 2010 recalibration of the Wyoming education resource block grant funding model (the "Model") determined funding for K-12 education exceeded the cost-basis of providing the statutorily required educational program to Wyoming school children. Although the 2011 Legislature forwarded K-12 funding at levels above those specified within the 2010 recalibration report as cost-based, it also recognized a need for a more robust or sophisticated process to monitor the cost-basis of the Model funding levels as they converge over time with cost-based levels. The 2012 Legislature adopted a monitoring process which:

1. Identifies this convergence through four major funding categories within the Model: professional staff, non-professional staff, educational materials and supplies, and energy; and

2. Targets each Model category to a recommended set of price indices or labor market indicators.

This monitoring process was designed to use readily available state, regional and national data as part of a set of relatively simple, understandable indicators of cost pressures. These indicators are to be viewed collectively when used by the Legislature for policy making decisions. The indicators are not to be considered in isolation of one another as individual indicators nor are they intended to be seen as definitively signaling any degradation of the cost-basis of the Model. The following core principles guide this process:

1. Cost pressures are identified when indicators show changes relative to previous levels, and trends are best identified when there are broad based changes in several measures;

2. All indicators have some transitory year-to-year variation and as such, the process seeks high quality data series that are consistent over time;

3. As new data collections are developed and become available, it is important to retain enough consistency with former measures to enable tracking of evolving trends in market conditions;

4. Changes in supply and demand conditions and changes in district outcomes are monitored; and

5. If several indicators reflect deviations from "historical" ranges, the process invokes the collection of a deeper set of cost data to confirm the presence of cost pressure.

The 2010 recalibration effort estimated legislative policy choices resulted in a level of funding which exceeded cost by roughly $101.4 million. The most current estimate of this gap between the legislatively established Model funding level and the cost-based funding level approximates $87.2 million for school year 2013-2014. This report builds upon cost data comprising the indicators identified in the 2011 and 2012 monitoring reports, with multiple indicators for each Model category, as depicted below.

WYOMING FUNDING MODEL RESOURCES: CONSULTANT RECOMMENDATIONS VS. CURRENT LAW

A comparison of cost-based funding levels (as recommended by school finance consultants) and legislative funding levels has been made for K-12 education funding for the past several years. The

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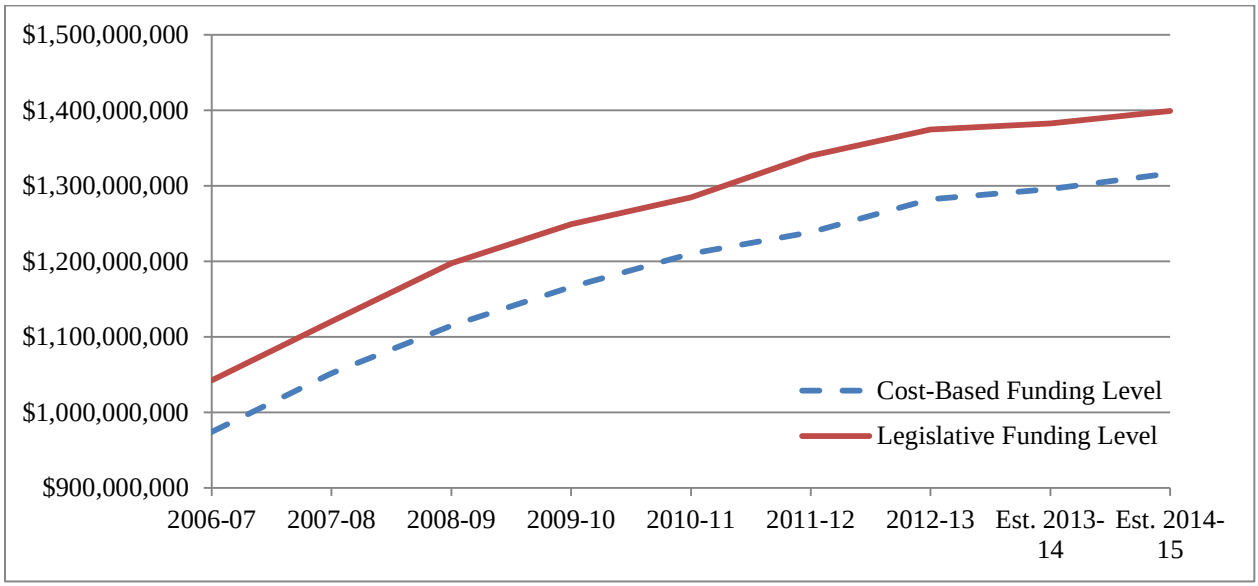
Legislature has chosen to fund the Model in excess of the cost-based funding levels since the 2005 recalibration. As seen in Table 1, the differences between cost-based and legislative funding levels range from $68.1 million in school year 2006-2007 to an estimated $82.7 million in school year 2014-2015. The different funding levels can also be viewed graphically in Figure 1.

Table 1. Cost-Based Funding Levels Compared to Legislative Funding Levels, School Year 2006-2007 to Estimated School Year 2014-2015.

School Year	Cost-Based Funding Level	Legislative Funding Level	Difference
2006-07	$974,384,621	$1,042,455,724	$68,071,103
2007-08	$1,051,584,249	$1,120,165,940	$68,581,691
2008-09	$1,114,929,855	$1,197,393,853	$82,463,998
2009-10	$1,166,146,943	$1,249,205,436	$83,058,493
2010-11	$1,210,135,687	$1,284,605,026	$74,469,340
2011-12	$1,238,547,690	$1,339,959,055	$101,411,365
2012-13	$1,282,008,100	$1,374,603,701	$92,595,601
Est. 2013-14	$1,295,544,492	$1,382,731,000	$87,186,507
Est. 2014-15	$1,316,461,688	$1,399,139,786	$82,678,098

Source: LSO Calculations and Analysis of Funding Models.

Figure 1. Cost-Based and Legislative Funding Levels, School Year 2006-2007 to Estimated School Year 2014-2015.



Source: LSO Calculations and Analysis of Funding Models.

A few observations about the differences between the cost-based funding levels and legislative funding levels over time:

- The difference in funding for school years 2006-2007 through estimated 2013-2014 is primarily attributable to legislative funding of smaller class sizes than consultants recommend;

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- The increase in the difference in funding for school year 2008-2009 from prior years was due to categorical funding for food service grants combined with larger amounts for summer school and extended day categorical and instructional facilitator grants;

- The decrease in the difference in funding for school year 2010-2011 from prior years was a reduction in categorical funding for instructional facilitators and the elimination of food service grants;

- The increase in the difference in funding for school year 2011-2012 from prior years was primarily attributable to the recalibration of the non-personnel cost-based levels for instructional supplies and materials and computer and technology equipment and the levels funded by the legislature. Funding levels for other components resourced by the legislature following the 2010 recalibration had a lesser effect;

- The decrease in the difference in funding for school year 2012-2013 was due to the use of the updated Hedonic Wage Index as calculated in the 2011 interim and the cost adjustments to non-personnel items for cost-based funding levels; and

- The estimated decrease in the difference in funding for school years 2013-2014 and 2014-2015 is attributable to cost adjustments to non-personnel items for cost-based funding levels.

The details of the most recent estimates are attached as Appendix A to this report, along with prior year differences.

PROFESSIONAL AND NON-PROFESSIONAL PERSONNEL

The 2012 report series for the professional personnel Model category included data-based indicators focusing on teacher salaries related to labor market and demographic patterns and district hiring capabilities, as well as specific indicators such as the comparability of non-teaching salaries and turnover rates for the non-professional personnel category. Reports conducted by the Research and Planning Division within the Department of Workforce Services in consultation with Dr. Christiana Stoddard are included as appendices to this report. These reports both update 2011 and 2012 data for professional personnel and provide additional data granularity for future consideration and development as part of the monitoring process. Report findings indicate that cost pressures on professional and non-professional salary levels in Wyoming school districts have not changed in significant ways since 2010-2011. These reports can be reviewed in Appendix B.

NON-PERSONNEL (EDUCATIONAL MATERIALS AND SUPPLIES, AND UTILITIES)

The cost-basis of components comprising the non-personnel Model categories are easier to monitor as compared to personnel costs. Adjusted cost-based levels can be compared annually to funding levels as a means to monitor convergence. The 2010 Model recalibration determined the Legislature funded the following Model components in excess of cost-based funding levels: education materials, computer supplies and equipment and student activities. However, as a measure to ensure Model integrity and in accordance with the 2012 report series, an adjustment was made to the cost-based level of non-personnel educational materials and supplies based upon the 2011-12 educational materials cost index[1].

[1] The educational materials cost index is the PPI for office supplies.

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The utilities component within the Model is based upon actual school year 2009-2010 expenditures adjusted for new school building square footage. The utilities component is somewhat set apart from other Model components in that respect. Based upon the 2012 report series, the utilities component was adjusted by the 2011-12 energy cost index.[2].

Estimated values for the energy cost index and educational materials cost index are provided within Table 2. These indices will be used to adjust the cost-based levels in the Model for non-personnel categories for the 2014-2015 school year in a manner similar to past adjustments.

Table 2. Cost Indices for Model Educational Materials and Energy Components.

	Energy		Educational Materials	
Year	**Annual**	**Change %**	**Annual**	**Change %**
2001-02	100		100	
2002-03	107	7.21%	100	0.42%
2003-04	120	11.88%	100	-0.05%
2004-05	131	9.39%	103	3.07%
2005-06	155	17.77%	106	2.08%
2006-07	148	-4.32%	109	3.51%
2007-08	156	5.19%	113	3.54%
2008-09	160	3.07%	117	3.64%
2009-10	142	-11.69%	117	-0.65%
2010-11	142	0.11%	119	2.18%
2011-12	134	-5.11%	122	2.78%
Est. 2012-13	133	-1.05%	124	1.44%

Note: The 2012-13 indices are preliminary at this time until the U.S. Bureau of Labor Statistics finalizes the May and June data. All indices have been rebased so that 2001=100.
Source: Legislative Service Office analysis of U.S. Bureau of Labor Statistics data.

Figure 2 provides an illustration of the data in Table 2. As the figure illustrates, the costs of educational materials have been rising in recent years, while the cost of energy (which comprises less than three percent of the Model) has been falling. The decline in the energy cost index reflects sharp declines in the price of natural gas.

[2] The energy cost index is a weighted average of the PPIs for commercial electricity and natural gas, where the weights are 0.441 and 0.559, respectively.

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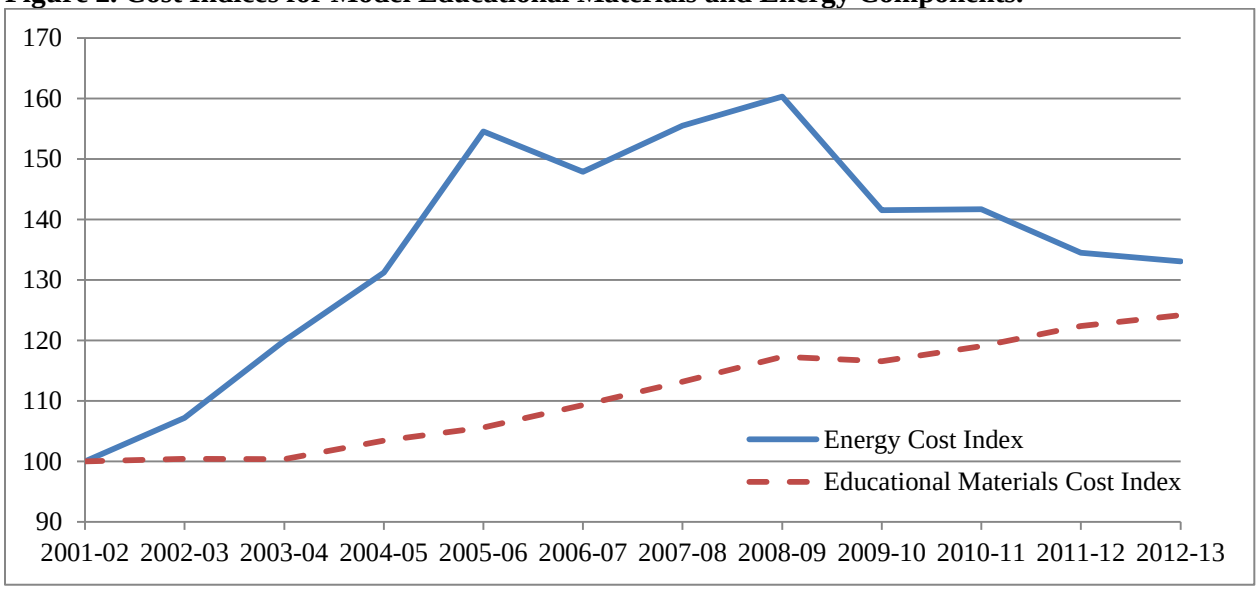
Figure 2. Cost Indices for Model Educational Materials and Energy Components.



Source: Legislative Service Office analysis of U.S. Bureau of Labor Statistics data.

Model funding for non-personnel components has exceeded district-reported expenditures in every year since the 2005 recalibration. This trend continues when comparing estimated school year 2012-2013 expenditures in the in the Department of Education's Continued Review of Educational Resources in Wyoming, 2005-06 through 2012-13, Report Update (Appendix D) .

The 2013-2014 cost-based levels for the educational materials and supplies category was adjusted by the educational materials cost index (2.78%). Accordingly, the cost-based level of the energy category was adjusted by the energy cost index (-5.11%). The estimated educational materials cost index for the 2014-2015 school year is 1.44% and the estimated energy cost index for the 2014-2015 school year is -1.05%. The 2014-2015 cost-based levels will be adjusted to reflect the changes in these cost indices once finalized data is available from the U.S. Bureau of Labor Statistics.

The estimated difference in the cost-based funding level and the legislative funding level for non-personnel components for school year 2013-2014 is $22.4 million. The estimated difference for each component can be seen in Table 3.

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Table 3. Estimated School Year 2013-2014 Difference of Cost-Based and Model Funding Levels.

Non-Personnel Model Component	Cost-Based Funding Level	Legislative Funding Level	Difference
Central Office Non-Personnel	$33,501,491	$31,899,922	-$1,601,569
Operations and Maintenance Supplies	$12,899,416	$12,282,748	-$616,668
Utilities	$32,367,152	$34,077,197	$1,710,044
School Supplies and Materials	$14,305,568	$32,229,713	$17,924,146
School Technology and Equipment	$23,910,526	$26,583,269	$2,672,742
Vocational Education Supplies	$3,044,091	$2,898,566	-$145,526
Gifted and Talented	$2,791,791	$2,658,327	-$133,464
Professional Development	$11,167,164	$10,633,307	-$533,856
Assessment	$3,432,942	$3,432,942	$0
Student Activities	$27,638,730	$30,735,052	$3,096,322
Total	**$165,058,871**	**$187,431,042**	**$22,372,171**

Source: LSO Analysis and Calculations of Estimated 2013-2014 Funding Models.

The estimated difference in the cost-based funding level and the legislative funding level for non-personnel components for school year 2014-2015 is $21.0 million. The estimated difference for each component can be seen in Table 4.

Table 4. Estimated School Year 2014-2015 Difference of Cost-Based and Model Funding Levels.

Non-Personnel Model Component	Cost-Based Funding Level	Legislative Funding Level	Difference
Central Office Non-Personnel	$33,995,905	$31,911,180	-$2,084,726
Operations and Maintenance Supplies	$13,085,167	$12,282,748	-$802,420
Utilities	$32,027,297	$34,077,197	$2,049,899
School Supplies and Materials	$14,468,621	$32,231,774	$17,763,153
School Technology and Equipment	$24,121,754	$26,592,650	$2,470,895
Vocational Education Supplies	$3,087,926	$2,898,566	-$189,360
Gifted and Talented	$2,816,454	$2,659,265	-$157,189
Professional Development	$11,265,816	$10,637,060	-$628,756
Assessment	$3,434,153	$3,434,153	$0
Student Activities	$28,046,622	$30,605,550	$2,558,929
Total	**$166,349,717**	**$187,330,142**	**$20,980,425**

Source: LSO Analysis and Calculations of Estimated 2013-2014 Funding Models.

ADDITIONAL INFORMATION

The monitoring process also incorporates by law the annual report produced by the Department of Education based upon resource utilization patterns of school districts in comparison to model-generated resources, as initiated by state consultants following 2005 model recalibration efforts. A summary of this report is included as Appendix D of this report.

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EXTERNAL COST ADJUSTMENT

The lawful purpose of this report series is to provide information to the Legislature with which to make any decision regarding appropriate Model adjustment. In a cost-based Model, the external cost adjustment maintains the purchasing power at a cost-based level. In the event that adjustments are needed to one or more Model categories based upon information gathered from this monitoring process, the Legislature prescribed a set of indices that can be targeted to specific parts of the Model to maintain the cost-basis of the Model as a whole.

The monitoring process and report series provide information to the Legislature to ensure maintenance of the cost-basis of Model funding between Model recalibrations and allows the Legislature more precision to infuse any additional funding into the Model as determined necessary. The monitoring process is designed to identify options to address market pressures, both on Model components and the Model as a whole.

Based upon the reports from the Department of Workforce Services Research and Planning Division, in consultation with Dr. Christiana Stoddard, it appears that cost pressures on professional and non-professional salary levels in Wyoming school districts have not changed in significant ways since 2010-2011. In addition, preliminary data from the Department of Education suggests that use of Model generated resources by school districts continues to replicate trends from previous years.

Regarding the cost-based funding levels, non-personnel funding in the Model continues to exceed cost-based levels for school year 2013-2014 by an estimated $22.4 million. Adjusting the cost-based levels by the recommended energy and educational materials cost indices decreases the difference in the funding gap for school year 2014-2015 by an estimated $1.4 million to $21.0 million.

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	Cost-Based Funding Level			*Legislative Funding Level*			*Difference*	
School-Level Resources	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**
Principals	269.07	$ 30,903,753	2.35%	269.07	$ 31,168,962	2.23%	0.00	$ (265,209)
Assistant Principals	80.90	$ 8,461,384	0.64%	80.90	$ 8,415,235	0.60%	0.00	$ 46,149
Small/ALE School Assistant Principals	75.00	$ 7,273,356	0.55%	75.00	$ 7,419,669	0.53%	0.00	$ (146,314)
School Secretarial	323.38	$ 17,541,434	1.33%	323.38	$ 17,649,471	1.26%	0.00	$ (108,036)
School Clerical	374.95	$ 16,873,808	1.28%	374.95	$ 16,923,120	1.21%	0.00	$ (49,313)
Core Teachers	4,364.56	$ 332,890,951	25.32%	4,932.48	$ 377,990,489	27.05%	-567.92	$ (45,099,538)
Specialist Teachers	996.11	$ 75,957,697	5.78%	1,248.46	$ 95,653,600	6.85%	-252.35	$ (19,695,903)
Additional Voc Ed Teachers	0.00	$ -	0.00%	37.96	$ 2,900,537	0.21%	-37.96	$ (2,900,537)
Minimum Teachers	97.90	$ 7,087,046	0.54%	204.82	$ 15,237,078	1.09%	-106.92	$ (8,150,032)
Alternative School Teachers	129.98	$ 10,080,423	0.77%	129.98	$ 10,074,463	0.72%	0.00	$ 5,960
Small School Teachers	176.47	$ 13,139,740	1.00%	176.47	$ 13,531,107	0.97%	0.00	$ (391,367)
Small District Minimum Teachers	0.00	$ -	0.00%	14.28	$ 1,109,581	0.08%	-14.28	$ (1,109,581)
Instructional Facilitators	444.07	$ 33,866,239	2.58%	266.44	$ 20,655,113	1.48%	177.63	$ 13,211,126
Summer School/Extended Day Teachers	297.75	$ 22,729,250	1.73%	180.33	$ 13,807,706	0.99%	117.42	$ 8,921,544
Substitute Teachers		$ 6,469,706	0.00		$ 6,678,501	0.48%	0.00	$ (208,796)
Tutors	378.31	$ 28,875,709	2.20%	378.31	$ 28,985,150	2.07%	0.00	$ (109,442)
ELL Teachers	35.56	$ 2,718,573	0.21%	35.56	$ 2,776,210	0.20%	0.00	$ (57,637)
Librarians	0.00	$ -	N/A	282.90	$ 21,580,827	1.54%	-282.90	$ (21,580,827)
Library Media Technicians	0.00	$ -	N/A	134.34	$ 9,428,243	0.67%	-134.34	$ (9,428,243)
Pupil Support	378.31	$ 28,875,709	2.20%	378.31	$ 28,985,150	2.07%	0.00	$ (109,442)
Secondary Guidance Counselors	169.27	$ 12,878,981	0.98%	169.27	$ 12,958,940	0.93%	0.00	$ (79,959)
Supervisory Aides	631.54	$ 23,261,195	1.77%	631.54	$ 23,329,206	1.67%	0.00	$ (68,011)
Subtotal	***9,223.12***	***$ 679,884,953***	***51.72%***	***10,324.76***	***$ 767,258,358***	***54.91%***	***-1,101.64***	***$ (87,373,405)***
District-Level Staff Resources								
Central Office Administration	260.52	$ 34,700,712	2.64%	279.57	$ 37,762,521	2.70%	-19.05	$ (3,061,808)
Central Office Clerical	298.62	$ 17,081,408	1.30%	317.67	$ 18,317,602	1.31%	-19.05	$ (1,236,194)
Librarians	242.03	$ 18,440,688	1.40%	0.00	$ -	0.00%	242.03	$ 18,440,688
Library Clerks	145.54	$ 6,529,004	0.50%	0.00	$ -	0.00%	145.54	$ 6,529,004
Computer Technicians	93.76	$ 6,551,719	0.50%	0.00	$ -	0.00%	93.76	$ 6,551,719
Custodians	719.82	$ 36,156,279	2.75%	738.09	$ 37,282,009	2.67%	-18.28	$ (1,125,730)
Maintenance Workers	328.01	$ 18,805,053	1.43%	328.01	$ 18,961,428	1.36%	0.00	$ (156,376)
Groundskeepers	439.19	$ 25,187,040	1.92%	439.19	$ 25,452,610	1.82%	0.00	$ (265,570)
Subtotal	***2,527.50***	***$ 163,451,902***	***12.43%***	***2,102.53***	***$ 137,776,170***	***9.86%***	***424.96***	***$ 25,675,732***
Non-Staff Resources								
Central Office Non-Personnel		$ 33,995,905	2.59%		$ 31,911,180	2.28%		$ 2,084,726
Operations and Maintenance Supplies		$ 13,085,167	1.00%		$ 12,282,748	0.88%		$ 802,420
Utilities		$ 32,027,297	2.44%		$ 34,077,197	2.44%		$ (2,049,899)
School Supplies and Materials		$ 14,468,621	1.10%		$ 32,231,774	2.31%		$ (17,763,153)
School Technology and Equipment		$ 24,121,754	1.83%		$ 26,592,650	1.90%		$ (2,470,895)
Vocational Education Supplies		$ 3,087,926	0.23%		$ 2,898,566	0.21%		$ 189,360
Gifted and Talented		$ 2,816,454	0.21%		$ 2,659,265	0.19%		$ 157,189
Professional Development		$ 11,265,816	0.86%		$ 10,637,060	0.76%		$ 628,756
Assessment		$ 3,434,153	0.26%		$ 3,434,153	0.25%		$ -
Student Activities		$ 28,046,622	2.13%		$ 30,605,550	2.19%		$ (2,558,929)
Subtotal		***$ 166,349,717***	***12.65%***		***$ 187,330,142***	***13.41%***		***$ (20,980,425)***
Reimbursable Costs								
Special Education[1]		$ 212,938,431	16.20%		$ 212,938,431	15.24%		$ -
Transportation		$ 74,407,064	5.66%		$ 74,407,064	5.33%		$ -
Other Reimburseables		$ 17,554,621	1.34%		$ 17,554,621	1.26%		$ -
Subtotal		***$ 304,900,116***	***23.19%***		***$ 304,900,116***	***21.82%***		***$ -***
Total Estimated Guarantee and Categorical[2,3]	**11,750.62**	**$ 1,314,586,688**		**12,427.29**	**$ 1,397,264,786**		**-676.68**	**$ (82,678,098)**

Notes:

1. Difference cannot be calculated, but consultants Special Education recommendation was a census approach to staff allocations for special education services to children with mild and moderate disabilities at the district level, but still 100% reimburse children with severe and profound disabilities.

2. Consultant recommendation uses the Hedonic Wage Index as the only index for the Regional Cost Adjustment as updated in 2011.

3. This difference is exclusive of any additional funding provided by the "price" of the personnel resources (the statewide average model salary) being set higher than necessary and an estimated additional $1,875,000 for 0.25% for employee retirement contributions..

	Cost-Based Funding Level			*Legislative Funding Level*			*Difference*	
School-Level Resources	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**
Principals	275.97	$ 31,590,144	2.44%	270.82	$ 31,286,632	2.27%	5.15	$ 303,512
Assistant Principals	80.37	$ 8,360,518	0.65%	80.37	$ 8,335,818	0.60%	0.00	$ 24,700
Small/ALE School Assistant Principals	65.00	$ 6,201,175	0.48%	72.00	$ 7,078,819	0.51%	-7.00	$ (877,644)
School Secretarial	329.57	$ 17,704,021	1.37%	324.42	$ 17,559,648	1.27%	5.15	$ 144,373
School Clerical	380.13	$ 16,901,136	1.31%	375.70	$ 16,776,249	1.21%	4.42	$ 124,887
Core Teachers	4,389.37	$ 332,430,475	25.70%	4,931.81	$ 375,984,640	27.23%	-542.44	$ (43,554,165)
Specialist Teachers	1,005.61	$ 76,149,813	5.89%	1,249.54	$ 95,235,021	6.90%	-243.93	$ (19,085,208)
Additional Voc Ed Teachers	0.00	$ -	0.00%	38.08	$ 2,895,122	0.21%	-38.08	$ (2,895,122)
Minimum Teachers	122.51	$ 8,922,225	0.69%	216.83	$ 16,059,475	1.16%	-94.33	$ (7,137,250)
Alternative School Teachers	0.00	$ -	0.00%	132.43	$ 10,209,476	0.74%	-132.43	$ (10,209,476)
Small School Teachers	196.60	$ 14,487,736	1.12%	163.72	$ 12,412,395	0.90%	32.88	$ 2,075,341
Small District Minimum Teachers	0.00	$ -	0.00%	14.31	$ 1,115,305	0.08%	-14.31	$ (1,115,305)
Instructional Facilitators	447.49	$ 33,888,459	2.62%	266.50	$ 20,545,499	1.49%	180.99	$ 13,342,960
Summer School/Extended Day Teachers	303.21	$ 22,990,599	1.78%	180.40	$ 13,736,313	0.99%	122.80	$ 9,254,286
Substitute Teachers		$ 6,436,958	0.00		$ 6,681,050	0.48%	0.00	$ (244,092)
Tutors	385.05	$ 29,192,889	2.26%	378.79	$ 28,865,334	2.09%	6.26	$ 327,555
ELL Teachers	35.83	$ 2,720,152	0.21%	35.56	$ 2,761,368	0.20%	0.27	$ (41,216)
Librarians	0.00	$ -	N/A	283.49	$ 21,511,928	1.56%	-283.49	$ (21,511,928)
Library Media Technicians	0.00	$ -	N/A	134.96	$ 9,414,781	0.68%	-134.96	$ (9,414,781)
Pupil Support	385.05	$ 29,192,889	2.26%	378.79	$ 28,865,334	2.09%	6.26	$ 327,555
Secondary Guidance Counselors	172.84	$ 13,062,091	1.01%	170.05	$ 12,947,691	0.94%	2.79	$ 114,401
Supervisory Aides	637.55	$ 23,136,152	1.79%	632.02	$ 23,034,649	1.67%	5.53	$ 101,503
Subtotal	***9,212.15***	***$ 673,367,434***	***52.05%***	***10,330.62***	***$ 763,312,549***	***55.28%***	***-1,118.47***	***$ (89,945,115)***
District-Level Staff Resources								
Central Office Administration	260.42	$ 34,544,479	2.67%	279.46	$ 37,673,737	2.73%	-19.04	$ (3,129,258)
Central Office Clerical	298.50	$ 16,909,317	1.31%	317.54	$ 18,166,321	1.32%	-19.04	$ (1,257,004)
Librarians	241.58	$ 18,273,295	1.41%	0.00	$ -	0.00%	241.58	$ 18,273,295
Library Clerks	145.95	$ 6,466,433	0.50%	0.00	$ -	0.00%	145.95	$ 6,466,433
Computer Technicians	93.71	$ 6,496,572	0.50%	0.00	$ -	0.00%	93.71	$ 6,496,572
Custodians	722.12	$ 35,869,677	2.77%	741.36	$ 37,100,542	2.69%	-19.25	$ (1,230,865)
Maintenance Workers	327.00	$ 18,567,055	1.44%	327.00	$ 18,752,679	1.36%	0.00	$ (185,624)
Groundskeepers	439.16	$ 24,943,170	1.93%	439.16	$ 25,245,940	1.83%	0.00	$ (302,770)
Subtotal	***2,528.44***	***$ 162,069,999***	***12.53%***	***2,104.52***	***$ 136,939,220***	***9.92%***	***423.92***	***$ 25,130,779***
Non-Staff Resources								
Central Office Non-Personnel		$ 33,501,491	2.59%		$ 31,899,922	2.31%		$ 1,601,569
Operations and Maintenance Supplies		$ 12,899,416	1.00%		$ 12,282,748	0.89%		$ 616,668
Utilities		$ 32,367,152	2.50%		$ 34,077,197	2.47%		$ (1,710,044)
School Supplies and Materials		$ 14,305,568	1.11%		$ 32,229,713	2.33%		$ (17,924,146)
School Technology and Equipment		$ 23,910,526	1.85%		$ 26,583,269	1.93%		$ (2,672,742)
Vocational Education Supplies		$ 3,044,091	0.24%		$ 2,898,566	0.21%		$ 145,526
Gifted and Talented		$ 2,791,791	0.22%		$ 2,658,327	0.19%		$ 133,464
Professional Development		$ 11,167,164	0.86%		$ 10,633,307	0.77%		$ 533,856
Assessment		$ 3,432,942	0.27%		$ 3,432,942	0.25%		$ -
Student Activities		$ 27,638,730	2.14%		$ 30,735,052	2.23%		$ (3,096,322)
Subtotal		***$ 165,058,871***	***12.76%***		***$ 187,431,042***	***13.57%***		***$ (22,372,171)***
Reimbursable Costs								
Special Education[1]		$ 204,748,491	15.83%		$ 204,748,491	14.83%		$ -
Transportation		$ 71,545,254	5.53%		$ 71,545,254	5.18%		$ -
Other Reimburseables		$ 16,879,443	1.30%		$ 16,879,443	1.22%		$ -
Subtotal		***$ 293,173,188***	***22.66%***		***$ 293,173,188***	***21.23%***		***$ -***
Total Estimated Guarantee and Categorical[2,3]	**11,740.59**	**$ 1,293,669,492**		**12,435.14**	**$ 1,380,856,000**		**-694.54**	**$ (87,186,507)**

Notes:

1. Difference cannot be calculated, but consultants Special Education recommendation was a census approach to staff allocations for special education services to children with mild and moderate disabilities at the district level, but still 100% reimburse children with severe and profound disabilities.

2. Consultant recommendation uses the Hedonic Wage Index as the only index for the Regional Cost Adjustment as updated in 2011.

3. This difference is exclusive of any additional funding provided by the "price" of the personnel resources (the statewide average model salary) being set higher than necessary and an additional $1,875,000 for 0.25% for employee retirement contributions.

	Cost-Based Funding Level			*Legislative Funding Level*			*Difference*	
School-Level Resources	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**
Principals	274.48	$ 31,573,857	2.46%	269.92	$ 31,383,318	2.28%	4.56	$ 190,540
Assistant Principals	78.31	$ 8,193,050	0.64%	78.31	$ 8,183,711	0.60%	0.00	$ 9,339
Small/ALE School Assistant Principals	63.00	$ 6,027,206	0.47%	69.00	$ 6,824,626	0.50%	-6.00	$ (797,420)
School Secretarial	326.32	$ 17,664,418	1.38%	321.77	$ 17,570,637	1.28%	4.56	$ 93,781
School Clerical	376.09	$ 16,900,683	1.32%	371.70	$ 16,793,362	1.22%	4.40	$ 107,322
Core Teachers	4,326.94	$ 331,508,225	25.86%	4,872.06	$ 376,184,602	27.37%	-545.12	$ (44,676,377)
Specialist Teachers	991.71	$ 75,963,727	5.93%	1,235.94	$ 95,410,265	6.94%	-244.23	$ (19,446,538)
Additional Voc Ed Teachers	0.00	$ -	0.00%	37.29	$ 2,864,734	0.21%	-37.29	$ (2,864,734)
Minimum Teachers	115.31	$ 8,450,436	0.66%	220.16	$ 16,459,321	1.20%	-104.85	$ (8,008,885)
Alternative School Teachers	0.00	$ -	0.00%	139.22	$ 10,913,810	0.79%	-139.22	$ (10,913,810)
Small School Teachers	193.61	$ 14,390,707	1.12%	153.29	$ 11,784,931	0.86%	40.32	$ 2,605,776
Small District Minimum Teachers	0.00	$ -	0.00%	16.08	$ 1,234,793	0.09%	-16.08	$ (1,234,793)
Instructional Facilitators	442.28	$ 33,884,342	2.64%	263.39	$ 20,543,465	1.49%	178.89	$ 13,340,877
Summer School/Extended Day Teachers	291.65	$ 22,342,377	1.74%	173.80	$ 13,379,089	0.97%	117.85	$ 8,963,288
Substitute Teachers		$ 6,328,972	0.00		$ 6,600,542	0.48%	0.00	$ (271,571)
Tutors	374.87	$ 28,730,581	2.24%	369.13	$ 28,474,534	2.07%	5.74	$ 256,047
ELL Teachers	33.79	$ 2,591,556	0.20%	33.58	$ 2,639,705	0.19%	0.21	$ (48,149)
Librarians	0.00	$ -	N/A	279.86	$ 21,504,134	1.56%	-279.86	$ (21,504,134)
Library Media Technicians	0.00	$ -	N/A	134.12	$ 9,427,958	0.69%	-134.12	$ (9,427,958)
Pupil Support	374.87	$ 28,730,581	2.24%	369.13	$ 28,474,534	2.07%	5.74	$ 256,047
Secondary Guidance Counselors	171.76	$ 13,136,470	1.02%	168.99	$ 13,035,084	0.95%	2.77	$ 101,386
Supervisory Aides	630.32	$ 23,234,294	1.81%	624.83	$ 23,152,231	1.68%	5.49	$ 82,063
Subtotal	***9,065.30***	***$ 669,651,484***	***52.23%***	***10,201.54***	***$ 762,839,387***	***55.50%***	***-1,136.24***	***$ (93,187,903)***
District-Level Staff Resources								
Central Office Administration	258.35	$ 34,303,736	2.68%	277.15	$ 37,436,410	2.72%	-18.81	$ (3,132,674)
Central Office Clerical	295.96	$ 16,882,231	1.32%	314.77	$ 18,153,778	1.32%	-18.81	$ (1,271,548)
Librarians	238.44	$ 18,234,502	1.42%	0.00	$ -	0.00%	238.44	$ 18,234,502
Library Clerks	145.40	$ 6,510,567	0.51%	0.00	$ -	0.00%	145.40	$ 6,510,567
Computer Technicians	92.65	$ 6,464,267	0.50%	0.00	$ -	0.00%	92.65	$ 6,464,267
Custodians	725.03	$ 36,457,859	2.84%	744.29	$ 37,746,623	2.75%	-19.25	$ (1,288,764)
Maintenance Workers	326.22	$ 18,723,071	1.46%	326.22	$ 18,932,098	1.38%	0.00	$ (209,028)
Groundskeepers	437.05	$ 25,057,103	1.95%	437.05	$ 25,396,736	1.85%	0.00	$ (339,633)
Subtotal	***2,519.11***	***$ 162,633,335***	***12.69%***	***2,099.48***	***$ 137,665,645***	***10.01%***	***419.62***	***$ 24,967,690***
Non-Staff Resources								
Central Office Non-Personnel		$ 32,222,573	2.51%		$ 31,535,108	2.29%		$ 687,465
Operations and Maintenance Supplies		$ 12,489,027	0.97%		$ 12,222,575	0.89%		$ 266,452
Utilities		$ 34,124,991	2.66%		$ 34,087,478	2.48%		$ 37,512
School Supplies and Materials		$ 13,762,063	1.07%		$ 31,866,589	2.32%		$ (18,104,526)
School Technology and Equipment		$ 22,997,743	1.79%		$ 26,279,257	1.91%		$ (3,281,514)
Vocational Education Supplies		$ 2,862,734	0.22%		$ 2,801,658	0.20%		$ 61,076
Gifted and Talented		$ 2,685,214	0.21%		$ 2,627,926	0.19%		$ 57,289
Professional Development		$ 10,740,858	0.84%		$ 10,511,703	0.76%		$ 229,155
Assessment		$ 3,393,682	0.26%		$ 3,393,682	0.25%		$ -
Student Activities		$ 26,852,144	2.09%		$ 31,180,443	2.27%		$ (4,328,299)
Subtotal		***$ 162,131,031***	***12.65%***		***$ 186,506,419***	***13.57%***		***$ (24,375,389)***
Reimbursable Costs								
Special Education[1]		$ 202,037,373	15.76%		$ 202,037,373	14.70%		$ -
Transportation		$ 69,218,381	5.40%		$ 69,218,381	5.04%		$ -
Other Reimburseables		$ 16,336,497	1.27%		$ 16,336,497	1.19%		$ -
Subtotal		***$ 287,592,251***	***22.43%***		***$ 287,592,251***	***20.92%***		***$ -***
Total Estimated Guarantee and Categorical[2,3]	**11,584.40**	**$ 1,282,008,100**		**12,301.02**	**$ 1,374,603,701**		**-716.62**	**$ (92,595,601)**

Notes:

1. Difference cannot be calculated, but consultants Special Education recommendation was a census approach to staff allocations for special education services to children with mild and moderate disabilities at the district level, but still 100% reimburse children with severe and profound disabilities.

2. Consultant recommendation uses the Hedonic Wage Index as the only index for the Regional Cost Adjustment as updated in 2011.

3. This difference is exclusive of any additional funding provided by the "price" of the personnel resources (the statewide average model salary) being set higher than necessary and $1,590,085 for charter school adjustments.

	Cost-Based Funding Level			*Legislative Funding Level*			*Difference*	
School-Level Resources	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**
Principals	274.24	$ 31,322,806	2.53%	270.12	$ 31,404,533	2.34%	4.12	$ (81,727)
Assistant Principals	74.25	$ 7,661,053	0.62%	74.25	$ 7,755,243	0.58%	0.00	$ (94,189)
Small/ALE School Assistant Principals	66.00	$ 6,368,030	0.51%	71.00	$ 7,037,716	0.53%	-5.00	$ (669,686)
School Secretarial	322.78	$ 17,277,480	1.39%	318.66	$ 17,319,758	1.29%	4.12	$ (42,278)
School Clerical	370.21	$ 16,409,965	1.32%	366.02	$ 16,431,615	1.23%	4.19	$ (21,650)
Core Teachers	4,255.80	$ 322,832,287	26.07%	4,802.33	$ 370,248,368	27.63%	-546.53	$ (47,416,081)
Specialist Teachers	974.75	$ 73,925,236	5.97%	1,218.78	$ 93,951,203	7.01%	-244.03	$ (20,025,968)
Additional Voc Ed Teachers	0.00	$ -	0.00%	37.89	$ 2,902,714	0.22%	-37.89	$ (2,902,714)
Minimum Teachers	107.68	$ 7,856,757	0.63%	205.63	$ 15,338,919	1.14%	-97.95	$ (7,482,162)
Alternative School Teachers	0.00	$ -	0.00%	143.65	$ 11,195,936	0.84%	-143.65	$ (11,195,936)
Small School Teachers	226.84	$ 17,052,562	1.38%	177.51	$ 13,659,664	1.02%	49.33	$ 3,392,898
Small District Minimum Teachers	0.00	$ -	0.00%	16.15	$ 1,216,164	0.09%	-16.15	$ (1,216,164)
Instructional Facilitators	435.92	$ 33,065,891	2.67%	259.67	$ 20,266,889	1.51%	176.25	$ 12,799,001
Summer School/Extended Day Teachers	284.15	$ 21,533,144	1.74%	169.50	$ 13,021,308	0.97%	114.65	$ 8,511,836
Substitute Teachers		$ 6,246,276	0.50%		$ 6,522,412	0.49%	0.00	$ (276,136)
Tutors	364.80	$ 27,667,007	2.23%	359.67	$ 27,694,252	2.07%	5.13	$ (27,245)
ELL Teachers	31.75	$ 2,429,055	0.20%	31.62	$ 2,480,127	0.19%	0.13	$ (51,071)
Librarians	0.00	$ -	0.00%	276.97	$ 21,258,006	1.59%	-276.97	$ (21,258,006)
Library Media Technicians	0.00	$ -	0.00%	132.47	$ 9,123,532	0.68%	-132.47	$ (9,123,532)
Pupil Support	364.80	$ 27,667,007	2.23%	359.67	$ 27,694,252	2.07%	5.13	$ (27,245)
Secondary Guidance Counselors	169.55	$ 12,849,725	1.04%	166.91	$ 12,859,450	0.96%	N/A	$ (9,725)
Supervisory Aides	621.03	$ 22,533,965	1.82%	615.79	$ 22,606,042	1.69%	5.24	$ (72,077)
Subtotal	***8,944.55***	***$ 654,698,246***	***52.86%***	***10,074.25***	***$ 751,988,104***	***56.12%***	***-1,132.34***	***$ (97,289,858)***
District-Level Staff Resources								
Central Office Administration	256.33	$ 33,512,897	2.71%	274.91	$ 36,798,814	2.75%	-18.58	$ (3,285,917)
Central Office Clerical	293.49	$ 16,573,664	1.34%	312.07	$ 17,916,705	1.34%	-18.58	$ (1,343,041)
Librarians	236.10	$ 17,879,377	1.44%	0.00	$ -	0.00%	236.10	$ 17,879,377
Library Clerks	143.92	$ 6,359,893	0.51%	0.00	$ -	0.00%	143.92	$ 6,359,893
Computer Technicians	91.61	$ 6,217,427	0.50%	0.00	$ -	0.00%	91.61	$ 6,217,427
Custodians	721.69	$ 35,883,607	2.90%	740.87	$ 37,368,607	2.79%	-19.17	$ (1,484,999)
Maintenance Workers	326.43	$ 18,562,731	1.50%	326.43	$ 18,863,383	1.41%	0.00	$ (300,653)
Groundskeepers	435.62	$ 24,800,758	2.00%	435.62	$ 25,189,343	1.88%	0.00	$ (388,586)
Subtotal	***2,505.20***	***$ 159,790,354***	***12.90%***	***2,089.89***	***$ 136,136,852***	***10.16%***	***415.30***	***$ 23,653,502***
Non-Staff Resources								
Central Office Non-Personnel		$ 31,172,759	2.52%		$ 31,172,759	2.33%		$ -
Operations and Maintenance Supplies		$ 12,316,537	0.99%		$ 12,316,537	0.92%		$ -
Utilities		$ 34,072,968	2.75%		$ 34,072,968	2.54%		$ -
School Supplies and Materials		$ 13,307,858	1.07%		$ 31,487,953	2.35%		$ (18,180,095)
School Technology and Equipment		$ 22,248,474	1.80%		$ 25,977,299	1.94%		$ (3,728,825)
Vocational Education Supplies		$ 2,777,962	0.22%		$ 2,777,962	0.21%		$ -
Gifted and Talented		$ 2,597,730	0.21%		$ 2,597,730	0.19%		$ -
Professional Development		$ 10,390,920	0.84%		$ 10,390,920	0.78%		$ -
Assessment		$ 3,354,688	0.27%		$ 3,354,688	0.25%		$ -
Student Activities		$ 25,717,526	2.08%		$ 31,583,616	2.36%		$ (5,866,090)
Subtotal		***$ 157,957,420***	***12.75%***		***$ 185,732,430***	***13.86%***		***$ (27,775,010)***
Reimbursable Costs								
Special Education[1]		$ 188,869,347	15.25%		$ 188,869,347	14.10%		$ -
Transportation		$ 63,236,070	5.11%		$ 63,236,070	4.72%		$ -
Other Reimburseables		$ 13,996,252	1.13%		$ 13,996,252	1.04%		$ -
Subtotal		***$ 266,101,669***	***21.48%***		***$ 266,101,669***	***19.86%***		$ -
Total Estimated Guarantee and Categorical[2,3]	**11,449.74**	**$ 1,238,547,690**		**12,164.14**	**$ 1,339,959,055**		**-714.40**	**$ (101,411,365)**

Notes:

1. Difference cannot be calculated, but consultants Special Education recommendation was a census approach to staff allocations for special education services to children with mild and moderate disabilities at the district level, but still 100% reimburse children with severe and profound disabilities.

2. Consultant recommendation uses the Hedonic Wage Index as the only index for the Regional Cost Adjustment as calculated in 2005.

3. This difference is exclusive of any additional funding provided by the "price" of the personnel resources (the statewide average model salary) being set higher than necessary, an additional $9,754,407 provided to school districts for additional 1.43 employee retirement contributions and $811,193 for charter school adjustments.

	Cost-Based Funding Level			*Legislative Funding Level*			*Difference*	
School-Level Resources	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**
Principals	288.27	$ 31,997,205	2.67%	288.27	$ 32,629,291	2.56%	0.00	$ (632,086)
Assistant Principals	53.32	$ 5,357,764	0.45%	53.32	$ 5,414,628	0.42%	0.00	$ (56,864)
Small/ALE School Assistant Principals	72.00	$ 6,754,520	0.56%	72.00	$ 6,922,809	0.54%	0.00	$ (168,289)
School Secretarial	316.43	$ 16,020,068	1.33%	316.43	$ 16,287,531	1.28%	0.00	$ (267,463)
School Clerical	360.75	$ 14,992,261	1.25%	360.75	$ 15,204,291	1.19%	0.00	$ (212,030)
Core Teachers	4,170.07	$ 303,375,994	25.27%	4,746.90	$ 351,380,778	27.56%	-576.83	$ (48,004,784)
Specialist Teachers	834.01	$ 60,675,199	5.05%	1,203.91	$ 89,105,207	6.99%	-369.89	$ (28,430,008)
Additional Voc Ed Teachers	31.45	$ 2,279,683	0.19%	37.44	$ 2,758,146	0.22%	-5.99	$ (478,463)
Minimum Teachers	108.09	$ 7,576,495	0.63%	217.31	$ 15,560,739	1.22%	-109.22	$ (7,984,244)
Alternative School Teachers	156.25	$ 11,519,871	0.96%	156.25	$ 11,687,567	0.92%	0.00	$ (167,696)
Small School Teachers	176.15	$ 12,660,302	1.05%	183.27	$ 13,556,036	1.06%	-7.12	$ (895,734)
Small District Minimum Teachers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Instructional Facilitators	427.60	$ 31,105,622	2.59%	217.92	$ 16,000,000	1.26%	209.68	$ 15,105,622
Summer School/Extended Day Teachers	264.27	$ 19,198,041	1.60%	161.21	$ 10,000,000	0.78%	103.07	$ 9,198,041
Substitute Teachers		$ 6,120,639	0.51%		$ 6,473,246	0.51%	0.00	$ (352,607)
Tutors	347.88	$ 25,294,346	2.11%	347.88	$ 25,707,711	2.02%	0.00	$ (413,365)
ELL Teachers	31.52	$ 2,319,042	0.19%	31.52	$ 2,381,622	0.19%	0.00	$ (62,580)
Librarians	274.30	$ 19,411,236	1.62%	274.30	$ 19,755,798	1.55%	0.00	$ (344,562)
Library Media Technicians	130.53	$ 8,419,405	0.70%	130.53	$ 8,561,394	0.67%	0.00	$ (141,989)
Pupil Support	512.35	$ 36,468,781	3.04%	512.35	$ 37,018,907	2.90%	0.00	$ (550,126)
Secondary Guidance Counselors	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Supervisory Aides	607.97	$ 20,433,569	1.70%	607.97	$ 20,699,960	1.62%	0.00	$ (266,391)
Subtotal	***9,163.22***	***$ 641,980,044***	***53.48%***	***9,919.54***	***$ 707,105,662***	***55.47%***	***-756.32***	***$ (65,125,618)***
District-Level Staff Resources								
Central Office Administration	272.94	$ 34,804,954	2.90%	272.94	$ 35,453,496	2.78%	0.00	$ (648,542)
Central Office Clerical	309.65	$ 16,591,381	1.38%	309.65	$ 16,870,127	1.32%	0.00	$ (278,746)
Librarians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Library Clerks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Computer Technicians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Custodians	708.53	$ 33,193,277	2.77%	728.58	$ 34,671,008	2.72%	-20.05	$ (1,477,731)
Maintenance Workers	323.36	$ 17,431,737	1.45%	323.36	$ 17,736,841	1.39%	0.00	$ (305,104)
Groundskeepers	430.56	$ 23,246,518	1.94%	430.56	$ 23,634,501	1.85%	0.00	$ (387,983)
Subtotal	***2,045.05***	***$ 125,267,868***	***10.44%***	***2,065.10***	***$ 128,365,974***	***10.07%***	***-20.05***	***$ (3,098,106)***
Non-Staff Resources								
Central Office Non-Personnel		$ 30,836,195	2.57%		$ 30,836,195	2.42%		$ -
Operations and Maintenance Supplies		$ 11,875,887	0.99%		$ 11,875,887	0.93%		$ -
Utilities		$ 33,152,577	2.76%		$ 33,152,577	2.60%		$ -
School Supplies and Materials		$ 31,134,572	2.59%		$ 31,134,572	2.44%		$ -
School Technology and Equipment		$ 25,696,830	2.14%		$ 25,696,830	2.02%		$ -
Vocational Education Supplies		$ 2,836,097	0.24%		$ 2,836,097	0.22%		$ -
Gifted and Talented		$ 2,569,683	0.21%		$ 2,569,683	0.20%		$ -
Professional Development		$ 10,278,732	0.86%		$ 10,278,732	0.81%		$ -
Assessment		$ 3,318,468	0.28%		$ 3,318,468	0.26%		$ -
Student Activities		$ 25,696,830	2.14%		$ 31,942,444	2.51%		$ (6,245,615)
Subtotal		***$ 177,395,870***	***14.78%***		***$ 183,641,485***	***14.40%***		***$ (6,245,615)***
Reimbursable Costs								
Special Education[1]		$ 181,412,753	15.11%		$ 181,412,753	14.23%		$ -
Transportation		$ 60,806,488	5.07%		$ 60,806,488	4.77%		$ -
Other Reimburseables		$ 13,518,258	1.13%		$ 13,518,258	1.06%		$ -
Subtotal		***$ 255,737,499***	***21.30%***		***$ 255,737,499***	***20.06%***		***$ -***
Total Estimated Guarantee and Categorical[2,3]	**11,208.27**	**$ 1,200,381,280**		**11,984.64**	**$ 1,274,850,620**		**-776.37**	**$ (74,469,340)**

Notes:

1. Difference cannot be calculated, but consultants Special Education recommendation was a census approach to staff allocations for special education services to children with mild and moderate disabilities at the district level, but still 100% reimburse children with severe and profound disabilities.

2. Consultant recommendation uses the Hedonic Wage Index as the only index for the Regional Cost Adjustment as calculated in 2005.

3. This difference is exclusive of any additional funding provided by the "price" of the personnel resources (the statewide average model salary) being set higher than necessary.

	Cost-Based Funding Level			*Legislative Funding Level*			*Difference*	
School-Level Resources	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**
Principals	285.43	$ 31,402,866	2.69%	285.43	$ 31,994,153	2.57%	0.00	$ (591,287)
Assistant Principals	53.83	$ 5,348,317	0.46%	53.83	$ 5,400,563	0.43%	0.00	$ (52,246)
Small/ALE School Assistant Principals	73.00	$ 6,779,110	0.58%	73.00	$ 6,945,230	0.56%	0.00	$ (166,120)
School Secretarial	313.76	$ 15,679,386	1.34%	313.76	$ 15,930,251	1.28%	0.00	$ (250,866)
School Clerical	358.10	$ 14,633,610	1.25%	358.10	$ 14,832,600	1.19%	0.00	$ (198,991)
Core Teachers	4,117.20	$ 297,328,871	25.50%	4,689.99	$ 344,340,724	27.64%	-572.79	$ (47,011,854)
Specialist Teachers	823.44	$ 59,465,774	5.10%	1,193.18	$ 87,592,432	7.03%	-369.74	$ (28,126,658)
Additional Voc Ed Teachers	32.51	$ 2,339,545	0.20%	38.70	$ 2,826,116	0.23%	-6.19	$ (486,571)
Minimum Teachers	113.38	$ 7,872,455	0.68%	224.07	$ 15,868,064	1.27%	-110.68	$ (7,995,609)
Alternative School Teachers	159.03	$ 11,664,948	1.00%	159.03	$ 11,824,953	0.95%	0.00	$ (160,005)
Small School Teachers	169.54	$ 11,977,075	1.03%	177.23	$ 12,876,008	1.03%	-7.69	$ (898,932)
Small District Minimum Teachers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Instructional Facilitators	422.97	$ 30,543,792	2.62%	270.01	$ 19,756,000	1.59%	152.96	$ 10,787,792
Summer School/Extended Day Teachers	237.73	$ 17,133,615	1.47%	145.02	$ 9,850,500	0.79%	92.72	$ 7,283,115
Substitute Teachers		$ 6,019,867	0.52%		$ 6,399,778	0.51%	0.00	$ (379,910)
Tutors	329.64	$ 23,797,006	2.04%	329.64	$ 24,169,255	1.94%	0.00	$ (372,249)
ELL Teachers	34.05	$ 2,474,558	0.21%	34.05	$ 2,534,531	0.20%	0.00	$ (59,973)
Librarians	271.55	$ 19,062,257	1.63%	271.55	$ 19,383,566	1.56%	0.00	$ (321,309)
Library Media Technicians	130.86	$ 8,334,339	0.71%	130.86	$ 8,469,275	0.68%	0.00	$ (134,936)
Pupil Support	494.53	$ 34,940,312	3.00%	494.53	$ 35,441,153	2.85%	0.00	$ (500,840)
Secondary Guidance Counselors	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Supervisory Aides	602.02	$ 19,786,324	1.70%	602.02	$ 20,033,588	1.61%	0.00	$ (247,263)
Subtotal	***9,022.57***	***$ 626,584,028***	***53.73%***	***9,843.99***	***$ 696,468,739***	***55.91%***	***-821.42***	***$ (69,884,712)***
District-Level Staff Resources								
Central Office Administration	271.14	$ 34,265,820	2.94%	271.14	$ 34,875,760	2.80%	0.00	$ (609,940)
Central Office Clerical	307.43	$ 16,307,507	1.40%	307.43	$ 16,573,290	1.33%	0.00	$ (265,783)
Librarians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Library Clerks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Computer Technicians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Custodians	701.74	$ 32,497,971	2.79%	721.74	$ 33,930,853	2.72%	-20.01	$ (1,432,882)
Maintenance Workers	322.38	$ 17,193,954	1.47%	322.38	$ 17,482,381	1.40%	0.00	$ (288,428)
Groundskeepers	428.92	$ 22,878,963	1.96%	428.92	$ 23,245,468	1.87%	0.00	$ (366,505)
Subtotal	***2,031.61***	***$ 123,144,215***	***10.56%***	***2,051.62***	***$ 126,107,753***	***10.12%***	***-20.01***	***$ (2,963,537)***
Non-Staff Resources								
Central Office Non-Personnel		$ 30,514,846	2.62%		$ 30,514,846	2.45%		$ -
Operations and Maintenance Supplies		$ 11,781,985	1.01%		$ 11,781,985	0.95%		$ -
Utilities		$ 33,152,577	2.84%		$ 33,152,577	2.66%		$ -
School Supplies and Materials		$ 30,846,067	2.65%		$ 30,846,067	2.48%		$ -
School Technology and Equipment		$ 25,429,038	2.18%		$ 25,429,038	2.04%		$ -
Vocational Education Supplies		$ 2,848,735	0.24%		$ 2,848,735	0.23%		$ -
Gifted and Talented		$ 2,542,904	0.22%		$ 2,542,904	0.20%		$ -
Professional Development		$ 10,171,615	0.87%		$ 10,171,615	0.82%		$ -
Assessment		$ 3,283,886	0.28%		$ 3,283,886	0.26%		$ -
Student Activities		$ 25,429,038	2.18%		$ 32,035,068	2.57%		$ (6,606,030)
Subtotal		***$ 176,000,691***	***15.09%***		***$ 182,606,721***	***14.66%***		***$ (6,606,030)***
Reimbursable Costs								
Special Education[1]		$ 168,900,642	14.48%		$ 168,900,642	13.56%		$ -
Transportation		$ 58,407,898	5.01%		$ 58,407,898	4.69%		$ -
Other Reimburseables		$ 13,109,469	1.12%		$ 13,109,469	1.05%		$ -
Subtotal		***$ 240,418,009***	***20.62%***		***$ 240,418,009***	***19.30%***		***$ -***
Total Estimated Guarantee and Categorical[2,3]	**11,054.18**	**$ 1,166,146,943**		**11,895.61**	**$ 1,245,601,222**		**-841.43**	**$ (79,454,279)**

Notes:

1. Difference cannot be calculated, but consultants Special Education recommendation was a census approach to staff allocations for special education services to children with mild and moderate disabilities at the district level, but still 100% reimburse children with severe and profound disabilities.

2. Consultant recommendation uses the Hedonic Wage Index as the only index for the Regional Cost Adjustment as calculated in 2005.

3. This difference is exclusive of any additional funding provided by the "price" of the personnel resources (the statewide average model salary) being set higher than necessary and doesn't include the $3,604,214 provided by the Legislature for food service.

	Cost-Based Funding Level			*Legislative Funding Level*			*Difference*	
School-Level Resources	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**
Principals	285.01	$ 30,207,253	2.71%	285.01	$ 30,709,327	2.57%	0.00	$ (502,074)
Assistant Principals	54.00	$ 5,169,949	0.46%	54.00	$ 5,203,418	0.44%	0.00	$ (33,469)
Small/ALE School Assistant Principals	78.00	$ 6,968,196	0.62%	78.00	$ 7,124,413	0.60%	0.00	$ (156,216)
School Secretarial	313.43	$ 15,133,125	1.36%	313.43	$ 15,343,897	1.29%	0.00	$ (210,772)
School Clerical	353.03	$ 13,955,198	1.25%	353.03	$ 14,112,729	1.18%	0.00	$ (157,531)
Core Teachers	4,048.76	$ 283,628,292	25.44%	4,617.14	$ 327,968,324	27.49%	-568.38	$ (44,340,032)
Specialist Teachers	809.75	$ 56,725,658	5.09%	1,178.63	$ 83,718,641	7.02%	-368.88	$ (26,992,982)
Additional Voc Ed Teachers	33.05	$ 2,308,365	0.21%	39.34	$ 2,783,680	0.23%	-6.29	$ (475,316)
Minimum Teachers	118.14	$ 7,924,935	0.71%	208.04	$ 14,244,980	1.19%	-89.90	$ (6,320,044)
Alternative School Teachers	161.01	$ 11,464,280	1.03%	161.01	$ 11,587,318	0.97%	0.00	$ (123,037)
Small School Teachers	181.93	$ 12,447,993	1.12%	189.33	$ 13,297,016	1.11%	-7.40	$ (849,023)
Small District Minimum Teachers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Instructional Facilitators	416.96	$ 29,209,003	2.62%	308.21	$ 21,894,306	1.84%	108.75	$ 7,314,697
Summer School/Extended Day Teachers	225.03	$ 15,733,630	1.41%	145.25	$ 9,850,500	0.83%	79.78	$ 5,883,130
Substitute Teachers		$ 5,726,942	0.51%		$ 6,086,502	0.51%	0.00	$ (359,560)
Tutors	321.69	$ 22,526,282	2.02%	321.69	$ 22,824,843	1.91%	0.00	$ (298,561)
ELL Teachers	36.49	$ 2,557,295	0.23%	36.49	$ 2,614,515	0.22%	0.00	$ (57,220)
Librarians	268.42	$ 18,271,282	1.64%	268.42	$ 18,538,064	1.55%	0.00	$ (266,782)
Library Media Technicians	130.87	$ 8,034,969	0.72%	130.87	$ 8,142,524	0.68%	0.00	$ (107,556)
Pupil Support	486.59	$ 33,349,686	2.99%	486.59	$ 33,749,954	2.83%	0.00	$ (400,268)
Secondary Guidance Counselors	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Supervisory Aides	593.48	$ 18,843,702	1.69%	593.48	$ 19,039,183	1.60%	0.00	$ (195,480)
Subtotal	***8,915.66***	***$ 600,186,034***	***53.83%***	***9,767.98***	***$ 668,834,132***	***56.07%***	***-852.32***	***$ (68,648,099)***
District-Level Staff Resources								
Central Office Administration	268.86	$ 32,676,950	2.93%	268.86	$ 33,187,760	2.78%	0.00	$ (510,810)
Central Office Clerical	304.53	$ 15,598,135	1.40%	304.53	$ 15,820,337	1.33%	0.00	$ (222,202)
Librarians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Library Clerks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Computer Technicians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Custodians	708.02	$ 31,657,254	2.84%	727.47	$ 32,950,504	2.76%	-19.46	$ (1,293,250)
Maintenance Workers	328.34	$ 16,913,665	1.52%	328.34	$ 17,163,950	1.44%	0.00	$ (250,285)
Groundskeepers	417.92	$ 21,529,606	1.93%	417.92	$ 21,817,606	1.83%	0.00	$ (287,999)
Subtotal	***2,027.68***	***$ 118,375,611***	***10.62%***	***2,047.14***	***$ 120,940,158***	***10.14%***	***-19.46***	***$ (2,564,547)***
Non-Staff Resources								
Central Office Non-Personnel		$ 29,066,460	2.61%		$ 29,066,460	2.44%		$ -
Operations and Maintenance Supplies		$ 11,797,081	1.06%		$ 11,797,081	0.99%		$ -
Utilities		$ 31,969,698	2.87%		$ 31,969,698	2.68%		$ -
School Supplies and Materials		$ 29,400,053	2.64%		$ 29,400,053	2.46%		$ -
School Technology and Equipment		$ 24,222,050	2.17%		$ 24,222,050	2.03%		$ -
Vocational Education Supplies		$ 2,732,903	0.25%		$ 2,732,903	0.23%		$ -
Gifted and Talented		$ 2,422,205	0.22%		$ 2,422,205	0.20%		$ -
Professional Development		$ 9,688,820	0.87%		$ 9,688,820	0.81%		$ -
Assessment		$ 3,128,016	0.28%		$ 3,128,016	0.26%		$ -
Student Activities		$ 24,222,050	2.17%		$ 30,973,403	2.60%		$ (6,751,353)
Subtotal		***$ 168,649,337***	***15.13%***		***$ 175,400,690***	***14.70%***		***$ (6,751,353)***
Reimbursable Costs								
Special Education[1]		$ 157,461,168	14.12%		$ 157,461,168	13.20%		$ -
Transportation		$ 55,402,563	4.97%		$ 55,402,563	4.64%		$ -
Other Reimburseables		$ 14,855,142	1.33%		$ 14,855,142	1.25%		$ -
Subtotal		***$ 227,718,873***	***20.42%***		***$ 227,718,873***	***19.09%***		***$ -***
Total Estimated Guarantee and Categorical[2,3]	**10,943.34**	**$ 1,114,929,855**		**11,815.11**	**$ 1,192,893,853**		**-871.77**	**$ (77,963,998)**

Notes:

1. Difference cannot be calculated, but consultants Special Education recommendation was a census approach to staff allocations for special education services to children with mild and moderate disabilities at the district level, but still 100% reimburse children with severe and profound disabilities.

2. Consultant recommendation uses the Hedonic Wage Index as the only index for the Regional Cost Adjustment as calculated in 2005.

3. This difference is exclusive of any additional funding provided by the "price" of the personnel resources (the statewide average model salary) being set higher than necessary and doesn't include the $4,500,000 provided by the Legislature for food service.

	Cost-Based Funding Level			*Legislative Funding Level*			*Difference*	
School-Level Resources	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**
Principals	282.92	$ 28,724,403	2.73%	282.92	$ 29,212,317	2.61%	0.00	$ (487,913)
Assistant Principals	54.86	$ 5,023,270	0.48%	54.86	$ 5,060,579	0.45%	0.00	$ (37,310)
Small/ALE School Assistant Principals	82.00	$ 6,976,601	0.66%	82.00	$ 7,145,029	0.64%	0.00	$ (168,428)
School Secretarial	312.14	$ 14,498,139	1.38%	312.14	$ 14,703,736	1.31%	0.00	$ (205,597)
School Clerical	347.52	$ 13,230,940	1.26%	347.52	$ 13,383,461	1.19%	0.00	$ (152,521)
Core Teachers	3,991.98	$ 267,308,620	25.42%	4,558.05	$ 309,598,148	27.64%	-566.07	$ (42,289,529)
Specialist Teachers	798.40	$ 53,461,724	5.08%	1,168.14	$ 79,341,396	7.08%	-369.75	$ (25,879,672)
Additional Voc Ed Teachers	34.11	$ 2,274,608	0.22%	40.61	$ 2,745,816	0.25%	-6.50	$ (471,209)
Minimum Teachers	129.97	$ 8,355,751	0.79%	194.99	$ 12,804,023	1.14%	-65.02	$ (4,448,272)
Alternative School Teachers	164.74	$ 11,230,049	1.07%	164.74	$ 11,373,359	1.02%	0.00	$ (143,310)
Small School Teachers	202.02	$ 13,099,008	1.25%	209.94	$ 14,003,314	1.25%	-7.93	$ (904,306)
Small District Minimum Teachers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Instructional Facilitators	412.73	$ 27,636,268	2.63%	240.78	$ 16,000,000	1.43%	171.94	$ 11,636,268
Summer School/Extended Day Teachers	223.60	$ 14,924,584	1.42%	137.48	$ 9,000,000	0.80%	86.12	$ 5,924,584
Substitute Teachers		$ 5,450,557	0.52%		$ 5,778,070	0.52%	0.00	$ (327,513)
Tutors	319.26	$ 21,349,666	2.03%	319.26	$ 21,638,958	1.93%	0.00	$ (289,292)
ELL Teachers	29.41	$ 1,973,372	0.19%	29.41	$ 2,021,838	0.18%	0.00	$ (48,466)
Librarians	264.99	$ 17,243,088	1.64%	264.99	$ 17,498,148	1.56%	0.00	$ (255,060)
Library Media Technicians	131.56	$ 7,653,198	0.73%	131.56	$ 7,754,839	0.69%	0.00	$ (101,641)
Pupil Support	485.02	$ 31,759,431	3.02%	485.02	$ 32,151,258	2.87%	0.00	$ (391,827)
Secondary Guidance Counselors	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Supervisory Aides	586.49	$ 18,003,817	1.71%	586.49	$ 18,192,460	1.62%	0.00	$ (188,643)
Subtotal	***8,853.72***	***$ 570,177,092***	***54.22%***	***9,610.91***	***$ 629,406,749***	***56.19%***	***-757.19***	***$ (59,229,656)***
District-Level Staff Resources								
Central Office Administration	267.45	$ 31,176,804	2.96%	267.45	$ 31,668,090	2.83%	0.00	$ (491,286)
Central Office Clerical	302.73	$ 14,918,338	1.42%	302.73	$ 15,134,612	1.35%	0.00	$ (216,274)
Librarians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Library Clerks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Computer Technicians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Custodians	707.80	$ 30,567,125	2.91%	726.82	$ 31,810,489	2.84%	-19.02	$ (1,243,364)
Maintenance Workers	329.23	$ 16,365,561	1.56%	329.23	$ 16,615,608	1.48%	0.00	$ (250,048)
Groundskeepers	429.42	$ 21,371,295	2.03%	429.42	$ 21,659,205	1.93%	0.00	$ (287,911)
Subtotal	***2,036.62***	***$ 114,399,121***	***10.88%***	***2,055.64***	***$ 116,888,004***	***10.43%***	***-19.02***	***$ (2,488,883)***
Non-Staff Resources								
Central Office Non-Personnel		$ 27,633,151	2.63%		$ 27,633,151	2.47%		$ -
Operations and Maintenance Supplies		$ 11,337,088	1.08%		$ 11,337,088	1.01%		$ -
Utilities		$ 30,651,676	2.91%		$ 30,651,676	2.74%		$ -
School Supplies and Materials		$ 27,973,823	2.66%		$ 27,973,823	2.50%		$ -
School Technology and Equipment		$ 23,027,626	2.19%		$ 23,027,626	2.06%		$ -
Vocational Education Supplies		$ 2,657,875	0.25%		$ 2,657,875	0.24%		$ -
Gifted and Talented		$ 2,302,763	0.22%		$ 2,302,763	0.21%		$ -
Professional Development		$ 9,211,050	0.88%		$ 9,211,050	0.82%		$ -
Assessment		$ 2,973,769	0.28%		$ 2,973,769	0.27%		$ -
Student Activities		$ 23,027,626	2.19%		$ 29,890,778	2.67%		$ (6,863,152)
Subtotal		***$ 160,796,448***	***15.29%***		***$ 167,659,600***	***14.97%***		***$ (6,863,152)***
Reimbursable Costs								
Special Education[1]		$ 144,630,235	13.75%		$ 144,630,235	12.91%		$ -
Transportation		$ 49,505,909	4.71%		$ 49,505,909	4.42%		$ -
Other Reimburseables		$ 12,075,443	1.15%		$ 12,075,443	1.08%		$ -
Subtotal		***$ 206,211,587***	***19.61%***		***$ 206,211,587***	***18.41%***		***$ -***
Total Estimated Guarantee and Categorical[2,3]	**10,890.34**	**$ 1,051,584,249**		**11,666.54**	**$ 1,120,165,940**		**-776.21**	**$ (68,581,691)**

Notes:

1. Difference cannot be calculated, but consultants Special Education recommendation was a census approach to staff allocations for special education services to children with mild and moderate disabilities at the district level, but still 100% reimburse children with severe and profound disabilities.

2. Consultant recommendation uses the Hedonic Wage Index as the only index for the Regional Cost Adjustment as calculated in 2005.

3. This difference is exclusive of any additional funding provided by the "price" of the personnel resources (the statewide average model salary) being set higher than necessary.

	Cost-Based Funding Level			*Legislative Funding Level*			*Difference*	
School-Level Resources	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**	**% of Total**	**FTEs**	**Total $**
Principals	283.45	$ 27,419,604	2.81%	283.45	$ 27,895,877	2.68%	0.00	$ (476,273)
Assistant Principals	55.58	$ 4,846,716	0.50%	55.58	$ 4,886,617	0.47%	0.00	$ (39,901)
Small/ALE School Assistant Principals	82.00	$ 6,703,897	0.69%	82.00	$ 6,860,705	0.66%	0.00	$ (156,808)
School Secretarial	313.28	$ 13,736,428	1.41%	313.28	$ 13,937,296	1.34%	0.00	$ (200,868)
School Clerical	346.56	$ 12,405,206	1.27%	346.56	$ 12,555,989	1.20%	0.00	$ (150,782)
Core Teachers	3,959.60	$ 252,500,352	25.91%	4,531.38	$ 293,281,634	28.13%	-571.78	$ (40,781,281)
Specialist Teachers	791.92	$ 50,500,070	5.18%	1,165.31	$ 75,417,150	7.23%	-373.39	$ (24,917,079)
Additional Voc Ed Teachers	35.91	$ 2,285,406	0.23%	42.75	$ 2,758,764	0.26%	-6.84	$ (473,358)
Minimum Teachers	132.31	$ 8,023,031	0.82%	204.56	$ 12,730,467	1.22%	-72.25	$ (4,707,436)
Alternative School Teachers	163.53	$ 10,639,238	1.09%	163.53	$ 10,780,404	1.03%	0.00	$ (141,166)
Small School Teachers	200.29	$ 12,366,734	1.27%	213.57	$ 13,506,635	1.30%	-13.28	$ (1,139,901)
Small District Minimum Teachers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Instructional Facilitators	410.83	$ 26,197,748	2.69%	246.28	$ 16,000,000	1.53%	164.55	$ 10,197,748
Summer School/Extended Day Teachers	233.82	$ 14,847,694	1.52%	142.63	$ 9,000,000	0.86%	N/A	$ 5,847,694
Substitute Teachers		$ 5,231,255	0.54%		$ 5,558,410	0.53%	0.00	$ (327,155)
Tutors	324.28	$ 20,638,198	2.12%	324.28	$ 20,925,489	2.01%	0.00	$ (287,291)
ELL Teachers	30.01	$ 1,890,749	0.19%	30.01	$ 1,933,522	0.19%	0.00	$ (42,773)
Librarians	263.66	$ 16,310,083	1.67%	263.66	$ 16,558,628	1.59%	0.00	$ (248,545)
Library Media Technicians	132.84	$ 7,291,930	0.75%	132.84	$ 7,390,640	0.71%	0.00	$ (98,710)
Pupil Support	491.66	$ 30,635,404	3.14%	491.66	$ 31,025,580	2.98%	0.00	$ (390,176)
Secondary Guidance Counselors	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Supervisory Aides	584.11	$ 16,671,973	1.71%	584.11	$ 16,855,126	1.62%	0.00	$ (183,153)
Subtotal	***8,835.61***	***$ 541,141,718***	***55.54%***	***9,617.41***	***$ 599,858,932***	***57.54%***	***-872.99***	***$ (58,717,214)***
District-Level Staff Resources								
Central Office Administration	266.68	$ 29,332,993	3.01%	266.68	$ 29,806,152	2.86%	0.00	$ (473,159)
Central Office Clerical	301.80	$ 14,071,200	1.44%	301.80	$ 14,280,377	1.37%	0.00	$ (209,177)
Librarians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Library Clerks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Computer Technicians	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Custodians	709.66	$ 28,848,703	2.96%	729.06	$ 30,054,156	2.88%	-19.40	$ (1,205,453)
Maintenance Workers	330.06	$ 15,489,281	1.59%	330.06	$ 15,734,326	1.51%	0.00	$ (245,045)
Groundskeepers	418.12	$ 19,658,152	2.02%	418.12	$ 19,985,356	1.92%	0.00	$ (327,205)
Subtotal	***2,026.33***	***$ 107,400,328***	***11.02%***	***1,779.04***	***$ 109,860,367***	***10.54%***	***247.28***	***$ (2,460,039)***
Non-Staff Resources								
Central Office Non-Personnel		$ 26,512,340	2.72%		$ 26,512,340	2.54%		$ -
Operations and Maintenance Supplies		$ 10,999,473	1.13%		$ 10,999,473	1.06%		$ -
Utilities		$ 29,529,553	3.03%		$ 29,529,553	2.83%		$ -
School Supplies and Materials		$ 26,850,951	2.76%		$ 26,850,951	2.58%		$ -
School Technology and Equipment		$ 22,093,617	2.27%		$ 22,093,617	2.12%		$ -
Vocational Education Supplies		$ 2,623,396	0.27%		$ 2,623,396	0.25%		$ -
Gifted and Talented		$ 2,209,362	0.23%		$ 2,209,362	0.21%		$ -
Professional Development		$ 8,837,447	0.91%		$ 8,837,447	0.85%		$ -
Assessment		$ 2,853,152	0.29%		$ 2,853,152	0.27%		$ -
Student Activities		$ 22,093,617	2.27%		$ 28,987,467	2.78%		$ (6,893,850)
Subtotal		***$ 154,602,907***	***15.87%***		***$ 161,496,757***	***15.49%***		***$ (6,893,850)***
Reimbursable Costs								
Special Education[1]		$ 116,442,547	11.95%		$ 116,442,547	11.17%		$ -
Transportation		$ 41,563,026	4.27%		$ 41,563,026	3.99%		$ -
Other Reimburseables		$ 13,234,095	1.36%		$ 13,234,095	1.27%		$ -
Subtotal		***$ 171,239,668***	***17.57%***		***$ 171,239,668***	***16.43%***		***$ -***
Total Estimated Guarantee and Categorical[2,3]	**10,861.94**	**$ 974,384,621**		**11,396.45**	**$ 1,042,455,724**		**-534.52**	**$ (68,071,103)**

Notes:

1. Difference cannot be calculated, but consultants Special Education recommendation was a census approach to staff allocations for special education services to children with mild and moderate disabilities at the district level, but still 100% reimburse children with severe and profound disabilities.

2. Consultant recommendation uses the Hedonic Wage Index as the only index for the Regional Cost Adjustment as calculated in 2005.

3. This difference is exclusive of any additional funding provided by the "price" of the personnel resources (the statewide average model salary) being set higher than necessary.

Executive Summary
Monitoring School District Human Resource Cost Pressures: 2013
Presented to the Joint Education Committee and Joint Appropriations Committee
October 2013

The Cost Pressures Project

In 2001, the Wyoming Supreme court directed the Legislature to "design the best educational system by identifying the 'proper' educational package each Wyoming student is entitled to have whether she lives in Laramie or in Sundance," and then "take the necessary action to fund that package" (*State of Wyoming, et al., v. Campbell County School District, et al.*, 2001). The legislature, in keeping with the *Campbell* decision, immediately hired a consulting firm to determine the "services which must be made available to all Wyoming school children and which the legislature codified as a list of core knowledge and skills areas" (*State v. Campbell* 2001).

The legislative commitment to ensuring equal services for every child in Wyoming continues today. The research presented here offers one way to examine the cost of delivering educational services, and to compare that cost across school districts in Wyoming. *Monitoring 2013* is the second report in an annual series, and represents a response to the legislative directive to "the department of workforce services, office of research and planning, to conduct data collection and analysis necessary for the education resource block grant model monitoring" (General Government Appropriations, Chapter 26, Section 326[d], March 2012). *Monitoring 2013* carefully assesses the Wyoming school district labor market in an effort to better understand the factors involved in attracting and retaining high-quality teachers in the state – a key component of the services offered to children in public schools. *Monitoring 2013* expands the study of school district compensation and labor supply by incorporating an analysis of the Professional Teaching Standards Board (PTSB) licensing information to better understand which subjects and grade levels will drive the need for teachers in the future.

Understanding the demographics of the public school labor supply is a key consideration of this report. Throughout much of the labor market we see baby boomers holding on to jobs in industries requiring a higher education, such as teaching. Because of this, young workers may have difficulty finding jobs in these industries, or may choose to work outside of Wyoming. Surrounding states' economies have grown more rapidly than Wyoming's, making it necessary to consider wage competition in the historical context of more stable and diversified labor markets proving attractive to educated residents of Wyoming.

Who We Are

Research & Planning (R&P) functions as an exclusively statistical entity within the Wyoming Department of Workforce Services. R&P collects, analyzes, and publishes timely and accurate labor market information (LMI) meeting established statistical standards. We work to make the labor market more efficient by providing the public and the public's representatives with the information needed for evidence-based, informed, decision making.

Methodology

Research for the report draws on several sources of information, many of which are not publically available or are only available to state employees working under contract to the U.S. Bureau of Labor Statistics. One major source from which the report draws wage information is the Occupational Employment Statistics (OES) program, a state-federal partnership. The OES program is the only source of reliable occupational-based wage estimates in the country. R&P produced school district wage estimates using confidential OES files for Wyoming and surrounding states.

To measure other market factors, such as the earnings of school district employees who leave for the private sector, R&P analyzed a number of records from administrative databases including Unemployment Insurance (UI) employer accounts, UI wage records, Wyoming Department of Transportation drivers' license files, Wyoming Department of Education (WDE) staffing files, and files from the Professional Teaching Standards Board (PTSB). PTSB files were combined with R&P's administrative databases to better understand the current supply of teachers available for school districts.

The potential supply of licensed teachers extends beyond Wyoming's borders, as demonstrated in Appendix A. Linking PTSB licensing files to UI payroll accounts in other states can only be accomplished by Research & Planning sections of state workforce agencies. R&P knows of no other state government entity which has analyzed teacher licensing files in this manner. This strategy facilitates a rigorous and meaningful analysis of school districts' multi-dimensional labor supply.

Findings from 2013 Monitoring School District Human Resource Cost Pressures

- During the 2010-11 school year, the average annual wage for all primary, secondary, and special education teachers in Wyoming public schools was $59,314, an increase of $2,245 over the 2009-10 school year. This salary is higher than in surrounding states and in the U.S. as a whole (Chapter 1).
- Teacher wages in Wyoming on average are competitive with surrounding states and the nation, but this is not the case in all of Wyoming's counties (Chapter 2).
- The exit rate of individuals leaving public schools ranges from 11% in 2008-09 to 13.2% in 2010-11. Replacement need represents a recruitment cost (Chapter 3).
- Wyoming may become increasingly dependent on importing teachers as the boom generation retires. More than one-quarter of special education teachers are approaching retirement age, and represent the most immediate replacement need (Chapter 4).
- Given the rapid aging of the workforce in industries requiring postsecondary education, school districts may encounter significant competition for qualified employees (Chapter 5).

Findings from Appendix Staff Reports

- A significant portion of individuals (33.5%) can teach in at least two content areas, allowing a district to employ teachers in varying content areas during a given school year (Appendix A).
- In each age group, males' contract wages were greater. It is therefore of interest that the largest earnings gains from 2011-12 to 2012-13 were found among younger females who remained in the same district but changed occupations (Appendix B).

Recommendations

- Report findings suggest a need for succession planning, and R&P recommends that the
- WDE), potentially in conjunction with the College of Education at the University of Wyoming, engage school districts on this topic. While it appears that the University of Wyoming is producing enough new teachers to meet replacement need, it is not clear if the teachers produced hold endorsements in the areas which will have the most current and future demand.
- R&P recommends that the Wyoming Retirement Board files be made available to R&P to provide accurate, historic, and current identifiable trends for those retiring from public employment.
- WDE 602 (School District Member Staffing) files should contain position numbers and related job descriptions, to facilitate determining what districts require at a minimum to perform certain tasks and how positions evolve over time.
- R&P recommends the standardization of data collection for the WDE 633 (Certified Staff Vacancy Information) files in order to measure the duration of job openings and estimate the recruitment difficulty for specific endorsements.
- R&P recommends use of this report by policymakers, school districts, jobseekers, and other parties to positively impact labor supply issues and allow for the framing of future research questions in the context of empirical results.

Future Research

Future research using administrative databases to explore the specific circumstances under which school district employees change districts or occupations is needed. R&P will also incorporate data from the Wyoming Retirement Board in future analyses to identify current and historical trends in retirement, and to identify the level of district use of substitute teachers. Additionally, R&P has started research using databases to create household level data which will be used to explore the relationship between leavers and their partners. National and regional employment growth opportunities affecting Wyoming's market will need to be monitored, to better understand the competition our school districts face from neighboring states. Directions for future research using Professional Teaching Standards Board files are detailed in Appendix A of this report. Finally, cost pressure analysis using administrative databases is new in this country. Naming conventions for the types of phenomena we describe in this report are not established. Future research will include improving the lexicon of administrative database research so that a common language may be employed.

Current Status of Cost Pressures on Teacher Salaries in Wyoming

(Scheduled for consolidation with *Monitoring School District Human Resource Cost Pressures* in 2014)

A Report to the Wyoming
Joint Appropriations Interim Committee
and the Joint Education Interim Committee

Research & Planning
Wyoming Department of Workforce Services

Research & Planning
Wyoming DWS

Fall 2013

Current Status of Cost Pressures on Teacher Salaries in Wyoming

Report to the Joint Appropriations Interim Committee and the Joint Education Interim Committee

Fall 2013

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"Your Source for Wyoming Labor Market Information"

Introduction

The current report and previous editions, "Monitoring cost pressures on teacher salaries in Wyoming" (Stoddard, 2011) and "Current status of cost pressures on teacher salaries in Wyoming" (Stoddard, 2012) explored the factors that influence the availability of highly qualified teachers "to improve instruction and student achievement"(Statewide education accountability-phase II, 2013). With this in mind, it is important to study the cost pressures (in regard to teacher salaries) facing school districts in Wyoming.

School districts face competition for teachers from two major competitors: school districts in surrounding states, and nationally; and the potential for employment in other sectors of the economy. (Inter-district competition within Wyoming is not addressed in this report.)

Other factors that influence an individual's decision regarding choices of geographic location and/or occupation are not discussed in this report such as: the relative cost of living in competing geographic areas, and non-monetary concerns such as quality of life considerations.

Notes on Methodological Changes

This is a transition year for this report. In contrast to past authoring, Research & Planning (R&P) shifts from using a mixture of data sources and moves toward consolidating to as few standard sources as possible. Past reports utilized Bureau of Labor Statistics (BLS) Occupational Employment Statistics (OES) reports and NCES wage information for teachers. The current report uses only OES data for wage information. See Appendix B for a detailed explanation of the OES survey (Research & Planning, 2013).

While prior reports utilized publically available OES wage and employment estimates, R&P, as agents of the Bureau of Labor Statistics, has access to OES estimates that contain confidential records that are not typically published. This means R&P can employ suppressed (not publically available) data in estimation processes. For example, when constructing an index of 'comparable occupations' to compare to teacher wages in Wyoming (Figure 1), the index is much more complete than had publically available OES data been utilized. This allows for a more appropriate comparison.

As publically available OES data are available for a longer time period, these data were employed where appropriate. Publically available OES data span all ownership categories (i.e. private sector and federal, state, and local government). These data are used in Figures 2, 3, and 4.

There have been two changes in methodology regarding the utilization of Wyoming Department of Education School District Staffing Files (WDE602). First, consistent with other reports from R&P, age data are drawn from Department of Motor Vehicles files for greater reliability, rather than the WDE602.

Starting with this report, the individuals in the WDE602 file were classified to Standard Occupational Classification (SOC) codes using OES guidelines. These guidelines are as follows:

Page XVI of the 2010 OES manual states "When workers in a single job could be coded in more than one occupation, they should be coded in the occupation that requires the highest level of skill. If there is no measurable difference in skill requirements, workers should be coded in the occupation in which they spend the most time. Workers whose job is to teach at different levels (e.g., elementary, middle, or secondary) should be coded in the occupation corresponding to the highest educational level they teach" (Office of Management and Budget, 2010).

Therefore, if an individual was a teacher and also an assistant principal they would be coded as an assistant principal (SOC 11-9032). This is a departure from prior reports in which an individual was classified as a teacher if any of the individual's assignment code in the WDE602 file were a teaching assignment code (C. Stoddard, personal communication, September 19, 2013).

Calculation of Teacher Exits and New Hires

Calculating exits rates for teachers is defined as leaving teachers where teaching is the individual's primary SOC code. For example, if an individual has been a teacher in previous years but then in 2012-2013 is classified as an assistant principal, that individual would be considered an exit (from teaching as their primary occupation).

An individual is defined as a 'New Hire' when they are employed as a teacher in a school year and were not employed as a teacher in a Wyoming public school the previous year. Therefore, for purposes of this report, an individual can be considered a new hire in more than one school year.

For example, an individual could be considered a new hire in the 2009-2010 school year then leaves teaching for two years and then accepts a teaching position for the 2012-2013 school year they would be considered a new hire.

As defined in this report new hires or exits are measured on a statewide basis. Therefore, an inter-district transfer would not be considered a new hire or exit.

Where methodology employed in the 2012 report yielded results such that the results are comparable to the current report, the results from the 2012 reports are included in tables 1, 2, and 3.

The Wyoming Department of Education Certified Staff Vacancy Application Information (WDE633) is used in creating Tables 5 and 6 as in previous reports.

Datasets used in the construction of the figures can be found in Appendix D.

Table 1: **Summary of Indicators of Cost Pressure Sources**

	Status in 2012-13	Status in 2011-12	Range 2009-2012	
Ratio of teaching wages to other professional and technical occupation wages in WY	0.96	0.95	0.954	to 0.96
Ratio of teaching wages to comparable occupation wages in WY	0.997	0.974	0.983	0.997
Ratio of WY teacher average salaries to teaching salaries in region	1.22	1.22	1.20	1.22
Student Enrollment growth (WDE)	1.7	1.5	0.9	1.7
Percent Teachers 55 and older	21.9	22.7	21.9	22.7
Percent Teachers 60 and older	9.1	9.1	7.8	9.1
Exit Rate Teachers Ages 60+	23.3	23.2	16.9	23.3
Percent New Hires	11.0	10.0	8.3	11.0
Exit Rate New Teachers (0-3 years of experience)	32.4	32.7	28.3	38.2
Exit Rate Mid Career Teachers (greater than 3 years of experience)	8.9	9.1	6.8	9.1
Number of Applicants per Full Time Position	33.0	37.0	31.0	37.0
Percentage Hired First Choice, Full Time Position	93.7	92.7	92.7	93.9
Percent vacancies where report “very” or “somewhat” easy to hire high quality	61.9	65.8	61.9	78.4

Sources:
Wyoming Department of Education Staffing Files (WDE 602).
Wyoming Department of Education Vacancy Files (WDE 633).
Occupational Employment Statistics (OES) published data.

Overview of Cost Indicators

Previous reports, "Monitoring cost pressures on teacher salaries in Wyoming" (Stoddard, 2011) and "Current status of cost pressures on teacher salaries in Wyoming" (Stoddard, 2012) included several different metrics for monitoring changes in cost pressures on teaching salaries. This report updates these metrics.

The following indicators were compiled to provide signals about cost pressures related to labor market trends, demographic patterns, teacher turnover, and district reports about vacancies:

1. Changes in the ratio of teaching wages relative to wages of comparable professionals
2. Changes in the ratio of teaching wages in Wyoming to teaching wages in other states
3. The trends in student enrollment
4. The trends in teacher retirement
5. The percent of new hires among active teachers
6. Retention rates of current teachers
7. Number of applicants per full time position
8. Percent of districts hiring first choice applicant
9. Percent of districts reporting "very easy" or "somewhat easy" to hire high quality applicants

Conclusions

Overall, few indicators changed in significant ways since the two previous reports.

- Teaching wages in Wyoming remained high relative to other occupations, at about 96% of wages in comparable occupations (i.e. teaching wages were 4% lower). The US average teaching wage remained at approximately 78% (as it has for the previous five years) while in the surrounding states the teaching – comparable occupation ratio has decreased slightly to 73%.

- Teaching salaries in Wyoming were approximately 22% higher than in neighboring states, reflecting no significant change over the last two years.

- The relatively high teaching wages in Wyoming may be instrumental in attracting and retaining teachers in the future as enrollment is expected to increase, thereby increasing the need for teachers.

- Student enrollment continued to increase slightly at an average growth rate of 1.2% per year over the last 5 years. Projected growth for the next 5 years is 0.7% per year.

- The rate of newly hired teachers relative to all active teachers has increased over the last two years to 11%.

- The exit rate for teachers 60 years of age and over has not changed considerably from 2011 to 2012 school years at 23.3%.

- The percentage of active teachers 55 years of age and older has remained relatively constant over the last 6 years at 21.9%.

- The exit rate of teachers with 3 years of experience or less was 32.4% in 2012 which was similar to the rate in 2011 of 32.7%. The exit rate of teachers with greater than 3 years of experience was much lower at 8.9%.

- The exit rate of teachers 60 years of age and over has remained unchanged from the two previous years (an exit rate of 23.3%). The number of projected exits are expected to remain steady over the next five years.

- The number of full time teaching vacancies can change substantially from year to year. For example, there were 700 full time vacancies in 2010. The number of vacancies increased to 1,010 in 2012.

- The two largest factors driving full time vacancies in 2012 were retirements (22.4%) and transfers within a district or a promotion (24.6%).

- Overall the availability of high quality teaching applicants has been very strong. On average, there were 33 applicants for each full-time position in 2012. Administrators have been able to hire their first choice about 93% of the time for the 2009, 2010, 2011, and 2012 school years.

- Administrators found it somewhat or very easy to attract high quality applicants 62% of the time in 2012 which is a steady decline from a rate of about 78% in 2009 and 2010.

Indicator 1: Ratio of Teaching Wages to Wages of Comparable Professionals

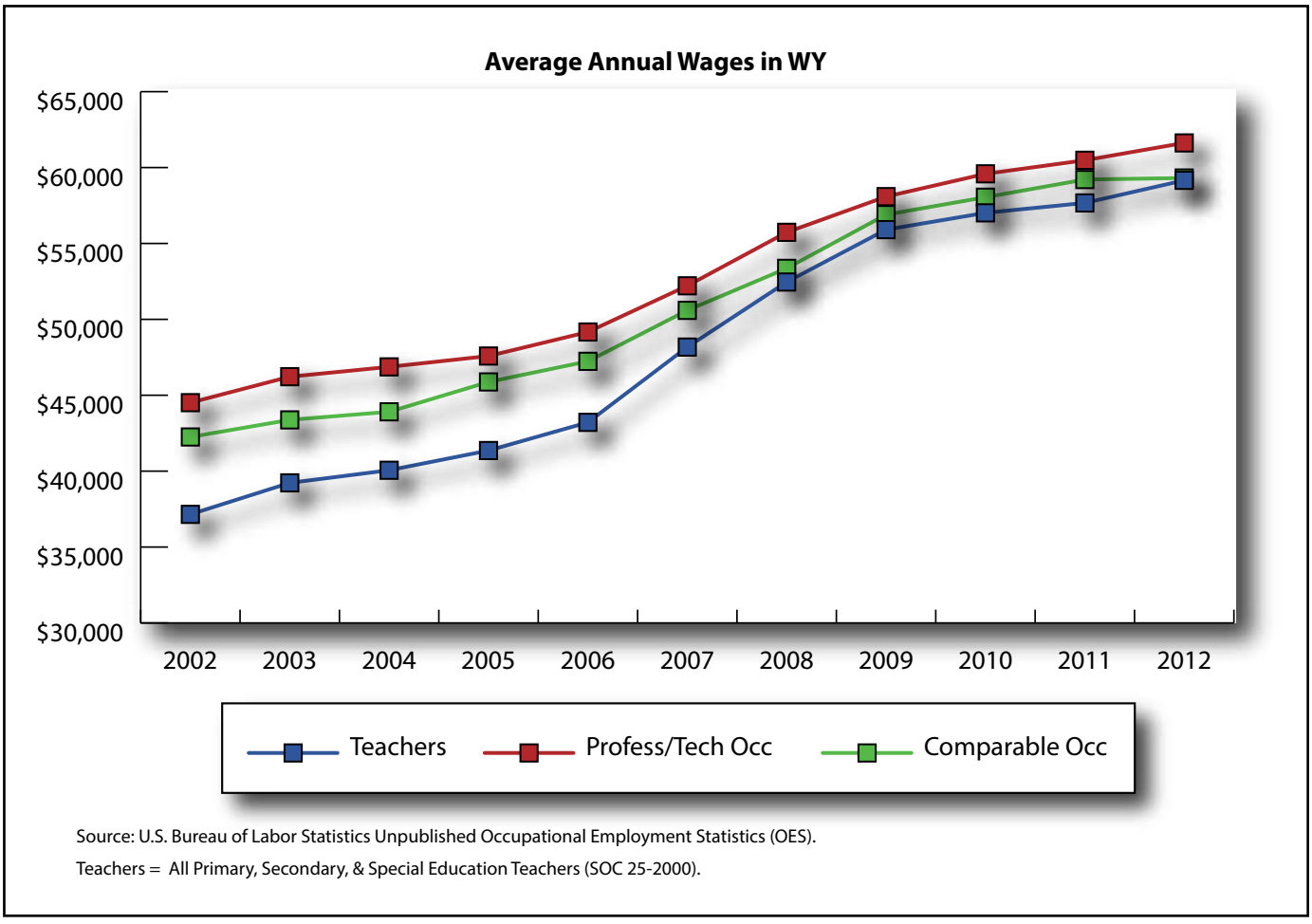
Data Sources: In prior years both Figure 1 and 2 were produced using publically available Occupational Employment Statistics (OES) data. These data span all ownership categories (i.e. private sector and federal, state, and local government).

Due to the unavailability of several of the comparable occupations (see Appendix A) within the publically available OES data, R&P utilized unpublished OES data to create the comparable occupation index for Figure 1.

These data were used to provide a more complete comparable occupation index. The series used in Figure 1 spans 2002 to 2012 as 2002 was the earliest year these unpublished data were available.

Metric: Figure 1 reports the average annual wages of teachers in Wyoming in comparison to all profession and technical, and comparable occupations (see Appendix A for the occupations that comprise these indices).

Figure 1: **Average Annual Wages for Teachers and Comparable Workers in Wyoming, 2002-2012**



Source: U.S. Bureau of Labor Statistics Unpublished Occupational Employment Statistics (OES).

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

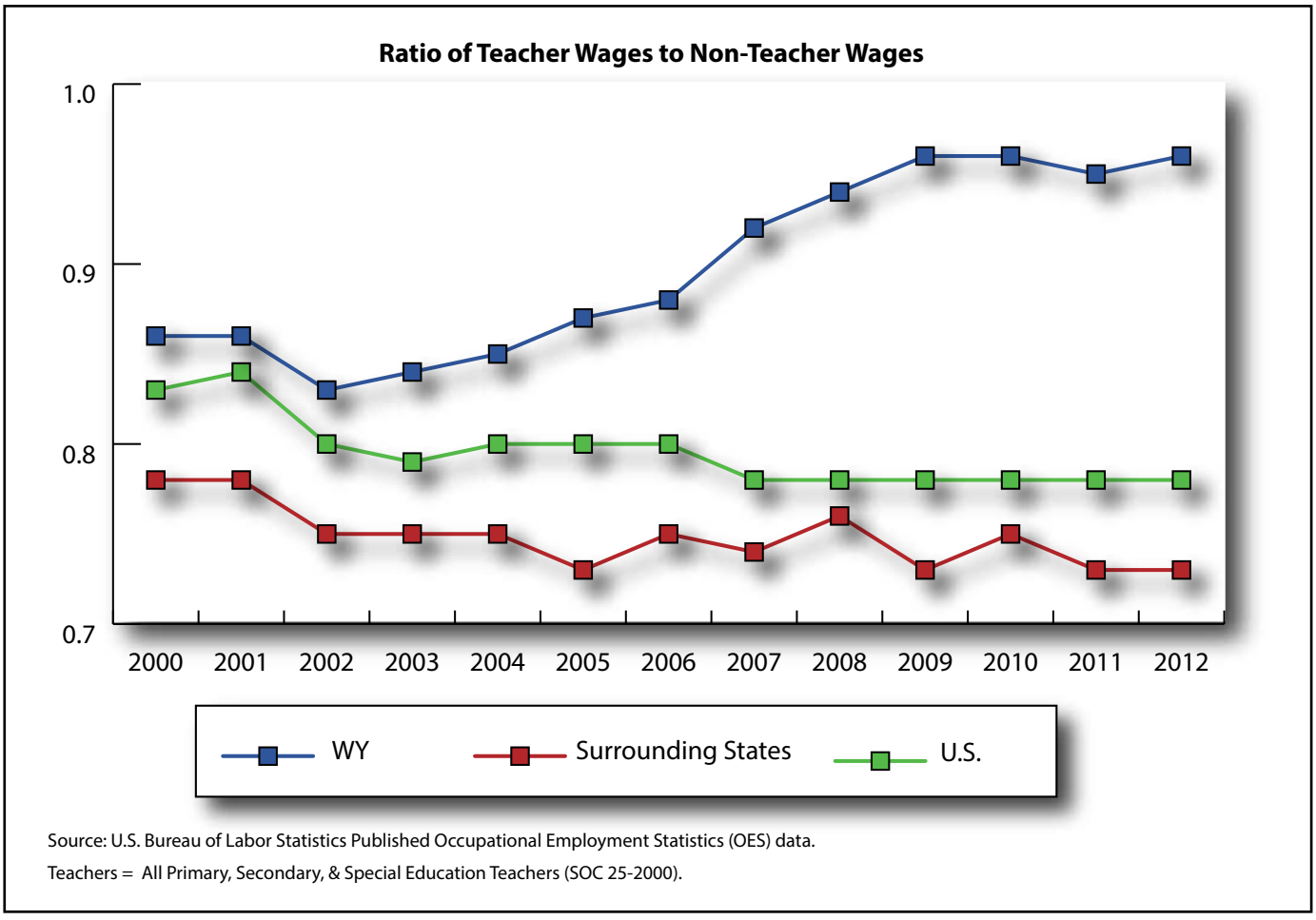
All Professional and Technical Occupations is an index spanning the 2 digit wage estimates according to the Standard Occupational Classification system. This spans Management occupations (SOC 11-0000) to healthcare practitioner and technical occupations (29-0000).

Comparable occupations are 18 occupations (21 SOC codes) as defined by the Economic Policy Institute (EPI). These occupations are shown in Appendix A. Allegretto et al., (2004) compiled these occupations based on methodology that in part, employed the Bureau of Labor Statistics (BLS) National Compensation Survey (NCS) occupational leveling criteria. Ten factors were used to compare the relative skills of various occupations.

In this report, an index weighted by employment was then created from these occupations and used in comparison to teacher wages.

Figure 2 reports the ratio of teaching wages to wages of all professional and technical occupations in Wyoming, the entire U.S., and the states surrounding Wyoming.

Figure 2: Ratio of Teacher Wages to Non-Teacher Wages in Professional/Technical Occupations, Wyoming , Surrounding States, and the U.S., 2000-2012 (All Ownerships)



Source: U.S. Bureau of Labor Statistics Published Occupational Employment Statistics (OES) data.

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

An example of this ratio calculation is:

Annual average teaching wage ($59,168 in 2012) divided by the annual average wage of all professional and technical occupations ($61,624 in 2012). The resulting ratio equals 0.96.

Conclusions: Figures 1 and 2 have shown little change from the results of the last two years.

The relationship between teacher wages and all professional and technical occupations has not changed.

Relative to the comparable wage index, teachers have had a higher growth rate from 2011 to 2012.

While comparable occupation wages were still slightly higher, by $154 on average, the growth rate for teachers was higher (2.6%) than the growth rate of comparable occupations (0.2%). Thus, the annual average wage difference has decreased from 2011 to 2012 (Figure 1).

The ratio of teacher wages to all professional and technical occupations in Wyoming (0.96), the U.S.(0.78), and surrounding states (0.72) has remained unchanged over the last four years (Figure 2).

Indicator 2: Teaching Salary Trends in Other States

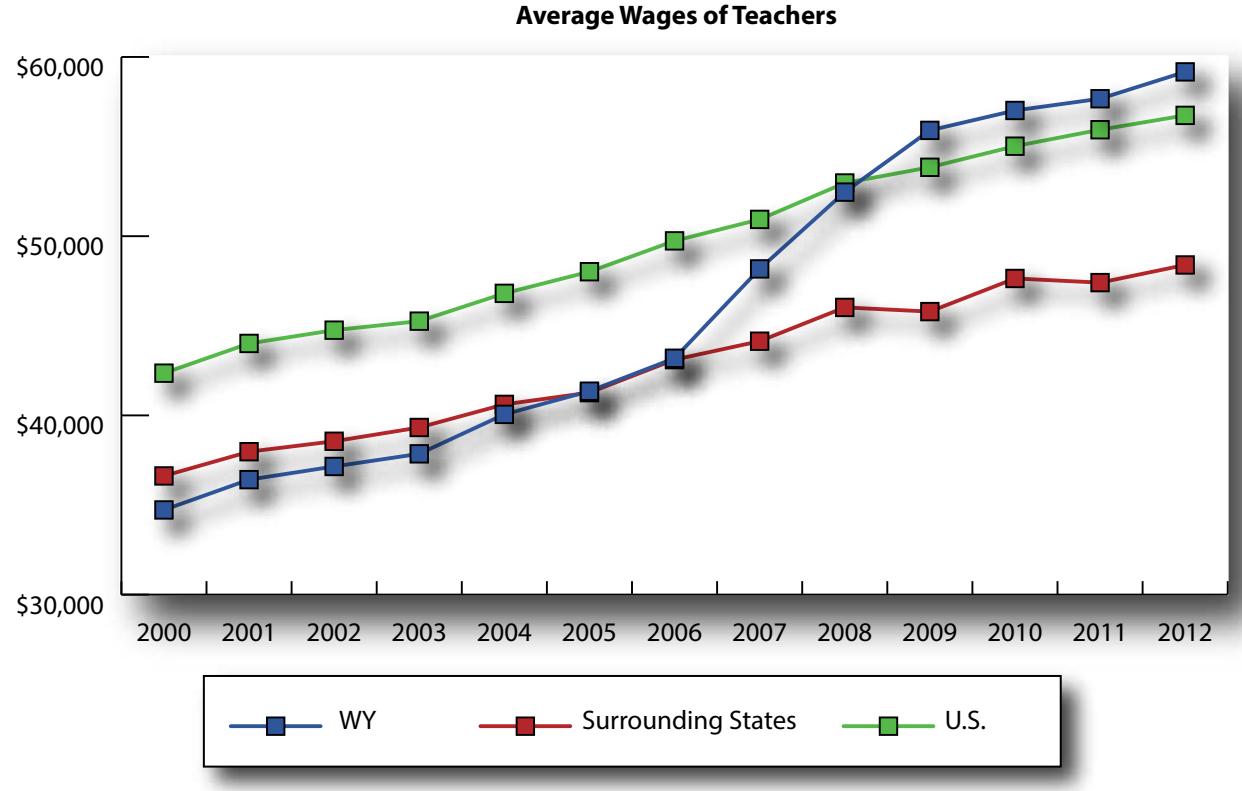
Data Sources: Figures 3 and 4 are based on published (publically available) OES data. This is a change from previous analyses, which used NCES data. The reason for this change is to move toward common data sources as much as possible to avoid confusion.

Metric: Figure 3 reports the average annual teaching wages in Wyoming, an index of surrounding states, and the U.S. Figure 4 displays the average annual teaching wages in Wyoming to the surrounding states individually.

Conclusions: Figure 3 shows that Wyoming teaching wages have exceeded the U.S. by approximately 4% for the last four years. Against the surrounding states index, Wyoming's teaching wages remained approximately 22% higher over the last four years.

Figure 4 demonstrates that in comparison to the surrounding states individually, Wyoming widened its wage advantage against all states with the exception of Utah, where the wage disparity dropped by 4% since the 2012 report. However, Wyoming teacher wages were still 19% higher than Utah teaching wages. The largest wage gap is between Wyoming

Figure 3: **Annual Teacher Wages in Wyoming, the U.S., and Surrounding States Index, 2000-2012**



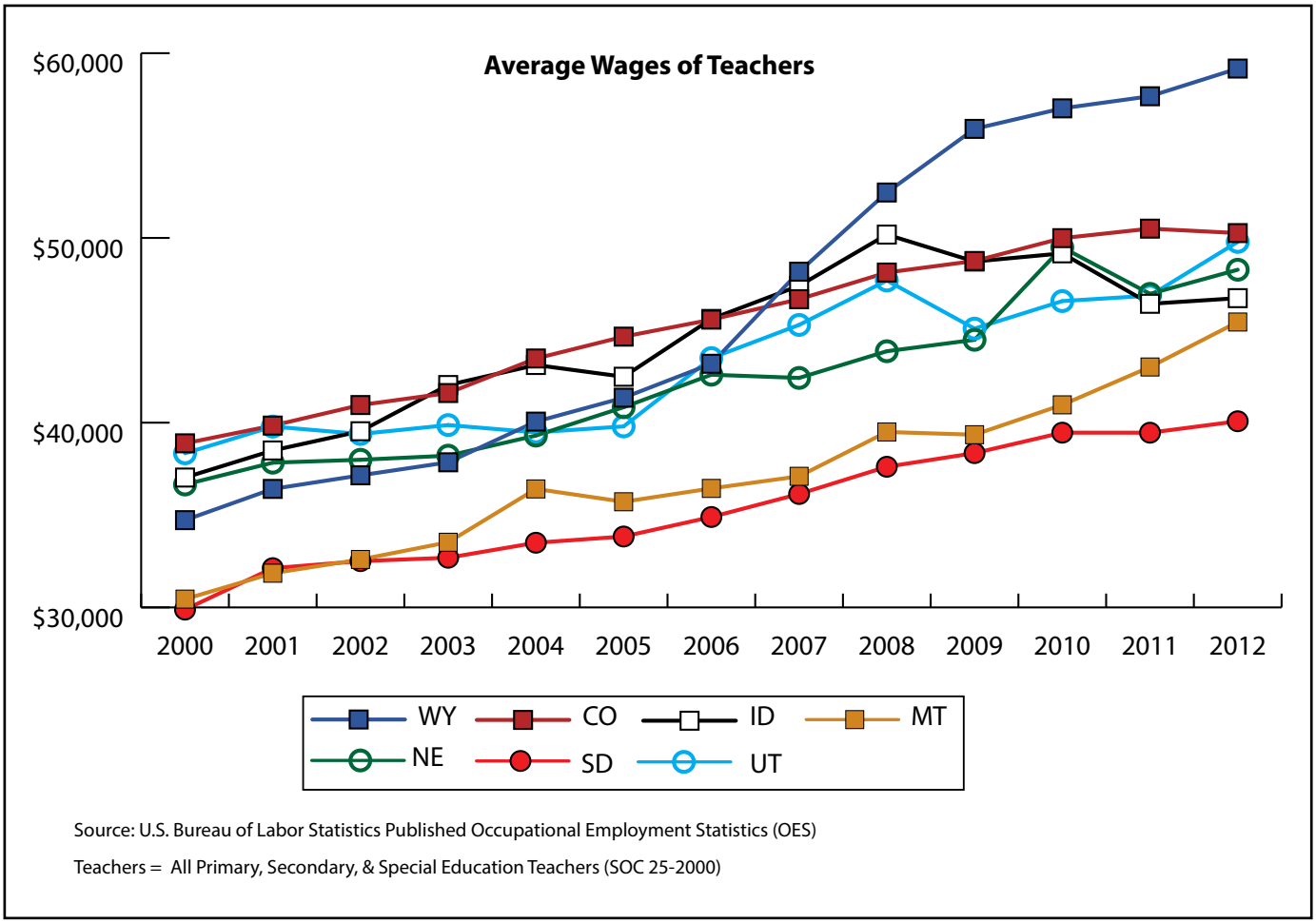
Source: U.S. Bureau of Labor Statistics Published Occupational Employment Statistics (OES)

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000)

and South Dakota with Wyoming's wages being 48% higher.

While Wyoming has the highest overall teaching wages, the pupil-teacher ratio as of 2010 was the lowest of any of the surrounding states at 12.5. Utah had the highest ratio of 22.8 (National Center for Education Statistics, 2012).

Figure 4: Average Annual Teacher Wages in Wyoming and Surrounding States, 2000-2012 (All Ownerships)



Source: U.S. Bureau of Labor Statistics Published Occupational Employment Statistics (OES)

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000)

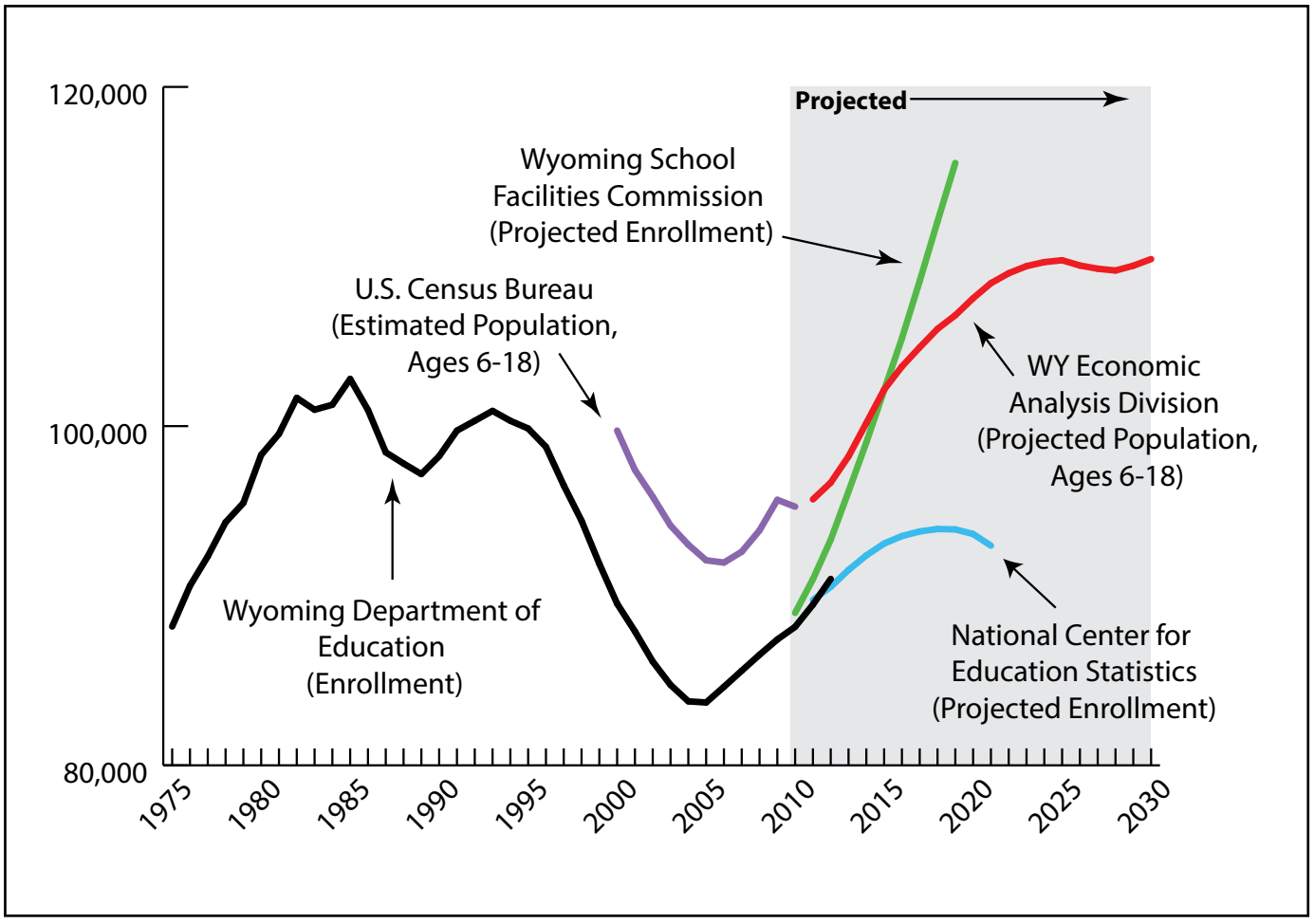
Indicator 3: Trend in Student Enrollment

Metric: The primary drivers of change in the demand for teachers are changes in student enrollment and replacement need (i.e. retirement and other reasons teachers exit the profession). This section of the narrative examines historic and projected student enrollment in Wyoming.

Figure 5 displays both historic and projected Wyoming population data for individuals between the ages of 6 and 18 and student enrollment in Wyoming public schools. the source of historic population data was the U.S. Census Bureau (2000-2010). Population projections were conducted by the Wyoming Economic Analysis Division (2011-2030). The WYEAD data by single year of age was not publically available but was provided to R&P with the agreement that the data only be used in summary form (W. Liu, personal communication, August 29, 2013). For the purposes of this report, a summation of population ages 6 through 18 from both of these sources was used as a proxy for possible student enrollment.

Historic student enrollment was provided by the Wyoming Department of Education

Figure 5: **Wyoming Student Enrollment and Population Ages 6-18, 1975-2030**



(WDE) (1975-2012) while two different projections of student enrollment are displayed. The purpose of displaying these different projections is to highlight the uncertainty of future student enrollment and in turn, the demand for teachers.

The first projection was conducted by the Wyoming School Facilities Commission (WYSFC) while the second projection is provided by the National Center for Education Statistics (NCES).

Conclusions: Comparing historic population and student enrollment data demonstrates that these two series tend to move together over time. The population of individuals 6 through 18 years of age is greater than student enrollment due to factors including but not limited to: students graduating or receiving a GED prior to their 18th birthday, private school enrollment, and homeschooling.

Projected population growth and the NCES projected student enrollment growth tend to move together through 2019 with a divergence occurring beginning in 2020. Population forecasts indicate continued growth, while NCES enrollment estimates predict enrollment to decline.

The WYSFC enrollment projection displays a much steeper growth rate than both the WYEAD population and NCES enrollment projections. The WYSFC growth rates exceeded NCES growth rates by 2-3% per year through 2019.

These differences among data sources indicate possible future uncertainty of teacher demand and additional school facility financing. Thus, decision makers should take care when utilizing these projections.

An examination of the various methodologies employed in the construction of these projections could be examined. How these various forecasts perform over time may have substantial logistic and cost implications.

Regardless of the projection utilized, enrollment is expected to increase, thereby increasing the need for teachers. The relatively high teaching wages in Wyoming may be instrumental in attracting and retaining teachers in the future.

Indicator 4: Trend in Teacher Retirements

Data: The Wyoming Department of Education 602 files contains copious amounts of information regarding teachers and other employees including: age, ethnicity, education, salary, and experience.

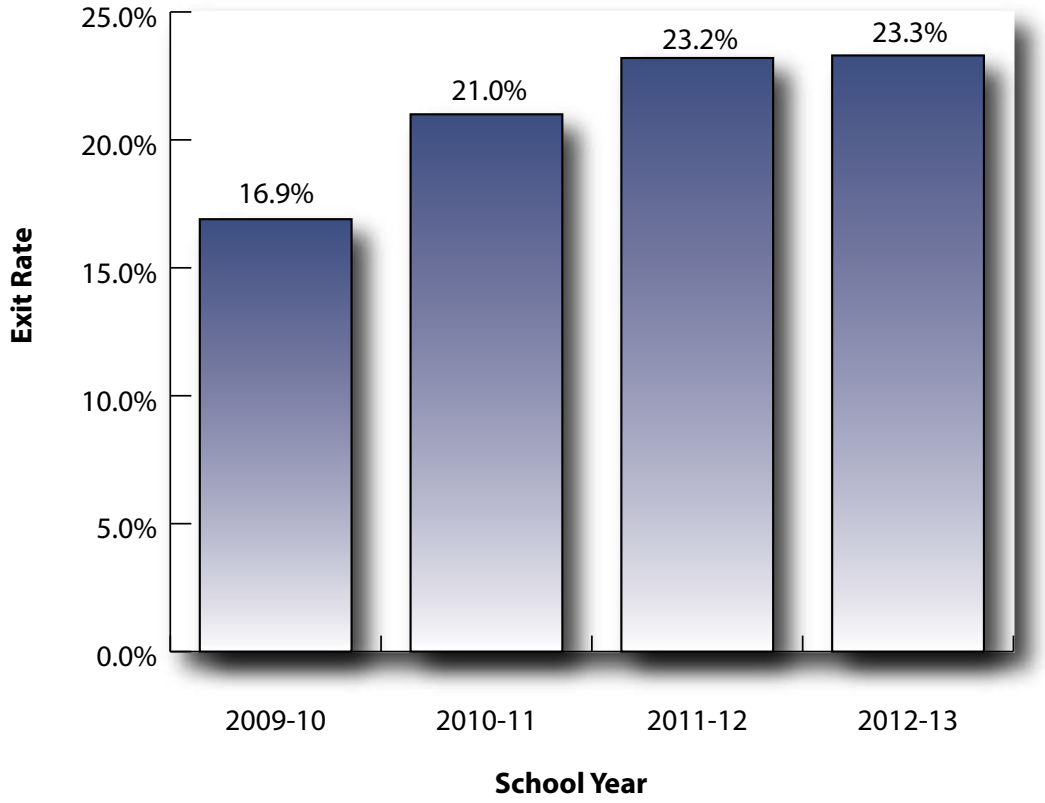
R&P employed drivers' license records to obtain age information if there is a discrepancy between these two data sources.

Metric: Figure 6 shows the exit rate of teachers aged 60 and older. Figure 7 shows the same data grouped into age ranges.

Note that while Figure 7 displays both the 2008 and 2012 age profiles for the sake of completeness, there is only a five year time span between the two. One would not expect the age profiles to change drastically over this time span. Therefore, rather than focus on the changes between the two, the most current year available (2012) is discussed.

Table 2 shows the percentage of Wyoming teachers near retirement age (55+, 60+, 65+

Figure 6: Exit Rate as for WY Teachers Ages 60 and Older, 2009-10 to 2012-13



Source: Wyoming Department of Education Staffing Files (WDE 602).

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000)

years of age).

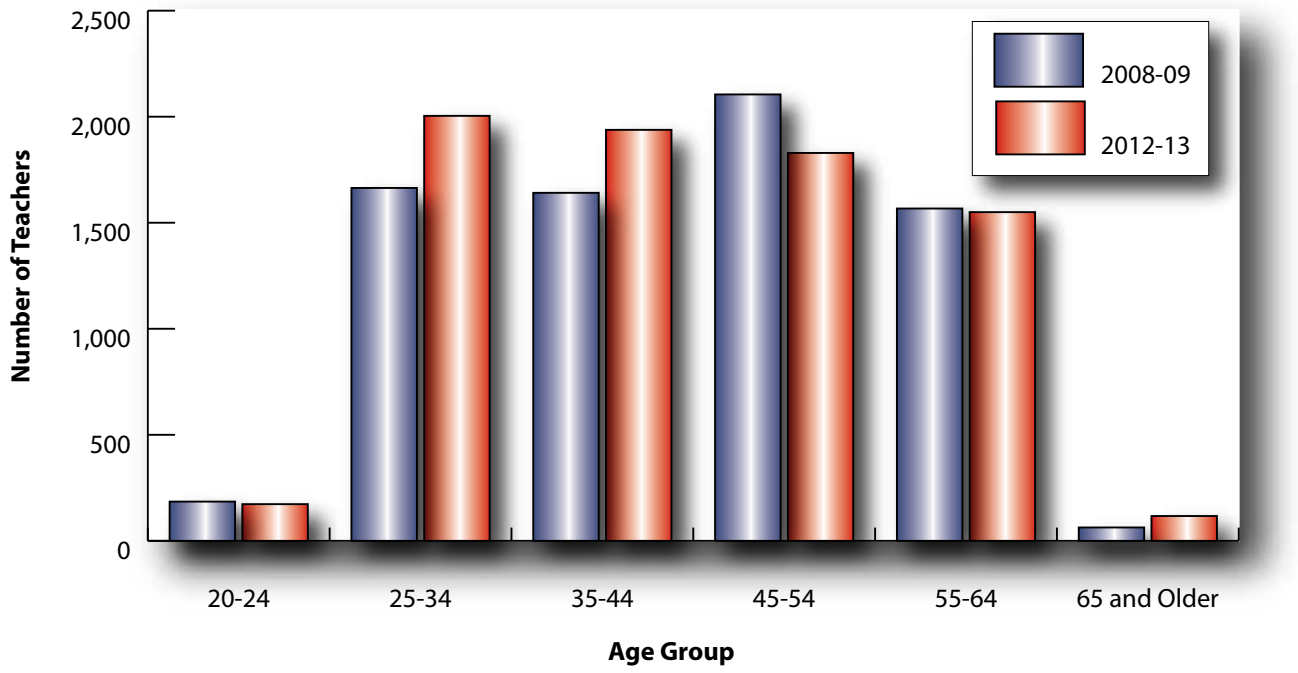
The projection of teacher exits at retirement age (Table 3) employs the same methodology as in the 2012 report (see Appendix C). This projection is based on historic exit rates of teachers 55 years of age or over.

Conclusions: Figure 6 demonstrates that the exit rate of teachers 60 years of age or older has risen from 16.9% in 2009 to 23.2% in 2011. This rate was maintained in 2012.

Figure 7 and Table 2 reiterate the finding in the 2012 report that "the baby-boom bubble has flattened over time through attrition" (Stoddard, 2012). The 2012 report also indicated that "the fraction of teachers of age 55 and older doubled between 2000 and 2007, but has remained relatively constant since then"(Stoddard, 2012). Table 2 shows that this trend continued into 2012.

While the 'baby boom' generation is moving toward or has arrived at retirement age, the overall average age of teachers decreased slightly from 2008 (44.2 years of age) to 2012 (43.3 years of age). This is partially due to the fact that often when an individual retires the

Figure 7: **Number of Teachers in Wyoming by Age Group, 2008-09 and 2012-13.**



Source: Wyoming Department of Education Staffing Files (WDE 602) and Research & Planning Administrative Databases.

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

result is the hiring of a teacher roughly one-third the age of the retiring individual.

Table 3 indicates that the number of teachers 55 years of age and over leaving teaching, in many cases retiring, has steadily risen from 127 individuals in 2000-2001 to 284 in 2012-2013. Projections indicate that exits will slowly decrease over the next five years.

The number of teachers 60 years of age and over leaving teaching has increased nearly four-fold over the 2000-2001 to 2012-2013 time period (41 to 162 individuals). Projected exits are expected to remain relatively steady over the next five years.

Table 2: Percentage of Wyoming Teachers Near Retirement Age

School Year	Percent Ages 55+	Percent Ages 60+	Percent Ages 65+	School Year
2000/01	11.7%	2.4%	0.2%	Data from the 2012 report
2001/02	13.2%	2.8%	0.3%	
2002/03	15.2%	2.9%	0.2%	
2003/04	16.5%	3.6%	0.3%	
2004/05	17.8%	4.2%	0.4%	
2005/06	19.2%	4.8%	0.6%	
2006/07	20.8%	5.9%	0.7%	
2007/08	22.0%	6.5%	0.9%	
2008/09	22.6%	7.2%	0.9%	Data from the current report
2009/10	22.6%	7.8%	1.2%	
2010/11	22.7%	8.6%	1.4%	
2011/12	22.7%	9.1%	1.4%	
2012/13	21.9%	9.1%	1.5%	

Source: Wyoming Department of Education Staffing Files (WDE 602).

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

Table 3: Actual and Projected Number of Exits of Teachers of Retirement Age

School Year	Number Exiting Ages 55+	Number Exiting Ages 60+	School Year
2000/01	127	41	Exits from the 2012 report
2001/02	144	50	
2002/03	145	39	
2003/04	148	51	
2004/05	154	56	
2005/06	176	64	
2006/07	183	88	
2007/08	265	110	
2008/09	202	89	
2009/10	213	98	Exits from the current report
2010/11	247	134	
2011/12	280	157	
2012/13	284	162	
2013/14	242	148	Projected Exits
2014/15	236	153	
2015/16	226	162	
2016/17	225	177	
2017/18	215	182	

Source: Wyoming Department of Education Staffing Files (WDE 602).

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

Indicator 5: Percent of New Hires

Data: Wyoming Department of Education Staffing Files (WDE602).

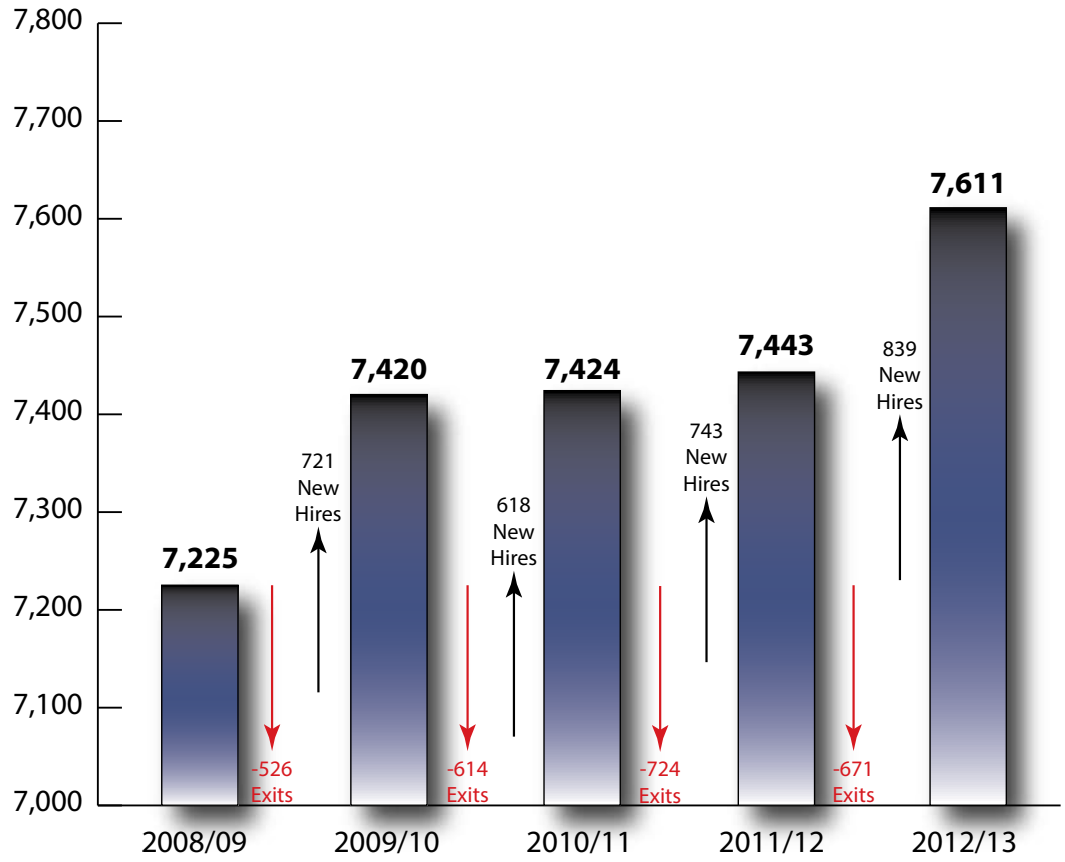
Metric: Figure 8 presents the number of new hires, exits, and the net change for the 2009-2013 time frame.

Conclusion: Changes in student enrollment, teacher retirements, individuals exiting the teaching profession in Wyoming, and policy changes (e.g. pupil – teacher ratio changes) all effect the demand for 'new hire' teachers.

As stated in the 2012 report, new hires tend to be approximately 10% of active teachers in any given year. Figure 8 shows that this continued to hold true for the 2011-2012 school year and 2012-2013 (11%) school years.

Figure 8 shows that new hires exceeded exits every year over the 2008 through 2012 time period. The net growth for this time period was 386 positions. Again, this is based on employing OES methodology to define teachers.

Figure 8: **Number of Year-to-Year New Hires, Exits, and Net Change Among Wyoming Teachers, 2008-09 to 2012-13**



Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

Source: Wyoming Department of Education Staffing Files (WDE 602).

Indicator 6: Retention Rates of Current Teachers

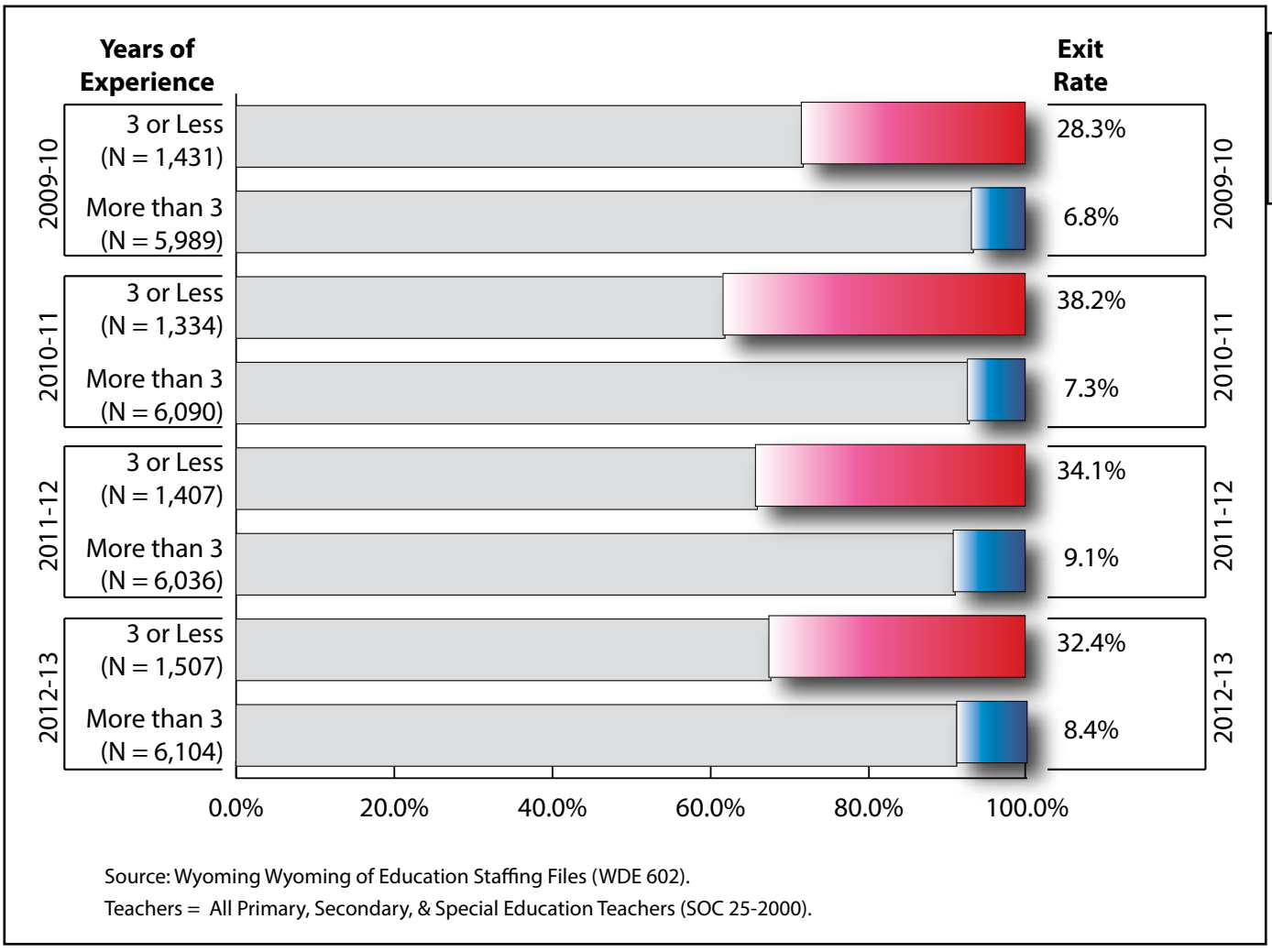
Data: Wyoming Department of Education Staffing Files (WDE 602) and Vacancy Files (WDE 633).

Metric: Many factors can affect the retention rates of current teachers in Wyoming. Factors include:

- Competition for teachers from other states.
- Competition from other industries.
- The age profile of active teachers.

Individuals that are new to the profession may decide that teaching is not the career for them. Therefore, Figure 9 presents the percentage of overall exits of active teachers and exits by level of experience.

Figure 9: **Exit Rates of Active Teachers by Years of Experience, 2009-10 to 2012-13**



Source: Wyoming Wyoming of Education Staffing Files (WDE 602).
Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

The two experience levels are defined as:

- 0-3 years of experience
- More than 3 years of experience

Table 4 includes the information from Figure 10 as well as the new hire rate and the exit rate of teachers age 60 and up to summarize the new hire/exits rate dynamic. Table 5 examines the causes of position vacancies that have occurred over the last four school years.

Conclusions: As stated in the 2012 report, the overall exit rate has stayed fairly constant. Over the 2009 to 2013 time period the annual average exit rate was 8.5%. The highest overall exit rate was in 2011 at 9.7%.

As would be expected, the exit rate of teachers 60 years of age and over exceeded the overall exit rate by a factor of approximately 2.5 over the 2009 to 2012 time period.

Teachers with 3 or less years of experience had much higher exit rates than those with greater than 3 years of experience. Over the 2009 to 2013 time period, the teachers of the lower experience level had exit rates approximately 4 times higher than the more experienced teachers.

Given that exit rates are highest for teachers 60 years of and or over (with the premise that the majority of these individuals have high levels of experience) and for those with three or less years of experience (with the premise that the majority of these teachers were relatively young) indicates that districts with a high proportion of teachers fitting these profiles may face higher replacement costs (e.g. recruitment) than those districts that do not.

Previous research described similar findings. Struck and Robinson, 2006 states, “This research points to a U-shaped curve of teacher experience and quits: Younger teachers have a higher rate of turnover, which declines as teachers hit middle age/ experience, and then rises again as teachers near retirement.” Glover, 2012 presented supporting results using data specific to Wyoming.

Table 5 shows that the number of vacancies has increased substantially for the 2009-10 through 2012-13 school years. Over this time period teachers being promoted or transferring within the district accounted for approximately one-quarter of vacancies. Over the last four school years approximately 20% of vacancies in a given year have been due to individuals transferring out of a particular school district. This indicates that inter-district competition within the state is a large source of turnover.

Table 4: Wyoming Teacher New Hires and Exit Rates

	% of Teacher New Hires	Overall Teacher Exit Rate	Exit Rate of Teachers Age 60+	Exit Rate by Years of Experience: 3 Years or Less	Exit Rate by Years of Experience: Greater than 3 Years
2009/10	9.7	7.1	16.9	28.3	6.8
2010/11	8.3	8.3	21.0	38.2	7.3
2011/12	10.0	9.7	23.2	32.7	9.1
2012/13	11.5	8.8	23.3	32.4	8.9
Average				**32.9**	**8.0**

A teacher can be included in more than one exit category. For example, a 66 year old teacher with more than 3 years experience would be included in both those categories (as well as the overall category)

Source: Wyoming Department of Education Staffing Files (WDE 602).

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

Table 5: District Reported Causes of Wyoming Teacher Vacancies, 2009/10 to 2012/13

	2009/10		2010/11		2011/12		2012/13	
	N	%[1]	N	%[1]	N	%[1]	N	%[1]
Number of vacancies	1,058		1,083		1,318		1,428	
Number of full time vacancies	848		700		966		1,010	
Reason for Vacancy - Full Time Positions[2]								
Former Teacher Retired	177	20.9%	161	23.0%	285	22.4%	226	22.4%
Former teacher transferred within district or promoted	231	27.2%	185	26.4%	224	24.6%	248	24.6%
New position or new course	182	21.5%	105	15.0%	139	15.3%	155	15.3%
Former teacher transferred out of district	177	20.9%	135	19.3%	168	23.4%	236	23.4%
Former teacher left profession	81	9.6%	114	16.3%	150	14.4%	145	14.4%

[1]Percentage of full time vacancies.

[2]There were two additional reasons for vacancy categories this year (position eliminated and position contracted out) accounting for five vacancies not included in this table.

Source: Wyoming Department of Education Staffing Files (WDE 602).

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

Indicator 7: Recruitment Indicators

Data: Wyoming Department of Education Vacancy Files (WDE 633)

Metric: The first metric was the average number of applicants for vacancies. Keep in mind that candidates are likely to be in the hiring pools for more than one district.

The second metric is what percentage of first choice candidates were ultimately hired.

The third metric is the level of difficulty with which it took district supervisor to hire a highly qualified candidate.

Conclusions: The range in the number of applicants for all positions (26 to 31) and full time positions (31-37) has remained steady and at a reasonably high level over the 2009 through 2012 school year time period.

Districts were able to hire their first choice candidate the vast majority of time (over 90%).

The rate at which district supervisors found it somewhat or very easy to attract high quality applicants has decreased over this time period to a level of 61.9% for 2012-13, from a high of 78.4% in 2010-11.

Table 6: Wyoming Department of Education Vacancy Files (WDE 633), 2009-2012 Positions

	2009/10	2010/11	2011/12	2012/13
Average number of applicants, all positions	28	26	31	27
Average number of applicants, full time	31	33	37	33
Percent of Hired first choice, full time positions	93.9	92.7	92.7	93.7
Percent of Very difficult to attract high quality applicants, full time positions	8.3	8.1	15.1	19.4
Percent of Somewhat difficult to attract high quality applicants, full time	13.8	13.4	19.0	18.5
Percent of Somewhat easy to attract high quality applicants, full time	34.2	30.3	27.4	22.0
Percent of Very easy to attract high quality applicants, full time	43.8	48.1	38.4	39.9

Source: Wyoming Wyoming of Education Vacancy Files (WDE 633).

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Appendix A: Comparable Professional and Technical Occupations

The possible occupations: SOC Codes Employed in Defining Teachers, Professional and Technical Occupations, and Comparable Occupations Defined by the Economic Policy Institute.

Teachers

Teachers:
9 possible prior to 2012
11 possible in 2012

- Kindergarten Teachers, Except Special Education 25-2012
- Elementary School teachers, Except Special Education 25-2021
- Middle School Teachers, Except Special and Career/Technical Education 25-2022
- Career/Technical Education Teachers, Middle School 25-2023
- Secondary School Teachers, Except Special and Career/Technical Education 25-2031
- Career/Technical Education Teachers, Secondary School 25-2032
- The following are old special education codes 25-2041, 25-2042, 25-2043,
- The following are new special education codes 25-2051, 25-2052, 25-2053, 25-2054, 25-2059

All Professional and Technical Occupations

Professional and Technical:
10 possible

- Management Occupations 11-0000
- Business and Financial Operations Occupations 13-0000
- Computer and Mathematical Science Occupations 15-0000
- Architecture and Engineering Occupations 17-0000
- Life, Physical, and Social Science Occupations 19-0000
- Community and Social Services Occupations 21-0000
- Legal Occupations 23-0000
- Education, Training and Library Occupations 25-0000
- Arts, Design, Entertainment, Sports, and Media Occupations
- Healthcare Practitioner and Technical Occupations 29-0000

Comparable Occupations (Economic Policy Institute)

Comparable Occupations:
18 occupations
21 SOC codes possible

The Economic Policy Institute (EPI) identified 16 professional and managerial occupations that it determined to be similar to teaching based on Bureau of Labor Statistic skill ratings.
These occupations are:

- Accountants and Auditors 13-2011
- Insurance Underwriters 13-2053
- Human Resources, Training, and Labor Relations Specialists, All Other 13-1079
- Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation 13-1041
- Architects 17-1011, 17-1012
- Conservation Scientists 19-1031

Appendix A: Comparable Professional and Technical Occupations

- Foresters 19-1032
- Registered Nurses 29-1141
- Occupational Therapists 29-1122
- Physical Therapists 29-1123
- Trade and industrial teachers
- Self-Enrichment Education Teachers 25-3021
- Farm and Home Management Advisors 25-9021
- Educational, Guidance, School, and Vocational Counselors School Cound== 21-1012
- Archivists 25-4011
- Curators 25-4012
- Clergy 21-2011
- Technical Writers 27-3042
- Editors and Reporters 27-3041, 27-3022
- Computer Programmers 15-1021

Appendix B: Occupational Employment Statistics (OES) Wage Survey

Research & Planning (R&P), a section of the Wyoming Department of Workforce Services, in cooperation with the U.S. Bureau of Labor Statistics (BLS), has conducted an Occupational Employment Statistics (OES) Wage Survey since 1996. The OES program produces occupational employment and wage estimates that have many uses. For example, wage information helps employers determine if they are offering competitive wages. Employment and training organizations (such as community colleges), vocational counselors, and individuals use wage data to assist students in making career decisions. OES data are used to determine staffing patterns, develop employment projections, and for Foreign Labor Certification.

In Wyoming, the OES Wage Survey samples and contacts approximately 1,000 establishments by mail and phone in May and November of each year. Data obtained are used to estimate occupational employment and wage rates for Unemployment Insurance (UI) covered wage and salary jobs in non-farm establishments.

Wages for the OES survey are straight-time, gross pay, exclusive of premium pay. Items included in the survey are base pay rates, cost-of-living allowances, guaranteed pay, hazard pay, incentive pay, commissions, piece rates and production bonuses, length-of-service allowances, on-call pay, and portal-to-portal pay. Items excluded are back pay, jury-duty pay, overtime pay, severance pay, shift differentials, vacation pay, Christmas bonuses, holiday or weekend pay, attendance bonuses, meal and lodging allowances, merchandise discounts, non-production bonuses, profit-sharing distributions, relocation allowances, stock bonuses, tool allowances, tuition reimbursements, and uniform allowances. Data from tips were not collected prior to 1999. Tip data are incorporated into the hourly estimates. The OES Wage Survey does not include benefit data.

Hourly wage estimates in this publication are calculated using a year-round, full-time figure of 2,080 hours per year (52 weeks times 40 hours). Occupations that typically have a work year of less than 2,080 hours (such as musical and entertainment occupations, flight attendants, pilots, and teachers) are reported only as an annual wage.

Every state conducts an identical OES wage survey using standard techniques. This facilitates comparison of data among states, as well as comparisons with national figures. National and state wage estimates are located on the BLS website at http://www.bls.gov/oes. For more information, see the BLS Technical Notes (http://www.bls.gov/oes/current/oes_tec.htm).

Appendix C: Projected Number of Wyoming Teacher Exits (Table 3)

Projections of teacher exits and retention were calculated using the age profile in 2012.

The 2012 report stated that the average annual exit rate for teachers 55 and over was 15.2% from 2000-2010. This rate has not changed in the last two years. Therefore, as in the 2012 report, an estimated exit rate of 15% was employed in the calculation.

The 2012 report stated that the average annual exit rate for teachers 60 and over was 23.2% from 2000-2010. This rate has dropped slightly to a rate of 21.1% over the last five years. Therefore, an estimated exit rate of 21% was employed in the calculation (which is a 2% decrease from the 2012 calculation).

The exit rates may be higher if some teachers retire earlier than recent data has indicated or if teachers near retirement age are hired during this 2013 through 2018 time period. Conversely, exit rates will be lower if teachers extend their careers longer than recent history suggests.

Age	Number of Teachers
50	161
51	218
52	165
53	204
54	231
55	200
56	232
57	195
58	173
59	173
60	161
61	159
62	119
63	80
64	58
65+	117
Total, 50+	2,646

Example: Ages 55 and Older

In the 2012-13 school year, there were 1,667 teachers 55 years of age or over. Actual exits from the 2011-2012 to 2012-2013 school years were 284.

Therefore, the number of teachers projected to be retained for the 2013-2014 school year is 1,383. The number of teachers that turned 55 years of age is 231. This is a total of 1614 teachers 55 and over.

Using the estimated exit rate of 15% the number of teachers projected to exit is 242 (i.e. 0.15 * 1614).

Appendix D: Data Used in the Figures

Figure 1: Average Annual Wages for Teachers and Comparable Workers in Wyoming, 2002-2012

	Wyoming Average Annual Wage		
Year	Teachers	Profess/Tech Occ	Comparable Occ
2002	$37,152	$44,511	$42,250
2003	$39,228	$46,222	$43,377
2004	$40,059	$46,869	$43,909
2005	$41,358	$47,584	$45,877
2006	$43,213	$49,166	$47,235
2007	$48,174	$52,210	$50,592
2008	$52,458	$55,733	$53,359
2009	$55,910	$58,085	$56,897
2010	$57,015	$59,586	$58,044
2011	$57,669	$60,480	$59,210
2012	$59,157	$61,622	$59,311

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

Source: Occupational Employment Statistics (OES) published data.

Figure 2: Ratio of Teacher Wages to Non-Teacher Wages in Professional/ Technical Occupations, Wyoming and Surrounding States, 2000-2012 (All Ownerships)

	Average Annual Wage	
Wyoming		
	Teachers	Prof/Tech
2000	$34,724	$40,289
2001	$36,415	$42,217
2002	$37,150	$44,514
2003	$37,855	$45,122
2004	$40,057	$46,869
2005	$41,351	$47,587
2006	$43,188	$49,166
2007	$48,174	$52,214
2008	$52,459	$55,736
2009	$55,904	$58,086
2010	$57,014	$59,631
2011	$57,669	$60,484
2012	$59,168	$61,624
U.S.		
	Teachers	Prof/Tech
2000	$42,356	$51,061
2001	$44,015	$52,543
2002	$44,756	$55,869
2003	$45,259	$57,252
2004	$46,810	$58,633
2005	$48,017	$60,096
2006	$49,739	$62,337
2007	$50,936	$64,944
2008	$52,968	$67,555
2009	$53,845	$69,152
2010	$55,022	$70,546
2011	$55,940	$71,959
2012	$56,741	$73,028
Surrounding States		
	Teachers	Prof/Tech
2000	$36,622	$47,065
2001	$37,974	$48,722
2002	$38,557	$51,573
2003	$39,325	$52,585
2004	$40,614	$54,012
2005	$41,270	$56,437
2006	$43,111	$57,216
2007	$44,140	$59,550
2008	$46,025	$60,372
2009	$45,792	$62,768
2010	$47,640	$63,836
2011	$47,409	$64,862
2012	$48,394	$66,128

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000)
Source: Occupational Employment Statistics (OES) published data.

Appendix D: Data Used in the Figures

Figure 3: **Average Annual Teacher Wages in Wyoming, the U.S., and Surrounding States, 2000-2012**

	Average Annual Wage			Ratio of WY Average Annual Wage to:	
Year	Wyoming	Surrounding States	U.S.	Surrounding States	U.S.
2000	$34,724	$36,622	$42,356	0.95	0.82
2001	$36,415	$37,974	$44,015	0.96	0.83
2002	$37,150	$38,557	$44,756	0.96	0.83
2003	$37,855	$39,325	$45,259	0.96	0.84
2004	$40,057	$40,614	$46,810	0.99	0.86
2005	$41,351	$41,270	$48,017	1.00	0.86
2006	$43,188	$43,111	$49,739	1.00	0.87
2007	$48,174	$44,140	$50,936	1.09	0.95
2008	$52,459	$46,025	$52,968	1.14	0.99
2009	$55,904	$45,792	$53,845	1.22	1.04
2010	$57,014	$47,640	$55,022	1.20	1.04
2011	$57,669	$47,409	$55,940	1.22	1.03
2012	$59,168	$48,394	$56,741	1.22	1.04

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000)

Source: Occupational Employment Statistics (OES) published data.

Figure 4: **Average Annual Teacher Wages in Wyoming and Surrounding States, 2000-2012 (All Ownerships)**

	Wyoming		Colorado		Idaho		Montana		Nebraska		South Dakota		Utah	
Year	Average Annual Wage	N	Average Annual Wage	N	Average Annual Wage	N	Average Annual Wage	N	Average Annual Wage	N	Average Annual Wage	N	Average Annual Wage	N
2000	$34,724	9	$38,882	9	$37,029	3	$30,449	9	$36,653	9	$29,881	9	$38,341	9
2001	$36,415	9	$39,842	9	$38,496	3	$31,851	9	$37,835	9	$32,124	9	$39,790	9
2002	$37,150	9	$40,955	9	$39,536	3	$32,595	9	$37,991	9	$32,505	9	$39,387	9
2003	$37,855	9	$41,604	8	$42,038	3	$33,527	9	$38,214	9	$32,689	9	$39,870	9
2004	$40,057	8	$43,474	9	$43,122	4	$36,413	9	$39,301	9	$33,501	9	$39,475	9
2005	$41,351	8	$44,657	9	$42,486	3	$35,719	9	$40,836	9	$33,838	8	$39,797	9
2006	$43,188	8	$45,578	9	$45,615	6	$36,441	9	$42,596	9	$34,894	8	$43,497	9
2007	$48,174	9	$46,683	9	$47,410	6	$37,097	9	$42,422	9	$36,139	8	$45,291	9
2008	$52,459	9	$48,128	8	$50,181	7	$39,496	9	$43,867	9	$37,614	9	$47,694	9
2009	$55,904	9	$48,752	8	$48,722	8	$39,348	9	$44,486	9	$38,352	9	$45,091	9
2010	$57,014	9	$49,988	9	$49,166	9	$40,965	9	$49,489	9	$39,459	9	$46,581	9
2011	$57,669	9	$50,503	9	$46,435	9	$43,014	9	$46,973	9	$39,457	9	$46,876	9
2012	$59,168	10	$50,262	11	$46,740	8	$45,449	10	$48,279	11	$40,077	9	$49,785	10

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

N = Number of Teaching Occupations Represented.

Source: Occupational Employment Statistics (OES) published data.

Appendix D: Data Used in the Figures

Figure 5: Wyoming Student Enrollment and Population Ages 6-18, 1975-2030

Year	WDE	Census	EAD	SFC	NCES
1975	88,184				
1976	90,587				
1977	92,321				
1978	94,328				
1979	95,468				
1980	98,305				
1981	99,541				
1982	101,665				
1983	100,965				
1984	101,261				
1985	102,779				
1986	100,955				
1987	98,455				
1988	97,793				
1989	97,172				
1990	98,226				
1991	99,734				
1992	100,313				
1993	100,899				
1994	100,314				
1995	99,859				
1996	98,777				
1997	96,504				
1998	94,420				
1999	91,883				
2000	89,531	99,738			
2001	87,897	97,415			
2002	86,117	95,837			
2003	84,741	94,136			
2004	83,772	93,006			
2005	83,705	92,088			
2006	84,629	91,955			
2007	85,578	92,593			
2008	86,519	93,852			
2009	87,420	95,654			
2010	88,165	95,249		88,987	
2011	89,476		95,681	90,975	89,752
2012	90,990		96,670	93,301	90,524
2013			98,216	96,144	91,520
2014			100,183	99,034	92,377
2015			102,153	102,115	93,076
2016			103,514	105,177	93,517
2017			104,647	108,558	93,790
2018			105,732	112,067	93,934
2019			106,537	115,519	93,910
2020			107,539		93,638
2021			108,427		92,951
2022			109,014		
2023			109,433		
2024			109,670		
2025			109,780		
2026			109,469		
2027			109,280		
2028			109,174		
2029			109,457		
2030			109,847		

Sources:
WDE = Wyoming Department of Education Enrollment
Census = U.S. Census Bureau Estimated Population, Ages 6-18
EAD = Wyoming Economic Analysis Division Projected Population, Ages 6-18
SFC = Wyoming School Facilities Projected Enrollment
NCES = National Center for Education Statistics Projected Enrollment

Figure 6: Exit Rates for Wyoming Teachers Ages 60 and Older, 2009-10 to 2012-13

	Exits		
School Year	Total	N	Exit Rate
2009-10	580	98	16.9%
2010-11	637	134	21.0%
2011-12	676	157	23.2%
2012-13	694	162	23.3%

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000)

Source: Wyoming Department of Education Staffing File (WDE 602).

Figure 7: Number of Teachers in Wyoming by Age Group, 2008-09 and 2012-13

Age Group	2008-09	2012-13
20-24	185	173
25-34	1,664	2,004
35-44	1,641	1,938
45-54	2,105	1,829
55-64	1,567	1,550
65-up	63	117

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000)

Sources:
Wyoming Department of Education Staffing Files (WDE 602).

Research & Planning Administrative Databases.

Figure 8: Number of Year-to-Year New Hires, Exits, and Net Change Among Wyoming Teachers, 2008-09 to 2012-13

Year	N	New Hires	Exits	Difference
2008-09	7,225			
2009-10	7,420	721	526	195
2010-11	7,424	618	614	4
2011-12	7,443	743	724	19
2012-13	7,611	839	671	168

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

Source: Wyoming Department of Education Staffing Files (WDE 602).

Figure 9: Exit Rates of Active Teachers by Years of Experience, 2009-10 to 2012-13

	Experience					
	3 Years or Less			More than 3 Years		
	N	Exits	Exit Rate	N	Exits	Exit Rate
2009-10	1,431	405	28.3%	5,989	410	6.8%
2010-11	1,334	510	38.2%	6,090	447	7.3%
2011-12	1,407	460	32.7%	6,036	547	9.1%
2012-13	1,507	488	32.4%	6,104	543	8.9%

Teachers = All Primary, Secondary, & Special Education Teachers (SOC 25-2000).

Source: Wyoming Department of Education Staffing Files (WDE 602).

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A Report to
the Wyoming
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Wyoming Department of Workforce Services
Joan Evans, Director

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Introduction

by: Tom Gallagher, Research & Planning Manager

The Cost Pressures Project

This report represents a response to legislative directive to "conduct data collection and analysis necessary for the education resource block grant model monitoring" (General Government Appropriations, Chapter 26, Section 326[d], March 2012). Our work was carried out in consultation with the Legislative Service Office and was complemented by access to data available only to state employees working under contract to the Bureau of Labor Statistics (U.S. Department of Labor) and administrative records not publicly available.

The purpose of this report is to present information on teacher and non-teacher cost pressures and to make recommendations on the future monitoring of educational needs. In this report, the term "cost pressures" is interpreted to mean a level of direct compensation that leads to the recruitment and retention of staff capable of producing a superior work product in the public school setting.

This report makes available a great deal of data for 10 teaching specialties and supporting staff for Wyoming, six surrounding states, the nation, and Wyoming's 23 counties. While focusing on teachers, we also provide links to a large body of tabular data, source documents, definitions, and methodologies used in this report at http://doe.state.wy.us/LMI/education_costs.htm.

Building on past reports, this analysis expands on the issue of cost pressures to include the demographics of labor and the structure of supply. Workforce demographics and supply issues are destined to become an increasingly important part of monitoring cost pressures.

This is the second annual report designed to monitor the competitiveness of staff compensation, and especially the compensation of teachers, enabled by the Wyoming school district block grant.

Government is generally slower to respond to market events than the private sector. It is not surprising, then, that the major finding of this report is that the compensation relationship between Wyoming, surrounding states, and the nation has remained relatively stable since the last report. The average wage for teachers in Wyoming remains well ahead of compensation in surrounding states, moreover, turnover remains relatively stable compared to the historic norm.

National and regional employment growth opportunities affecting Wyoming's market have been slow in developing since the end of the recession. At the same time, as can be seen in **Figure 1** and as discussed in **Box 1** (see pages 7-9), employment in the region is growing more rapidly and consistently than in Wyoming. And, as

importantly, the growth is led by two larger surrounding states, Colorado and Utah, with more complex and generally higher wage markets.

Architect is included among the "Comparable Occupations" to teaching (see Appendix A in *Current Status of Cost Pressures*). At $78,400, the compensation of Architects (SOC 17-1011, see page 11 of Table 1 at http://doe.state.wy.us/LMI/education_costs/LSO_OES_Tables_2010_2012.pdf) in Colorado is substantially higher than average compensation of architects in Wyoming at $68,400. Architects in Utah are paid an average wage 4.1% greater than in Wyoming. Given the slowness with which governments tend to act in response to market changes, it is essential that we monitor private sector employment change or risk reacting after the fact to private sector competition for labor that would otherwise flow into public schools within Wyoming. Wage competition must be considered in the context of migration decisions made by households rather than individuals, and it is not without historic precedent for more stable and diversified labor markets to prove attractive to more highly educated residents of Wyoming.

Other Key Findings

- During the 2010/11 school year, the average annual wage for all primary, secondary, and special education teachers in public schools in Wyoming was $59,314, an increase of $2,245 over the 2009/10 school year. This salary is higher than in surrounding states and in the U.S. as a whole (Chapter 1).

- Teacher wages in Wyoming on average are competitive with surrounding states and the nation, but this is not the case in all counties (Chapter 2).

- The replacement rate of individuals leaving public schools ranges from 11% in 2008/09 to 13.2% in 2010/11, those leaving represent a recruitment cost (Chapter 3).

- Wyoming may become increasingly dependent on importing teachers as the boom generation retires. More than one-quarter of special education teachers are approaching retirement age, and represent the most immediate replacement need (Chapter 4).

- Given the rapid aging of the workforce in industries requiring post-high school degrees, school districts may encounter significant competition for qualified employees (Chapter 5).

- A significant portion of individuals (33.5%) can teach in at least two content areas, allowing districts to employ teachers in varying content areas during a given school year (Staff Reports, Appendix A).

- At each age group, males' contract wages were generally greater. It is therefore of interest that the largest earnings gains from 2011/12 to 2012/13 were found among younger females who remained in the same district but changed occupations (Staff Reports, Appendix B).

Box 1: Wyoming Lags Behind Surrounding States in Job Growth

by: David Bullard, Senior Economist, and Michael Moore, Research Analyst

Based on the most recent Unemployment Insurance (UI) covered wage and salary employment estimates, job growth in surrounding states like Colorado and Utah is outpacing job growth in Wyoming.

During the second half of 2012, the over-the-year percentage change in employment in Wyoming was lower than that of all surrounding states (Colorado, Idaho, Montana, Nebraska, South Dakota, and Utah) and the U.S. (see **Map**). In December 2012, Utah (3.7%) and Colorado (2.7%) experienced the greatest increase in UI covered wage and salary employment compared to December 2011. States with large urban areas – such as Colorado and Utah – experienced the most growth, while more rural states experienced a slow, steady increase in employment.

Job growth in Wyoming, its surrounding states, and the U.S. from 2005 to 2012 is shown in **Figure 1**. The Great Recession lasted from December 2007 to June 2009 (NBER, 2010), and most states entered the recession several months before Wyoming. Before the Great Recession, Wyoming's job growth was generally higher than its surrounding states. During 2008, high oil and natural gas prices spurred energy development in Wyoming, while holding back economic growth in the nation as a whole.

During the recession, a sharp drop in energy prices caused larger job losses in Wyoming than were seen in most surrounding states. Wyoming added jobs at a healthy pace early in the recovery, but in the second half of 2012 job growth slowed to very low levels. It is clear that Wyoming's job growth has been lagging behind other states in the region.

Map: Over-the-Year Percentage Change in Total Unemployment Insurance Covered Employment for Wyoming and Surrounding States, December 2012

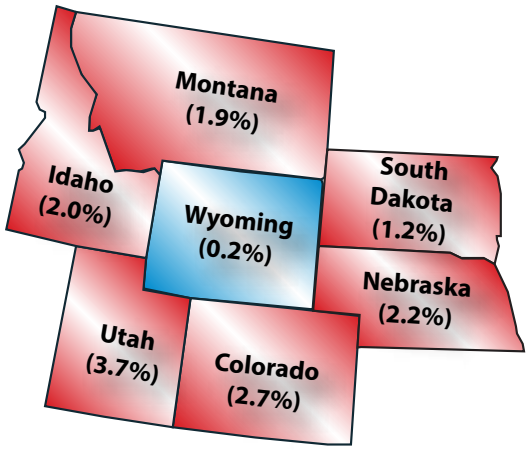
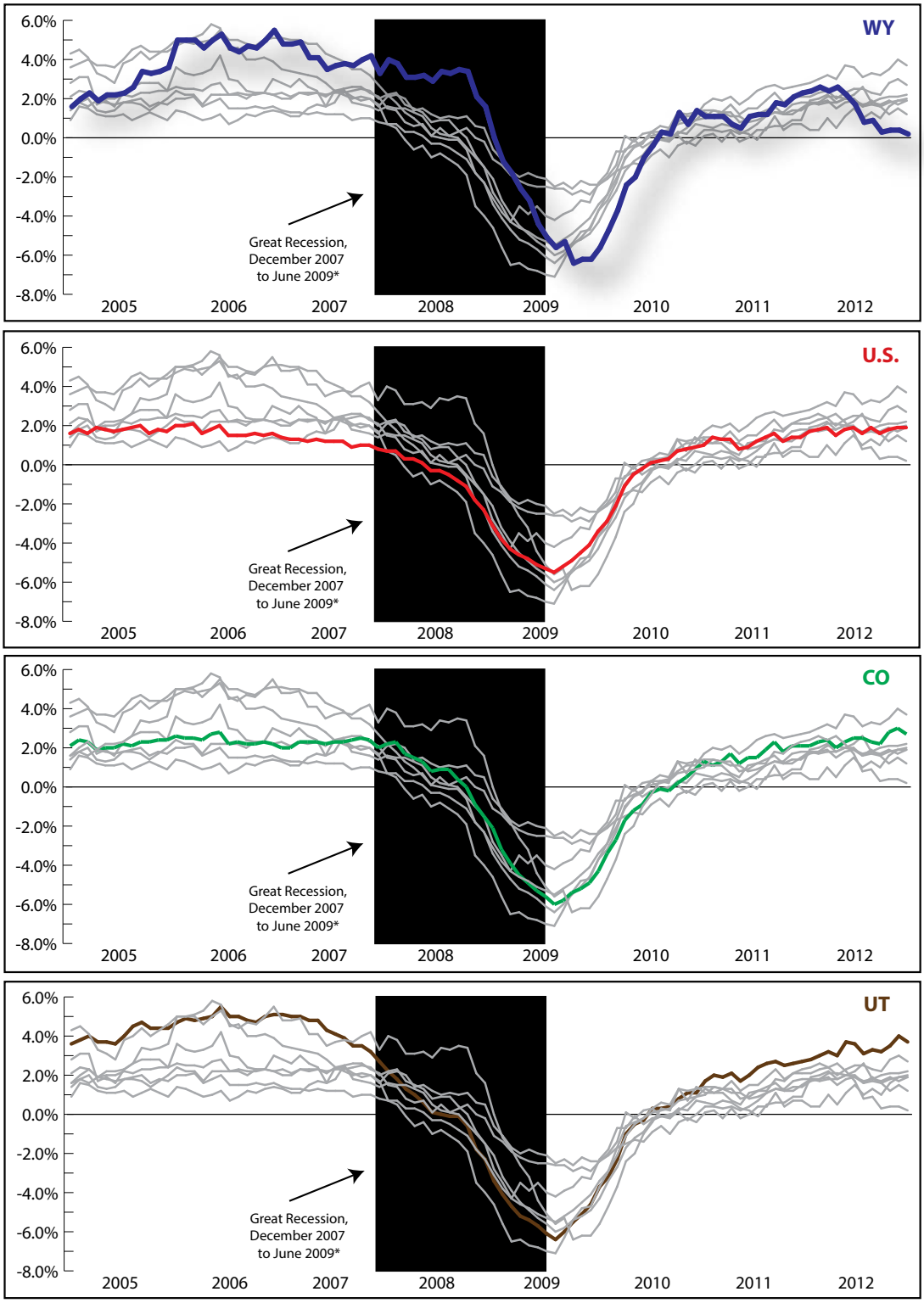


Figure 2 shows Wyoming's average annual unemployment rate and its employment-to-population ratio from 2005 to present. Before the recession, as employment was increasing, the unemployment rate fell to 2.8% in 2007. Then, as workers lost their jobs during the recession, the employment to population ratio fell (down from 70% to 65%) and the unemployment rate rose, hitting 7.0% in 2010.

In the recent recovery the unemployment rate has steadily decreased, while the employment to population ratio has remained largely flat. It seems that a large part of the decrease in the unemployment rate is related to people dropping out of the labor force, rather than returning to work.

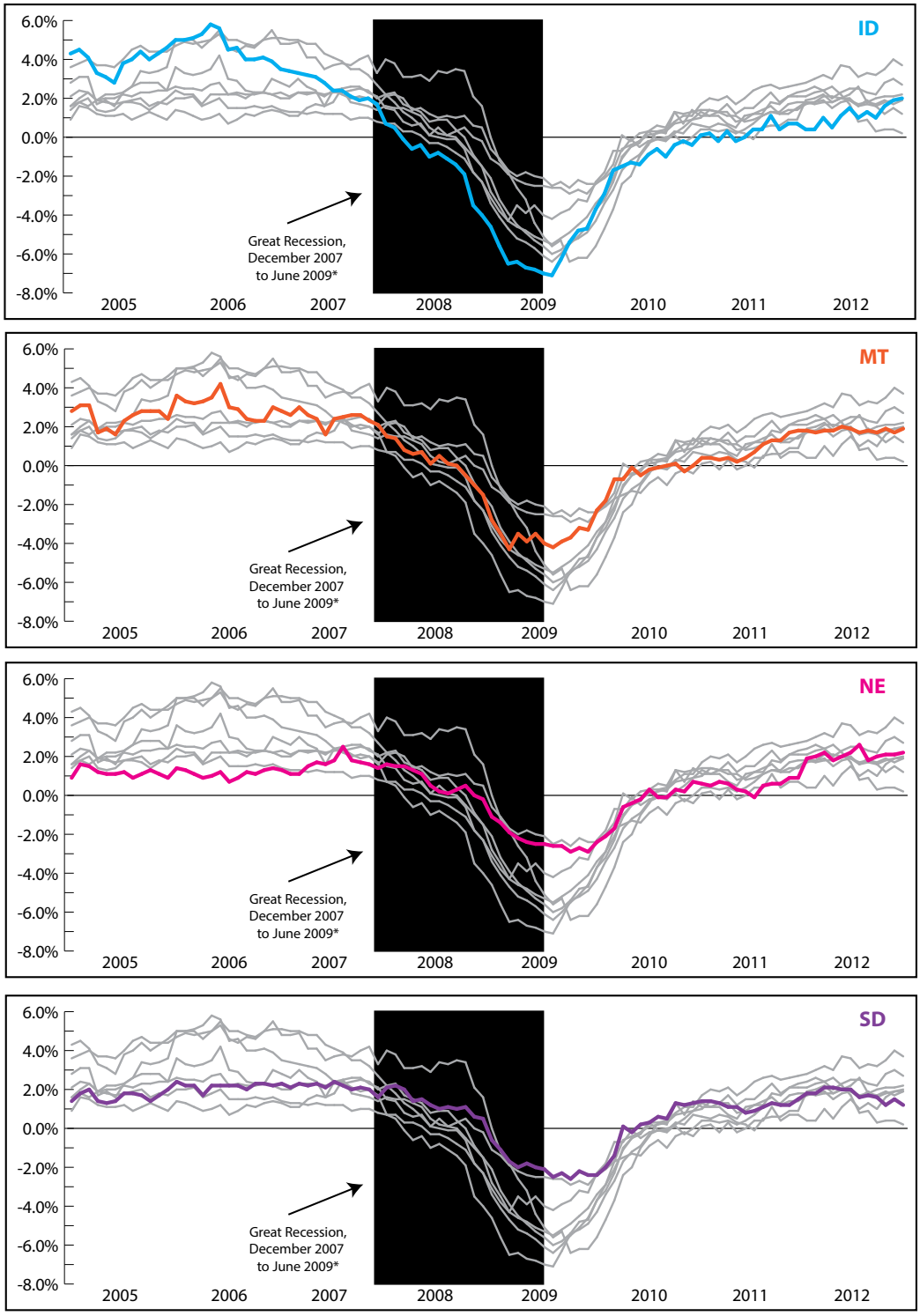
(Text continued on page 10)

Figure 1: Over-the-Year Percentage Change in Total Unemployment Insurance Covered Employment for Wyoming, Surrounding States, and the U.S., 2005-2012



Source: Quarterly Census of Employment and Wages (QCEW).
* Source: National Bureau of Economic Research (2010).

Figure 1: Over-the-Year Percentage Change in Total Unemployment Insurance Covered Employment for Wyoming, Surrounding States, and the U.S., 2005-2012 (continued)



Source: Quarterly Census of Employment and Wages (QCEW).
* Source: National Bureau of Economic Research (2010).

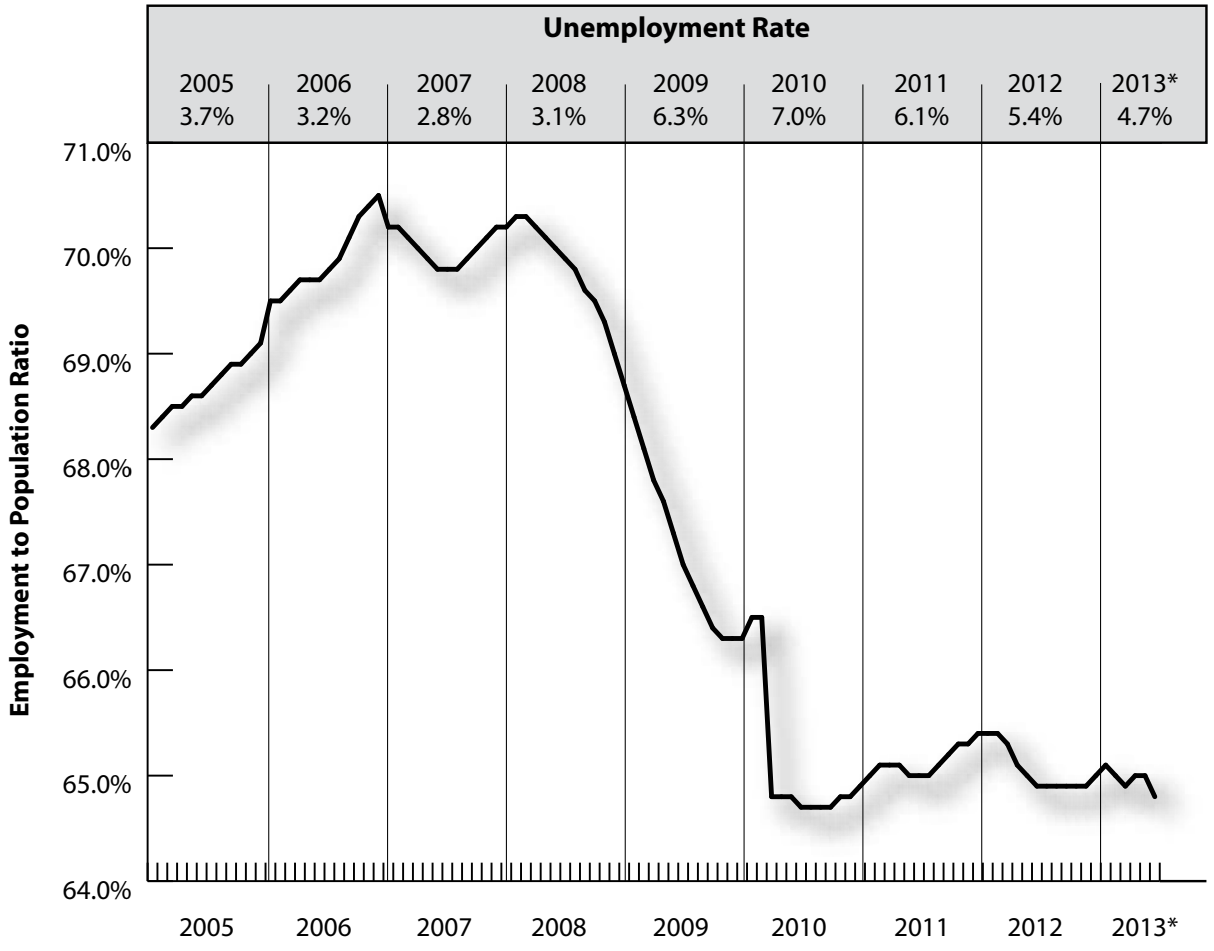
(Text continued from page 7)

One way to interpret the stagnant employment-to-population ratio is that employment and population are increasing at roughly the same rate, and therefore the ratio between the two is fairly constant. This is in direct contrast to the situation in 2005 and 2006, when employment increased faster than population, raising the employment-to-population ratio and driving the unemployment rate down.

References

National Bureau of Economic Research. (2010). Retrieved September 17, 2013, from http://www.nber.org/cycles/sept2010.html

Figure 2: Seasonally Adjusted Employment to Population Ratio and Annual Unemployment Rate for Wyoming, 2005-2013



Series break in April 2010 is related to the introduction of new population estimates.
*2013 = January-July.
Employment to Population Ration = Employment/Population.
Source: Local Area Unemployment Statistics.

Prepared by Bullard, D., and Moore, M. Research & Planning, WY DWS, 9/17/2013.

Methodological Note: How Do We Know What We Know?

by: Tom Gallagher, Research & Planning Manager

Research & Planning (R&P) uses two types of data in the analysis conducted for this report, an establishment survey and administrative records. Our objective is to understand and describe the relative competitiveness of compensation for employment in Wyoming school districts in the context of regional (surrounding States) and the nationwide market, especially for teaching positions. The central, nationwide program used to analyze market competitiveness is the product of a State-Federal partnership.

The Occupational Employment Statistics (OES) survey of establishments is conducted in two panels (with May and November reference periods) by State Research offices under contract to the U.S. Department of Labor's Bureau of Labor Statistics (BLS). Under this State-Federal statistical program, R&Ps staff serve as sworn agents of the Commissioner of the BLS and are subject to the requirements of Title V – Confidential Information Protection and Statistical Efficiency Act, Public Law 107-347 when carrying out BLS-funded activities.

The OES program is the only source of reliable occupation-based staffing and wage estimates in the country. Annually, 400,000 establishments are sampled nationwide for State collection of occupation and wage information in the OES program. Establishments are organized by industrial sector using the North American Industrial Classification System (NAICS) and their ownership status. (North American Industrial Classification System, Executive Office of the President, Office of Management and Budget, United States, 2012) A firm can be said to be "owned" by a private entity, or an entity of local, state, or federal government. (This background is useful in reading the tabular data underlying the analysis in this report.)

While BLS produces occupational staffing and wage estimates for local government schools (local government ownership, NAICS code 611100) for the nation, it does not do so at the state level. In order to produce wage rates and occupational distributions corresponding to the political jurisdictions for which Wyoming provides education block grant funding, it is necessary for R&P to produce school district estimates using confidential OES files for Wyoming and surrounding states. With permission from the six surrounding states, and with the assistance of the BLS Dallas Regional Office, staffing and wage estimates were produced using the methodology documented in "Methodological Documentation for Occupational Employment Statistics (OES) Employment and Wage Summary Tables for Wyoming's Teacher Compensation Study." This BLS funded documentation can be found at http://doe.state.wy.us/LMI/education_costs.htm.

Excerpts of occupational staffing and wage estimates based on state OES files correspond to the 2011/12 (November/May) period can be found throughout this report. The entire tabular report, for all occupations found in school districts is located at http://doe.state.wy.us/LMI/education_costs/LSO_OES_Tables_2010_2012.pdf. The tables for all surrounding states and the nation are limited to those occupations found in Wyoming school districts.

For Wyoming counties, the analysis of employment shifts from the use of sample survey data (OES) to the use of administrative records, the second source of

information used in this report.

The Wyoming Department of Education provides the following three types of files to R&P, based on their collection of information from school districts:

- WDE 602/652 – WISE School District Staff Member Staffing files: The WDE 602 represents a point in time during the fall which records staff on contract for the beginning school year. Consequently, as the reader will soon learn, not all contract staff actually show up for work. The WDE 652 represents a collection from the districts the following spring which retrospectively records changes in staffing and assignment based on the WDE 602 record. The WDE 652 report modifies the WDE 602 record.

  Notes and references in the tables to "contract compensation" refer to the WDE 602 record. Contract compensation amounts represent district plans. OES wage estimates represent actual compensation averaged for two points in time (November and May). As a result, there will always be some difference in the level of compensation between the two. (It is noted that R&P appreciates the opportunity to participate in WDE 602 training provided by the Department of Education to the school districts.)

- WDE 633 – Certified Staff Vacancy Application Information: As its name implies, this collection of information from the districts represents an attempt to develop information about vacancies and recruitment difficulties. However, establishing a clear audit trail between a vacancy and a district position is hampered by the fact that there are no position numbers at the district level.

  The most recent WDE 633 file was provided to R&P on October 4, 2013. In contrast to past files, the current file includes a vacated and replacement staff identification number and name. The additional identification information on the 633, in addition to complete assignment information from the 602/652 is needed to determine precisely for what functions (or job) districts have been recruiting.

Other administrative records include licensing information records from the Professional Teaching Standards Board (PTSB), discussed later in this report, Unemployment Insurance quarterly payroll tax and employee compensation information, and drivers' license addresses. These databases begin as regulatory records with legal sanctions attached to them and are therefore presumed to be administered with greater rigor. These databases are used to validate key attributes of WDE data collections from the school districts, and permit the measurement of other market factors including earnings of district employees in the private sector and commuting distances to define the industrial geographic scope of the labor market in which district staff are active.

A guiding research principle for this work is continuity in coding, especially occupational coding. WDE district staffing files are coded to the Standard Occupational Classification (SOC) system ("Standard Occupational Classification Manual 2010," Executive Office of the President, Office Of Management and Budget) which is the same system used in the OES program. To the extent possible, R&P codes teacher assignments to SOCs, that the compensation of district staff is measured in a manner comparable to the estimates of occupational compensation from the OES program at the

multi-state regional and national level.

A second research principle is an attempt to be comprehensive and exhaustive. Given the iterative nature of research, this goal can never be attained. However, Appendix A, "Teacher Supply in Wyoming: The Professional Teaching Standards Board (PTSB) and School District Recruitment Needs" represents an attempt to move in this direction. A basic building block of the teacher licensing function carried out by the Board is the endorsement by an institution of higher education to teach in a particular domain (e.g. language arts, math, science etc.) at a particular level of instructions (elementary, middle, high school). A goal of this appendix report is to develop a method of distilling this large amount of data into a manageable set of categories that can assist in understanding and quantifying the labor supply in a way that matches district demand for labor. R&P plans to use the endorsement classification system to improve our understanding of the types of human resources districts recruit, and are likely in the future to need to recruit, in order to inform the higher education system and their students about the types of endorsements most likely to lead to a job teaching in Wyoming.

By codifying supply and demand issues, never before attempted, as part of cost model pressures analysis the results can facilitate minimizing future labor costs for districts provided that supply and demand information is available to the system of labor supply in a timely and useful manner.

"School District Exit: Teacher Wage Progression and Assignment Status by Age and Gender," Appendix B, represents another attempt at comprehensive analysis. Even though the report only covers the components of change from the 2011/12 to 2012/13 school years, the analysis suggests useful directions for future research, and implications for labor policy development. For example, the largest earnings gains were found among younger females who remained in the same district but who changed occupations (see Table 1a, Appendix B). In general, earnings gains were more prevalent among younger teachers than more mature teachers, but only when the teacher remained within the same district. Changing districts, and in many cases losing tenure, was associated with earnings loss. Earnings loss was most likely among the teaching pool of those 55 and up. This phenomenon appears to be a function of a change in the pool of older workers whose membership selectively retire at their peak earnings leaving the remaining pool of less well paid workers in the 55 and up age category behind. However, a definitive understanding of teacher retirement behavior depends upon analyst access to Retirement Board files.

The literature on retirement suggests that as the level of worker education increases, so does the likelihood of working more years until retirement. With the teacher compensation system driven in part by attaining increasing amounts of education, a standard model for the prediction of teacher retirement based on general patterns of retirement in the population as a whole may not be applicable to understanding replacement need due to retirement from school districts. However, effectively exploring this possibility is dependent upon researcher access to Retirement Board files. Barriers to comprehensive analysis extend beyond the issue of access to resources.

Appendix A and B represent a beginning in the establishment of baselines in two new areas and suggest a direction to the establishment of additional trend analysis. Extrapolation from these reports must be limited, but they open the possibilities for future analysis.

Recommendations and Future Direction

by: Tom Gallagher, Research & Planning Manager

A. WDE 602 files should contain position numbers and related job descriptions. Job descriptions should include major assignment codes, related FTE information, and the required endorsements (and potentially years of experience and education) needed to perform the duties of the job. At this point, it is impractical to determine with certainty what districts require as basic minimums to perform necessary tasks, nor can it be established how position responsibilities evolve over time.

B. Further, there is no direct mechanism to link WDE 633 evaluations of vacancy recruitment difficulties to a particular job function (proposed in Recommendation A). In addition, unless the WDE 633 (and related instructions to the districts) is modified to collect the PTSB licensing number from job applicants, it cannot be empirically determined whether or not applicants constitute a large or small pool of job seekers with the requisite set of endorsements required by the job, to what extent the same set of job seekers is pursuing a limited set of openings, or to what extent applicants are tied to a particular location or appear willing to re-locate.

C. The WDE 633 data collection process lacks a desired level of rigor. The "reason for vacancy" categories are not mutually exclusive, nor are there any instructions regarding the documentation needed to define a vacancy and record it in auditable form. Given the lack of mutual exclusiveness in the reason for vacancy categories and the lack of criteria to select one vacancy reason over another, it is highly unlikely that responses are consistent over time or from one district to the next. Nor are there directives regarding which authority within the district is charged with making such determinations and maintaining the documentation. There appears to be no standards for the definition of what constitutes a vacancy (the day the person left work, the date a job announcement was posted to the internet, to the newspaper) and therefore no mechanism to measure the duration of job openings as an objective estimate of recruitment difficulty. There appears to be no requirement for documentation to be recorded as vacancy and recruitment events unfold subjecting district reporting to recall bias and non-comparability. In sum, given the lack of rigor in the WDE 633 collection and the difficulty of linking it to an existing job function, it is not clear exactly what the output of the WDE 633 represents in terms of the market, or that the value of the collection exceeds its cost. The WDE 633 data collection process should be standardized across school districts.

Synopsis of Recommendations from the 2012 Monitoring Report

A. "(T)he Legislature should enact legislation requiring that the Retirement Board provide historic and current individually identifiable files to R&P. – Unresolved. " Professional Teaching Standards Board files are viewed as important to understanding supply issues (Appendix A of the 2013 Monitoring report)."

B. R&P will elaborate "…on the

analysis presented in this report with a goal of establishing a system of dashboard indicators for retention, turnover, wage progression (Appendix B of the 2013 Monitoring)." – In progress.

C. "We recommend continued use of the Occupational Employment Statistics (OES) as the standard for measuring cost pressures." – Implemented.

D. Given the maturing of the population of teachers "…there is a need for succession planning" in education. – Unresolved.

E. The Department of Education should consider establishing a statistical unit staffed with individuals possessing appropriate advanced social science research backgrounds." – While the Wyoming Department of Education currently advertises for such positions as Statistician and Data Architect, as well as others, whether or not these positions will be staffed with individuals having the most relevant academic credentials remains to be seen.

F. "A more thorough documentation of Department of Education data collection efforts and purposes is necessary in order to facilitate intelligent participation in decisions about the future of …[the]… education system by all interested parties." – Unresolved.

G. "…(T)he Department of Education should consider adding a Standard Occupational Classification (SOC) system code to occupations for staffing and vacancy collections." -- Unresolved.

Future Reporting

"Monitoring School District Human Resource Cost Pressures" and "Current Status of Cost Pressures" are produced and published by R&P. In 2014, we plan on combining the two reports and eliminating redundant components.

Table 1-1: Total, All Primary, Secondary, & Special Education School Teachers (25-2000) in Public Schools in Wyoming and Surrounding States, 2009/10 and 2011/12

This group is a composite of all teachers involved in direct instruction in the classroom.

Wyoming

Employment

2009/10	2011/12	Change	%
8,320	7,527	-793	-9.5%

Average Annual Wage

2009/10	2011/12	Change	%
$57,069	$59,314	$2,245	3.9%

Wyoming teachers in public schools continued to earn more on average than teachers in all surrounding states in 2011/12. Only Montana and Utah narrowed the wage gap from 2009/10 to 2011/12. Teachers in Montana earned $15,256 (-26.7%) less than teachers in Wyoming on average in 2009/10, and then $13,266 (-22.4%) less in 2011/12.

U.S.

Employment

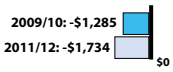
2009/10	2011/12	Change	%
3,598,130	3,334,130	-264,000	-7.3%

Average Annual Wage

2009/10	2011/12	Change	%
$55,784	$57,580	$1,796	3.2%

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$1,285	-2.3%	-$1,734	-2.9%



Colorado

Employment

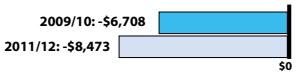
2009/10	2011/12	Change	%
61,668	62,864	1,196	1.9%

Average Annual Wage

2009/10	2011/12	Change	%
$50,361	$50,841	$480	1.0%

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$6,708	-11.8%	-$8,473	-14.3%



Idaho

Employment

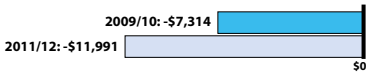
2009/10	2011/12	Change	%
16,853	14,610	-2,243	-13.3%

Average Annual Wage

2009/10	2011/12	Change	%
$49,755	$47,323	-$2,432	-4.9%

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$7,314	-12.8%	-$11,991	-20.2%



Montana

Employment

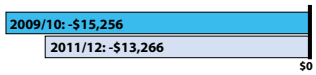
2009/10	2011/12	Change	%
12,400	11,779	-621	-5.0%

Average Annual Wage

2009/10	2011/12	Change	%
$41,813	$46,048	$4,235	10.1%

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$15,256	-26.7%	-$13,266	-22.4%



Nebraska

Employment

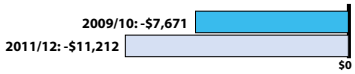
2009/10	2011/12	Change	%
24,654	24,145	-509	-2.1%

Average Annual Wage

2009/10	2011/12	Change	%
$49,398	$48,102	-$1,296	-2.6%

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$7,671	-13.4%	-$11,212	-18.9%



South Dakota

Employment

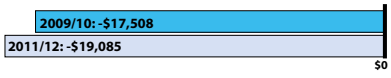
2009/10	2011/12	Change	%
11,647	11,399	-248	-2.1%

Average Annual Wage

2009/10	2011/12	Change	%
$39,561	$40,229	$668	1.7%

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$17,508	-30.7%	-$19,085	-32.2%



Utah

Employment

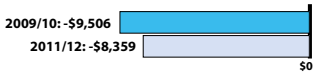
2009/10	2011/12	Change	%
26,453	25,696	-757	-2.9%

Average Annual Wage

2009/10	2011/12	Change	%
$47,563	$50,955	$3,392	7.1%

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$9,506	-16.7%	-$8,359	-14.1%



Source: Occupational Employment Statistics.

Chapter 1: Regional and National Wage Trends

by: Patrick Manning, Principal Economist

The primary focus of this chapter is to compare wages for teachers in Wyoming to those in the U.S. as a whole and in surrounding states to determine if Wyoming salaries are cost competitive. These relative wages may prove instrumental in recruiting and retaining quality teachers in Wyoming. Other factors that will affect the demand for teachers are the exit rate of individuals leaving the profession, changes in pupil-teacher ratios, and changes in projected student enrollment, thereby increasing (or decreasing) the need for teachers.

Teachers' wages are not the only sources of cost pressures on school districts. This chapter also compares selected non-teaching occupations in public schools in Wyoming to those found in private industry, state government, and federal government in Wyoming, the U.S., and the surrounding states.

As can be seen in **Table 1-1** (see previous page), teacher employment decreased from the 2009/10 school year to the 2011/12 school year in Wyoming, the U.S., and the surrounding states, with the exception of Colorado. Projections indicate (by varying degrees) that student enrollment and the population of those

Understanding Table 1-1

Table 1-1 (see previous page) uses data collected from the Occupational Employment Statistics (OES) survey to show the employment level and average annual wage for all primary, secondary, and special education teachers (25-2000) in public schools in Wyoming and surrounding states for the 2009/10 and 2011/12 school years. This table also allows for a quick comparison of the average annual wage for surrounding states and the U.S. to that of Wyoming.

The first column in Table 1-1 provides information regarding the employment and average wage within each surrounding state and the U.S. In many cases, employment decreased while the average annual wage increased. For example, Wyoming had an estimated 8,320 jobs worked by teachers in public education in 2009/10; in 2011/12, that number decreased to 7,527, a change of -793 (-9.5%). During this period, the average annual wage increased in Wyoming from $57,069 to $59,314, a change of $2,245 (3.9%). Idaho had the largest decrease in employment with 13.3%, while Colorado saw the only increase.

The second column compares the average annual wage for the U.S. and surrounding states to that of Wyoming. In 2009/10, the U.S. average annual wage for teaching jobs was $55,784, compared to Wyoming's $57,069, a difference of -$1,285 (-2.3%). In 2011 the gap between Wyoming and the U.S. average wage widened slightly with a difference of -2.9%. The states that narrowed the average wage gap compared to Wyoming were Montana and Utah while the gap widened in all other surrounding states.

ages 6-18 are expected to increase, (see **Figure 1-1**) which should spur teacher demand.

Figure 1-2 (see page 19) shows that nationally, total public school enrollment is projected to grow at the rate of 0.6% per year through 2021 and the number of full-time equivalent (FTE) teachers is projected to increase from 3,209,637 in 2010 to 3,694,080 in 2021 (NCES, 2012b).

Teacher Classification and Wages

Teachers are classified as "primary, secondary, and special education school teachers" by the Standard Occupational Classification (SOC) system, and given an SOC code of 25-2000 (Office of Management and Budget, 2010). Specialized teaching occupations are then defined and provided a six-digit SOC code, such as kindergarten teachers, except special education, which is classified as SOC 25-2012. The SOC classification structure is presented in **Box 1-1** (see page 19). The other key element in the discussion is whether the firm in which the position is found is privately or publically (federal, state, or local government) owned.

This chapter examines the average annual wage for all teachers (SOC 25-2000), and then examines the wages

(Text continued on page 20)

Figure 1-1: Wyoming Student Enrollment, Population (Ages 6-18), and Projections, 1975-2030

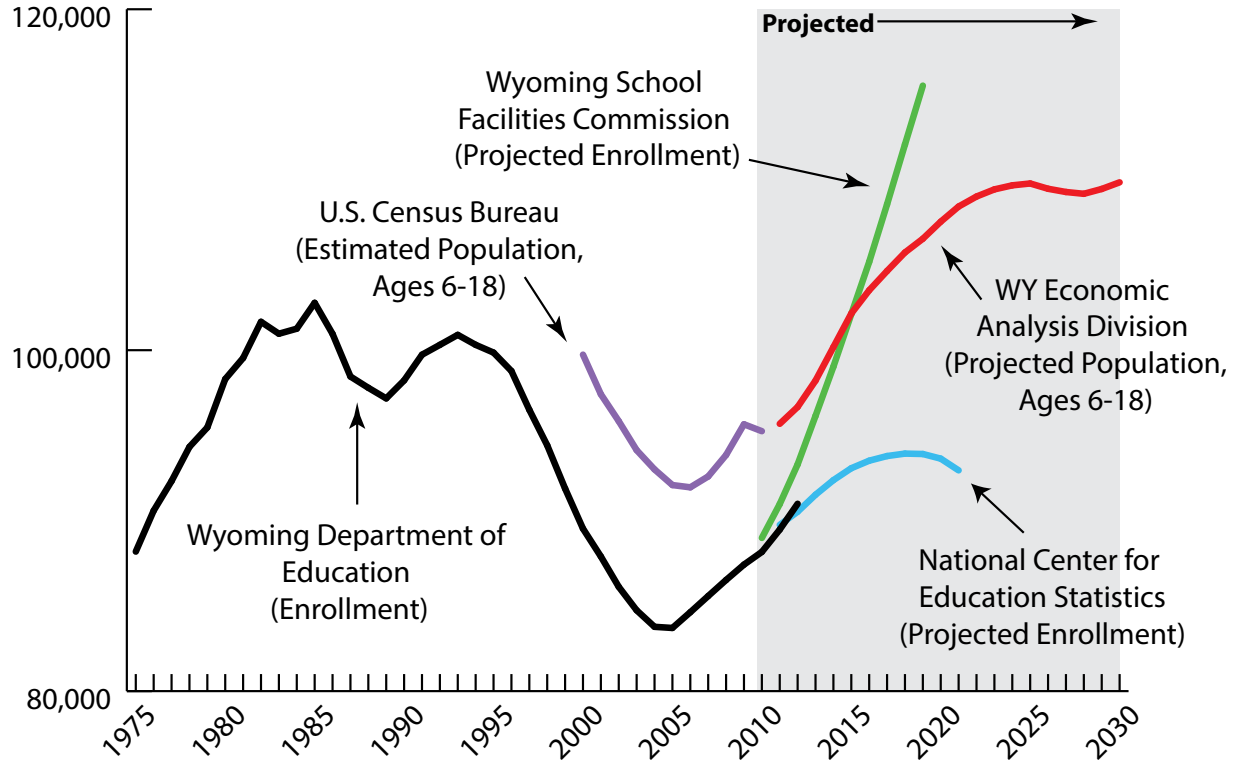
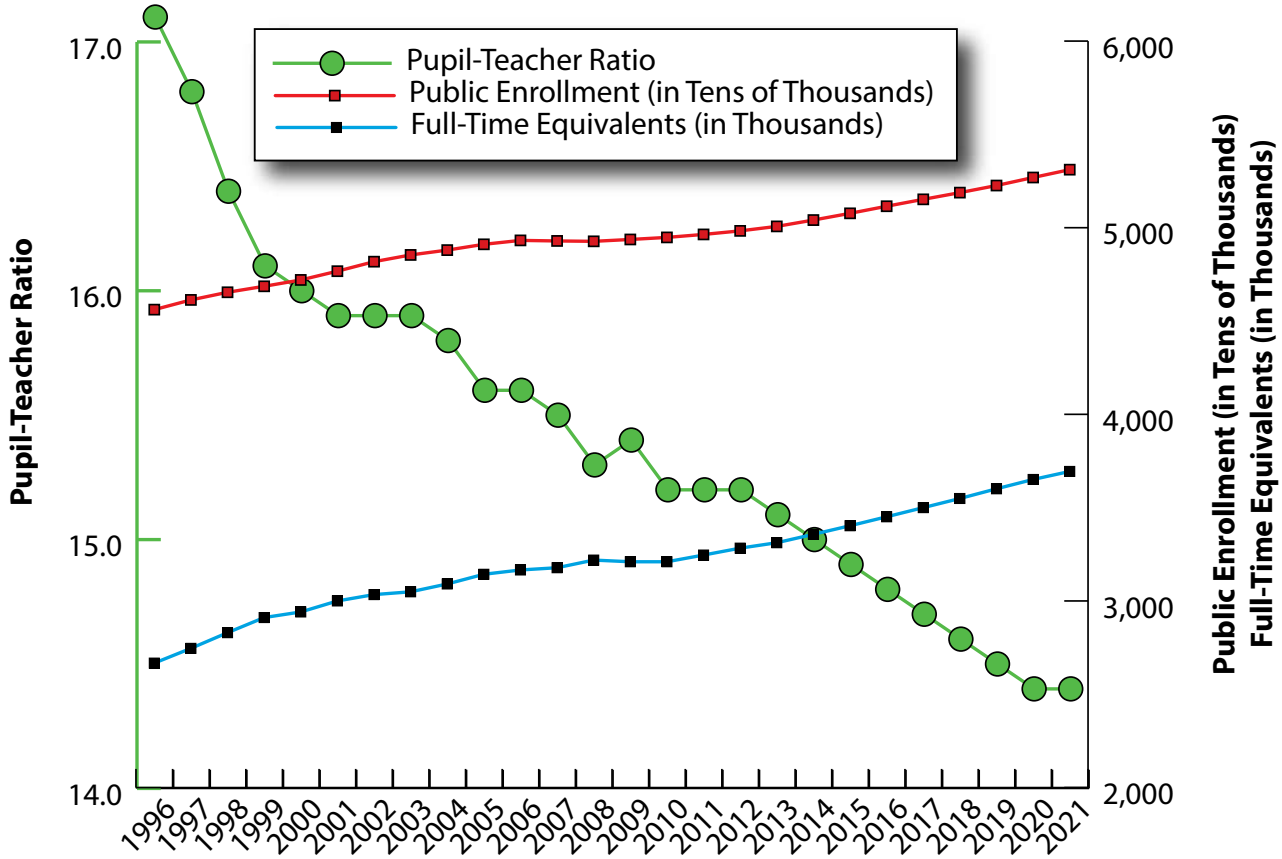
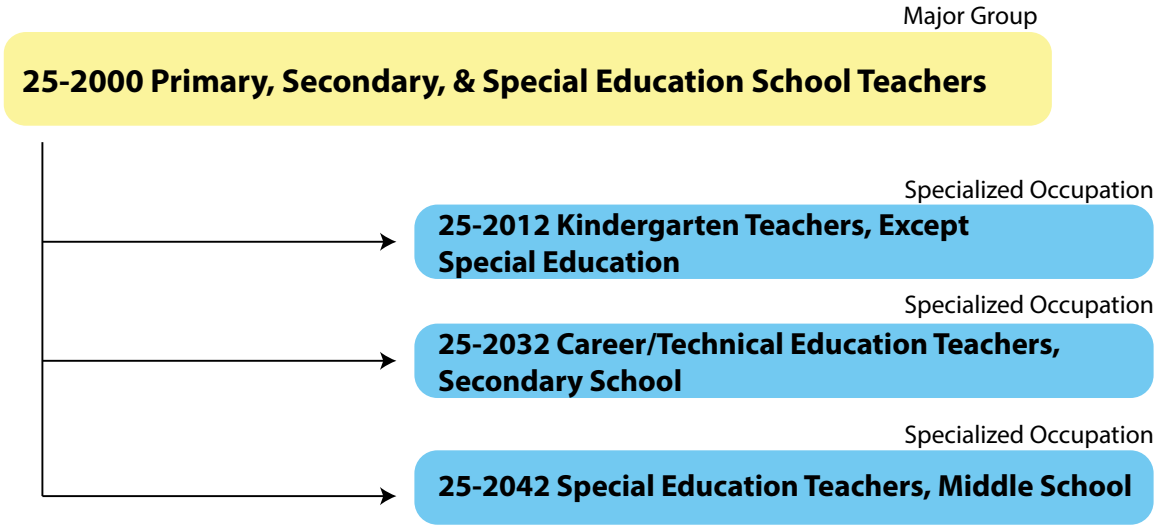


Figure 1-2: U.S. Public School Pupil-Teacher Ratio and Student Enrollment, 1996-2021



Box 1-1: Standard Occupational Classification (SOC) System Structure



(Text continued from page 18)

for specialized teaching occupations. The source of employment and wage estimates presented in this chapter is the State-Federal Occupational Employment Statistics (OES) program, described in the Methodological Note in this publication. A detailed overview of the OES program is available online at http://doe.state.wy.us/LMI/education_costs/oes_ed_overview.htm.

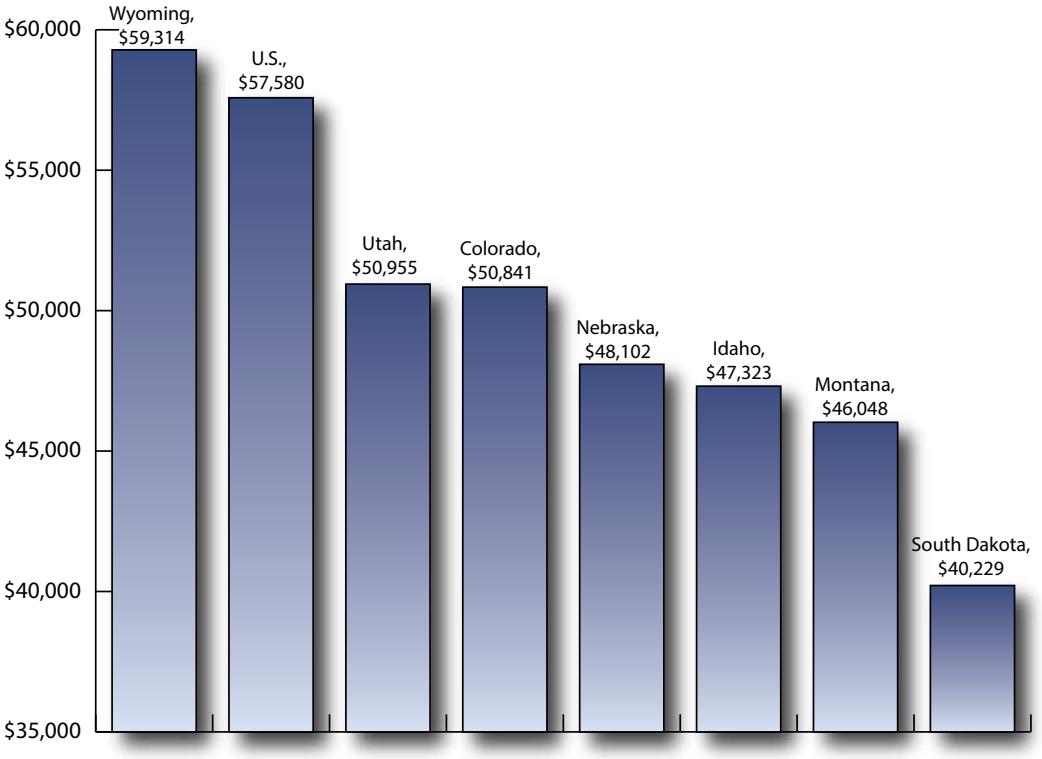
Ten specialized teaching occupations comprise all preschool, primary, secondary, and special education teachers (SOC 25-2000). Of these 10 specialized occupations, nine are discussed in this narrative, while one specialized occupation (career/technical education teachers, middle school, SOC 25-2023) is not discussed due to the non-discloseable nature of the data. Data are non-discloseable when they do not meet reliability standards, or there is a confidentiality issue.

Of these nine specialized teaching occupations, Wyoming wages exceed the national average in six.

Wage Trends for Wyoming and Surrounding States

During the 2011/12 school year, the average annual wage for all primary, secondary, and special education teachers (SOC 25-2000) in public schools in Wyoming was $59,314. This was an increase of $2,245 from the 2009/10 school year. In 2011/12, the average annual wage for teachers in Wyoming was higher than in all surrounding

Figure 1-3: Average Annual Wage for Primary, Secondary, and Special Education School Teachers (SOC 25-2000) in Local Government Schools (NAICS 611100), 2011/12



Source: Occupational Employment Statistics (OES) Survey Files.

states and the U.S. (see **Figure 1-3**).

During the 2011/12 school year, the wage for all teachers in public schools in the U.S. was $57,580, 2.9% lower than the Wyoming wage.

The difference in average wage between Wyoming and the surrounding states was substantial. Of all surrounding states, Utah had the highest average annual wage for teachers ($50,955). This was $8,359 less than the average annual wage for teachers in Wyoming. South Dakota had the lowest average annual wage of all surrounding states at $40,229, or 32.2% less than Wyoming.

These results have not changed markedly since last year's report. Given that these relationships have remained steady in recent years, cost pressure to attract and retain high quality teachers remains low.

Table 1-1 shows the change in employment and average annual wage for all primary, secondary, and special education teachers (SOC 25-2000) in Wyoming, surrounding states, and the U.S. from the 2009/10 to 2011/12 school years. This summary table also shows the average annual wage for teachers in each state compared to Wyoming.

From the 2009/10 to 2011/12 school years, employment among all primary, secondary, and special education teachers (SOC 25-2000) decreased nationally and in Wyoming. Employment decreased in all surrounding states except Colorado, which experienced a 1.9% increase.

In contrast, the average annual wage for teachers increased during this period in Wyoming, the U.S., and all surrounding states, with the exceptions of Idaho (-4.9%) and Nebraska (-2.6%). The average annual wage for teachers in Wyoming increased by 3.9% ($2,245), compared to 3.2% ($1,796) nationally. The largest percentage increase in wages in surrounding states occurred in Montana (10.1%, or $4,235). Montana also exhibited the highest rate of increase from 2008/09 to 2010/11 (see the 2012 version of this report at http://doe.state.wy.us/LMI/education_costs/education_costs.pdf).

Despite this rate of gain relative to Wyoming, the average annual wage for teachers in Montana was still 22.4% lower than in Wyoming.

Specialized Occupations

This section examines the relationship among specialized teaching categories in Wyoming (i.e. six-digit SOC codes) to ascertain if results at the detailed level vary markedly from the overall findings.

The wage and employment data discussed in this section reference "Table 1: Employment and Mean Wage by State, Region, US, and Ownership for Occupations in Public Schools in Wyoming or Bordering State in 2011/12." Comparisons between Wyoming, the U.S., and surrounding states are presented in and "Table 3: Employment and Mean Wage Change by State, Region, U.S., and Ownership for Occupations in Public Schools in Wyoming or Bordering State from 2009/10 to 2011/12." For example, "Table 1, page 22" refers to page 22 of the aforementioned table, which is available online at http://doe.state.

wy.us/LMI/education_costs/LSO_OES_Tables_2010_2012.pdf.

Preschool Teachers, Except Special Education (SOC 25-2011)

Table 1, page 19-20

The average annual wage for Wyoming preschool teachers ($44,420) trailed those of the U.S. ($48,860) and Colorado ($46,950). Montana trailed all the surrounding states, with an average annual wage that was 41% lower than Wyoming. These results should be taken with caution as there were a relatively low number of preschool teachers (27) in public schools in Wyoming in 2011/12.

Kindergarten Teachers, Except Special Education (SOC 25-2012)

Table 1, page 20

The average annual wage for Wyoming kindergarten teachers ($54,850) exceeded those of the surrounding states by a large margin and trailed the national average slightly by $740. Relative to Wyoming, Colorado wages were 11.6% lower while South Dakota wages were the lowest of the surrounding states (28.8% lower than Wyoming).

Wyoming is competitive in terms of wages in this teaching category and faces very little cost pressure from surrounding states.

Elementary School Teachers, Except Special Education (SOC 25-2021)

Table 1, page 20

The average annual wage for Wyoming elementary school teachers ($58,690) exceeded the average annual wages for the U.S. and all surrounding states.

The average annual wage for Wyoming elementary school teachers was $7,740 higher than that of the most competitive state, Utah. South Dakota had the lowest average annual wage of all surrounding states (31.6% lower than Wyoming). Wyoming school districts face little cost pressure from surrounding states for elementary school teachers.

Middle School Teachers, Except Special and Career/Technical Education (SOC 25-2022)

Table 1, pages 20-21

The average annual wage for Wyoming middle school teachers ($61,400) was higher than the U.S. average ($56,930) and all surrounding states. As was the case with kindergarten and elementary school teachers, Wyoming wages were substantially higher on average than average wages in surrounding states. Utah paid the next highest wages (13.2% lower), while South Dakota trailed Wyoming by $20,930.

Secondary School Teachers, Except Special and Career/ Technical Education (SOC 25-2031)

Table 1, page 21

The relationship between secondary school teachers' wages in Wyoming and surrounding states was very similar to that of middle school teachers' salaries. Colorado (14.4% lower than Wyoming) had the second highest wages, while South Dakota lagged behind all surrounding states (33.1% lower than Wyoming).

Wage comparisons in this specialized occupation yield largely the same result of those previously discussed in this narrative. The gap between Wyoming and the next highest compensating state, Colorado (10.5% lower), was the second

smallest margin of any detailed category.

Special Education Teachers, Preschool, Kindergarten, and Elementary School (SOC 25-2041)
Special Education Teachers, Middle School (SOC 25-2053)
Special Education Teachers, Secondary School (SOC 25-2054)

Table 1, page 22

Wages of special education teachers in Wyoming relative to the surrounding states and the U.S. followed a very similar pattern to the teaching categories previously discussed. One exception is that the U.S. average annual wage for secondary school special education teachers ($60,627) exceeded that of salaries in Wyoming ($57,760).

Summary of Teachers' Wages

Wyoming wages exceeded the national average with the exceptions of preschool teachers, except special education (the U.S. was 10.0% higher), kindergarten teachers, except special education (the U.S. was 1.4% higher), and special education teachers in secondary schools (the U.S. was 5.0% higher).

Teacher wages in each detailed classification are greater than those of surrounding states, with the exception that Colorado wages were 5.7% higher on average for preschool teachers, except special education.

Within public schools, Wyoming's wage advantage was substantial in most cases during the 2011/12 school year. Of the detailed teaching occupations discussed, none of the surrounding states' wages represented 90% of Wyoming wages (with the exception of Colorado preschool teachers). When examining these teaching occupations collectively, none of the states compensated teachers at 85% of Wyoming wages. Wyoming school districts currently face negligible cost pressure on salaries in relation to competition from surrounding states.

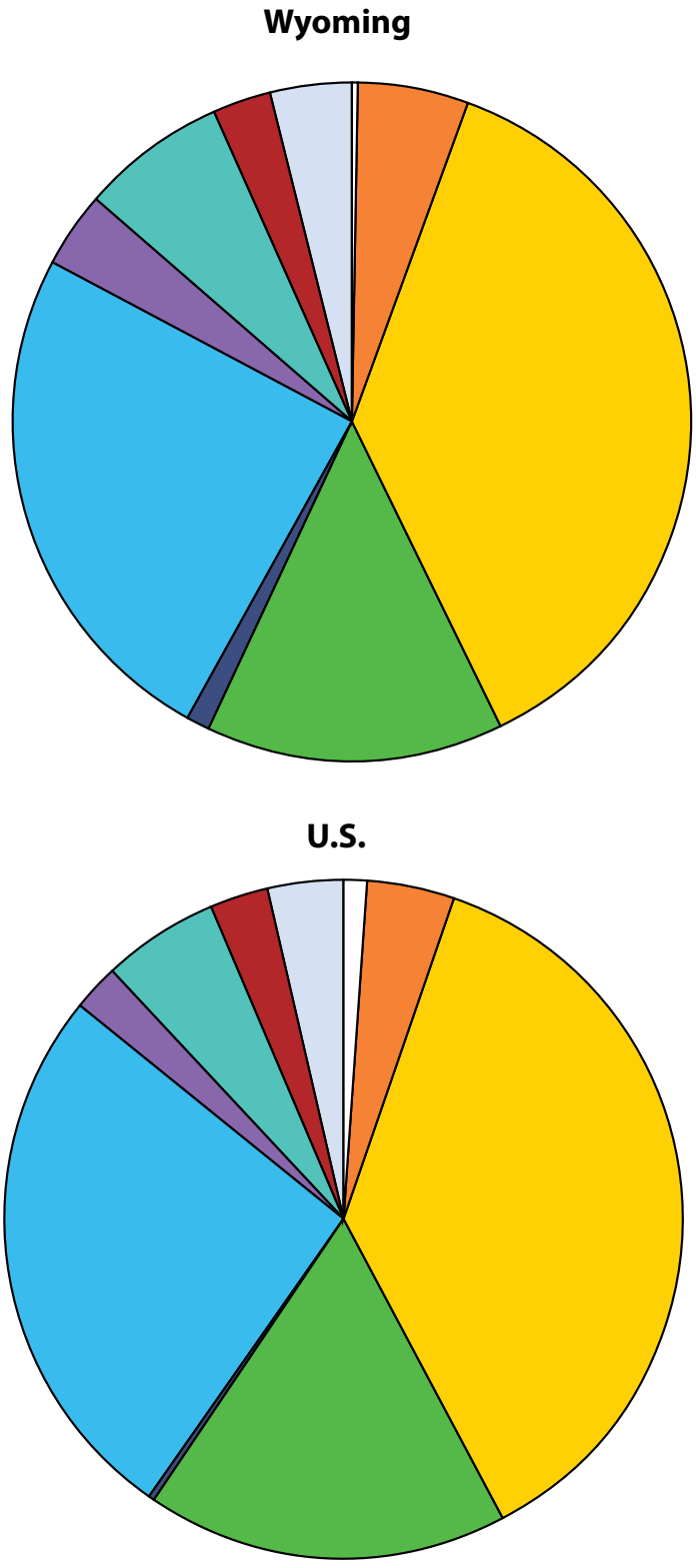
Occupational Staffing Patterns for the U.S., Wyoming, and Surrounding States, 2011/12

Figure 1-4 (see page 24) shows staffing patterns for the detailed teaching occupations within SOC 25-2000 for the U.S. and Wyoming. These staffing patterns are very similar. In percentage terms, the largest difference was within middle school teachers, except special education and career/technical education. This occupation comprised 16.9% of all U.S. teachers, compared to 14.1% of all teachers in Wyoming.

Figure 1-5 (see page 25) displays the overall staffing patterns of teachers in schools in the U.S., Wyoming, and selected surrounding states for the 2011/12 school year. The underlying occupational detail for the graphics can be found in Table 1 at http://doe.state.wy.us/LMI/education_costs/LSO_OES_Tables_2010_2012.pdf. As was true for the teaching staffing pattern, the overall staffing pattern (i.e. all occupations commonly found within school employment) was very similar across Wyoming, the U.S.,

(Text continued on page 25)

Figure 1-4: Occupational Staffing Patterns for Primary, Secondary, & Special Education Teachers in Local School Districts in Wyoming and the U.S., 2012



Source: Occupational Employment Statistics Survey Files, U.S. Bureau of Labor Statistics.

Occupation	Percentage of Total Employment WY	U.S.
Preschool Teachers, Except Special Education (25-2011)	0.4	1.4
Kindergarten Teachers, Except Special Education (25-2012)	5.4	4.0
Elementary School Teachers, Except Special Education (25-2021)	37.2	36.6
Middle School Teachers, Except Special and Career/Technical Education (25-2022)	14.1	16.9
Career/Technical Education Teachers, Middle School (25-2023)	1.0	0.5
Secondary School Teachers, Except Special & Career/Technical Education (25-2031)	24.7	25.3
Career/Technical Education Teachers, Secondary School (25-2032)	3.8	2.5
Special Education Teachers, Preschool, Kindergarten, & Elementary School (25-2041)	6.9	5.7
Special Education Teachers, Middle School (25-2053)	2.8	2.7
Special Education Teachers, Secondary School (25-2054)	3.7	4.4
Total, All Primary, Secondary, & Special Education Teachers (25-2000)	**100.0**	**100.0**

(Text continued from page 23)

Colorado, and South Dakota. The U.S. had the highest percentage of employees in direct instruction (66.8%), with Colorado exhibiting the lowest (63.2%). Non-teaching employment comprises slightly over one-third of all public school employment.

Salaries for Selected Non-Teaching Occupations

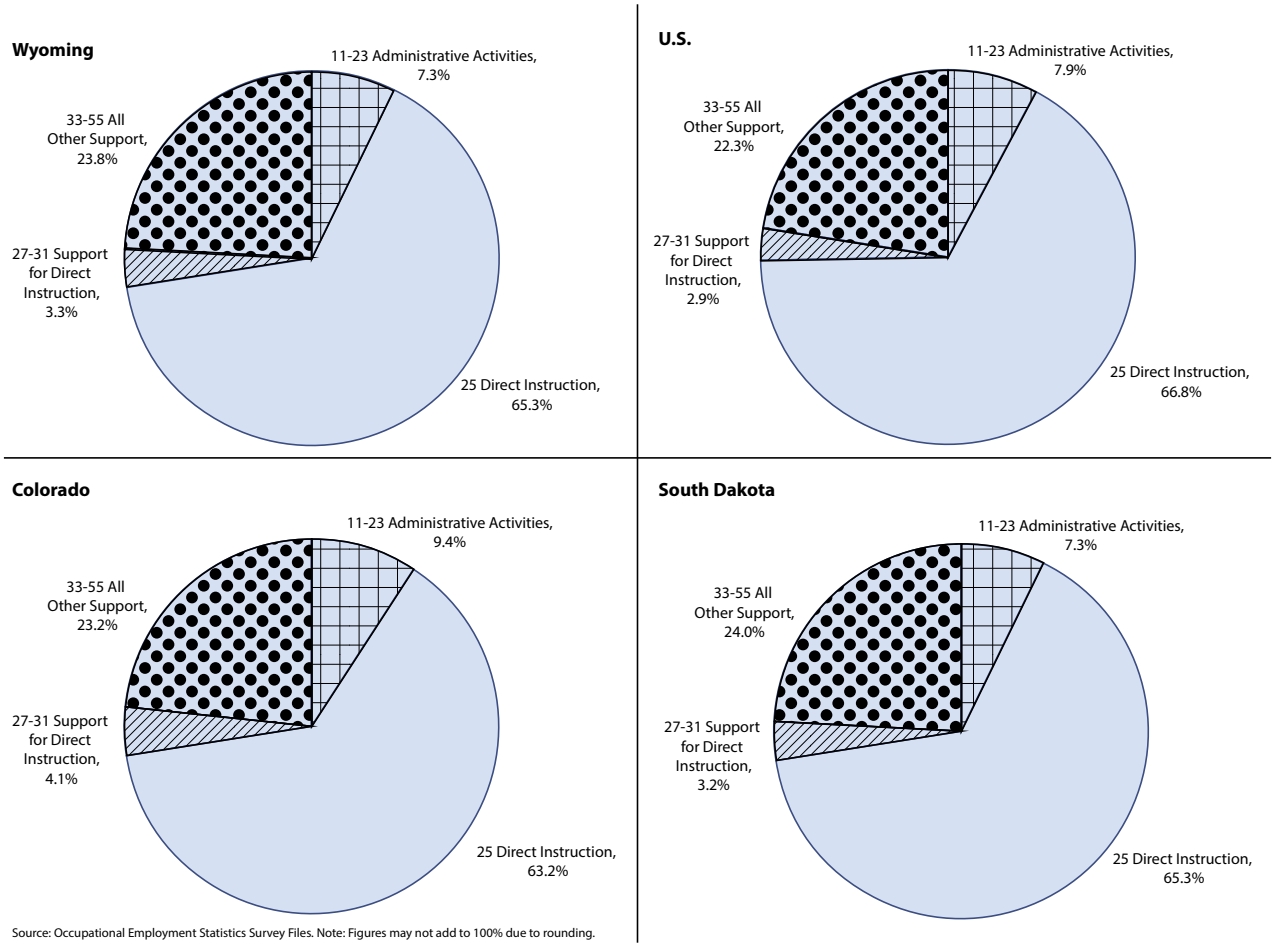
Other Management Occupations (SOC 11-9000)

As can be seen in **Table 1-2** (see page 27), this group includes education administrator occupations at all levels in public schools. This is a general occupational grouping which has comparable occupation managers in other sectors including construction, food service, and the medical field. With this caveat in mind, Wyoming school districts wages ($87,019) lagged Wyoming state government ($98,213) and the federal government ($112,607). Compared to the private sector in Wyoming, school district wages were almost $20,000 higher on average.

Computer Specialists (SOC 15-1000)

There was substantial variation within

Figure 1-5: Occupational Staffing Patterns for the U.S., Wyoming, and Surrounding States, 2011/12



Source: Occupational Employment Statistics Survey Files. Note: Figures may not add to 100% due to rounding.

this general occupation classification among Wyoming and the surrounding states. Within public school education, salaries ranged from a low of $41,440 in Montana to a high of $62,728 in Colorado, a difference of $21,288. Nebraska salaries were roughly equal to that of Wyoming. While Wyoming ($52,367) trailed only Colorado, the difference was substantial – Wyoming salaries were 19.8% lower. The national average in all ownership categories other than public schools exceeded Wyoming public school wages. Federal government salaries in Wyoming and surrounding states were 56.2% higher. Collectively, the higher wages in Colorado and the higher wages in the U.S. overall may be a source of turnover within this occupation.

Community and Social Services Occupations (SOC 21-0000)

Table 1, page 15

This general category includes occupations such as counselors and social workers.

Wyoming public schools are highly competitive regarding wages relative to the U.S. and surrounding regardless of ownership (i.e. public schools or private sector, and, all levels of government). Within Wyoming, the public school wages are much higher than the private sector at $63,204 and $36,096 respectively. Therefore, school districts are extremely competitive in terms of wages with other potential employers.

Health Diagnosing and Treating Practitioners (SOC 29-1000)

This general occupation classification had the most variation of any discussed in this narrative.

Within public school education, salaries ranged from a low of $46,495 in South Dakota to a high of $82,910 in Colorado, a difference of $36,415. Wyoming wages were lower than Colorado and Montana with a wage of $60,388. Wyoming public school salaries were lower than the private sector in-state, the U.S. overall, and all surrounding states with the exception of South Dakota. Given relative wages and the large amount of employment in these occupations (more than 6,000 people in Wyoming and approximately 3.5 million nationally) there is likely to be some cost pressures to retaining individuals in this occupation.

Cooks and Food Preparation Workers (SOC 35-2000)

Currently, jobs in this occupational category do not seem to be a significant source of cost pressure to Wyoming school districts given that wages exceed that of surrounding states and the U.S. among all ownership types. The one exception is Wyoming state government with a larger salary, $31,738 relative to $26,060 in public schools.

Non-Teaching Occupations at the Detailed Level

In this section, three occupations are examined at the most detailed occupational level (six-digit SOC code), as these professions have many opportunities in other sectors of the economy.

(Text continued on page 28)

Table 1-2: **Employment and Mean Wage by State, Region, U.S., and Ownership for Selected Occupations in Public Schools in Wyoming or Bordering State in 2011/12 (Excerpt)**

Other Management Occupations (SOC 11-9000)

	Total, All Industries		Public Schools		Local Government		State Government		Federal Government		Private Industry	
	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage
U.S.	1,580,670	$88,045	210,300	$90,974	309,190	$89,070	114,790	$91,797	79,160	$112,607	1,077,040	$85,539
WY & Border States	61,456	$80,418	10,293	$81,149	15,712	$79,477	6,666	$86,029	2,918	$104,431	36,216	$77,849
Colorado	23,570	$88,137	4,669	$82,692	6,659	$85,675	2,262	$93,765			13,148	$86,198
Idaho	6,822	$67,190	1,123	$73,478	1,638	$69,019	621	$75,005			4,403	$63,976
Montana	4,610	$69,257	707	$73,180	1,245	$64,230	1,041	$68,120			2,063	$68,404
Nebraska	9,013	$79,563	1,404	$86,166	2,312	$78,645	622	$93,909			5,863	$77,377
South Dakota	2,992	$72,618	579	$70,571	794	$69,014	297	$81,187			1,646	$69,875
Utah	10,918	$80,652	1,311	$83,665	1,740	$80,700	1,427	$85,961			7,369	$78,548
Wyoming	3,531	$77,113	500	$87,019	1,324	$81,775	396	$98,213			1,724	$67,130

Computer Specialists (SOC 15-1000)

	Total, All Industries		Public Schools		Local Government		State Government		Federal Government		Private Industry	
	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage
U.S.	4,125,240	$75,371	93,870	$51,477	218,580	$57,405	176,190	$61,048	80,800	$87,866	3,649,610	$76,862
WY & Border States	172,345	$75,435	2,864	$53,910	8,009	$59,543	7,813	$58,433	4,496	$81,813	152,077	$76,955
Colorado	88,625	$83,856	1,263	$62,728	3,645	$67,303	1,852	$70,717			81,162	$84,805
Idaho	11,184	$63,346	263	$47,206	655	$47,363	845	$46,879			9,434	$65,593
Montana	6,265	$56,062	249	$41,440	494	$42,776	1,087	$52,002			4,492	$57,704
Nebraska	24,285	$69,376	277	$52,317	1,099	$62,656	1,117	$52,469			21,486	$70,400
South Dakota	6,121	$56,489	266	$42,625	537	$46,078	457	$49,834			4,955	$57,736
Utah	33,303	$69,934	318	$45,562	972	$54,110	1,935	$61,696			29,233	$70,586
Wyoming	2,562	$58,355	228	$52,367	607	$54,161	520	$55,022			1,315	$60,596

Health Diagnosing and Treating Practitioners (SOC 29-1000)

	Total, All Industries		Public Schools		Local Government		State Government		Federal Government		Private Industry	
	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage
U.S.	3,453,680	$70,112	119,450	$62,138	376,870	$65,009	167,780	$68,704	89,110	$80,985	2,819,890	$70,534
WY & Border States	152,047	$64,596	6,609	$69,178	18,065	$66,137	7,221	$62,548	4,391	$71,252	122,408	$64,252
Colorado	57,133	$69,572	3,499	$82,910	8,488	$74,264	3,300	$70,760			44,016	$68,422
Idaho	14,947	$63,021	494	$50,094	2,165	$61,249	324	$54,754			12,147	$63,247
Montana	11,047	$61,509	245	$60,687	567	$57,811	270	$51,807			9,804	$61,784
Nebraska	24,813	$61,100	897	$54,663	2,535	$56,420	739	$55,999			20,963	$61,686
South Dakota	13,586	$56,919	416	$46,495	730	$49,345	420	$46,839			11,652	$57,101
Utah	24,459	$63,349	705	$53,328	1,225	$54,741	1,928	$57,616			20,669	$64,103
Wyoming	6,062	$63,743	353	$60,388	2,355	$64,907	240	$59,606			3,157	$62,033

Cooks and Food Preparation Workers (35-2000)

	Total, All Industries		Public Schools		Local Government		State Government		Federal Government		Private Industry	
	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage	Emp.	Wage
U.S.	1,706,440	$21,126	165,380	$22,905	204,230	$23,116	19,990	$28,495	2,480	$41,080	1,478,830	$20,718
WY & Border States	76,191	$20,717	10,903	$23,315	13,639	$23,149	1,051	$25,152	237	$36,746	61,276	$20,036
Colorado	20,730	$22,756	4,126	$25,040	4,507	$24,952	453	$24,859	15,701	$22,009		
Idaho	9,899	$19,166	1,549	$19,888	1,911	$20,384	38	$26,450	7,940	$18,805		
Montana	6,179	$20,965	878	$23,575	1,155	$23,841	111	$22,689	4,876	$20,070		
Nebraska	15,779	$19,219	1,262	$21,488	1,908	$21,057	288	$24,836	13,567	$18,823		
South Dakota	8,453	$19,780	902	$21,754	1,178	$21,560	7,192	$19,308				
Utah	11,701	$20,481	1,603	$23,368	1,910	$22,907	66	$23,155	9,719	$19,975		
Wyoming	3,450	$22,403	583	$26,060	1,070	$25,664	92	$31,738	2,281	$20,427		

Source: Occupational Employment Statistics Survey Files, U.S. Bureau of Labor Statistics.

http://doe.state.wy.us/LMI/education_costs/LSO_OES_Tables_2010_2012.pdf

(Text continued from page 26)

Education Administrators, Elementary and Secondary School (SOC 11-9032)

Table 1, page 5

Within public schools, Wyoming wages ($88,780) exceeded all of the surrounding states. Nebraska pays the next highest salary on average ($87,230), while South Dakota trails the surrounding states at a salary of $71,570. The U.S. average exceeds Wyoming salaries by $3,600.

Clinical, Counseling, and School Psychologists (SOC 19-3031)

Table 1, page 14

This occupation was paid $76,600 in public schools in Wyoming on average. This wage exceeded wages in the private sector within Wyoming by $12,330. Therefore there is a strong incentive for Wyoming residents with the required training to seek employment within Wyoming school districts.

This wage also exceeded the overall U.S. wage overall and in public schools in the surrounding states with the exception of Colorado public schools where the wages were substantially higher ($87,340). This wage differential may lead individuals in this profession to consider relocation to Colorado, therefore reducing the pool of candidates for the Wyoming school districts.

Secretaries, Except Legal, Medical, and Executive (SOC 43-6014)

Table 1, page 53

Within Wyoming, school districts pay higher wages ($35,710) than among all other ownerships.

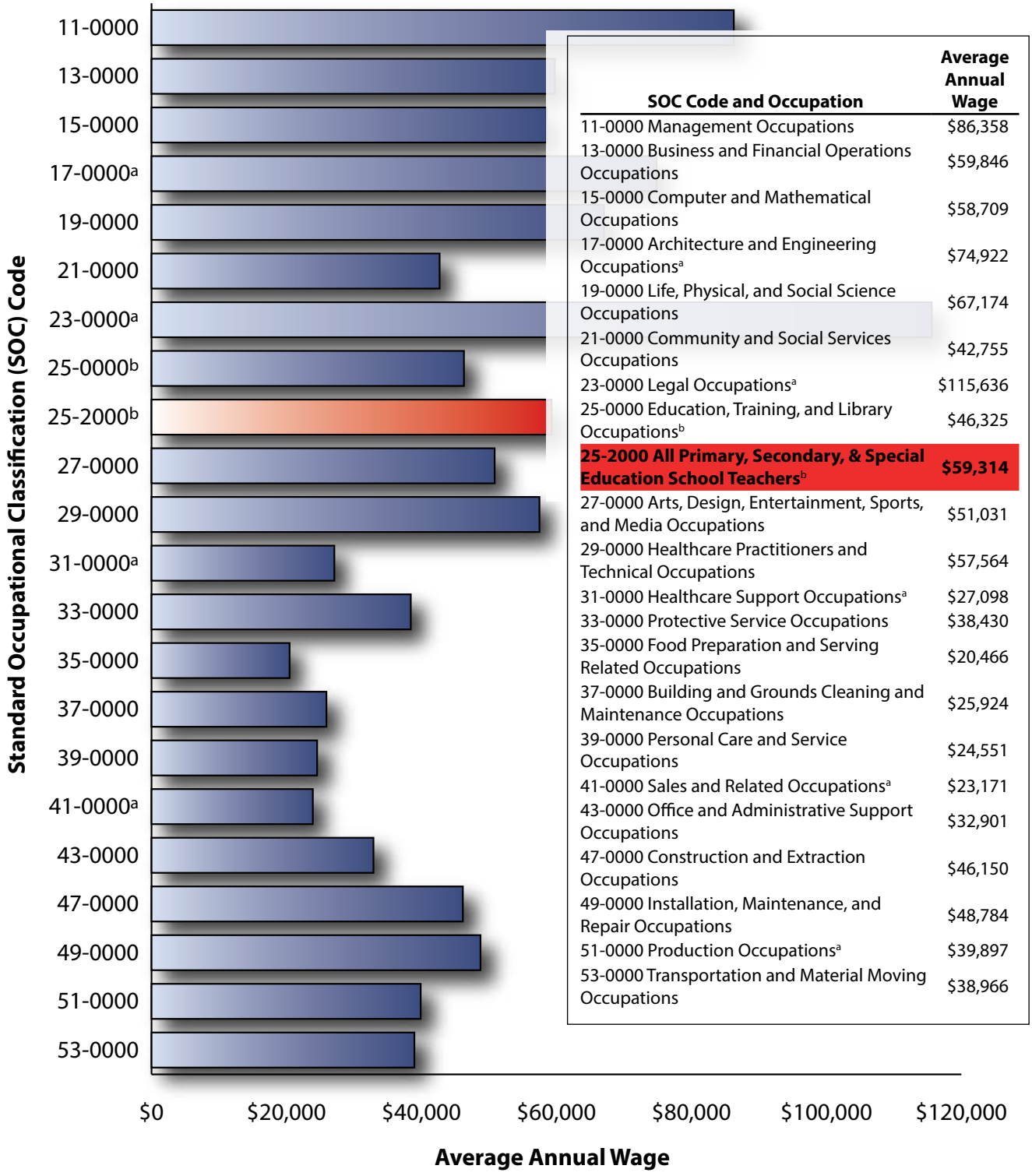
Wyoming school districts pay higher wages than school districts and the private sector in surrounding states, with the exception of Colorado state government ($38,010). Federal government salaries nationwide ($47,640) and in Wyoming and the surrounding states ($44,596) are higher than Wyoming school district salaries.

Overall, individuals may find employment in this occupation with Wyoming school districts desirable, therefore cost pressure for this occupation is unlikely.

More Information

As mentioned in last year's report, R&P is continuing to advance the methodology of comparing teacher salaries to occupations with similar skills, abilities and educational attainment. **Figure 1-7** (see page 29) shows how wages for all teachers (SOC 25-2000) compare to wages in other major occupational groups. This research is a major component of *Current Status of Cost Pressures on Teacher Salaries in Wyoming, 2013*, which accompanies this report. This issue will also be examined in detail in forthcoming articles from R&P.

Figure 1-7: Average Annual Wage for All Primary, Secondary, & Special Education School Teachers (SOC 25-2000) in Public Schools and Other Occupations (Across All Industries) in Wyoming, 2011/12



SOC Code and Occupation	Average Annual Wage
11-0000 Management Occupations	$86,358
13-0000 Business and Financial Operations Occupations	$59,846
15-0000 Computer and Mathematical Occupations	$58,709
17-0000 Architecture and Engineering Occupations[a]	$74,922
19-0000 Life, Physical, and Social Science Occupations	$67,174
21-0000 Community and Social Services Occupations	$42,755
23-0000 Legal Occupations[a]	$115,636
25-0000 Education, Training, and Library Occupations[b]	$46,325
25-2000 All Primary, Secondary, & Special Education School Teachers[b]	**$59,314**
27-0000 Arts, Design, Entertainment, Sports, and Media Occupations	$51,031
29-0000 Healthcare Practitioners and Technical Occupations	$57,564
31-0000 Healthcare Support Occupations[a]	$27,098
33-0000 Protective Service Occupations	$38,430
35-0000 Food Preparation and Serving Related Occupations	$20,466
37-0000 Building and Grounds Cleaning and Maintenance Occupations	$25,924
39-0000 Personal Care and Service Occupations	$24,551
41-0000 Sales and Related Occupations[a]	$23,171
43-0000 Office and Administrative Support Occupations	$32,901
47-0000 Construction and Extraction Occupations	$46,150
49-0000 Installation, Maintenance, and Repair Occupations	$48,784
51-0000 Production Occupations[a]	$39,897
53-0000 Transportation and Material Moving Occupations	$38,966

Full table available at http://doe.state.wy.us/LMI/education_costs/LSO_OES_Tables_2010_2012.pdf
Source: Occupational Employment Statistics (OES).
[a]Average Annual Wage for Wyoming and Surrounding States.
[b]Only in Public Schools.

Research & Planning
Wyoming DWS

Chapter 2: Local Wage Trends and Commuting

by: Patrick Harris, Principal Economist

While wages in teaching jobs in Wyoming are often higher than surrounding states and the nation, counties within Wyoming vary in terms of employment and average annual wage.

The previous chapter discussed the differences in employment and wages between Wyoming, surrounding states, and the U.S. using Occupational Employment Statistics (OES) survey data. In contrast, this chapter examines employment and wages at the county level for Wyoming using contract data from the Wyoming Department of Education (WDE 602). This information is provided in detail in Table 5: Wyoming Department of Education Contractual Staffing Data; 2011/12 Employment and Contract Wages, 2011/12, which is available at http://doe.state.wy.us/LMI/education_costs/Table5_WDE_Contract_Data_2013.pdf.

In chapter 1, comparisons to surrounding states and the U.S. were based on OES establishment survey data. As we pointed out in the Methodological Note and illustrate in Appendix B: Data Collection Schematic, the OES survey represents a sample-based estimate of the average number of jobs worked and average wages earned (the estimated average wage for all teachers in Wyoming for 2011/12 was $59,314). As a sample survey, OES estimates are not available at the county level. The WDE 602 data file representing the "Fall School District Staff Member Collection" is a point in time census, or what we have been referring to as a contract file of administrative data (the average teacher contract wage reported in WDE 602 was $58,075). For illustrative purposes, this chapter compares the two sources of data to point out, for example, that while Wyoming as a whole appears to be competitively positioned, not all counties may be considered to be equally positioned relative to surrounding states and the nation. Further, there may be a level of intercounty competitiveness as teachers begin to retire. In this case, the two measures are very close in concept but should not be mistaken for one another.

Some data for teaching occupations at the county level are not available for analysis because the low number of teachers in that occupation presents a confidentiality issue. Therefore, these occupations are not included in Table 5 and will not be discussed in this chapter.

All Primary, Secondary, and Special Education Teachers (SOC 25-2000)

The statewide average annual wage for Wyoming in the 2011/12 school year was $58,075. Wages in Teton County were 11.2% higher than the statewide average. Three counties had wages that were at least 10% lower than the statewide average: Niobrara (18.7%), Platte (10.3%), and Albany (10.2%). **Figure 2-1** (see page 32) shows the average annual wage for each county from highest to lowest in 2011/12.

Elementary School Teachers, Except Special Education Teachers (SOC 25-2021)

The statewide average wage for this occupation in 2011/12 was $56,550.

Teton County had the highest average annual wage at $63,379 (12.1% higher than the statewide average). Niobrara County had the lowest average annual wage at $45,959 (18.7% lower than the statewide average).

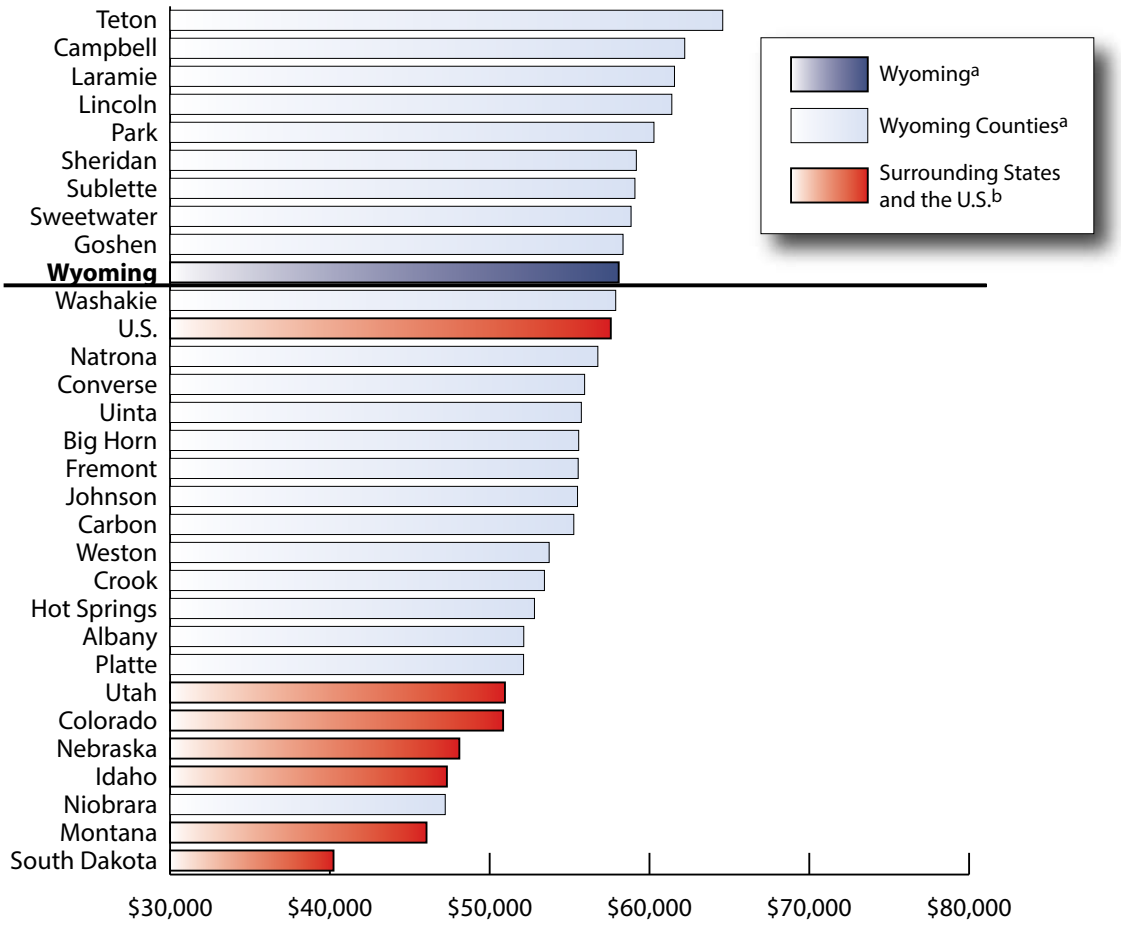
Middle School Teachers, Except Special Education Teachers (SOC 25-2022)

The statewide average wage for this occupation in 2011/12 was $58,740. The average annual wage for Teton County was 11.0% higher than the statewide average, while the average annual wage for Crook County was 16.6% lower.

Secondary School Teachers, Except Special Education Teachers (SOC 25-2031)

The statewide average wage for this occupation in 2011/12 was $60,159. The average annual wage in Teton County was 12.0% higher, while the average wage for Niobrara County was 28.7% less than the statewide average.

Figure 2-1: Average Annual Wage for Primary, Secondary, and Special Education School Teachers (SOC 25-2000) in Public Schools (NAICS 611100) in Wyoming (including Counties), Surrounding States, and the U.S., 2011/12



[a]Source: Wyoming Department of Education Contract Files (WDE 602).
[b]Source: Occupational Employment Statistics (OES).
Prepared by M Moore Research & Planning, WYDWS, 07/06/2013

As discussed in Chapter 1, the average annual wage for all primary, secondary, and special education school teachers (SOC 25-2000) is higher than the national average and surrounding states. However, the variation among Wyoming's counties is substantial. An analysis of Wyoming's counties and surrounding states is warranted in order to assess each county's capability of attracting and retaining those in teaching occupations.

Table 2-1 compares data from OES survey estimates (from Table 1) and WDE 602 contract files (from Table 5). The average annual wage for all primary, secondary, and special education school teachers (SOC 25-2000) in Wyoming differed by $1,239 (approximately 2.0%) between the OES estimates ($59,314) and the WDE 602 contract data ($58,075). The difference in average annual wage was caused in part by the standard error of the OES estimates and the WDE 602 contract data source that includes *no shows*, which are defined in Chapter 3 of this publication as "Contracted individuals who did not have Unemployment Insurance wages in the fourth quarter of the contract year." The OES average annual wage for Wyoming ($59,314) was used as the base in Table 2-1.

While the following discussion focuses on all primary, secondary, and special education school teachers (SOC 25-2000),

Table 2-1: **Difference in Average Annual Wage for All Primary, Secondary, and Special Education Teachers (SOC 25-2000) in Wyoming Counties[1] and Surrounding States[2], 2011/12**

		Occupational Employment Statistics (OES) Survey Data							
Wyoming County		WY	U.S.	CO	ID	MT	NE	SD	UT
		$59,314	$57,580	$50,841	$47,323	$46,048	$48,102	$40,229	$50,955
Wyoming Department of Education (WDE 602) Contract File									
Albany County	$52,133	-$7,181	-$5,447	$1,292	$4,810	$6,085	$4,031	$11,904	$1,178
Big Horn County	$55,570	-$3,744	-$2,010	$4,729	$8,247	$9,522	$7,468	$15,341	$4,615
Campbell County	$62,206	$2,892	$4,626	$11,365	$14,883	$16,158	$14,104	$21,977	$11,251
Carbon County	$55,264	-$4,050	-$2,316	$4,423	$7,941	$9,216	$7,162	$15,035	$4,309
Converse County	$55,941	-$3,373	-$1,639	$5,100	$8,618	$9,893	$7,839	$15,712	$4,986
Crook County	$53,427	-$5,887	-$4,153	$2,586	$6,104	$7,379	$5,325	$13,198	$2,472
Fremont County	$55,538	-$3,776	-$2,042	$4,697	$8,215	$9,490	$7,436	$15,309	$4,583
Goshen County	$58,343	-$971	$763	$7,502	$11,020	$12,295	$10,241	$18,114	$7,388
Hot Springs County	$52,803	-$6,511	-$4,777	$1,962	$5,480	$6,755	$4,701	$12,574	$1,848
Johnson County	$55,497	-$3,817	-$2,083	$4,656	$8,174	$9,449	$7,395	$15,268	$4,542
Laramie County	$61,565	$2,251	$3,985	$10,724	$14,242	$15,517	$13,463	$21,336	$10,610
Lincoln County	$61,398	$2,084	$3,818	$10,557	$14,075	$15,350	$13,296	$21,169	$10,443
Natrona County	$56,769	-$2,545	-$811	$5,928	$9,446	$10,721	$8,667	$16,540	$5,814
Niobrara County	$47,219	-$12,095	-$10,361	-$3,622	-$104	$1,171	-$883	$6,990	-$3,736
Park County	$60,280	$966	$2,700	$9,439	$12,957	$14,232	$12,178	$20,051	$9,325
Platte County	$52,121	-$7,193	-$5,459	$1,280	$4,798	$6,073	$4,019	$11,892	$1,166
Sheridan County	$59,178	-$136	$1,598	$8,337	$11,855	$13,130	$11,076	$18,949	$8,223
Sublette County	$59,090	-$224	$1,510	$8,249	$11,767	$13,042	$10,988	$18,861	$8,135
Sweetwater County	$58,846	-$468	$1,266	$8,005	$11,523	$12,798	$10,744	$18,617	$7,891
Teton County	$64,584	$5,270	$7,004	$13,743	$17,261	$18,536	$16,482	$24,355	$13,629
Uinta County	$55,736	-$3,578	-$1,844	$4,895	$8,413	$9,688	$7,634	$15,507	$4,781
Washakie County	$57,887	-$1,427	$307	$7,046	$10,564	$11,839	$9,785	$17,658	$6,932
Weston County	$53,721	-$5,593	-$3,859	$2,880	$6,398	$7,673	$5,619	$13,492	$2,766

[1]Source: Wyoming Department of Education Contract Files (WDE 602).
[2]Source: Occupational Employment Statistics (OES).

similar comparisons can be conducted for specialized teaching occupations, such as elementary school teachers, except special education (SOC 25-2021) by using the information provided in Appendix B.

All Wyoming counties had competitive wages with surrounding states, with the exception of Niobrara County which fell below Colorado, Idaho, Nebraska, and Utah.

Of Wyoming's 23 counties, 10 had average wages higher than the national average, while 13 counties had average wages lower average wages (see Table 2-1). The three counties with average wages higher than the national average were Teton ($7,004), Campbell ($4,626), and Laramie ($3,985). The three counties that trailed the national average by the largest amount were Niobrara (-$10,361), Platte (-$5,459), and Albany (-$5,447).

Understanding Table 2-2

The information presented in Table 2-2 (see page 35-37) is similar to Table 1-1 (see page 16), but compares Wyoming's counties to the overall state average. While Table 1-1 was compiled using estimates from the Occupational Employment Statistics (OES), Table 2-2 is based on data in the Wyoming Department of Education Contract Files (WDE 602).

The left side shows how employment and average wage changed from 2009/10 to 2011/12 across the state and in each county. The average annual wage for teachers increased in each of Wyoming's 23 counties from 2009/10 to 2010/11. The most significant wage increases were seen in Carbon (6.0%), Johnson (4.9%), Lincoln (4.9%), Niobrara (4.7%) and Big Horn (4.2%) counties.

The number of teachers employed in public schools decreased in eight counties: Albany (-1.4%), Campbell (-1.5%), Goshen (-4.0%), Hot Springs (-10.3%), Lincoln (-3.1%), Platte (-2.7%), Sheridan (-4.6%), and Teton (-4.9%) counties.

The right side column of Table 2-2 compares annual employment and average annual wage of teachers to statewide numbers. In nine of Wyoming's counties during the 2011/12 school year, teachers had higher average wages than the state as a whole (Campbell, Goshen, Laramie, Lincoln, Park, Sheridan, Sublette, Sweetwater, and Teton).

Wage Change, 2009/10 to 2011/12

A summary table of all primary, secondary, and special education teachers (SOC 25-2000) for each county is presented in **Table 2-2**, which is taken from Appendix B. This summary table is similar to those introduced in Chapter 1. This summary table shows the change in employment and average annual wage for each county, and how each county's average annual wage compared to the statewide average using the WDE 602 data.

For all primary, secondary, and special education teachers (SOC 25-2000) in Wyoming, the average annual wage increased from $56,997 in 2009/10 to $58,075 in 2011/12. The WDE 602 staffing file shows an

(Text continued on page 38)

Table 2-2: Total, All Primary, Secondary, & Special Education School Teachers (SOC 25-2000) in Public Schools in Wyoming and its 23 Counties, 2009/10 and 2011/12

This group is a composite of all teachers involved in direct instruction in the classroom.

Wyoming

Employment

2009/10	2011/12	Change	%	
7,406	7,443	37	0.5%	↑

Average Annual Wage

2009/10	2011/12	Change	%	
$56,997	$58,075	$1,078	1.9%	↑

Of all 23 Wyoming counties in 2012, the highest average annual wage for teachers was found in Teton County ($64,584). This was $5,594 more (10.3%) than the statewide average.

Albany County

Employment

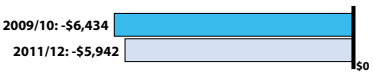
2009/10	2011/12	Change	%	
351	346	-5	-1.4%	↓

Average Annual Wage

2009/10	2011/12	Change	%	
$50,563	$52,133	$1,569	3.1%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$6,434	-11.3%	-$5,942	-10.2%



Big Horn County

Employment

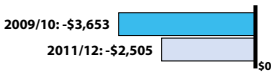
2009/10	2011/12	Change	%	
212	217	5	2.4%	↑

Average Annual Wage

2009/10	2011/12	Change	%	
$53,344	$55,570	$2,226	4.2%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$3,653	-6.4%	-$2,505	-4.3%



Campbell County

Employment

2009/10	2011/12	Change	%	
646	636	-10	-1.5%	↓

Average Annual Wage

2009/10	2011/12	Change	%	
$61,139	$62,206	$1,067	1.7%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
$4,142	7.3%	$4,131	7.1%

Carbon County

Employment

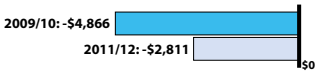
2009/10	2011/12	Change	%	
245	247	2	0.8%	↑

Average Annual Wage

2009/10	2011/12	Change	%	
$52,131	$55,264	$3,133	6.0%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$4,866	-8.5%	-$2,811	-4.8%



Converse County

Employment

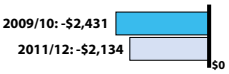
2009/10	2011/12	Change	%	
218	225	7	3.2%	↑

Average Annual Wage

2009/10	2011/12	Change	%	
$54,566	$55,941	$1,375	2.5%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$2,431	-4.3%	-$2,134	-3.7%



Crook County

Employment

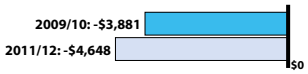
2009/10	2011/12	Change	%	
103	107	4	3.9%	↑

Average Annual Wage

2009/10	2011/12	Change	%	
$53,116	$53,427	$311	0.6%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$3,881	-6.8%	-$4,648	-8.0%



Fremont County

Employment

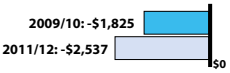
2009/10	2011/12	Change	%	
583	589	6	1.0%	↑

Average Annual Wage

2009/10	2011/12	Change	%	
$55,172	$55,538	$366	0.7%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$1,825	-3.2%	-$2,537	-4.4%



Source: Wyoming Department of Education Contract Files (WDE 602).

Chapter 2

Table 2-2: Total, All Primary, Secondary, & Special Education School Teachers (SOC 25-2000) in Public Schools in Wyoming and its 23 Counties, 2009/10 and 2011/12

This group is a composite of all teachers involved in direct instruction in the classroom.

Goshen County

Employment

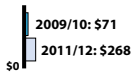
2009/10	2011/12	Change	%	
173	166	-7	-4.0%	↓

Average Annual Wage

2009/10	2011/12	Change	%	
$57,068	$58,343	$1,276	2.2%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
$71	0.1%	$268	0.5%



Hot Springs County

Employment

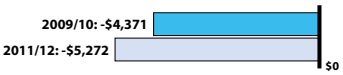
2009/10	2011/12	Change	%	
68	61	-7	-10.3%	↓

Average Annual Wage

2009/10	2011/12	Change	%	
$52,626	$52,803	$176	0.3%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$4,371	-7.7%	-$5,272	-9.1%



Johnson County

Employment

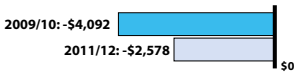
2009/10	2011/12	Change	%	
124	128	4	3.2%	↑

Average Annual Wage

2009/10	2011/12	Change	%	
$52,905	$55,497	$2,592	4.9%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$4,092	-7.2%	-$2,578	-4.4%



Laramie County

Employment

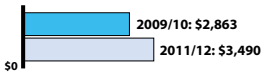
2009/10	2011/12	Change	%	
1,106	1,113	7	0.6%	↑

Average Annual Wage

2009/10	2011/12	Change	%	
$59,860	$61,565	$1,705	2.8%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
$2,863	5.0%	$3,490	6.0%



Lincoln County

Employment

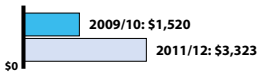
2009/10	2011/12	Change	%	
255	247	-8	-3.1%	↓

Average Annual Wage

2009/10	2011/12	Change	%	
$58,517	$61,398	$2,881	4.9%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
$1,520	2.7%	$3,323	5.7%



Natrona County

Employment

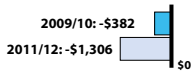
2009/10	2011/12	Change	%	
863	882	19	2.2%	↑

Average Annual Wage

2009/10	2011/12	Change	%	
$56,615	$56,769	$154	0.3%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$382	-0.7%	-$1,306	-2.2%



Niobrara County

Employment

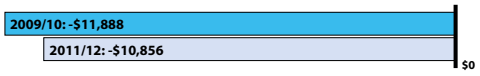
2009/10	2011/12	Change	%	
53	66	13	24.5%	↑

Average Annual Wage

2009/10	2011/12	Change	%	
$45,109	$47,219	$2,110	4.7%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
-$11,888	-20.9%	-$10,856	-18.7%



Park County

Employment

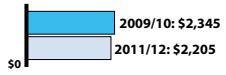
2009/10	2011/12	Change	%	
317	321	4	1.3%	↑

Average Annual Wage

2009/10	2011/12	Change	%	
$59,342	$60,280	$939	1.6%	↑

Comparison to Wyoming Wage

2009/10	%	2011/12	%
$2,345	4.1%	$2,205	3.8%



Source: Wyoming Department of Education Contract Files (WDE 602).

Table 2-2: Total, All Primary, Secondary, & Special Education School Teachers (SOC 25-2000) in Public Schools in Wyoming and its 23 Counties, 2009/10 and 2011/12

This group is a composite of all teachers involved in direct instruction in the classroom.

Platte County

Employment					Comparison to Wyoming Wage			
2009/10	2011/12	Change	%		2009/10	%	2011/12	%
148	144	-4	-2.7%	↓	-$5,459	-9.6%	-$5,954	-10.3%

Average Annual Wage				
2009/10	2011/12	Change	%	
$51,538	$52,121	$583	1.1%	↑

Sheridan County

Employment					Comparison to Wyoming Wage			
2009/10	2011/12	Change	%		2009/10	%	2011/12	%
395	377	-18	-4.6%	↓	$1,201	2.1%	$1,103	1.9%

Average Annual Wage				
2009/10	2011/12	Change	%	
$58,198	$59,178	$980	1.7%	↑

Sublette County

Employment					Comparison to Wyoming Wage			
2009/10	2011/12	Change	%		2009/10	%	2011/12	%
135	140	5	3.7%	↑	$1,890	3.3%	$1,015	1.7%

Average Annual Wage				
2009/10	2011/12	Change	%	
$58,887	$59,090	$202	0.3%	↑

Sweetwater County

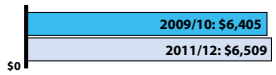
Employment					Comparison to Wyoming Wage			
2009/10	2011/12	Change	%		2009/10	%	2011/12	%
592	614	22	3.7%	↑	$1,608	2.8%	$771	1.3%

Average Annual Wage				
2009/10	2011/12	Change	%	
$58,605	$58,846	$242	0.4%	↑

Teton County

Employment					Comparison to Wyoming Wage			
2009/10	2011/12	Change	%		2009/10	%	2011/12	%
224	213	-11	-4.9%	↓	$6,405	11.2%	$6,509	11.2%

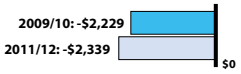
Average Annual Wage				
2009/10	2011/12	Change	%	
$63,402	$64,584	$1,182	1.9%	↑



Uinta County

Employment					Comparison to Wyoming Wage			
2009/10	2011/12	Change	%		2009/10	%	2011/12	%
367	370	3	0.8%	↑	-$2,229	-3.9%	-$2,339	-4.0%

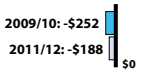
Average Annual Wage				
2009/10	2011/12	Change	%	
$54,768	$55,736	$968	1.8%	↑



Washakie County

Employment					Comparison to Wyoming Wage			
2009/10	2011/12	Change	%		2009/10	%	2011/12	%
126	126	0	0.0%	--	-$252	-0.4%	-$188	-0.3%

Average Annual Wage				
2009/10	2011/12	Change	%	
$56,745	$57,887	$1,142	2.0%	↑



Weston County

Employment					Comparison to Wyoming Wage			
2009/10	2011/12	Change	%		2009/10	%	2011/12	%
102	108	6	5.9%	↑	-$4,513	-7.9%	-$4,354	-7.5%

Average Annual Wage				
2009/10	2011/12	Change	%	
$52,484	$53,721	$1,237	2.4%	↑

Source: Wyoming Department of Education Contract Files (WDE 602).

(Text continued from page 30)

increase of 1.9%, compared to the 3.9% increase shown by OES.

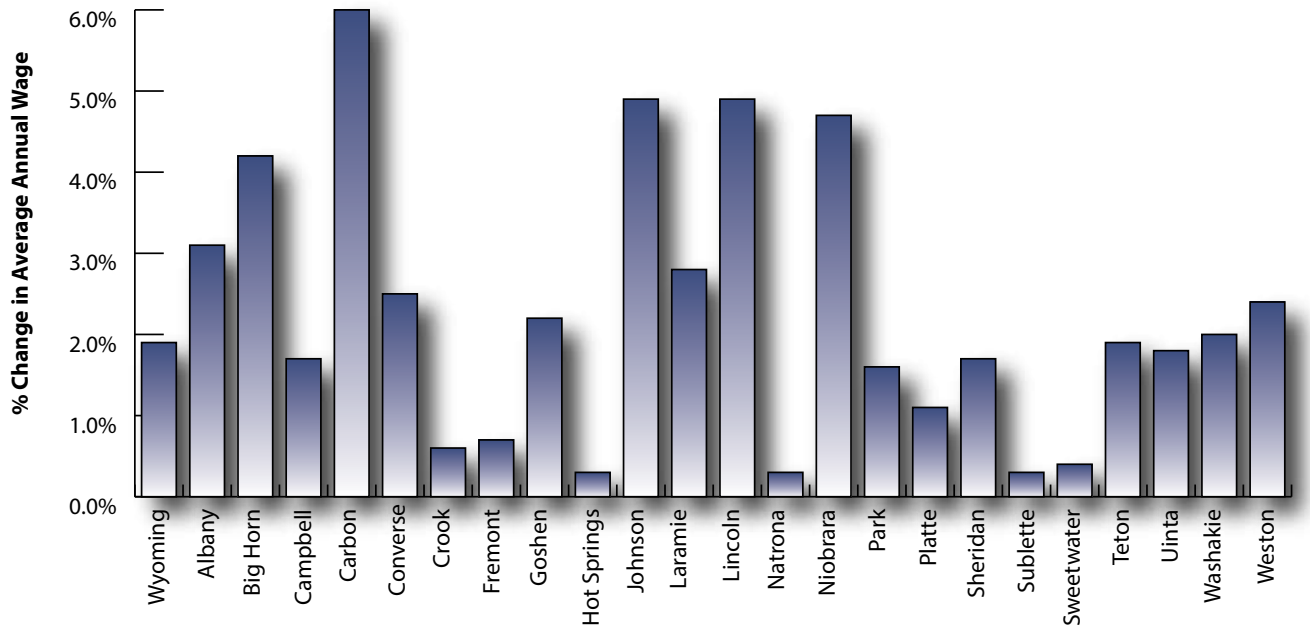
The average annual wage for teachers (25-2000) in all counties increased from 2009/10 to 2011/12 , and Carbon County experienced the highest percentage increase of 6.0%, or $3,133 (see **Figure 2-2**). Six counties saw an increase in wages of less than 1.0%: Crook, Fremont, Hot Springs, Natrona, Sublette, and Sweetwater. In terms of employment, Washakie County was the only county where employment remained unchanged (126) during both periods. The largest increase in employment was in Sweetwater County (22 individuals), while the largest decrease in employment was in Teton (-11 individuals).

Commuting

With Wyoming being a rural state, workers may need to travel great distances to their workplace. It appears that higher wages, as noted in another study of Wyoming workers by Research & Planning (*Health Care Workforce Needs in Wyoming: Advancing the Study, 2011*) may be associated with more extensive commuting. For the 2011/12 school year, 11.2% of all contracted WDE employees commuted to their place of employment either from another county or from out of state.

Table 2-3 (see page 39) shows the county of contracted employment by commuting type (i.e., intracounty,

Figure 2-2: Percentage Change in Average Annual Wage for All Primary, Secondary, and Special Education School Teachers (SOC 25-2000) in Local Government Schools (NAICS 611100) in Wyoming by County, 2009/10 to 2011/12



Source: Wyoming Department of Education Contract File (WDE 602).

intercounty, or interstate). Two counties had more than 20.0% of employees in all occupations in public schools commuting to work from outside the county: Niobrara and Big Horn. Only four counties had less than 10.0% of their workforce for all occupations in public schools coming from outside the county: Fremont, Laramie, Natrona, and Park. Natrona County had the smallest percentage of workers in public schools commuting from outside the county (7.5%).

Statewide, 13.8% of teachers were commuting to work from outside their county of employment. Six counties (Big Horn, Crook, Hot Springs, Niobrara, Sublette, and Weston) had more than 20.0% of contracted teachers commuting from outside the county. Niobrara had nearly half (47.7%) of their 65 teachers coming from outside the county. The two largest counties by population (Natrona and Laramie) were the only counties with less than 10.0% of teachers commuting to work from outside the county, 9.4% and 8.3% respectively.

The percentage of contracted teachers

Table 2-3: **Commuting Patterns for All Occupations and Teachers in Public Schools in Wyoming, 2011/12**

Total, All Occupations in Public Schools in Wyoming

County of Employment	Contract Emp.	Intracounty Workers		Intercounty and Interstate Commuters			
		N	%	Intercounty Commuters	Interstate Commuters	Total	%
Albany	777	662	85.2	41	74	115	14.8
Big Horn	515	403	78.3	84	28	112	21.7
Campbell	1,658	1,480	89.3	81	97	178	10.7
Carbon	605	535	88.4	28	42	70	11.6
Converse	541	464	85.8	42	35	77	14.2
Crook	278	240	86.3	18	20	38	13.7
Fremont	1,502	1,377	91.7	53	72	125	8.3
Goshen	416	364	87.5	16	36	52	12.5
Hot Springs	182	153	84.1	17	12	29	15.9
Johnson	307	270	87.9	21	16	37	12.1
Laramie	2,470	2,255	91.3	51	164	215	8.7
Lincoln	653	582	89.1	12	59	71	10.9
Natrona	2,260	2,091	92.5	60	109	169	7.5
Niobrara	121	85	70.2	33	3	36	29.8
Park	848	771	90.9	32	45	77	9.1
Platte	368	330	89.7	26	12	38	10.3
Sheridan	888	783	88.2	55	50	105	11.8
Sublette	360	292	81.1	38	30	68	18.9
Sweetwater	1,585	1,424	89.8	76	85	161	10.2
Teton	457	385	84.2	28	44	72	15.8
Uinta	914	799	87.4	55	60	115	12.6
Washakie	345	291	84.3	18	36	54	15.7
Weston	266	220	82.7	12	34	46	17.3
Total	**18,316**	**16,256**	**88.8**	**897**	**1,163**	**2060**	**11.2**

Total, All Teachers in Public Schools in Wyoming

County of Employment	Contract Emp.	Intracounty Workers		Intercounty and Interstate Commuters			
		N	%	Intercounty Commuters	Interstate Commuters	Total	%
Albany	345	294	85.2	19	32	51	14.8
Big Horn	211	141	66.8	56	14	70	33.2
Campbell	627	551	87.9	38	38	76	12.1
Carbon	241	200	83.0	22	19	41	17.0
Converse	223	185	83.0	21	17	38	17.0
Crook	107	80	74.8	14	13	27	25.2
Fremont	577	510	88.4	38	29	67	11.6
Goshen	160	133	83.1	9	18	27	16.9
Hot Springs	61	48	78.7	10	3	13	21.3
Johnson	123	105	85.4	11	7	18	14.6
Laramie	1,086	996	91.7	24	66	90	8.3
Lincoln	244	218	89.3	7	19	26	10.7
Natrona	869	787	90.6	33	49	82	9.4
Niobrara	65	34	52.3	29	2	31	47.7
Park	320	288	90.0	11	21	32	10.0
Platte	140	121	86.4	15	4	19	13.6
Sheridan	376	319	84.8	32	25	57	15.2
Sublette	139	110	79.1	17	12	29	20.9
Sweetwater	601	511	85.0	54	36	90	15.0
Teton	211	186	88.2	12	13	25	11.8
Uinta	360	302	83.9	34	24	58	16.1
Washakie	126	106	84.1	6	14	20	15.9
Weston	104	82	78.8	8	14	22	21.2
Total	**7,316**	**6,307**	**86.2**	**520**	**489**	**1,009**	**13.8**

Sources: Wyoming Department of Education Contract Files (WDE 602).
Research & Planning (R&P) Wage Records Database

commuting from outside the county was generally higher than for all occupations in public schools. Hot Springs, Johnson, Niobrara, and Platte counties all had less than 10 teachers coming from outside the state.

More information on commuting is available online at http://doe.state.wy.us/LMI/commute.htm. This commuting analysis does not include telecommuting.

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Chapter 3: Local Turnover

by: Tony Glover, Workforce Information Supervisor

People change employers for many reasons, including family-based decisions (care for young children, elderly parents, or to relocate with a spouse), personal reasons (the chosen profession is no longer desirable because of schedules, work environment, workplace safety, or retirement), and financial reasons (promotion and/or wage progression; LSO, 2000).

While this chapter cannot identify the specific reasons persons employed in Wyoming's public schools choose to change employers, it does offer insight into those changes and shows where a large portion of individuals that left landed with respect to location, industry, and wages. It is hypothesized that individuals who leave jobs with higher wages for jobs paying less are likely doing so due to family-based and personal reasons. Further, individuals who left jobs paying less to acquire jobs paying more left for financial incentives, such as career advancement.

It is accepted that the education and skills acquired by teachers have several applications to occupations other than teaching and industries other than public schools. However, Chapter 1 showed that Wyoming pays its teachers more than surrounding states and Chapter 2 demonstrated the large variation in teacher pay within Wyoming. The primary function of this chapter is to focus on individuals leaving school district employment for another school district, another industry, or another state.

To capture the school districts' employee transitions, it is necessary to combine the Wyoming Department of Education - Fall School District Staff Member Collection (WDE 602), Wyoming's Unemployment Insurance Wage Records (WR), and Wyoming's Quarterly Census of Employment and Wages (QCEW) databases. Longitudinal WDE 602 data allows tracking the internal (Wyoming Public Schools) market of public school employees for example, when a teacher changes districts or occupations from one year to the next. Wage Records collects SSN, year, quarter, employer, and wages for all individuals covered by Unemployment Insurance in Wyoming and the QCEW collects data on the characteristics of the employers that report data to WR such as North American Industrial Classification (industry), ownership (local, state, federal, private) and county of employment. Whereas, the WDE 602 is restricted to the public schools market only, WR combined with the QCEW allows for the analysis of individuals changes in locations and industries of employment other than public schools. Due to the level of tabular cell detail in this chapter and to ensure the confidentiality of individuals studied, data are presented as an aggregate of two years 2010/11 and 2011/12.

It is assumed that the large investment in teachers' human capital (education, training, and experience) towards the specific occupation of teaching in schools limits their market to teaching in schools. Non-teaching occupations occurring in public schools have a larger number of market opportunities. As pointed out in previous chapters, computer specialists (SOC 15-1000) and health diagnosing and treating practitioners (SOC 29-1000)

are both paid higher wages in the private sector in Wyoming and, in most cases, higher wages in the private sector in other states.

Much of the previous work in this publication is focused on all primary, secondary, and special education school teachers (SOC 25-2000) and touched briefly on the numerous other occupations found in Wyoming's public schools. The focus on teachers was based on specific requests from the Legislative Service Office (LSO), and the non-teaching occupations were used for illustrative purposes. This chapter categorizes public school contracts from the Wyoming Department of Education database (WDE 602) into two occupational groups and two retention statuses, and presents findings on the destination industries and locations of work for those who left public school employment. The first occupational group is all occupations (including teachers) and the second is primary, secondary, and special education school teachers (SOC 25-2000) only. The two retention statuses are retained and leavers; leavers are comprised of no shows and exits (see Box 3-1).

As noted above, the WDE 602 was combined with other administrative databases maintained by the Research & Planning (R&P) section of the Wyoming Department of Workforce Services. The first of these is Unemployment Insurance (UI) Wage Records, collected quarterly for unemployment insurance tax purposes. Wage Records contain social security number, year, quarter, employer, and wages. R&P currently maintains 22 years of wage records by quarter for Wyoming and 12 years of the same data for Colorado, Utah, Idaho, Montana, South Dakota, Nebraska, Texas, Alaska, New Mexico, and Oklahoma. The data are combined with a third administrative database, the Quarterly Census of Employment and Wages (QCEW), also collected for UI tax administration, which has detailed information about the industry, ownership, and other characteristics of the employers found in wage records. When combined, the resulting data set allows R&P to determine the who (SSN & UI account), what (earnings), when (temporally across 20 years), and where (UI accounts are geocoded) for approximately 92.0% of the employed individuals in Wyoming.

Box 3-1: Retention Statuses

1. Retained: Contracted staff who also had Unemployment Insurance (UI) reported wages in the fourth quarter of the contract year and who renewed a contract with the same school district the following year.

2. Leavers: The total of no shows and exits.
- ***a. No Shows:*** Contracted individuals who did not have UI wages in the fourth quarter of the contract year.
- ***b. Exits:*** Contracted individuals with UI wages in the fourth quarter of the contract year that did not renew a contract with the same school district in the following year.

The WDE 602, like other administrative data sets, is collected for operational purposes and has little oversight or integrity rules relating to the quality or completeness of the data. While working with the WDE 602 Staffing File, it became apparent that many of the birth dates listed were not the

(Text continued on page 43)

same as those found on the Department of Motor Vehicles (DMV) driver's license database. When there was a difference between the WDE 602 and the DMV during this research, the DMV took precedence.

The WDE 602, Wage Records, QCEW, and DMV driver's license databases were combined to create a table similar to the hypothetical example found in **Table 3-1**. From left to right, the SSN is found in the WDE 602, Wage Records, and DMV databases, and creates the main linking variable between data sets. The school year is defined in terms of a typical school year cycle. For example, 2010/11 is used for the period of July 1, 2010 to June 30, 2011. As wage records are collected quarterly, the 2010/11 school year corresponds to calendar year 2010Q3, 2010Q4, 2011Q1, and 2011Q2. The staff ID is the primary linkage mechanism between the WDE 602 and signifies whether the individual was contracted in the WDE 602. The Standard Occupational Classification (SOC) code was assigned by R&P staff trained by the U.S. Bureau of Labor Statistics, which manages the Occupational Employment Statistics (OES) survey. This assignment was based on the WDE 602 assignment code and highest grade with which the contracted individual has contact, e.g. elementary, middle, or high school. The district ID, district, district wages, and experience are also present on the WDE 602. The age was calculated by subtracting the year of birth (DMV) from the school year (WDE 602). The primary state, primary industry, and primary county represent the state, county, and industry for which the individual had the highest wages in the four-quarter period based on Wage Records. Lastly, total wage is the individual's total wages for all employers during the four-quarter period.

Table 3-1 shows that the individual named Hypothetical Pat with the SSN of 999999999 was employed by the Natrona County School District from the 2007/08 school year until the 2010/11 school

Table 3-1: **Record Structure of Linked Administrative Databases for Hypothetical Pat**

Staffing File Matched to Wage Records		Contract File (WDE 602)						Driver's License	QCEW[b] Matched to Wage Records			
Social Security Number	School Year	Staff ID	SOC[a] Code	District ID	School District	District Wages	Experience (in Years)	Age	Primary State of Residence	Primary Industry	County	Total Wages
999999999	2007/08	8888888	25-2031	1301000	Natrona County School District #1	$39,967	15	30	WY	09a- Public Schools	Natrona County	$39,967
999999999	2008/09	8888888	25-2031	1301000	Natrona County School District #1	$45,526	16	31	WY	09a- Public Schools	Natrona County	$45,526
999999999	2009/10	8888888	25-2031	1301000	Natrona County School District #1	$55,968	17	32	WY	09a- Public Schools	Natrona County	$55,968
999999999	2010/11	8888888	25-2031	1301000	Natrona County School District #1	$55,968	18	33	WY	09a- Public Schools	Natrona County	$55,968
999999999	2011/12							34	WY	01- Natural Rescources & Mining (11, 21)	Campbell County	$75,284

This record structure has 90,360 records in the actual analysis table.

[a]Standard Occupational Classification.

[b]Quarterly Census of Employment and Wages.

Chapter 3

(Text continued from page 43)

year. During this time, Pat showed wage progression from 2007/08 to 2009/10, at which point Pat's wages remained relatively flat for two consecutive school years. Between the 2010/11 and 2011/12 school years, Hypothetical Pat decided to leave employment as a teacher (SOC 25-2031) with the Natrona County School District and work in Campbell County in the natural resources & mining industry. Based on the definitions outlined on page 43, Hypothetical Pat was an exit from public school employment in 2010/11. In this example, the career transition appears to have been financial in nature (although this does not rule out other explanations) as Pat's wages increased from $55,968 to $75,284 per year, a gain of $19,316.

As stated at the beginning of this chapter, public school contracts were divided into two distinct retention statuses: retained (next year) and leavers, which consists of no shows (for the current year) plus exits (those who leave the district by the next year). Public school contracts were also divided into two occupational groups: all occupations and all teachers (SOC 25-2000). The summary results appear in **Table 3-2** (see page 45). The leavers column includes N (number of leavers), contracted average wage (from the WDE 602), and the percentage of all contracted individuals who exited. The exit rate represents a replacement rate that would need to be met to maintain the same level of employment across school districts. Table 3-2a shows that across all occupations, the replacement rate of contracted individuals who exit ranges from 11.0% in 2008/09 to 13.3% in 2011/12. The total replacement rate for teachers is lower, ranging between 8.2% in 2008/09 and 9.6% in 2011/12. Provided that demand remains constant, or increases, the number of leavers represents a recruitment cost at the school district level.

Tables 3-2a and 3-2b also show exit rates for three age groups by school year: less than or equal to 34 (≤34), 35-54, and 55+. Previous research (Robinson & Strunk, 2006) states, "This research points to a U-shaped curve of teacher experience and quits: Younger teachers have a higher rate of turnover, which declines as teachers hit middle age/ experience, and then rises again as teachers near retirement."

Combined data of teachers that left for the 2010/11 to 2011/12 school years were aggregated by the age of the leaver in the year of departure to create **Figure 3-1** (see page 46). The U-shaped curve described by Robinson & Strunk is apparent and was used to define the age group boundaries that appear in Tables 3-2a and 3-2b. The importance of these distinct age groups lays in the motivation and circumstances of the individuals that leave and the type of resource that needs to be replaced. As suggested in the introduction, young people may leave due to factors such as child care, workplace environment, and other financial reasons and older individuals may be more likely to retire.

As discussed in Chapter 2, there are wage differences within Wyoming between counties. A contracted individual moving from Converse County to Natrona County would qualify as a district leaver under the current definition. **Tables 3-3a and 3-3b** (see page 47) were created by combining two school years (2010/11 & 2011/12) of data to eliminate issues related to low cell counts and confidentiality. For these same reasons, the no show and exit columns

Table 3-2a: Wyoming Public School All Occupation Contracts by Retention Status, 2008/09 to 2012/13

						Leavers						
		Contracts		Retained		No Shows		Exits		Total, All Leavers		
School Year	Age Group	N	Contract Annual Wage	N	Average Annual Wage	N	Average Annual Wage	N	Average Annual Wage	N	Average Annual Wage	Exit Rate
2008/09	Total	17,459	$41,350	15,540	$42,346	444	$27,760	1,475	$34,952	1,919	$33,288	11.0
	≤34	3,458	$36,496	2,879	$38,582	140	$23,227	439	$27,048	579	$26,124	16.7
	35-54	9,283	$42,442	8,561	$43,383	204	$27,659	518	$32,709	722	$31,282	7.8
	55+	4,718	$42,761	4,100	$42,824	100	$34,313	518	$43,893	618	$42,343	13.1
2009/10	Total	18,238	$41,933	16,059	$43,015	496	$28,115	1,683	$35,678	2,179	$33,956	11.9
	≤34	3,773	$37,067	3,102	$39,414	152	$22,820	519	$27,215	671	$26,219	17.8
	35-54	9,481	$43,149	8,669	$44,341	249	$28,111	563	$31,434	812	$30,415	8.6
	55+	4,984	$43,304	4,288	$42,940	95	$36,598	601	$46,961	696	$45,547	14.0
2010/11	Total	18,356	$42,090	15,907	$43,490	515	$25,012	1,934	$35,122	2,449	$32,996	13.3
	≤34	3,797	$37,472	3,079	$40,279	162	$19,565	556	$27,147	718	$25,436	18.9
	35-54	9,427	$43,322	8,503	$44,746	242	$24,579	682	$32,215	924	$30,215	9.8
	55+	5,132	$43,243	4,325	$43,306	111	$33,907	696	$44,340	807	$42,905	15.7
2011/12	Total	18,316	$42,817	15,899	$44,141	370	$18,153	2,047	$36,990	2,417	$34,106	13.2
	≤34	3,853	$38,536	3,122	$41,002	112	$16,296	619	$30,120	731	$28,002	19.0
	35-54	9,241	$44,178	8,352	$45,546	178	$18,534	711	$34,518	889	$31,318	9.6
	55+	5,222	$43,567	4,425	$43,702	80	$19,904	717	$45,371	797	$42,815	15.3
2012/13	Total	18,570	$42,936			544	$27,195					
	≤34	4,029	$38,522			180	$21,811					
	35-54	9,253	$44,564			238	$29,591					
	55+	5,288	$43,452			126	$30,359					

Table 3-2b: Wyoming Public School Teacher[a] Contracts by Contracted Individuals' Retention Status, 2008/09 to 2012/13

						Leavers						
		Contracts		Retained		No Shows		Exits		Total, All Leavers		
School Year	Age Group	N	Contract Annual Wage	N	Average Annual Wage	N	Average Annual Wage	N	Average Annual Wage	N	Average Annual Wage	Exit Rate
2008/09	Total	7,225	$55,808	6,630	$56,114	136	$47,591	459	$53,817	595	$52,394	8.2
	20-34	1,886	$47,740	1,680	$48,146	54	$39,717	152	$46,094	206	$44,422	10.9
	35-54	3,776	$57,567	3,596	$57,805	49	$50,404	131	$53,708	180	$52,809	4.8
	55+	1,563	$61,293	1,354	$61,509	33	$56,300	176	$60,567	209	$59,894	13.4
2009/10	Total	7,406	$56,996	6,750	$57,355	113	$45,886	543	$54,852	656	$53,308	8.9
	≤34	2,006	$48,991	1,781	$49,475	48	$40,538	177	$46,411	225	$45,158	11.2
	35-54	3,793	$58,843	3,595	$59,217	46	$47,217	152	$53,514	198	$52,051	5.2
	55+	1,607	$62,631	1,374	$62,696	19	$56,175	214	$62,785	233	$62,246	14.5
2010/11	Total	7,410	$57,296	6,735	$57,571	86	$47,825	589	$55,531	675	$54,549	9.1
	≤34	2,019	$49,466	1,807	$49,832	36	$42,318	176	$47,171	212	$46,347	10.5
	35-54	3,771	$58,969	3,557	$59,372	34	$48,750	180	$52,921	214	$52,258	5.7
	55+	1,620	$63,160	1,371	$63,098	16	$58,250	233	$63,863	249	$63,502	15.4
2011/12	Total	7,443	$58,074	6,729	$58,358	42	$44,921	672	$56,060	714	$55,405	9.6
	≤34	2,100	$50,311	1,851	$50,695	22	$42,090	227	$47,975	249	$47,455	11.9
	35-54	3,711	$59,986	3,511	$60,237	12	$49,777	188	$55,935	200	$55,566	5.4
	55+	1,632	$63,719	1,367	$63,906	8	$45,424	257	$63,293	265	$62,754	16.2
2012/13	Total	7,610	$57,984			102	$46,179					
	≤34	2,219	$50,141			50	$40,829					
	35-54	3,783	$59,989			39	$48,049					
	55+	1,608	$64,092			13	$61,148					

[a]Teachers = All Primary, Secondary, and Special Education Teachers (SOC 25-2000).

are consolidated into the single category of leavers. As Table 3-3a shows, the top three counties with the greatest replacement need for all occupations are Hot Springs (24.2%), Albany (21.3%), and Sublette (19.4%) counties, and the lowest three are Niobrara (8.4%), Laramie (9.3%), and Natrona (9.5%) counties. For teachers (Table 3-3b), the greatest replacement needs are in Hot Springs (23.3%), Albany (15.7%), and Goshen (13.7%) counties and the lowest are Niobrara (5.6%), Lincoln (6.1%), and Park (6.5%), and Laramie and Natrona counties were tied at (6.7%).

Data to this point have shown who the leavers are by school year and age group, and the counties from which they leave. Using the same two years of data presented in Tables 3-3a and 3-3b, **Table 3-4a** (see page 48) is comprised of all of the leavers from 2010/11 and 2011/12 combined. At first glance it can be seen that even though we have aggregated two school years of data, there remain numerous blank cells in Table 3-4 that are non-disclosable (ND) due to confidentiality. To better understand Table 3-4a, Hypothetical Pat from Table 3-1 is one of the 35 individuals, ages

Figure 3-1: Number of Wyoming Public School District Leavers by Age Group, All Occupations, 2010/11 to 2011/12

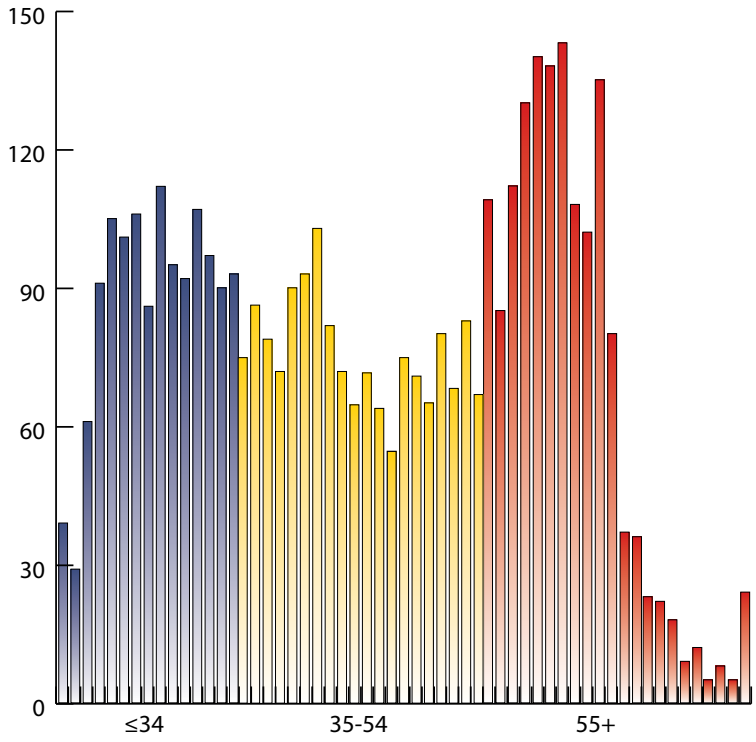

Figure 3-2: Number of Wyoming Public School District Leavers by Age Group, Teachers, 2010/11 to 2011/12

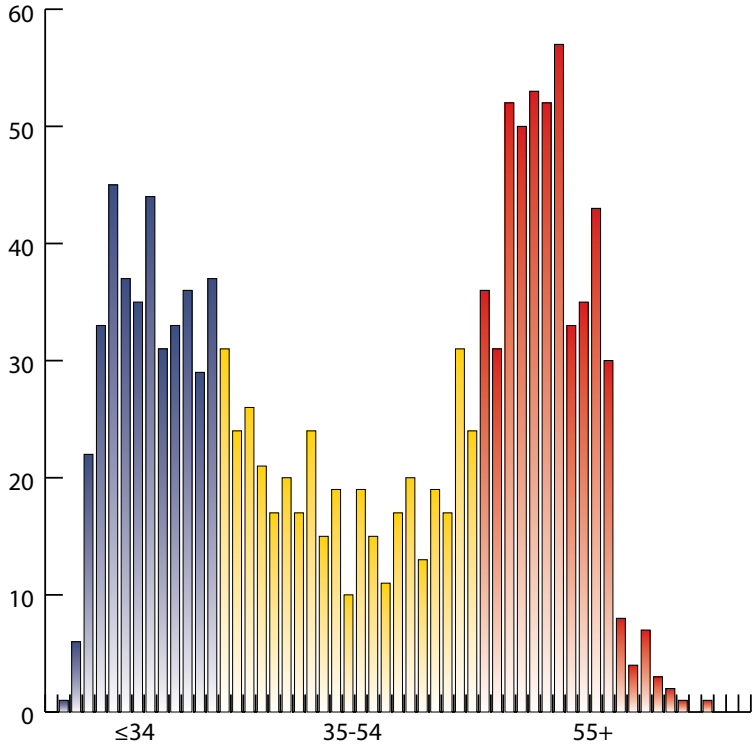

Table 3-3a: **Public School Contracts by Districts' County and Contracted Individuals' Retention Status for Combined 2010/11 & 2011/12**

	Total		Retained		Leavers		
Table 3-3a: Total, All Occupations							
County	**N**	**Contract Wages**	**N**	**Contract Wages**	**N**	**Contract Wages**	**Exit Rate**
Total	**36,674**	**$42,452**	**31,806**	**$43,815**	**4,868**	**$33,547**	**13.3**
01-Albany County	1,623	$38,557	1,277	$41,338	346	$28,293	21.3
02-Big Horn County	1,024	$40,133	896	$41,443	128	$30,968	12.5
03-Campbell County	3,375	$44,316	2,929	$45,808	446	$34,516	13.2
04-Carbon County	1,199	$39,221	997	$40,801	202	$31,420	16.8
05-Converse County	1,073	$39,987	923	$41,020	150	$33,628	14
06-Crook County	543	$36,969	475	$38,202	68	$28,357	12.5
07-Fremont County	2,986	$43,215	2,527	$44,277	459	$37,369	15.4
08-Goshen County	864	$40,817	702	$41,889	162	$36,172	18.8
09-Hot Springs County	376	$35,728	285	$37,508	91	$30,153	24.2
10-Johnson County	609	$39,841	534	$41,338	75	$29,188	12.3
11-Laramie County	4,945	$47,118	4,484	$47,854	461	$39,953	9.3
12-Lincoln County	1,316	$39,673	1,178	$41,194	138	$26,690	10.5
13-Natrona County	4,487	$44,241	4,061	$44,892	426	$38,033	9.5
14-Niobrara County	238	$38,768	218	$39,768	20	$27,860	8.4
15-Park County	1,690	$42,021	1,506	$43,448	184	$30,338	10.9
16-Platte County	739	$34,407	609	$35,721	130	$28,250	17.6
17-Sheridan County	1,782	$42,392	1,534	$44,378	248	$30,112	13.9
18-Sublette County	707	$43,331	570	$46,321	137	$30,889	19.4
19-Sweetwater County	3,123	$40,993	2,691	$42,473	432	$31,772	13.8
20-Teton County	947	$52,021	785	$53,423	162	$45,227	17.1
21-Uinta County	1,812	$39,739	1,582	$41,043	230	$30,764	12.7
22-Washakie County	696	$37,710	600	$39,683	96	$25,382	13.8
23-Weston County	520	$39,513	443	$40,706	77	$32,649	14.8
Table 3-3b: Teachers[a]							
Total	**14,853**	**$57,686**	**13,464**	**$57,964**	**1,389**	**$54,989**	**9.4**
01-Albany County	700	$51,940	590	$53,139	110	$45,508	15.7
02-Big Horn County	430	$54,566	387	$54,943	43	$51,169	10
03-Campbell County	1,298	$61,795	1,193	$61,684	105	$63,058	8.1
04-Carbon County	489	$54,505	423	$54,562	66	$54,140	13.5
05-Converse County	446	$55,271	403	$55,498	43	$53,144	9.6
06-Crook County	212	$52,972	192	$53,400	20	$48,865	9.4
07-Fremont County	1,161	$55,599	1,028	$55,850	133	$53,657	11.5
08-Goshen County	342	$57,675	295	$58,653	47	$51,539	13.7
09-Hot Springs County	129	$52,968	99	$53,898	30	$49,900	23.3
10-Johnson County	251	$55,066	226	$55,222	25	$53,656	10
11-Laramie County	2,206	$60,661	2,058	$60,781	148	$59,001	6.7
12-Lincoln County	492	$60,092	462	$60,311	30	$56,718	6.1
13-Natrona County	1,767	$56,983	1,648	$57,086	119	$55,558	6.7
14-Niobrara County	126	$46,576	119	$47,042	7	$38,646	5.6
15-Park County	646	$59,679	604	$59,945	42	$55,860	6.5
16-Platte County	288	$52,133	250	$51,831	38	$54,120	13.2
17-Sheridan County	756	$58,949	693	$59,063	63	$57,695	8.3
18-Sublette County	279	$59,308	241	$59,615	38	$57,360	13.6
19-Sweetwater County	1,202	$58,568	1,090	$58,588	112	$58,374	9.3
20-Teton County	435	$64,179	385	$64,613	50	$60,833	11.5
21-Uinta County	735	$55,262	663	$55,595	72	$52,199	9.8
22-Washakie County	254	$57,322	229	$58,060	25	$50,561	9.8
23-Weston County	209	$53,592	186	$53,848	23	$51,529	11

[a]Teachers = All Primary, Secondary, and Special Education Teachers (SOC 25-2000).

34 and younger, who left public school to work in natural resources and mining and would appear in the yello shaded cells of Table 3-4a. We know Pat was a 34-year-old and left employment in a public school in 2010/11, and in 2011/12 Pat was working in the natural resources and mining industry. We also know Pat was a teacher based upon his or her SOC code (25-2031) while contracted with Natrona County School District. Therefore, Pat would be captured as one of the five individuals in the teacher panel of **Table 3-4b** (see page 49) as well.

In Table 3-4, the largest destination state and industry of both all occupations (1,521) and teachers (606) is the same industry they left: public schools in Wyoming. Recall that the definition of a leaver is predicated on the fact that the individual no longer contracts with the same school district. Therefore the destination of choice for individuals leaving a contract with a public school is another public school. At this point, we do not know the occupation of the new job. The second largest destination in Table

(Text continued on page 50)

Table 3-4a: **Public School Contracted Individuals in All Occupations who Leave District Contracts by Destination State and Industry for Combined 2010/11 & 2011/12**

	Total			≤34			35-54			55+		
		Average Wage			Average Wage			Average Wage			Average Wage	
Destination	N	Contract	Destination	N	Contract	Destination	N	Contract	Destination	N	Contract	Destination
Total	**4,868**	**$33,547**	**$27,422**	**1,449**	**$26,731**	**$28,166**	**1,815**	**$30,758**	**$31,017**	**1,604**	**$42,861**	**$20,544**
Wyoming	**2,924**	**$32,090**	**$26,863**	**959**	**$26,580**	**$28,109**	**1,181**	**$29,904**	**$30,641**	**784**	**$42,123**	**$19,648**
Nat. Res. & Mining (11, 21)	91	$19,554	$51,601	35	$18,119	$55,716	43	$15,193	$54,171	13	$37,842	$32,024
Construction (23)	48	$25,942	$27,196	19	$22,710	$27,269	22	$25,155	$28,339	7	$37,187	$23,410
Manufacturing (31, 32, 33)	37	$18,941	$38,963	18	$17,964	$40,176	15	$16,482	$40,925		$32,560	$26,146
Wholesale Trade, Trans., & Util. (22, 42, 48, 49)	83	$17,409	$33,684	25	$14,564	$36,330	41	$19,871	$35,860	17	$15,656	$24,548
Retail Trade (44, 45)	113	$21,235	$20,420	37	$16,532	$20,278	53	$18,441	$21,885	23	$35,237	$17,271
Information (51)	25	$21,461	$24,874	9	$16,291	$30,087	9	$18,610	$30,986	7	$31,773	$10,312
Financial Activities (52, 53)	65	$17,693	$25,863	27	$14,024	$25,947	30	$15,982	$29,841	8	$36,489	$10,665
Prof. & Business Services (54, 55, 56)	111	$26,601	$21,738	31	$18,400	$26,166	52	$20,944	$23,767	28	$46,186	$13,068
Public Schools, Ed. Services (6111-3)	1,521	$38,775	$23,897	455	$33,027	$26,155	545	$37,399	$28,250	521	$45,234	$17,371
Ed. Services (61)	126	$33,731	$29,604	49	$33,125	$33,454	51	$32,830	$32,367	26	$36,640	$16,928
Health Care & Social Assist. (62)	363	$26,421	$30,261	130	$20,880	$28,556	171	$26,137	$31,418	62	$38,822	$30,648
Leisure & Hospitality (71, 72)	112	$21,720	$15,855	47	$22,493	$14,790	46	$20,390	$17,504	19	$23,025	$14,501
Other Svcs. Exc. Public Admin. (81)	61	$26,829	$25,685	18	$19,662	$19,644	27	$30,352	$32,850	16	$28,946	$20,389
Public Admin. (92)	167	$28,261	$41,179	59	$21,248	$34,302	75	$27,138	$46,193	33	$43,349	$42,081
Nonclassified (99)		$15,042	$4,500					$15,042	$4,500			
Other States	**400**	**$37,668**	**$31,504**	**169**	**$32,538**	**$28,488**	**181**	**$39,254**	**$33,466**	**50**	**$49,267**	**$34,592**
Nat. Res. & Mining (11, 21)	6	$15,337	$45,922		$13,225	$53,276		$23,860	$45,405		$15,264	$17,024
Construction (23)	7	$40,320	$36,158		$30,008	$27,338		$54,069	$47,917			
Manufacturing (31, 32, 33)	6	$17,905	$34,701		$13,997	$29,441		$12,673	$30,224		$40,090	$59,434
Wholesale Trade, Trans., & Util. (22, 42, 48, 49)	14	$19,733	$29,024		$8,064	$15,788	10	$17,816	$28,853		$30,013	$34,006
Retail Trade (44, 45)	19	$22,514	$21,498	6	$18,512	$19,660	9	$15,354	$27,727		$44,626	$10,240
Information (51)		$52,675	$54,865					$52,675	$54,865			
Financial Activities (52, 53)	10	$26,410	$56,311		$26,067	$8,876	6	$26,414	$57,290		$27,411	$192,744
Prof. & Business Services (54, 55, 56)	19	$34,837	$33,071	11	$31,600	$32,467	6	$17,706	$15,663		$104,036	$88,613
Public Schools, Ed. Services (6111-3)	121	$46,190	$33,437	50	$41,659	$32,188	55	$49,193	$35,532	16	$50,030	$30,141
Ed. Services (61)	101	$44,769	$36,145	44	$35,382	$31,755	45	$49,594	$40,506	12	$61,097	$35,888
Health Care & Social Assist. (62)	42	$29,170	$23,619	19	$24,658	$21,802	17	$28,682	$23,880	6	$44,836	$28,636
Leisure & Hospitality (71, 72)	26	$28,691	$16,293	11	$27,629	$12,662	14	$30,626	$20,056		$13,294	$3,544
Other Svcs. Exc. Public Admin. (81)	12	$20,301	$16,406	7	$16,957	$18,716		$27,820	$11,730		$13,636	$18,949
Public Admin. (92)	14	$32,401	$30,599	6	$34,700	$32,496	6	$28,501	$33,403		$37,203	$16,496
Nonclassified (99)		$71,103	$11,160					$71,103	$11,160			
Unknown	**1,544**	**$35,240**		**321**	**$24,127**		**453**	**$29,590**		**770**	**$43,196**	

Blank cells indicate data suppression due to confidentiality (a count of less than 5).

[a]Teachers = All Primary, Secondary, and Special Education Teachers (SOC 25-2000).

Table 3-4b: **Public School Contracted for All Teachers who Leave District Contracts by Destination State and Industry for Combined 2010/11 & 2011/12**

	Total			≤34			35-54			55+		
		Average Wage			Average Wage			Average Wage			Average Wage	
Destination	N	Contract	Destination	N	Contract	Destination	N	Contract	Destination	N	Contract	Destination
Total	**1,389**	**$54,990**	**$31,173**	**461**	**$46,946**	**$33,749**	**414**	**$53,856**	**$36,252**	**514**	**$63,117**	**$21,210**
Wyoming	**825**	**$53,675**	**$31,113**	**308**	**$46,741**	**$34,459**	**269**	**$53,437**	**$36,743**	**248**	**$62,544**	**$20,849**
Nat. Res. & Mining (11, 21)	13	$49,159	$46,586	5	$38,173	$45,296		$43,451	$53,619	5	$63,570	$43,657
Construction (23)	7	$55,597	$19,546		$47,684	$28,357		$52,251	$19,823		$70,814	$6,051
Manufacturing (31, 32, 33)		$69,463	$26,218					$58,695	$33,760		$80,230	$18,675
Wholesale Trade, Trans., & Util. (22, 42, 48, 49)	6	$52,199	$31,586		$52,188	$34,867		$57,906	$39,499		$35,104	$1,288
Retail Trade (44, 45)	13	$52,810	$22,321		$41,386	$33,963		$48,921	$28,710	6	$62,372	$11,364
Information (51)		$53,625	$25,696					$53,625	$25,696			
Financial Activities (52, 53)		$55,030	$13,405		$37,389	$4,424		$45,400	$30,397		$68,666	$9,400
Prof. & Business Services (54, 55, 56)	15	$57,172	$20,334		$44,947	$34,105	5	$55,908	$25,604	7	$63,315	$10,668
Public Schools, Ed. Services (6111-3)	606	$54,525	$31,363	221	$47,424	$35,836	189	$54,238	$36,185	196	$62,806	$21,671
Ed. Services (61)	56	$46,792	$30,612	28	$41,326	$32,200	20	$47,292	$34,126	8	$64,674	$16,268
Health Care & Social Assist. (62)	51	$47,266	$33,188	17	$42,944	$33,444	25	$50,247	$37,110	9	$47,152	$21,809
Leisure & Hospitality (71, 72)	10	$56,500	$21,714	8	$55,540	$16,549		$64,649	$74,188		$56,023	$10,559
Other Svcs. Exc. Public Admin. (81)	15	$54,313	$28,451	5	$45,480	$18,389	7	$51,409	$42,724		$75,810	$11,918
Public Admin. (92)	25	$59,088	$37,061	11	$52,755	$34,122	7	$64,399	$58,975	7	$63,728	$19,763
Nonclassified (99)												
Other States	**151**	**$50,968**	**$31,501**	**80**	**$46,751**	**$31,017**	**54**	**$53,751**	**$33,804**	**17**	**$61,972**	**$26,466**
Nat. Res. & Mining (11, 21)												
Construction (23)		$44,900	$1,260		$44,900	$1,260	0					
Manufacturing (31, 32, 33)												
Wholesale Trade, Trans., & Util. (22, 42, 48, 49)		$60,783	$28,926					$57,700	$9,482		$63,865	$48,370
Retail Trade (44, 45)		$52,980	$11,619		$48,327	$8,162		$39,500	$24,924		$62,047	$6,694
Information (51)		$48,949	$91,392					$48,949	$91,392			
Financial Activities (52, 53)		$46,838	$8,462		$46,838	$8,462	0					
Prof. & Business Services (54, 55, 56)	5	$39,419	$30,878		$38,154	$33,724		$44,479	$19,496			
Public Schools, Ed. Services (6111-3)	66	$51,733	$30,885	32	$47,607	$33,344	27	$53,845	$32,520	7	$62,447	$13,335
Ed. Services (61)	45	$50,772	$39,095	28	$46,862	$35,145	12	$55,670	$42,812	5	$60,916	$52,292
Health Care & Social Assist. (62)	12	$48,429	$24,302	7	$41,831	$27,104		$54,757	$22,183		$69,305	$13,167
Leisure & Hospitality (71, 72)	6	$53,539	$15,705		$52,433	$3,494		$54,645	$27,916			
Other Svcs. Exc. Public Admin. (81)		$51,891	$10,589		$57,466	$16,349		$46,316	$4,828			
Public Admin. (92)	6	$53,263	$32,028		$52,115	$30,462		$53,598	$37,016		$54,550	$20,196
Nonclassified (99)												
Unknown	**413**	**$59,087**		**73**	**$48,027**		**91**	**$55,158**		**249**	**$63,765**	

Blank cells indicate data suppression due to confidentiality (a count of less than 5).

[a]Teachers = All Primary, Secondary, and Special Education Teachers (SOC 25-2000).

Chapter 3

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3-4a is designated as unknown, with 1,544 individuals in all occupations and 413 teachers whose whereabouts are unaccounted for. The individuals could have withdrawn from the labor market due to retirement, to care for children, or moved to a state in which R&P does not capture wages. The third most common destination is health care and social assistance, with 363 individuals in the all occupations category and 51 teachers choosing it as their destination industry. Given that R&P has similar data on all licensed health care professionals, we could track the career path of these individuals to get a better understanding of those who leave public school employment.

To this point average contract wages are discussed, and they represent the wages in the base year of the analysis. In other words, they are the average of the wages the individual public school employees who were contracted at by the school district. There is currently a debate (NISS, 2013) as to which is more appropriate to use: contract wages the actual compensation as collected by Wage Records. The second wage item introduced in Tables 3-4a & 3-4b is the destination average wage, which is calculated from the wages collected by Wage Records.

Tables 3-4a and 3-4b also demonstrate that the individuals who left public schools with a destination industry of public schools always had lower subsequent wages. It is hypothesized that these may be teachers that left a contracted position for some personal reason or retirement and are working on a part-time basis as substitutes or have returned to employment after an absence but not during the contracting period. Further investigation using the Professional Teachers Standards Board (PTSB) data is warranted. Please see Appendix A and Appendix B for detailed analyses of exit behaviors and wage progression for district staff.

The remainder of Table 3-4a shows that the all occupations group typically loses wages during the transition, but a large number of the transitions resulted in wage gains. For example, the 91 individuals who went into natural resources & mining went from a contracted wage $19,554 per year to a destination wage of $51,601 per year, and the 167 individuals with a destination of public administration in Wyoming went from $28,261 per year to $41,179. Individuals in the all occupations group gained wages in 13 of the 30 possible transitions.

As demonstrated in Chapter 1, teachers in Wyoming are compensated relatively well in comparison to teachers in surrounding states. This holds true when looking at the teachers who left public schools in Wyoming and are working in public schools in one of the surrounding states. Table 3-4b shows that teachers leaving Wyoming to teach in another state went from $51,733 per year to $30,885 per year on average. Table 3-4 also shows that on average, teachers always lost wages when leaving contracts with Wyoming's public schools, no matter their destination industry.

Lastly, Table 3-5 (see http://doe.state.wy.us/LMI/education_costs/Table_3-5_2013.pdf) looks at all of the major three-digit SOC occupational groupings by the destination industry of the leavers and wages across the school

years 2008/09 to 2011/12. It shows that there is substantial variation in the occupations of those who gain wages and those who lose wages. For example, Table 3-5 confirms that on average, teachers lose wages during the transition, but there are quite a few other occupational groups (in particular those requiring less human capital investment) that gain during the transition.

As stated in the introduction, there are numerous reasons for individuals to change employers. The tables introduced here suggest that in most cases, the reason that teachers leave public schools is not for financial gain, but may be attributed to other underlying motivations and circumstances.

Future research using administrative databases is warranted to explore other motivations and circumstantial factors influencing individuals to take a pay cut and leave employment with a school district is warranted.

R&P captures data from the Wyoming Department of Health on births, deaths, divorces, and marriages. All or any of these events could impact career decisions. Births data could help determine whether or not teachers who have young children are more likely to leave full-time employment for part-time. Marriages may attach a teacher to a spouse who may not be able to find local career opportunities, and divorces may make the teacher want to leave one geographical area for another.

In Chapter 2, R&P presented commuting data to show how many teachers and other occupations commuted across county and state lines. The commuting data are created at the SSN, year, quarter, and employer levels, and could be used to see if individuals change districts or industries while trying to shorten their commute travel in some combination with family circumstances mentioned before.

Additionally, R&P has started research using administrative databases to create household (husband, wife, and children) level data, which would be of interest to explore the relationship between leavers and their partners. Perhaps, as suggested earlier, the spouse of a school district employee may not be able to find suitable employment in the same geographic location as their public school spouse. Other factors such as economic conditions, employer downsizing, or business closure are likely to impact the family dynamic and choices on whether to stay with the same employer.

Research & Planning
Wyoming DWS

Chapter 4: Impending Retirement Trends

by: David Bullard, Senior Economist

School districts need to plan to replace teachers who retire. Fortunately, the retirement process is generally well understood and, for the most part, predictable. This chapter will focus on those teachers age 55 and older, because they are the most likely to retire in the next few years,

Current Age Distribution of Wyoming Teachers

Table 4-1 (see page 54) shows the age distribution of Wyoming teachers during the 2012/13 school year. Across all types of teachers, more than one-fifth (21.9%) are in the 55 and older category. However, the age distribution varies across the different types of teachers. The oldest group of teachers is special education teachers, middle school (SOC 25-2053), with 28.7% in the 55 and older category and 20.8% in the 25-34 year old category.

Elementary school teachers, except special education (SOC 25-2021) is the largest group of teachers in the state. Similar to the pattern for all teachers, more than one-fifth (21.6%) are in the 55 and older category. However, a much larger group (27.5%) was age 25-34. It is possible that the large group of teachers in the 25-34 age range is related to recent increases in elementary school enrollment and also may reflect legislative action to decrease class sizes.

Secondary school teachers, except special and vocational education (SOC 25-2031) are the second largest group of teachers. Their age distribution is slightly skewed toward the younger age groups, with more than one-quarter (26.3%) in the 25-34 category, and 19.8% in the 55 and older category.

Large portions of special education teachers are approaching retirement age. One-quarter or more of special education teachers (at all school levels; SOC 25-2041, 25-2053, and 25-2054) are found in the 55 and older age category. Thus, it appears that the most immediate replacement needs will be among special education teachers.

Retirement Eligibility

Every school district in Wyoming is covered by the Wyoming Retirement System (WRS; Loeb & Miller, 2006). Individuals who began working in WRS-covered employment before September 1, 2012, are eligible to retire at age 60, or earlier if they meet the rule of 85 (Wyoming Retirement System, 2013). Under the rule of 85, workers are eligible for a normal (unreduced) retirement benefit when their age plus their years of service equals 85. The level of retirement benefits is based on years of service and three-year highest average salary, so even teachers who are currently eligible for retirement can increase their retirement benefits by working longer.

Applying WRS eligibility requirements to the WDE 602 file reveals that in 2012, approximately one out of seven (1,040, or 13.7%) teachers in Wyoming was eligible for retirement. **Figure 4-1** (see page 55) shows that the number of teachers who become

(Text continued on page 55)

Table 4-1: **Age Distribution of Teachers in Public Schools in Wyoming, 2012/13 School Year**

	All Primary, Secondary, & Special Education Teachers (25-2000)		Kindergarten Teachers, Except Special Education (25-2012)		Elementary School Teachers, Except Special Education (25-2021)		Middle School Teachers, Except Special and Vocational Education (25-2022)		Vocational Education Teachers, Middle School (25-2023)		Secondary School Teachers, Except Special and Vocational Education (25-2031)		Vocational Education Teachers, Secondary School (25-2032)		Special Ed. Teachers, Preschool, K, and Elementary School (25-2041)		Special Education Teachers, Middle School (25-2053)		Special Education Teachers, Secondary School (25-2054)	
Age Group	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
20-24	207	2.8%	18	4.2%	88	4.1%	25	2.0%	ND	ND	44	2.3%	7	1.7%	10	2.7%	7	1.7%	7	1.9%
25-34	1,893	25.4%	143	33.0%	591	27.5%	336	26.5%	ND	ND	507	26.3%	65	15.4%	81	21.9%	86	20.8%	61	16.5%
35-44	1,854	24.9%	119	27.5%	500	23.3%	309	24.3%	18	24.7%	497	25.8%	107	25.4%	93	25.1%	102	24.6%	104	28.1%
45-54	1,857	24.9%	89	20.6%	505	23.5%	317	25.0%	22	30.1%	497	25.8%	136	32.2%	92	24.9%	100	24.2%	97	26.2%
55 and Older	1,632	21.9%	64	14.8%	464	21.6%	282	22.2%	18	24.7%	382	19.8%	107	25.4%	94	25.4%	119	28.7%	101	27.3%
Total	**7,443**	**100.0%**	**433**	**100.0%**	**2,148**	**100.0%**	**1,269**	**100.0%**	**73**	**100.0%**	**1,927**	**100.0%**	**422**	**100.0%**	**370**	**100.0%**	**414**	**100.0%**	**370**	**100.0%**

ND = non-discloseable due to confidentiality.

Source: Wyoming Department of Education Contract Files (WDE 602).

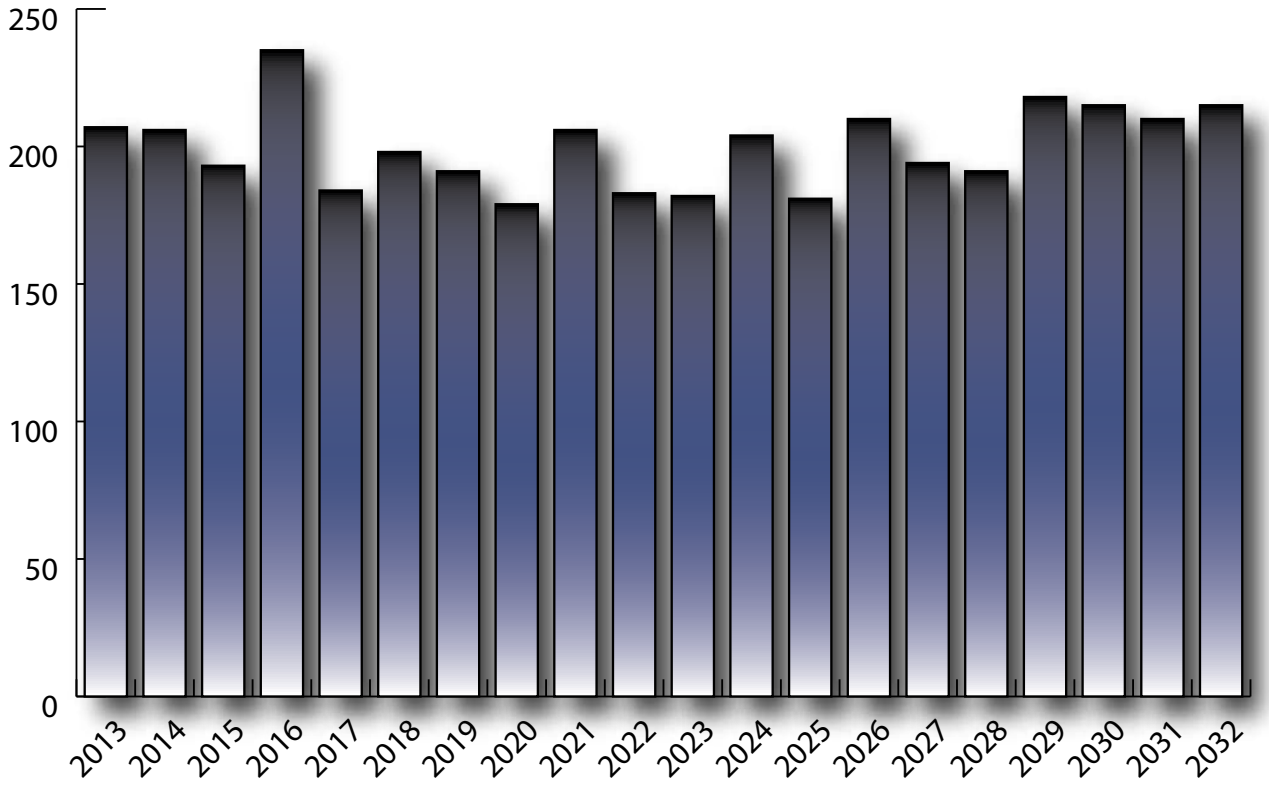
(Text continued from page 53)

eligible for retirement each year from 2013 to 2032 is quite stable, averaging 200 per year. According to this projection, the year in which the largest number of teachers become eligible is 2016 (235 teachers) and the year in which the smallest number become eligible is 2020 (179 teachers). From this perspective, the retirement eligibility process appears quite stable from year to year, without an obvious upward (or downward) trend.

The projections were developed by taking the current population of teachers and aging them year by year (increasing both their age and their years of service). This method assumes that all currently working teachers continue in that status and that no new teachers are hired. Of course, if all newly hired teachers began working in their 20s and had no prior experience, they would not become eligible for retirement during the projection period, and the results would not change.

It should be noted that many teachers do not retire immediately upon becoming eligible. This could be for several possible reasons. Some may gain satisfaction from working and prefer to delay retirement because they enjoy their work. Others may take note of the fact that their Wyoming Retirement System benefits are calculated

Figure 4-1: Number of Teachers Eligible for Retirement Based on 60 Years of Age or Experience + Age >= 85 from 2012 to 2032



Source: Wyoming Department of Education Contract File (WDE 602).

based on their years of service, and realize that by working longer their monthly retirement benefits will be larger. Some may work until age 62, when they first become eligible for (early) Social Security benefits. Yet others may delay their retirement until they are 65 and eligible for Medicare. Certain individuals may delay retirement as long as their health allows them to work.

Research has suggested that individuals who perceived that they "will have adequate financial resources during retirement" were more likely to retire (Adams & Beehr, 1998). Retirement benefits are usually considerably lower than one's salary, so this may affect when a teacher decides to retire. For example, teachers who work 30 years would receive retirement benefits replacing approximately two-thirds (65.6%) of their monthly salary. Thus, being eligible for retirement and being able to afford to retire may be two separate issues.

Another factor influencing the decision to retire is marital status. Adams & Beehr hypothesized that married individuals may be more likely to retire because of "positive expectations regarding the use of leisure time such as spending time with one's spouse" (1998). Additionally, there is some evidence that married people may be better prepared financially for retirement (Templer, Armstrong-Stassen, & Cattaneo, 2010).

Thus, while one cannot predict exactly when teachers may choose to retire, we expect approximately 200 teachers to become eligible each year for the next 20 years.

County-level Data

At the statewide level, more than one in five teachers (21.9%) was 55 or older during the 2011/2012 school year. However, **Table 4-2** shows that this figure varies widely across Wyoming's counties. In Sublette County, 10.7% of teachers were 55 or older,

Table 4-2: **Percentage of Teachers Age 55 and Older and Their Exit Rate in Public Schools in Wyoming, 2011/12 to 2012/13 School Years**

		Workers Age 55 and Older			
				Exits	
	Total Contract Employment, 2011/12	N	%	N	Exit Rate
Albany	346	82	23.7%	15	18.3%
Big Horn	217	57	26.3%	9	15.8%
Campbell	636	126	19.8%	30	23.8%
Carbon	247	72	29.1%	15	20.8%
Converse	225	43	19.1%	6	14.0%
Crook	107	30	28.0%	ND	ND
Fremont	589	165	28.0%	19	11.5%
Goshen	166	38	22.9%	7	18.4%
Hot Springs	61	13	21.3%	ND	ND
Johnson	128	15	11.7%	ND	ND
Laramie	1,113	218	19.6%	36	16.5%
Lincoln	247	49	19.8%	ND	ND
Natrona	882	137	15.5%	13	9.5%
Niobrara	66	13	19.7%	0	0.0%
Park	321	70	21.8%	5	7.1%
Platte	144	48	33.3%	21	43.8%
Sheridan	377	102	27.1%	17	16.7%
Sublette	140	15	10.7%	ND	ND
Sweetwater	614	154	25.1%	26	16.9%
Teton	213	36	16.9%	6	16.7%
Uinta	370	86	23.2%	15	17.4%
Washakie	126	32	25.4%	ND	ND
Weston	108	31	28.7%	6	19.4%
Wyoming	**7,443**	**1,632**	**21.9%**	**259**	**15.9%**

ND= non-disclosable due to confidentiality.
Source: Wyoming Department of Education Contract Files (WDE 602).

while in Platte County, fully one-third (33.3%) were in the same age group. Some other counties with relatively young teacher workforces were Johnson (11.7% age 55 or older), Natrona (15.5%), and Teton (16.9%). The counties with the highest percentage of teachers in the oldest age group were all located in rural areas of the state (Platte 33.3%; Carbon 29.1%; Weston 28.7%; Crook 28.0%; and Fremont 28.0%).

Exit rates for teachers 55 and older also varied across the counties. In several counties, exit rates were much lower than the statewide average of 15.9%. In Niobrara County, for example, there were zero exits among this age group, Park County's exit rate was 7.1%, and Natrona County's was 9.5%.

At the other end of the spectrum, Platte County had more than four out of 10 (43.8%) teachers age 55 and older leave their employment. Other counties with high exit rates included Campbell (23.8%), Carbon (20.8%), Weston (19.4%), and Goshen (18.4%) counties.

It is noteworthy that Carbon, Weston, and Platte counties were among those with both the highest percentage of workers 55 and older and the highest exit rates. Those counties are clearly seeing a large impact from retiring teachers.

In summary, more than one-seventh of all teachers in Wyoming are currently eligible to retire and each year an additional 200 become eligible. There are large differences across counties and types of teachers, with many special education teachers approaching retirement. Although it is impossible to predict exactly when a teacher will choose to retire, recent data suggest that, on average, 15.9% of teachers age 55 and older exit each year.

Note: Individuals who began working in WRS-covered employment on or after September 1, 2012 are eligible for a normal retirement benefit at age 65, and are also eligible for early retirement based on the rule of 85.

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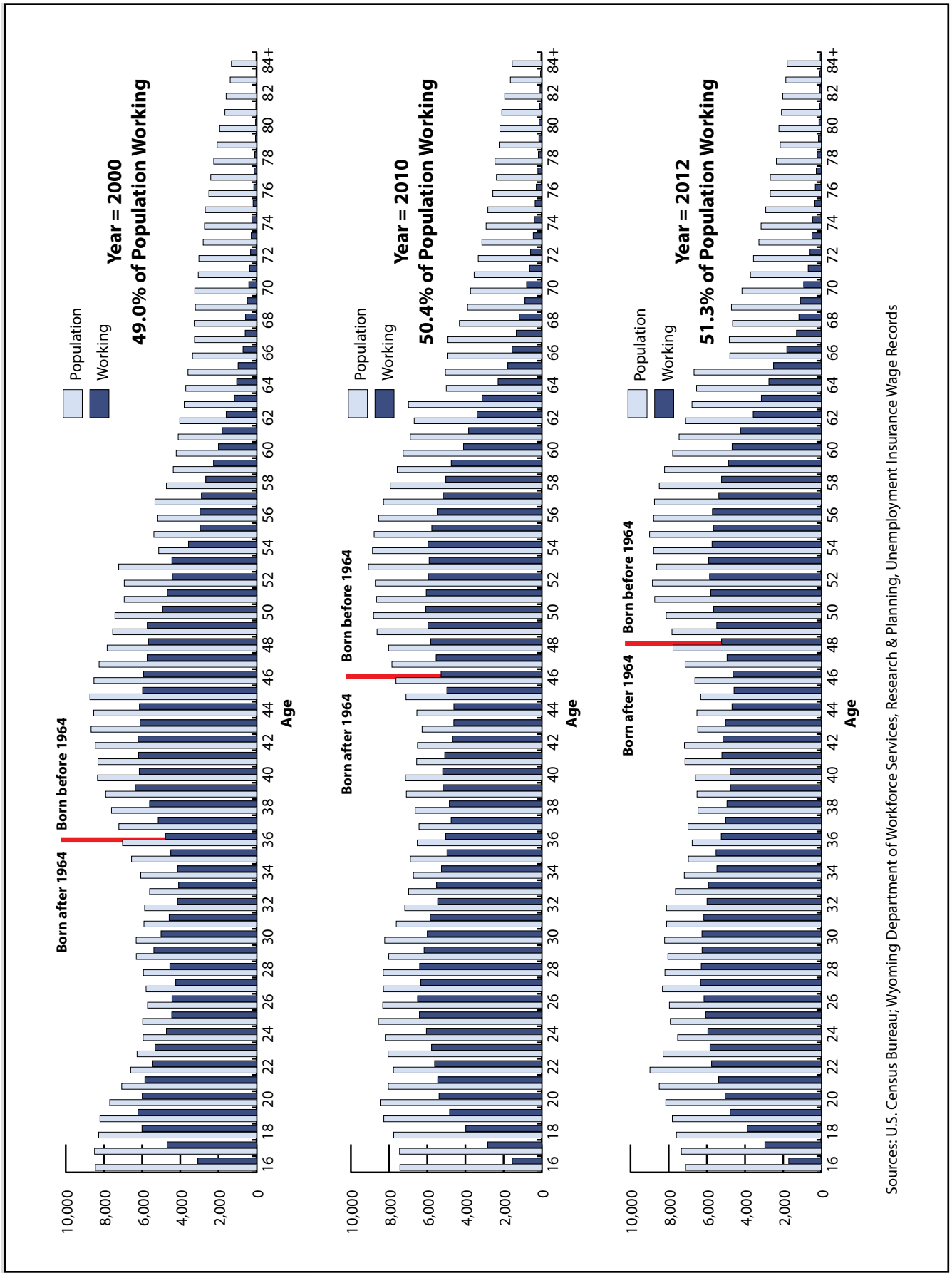


Sources: U.S. Census Bureau; Wyoming Department of Workforce Services, Research & Planning, Unemployment Insurance Wage Records

Figure 5-1: **Estimates of the Resident Population and Working Population by Single Years of Age in Wyoming for Selected Years (Ages 16+)**

Chapter 5: Industry Educational Attainment, Aging Professionals, and Teacher Supply

by: Lisa Knapp, Senior Research Analyst

As detailed in Chapter 4, one in five Wyoming teachers is age 55 and older and, in 2012, 13.7% of teachers were eligible for retirement, a proportion that will continue to grow. The purpose of this article is to give an overview of demographic and educational trends that could affect the replacement of these teachers. This chapter focuses mainly on teaching professions and the educational industry, although comparisons to similar occupations and industries, as well as trends in surrounding states, will be made.

Replacement need refers to the need to replace workers who have exited the labor force for a variety of reasons, including a change in family status, such as marriage, divorce, or child birth, a return to school, and retirement. As this chapter will show, the effects of replacement need due to retirement are of particular concern in Wyoming. The baby boom generation (people born between 1946 and 1964) is rapidly reaching retirement age (Vincent and Velkoff, 2010). The oldest members of this generation turned age 65, a typical age for retirement, in 2011, and, as of July 1, 2012 (the most recent data available), this group was estimated to constitute a quarter of the state's population (25.9%). **Figure 5-1** (see page 58) contains graphs of Wyoming's population and employed workforce by age for 2000, 2010, and 2012. This figure clearly shows that the proportion of older workers compared to the general population continues to increase over time.

Although there were more teachers during the 2012/13 school year (7,443 in 2012/13 compared to 7,345 in 2011/12), more than one in five of them (21.9%) were age 55 and older (WDE 602 Report). A lack of access to Retirement Board files prevented development of an accurate projection of replacement need as a function of retirement. However, a simple model illustrates the effect of retirement for the segment of teachers of record during the 2012/13 school year for those 55 and older over the next 10 years until the youngest of this group turn 65: 7,443 teachers x .219 (percent of the population) = 1,632/10, or 163 people retiring per year on average (see Table 4-2, page 56; workers age 55 and older = 1,632, or 21.9%). This is higher than the rate calculated during the 2011/12 school year when the formula estimated approximately 160 retirements per year. An alternate approach was used in Chapter 4 (see page 53) with similar findings. That method was based on Wyoming Retirement System eligibility requirements and estimated that the number of retirements may average 200 per year.

This chapter utilizes widely available public data sources, such as the U.S. Census Bureau's American Community Survey (ACS) and the national Center for Educational Statistics' Integrated Postsecondary Education Data System (IPEDS) to illustrate trends in age, occupation, and education amongst professionals in the state and nation. The IPEDS database contains information such as enrollment and completion rates by year, degree program, and demographics for postsecondary education institutions in the U.S. More information about this database can be found at http://nces.ed.gov/ipeds/. The ACS is a sample based survey sent to households

and then statistically weighted to represent the entire population. This survey has been collected since 2005 when it replaced the decennial census "long form." Since 2011, this survey has been sent to approximately 295,000 households a month nationally, and provides timely annual estimates of population, housing, social, and economic characteristics of the population (U.S. Department of Commerce). The data used in these analyses are a three-year average of survey responses collected between January 1, 2009, and December 31, 2011, in Wyoming and the U.S. Because more responses are collected in three years compared to one year, the three-year estimate data set is more reliable and better for analyzing areas with smaller populations such as Wyoming.

In general, the analysis of data from these sources show that a large proportion of employees age 55 and older work in jobs that require greater levels of education, and industries that have occupations requiring higher levels of education also employ larger proportions of older workers. In contrast, at least for education jobs, the number of education-related degree completers in Wyoming is very small compared to other states, although there was a significant increase in the number of these graduates in 2012 compared to 2011 (20.9% increase, see **Table 5-3** on page 66). Even though there is not a large number of people graduating to fill vacant teaching jobs in Wyoming, there are a comparatively large number of these graduates in the states surrounding Wyoming, such as Colorado, Utah, and Nebraska. This could provide a possible pool to recruit although, as shown in Appendix A, it is not necessarily just the need to replace a teacher with a teacher. According to Appendix A, teachers in Wyoming are required to have endorsements that indicate what grade levels and subjects they are qualified to teach. Because of this, there may need to be a focus on the degree programs and specific qualifications of new graduates. Also, as this chapter will discuss, there are other issues that may create problems for the supply system and recruitment efforts of teachers, including the workforce demands of other occupations and industries heavily populated with aging, highly educated workers.

Replacement Need by Occupation

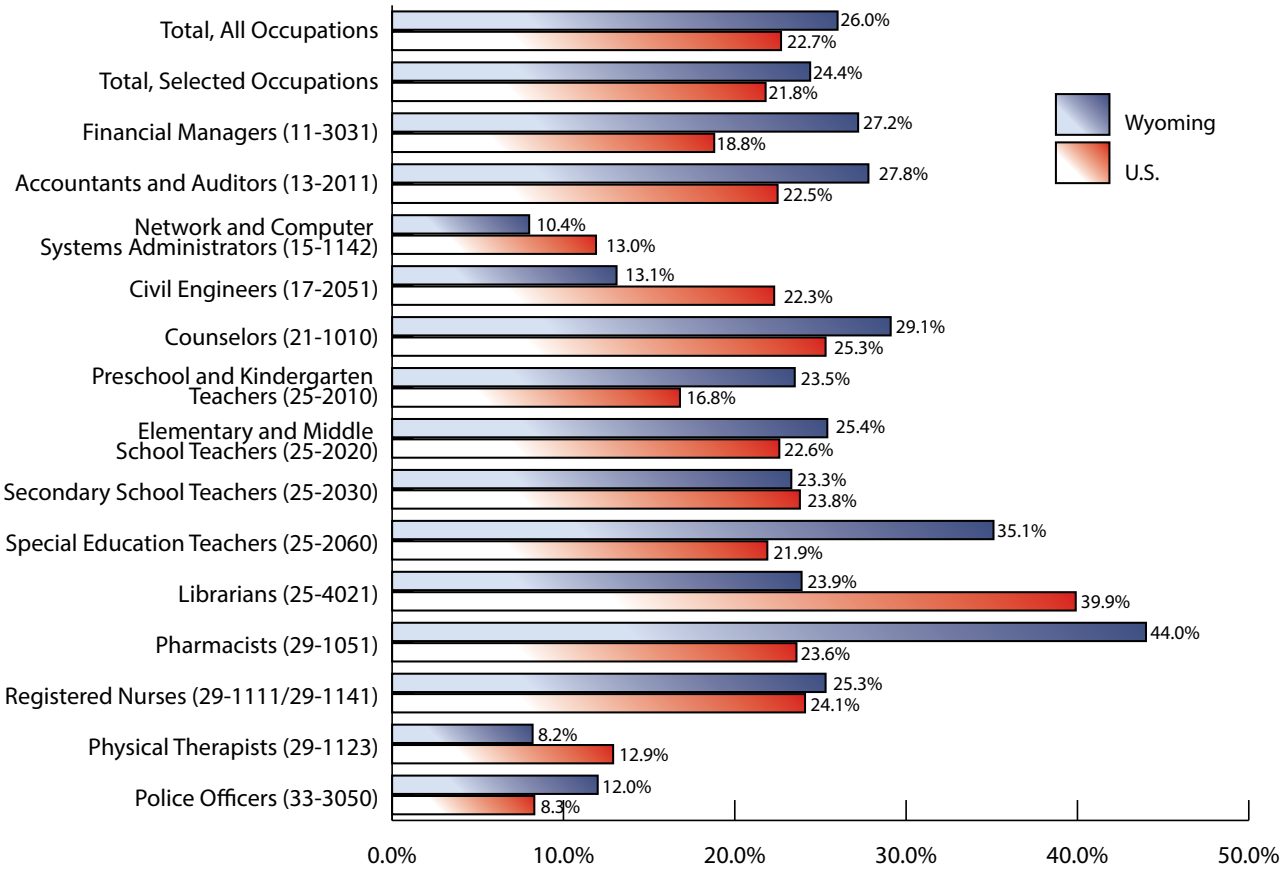
Figure 5-2 (see page 61) shows the percentage of employed workers age 55 and older for selected occupations in Wyoming and the U.S. based on estimates from the ACS program. Occupations were chosen based on similar education requirements as teaching occupations; a minimum of a bachelor's degree was generally required for all occupations, excluding registered nurses and police officers. The ACS is based on a sample so there are some issues with missing data. In particular, we know the number of jobs worked in any occupation based on the U.S. Bureau of Labor Statistics' (BLS) Occupational Employment Survey program. However, if no respondent in the ACS worked in a particular occupation, that occupation would not be available for estimation. The occupations in this analysis were selected because they comprised a sufficient proportion of the sample to make reliable estimates for comparison.

In all occupations, there was a greater proportion of workers age 55 and older in Wyoming (26.0%) than in the U.S. (22.7%). There was a greater percentage of workers age 55 and older in Wyoming than in the U.S. in nine of the selected

comparison occupations, as well. For example, there were more of these older workers among elementary and middle school teachers (25.4% compared to 22.6%), special education teachers (35.1% compared to 21.9%), pharmacists (44.0% compared to 23.6%), and accountants and auditors (27.8% compared to 22.5%). There were similar proportions of secondary school teachers age 55 and older in both Wyoming and the U.S. (23.3% compared to 23.8%), and there were greater proportions of older workers at the national level among civil engineers (22.3% compared to 13.1%), network and computer systems administrators (13.0% compared to 10.4%), and physical therapists (12.9% compared to 8.2%).

It should be noted that, while the data for the U.S. stayed relatively steady between 2010 and 2011, there were some very large percentage differences in the Wyoming data for these two years. For instance, the data showed 8.1% of preschool and kindergarten teachers were age 55 and older in 2010 compared to 23.5% in 2011. In 2010 the proportion of librarians age 55 and older was 49.5% compared to 23.9% in 2011. These very large differences are most likely due to a comparatively small sample size. Statistically, the larger a sample size is, the more stable the estimate will be.

Figure 5-2: Percentage of Employed Workers Age 55 and Older for Selected Occupations in Wyoming and the U.S., 2011



Source: American Community Survey, U.S. Census Bureau.

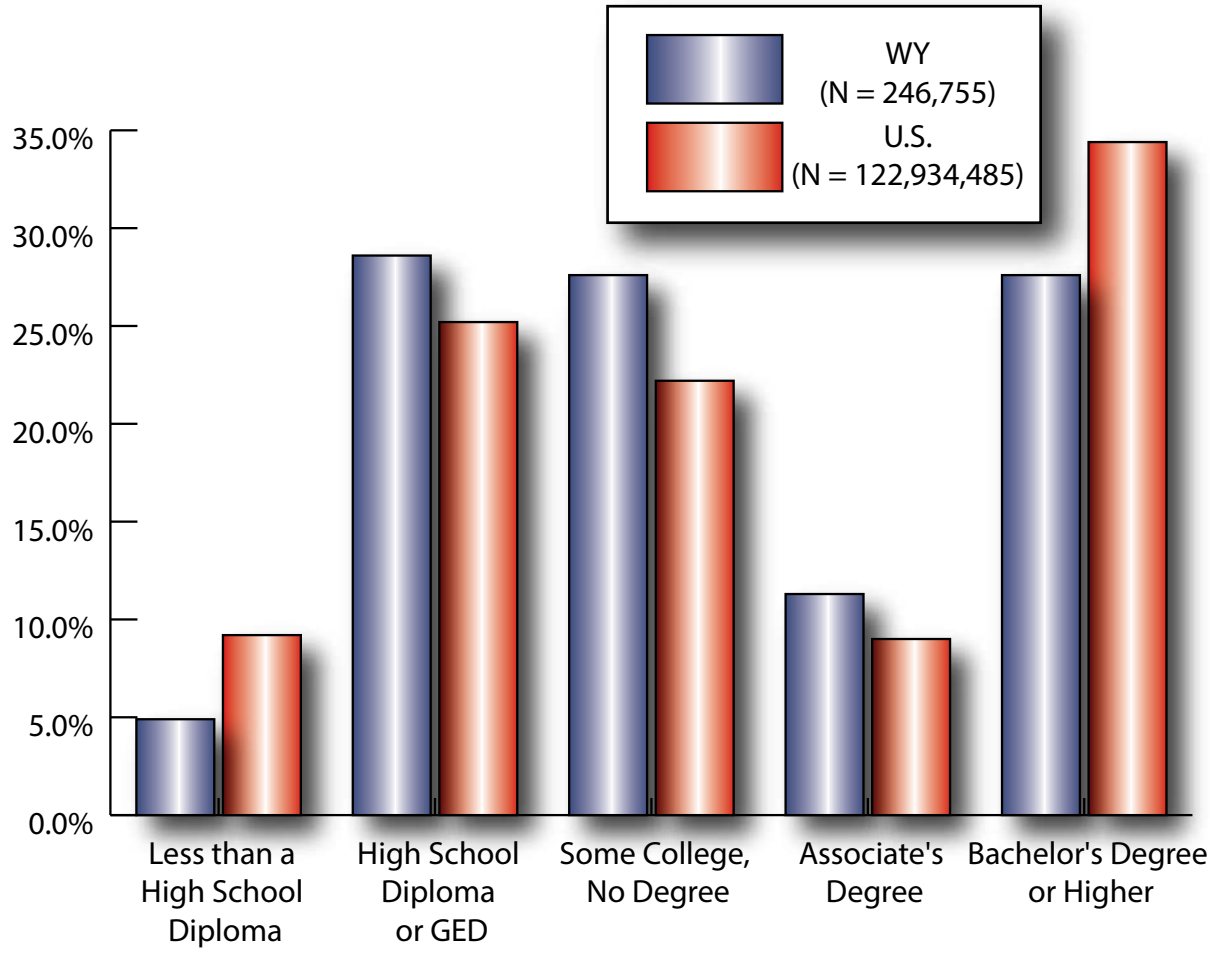
The preceding data suggest that, assuming other professional occupations show similar trends to these comparison occupations, those working in professional occupations are aging out of the workforce faster in Wyoming than in the nation as a whole. This creates a demand for educated workers, which places stress on educational institutions that create supply. Employers must recruit across larger geographies to replace retiring workers in several areas of the workforce. These factors increase competition for workers that could be filling vacant teaching positions.

Replacement Need by Industry and Education

Table 5-1 (see page 63) shows the estimated number and proportion of workers age 25 and older by industry and highest level of education attained for both Wyoming and the U.S. **Figure 5-3** more clearly illustrates the differences in educational attainment between Wyoming

(Text continued on page 64)

Figure 5-3: Education Level for Wyoming and the U.S. Employed Workers Age 25+, 2011 (3-Year Average)



Source: U.S. Census Bureau, American Community Survey (2011 3-Year Average)

Table 5-1: **Education Level by Industry, Wyoming and U.S. Workers Age 25 and Older, 2011 (3-Year Average)**

Industry	Less Than High School Diploma		High School Diploma or GED		Some College, No Degree		Associate's Degree		Bachelor's Degree or Higher		Total	
	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %
Wyoming												
Natural Resources & Mining	1,846	6.0	11,553	37.7	8,748	28.6	3,109	10.2	5,351	17.5	30,607	100.0
Construction	1,624	8.4	8,786	45.7	4,958	25.8	1,625	8.5	2,235	11.6	19,228	100.0
Manufacturing	706	5.6	3,997	31.9	3,944	31.4	1,693	13.5	2,208	17.6	12,548	100.0
Wholesale Trade, Transportation, & Utilities	872	4.1	7,684	35.8	8,000	37.2	2,325	10.8	2,611	12.1	21,492	100.0
Retail Trade	1,894	8.0	8,303	35.1	7,668	32.4	2,557	10.8	3,238	13.7	23,660	100.0
Information	171	4.4	691	17.8	1,032	26.5	390	10.0	1,604	41.3	3,888	100.0
Financial Activities	137	1.2	3,091	28.1	3,234	29.4	1,105	10.1	3,427	31.2	10,994	100.0
Professional & Business Services	726	4.4	3,344	20.4	3,257	19.9	1,545	9.4	7,518	45.9	16,390	100.0
Educational Services	441	1.5	3,400	11.6	4,287	14.6	1,971	6.7	19,313	65.7	29,412	100.0
Health Care & Social Services	877	2.9	6,939	23.2	7,903	26.4	5,782	19.3	8,429	28.2	29,930	100.0
Leisure & Hospitality	1,990	11.4	6,030	34.5	5,207	29.8	1,151	6.6	3,097	17.7	17,475	100.0
Other Services, Except Public Administration	699	6.1	3,984	34.5	3,390	29.3	1,131	9.8	2,347	20.3	11,551	100.0
Public Administration	189	1.0	2,431	13.0	6,133	32.9	3,262	17.5	6,616	35.5	18,631	100.0
Unknown	0	0.0	417	43.9	229	24.1	126	13.3	177	18.7	949	100.0
Total	**12,172**	**4.9**	**70,650**	**28.6**	**67,990**	**27.6**	**27,772**	**11.3**	**68,171**	**27.6**	**246,755**	**100.0**
U.S.												
Natural Resources & Mining	612,342	26.3	783,269	33.6	405,191	17.4	142,623	6.1	387,223	16.6	2,330,648	100.0
Construction	1,646,272	20.3	3,120,350	38.5	1,820,640	22.4	525,030	6.5	1,002,580	12.4	8,114,872	100.0
Manufacturing	1,607,717	12.1	4,350,274	32.6	2,812,731	21.1	1,070,051	8.0	3,500,526	26.2	13,341,299	100.0
Wholesale Trade, Transportation, & Utilities	977,368	9.6	3,411,322	33.3	2,702,838	26.4	866,100	8.5	2,275,588	22.2	10,233,216	100.0
Retail Trade	1,188,250	10.1	4,064,268	34.5	3,112,527	26.5	984,346	8.4	2,416,236	20.5	11,765,627	100.0
Information	66,239	2.4	454,567	16.7	664,465	24.4	250,141	9.2	1,289,721	47.3	2,725,133	100.0
Financial Activities	249,094	2.9	1,602,166	18.4	2,159,998	24.8	774,718	8.9	3,912,551	45.0	8,698,527	100.0
Professional & Business Services	1,086,629	8.0	2,334,831	17.2	2,562,171	18.9	1,073,209	7.9	6,515,324	48.0	13,572,164	100.0
Educational Services	292,990	2.5	1,379,188	11.7	1,401,308	11.8	656,018	5.5	8,105,660	68.5	11,835,164	100.0
Health Care & Social Services	938,714	5.4	3,339,958	19.3	3,831,857	22.1	2,682,273	15.5	6,522,342	37.7	17,315,144	100.0
Leisure & Hospitality	1,540,885	18.1	2,605,200	30.6	2,047,625	24.0	613,657	7.2	1,716,723	20.1	8,524,090	100.0
Other Services, Except Public Administration	869,539	14.2	1,953,088	31.9	1,401,449	22.9	478,691	7.8	1,425,672	23.3	6,128,439	100.0
Public Administration	132,550	1.8	1,267,936	17.2	2,082,234	28.2	888,871	12.0	3,009,373	40.8	7,380,964	100.0
Unknown	101,432	10.5	304,147	31.4	243,637	25.1	79,144	8.2	240,838	24.8	969,198	100.0
Total	**11,310,021**	**9.2**	**30,970,564**	**25.2**	**27,248,671**	**22.2**	**11,084,872**	**9.0**	**42,320,357**	**34.4**	**122,934,485**	**100.0**

Source: U.S. Census Bureau, American Community Survey (2011 3-Year Average).

(Text continued from page 62)

and the U.S. for all workers combined. In the state, 28.6% of these workers had a high school diploma or GED, 27.6% had some college but no degree, and 27.6% had at least a bachelor's degree. In comparison, 25.2% of similar workers at the national level had a high school diploma or GED, 22.2% had some college but no degree, and 34.4% had at least a bachelor's degree. To summarize, workers in Wyoming tend to be less educated than at the national level, and those that are well educated tend to be concentrated in a few industries.

Although other tables in this report contain employment data specific to public schools, the data in tables 5-1 and 5-2 are categorized based on industrial classification (two-digit NAICS groups). This means that educational services includes all public school workers as well as those working in higher education institutions and will therefore show a greater number of workers.

As Table 5-1 shows, at the national level, the industries with the highest proportion of workers age 25 and older with at least a bachelor's degree include educational services (68.5%), professional and business services (48.0%), information (47.3%), and financial activities (45.0%). In Wyoming, the industries with the greatest proportion of workers age 25 and older with at least a bachelor's degree were similar, although the proportions were smaller. The industry with the highest proportion of these workers was educational services (65.7%), followed by professional and business services (45.9%), information (41.3%), and public administration (35.5%).

As shown in **Table 5-2**, similar industries also have higher proportions of female employees and workers age 55 and older. The proportion of female employees working in educational services during 2011 was 64.9% while the proportion of workers age 55 and older was 29.5%. The proportion of female employees working in information was 45.8% and in public administration it was 44.6%. The proportion of workers age 55 and older in these two industries was 21.0% and 25.2%, respectively. Complete demographics tables comparing gender, age, wages, and job tenure

Table 5-2: **Demographics of Wyoming Workers by Industry as a Percentage of Total Employment, 2011**

	Gender			
Industry	Female	Male	Nonresident[a]	Age 55 and Older
Natural Resources & Mining	10.7	78.0	3.4	15.2
Construction	8.2	66.9	24.9	12.2
Manufacturing	20.4	73.9	5.6	20.3
Wholesale Trade, Transportation, & Utilities	19.7	73.4	6.9	22.1
Retail Trade	49.2	42.3	8.6	16.9
Information	45.8	49.0	5.2	21.0
Financial Activities	58.9	36.4	4.7	22.6
Professional & Business Services	36.7	49.3	14.0	18.1
Educational Services	64.9	30.8	4.3	29.5
Health Care & Social Services	78.1	18.1	3.8	21.2
Leisure & Hospitality	43.9	34.2	21.9	8.5
Other Services, Except Public Administration	39.5	49.1	11.3	17.5
Public Administration	44.6	53.1	2.3	25.2
Unknown	44.5	51.3	4.2	22.0
Total	**39.8**	**48.8**	**11.4**	**18.0**

Source: Wyoming Wages by County, Industry, Age, & Gender, 2000-2012, Research & Planning, Wyoming Department of Workforce Services.

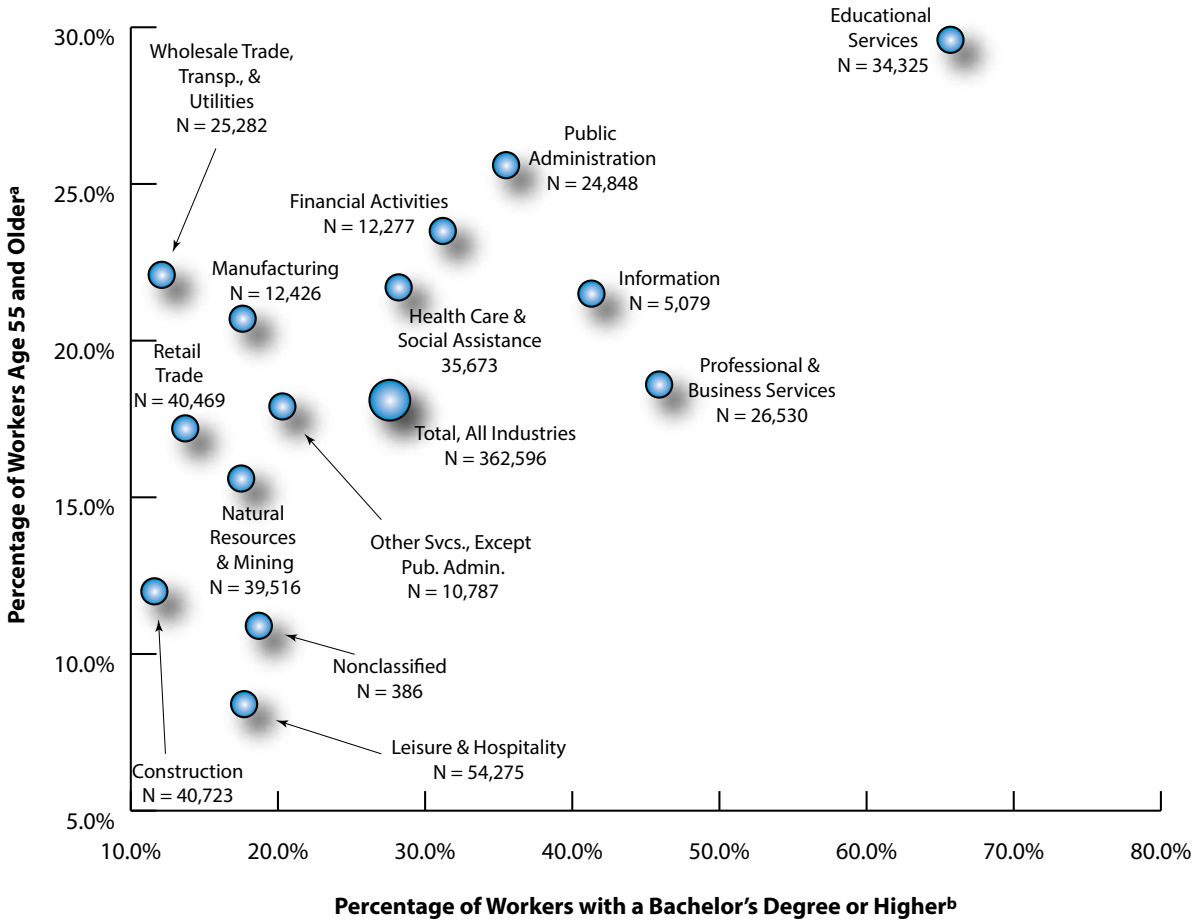
[a]Nonresidents are workers who do not have a Wyoming-issued driver's license and work less than four quarters in Wyoming (Jones, 2002). Demographic data are not available for these workers. More information is available at http://doe.state.wy.us/LMI/trends/0613/a1.htm.

for Wyoming workers are available for 2000-2012 at http://doe.state.wy.us/lmi/earnings_tables/2013/index.html.

Figure 5-4 is a combination of the data from Tables 5-2 and 5-3. It illustrates that the educational services industry has the highest proportion of workers age 55 and older and the highest proportion of workers with at least a bachelor's degree of all industries in Wyoming. As noted earlier, professional and business services, information, and public administration all have comparatively high proportions of workers age 55 and older and workers with bachelor's degrees, although not to the same extent as educational services.

As noted earlier, people working in professional occupations are aging out of the workforce faster in Wyoming than in the U.S. The data shown in this section suggest a similar trend at the industry level. Data from the ACS show that some industries, such as public administration and educational services, have a high proportion of employees with at least a bachelor's degree, and, according to R&P's

Figure 5-4: Percentage of Workers Age 55 and Older and Percentage of Workers with a Bachelor's Degree or Higher by Industry in Wyoming, 2011



[a]Source: Wyoming Wages by County, Industry, Age, & Gender, 2000-2012, Research & Planning, Wyoming Department of Workforce Services.
[b]Source: U.S. Census Bureau, American Community Survey (2011 3-Year Average).

Chapter 5

demographics tables, there is a large proportion of workers age 55 and older in those industries who will presumably be leaving the workforce within the next 10 years. Given the more rapid aging of the workforce in industries with workers holding post-high school degrees, circumstances may lead to significant competition for qualified employees.

Trends in the Current Supply System

Table 5-3 contains the number of degree completers or graduates, in select education-related degree programs in Wyoming, surrounding states, and nationally. A crosswalk comparing the Classification of Instructional Programs (CIP) codes from the National Center for Educational Statistics to the Standard Occupational Classification (SOC) codes from the U.S. Bureau of Labor Statistics was used to determine which CIP codes were related to preschool and kindergarten teachers (SOC code 25-2010), elementary and middle school teachers (SOC code 25-2020), secondary school teachers (SOC code 25-2030), and special education teachers (SOC code 25-2050). The data in this table are only for degree completers at institutions that offer primarily baccalaureate degrees or higher because the minimum level of higher education needed to become a teacher is a four-year degree.

In 2012, 289 education-related degrees were conferred at the University of Wyoming, the sole four-year degree granting institution in the state. This was a 20.9% increase from 2011 when 239 education degrees were conferred, and a 14.7% increase from 2009 when 252 education degrees were conferred. In comparison, there was an increase in the number of education degrees conferred from 2011 to 2012 in two of the six states surrounding Wyoming. There were 1,414 education degrees conferred in Idaho during 2012, an increase of 17.0% from 2011 (1,209) and an increase of 17.3% from 2009 (1,205). Similarly, Utah schools had an increase of 5.4% in education degrees conferred from 2011 (3,456) to 2012 (3,643) and an increase of 35.6% from 2009 to 2012 (2,687). Overall, the number

Table 5-3: **Number of Education Degrees Conferred by Institutions Granting Predominantly 4-Year Degrees, State and National, and Percent Change by Year, 2009-2012**

	2012	% Change, 2011-2012	2011	% Change, 2010-2011	2010	% Change, 2009-2010	2009	% Change, 2009-2012
Wyoming	289	20.9	239	-7.4	258	2.4	252	14.7
Nebraska	2,175	-3.3	2,250	17.2	1,919	-10.7	2,149	1.2
South Dakota	590	-16.4	706	6.5	663	8.5	611	-3.4
Idaho	1,414	17.0	1,209	-3.4	1,252	3.9	1,205	17.3
Montana	536	-9.5	592	12.1	528	-10.8	592	-9.5
Colorado	740	-2.2	757	5.7	716	-3.0	738	0.3
Utah	3,643	5.4	3,456	24.8	2,770	3.1	2,687	35.6
Regional Total	9,387	1.9	9,209	13.6	8,106	-1.6	8,234	14.0
U.S. Total	**174,396**	**-3.3**	**180,397**	**-1.3**	**182,739**	**1.2**	**180,533**	**-3.4**

Source: National Center for Education Statistics/Integrated Postsecondary Education System.

Note: CIP codes chosen based on crosswalk to SOC codes for kindergarten, elementary, middle school, secondary, and related special education teachers. Totals include both first- and second-major degrees conferred. Totals include graduates of institutions granting primarily baccalaureate degrees or higher only.

of education-related degrees conferred in the region had a small increase of 1.9% from 2011 (9,209) to 2012 (9,387) and they increased 14.0% from 2009 (8,234). At the national level, however, the number of these degrees decreased 3.3% from 2011 (180,397) to 2012 (174,396) and decreased 3.4% from 2009 (180,533).

Table 5-4 shows the ratio of teaching degrees to all degrees conferred by state and for the nation. Nationally, 6.0% of all degrees were in teaching related programs, but in Wyoming nearly one in ten degrees conferred (9.7%) were related to teaching. In the surrounding states, Nebraska and Idaho had similar ratios of teaching graduates to all graduates (9.7% and 9.3%, respectively) while the ratio of teacher graduates to all graduates in Colorado was significantly lower (1.5%). At the time this chapter was published, federal websites, such as the online IPEDS database site, were inaccessible due to a lack of federal funding. Because of this, supplementary data needed to determine why the ratio of education graduates to all graduates was so much lower in Colorado compared to Wyoming and other surrounding states was unavailable. As soon as these websites are accessible again, a *Wyoming Labor Force Trends* article will be published with possible explanations for these differences.

It is worth noting that the number of education degrees conferred by colleges and universities in Colorado may not be directly comparable to numbers from some other states. A review of websites at some large Colorado universities revealed that students aspiring to become elementary school teachers are required to complete a stated-approved major (e.g. biology, English, or mathematics) outside of education. It is possible that these majors would not be included in the counts presented in Tables 5-3 and 5-4.

Summary

In summary, there is a comparatively large proportion of workers in Wyoming nearing retirement age. Many of these workers are employed in occupations and industries requiring higher levels of education, including teachers. Colleges in

Table 5-4: **Number of Degrees Conferred in Institutions Granting Predominantly 4-Year Degrees or Higher in Teaching-Related Programs and All Programs, and Ratio of Teaching Degrees to All Degrees by State and National, 2009-2012**

	2012			2011			2010			2009		
	Teaching Degrees	All Degrees	Ratio	Teaching Degrees	All Degrees	Ratio	Teaching Degrees	All Degrees	Ratio	Teaching Degrees	All Degrees	Ratio
Wyoming	289	2,990	9.7	239	2,729	8.8	258	2,567	10.1	252	2,608	9.7
Nebraska	2,175	22,397	9.7	2,250	21,242	10.6	1,919	20,083	9.6	2,149	19,954	10.8
South Dakota	590	8,367	7.1	706	8,279	8.5	663	7,798	8.5	611	7,861	7.8
Idaho	1,414	15,235	9.3	1,209	13,992	8.6	1,252	14,228	8.8	1,205	14,006	8.6
Montana	536	8,370	6.4	592	8,219	7.2	528	7,429	7.1	592	7,468	7.9
Colorado	740	48,121	1.5	757	46,041	1.6	716	44,087	1.6	738	41,791	1.8
Utah	3,643	40,495	9.0	3456	37,182	9.3	2,770	33,227	8.3	2,687	32,206	8.3
Regional Total	9,387	145,975	6.4	9,209	137,684	6.7	8,106	129,419	6.3	8,234	125,894	6.5
U.S.	**174,396**	**2,925,095**	**6.0**	**180,397**	**2,834,818**	**6.4**	**182,739**	**2,716,241**	**6.7**	**180,533**	**2,612,954**	**6.9**

Source: National Center for Education Statistics/Integrated Postsecondary Education System.

Note: CIP codes chosen based on crosswalk to SOC codes for kindergarten, elementary, middle school, secondary, and related special education teachers. Totals include both first- and second-major degrees conferred. Totals include graduates of institutions granting primarily baccalaureate degrees or higher only.

Wyoming have experienced an increase in graduates from education related degree programs, but that number is small compared to surrounding states and may not be enough to fulfill the state's replacement need over time. Recruitment from these surrounding states, such as Colorado, Utah, Nebraska, and Montana may be an option in filling vacant positions, but factors such as degree program, endorsements, and qualifications will also be a factor. Also, due to the aging trends in so many occupations requiring higher education, there could be competition for these workers.

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Appendix A

Teacher Supply in Wyoming: The Professional Teaching Standards Board and School District Recruitment Needs

Monitoring School District Cost Pressures

A Report to the Wyoming Joint Appropriations Interim Committee and the Joint Education Interim Committee

Fall 2013

Research & Planning
Wyoming DWS

Teacher Supply in Wyoming

by: Patrick Harris, Principal Economist

As student enrollment continues to increase and the working population continues to age, the availability of teachers will become crucial. To say there will be a need for teachers within the next 10 years is too simplistic as there are a variety of content areas (e.g., mathematics, reading, art) and grade levels (K-12) taught in public schools around the country. The replacement need of individual school districts is becoming increasingly complex, and a deeper level of analysis is required to understand which subjects and grade levels within districts will drive the need for teachers in the future. A primary goal of this chapter is to provide an exploratory analysis of the teachers currently licensed by the Wyoming Professional Teaching Standards Board (PTSB) to include demographic and wage analysis both statewide and at the district level in understanding teacher supply.

The PTSB licenses individuals to teach in Wyoming public schools. The primary license types the PTSB grants are standard, professional, and substitute. Teachers who wish to be employed in a public school must hold either the standard or professional license. At the time an individual applies and obtains a license, endorsements are added to the license specifying which subjects and grade levels the individual is permitted to teach. The No Child Left Behind Act of 2001 required individuals who teach in a public school to be highly qualified in a specific subject. In order to demonstrate their highly qualified status, the educational institution where the individual received their teaching preparation must endorse the individual in at least one specific subject and grade level.

The number of endorsements is not limited as long as the individual requests and receives the endorsement from their teaching preparation program to teach in a specific subject and at a specific grade level. For example, an individual can be endorsed to teach elementary education K-6, mathematics 6-12, and art K-12. We have classified these individuals as "multi-endorsed." These multi-endorsed individuals have invested in their human capital (education, skills, and abilities) in such a way that may be advantageous in an increasingly competitive labor market. Multi-endorsement allows an individual to be available in many subjects and grade levels and their teaching scope can range from classroom to classroom, school to school and district to district. This example illustrates the complexity that teaching endorsements present in labor supply research. The categorization of multi-endorsed individuals will be discussed at length in the method and discussion sections of this chapter.

Considerable differences in teacher retention, retirement, and even once licensed, choosing to work in the school system may be accounted for by PTSB endorsement. Ryan, Healy, and Sullivan (2012) surveyed faculty at a large research university regarding satisfaction, stress, which discipline they taught (e.g., from the arts and humanities to business and engineering), and their intent to leave the university. The authors found that those in the hard/applied disciplines (e.g., business, engineering, medicine)

were more likely to consider leaving than those who taught "softer" disciplines such as the arts and humanities. The authors suggest this may be due to more career opportunities outside of teaching and academia for those educated in subjects that are more applied (and thus may provide more career mobility and higher wages outside of academia). As the majority of high school teachers have a bachelor's degree, gaining a graduate degree in a more marketable field or teaching only until higher paying employment becomes available can limit the school district recruitment pool.

The impact of an aging teacher labor pool and competition with other industries and occupations may leave school districts with a shortage of teachers in specific subjects. As discussed above, individuals educated in more marketable fields outside of teaching may not view teaching as a viable option compared to other occupations and industries. This chapter will describe the individual subjects by grade level which will allow for a more detailed understanding of Wyoming's teacher labor pool such as age, wage, and geographic location.

Further complicating the nature of teacher recruitment is the often rigid pay standards school districts typically follow. Ballou and Podgursky (2001) point out potential issues for school districts in recruiting teachers in those marketable fields (e.g., math and the sciences) because of the pressures of the high salaries offered outside of the public school system. However, the authors also indicate that there is widespread sentiment among teachers that there should be no pay differential based on subjects taught (i.e., a math teacher should not be compensated more than a foreign language teacher). In Wyoming's labor market, natural resources and mining attract individuals holding degrees in engineering, geology, and physics because of the relatively high wages offered especially during periods of economic expansion (which we are not currently in) and potential career mobility. This industry pull can make it more difficult for school districts to recruit these individuals to be science teachers.

Another particular challenge for teacher recruitment is the need for a license in order to teach in a public school. Individuals must take specific courses and complete student teaching requirements in order to obtain a teaching license in any state. The attraction of the teaching profession can be significantly reduced by the prospect of needing to complete a licensure package (e.g., examinations, application, background checks). For a brief overview of college education and occupational licensing, see The Cornerstone: Building an American Public Policy for Educational Attainment and Success in the Labor Market available at this web address: http://doe.state.wy.us/LMI/education.htm. The need for a license presents a potential barrier and may have considerable consequences when specific content areas are taken into account.

Another primary goal of this chapter is to understand the teacher labor pool in two parts. First, we will analyze the demographics of all available teachers by content area to fill potential open positions within Wyoming school districts. The second goal is to understand the demographic and wage characteristics of those endorsed individuals who are

currently working in Wyoming's labor force. These analyses will be crucial as the baby boom generation begins to retire and the number of available teachers to fill positions may become increasingly restricted.

The analysis presented in this chapter expands upon current R&P research using WDE (Wyoming Department of Education) staff files (i.e., 602, 652, and 633) in analyzing school district cost pressures. R&P knows of no other state or government entity which has analyzed teacher licensing files to understand the supply of teachers available for school districts. Linking teacher licensing files to administrative datasets (both point-in-time and longitudinally) can only be accomplished by Labor Market Information (LMI) sections of state workforce agencies. The PTSB licensing data are separate from the WDE staffing files that are compiled by districts. The goal of R&P is to combine the PTSB and WDE staffing files to create a supply and demand analysis of public schools in Wyoming. Individuals can, and often are, multi-dimensional in terms of the number and type of endorsements they carry throughout their careers.

In this paper, we discuss 13,594 individuals endorsed to teach in Wyoming public schools in the 2010/11 school year. According to WDE staffing files, 7,344 of the 13,594 individuals were contracted to teach in Wyoming school districts.

Methodology

Overview

The Professional Teaching Standard Board's (PTSB) files were combined with R&P's administrative databases to create a profile of teachers licensed during the 2010-2011 school year. The primary administrative database used in this chapter is the unemployment insurance (UI) Wage Records file which is a quarterly collection of wages for UI tax purposes. Each wage record contains social security number, year, quarter, employer, and wages for a specific individual. The PTSB's standard and professional licenses are valid for a period of five years where specific endorsements can be added or dropped at the request of the licensee. As mentioned in the introduction, in order to add an endorsement, a licensee must still show they are highly qualified in an area in order to add an endorsement once licensed.

The PTSB file contained endorsements for each individual licensed to teach in a Wyoming school district by year. A teaching endorsement has both a subject (e.g., mathematics) and grade level (e.g., 6-12) associated with it. In order to understand the complete duration of a licensed individual, each license was divided into year and quarter so the individual could be matched with administrative data (i.e., wage records). For example, an individual endorsed from September 2007 to September 2012 was endorsed for a total of 20 quarters (5 years times 4 quarters).

To develop a profile for the 2010/11 school year, each individual's license was spread across the specific years and quarters for which it was valid. For example, an individual whose license was valid from September 2007 to September 2012 would be included in the analysis. The beginning of the school year was defined as the third quarter of

each calendar year (July, August, and September) as most schools start in the months of August or September. In order to perform employment and wage analyses, R&P focused on quarterly data as the unit of analysis due to UI payroll (i.e., wage records) being available only in quarterly units.

Demographic variables were obtained using the year of birth from the Department of Motor Vehicles (DMV) Drivers' License database maintained by R&P. DMV files were used due to the overall reliability of birthdate data. Any DMV birthdates that were invalid were replaced by the PTSB birthdate. As most schools start their school year in late August or early September, each birthdate was subtracted from September 1st of 2010. This allowed for an approximate age when the school year began. All age data is based on this calculation.

Industries are defined using the North American Industry Classification System (NAICS) which is an economic classification used to place establishments into categories. When a primary activity is defined for an establishment, it is placed in the NAICS industry classification that best fits that activity. For more information on NAICS industry classification, please visit www.census.gov/naics.

Annual wages were calculated as a function of primary industry. Teachers are an exception to most occupations in that they have summers where they are not required to work. Teachers may take temporary jobs in the summers and then maintain those jobs even after the school year begins. If an individual earned wages in more than one industry during the school year, their primary industry was set in terms of where their highest wages were earned. For example, if an individual earned wages in public schools (NAICS 611100) and also in Health Care & Social Services (NAICS 62) during a specific school year, their wages were calculated for each industry. In this example, if NAICS 62 accounted for higher wages for the individual then their primary industry would be classified as Health Care & Social Services rather than public schools.

Endorsements and Assigned Content Areas

An endorsement specifies the subject and grade level the licensee is highly qualified to teach. For example, if an individual is endorsed in mathematics grades 6-12, the PTSB considers this licensee highly qualified to teach middle school and secondary mathematics in any school district in Wyoming.

Due to the complex nature of PTSB endorsements, the number of endorsements was reduced allowing for a more efficient analysis. Overall, 238 different PTSB endorsements appeared in the PTSB data file for the 2010/11 school year. For simplicity and more efficient data analysis, R&P subjectively collapsed the endorsements into 42 assigned content areas (ACAs) with supporting guidance from the PTSB. The subject matter and structure of the classroom for each endorsement was used to create the 42 ACAs used in the analyses. It should be noted that not all of the PTSB's endorsements will be discussed (e.g., driver's education, coaching, gifted and talented, etc.) as this was beyond the scope of this chapter.

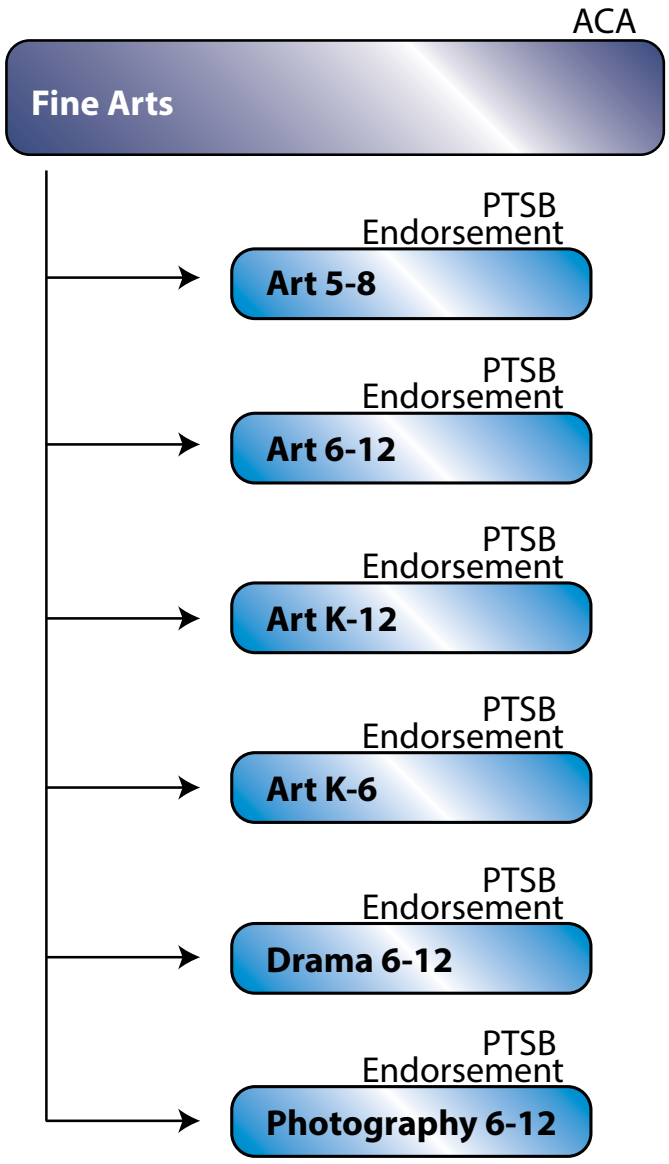
Figure A-1 shows an example of the

ACA structure using fine arts. As seen in **Figure A-1**, the specific PTSB endorsements of art (at all grade levels), drama, and photography were grouped into the ACA of fine arts. These endorsements were deemed similar in respect to both subject matter (i.e., using creative methods of discovery) and the nature of instruction (i.e., being hands on in nature). Reference Table 1 shows the 194 PTSB endorsements used in the analysis and the 13 ACAs which R&P created to simplify the analyses. Also presented in Reference Table 1 is whether the PTSB was currently issuing this endorsement at the time of this chapter's publication. An individual could still remain endorsed in an inactive content area (e.g., middle school) due to being endorsed at the time the endorsement was active. For a list of PTSB endorsements not included in the analysis, please see Reference Table 2.

Figure A-2 (see page A7) gives a visual representation of the 13 ACAs included in the analysis. Overall, a total of 13,594 unique individuals were endorsed in these content areas with an average of 1.6 ACAs per individual. Administrative staff (e.g., principals, school nurses, etc.) were not included in the analyses. As mentioned in the introduction, a person is not limited in number of endorsements if they are able to be endorsed by their teaching preparation

(Text continued on page A8)

Figure A-1: Assigned Content Area (ACA) Structure of PTSB Endorsements



For entire listing, see Reference Table 1 on page A26.

Figure A-2: Assigned Content Areas (ACA) of Persons Licensed to Teach in Wyoming, 2010/11

There were **13,594 INDIVIDUALS** licensed to teach in Wyoming

Among those individuals, there were **21,067 TOTAL ACAs**

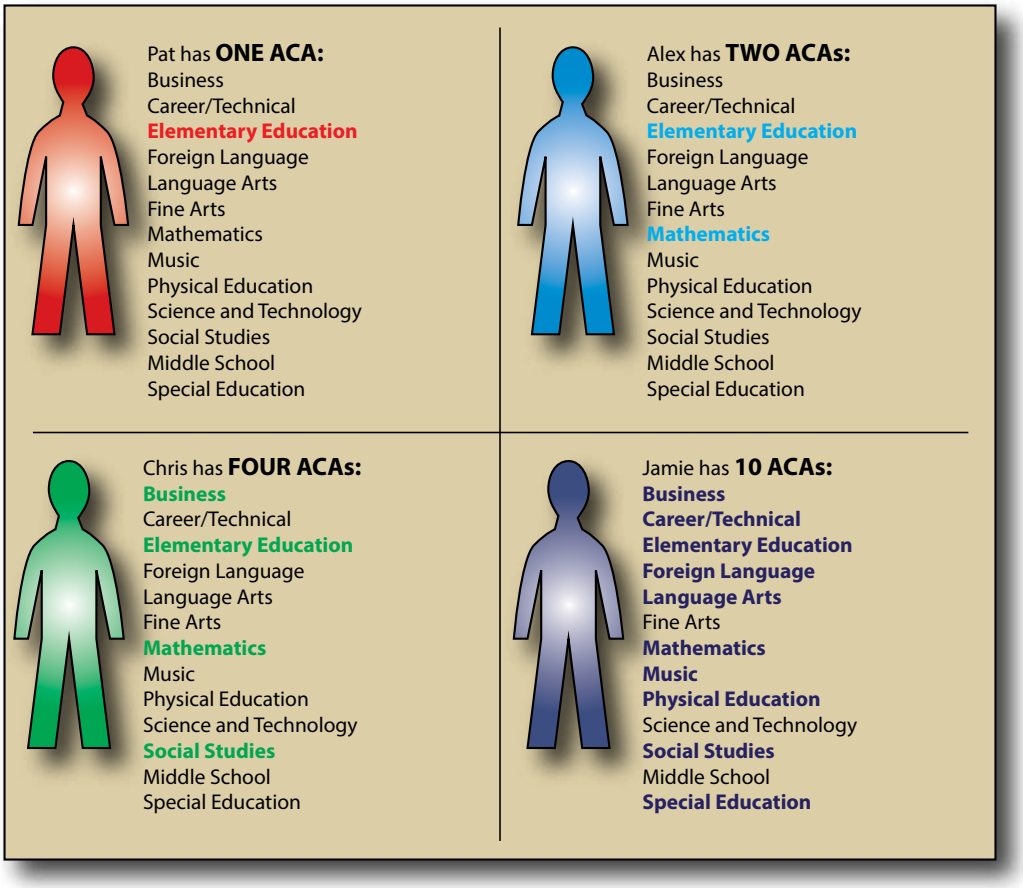
An average of **1.6 ACAs PER INDIVIDUAL**

Of those 13,594 INDIVIDUALS:
- ✓ 7,704 (57.1%) had only ONE ACA → 57.1%
- ✓ 4,560 (33.5%) had TWO ACAs
- ✓ 1,055 (7.5%) had THREE ACAs → 42.9%
- ✓ 275 (1.9%) had FOUR OR MORE ACAs

This research looks at **13 CONTENT AREAS** for teachers in Wyoming's public schools

Each individual could have AS FEW AS ONE ACA or AS MANY AS 13 ACAs

ACAs
Business
Career/Technical
Elementary Education
Foreign Language
Language Arts
Fine Arts
Mathematics
Music
Physical Education
Science and Technology
Social Studies
Middle School
Special Education



Source: Professional Teaching Standards Board Files.

Figure A-2 displays four hypothetical endorsed individuals with varying numbers of Assigned Content Areas (ACAs). Pat was only able to teach elementary education, while Alex was able to teach both elementary education and mathematics. Jamie was able to teach a total of 10 different ACAs; this is rare, but does occur. This example illustrates the difference between the counts of individuals and the counts of ACAs. Jamie would be counted 10 different times in ACA analyses while only once as an individual (one individual with a count of 10 ACAs). Pat counted as one individual with one ACA.

(Text continued from page A6)

program. Figure A-2 shows that a large number of teachers (42.9%) were endorsed in at least two content areas. This will be discussed in depth in the results section.

Results

Content Area and Employment Status

The introduction of this chapter covered the concept of licenses and endorsements the PTSB currently issues. As discussed in the method section, the PTSB issues a wide range of endorsements. People with multiple endorsements become increasingly difficult to place into specific teaching categories. For this reason, the data were restricted to include only standard and professional licenses as teachers who wish to teach in a Wyoming public school are required to possess one of these license types (excluding substitute teachers). To understand the complete statewide availability (labor and recruitment pool) of teachers, this section focuses on all individuals currently endorsed to teach in Wyoming in the 2010/11 school year.

To facilitate the analyses, **Table A-1** shows the number and percent of individuals endorsed by number of ACAs. As mentioned previously, the number of endorsements is not restricted as long as an individual is endorsed by their teaching preparation program. As seen in Table A-1, the 13,594 individuals who were endorsed in 2010/11 had a total of 21,067 ACAs. We further divided individuals based on the total number of ACAs ranging from

Table A-1: **Total Number of Teaching Assigned Content Areas (ACAs) in Wyoming, 2010/11**

				Multiple ACAs					
	Total ACAs	Only One ACA		Two ACAs		Three ACAs		Four or More ACAs	
Assigned Content Area	N	N	Row %	N	Row %	N	Row %	N	Row %
Business	396	133	33.6%	184	46.5%	65	16.4%	14	3.5%
Career/Technical	381	147	38.6%	165	43.3%	51	13.4%	18	4.7%
Elementary Education	7,065	3,815	54.0%	2,488	35.2%	567	8.0%	195	2.8%
Foreign Language	445	135	30.3%	208	46.7%	82	18.4%	20	4.5%
Language Arts	1,876	514	27.4%	841	44.8%	354	18.9%	167	8.9%
Fine Arts	579	263	45.4%	219	37.8%	80	13.8%	17	2.9%
Mathematics	1,021	350	34.3%	370	36.2%	169	16.6%	132	12.9%
Middle School	1,924	10	0.5%	1,160	60.3%	625	32.5%	129	6.7%
Music	547	422	77.3%	95	17.4%	25	4.6%	5	0.7%
Physical Education	1,421	531	37.3%	653	45.9%	185	13.0%	53	3.7%
Science and Technology	1,362	453	33.3%	531	39.0%	225	16.5%	153	11.2%
Social Studies	1,849	625	33.8%	783	42.3%	294	15.9%	147	8.0%
Special Education	2,201	357	16.2%	1,423	64.7%	341	15.5%	80	3.6%
Total ACAs	**21,067**	**7,756**	**36.8%**	**9,120**	**43.3%**	**3,063**	**14.5%**	**1,129**	**5.4%**
Total Individuals	**13,594**	**7,756**	**57.1%**	**4,560**	**33.5%**	**1,021**	**7.5%**	**257**	**1.9%**
Average ACAs Per Individual	**1.6**	**1.0**		**2.0**		**3.0**		**4.4**	

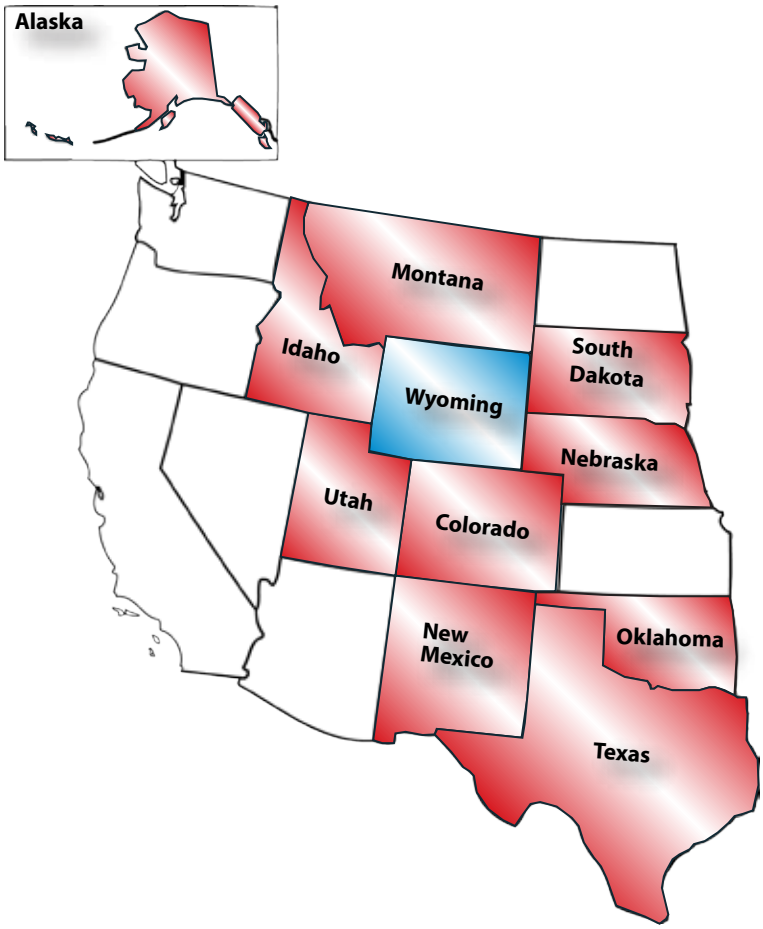
Source: Professional Teaching Standards Board Files.

one to four or more. Of the 13,594 individuals who were endorsed, 57.1% had only one ACA while a small percentage (1.9%) had four or more ACAs. The ACA counts within the table show the number of individuals endorsed. These counts of ACAs are not mutually exclusive. The counts within the table should be considered endorsements and not individuals.

The counts of ACAs differ significantly across content areas. Only 10 middle school ACAs had no other ACA while 1,160 had at least one other ACA. The most homogeneous content area was music with a total of 124 (or 22.7%) being endorsed in at least one other content area. A significant proportion of ACAs in special education had at least two ACAs (64.7%) with a relatively low number endorsed only in special education (16.2%). The largest percentage endorsed in four or more ACAs were those endorsed in mathematics (12.9%). Overall, this table indicates that a significant proportion (33.5%) of individuals can teach in at least two content areas allowing a district to employ teachers in varying content areas during a given school year.

To further explore the content area differences, wage and age analyses were conducted by content area and area of employment. **Table A-2** (see page A10) shows ACAs by state, industry, and employment area. Again, the content areas displayed in the table are not mutually exclusive as endorsements for the same individual can appear in the counts multiple times depending on which content areas they were endorsed to teach. **Figure A-3** displays the partner states used in the analysis for which R&P has a data sharing agreement (e.g., wage records). A total of 11,073 individuals who were endorsed to teach in Wyoming were working in the state (either in public schools or in other industries). A total of 752 individuals who were endorsed to teach in Wyoming were working in partner states while 1,769 individuals could not be found working in either Wyoming or a partner state based on wage records. These "not found in Wyoming or

Figure A-3: Wyoming and States with which Research & Planning Has a Data-Sharing Agreement (*Partner States*)



(Text continued on page A11)

Table A-2: **Total Number of Individuals in Wyoming by Industry and Assigned Content Area (ACA), 2010/11**

Table 2a

	Wyoming					Partner States			Not Found*	Total
ACA	Public Schools, Ed. Services (611100)	Goods-Producing	Service Providing	Government (except Public Schools)	Subtotal	Public Schools, Ed. Services (611100)	Other Industries	Subtotal	Subtotal	Total
Business	278		41	9	328	18	8	26	40	394
Career/Technical	283		31	10	324	13		13	37	374
Elementary Ed.	5,061	28	592	91	5,772	276	70	346	947	7,065
Foreign Language	309		32		341	26		26	67	434
Language Arts	1,313	6	148	22	1,489	87	28	115	272	1,876
Fine Arts	413	7	48		468	23	6	29	78	575
Mathematics	735	7	82	11	835	48	16	64	122	1,021
Middle School	1,508	16	127	23	1,674	38	13	51	199	1,924
Music	399		53	9	461	27	13	40	45	546
Physical Education	1,064	9	89	22	1,184	57	25	82	155	1,421
Science and Tech.	921	17	114	23	1,075	58	29	87	201	1,363
Social Studies	1,250	9	155	27	1,441	70	29	99	309	1,849
Special Education	1,642		140	44	1,826	83	21	104	266	2,196
Total ACAs	**15,176**	**112**	**1,652**	**301**	**17,241**	**824**	**264**	**1,088**	**2,738**	**21,067**
Total Individuals	**9,677**	**76**	**1,116**	**204**	**11,073**	**568**	**184**	**752**	**1,769**	**13,594**

Table A-2b: Average Wage

	Wyoming					Partner States			Not Found*	Total
ACA	Public Schools, Ed. Services (611100)	Goods-Producing	Service Providing	Government (except Public Schools)	Subtotal	Public Schools, Ed. Services (611100)	Other Industries	Subtotal	Subtotal	Total
Business	$59,864		$44,198	$52,079		$44,135	$34,042		N/A	
Career/Technical	$62,289		$43,905	$60,874		$41,183			N/A	
Elementary Ed.	$54,872	$31,811	$30,081	$45,920		$38,377	$20,317		N/A	
Foreign Language	$57,490		$27,556			$42,036			N/A	
Language Arts	$57,119	$20,900	$27,698	$52,357		$38,307	$25,616		N/A	
Fine Arts	$55,550	$24,639	$30,185			$37,861	$22,463		N/A	
Mathematics	$58,175	$34,509	$34,207	$41,106		$39,671	$49,791		N/A	
Middle School	$62,412	$53,049	$38,689	$54,687		$50,127	$38,536		N/A	
Music	$55,658		$23,204	$34,247		$32,478	$16,830		N/A	
Physical Education	$60,192	$32,860	$38,138	$39,013		$42,672	$21,184		N/A	
Science and Tech.	$59,497	$56,539	$36,019	$45,028		$40,711	$27,942		N/A	
Social Studies	$58,823	$61,069	$33,843	$59,532		$43,422	$30,685		N/A	
Special Education	$59,250		$36,082	$61,622		$41,923	$25,621		N/A	
Total	**$56,646**	**$41,104**	**$30,675**	**$46,609**		**$35,910**	**$26,739**		**N/A**	

Table A-2c: Average Age

	Wyoming					Partner States			Not Found*	Total
ACA	Public Schools, Ed. Services (611100)	Goods-Producing	Service Providing	Government (except Public Schools)	Subtotal	Public Schools, Ed. Services (611100)	Other Industries	Subtotal	Subtotal	Total
Business	48.7		52.2	54.3		44.4	54.0		56.7	
Career/Technical	50.0		52.9	45.1		46.0			57.4	
Elementary Ed.	44.6	39.7	43.0	47.1		40.7	40.5		48.5	
Foreign Language	44.5		47.1			44.8			51.2	
Language Arts	46.2	35.2	46.1	49.8		41.5	45.4		51.6	
Fine Arts	47.0	46.4	49.1			43.0	46.9		51.0	
Mathematics	43.4	40.1	44.3	45.7		37.4	42.1		47.0	
Middle School	47.9	49.2	48.5	49.9		48.6	55.8		52.6	
Music	45.5		44.9	53.0		36.9	40.3		45.3	
Physical Ed.	45.8	38.4	47.6	48.9		41.3	44.4		50.3	
Science and Tech.	45.0	45.3	44.5	51.6		38.7	39.1		48.7	
Social Studies	46.8	40.1	47.5	47.3		41.7	48.9		54.5	
Special Education	46.1		47.4	48.6		43.7	44.3		52.5	
Total	**44.7**	**40.3**	**44.1**	**47.0**		**40.3**	**42.0**		**49.2**	

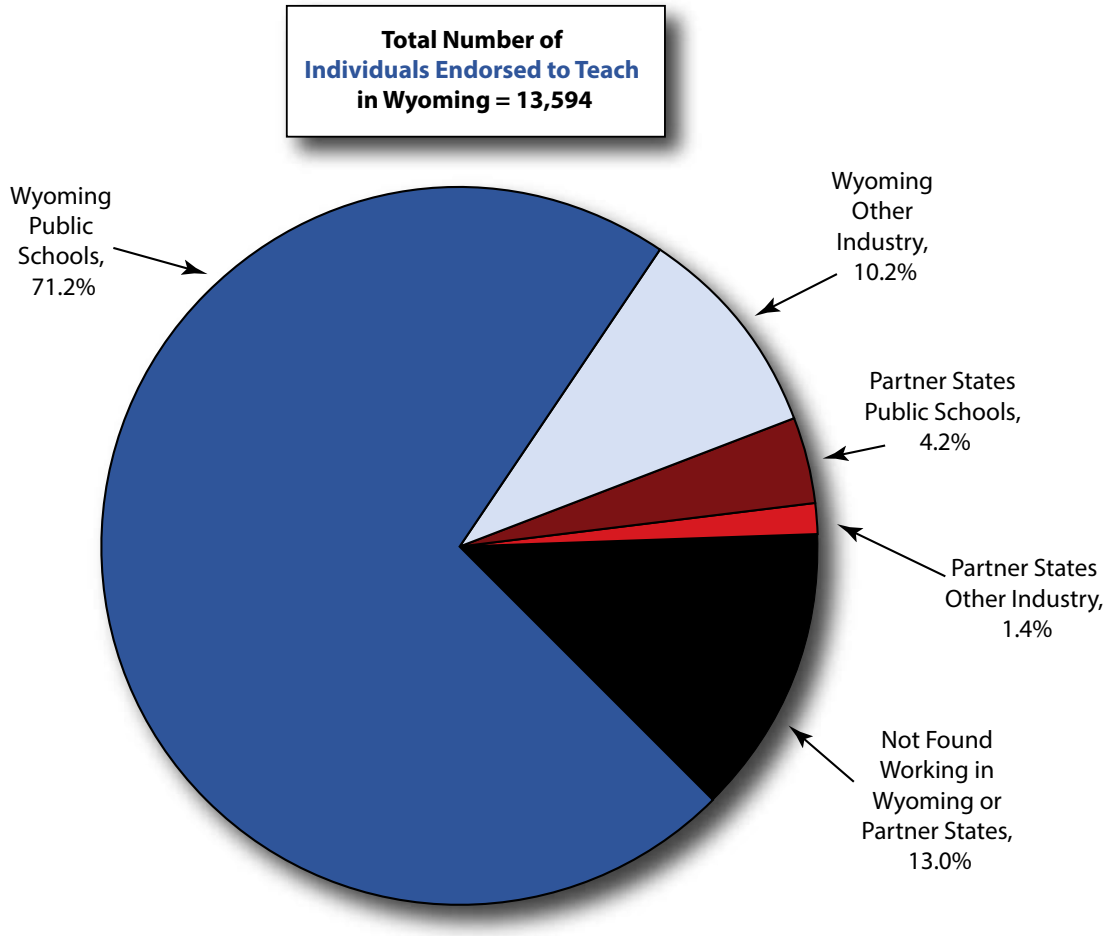
Blank cells indicate data suppression due to confidentiality (a count of less than 5)
* Not found in Wyoming or partner states.
Source: Professional Teaching Standards Board Files.

(Text continued from page A9)

partner states" individuals could have been retired, in non-partner states, or out of the labor market for other reasons (e.g., death, unemployment, self-employed, etc.). One individual was removed from the analysis as their annual wage was more than three standard deviations above the mean (an outlier). The total percentage of individuals endorsed to teach by employment area (i.e., Wyoming or partner state and industry) is also shown graphically in **Figure A-4**.

Within Wyoming, the vast majority (71.2%) were working in public schools while a total of 1,396 (10.3%) were working in other industries. Of those endorsed to teach elementary education, 5,061 were working in Wyoming public schools while 592 were working in the private service providing sectors. The total number working in public schools in partner states was relatively small (568); however, these ACAs constitute a significant portion of the potential labor pool of teachers in Wyoming. As seen in **Table A-2c**, these individuals were, on average, younger than any other segment

Figure A-4: Total Number of Individuals Endorsed to Teach in Wyoming and Where They Worked, 2010/11

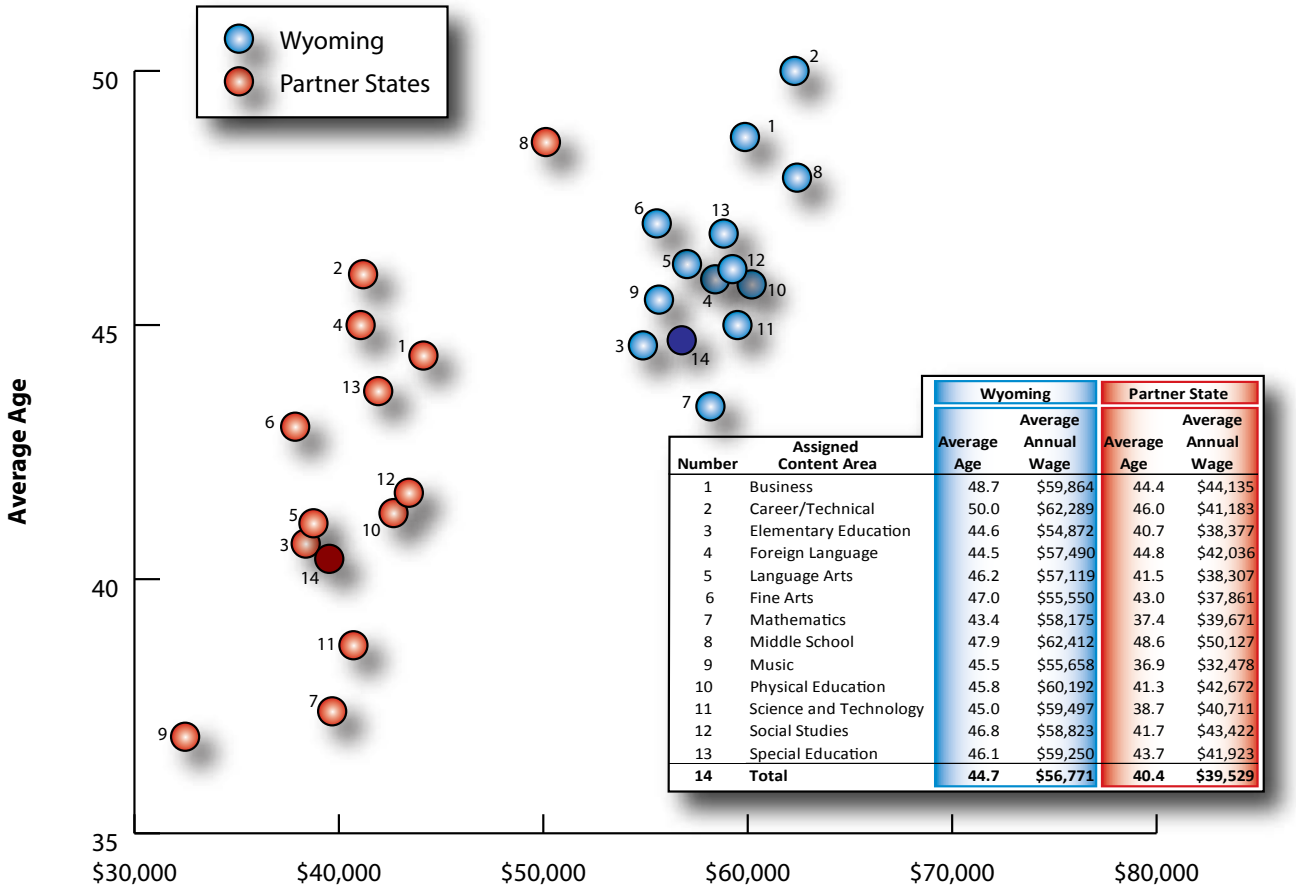


Sources:
Professional Teaching Standards Board Files.
Unemployment Insurance (UI) Wage Records.

of endorsed individuals analyzed (with the exception of those working in goods producing industries in Wyoming). Also, as seen in Table A-2b, these individuals had lower annual wages across all content areas and industries. This result may indicate that individuals who receive a Wyoming teaching license but cannot find a teaching job within the state may decide to work out of state for a lower wage until they are able to find a job in Wyoming public schools.

Figure A-5 further illustrates this point by plotting average annual wage and average age for those working in public schools in Wyoming and partner states. Two clusters emerge from this data. Those individuals working in Wyoming public schools were both older and earning higher annual wages on average than those working in partner states. It is clear that age plays a significant role in average annual wage by content area. For example, those endorsed in music who were working in partner states were significantly

Figure A-5: Average Age and Average Annual Wage of Individuals Who are Endorsed in Wyoming and Working in Public Schools in Wyoming, or Endorsed in Wyoming and Working in Partner States, 2010/11



Number	Assigned Content Area	Wyoming Average Age	Wyoming Average Annual Wage	Partner State Average Age	Partner State Average Annual Wage
1	Business	48.7	$59,864	44.4	$44,135
2	Career/Technical	50.0	$62,289	46.0	$41,183
3	Elementary Education	44.6	$54,872	40.7	$38,377
4	Foreign Language	44.5	$57,490	44.8	$42,036
5	Language Arts	46.2	$57,119	41.5	$38,307
6	Fine Arts	47.0	$55,550	43.0	$37,861
7	Mathematics	43.4	$58,175	37.4	$39,671
8	Middle School	47.9	$62,412	48.6	$50,127
9	Music	45.5	$55,658	36.9	$32,478
10	Physical Education	45.8	$60,192	41.3	$42,672
11	Science and Technology	45.0	$59,497	38.7	$40,711
12	Social Studies	46.8	$58,823	41.7	$43,422
13	Special Education	46.1	$59,250	43.7	$41,923
14	**Total**	**44.7**	**$56,771**	**40.4**	**$39,529**

Partner states are those with which Research & Planning has data-sharing agreements: AK, CO, ID, MT, NE, NM, OK, SD, TX, and UT.

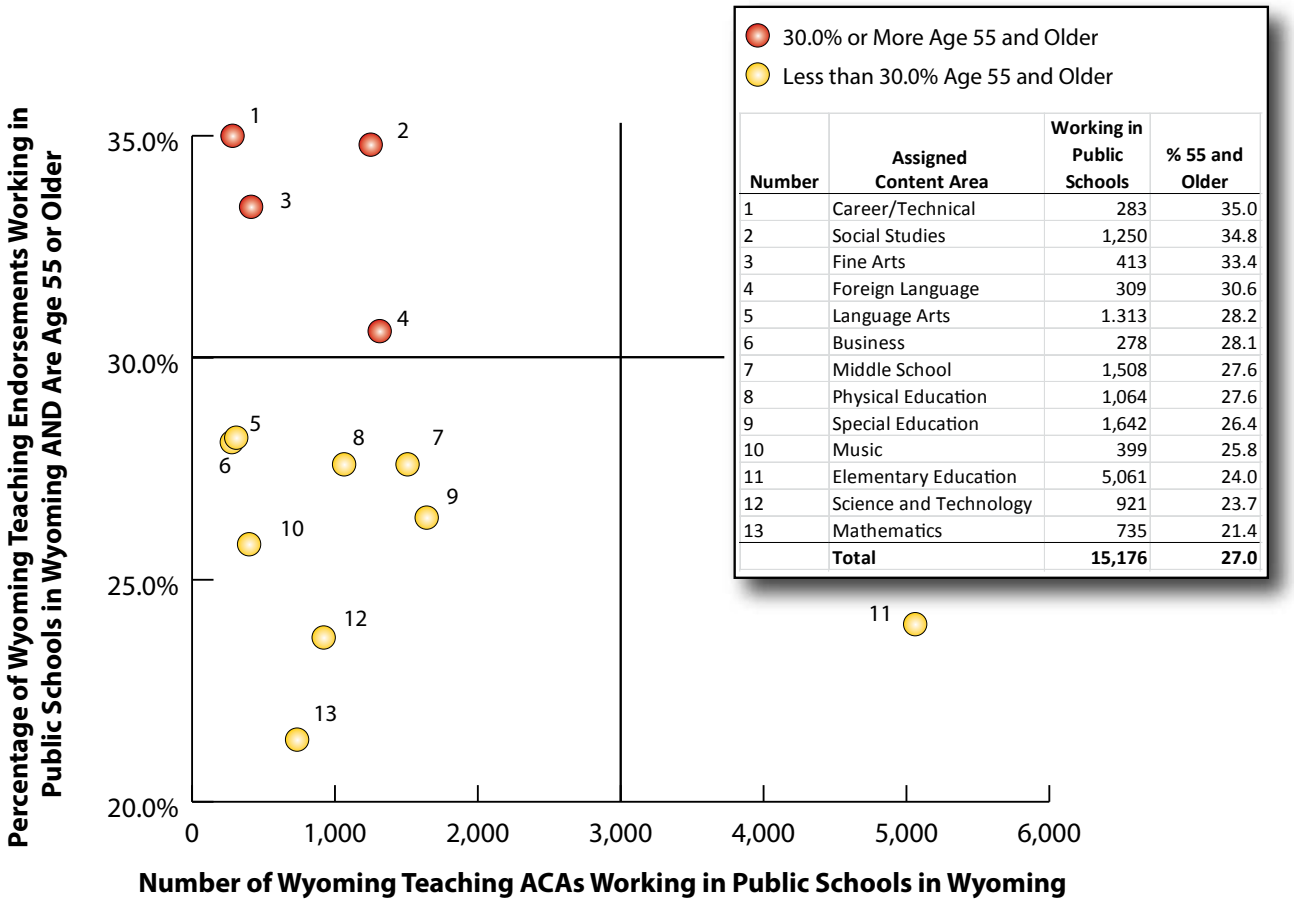
Sources:
Professional Teaching Standards Board Files.
Unemployment Insurance (UI) Wage Records.

younger (36.9) and earning less annually ($32,478) compared to those working in Wyoming (45.5 and $55,658, respectively). Of those endorsed in music, 45 were working in partner states during the 2010/11 school year and constituted a potential labor pool for music teachers for Wyoming school districts.

The average age of individuals endorsed but could not be found in either Wyoming or partner states is of particular note (see Table A-2c). In all content areas, the average age was higher than all other employment areas indicating that a majority of these individuals were likely retired with little intention of entering the recruitment pool. One reason the number of unknown ACAs is high may be due to recent retirements and the need for these teachers to renew their licenses in order to finish their final year. A teacher may need to renew his or her license to continue to teach for one year but because the license is valid for five, the remaining four years would not be utilized.

Endorsed individuals who teach in Wyoming public schools also differ in terms of age and content area. The data presented in **Figure A-6** show the count and percentage of those working in

Figure A-6: Number Working in Wyoming Public Schools, and Percentage of those Endorsed Age 55 and Older by Assigned Content Area (ACA), 2010/11



Number	Assigned Content Area	Working in Public Schools	% 55 and Older
1	Career/Technical	283	35.0
2	Social Studies	1,250	34.8
3	Fine Arts	413	33.4
4	Foreign Language	309	30.6
5	Language Arts	1.313	28.2
6	Business	278	28.1
7	Middle School	1,508	27.6
8	Physical Education	1,064	27.6
9	Special Education	1,642	26.4
10	Music	399	25.8
11	Elementary Education	5,061	24.0
12	Science and Technology	921	23.7
13	Mathematics	735	21.4
	Total	**15,176**	**27.0**

Sources:
Professional Teaching Standards Board Files.
Unemployment Insurance (UI) Wage Records.

Wyoming public schools that are 55 and older. We found that four ACAs have over 30% of teachers over the age of 55: career/technical, social studies, fine arts, and language arts. Those endorsed in mathematics and science and technology were the youngest. Elementary education is a clear outlier. With a large number of ACAs (5,061) and only 24.0% being over the age of 55, this population could serve as a large labor pool for districts as those endorsed in other content areas continue to age.

Table A-3 displays data from within Wyoming for those working in public schools and those working in other industries. Overall, 77.9% of those endorsed in social studies were working in the state followed closely by foreign language (78.4%), and science and technology (78.9%). Due to the low percentages in these content areas working in the school districts, the recruitment pool is larger compared to those content areas where a significant proportion is already working in the district (e.g., middle school with 87.0%). Districts can look to other pockets of labor to recruit teachers outside the school system.

In terms of comparing those working in Wyoming, a significant proportion of those endorsed in middle school (90.1%) were working in public schools compared to only 9.9% working in other industries. Those endorsed in business (84.2%), science and technology (85.7%), and career/technical (86.3%) had the lowest percentage working in public schools. This result indicates two points. First, individuals endorsed in these content areas may have more incentive (e.g., higher wages, more career mobility) to work in other industries which means they may not consider teaching a viable option. Second, those endorsed in business, science and technology, and career/technical content areas have a larger labor pool already endorsed and working (outside public schools) which districts can attempt to recruit.

Teacher Labor Pool & Multi-Endorsement

In light of the aging teachers in Wyoming, the need for replacements is evident. An issue for school districts within the next 10 years will be effective recruitment of teachers in

Table A-3: **Total Number of Endorsements of Persons Licensed to Teach in Wyoming Who Are Working in Public Schools or Other Industry in Wyoming, 2010/11**

		Endorsements of Persons Working in Wyoming					
	Total ACAs	Working in Public Schools in Wyoming		Working in Other Industry in Wyoming		Total Working in Wyoming	
Assigned Content Area (ACA)	N	N	Row %	N	Row %	N	Row %
01 Business	396	278	70.2%	52	13.1%	330	83.3%
02 Career/Technical	381	283	74.3%	45	11.8%	328	86.1%
03 Elementary Ed.	7,065	5,061	71.6%	711	10.1%	5,772	81.7%
04 Foreign Language	445	309	69.4%	40	9.0%	349	78.4%
05 Language Arts	1,876	1,313	70.0%	176	9.4%	1,489	79.4%
06 Fine Arts	579	413	71.3%	59	10.2%	472	81.5%
07 Mathematics	1,021	735	72.0%	100	9.8%	835	81.8%
08 Middle School	1,924	1,508	78.4%	166	8.6%	1,674	87.0%
09 Music	547	399	72.9%	63	11.5%	462	84.5%
10 Physical Education	1,421	1,064	74.9%	121	8.5%	1,185	83.4%
11 Science and Tech	1,362	921	67.6%	154	11.3%	1,075	78.9%
12 Social Studies	1,849	1,250	67.6%	191	10.3%	1,441	77.9%
13 Special Education	2,201	1,642	74.6%	189	8.6%	1,831	83.2%
Total ACAs	**21,067**	**15,176**	**72.0%**	**2,067**	**9.8%**	**17,243**	**81.8%**
Total Individuals	**13,594**	**9,677**	**71.2%**	**1,397**	**10.3%**	**11,074**	**81.5%**
Average ACA Per Individual	**1.6**	**1.6**		**1.5**		**1.6**	

specific content area. As stated in Chapter 4, the number of education graduates in the region saw a percentage increase of 1.9% from 2011 to 2012. Wyoming saw an increase of about 20.9% but the number was small with just 50 graduates. In light of this small numerical growth, the number of already endorsed teachers not currently working in Wyoming public schools is a potential replacement pool. Further, not only do districts have the option of recruiting teachers from recent graduates and other labor markets, but districts may have teachers already working for them that could fill the most pressing recruitment needs.

Teachers are often endorsed in several different content areas and grade levels allowing them to teach a wide range of subjects. As school districts post jobs for particular content areas and grade levels, an individual who is endorsed in many areas might be a more attractive prospect as they can teach multiple content areas at differing grade levels.

At the middle and secondary levels, teachers are often very specialized in what content areas they teach (e.g., students will go to specific classrooms to be taught a specific subject such as math or political science) as opposed to the self-contained classroom setting in an elementary school. To illustrate this point, **Table A-4** (see page A16) displays several matrices of teachers who were endorsed to teach in Wyoming by content area only. Grade level was not included as it added to the complexity of the analysis and was outside the scope of this chapter. The numbers displayed will not sum to the total due to confidential data suppression. Any cell with fewer than five (5) ACAs was suppressed. As seen in **Table A-4a (see page A16)**, a total of 328 of those endorsed in career/technical were also endorsed in other content areas. Since the cells are not mutually exclusive, these counts of endorsements cannot be considered individuals, but a count of ACAs.

The elementary education ACA had a total of 4,307 able to teach in middle and secondary school content areas. In contrast, only a small number of those endorsed in music were endorsed to teach other content areas (a total of 158). For example, only six endorsed in music were also endorsed in science and technology.

Table A-4b (see page A16) displays the number of ACAs licensed in Wyoming, but could not be located in either Wyoming or partner states. Many cells were suppressed in this table due to data confidentiality. Among those not found in Wyoming or partner states, a total of 107 of those endorsed in elementary education could also teach language arts. A total of only 14 music ACAs could teach in other content areas. **Table A-4c** (see page A16) shows the percentage by ACAs of those who are neither in Wyoming's or partner state's labor force and the overall number of ACAs. Overall, 15.3% of those endorsed in elementary education and language arts were not found using current R&P data. This percentage represents a potential labor pool from which districts could utilize both content areas if needed. In total, 16.7% of those endorsed in social studies were unable to be found using current R&P data. This finding is expected as social studies teachers who were unable to be found were among the oldest with an average age of 54.5 (see **Table A-2d, page A10**). This illustrates that a significant proportion of teachers endorsed in social studies may have been retired and had no

(Text continued on page A17)

Table A-4: **Total Number of Multiple Assigned Content Areas (ACAs) in Wyoming and Number of ACAs Not Found Working in Wyoming or Partner States, 2010/11**

Table 4a: Total ACAs

Endorsement: Content Area of Endorsement	Total	01 Business	02 Career/ Technical	03 Elementary Ed.	04 Foreign Language	05 Language Arts	06 Fine Arts	07 Mathematics	08 Middle School	09 Music	10 Physical Education	11 Science and Tech.	12 Social Studies	13 Special Education
01 Business	396	-	57	41	8	24		40	64		53	23	28	13
02 Career/Technical	381	57	-	27		7	9	17	79		33	42	35	18
03 Elementary Ed.	7,065	41	27	-	62	701	108	194	943	61	153	221	367	1,429
04 Foreign Language	445	8		62	-	121	11	21	78	7	30	20	60	19
05 Language Arts	1,876	24	7	701	121	-	125	125	331	19	70	133	309	180
06 Fine Arts	579		9	108	11	125	-	9	66			19	35	31
07 Mathematics	1,021	40	17	194	21	125	9	-	217	7	95	309	121	34
08 Middle School	1,924	64	79	943	78	331	66	217	-	24	174	282	354	212
09 Music	547			61		19		7	24	-		6	11	12
10 Physical Ed.	1,421	53	33	153	30	70	13	95	174		-	243	186	147
11 Science and Tech.	1,363	23	42	221	20	133	19	309	282	6	243	-	173	60
12 Social Studies	1,849	28	35	367	60	309	35	121	354	11	186	173	-	224
13 Special Ed.	2,200	13	18	1,429	19	180	31	34	212	12	147	60	224	-
Total ACAs	**21,067**	**358**	**328**	**4,307**	**439**	**2,145**	**435**	**1,189**	**2,824**	**158**	**1,200**	**1,531**	**1,903**	**2,379**
Total Individuals	**13,594**													

Table A-4b: Not Found Working in Wyoming or Partner States

Endorsement: Content Area of Endorsement	Total	01 Business	02 Career/ Technical	03 Elementary Ed.	04 Foreign Language	05 Language Arts	06 Fine Arts	07 Mathematics	08 Middle School	09 Music	10 Physical Education	11 Science and Tech.	12 Social Studies	13 Special Education
01 Business	40	-						5	8		5			
02 Career/Technical	37		-									9	5	5
03 Elementary Ed.	947	5		-	6	107	18	25	90	7	15	37	76	175
04 Foreign Language	67			6	-	18			11			2	16	
05 Language Arts	272			107	18	-	16	14	47		7	17	52	30
06 Fine Arts	78			18		16	-		9			5	8	10
07 Mathematics	122	5		25		14		-	21		10	40	14	
08 Middle School	199	8	6	90	11	47	9	21	-		19	33	45	22
09 Music	45			7						-				
10 Physical Ed.	155	5		15		7		10	19		-	41	22	7
11 Science and Tech.	201		9	37		17	5	40	33		41	-	26	11
12 Social Studies	309		5	76	16	52	8	14	45		22	26	-	40
13 Special Ed.	266		5	175		30	10		22		7	11	40	-
Total ACAs	**2,738**	**35**	**40**	**564**	**64**	**314**	**69**	**137**	**312**	**14**	**133**	**224**	**309**	**303**

Table A-4c: Percentage of Total ACAs Not Found Working in Wyoming or Partner States

Endorsement: Content Area of Endorsement	Total	01 Business	02 Career/ Technical	03 Elementary Ed.	04 Foreign Language	05 Language Arts	06 Fine Arts	07 Mathematics	08 Middle School	09 Music	10 Physical Education	11 Science and Tech.	12 Social Studies	13 Special Education
01 Business	10.1%	-						12.5%	12.5%		9.4%			
02 Career/Technical	9.7%		-									21.4%	14.3%	27.8%
03 Elementary Ed.	13.4%	12.2%		-	9.7%	15.3%	16.7%	12.9%	9.5%	11.5%	9.8%	16.7%	20.7%	12.2%
04 Foreign Language	15.1%			9.7%	-	14.9%			14.1%			10.0%	26.7%	
05 Language Arts	14.5%			15.3%	14.9%	-	12.8%	11.2%	14.2%		10.0%	12.8%	16.8%	16.7%
06 Fine Arts	13.5%			16.7%		12.8%	-		13.6%			26.3%	22.9%	32.3%
07 Mathematics	11.9%	12.5%		12.9%		11.2%		-	9.7%		10.5%	12.9%	11.6%	
08 Middle School	10.3%	12.5%	7.6%	9.5%	14.1%	14.2%	13.6%	9.7%	-		10.9%	11.7%	12.7%	10.4%
09 Music	8.2%			11.5%						-				
10 Physical Education	10.9%	9.4%		9.8%		10.0%		10.5%	10.9%		-	16.9%	11.8%	4.8%
11 Science and Tech.	14.7%		21.4%	16.7%		12.8%	26.3%	12.9%	11.7%		16.9%	-	15.0%	18.3%
12 Social Studies	16.7%		14.3%	20.7%	26.7%	16.8%	22.9%	11.6%	12.7%		11.8%	15.0%	-	17.9%
13 Special Education	12.1%		27.8%	12.2%		16.7%	32.3%		10.4%		4.8%	18.3%	17.9%	-
Total ACAs	**13.0%**	**9.8%**	**12.2%**	**13.1%**	**14.6%**	**14.6%**	**15.9%**	**11.5%**	**11.0%**	**8.9%**	**11.1%**	**14.6%**	**16.2%**	**12.7%**

Blank cells indicate data suppression due to confidentiality (a count of less than 5)

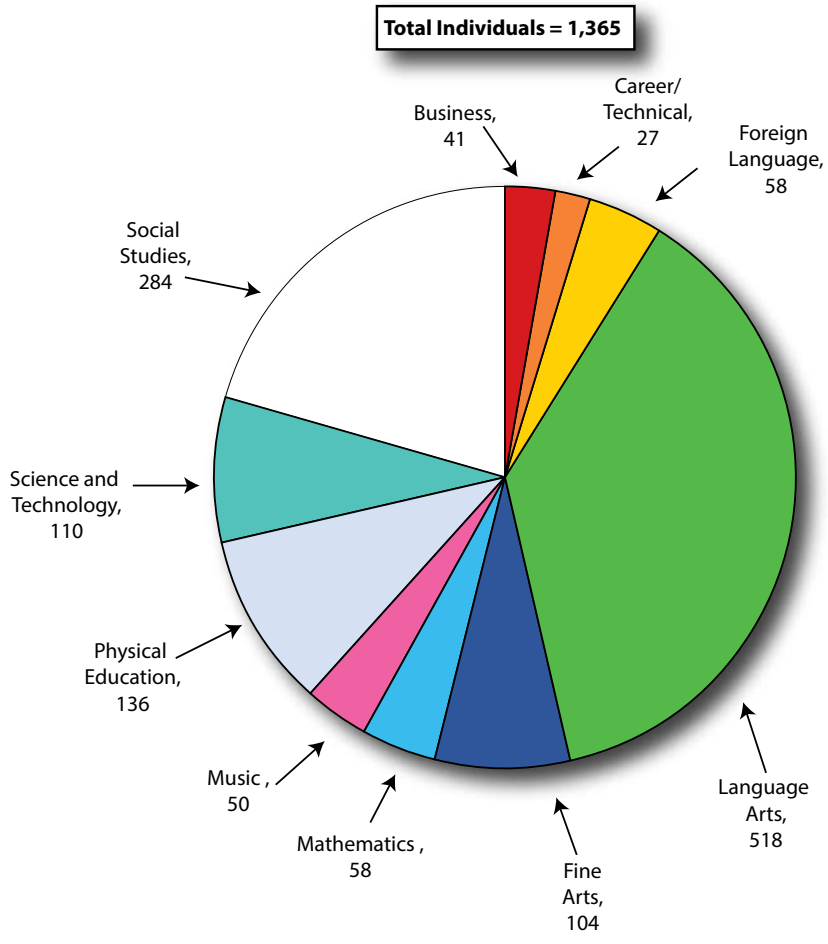
Source: Professional Teaching Standards Board Files.

(Text continued from page A15)

intention of returning to the labor force full time.

Due to elementary education having a significant proportion able to teach in other content areas (4,307), a separate analysis was conducted. Teachers who were able to teach elementary education and another subject at the middle and high school grade levels were compared. As seen in **Figure A-7**, a total of 1,365 individuals endorsed in elementary education were also endorsed at the middle and high school grade levels (6-12). The largest group was language arts (518) followed by social studies (284). As previously discussed, with the large percentage of social studies teachers (see Figure A-6) nearing retirement age, districts could look within their own labor pool (e.g., people already employed by the district) for teachers who are currently teaching elementary education but who are also endorsed to teach social studies (a labor pool of 284, as shown in Figure A-7). However, it should be noted that the teacher's own preference in which content area they teach must be considered.

Figure A-7: Teachers Endorsed in Elementary Education with Another Assigned Content Area (ACA), 2010/11



County, Content Area, and Replacement Need

The previous section covered statewide employment and demographic information for teachers licensed and endorsed to teach in Wyoming public schools in the 2010/11 school year. A reasonable assumption is that counties across Wyoming will differ in the recruitment needs by content area. If counties that share borders also share the same recruitment need for a specific content area then inter-district competitiveness may increase both for those already licensed and new graduates.

Reference Table 3 (see page A32) displays a full, detailed listing of all ACAs with the highest average age for each county in Wyoming, in descending order. Four counties had more than 30% of individual teachers over the

age of 55: Platte (36.0), Hot Springs (32.9), Crook (31.7), and Fremont (30.2). Three counties had less than 20% of individuals endorsed to teach over the age of 55: Teton (18.9), Sublette (17.8), and Johnson (16.6).

In terms of recruitment needs by individual counties, there are clear trends across counties. Career/technical appears in the top three for 17 of the 23 counties (74.0%) and business appears in the top three for 12 of the 23 counties (52.2%). The total number in these content areas was relatively small; however, districts will need to recruit for these positions as these individuals begin to retire. The inter-county competition among these content areas may become increasingly more evident as districts try to hire.

People who change employment from county to county constitute a labor pool from within the state which is readily available due to already being licensed, endorsed, and working in the state. **Table A-5** shows the demographics of individuals by content area who switched employment from one district in the 2008/09 school year to another in 2010/11. The average age is the age of the individual at the start of the 2010/11 school year. A total of 204 individuals changed employment from one district to another with an average age of 41.5. The highest wage increases were for those endorsed in business ($12,947), science and technology ($11,595), and career/technical ($7,585). Five content areas decreased in wages: foreign language, fine arts, mathematics, middle school, and physical education after changing school districts.

A total of 168 (82.3%) of the 204 individuals were 54 years of age and younger indicating that younger individuals were more likely to change districts than older individuals. Women in elementary education (84.4%), special education (80.0%), and language arts (73.9%) were more likely to change districts than their male counterparts. Social studies was the only content

Table A-5: **Demographics for those Employed in Public Schools in Wyoming Who Changed School Districts from 2008/09 to 2010/11 School Year**

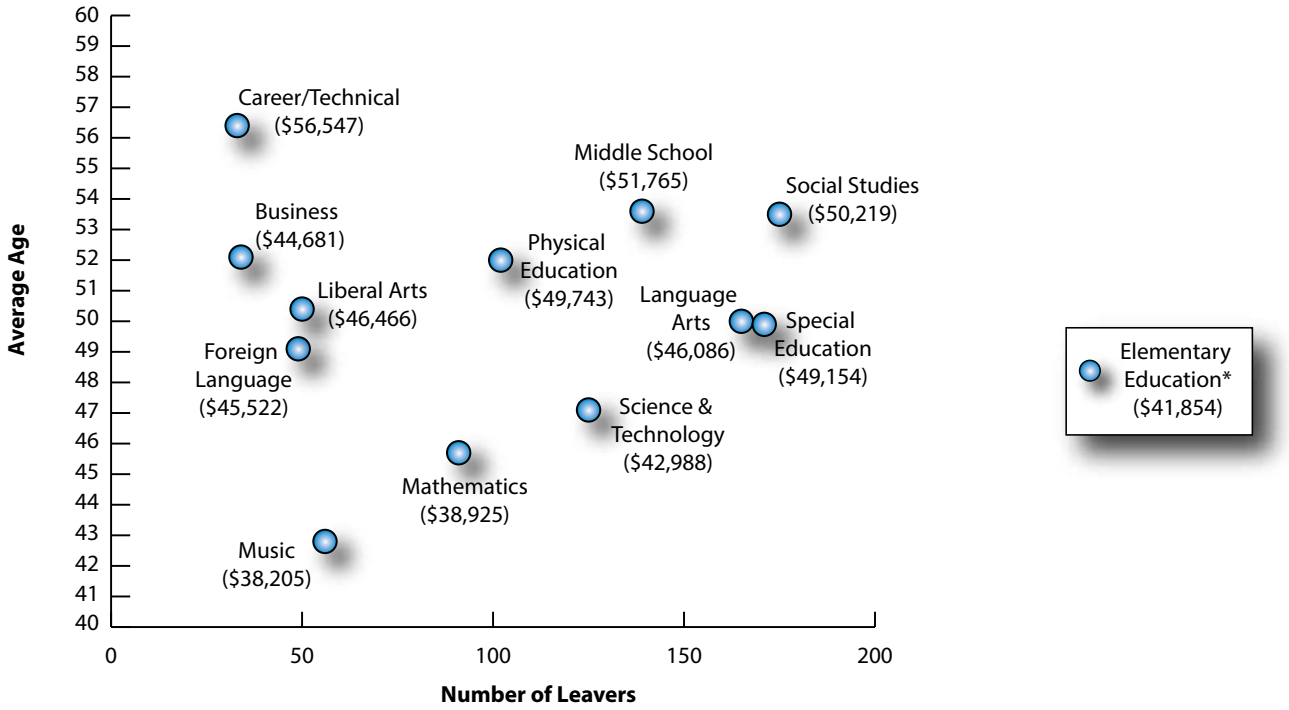
		Age in 2010-11			Gender		Average Annual Wage			
Assigned Content Area (ACA)	Total	Average Age	55 and Older	54 and Younger	Males	Females	2008-09	2010-11	N Change	% Change
Business	6	37.1					$57,490	$70,437	$12,947	22.5%
Career/Technical	7	47.8					$52,545	$60,131	$7,585	14.4%
Elementary Ed.	96	41.7	16	80	14	81	$41,846	$45,110	$3,263	7.8%
Foreign Language	6	44.7					$38,827	$35,797	-$3,030	-7.8%
Language Arts	23	39.4			6	17	$49,771	$54,425	$4,653	9.3%
Fine Arts	13	44.6	5	8			$39,106	$36,360	-$2,746	-7.0%
Mathematics	22	49.9	8	14	10	12	$56,219	$53,044	-$3,175	-5.6%
Middle School	31	49.1	9	22	13	18	$56,521	$53,044	-$3,477	-6.2%
Music	9	37.7					$51,949	$52,420	$471	0.9%
Physical Education	26	40.1			13	13	$50,643	$45,792	-$4,851	-9.6%
Science and Tech.	28	42.7	5	23	12	16	$40,344	$51,939	$11,595	28.7%
Social Studies	28	41.8	5	23	17	11	$56,321	$57,962	$1,641	2.9%
Special Education	45	41.8	9	36	9	36	$48,363	$49,767	$1,404	2.9%
Total Endorsements	340	43.0	69	271	112	228	$49,227	$51,248	$2,022	4.1%
Total Individuals	204	41.5	36	168	68	135	$47,275	$49,358	$2,084	4.4%

Source: Professional Teaching Standards Board Files.

area where males were more likely to change districts than females (39.3%). Overall, 135 females (66.2%) changed districts from 2008/09 to 2010/11. This result could simply be the effect of more women in this particular sample than a result associated with gender effects of migration. This will be discussed in more detail in the discussion section.

As older individuals in Wyoming public schools begin to retire and districts attempt to fill vacant positions, not only will individuals who are willing to change employment from district to district become important but also those who leave Wyoming public schools (leavers). People leave jobs for many reasons (e.g., retirement, better wages, better location, career advancement). The content area an individual is able to teach becomes increasingly more important to school districts as the labor supply of teachers in a particular area dwindles. As seen in **Figure A-8**, content areas differ when age and total number of leavers were considered. Those endorsed in music (56) who worked in Wyoming public schools in 2008/09 but left in 2010/11 were younger (42.8) than any other content area and also had the lowest average annual wage ($38,205). Comparatively, those endorsed in social studies (175) were significantly older (53.5) and had a higher average annual wage ($50,219) when they left Wyoming public schools. Elementary education was a clear outlier and shown on the graph in its own space. A total of 520 elementary education ACAs left Wyoming public schools with an average

Figure A-8: Total Number Employed in Wyoming Public Schools in 2008-09, Who Did Not Appear in Public Schools in 2010-11 (*Leavers*) by Assigned Content Area (ACA)



* Elementary Education (368 leavers, 47.2 average age) is not plotted in this graphic.
Source: Professional Teaching Standards Board Files.

age of 48.8. These results indicate that if individuals teaching in content areas with a lower wage and who are younger may seek jobs in other industries in the state or outside the state (e.g., music). However, as individuals age, they leave with high wages and are likely entering retirement (e.g., social studies).

Discussion

Overview of Findings

This chapter examined the PTSB licensing data for teachers endorsed to teach in Wyoming for the 2010/11 school year. The goals of this chapter were to identify potential labor pools of endorsed individuals districts can recruit from and further identify specific content areas where the recruitment need is higher. As student enrollment continues to increase, the findings in this chapter may assist districts in locating specific human labor pools of teachers in Wyoming.

The number of teachers who are able to teach multiple content areas is significant. This content area diversity adds to the potential labor pool for which districts can recruit for specific content areas. However, it was also found that the total number is tied with the specific content area. Those endorsed in elementary education were also endorsed in a large number of other content areas. This finding indicates that districts can use their elementary education teachers who are endorsed in other content areas for the most pressing recruitment needs.

The present research also focused on the age and wages of endorsed teachers by state and industry. Several pockets of available teachers were found. Those employed in partner states both in public schools and other industries is one labor pool for districts to recruit. Individuals in partner states were found to be, on average, younger and had a lower annual wage compared to those working in Wyoming public schools. As previously mentioned, this may be due to recent graduates who were unable to obtain teaching positions in Wyoming and turned to partner states for employment. However, it is unknown whether individuals in partner states would be willing to relocate or commute which makes this group volatile in terms of recruitment costs for districts.

Those endorsed and working in other industries in Wyoming serve as potential labor pools within the state. The reason for their employment in other industries was not analyzed here as it was out of the scope of the available data. Those that are not working in Wyoming or partner states are another pocket of labor available to school districts. This "unknown" group is relatively large; however, the average age is significantly above any other segment of endorsed individuals analyzed which may indicate that a large proportion may be retired.

Individual counties were found to have both similarities and differences. Nearly all counties included business and career/technical content areas as areas with the greatest percentage over the age of 55. This result suggests that as teachers from these content areas begin to retire, inter-county competition for labor may increase. Certain counties were found to have, on average, older endorsed individuals than others. Platte, Hot Springs, Crook, and Fremont had over 30% of endorsed

individuals over the age of 55 while Teton, Sublette, and Johnson counties had less than 20%. As these individuals begin to retire, counties will see differing recruitment costs associated with filling vacancies based on content area.

The range of average annual wages was relatively homogenous across content areas for those working in Wyoming public schools. This finding supported Ballou and Podgursky (2001) that suggest there is a strong attitude among teachers for not being compensated differently depending upon the content area one teaches. The main contributor to higher annual wages was age. It should not be assumed, however, that each particular class subject costs districts the same amount of their budget. Roza (2009) analyzed three school districts across differing areas of the United States and found that districts paid more per-pupil for electives and noncore courses (e.g., foreign language) than core courses (e.g., math, science, and English). The author suggests that class size is a significant contributor to per-pupil cost as elective and noncore courses tend to have smaller class sizes than core courses while teacher compensation does not differ based on subject taught.

A separate analysis found that approximately 200 individuals changed districts from the 2008/09 school year to the 2010/11 school year. Individuals who are more likely to change employment from county to county could also potentially give districts the necessary recruitment pool for filling vacancies. It should be noted that even though an individual changed employment between districts, it does not necessarily mean that they changed residence. People who change districts and choose to commute would also be included in this count.

Endorsement Classification

As part of this research, R&P created a classification system of teaching endorsements that allowed for effective labor market analysis of the teacher supply in Wyoming. R&P used this strategy in order for individuals that provide educational services (e.g., teachers, principals, counselors) and those who conduct educational research to have a common set of defined categories when researching labor supply. Across the nation, states vary significantly in how they both license and endorse individuals to teach within their borders. In order to make comparisons among national, regional, state, and county level analyses, R&P developed an efficient way to understand teacher supply.

The structure was developed using several guiding principles. Endorsements were grouped based on similarity on two variables: the subject taught in the classroom and nature of instruction. Each endorsement was evaluated for overall uniqueness based on subject and nature of instruction.

R&P classified endorsement areas into 42 Assigned Content Areas (ACAs) distinguishing between subject and nature of instruction in the following ways:

1. Elementary education teachers teach students in a self-contained classroom where multiple subjects are often taught (e.g., language arts, art, and music). However, teachers who are endorsed in art K-6 can only teach art in those grades thus the two endorsements are distinguished both in terms of specific subject taught and nature of instruction.

2. Middle and high school grade levels are specialized in terms of what subject is taught in the classroom. For example, foreign language endorsements (e.g., French, Spanish) follow the same structure within the classroom such as grammar, speaking, and reading but differ in what subject matter is taught. Similarly, music is often taught by the same teacher and covers the concepts associated with music regardless of whether the focus is instrumental or vocal. Endorsements at the middle and high school grade levels were placed into specific ACAs based on similarity of subject matter or nature of instruction.

3. All special education endorsements were included in the same ACA due to both nature of instruction and subject being similar across specialty.

4. Mathematics was placed into its own distinct ACA due to the subject matter in each classroom being sufficiently narrow. For example, in a pre-algebra class, the focus remains on pre-algebra throughout the course of instruction while chemistry courses often cover a wide range of topics within the discipline of chemistry (e.g., organic and inorganic chemistry).

5. Administrative endorsements (e.g., Audiology, Counselors, and Principals) were grouped individually regardless of grade level. The specific function each person with these endorsements performs is sufficiently distinct to warrant separate groupings.

6. All endorsements that were no longer active with PTSB but were too general to place into specific categories were given their own ACA (e.g., Middle School).

The classification of endorsements into ACAs allowed R&P to conduct analyses in a clearer and more concise way that allows for commonality easier across labor markets. This classification system is not limited to the occupations found in school districts. This type of classification could be accomplished with other occupations for comparability across national, state, and county labor markets. For example, nurses are often licensed in a wide range of specialties (e.g., Oncology, Community, Psychiatric) which can complicate labor market supply analysis if similarity across specialties is not considered.

Future Research

Past research indicates that the effect of migration is varied and complex in terms of men and women's employment. Using data collected from individuals in professional and management positions regarding the factors in willingness to relocate, Baldridge, Eddleston, and Veiga (2006) found that married women were more likely to relocate if their husbands were the primary wage earner. The authors suggest that their results are in line with previous research that indicates gender roles are a significant factor in influencing women's attitudes regarding relocation (e.g., the husband's career is given priority and child care is part of a woman's responsibility). Cooke and Bailey (1996) tested the effects of migration on women using the Public Use Microdata Sample (PUMS) of the 1980 U.S. Census. Using a logit probability model which included employment after migration as the dependent variable, the authors found a positive impact on women's employment after migration. The authors found that women who migrated had a 9% increase in their probability of employment compared to women who did not migrate.

Even though gender role theory and migration effects were not specifically tested in the current chapter, our results indicated that the majority of the individuals who changed districts tended to be younger, female and, on average, increased their average annual wage after they changed districts.

Future research is needed in order to examine the effects of family characteristics on migration of teachers within Wyoming and between partner states. Wyoming's economy is highly dependent upon natural resources (e.g., mining) which has within it an attitude that as jobs move, employees must move with them (Allan, 2011). As families increasingly have two wage earners, the effects of gender roles and the availability of a labor supply of teachers within a state is important. Further, future research should also include administrative staff (e.g., principals, school nurses) labor supply and the different wage ranges for public school employees compared to employees in other industries.

Another important avenue of future research is substitute teachers and the role they play in the labor supply to school districts. If a permanent teacher vacates his or her position and the district is unable to find a replacement, substitutes may be hired to cover classrooms. The PTSB data supplied to R&P included a substitute license type. However, many teachers must hold a substitute license to complete student teaching and then gain a standard or professional license. Due to the large number of individuals with double licensure (either standard or professional and substitute), R&P did not conduct an analysis on substitute teachers. Wyoming Retirement Board files would allow R&P to effectively separate permanent and substitute teachers as substitute teachers do not contribute to the retirement fund. The practicality of using substitutes as a temporary means to fill vacated positions in districts would be examined in future research once reliable data is obtained. The supply of substitute teachers could play a major role in district staffing patterns as teacher retirement increases.

As mentioned in the introduction, the PTSB is a separate entity from the WDE. To understand the dynamics of both teacher supply and demand, a combination of both datasets is necessary in future research. As the boom generation of teachers begins to retire, the demands of the school district may change based on content area and grade level. The labor supply research using PTSB licensing data may assist districts in finding the best routes to recruit teachers effectively depending on the needs identified using WDE staffing patterns and recruitment needs.

The rate of teacher exits from school districts has been shown to be dependent upon age and years of experience (Strunk & Robinson, 2006). Younger and older teachers are more likely to leave employment due to other employment opportunities and retirement, respectively. School district characteristics such as level of funding (Boe, Cook, & Sunderland, 2008) and student performance (Clotfelter, Ladd, Vigdor, & Diaz, 2004), wages and benefits (Currall, Towler, Judge, & Kohn, 2005), and college major (Grier & Johnston, 2008) have all been shown to influence whether a teacher intends to leave employment both outside and between school districts. R&P is capable of conducting longitudinal research on wage

progression and the likelihood of teacher turnover for both younger and older teachers. With the supply of teachers by content area and grade level becoming increasingly important, understanding teacher turnover will be needed for government legislative bodies to ensure adequate funding for recruitment.

Limitations and Recommendations

Several important limitations in the current chapter should be noted. First, the quality of teaching in the classroom was not a focus of the current research due to lack of empirical data. No data were provided to R&P that would specifically address overall quality of classroom instruction. The Wyoming Community College Commission and the University of Wyoming are providing R&P with student data which may help address this issue. The data from the Wyoming college system were unavailable at the time this chapter was published. Data on student achievement and outcomes can provide insit into both school and district performance.

Second, the college in which a teacher graduates may not be the college in which they gained their teacher preparation. The PTSB data included the college where an individual earned their degree, but did not specify where they earned their teacher preparation. Due to this data limitation, no degree level analysis was conducted.

Third, the No Child Left Behind Act (2001) was implemented to address quality among teachers and more accountability among school districts. Endorsements were both implemented and retired with the PTSB continuing to issue retired endorsements to those who already had the endorsement on their license. As previously stated, the teacher preparation program is now required to endorse a teacher to teach a specific subject. Due to the variability in the methods a teacher was required to be endorsed, content area analysis may be biased as not all teachers were endorsed in the same fashion.

Several methodologies could be implemented to address these concerns. Developing a survey instrument designed to assess past migration and intent to migrate along with work/family compromise would be an effective strategy to understand labor availability. Also included in the instrument would be specific questions regarding content area(s) taught, endorsement procedures required, and current (and future) plans for retirement. Further, for those endorsed to teach but are working in other industries, specific questions could be developed to understand the reasons for their employment outside of public schools. This level of data collection and analysis would provide a deeper understanding of current teacher trends in Wyoming public schools.

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Reference Table 1: **Professional Teaching Standards Board (PTSB) Endorsements included in Chapter Analyses and Research & Planning (R&P) Assigned Content Area (ACA), 2010/11**

Endorsement Active	PTSB Endorsement	ACA
No	Business (Excluding Shorthand) 6-12	Business
No	Business (Excluding Typing & Shorthand) 6-12	
No	Business (Excluding Typing) 6-12	
Yes	Business Education 6-12	
No	Marketing 6-12	
No	Auto Body 6-12	Career/Technical
No	Auto Mechanics 6-12	
No	Aviation 6-12	
No	Building Trades 6-12	
No	Certified Nursing Assistant Instructor 6-12	
Yes	Cooperative Vocational Education 6-12	
No	Distributive Education 6-12	
No	Electronics 6-12	
No	Graphics 6-12	
No	Health Occupations 6-12	
No	Industrial Arts 6-12	
No	Law Enforcement 6-12	
No	Macintosh Service Repair 6-12	
No	Motorcycle Education 6-12	
No	Outdoor Living 6-12	
Yes	PIC- Agriculture, Food & Natural Resources	
Yes	PIC- Architecture & Construction	
Yes	PIC- Arts, A/V Technology & Communications	
Yes	PIC- Business, Management, & Administration	
Yes	PIC- Education & Training	
Yes	PIC- Finance	
Yes	PIC- Health Science	
Yes	PIC- Hospitality & Tourism	
Yes	PIC- Information Technology	
Yes	PIC- Law, Public Safety, Corrections & Security	
Yes	PIC- Marketing, Sales & Services	
Yes	PIC- Science, Technology, Engineering & Mathematics	
No	Radio/TV/Media Technology 6-12	
No	Technical National Guard 6-12	
No	Trade & Industrial (Auto Mechanics) 6-12	
No	Trade & Industrial (Building Trades) 6-12	
No	Trade & Industrial (Drafting) 6-12	
No	Trade & Industrial (Electrical) 6-12	
No	Trade & Industrial (Electronics) 6-12	
No	Trade & Industrial (Graphics) 6-12	
No	Trade & Industrial (Machine Shop) 6-12	
No	Trade & Industrial (Mechanics) 6-12	
No	Trade & Industrial (Welding) 6-12	
No	Trade & Industrial (Woodworking) 6-12	
No	Trade & Industrial Education 6-12	
No	Trade & Industrial Health Occupations 6-12	
No	Trade and Technical 6-12	
No	Trade and Technical Careers 6-12	
No	Trade and Technical Military Careers 6-12	
No	Trade Chef 6-12	
No	Trade-Computer Technology 6-12	
No	Trade-Horticulture 6-12	
No	Trade-Sports Medicine 6-12	
No	Welding 6-12	
Yes	Elementary Education K-6	Elementary Education

(Table continued on page A27)

(Table continued from page A26)

Reference Table 1: **Professional Teaching Standards Board (PTSB) Endorsements included in Chapter Analyses and Research & Planning (R&P) Assigned Content Area (ACA), 2010/11**

Endorsement Active	PTSB Endorsement	ACA
No	Bilingual K-12	Foreign Language
Yes	French 6-12	
Yes	French K-12	
Yes	German 6-12	
Yes	Italian 6-12	
Yes	Japanese 6-12	
Yes	Latin 6-12	
Yes	Native Language - Arapahoe K-12	
Yes	Native Language - Shoshoni K-12	
Yes	Russian 6-12	
Yes	Spanish 5-8	
Yes	Spanish 6-12	
Yes	Spanish K-12	
Yes	Spanish K-6	
Yes	American Indian Children K-12	Language Arts
Yes	English 6-12	
Yes	Journalism 6-12	
No	Junior High English & Social Studies 5-8	
Yes	Language Arts 5-8	
Yes	Reading 5-8	
Yes	Reading 6-12	
Yes	Reading K-12	
Yes	Reading K-6	
No	Reading Specialist K-12	
No	Remedial Reading K-12	
Yes	Speech 6-12	
Yes	Art 5-8	Fine Arts
Yes	Art 6-12	
Yes	Art K-12	
Yes	Art K-6	
Yes	Drama 6-12	
No	Photography 6-12	
No	Junior High Mathematics & Science 5-8	Mathematics
Yes	Mathematics 5-8	
Yes	Mathematics 6-12	
No	Middle School 5-8	Middle School
Yes	Music 5-8	Music
Yes	Music 6-12	
Yes	Music Instrumental 5-8	
Yes	Music Instrumental 6-12	
Yes	Music Instrumental K-12	
Yes	Music K-12	
Yes	Music K-6	
Yes	Music Vocal 5-8	
Yes	Music Vocal 6-12	
Yes	Music Vocal K-12	
Yes	Music Vocal K-6	
Yes	Musical Instrumental K-6	

(Table continued on page A28)

(Table continued from page A27)

Reference Table 1: **Professional Teaching Standards Board (PTSB) Endorsements included in Chapter Analyses and Research & Planning (R&P) Assigned Content Area (ACA), 2010/11**

Endorsement Active	PTSB Endorsement	ACA
Yes	Health 5-8	Physical Education
Yes	Health 6-12	
Yes	Health K-12	
Yes	Physical Education 5-8	
Yes	Physical Education 6-12	
Yes	Physical Education K-12	
Yes	Physical Education K-6	
Yes	Agriculture 6-12	Science and Technology
No	Audiovisual K-12	
Yes	Biology 6-12	
Yes	Chemistry 6-12	
No	Computer Industry Certification 6-12	
Yes	Computer Science Education 6-12	
Yes	Earth Science 6-12	
No	General Science 6-12	
Yes	Instructional Technology 5-8*	
Yes	Instructional Technology 6-12*	
Yes	Instructional Technology K-12*	
Yes	Instructional Technology K-6*	
Yes	Physical Science 6-12	
Yes	Physics 6-12	
Yes	Science 5-8	
No	Science Comprehensive 6-12	
Yes	Anthropology 6-12	Social Studies
Yes	Economics 6-12	
Yes	Family and Consumer Science 6-12	
No	Food Services 6-12	
No	General Social Studies 6-12	
Yes	Geography 6-12	
No	Government and Public Admin 6-12	
Yes	History 6-12	
Yes	Political Science 6-12	
Yes	Psychology 6-12	
Yes	Social Studies 5-8	
No	Social Studies Comprehensive 6-12	
Yes	Sociology 6-12	
No	United States History 6-12	
No	World History 6-12	
Yes	Adaptive Physical Education 5-8	Special Education
Yes	Adaptive Physical Education 6-12	
Yes	Adaptive Physical Education K-12	
Yes	Exceptional Generalist 5-8	
Yes	Exceptional Generalist 6-12	
Yes	Exceptional Generalist K-12	
Yes	Exceptional Generalist K-6	
Yes	Exceptional Specialist -AH K-12	
Yes	Exceptional Specialist -AH K-6	
Yes	Exceptional Specialist -BEH K-12	
Yes	Exceptional Specialist -BM 6-12	
Yes	Exceptional Specialist -BM K-12	
Yes	Exceptional Specialist -BM K-6	
Yes	Exceptional Specialist -Deaf 5-8	
Yes	Exceptional Specialist -Deaf K-12	
Yes	Exceptional Specialist -Deaf K-6	
Yes	Exceptional Specialist -ED 5-8	
Yes	Exceptional Specialist -ED K-12	
Yes	Exceptional Specialist -ED K-6	

(Table continued on page A29)

* Instructional Technology includes individuals who instruct teachers on how to use technology in the classroom but also can teach computer applications to students.

(Table continued from page A28)

Reference Table 1: **Professional Teaching Standards Board (PTSB) Endorsements included in Chapter Analyses and Research & Planning (R&P) Assigned Content Area (ACA), 2010/11**

Endorsement Active	PTSB Endorsement	ACA
Yes	Exceptional Specialist -LD 5-8	Special Education (continued)
Yes	Exceptional Specialist -LD 6-12	
Yes	Exceptional Specialist -LD K-12	
Yes	Exceptional Specialist -LD K-6	
Yes	Exceptional Specialist -MR 5-8	
Yes	Exceptional Specialist -MR 6-12	
Yes	Exceptional Specialist -MR K-12	
Yes	Exceptional Specialist -MR K-6	
Yes	Exceptional Specialist -PH 6-12	
Yes	Exceptional Specialist -PH K-12	
Yes	Exceptional Specialist -PH K-6	
Yes	Exceptional Specialist -VH K-12	

Reference Table 2: **Professional Teaching Standards Board (PTSB) Endorsements Excluded from Analyses and Research & Planning (R&P) Assigned Content Area (ACA), 2010/11**

Endorsement Active	PTSB Endorsement	ACA
Yes	Alternative, Non-Traditional, At-Risk 6-12	Alternative, Non-Traditional, At-Risk
No	Athletic Trainer	Athletic Trainer
No	Audiology K-12	Audiology
No	Assistant Coaching - All Sports	Coaches and Scouts
Yes	Assistant Coaching Baseball	
Yes	Assistant Coaching Basketball	
Yes	Assistant Coaching Football	
Yes	Assistant Coaching Golf	
Yes	Assistant Coaching Gymnastics	
Yes	Assistant Coaching Skiing	
Yes	Assistant Coaching Soccer	
Yes	Assistant Coaching Swimming	
Yes	Assistant Coaching Tennis	
Yes	Assistant Coaching Track	
Yes	Assistant Coaching Volleyball	
Yes	Assistant Coaching Wrestling	
Yes	Coaching Baseball	
Yes	Coaching Basketball	
Yes	Coaching Football	
Yes	Coaching Golf	
Yes	Coaching Gymnastics	
Yes	Coaching Skiing	
Yes	Coaching Soccer	
Yes	Coaching Swimming	
Yes	Coaching Tennis	
Yes	Coaching Track	
Yes	Coaching Volleyball	
Yes	Coaching Wrestling	

(Table continued on page A30)

(Table continued from page A29)

Reference Table 2: **Professional Teaching Standards Board (PTSB) Endorsements Excluded from Analyses and Research & Planning (R&P) Assigned Content Area (ACA), 2010/11**

Endorsement Active	PTSB Endorsement	ACA
Yes	Counselor 5-8	Counselor
Yes	Counselor 6-12	
Yes	Counselor K-12	
Yes	Counselor K-6	
Yes	Director 6-12	Director
Yes	Director K-12	
Yes	Director K-6	
Yes	Driver Education	Driver Education
Yes	Early Childhood Birth - Age 8 (or 3rd grade)	Early Childhood Birth - Age 8 (or 3rd grade)
Yes	Early Childhood Education K-3	Early Childhood Education K-3
Yes	Early Childhood Special Education Birth to 5 years	Early Childhood Special Education Birth to 5 years
Yes	Educational Diagnostician K-12	Education Diagnostician
Yes	English As A Second Language 5-8	ESL
Yes	English As A Second Language 6-12	
Yes	English As A Second Language K-12	
Yes	English As A Second Language K-6	
No	General Education K-6	General Education
Yes	Gifted and Talented K-6	Gifted and Talented
No	Head Teacher K-12	Head Teacher
No	Institutional School	Institutional School

(Table continued on page A31)

(Table continued from page A30)

Reference Table 2: **Professional Teaching Standards Board (PTSB) Endorsements Excluded from Analyses and Research & Planning (R&P) Assigned Content Area (ACA), 2010/11**

Endorsement Active	PTSB Endorsement	ACA
No	Institutional School Director	Institutional School Director
Yes	Institutional School Teacher	
Yes	Library Media K-12	Library Media
Yes	Preschool (Early Childhood) Birth - 5	Preschool (Early Childhood) Birth - 5
Yes	Intern Principal	Principal
Yes	Principal 5-8	
Yes	Principal 6-12	
Yes	Principal K-12	
Yes	Principal K-6	
No	Psychological Technician K-12	Psychological Technician
Yes	School Nurse K-12	School Nurse
Yes	Intern School Psychologist	School Psychologist
Yes	School Psychologist K-12	
Yes	School Social Worker K-12	School Social Worker
Yes	Educational Sign Language Interpreter 6-12	Sign Language Interpreter
Yes	Educational Sign Language Interpreter K-12	
Yes	Speech Pathologist K-12	Speech Pathologist
Yes	Superintendent K-12	Superintendent

Reference Table 3: **Number, Average Age, and Percentage of Assigned Content Areas (ACAs) Over the Age of 55 Working in Public School Districts by County and Content Area, 2010/11**

				Age 55 and Older	
County	Content Area	N	Average Age	N	%
Albany	Business	7	58.9		
	Career/Technical	13	51.4		
	Language Arts	71	50.0	29	40.8%
	Fine Arts	22	48.9	9	40.9%
	Foreign Language	17	48.8	8	47.1%
	Middle School	36	48.1	7	19.4%
	Social Studies	61	48.0	24	39.3%
	Science and Technology	38	47.7	11	28.9%
	Mathematics	34	47.0	11	32.4%
	Physical Education	41	46.7	10	24.4%
	Elementary Education	248	42.9	55	22.2%
	Special Education	83	42.8	18	21.7%
	Music	22	41.4		
	Total ACAs	693		195	28.1
	Total Individuals	464	43.9	111	23.9
Big Horn	Career/Technical	13	53.1	8	61.5%
	Fine Arts	11	52.6		
	Middle School	73	49.9	28	38.4%
	Social Studies	48	49.2	18	37.5%
	Business	12	48.9		
	Physical Education	31	47.4	12	38.7%
	Special Education	36	46.9	13	36.1%
	Language Arts	45	46.9	15	33.3%
	Elementary Education	143	45.3	34	23.8%
	Music	13	44.1		
	Science and Technology	35	44.0	8	22.9%
	Mathematics	27	43.3	7	25.9%
	Foreign Language	10	43.1		
	Total ACAs	497		156	31.4
	Total Individuals	280	46.2	81	28.9
Campbell	Career/Technical	19	48.1	6	31.6%
	Social Studies	105	46.8	40	38.1%
	Middle School	70	45.9	18	25.7%
	Music	37	45.9	8	21.6%
	Business	26	45.3	6	23.1%
	Special Education	160	44.7	40	25.0%
	Foreign Language	19	44.5	7	36.8%
	Elementary Education	464	44.0	114	24.6%
	Physical Education	112	43.8	27	24.1%
	Fine Arts	36	43.5	11	30.6%
	Language Arts	117	42.5	24	20.5%
	Science and Technology	64	42.4	11	17.2%
	Mathematics	54	39.8	5	9.3%
	Total ACAs	1,283		317	24.7%
	Total Individuals	829	44.1	198	23.9%
Carbon	Career/Technical	5	52.7		
	Fine Arts	11	51.6		
	Middle School	49	51.5	21	42.9%
	Business	7	47.8		
	Physical Education	41	47.5	15	36.6%
	Science and Technology	29	47.0	11	37.9%
	Special Education	48	46.8	17	35.4%
	Elementary Education	155	46.1	47	30.3%
	Social Studies	34	45.6	10	29.4%
	Language Arts	44	45.6	13	29.5%
	Mathematics	25	44.8	5	20.0%
	Music	15	42.0	6	40.0%
	Foreign Language	13	39.3		
	Total ACAs	476		159	33.4
	Total Individuals	299	45.2	88	29.4

Blank cells indicate data suppression due to confidentiality (a count of less than 5).
Source: Professional Teaching Standards Board Files.

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(Table continued from page A32)

Reference Table 3: **Number, Average Age, and Percentage of Assigned Content Areas (ACAs) Over the Age of 55 Working in Public School Districts by County and Content Area, 2010/11**

				Age 55 and Older	
County	Content Area	N	Average Age	N	%
Converse	Fine Arts	8	48.8		
	Middle School	50	48.6	15	30.0%
	Business		48.2		
	Language Arts	35	47.9	13	37.1%
	Music	13	45.7	5	38.5%
	Physical Education	40	43.8	7	17.5%
	Elementary Education	143	43.5	34	23.8%
	Social Studies	34	42.9	7	20.6%
	Foreign Language		42.8		
	Career/Technical	8	42.7		
	Special Education	65	42.6	12	18.5%
	Science and Technology	25	41.9		
	Mathematics	18	36.5	0	0.0%
	Total ACAs	450		101	22.4%
	Total Individuals	279	43.2	58	20.8%
Crook	Fine Arts	9	50.6		
	Business		50.0		
	Music	8	48.4		
	Special Education	32	48.2	12	37.5%
	Career/Technical		47.9		
	Physical Education	21	47.1	6	28.6%
	Elementary Education	72	46.7	25	34.7%
	Middle School	5	46.6		
	Language Arts	29	45.9	10	34.5%
	Science and Technology	22	43.7		
	Social Studies	23	43.7	5	21.7%
	Mathematics	18	42.5	5	27.8%
	Foreign Language	6	39.9	0	0.0%
	Total ACAs	253		79	31.2%
	Total Individuals	142	46.8	45	31.7%
Fremont	Career/Technical	37	55.0	22	59.5%
	Business	17	52.9	8	47.1%
	Middle School	130	50.1	43	33.1%
	Physical Education	82	48.4	31	37.8%
	Special Education	133	48.2	45	33.8%
	Music	25	47.4	9	36.0%
	Elementary Education	395	47.4	126	31.9%
	Social Studies	107	46.9	42	39.3%
	Language Arts	100	46.6	36	36.0%
	Fine Arts	36	46.4	12	33.3%
	Science and Technology	87	46.3	24	27.6%
	Foreign Language	23	46.1	9	39.1%
	Mathematics	56	44.7	13	23.2%
	Total ACAs	1,228		420	34.2%
	Total Individuals	761	46.6	230	30.2%
Goshen	Fine Arts	10	51.0	5	50.0%
	Career/Technical	11	49.6		
	Business	9	49.4		
	Middle School	40	48.0	11	27.5%
	Physical Education	28	46.6	7	25.0%
	Social Studies	34	46.5	11	32.4%
	Language Arts	30	45.5	7	23.3%
	Music	11	45.0		
	Special Education	35	44.8	9	25.7%
	Elementary Education	97	44.7	23	23.7%
	Mathematics	20	43.5		
	Science and Technology	23	42.7		
	Foreign Language	5	40.1		
	Total ACAs	353		88	24.9
	Total Individuals	226	45.0	55	24.3

Blank cells indicate data suppression due to confidentiality (a count of less than 5).
Source: Professional Teaching Standards Board Files.

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(Table continued from page A33)

Reference Table 3: **Number, Average Age, and Percentage of Assigned Content Areas (ACAs) Over the Age of 55 Working in Public School Districts by County and Content Area, 2010/11**

				Age 55 and Older	
County	Content Area	N	Average Age	N	%
Hot Springs	Business		58.6		
	Special Education	11	53.2	6	54.5%
	Career/Technical		52.2		
	Physical Education	13	51.1	7	53.8%
	Middle School	22	50.1	8	36.4%
	Mathematics	7	46.7		
	Fine Arts		46.6		
	Elementary Education	47	46.3	15	31.9%
	Science and Technology	11	46.1	5	45.5%
	Music		45.3		
	Social Studies	17	43.8	6	35.3%
	Language Arts	12	41.3		
	Foreign Language		31.0		
	Total ACAs	157		59	37.6
	Total Individuals	85	45.2	28	32.9
Johnson	Career/Technical		50.1		
	Special Education	30	49.1	8	26.7%
	Business	10	48.4		
	Physical Education	20	47.6	6	30.0%
	Middle School	32	46.8	6	18.8%
	Fine Arts	7	45.9		
	Foreign Language		45.2		
	Music	8	45.2		
	Elementary Education	79	43.2	12	15.2%
	Science and Technology	20	43.1		
	Mathematics	15	42.8		
	Language Arts	23	42.3		
	Social Studies	17	41.1		
	Total ACAs	271		51	18.8
	Total Individuals	163	43.5	27	16.6
Laramie	Career/Technical	43	51.0	14	32.6%
	Business	43	48.5	11	25.6%
	Special Education	219	47.5	63	28.8%
	Social Studies	191	46.7	62	32.5%
	Music	68	46.3	16	23.5%
	Foreign Language	47	45.9	14	29.8%
	Language Arts	173	45.9	51	29.5%
	Science and Technology	133	45.8	27	20.3%
	Physical Education	141	45.3	32	22.7%
	Elementary Education	734	44.5	161	21.9%
	Fine Arts	71	44.4	18	25.4%
	Middle School	126	44.1	20	15.9%
	Mathematics	112	43.9	24	21.4%
	Total ACAs	2,101		513	24.4
	Total Individuals	1,491	44.4	329	22.1%
Lincoln	Career/Technical	9	49.3		
	Fine Arts	12	49.1		
	Language Arts	43	48.3	13	30.2%
	Physical Education	31	47.5	11	35.5%
	Business	13	46.1		
	Middle School	41	46.1	11	26.8%
	Elementary Education	157	45.8	38	24.2%
	Social Studies	31	45.7	8	25.8%
	Mathematics	28	45.2	8	28.6%
	Science and Technology	27	43.9	7	25.9%
	Foreign Language	13	43.7		
	Music	16	42.8	5	31.3%
	Special Education	50	41.7	6	12.0%
	Total ACAs	471		115	24.4%
	Total Individuals	309	45.2	72	23.3%

Blank cells indicate data suppression due to confidentiality (a count of less than 5).
Source: Professional Teaching Standards Board Files.

(Table continued on page A35)

(Table continued from page A34)

Reference Table 3: **Number, Average Age, and Percentage of Assigned Content Areas (ACAs) Over the Age of 55 Working in Public School Districts by County and Content Area, 2010/11**

County	Content Area	N	Average Age	Age 55 and Older N	Age 55 and Older %
Natrona	Business	31	51.9	10	32.3%
	Foreign Language	35	49.0	13	37.1%
	Career/Technical	34	49.0	11	32.4%
	Language Arts	139	47.1	45	32.4%
	Middle School	258	47.0	61	23.6%
	Fine Arts	50	46.7	18	36.0%
	Special Education	199	46.0	43	21.6%
	Social Studies	142	46.0	44	31.0%
	Physical Education	110	45.4	22	20.0%
	Science and Technology	99	44.6	23	23.2%
	Music	43	44.1	8	18.6%
	Mathematics	85	43.2	18	21.2%
	Elementary Education	683	43.0	126	18.4%
	Total ACAs	1,908		442	23.2
	Total Individuals	1,216	43.7	247	20.3%
Niobrara	Career/Technical		57.2		
	Middle School	21	50.1	8	38.1%
	Science and Technology	7	48.8		
	Business	9	48.6		
	Language Arts	16	47.1	5	31.3%
	Social Studies	12	46.5		
	Elementary Education	36	46.0	9	25.0%
	Special Education	11	45.6		
	Mathematics	8	44.0		
	Physical Education	9	42.8		
	Music		42.4		
	Fine Arts		39.3		
	Foreign Language		24.7		
	Total ACAs	137		41	29.9
	Total Individuals	82	45.4	21	25.6
Park	Middle School	96	48.8	30	31.3%
	Social Studies	55	48.3	17	30.9%
	Music	14	47.8		
	Foreign Language	15	47.6	5	33.3%
	Special Education	75	47.6	19	25.3%
	Career/Technical	7	46.6	0	0.0%
	Mathematics	34	46.3	12	35.3%
	Elementary Education	253	45.9	65	25.7%
	Science and Technology	41	45.9	11	26.8%
	Language Arts	67	45.2	17	25.4%
	Physical Education	48	44.2	8	16.7%
	Business	11	43.9		
	Fine Arts	11	42.8		
	Total ACAs	727		190	26.1%
	Total Individuals	441	45.4	101	22.9
Platte	Fine Arts	6	57.5		
	Social Studies	34	53.3	20	58.8%
	Language Arts	25	52.3	12	48.0%
	Mathematics	14	50.5	6	42.9%
	Middle School	32	50.2	12	37.5%
	Music	7	49.8		
	Business	9	49.6		
	Foreign Language	7	48.7		
	Physical Education	28	48.7	13	46.4%
	Career/Technical	6	48.5		
	Elementary Education	86	48.5	29	33.7%
	Special Education	38	46.0	7	18.4%
	Science and Technology	18	45.7	5	27.8%
	Total ACAs	310		119	38.4%
	Total Individuals	186	48.6	67	36.0%

Blank cells indicate data suppression due to confidentiality (a count of less than 5).
Source: Professional Teaching Standards Board Files.

(Table continued on page A36)

(Table continued from page A35)

Reference Table 3: **Number, Average Age, and Percentage of Assigned Content Areas (ACAs) Over the Age of 55 Working in Public School Districts by County and Content Area, 2010/11**

				Age 55 and Older	
County	Content Area	N	Average Age	N	%
Sheridan	Career/Technical	11	50.6		
	Fine Arts	20	49.7	6	30.0%
	Science and Technology	57	48.6	20	35.1%
	Social Studies	62	48.4	23	37.1%
	Special Education	76	48.3	28	36.8%
	Language Arts	87	48.1	31	35.6%
	Middle School	102	47.9	28	27.5%
	Business	14	47.6		
	Physical Education	50	47.1	14	28.0%
	Elementary Education	258	44.9	65	25.2%
	Music	17	44.6		
	Mathematics	33	44.3	7	21.2%
	Foreign Language	16	44.2	5	31.3%
	Total ACAs	803		237	29.5%
	Total Individuals	488	45.5	127	26.0%
Sublette	Music	6	50.3		
	Middle School	34	46.7	6	17.6%
	Career/Technical	5	46.6		
	Fine Arts	9	45.8		
	Special Education	21	45.1		
	Elementary Education	86	44.3	18	20.9%
	Language Arts	22	44.0	5	22.7%
	Physical Education	22	43.7	6	27.3%
	Science and Technology	19	42.6		
	Social Studies	23	41.8		
	Mathematics	20	38.8		
	Business		36.2		
	Foreign Language		32.9		
	Total ACAs	275		52	18.9
	Total Individuals	169	43.2	30	17.8
Sweetwater	Career/Technical	16	50.2	7	43.8%
	Business	18	50.1		
	Social Studies	81	48.8	36	44.4%
	Middle School	91	48.0	24	26.4%
	Music	27	47.5	7	25.9%
	Language Arts	79	46.8	24	30.4%
	Special Education	132	46.7	35	26.5%
	Fine Arts	27	45.5	9	33.3%
	Science and Technology	56	44.5	12	21.4%
	Physical Education	71	44.5	21	29.6%
	Elementary Education	383	44.3	101	26.4%
	Foreign Language	18	43.9		
	Mathematics	39	42.2	6	15.4%
	Total ACAs	1,038		291	28.0%
	Total Individuals	682	44.9	188	27.6%
Teton	Business		51.5		
	Fine Arts	18	50.3	7	38.9%
	Middle School	45	47.3	11	24.4%
	Music	10	46.9		
	Social Studies	35	46.2	12	34.3%
	Career/Technical		45.6		
	Language Arts	41	45.3	12	29.3%
	Special Education	44	45.1	10	22.7%
	Mathematics	20	45.1		
	Physical Education	28	43.6	7	25.0%
	Elementary Education	161	42.2	27	16.8%
	Science and Technology	26	41.1		
	Foreign Language	19	40.7		
	Total ACAs	454		99	21.8
	Total Individuals	307	42.7	58	18.9

Blank cells indicate data suppression due to confidentiality (a count of less than 5)
Source: Professional Teaching Standards Board Files.

(Table continued on page A37)

(Table continued from page A36)

Reference Table 3: **Number, Average Age, and Percentage of Assigned Content Areas (ACAs) Over the Age of 55 Working in Public School Districts by County and Content Area, 2010/11**

				Age 55 and Older	
County	Content Area	N	Average Age	N	%
Uinta	Middle School	97	48.9	29	29.9%
	Business	6	48.8	0	0.0%
	Fine Arts	18	48.7	5	27.8%
	Social Studies	61	47.7	24	39.3%
	Science and Technology	45	47.1	15	33.3%
	Physical Education	46	46.4	12	26.1%
	Elementary Education	221	46.2	57	25.8%
	Special Education	80	45.8	21	26.3%
	Career/Technical	11	45.5		
	Language Arts	68	44.8	19	27.9%
	Music	22	44.5		
	Foreign Language	19	42.5		
	Mathematics	37	40.1	7	18.9%
	Total ACAs	731		197	26.9%
	Total Individuals	451	45.2	108	23.9%
Washakie	Social Studies	26	51.5	11	42.3%
	Career/Technical	5	50.0		
	Middle School	34	49.8	10	29.4%
	Business	12	49.3		
	Music	7	48.5		
	Physical Education	21	47.0	8	38.1%
	Mathematics	17	46.8	5	29.4%
	Science and Technology	19	46.6	6	31.6%
	Language Arts	25	46.6	7	28.0%
	Elementary Education	78	46.5	17	21.8%
	Fine Arts	6	46.3		
	Special Education	28	44.6	5	17.9%
	Foreign Language	6	38.6		
	Total ACAs	284		79	27.8
	Total Individuals	160	46.9	44	27.5
Weston	Foreign Language		52.1		
	Music		51.5		
	Career/Technical	7	48.2		
	Language Arts	15	47.7	7	46.7%
	Science and Technology	11	47.0		
	Physical Education	18	47.0	5	27.8%
	Social Studies	11	46.8		
	Middle School	19	46.4	5	26.3%
	Elementary Education	54	46.2	13	24.1%
	Fine Arts	5	45.1		
	Business	6	44.2		
	Special Education	20	44.0	5	25.0%
	Mathematics	10	42.8		
	Total ACAs	182		79	27.8
	Total Individuals	107	45.2	27	25.2

Blank cells indicate data suppression due to confidentiality (a count of less than 5)
Source: Professional Teaching Standards Board Files.

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Appendix B

School District Exit: Teacher Wage Progression and Assignment Status by Age and Gender

Monitoring School District Cost Pressures

A Report to the Wyoming Joint Appropriations Interim Committee and the Joint Education Interim Committee

Fall 2013

Research & Planning
Wyoming DWS

Teacher School District Exits

by: Patrick Harris, Principal Economist

As wages in teaching occupations continue to increase, analyzing transitions from district to district or between occupations may reveal potential labor pools and district labor demands. In Chapter 1, employment and wage data were presented over a two-year period using the Standard Occupational Classification (SOC) system. As discussed in Chapter 1, Wyoming's average wage for all primary, secondary, and special education teachers in public schools is higher than the U.S. average and significantly higher than most surrounding states. However, little is known regarding wage changes as teachers change district employment or change occupations from year to year.

This appendix analyzes only teachers in public schools, and does not include those individuals who worked non-teaching jobs. Teachers are classified as "primary, secondary, and special education teachers" by the SOC classification system with a code of 25-2000. Further classification is dependent upon which grade levels a teacher is assigned to teach. Teacher occupations are broken down into a six-digit SOC code, such as secondary school teachers, except special education, which is coded as 25-2031. The SOC classification structure is presented in Chapter 1.

There are many different career paths a teacher can take from year to year. The primary goal of this chapter is to examine the transitional trends of 10 teacher occupations by age group and gender. Five transitions were examined between the 2011/12 to 2012/13 school years. **Figure B-1** displays the different transitions used in this chapter based on the retention status described in detail in Chapter 3. Teachers who stayed in the same occupation and the same district over the two school years were labeled as no change (NC). Teachers who stayed in the same occupation but changed employment to another school district were labeled as location change (LC). Teachers who stayed in the same district but changed occupations were labeled occupation change (OC). Teachers who changed both occupation and school district were labeled occupation and location change (OLC). Finally, there were 562 teachers who were in Wyoming public schools one year but left public schools the following year.

To capture the transition trends of teachers, the number of teachers employed and the average annual wage was analyzed using the Wyoming Department of Education Contract Staffing Files (WDE 602). Age and gender were included to examine

Figure B-1: **Total, All Teachers Working in Public Schools, 2011/12 and 2012/13**

Total Teachers = 6,881

Occupation	District: Same (N = 6,759, or 98.2%)	District: Different (N = 122, or 1.8%)
Same (N =6,046, or 87.9%)	No Change (NC) 5,992 87.1%	Location Change (LC) 54 0.8%
Different (N = 835, or 12.1%)	Occupation Change (OC) 767 11.1%	Occupation and Location Change (OLC) 68 1.0%

Note: 562 teachers left public schools from 2011/12 to 2012/13; see Table B-1b, page B7

Source: Wyoming Department of Education Contract Staffing Files (WDE 602).

the differences in transitions between specific demographic groups. For example, identifying the number of young and middle-aged teachers who change occupations and school districts over time can assist districts in meeting their staffing needs. It should be noted that this chapter focuses on teacher transitions between only one school year to another. Future research using longitudinal administrative data is warranted to understand the full breadth of teacher movement within occupations, school districts, and Wyoming's labor market as a whole.

The WDE staffing files included all those teachers contracted to work in Wyoming public schools for the 2011/12 and 2012/13 school years and their assignment status. The assignment status indicates which subjects and at what grade levels the teacher is contracted to teach in a given school year. In order to code the WDE contracted assignment status to the appropriate SOC classification, R&P used the highest grade level a teacher was able to teach. For example, a teacher contracted to teach mathematics for grades 6-12 would be classified as a secondary school teacher, except special and career/technical education (SOC 25-2031). Regardless of the number of assignments an individual in the WDE staffing file had, he or she was assigned a primary occupation and a primary school district. Primary school district was assigned to the district where that person earned the highest wages.

The WDE 602 file included the contracted wage for each individual teacher contracted to work for the two time periods. The contracted wage in the WDE 602 file was used in the wage analyses, except when identifying earnings after the teacher left public schools. R&P used Unemployment Insurance (UI) Wage Records to identify those individuals who did not continue employment with Wyoming public schools. The UI wage records longitudinal administrative database is collected quarterly for unemployment insurance tax purposes. Each wage record contains ssn, year, quarter, employer, and wages. R&P currently maintains 22 years of wage records for approximately 92.0% of the employed individuals in Wyoming.

Of the 562 teachers who left working in public schools in Wyoming, R&P located 350 persons working in Wyoming or in 10 other states with whom R&P has data sharing agreements (see Figure A-3 in Appendix A, page A9, for a map of these 10 states).

Age and Gender

Table B-1a (see page B4) displays the data based on age and gender and the different transitional categories. The first column of Table B-1a indicates the district transition, while the second indicates the occupational transition. A total of 7,443 teachers with an average wage of $58,075 in 2011/12 were used in the analyses. A total of 562 teachers left Wyoming public schools while 6,881 were retained in Wyoming public schools. Of those retained in Wyoming public schools 4,858 were female (70.6%). Nearly all those retained in Wyoming public schools increased their wages, with the exception of those ages 65 and older (-0.7%). Of those who were retained in Wyoming public schools, younger males (54 or younger) consistently earned higher wages regardless of transition type compared to younger females. All those who left Wyoming public schools showed a large decrease in wages, with the largest decrease for males ages 55-64 (80.0%) followed closely by females in the same age group (77.5%).

(Text continued on page B7)

Table B-1a: **Public School Teacher Transition Activity Between School Districts and Occupations from 2011/12 to 2012/13 by Age and Gender**

Total

District Transition	Occupational Transition	Age Group	2011/12 N	2011/12 ACW	2012/13 N	2012/13 ACW	Wage Change $	Wage Change %
Total	Total	Total	7,443	$58,075	7,231	$57,328	-$747	-1.3%
		20-24	207	$44,964	206	$44,856	-$108	-0.2%
		25-34	1,893	$50,896	1,865	$51,047	$151	0.3%
		35-44	1,854	$57,718	1,832	$58,141	$422	0.7%
		45-54	1,857	$62,250	1,832	$62,169	-$81	-0.1%
		55-64	1,543	$63,915	1,421	$60,310	-$3,605	-5.6%
		65-Up	89	$60,331	75	$53,185	-$7,146	-11.8%
Left Wyoming Public Schools	Total (2012/13 wage for this group comes from UI Wage Records Database)	Total	562	$56,646	350	$21,917	-$34,729	-61.3%
		20-24	18	$43,522	17	$20,779	-$22,744	-52.3%
		25-34	141	$47,603	113	$25,869	-$21,734	-45.7%
		35-44	72	$52,841	50	$27,704	-$25,137	-47.6%
		45-54	72	$59,855	47	$25,760	-$34,095	-57.0%
		55-64	230	$63,284	108	$13,727	-$49,557	-78.3%
		65-Up	29	$57,594	15	$21,076	-$36,518	-63.4%
Retained in Wyoming Public Schools	Total	Total	6,881	$58,192	6,881	$59,129	$937	1.6%
		20-24	189	$45,101	189	$47,021	$1,920	4.3%
		25-34	1,752	$51,161	1,752	$52,670	$1,510	3.0%
		35-44	1,782	$57,915	1,782	$58,995	$1,079	1.9%
		45-54	1,785	$62,347	1,785	$63,128	$781	1.3%
		55-64	1,313	$64,026	1,313	$64,141	$116	0.2%
		65-Up	60	$61,654	60	$61,212	-$442	-0.7%
Same District	Total	Total	6,759	$58,314	6,759	$59,273	$959	1.6%
		20-24	176	$45,299	176	$47,146	$1,847	4.1%
		25-34	1,691	$51,185	1,691	$52,779	$1,593	3.1%
		35-44	1,756	$58,013	1,756	$59,067	$1,054	1.8%
		45-54	1,765	$62,395	1,765	$63,222	$827	1.3%
		55-64	1,311	$64,012	1,311	$64,148	$136	0.2%
		65-Up	60	$61,654	60	$61,212	-$442	-0.7%
	Same occupation	Total	5,992	$58,428	5,992	$59,431	$1,003	1.7%
		20-24	145	$45,567	145	$47,254	$1,687	3.7%
		25-34	1,490	$51,143	1,490	$52,648	$1,505	2.9%
		35-44	1,544	$58,036	1,544	$59,131	$1,095	1.9%
		45-54	1,567	$62,586	1,567	$63,443	$857	1.4%
		55-64	1,190	$63,997	1,190	$64,428	$432	0.7%
		65-Up	56	$61,633	56	$61,208	-$425	-0.7%
	Different Occupation	Total	767	$57,425	767	$58,040	$614	1.1%
		20-24	31	$44,043	31	$46,642	$2,599	5.9%
		25-34	201	$51,497	201	$53,745	$2,247	4.4%
		35-44	212	$57,847	212	$58,603	$756	1.3%
		45-54	198	$60,877	198	$61,466	$588	1.0%
		55-64	121	$64,164	121	$61,395	-$2,770	-4.3%
		65-Up	ND	$61,944	ND	$61,267	-$677	-1.1%
Different District	Total	Total	122	$51,425	122	$51,162	-$263	-0.5%
		20-24	13	$42,421	13	$45,331	$2,909	6.9%
		25-34	61	$50,481	61	$49,669	-$812	-1.6%
		35-44	26	$51,335	26	$54,089	$2,754	5.4%
		45-54	20	$58,125	20	$54,855	-$3,270	-5.6%
		55-64	ND	$72,916	ND	$59,639	-$13,277	-18.2%
	Same occupation	Total	54	$52,211	54	$52,414	$203	0.4%
		20-24	6	$42,528	6	$44,404	$1,877	4.4%
		25-34	30	$51,060	30	$50,363	-$697	-1.4%
		35-44	10	$52,402	10	$57,535	$5,133	9.8%
		45-54	8	$63,556	8	$59,715	-$3,840	-6.0%
	Different Occupation	Total	68	$50,800	68	$50,168	-$632	-1.2%
		20-24	7	$42,330	7	$46,125	$3,794	9.0%
		25-34	31	$49,920	31	$48,997	-$923	-1.8%
		35-44	16	$50,668	16	$51,935	$1,268	2.5%
		45-54	12	$54,504	12	$51,615	-$2,889	-5.3%
		55-64	ND	$72,916	ND	$59,639	-$13,277	-18.2%

ACW = Average contract wage (from WDE 602).
ND = Non-disclosable due to confidentiality.
Sources: Wyoming Department of Education Contract Staffing Files (WDE 602) and Research & Planning Unemployment Insurance Wage Records.

Table B-1a **Continued from page B4**

Females

District Transition	Occupational Transition	Age Group	2011/12 N	2011/12 ACW	2012/13 N	2012/13 ACW	Wage Change $	Wage Change %
Total	Total	Total	5,258	$56,828	5,102	$56,119	-$709	-1.2%
		20-24	173	$44,654	172	$44,426	-$229	-0.5%
		25-34	1,282	$49,880	1,263	$49,825	-$55	-0.1%
		35-44	1,285	$55,918	1,268	$56,369	$451	0.8%
		45-54	1,328	$60,678	1,312	$60,615	-$63	-0.1%
		55-64	1,128	$62,975	1,034	$60,091	-$2,884	-4.6%
		65-Up	62	$59,019	53	$49,263	-$9,756	-16.5%
Left Wyoming Public Schools	Total (2012/13 wage for this group comes from UI Wage Records Database)	Total	400	$55,351	244	$20,128	-$35,224	-63.6%
		20-24	ND	$44,724	ND	$19,859	-$24,865	-55.6%
		25-34	99	$46,823	80	$24,025	-$22,798	-48.7%
		35-44	50	$51,168	33	$24,107	-$27,061	-52.9%
		45-54	48	$58,157	32	$22,864	-$35,293	-60.7%
		55-64	166	$61,972	72	$13,918	-$48,054	-77.5%
		65-Up	ND	$54,408	ND	$13,989	-$40,419	-74.3%
Retained in Wyoming Public Schools	Total	Total	4,858	$56,950	4,858	$57,927	$977	1.7%
		20-24	158	$44,648	158	$46,602	$1,955	4.4%
		25-34	1,183	$50,136	1,183	$51,570	$1,434	2.9%
		35-44	1,235	$56,111	1,235	$57,231	$1,121	2.0%
		45-54	1,280	$60,773	1,280	$61,559	$786	1.3%
		55-64	962	$63,148	962	$63,547	$399	0.6%
		65-Up	40	$61,556	40	$60,727	-$829	-1.3%
Same District	Total	Total	4,775	$57,069	4,775	$58,060	$991	1.7%
		20-24	147	$44,832	147	$46,709	$1,877	4.2%
		25-34	1,144	$50,140	1,144	$51,658	$1,518	3.0%
		35-44	1,219	$56,182	1,219	$57,285	$1,103	2.0%
		45-54	1,264	$60,854	1,264	$61,664	$810	1.3%
		55-64	961	$63,149	961	$63,550	$401	0.6%
		65-Up	40	$61,556	40	$60,727	-$829	-1.3%
	Same occupation	Total	4,133	$57,084	4,133	$58,091	$1,007	1.8%
		20-24	119	$45,141	119	$46,805	$1,664	3.7%
		25-34	977	$49,967	977	$51,337	$1,371	2.7%
		35-44	1,046	$56,072	1,046	$57,209	$1,137	2.0%
		45-54	1,096	$60,954	1,096	$61,812	$858	1.4%
		55-64	858	$62,946	858	$63,564	$618	1.0%
		65-Up	37	$61,502	37	$60,575	-$927	-1.5%
	Different Occupation	Total	642	$56,973	642	$57,860	$887	1.6%
		20-24	ND	$43,519	ND	$46,299	$2,780	6.4%
		25-34	167	$51,155	167	$53,533	$2,378	4.6%
		35-44	173	$56,851	173	$57,750	$900	1.6%
		45-54	168	$60,206	168	$60,699	$493	0.8%
		55-64	103	$64,841	103	$63,434	-$1,407	-2.2%
		65-Up	ND	$62,220	ND	$62,609	$389	0.6%
Different District	Total	Total	83	$50,080	83	$50,244	$164	0.3%
		20-24	ND	$42,183	ND	$45,179	$2,996	7.1%
		25-34	39	$50,022	39	$48,991	-$1,031	-2.1%
		35-44	16	$50,650	16	$53,118	$2,468	4.9%
		45-54	16	$54,320	16	$53,248	-$1,072	-2.0%
		55-64	ND	$62,200	ND	$60,777	-$1,423	-2.3%
	Same occupation	Total	34	$50,532	34	$52,057	$1,525	3.0%
		20-24	ND	$42,528	ND	$44,404	$1,877	4.4%
		25-34	18	$51,054	18	$50,697	-$357	-0.7%
		35-44	5	$48,681	5	$57,522	$8,841	18.2%
		45-54	ND	$60,107	ND	$60,672	$565	0.9%
	Different Occupation	Total	49	$49,766	49	$48,986	-$780	-1.6%
		20-24	ND	$41,770	ND	$46,109	$4,339	10.4%
		25-34	21	$49,137	21	$47,528	-$1,609	-3.3%
		35-44	11	$51,545	11	$51,117	-$428	-0.8%
		45-54	ND	$51,690	ND	$49,873	-$1,817	-3.5%
		55-64	ND	$62,200	ND	$60,777	-$1,423	-2.3%

ACW = Average contract wage (from WDE 602).
ND = Non-disclosable due to confidentiality.
Sources: Wyoming Department of Education Contract Staffing Files (WDE 602) and Research & Planning Unemployment Insurance Wage Records.

Table B-1a **Continued from page B5**

Males

District Transition	Occupational Transition	Age Group	2011/12 N	2011/12 ACW	2012/13 N	2012/13 ACW	Wage Change $	Wage Change %
Total	Total	Total	2,185	$61,075	2,129	$60,225	-$850	-1.4%
		20-24	34	$46,537	34	$47,031	$494	1.1%
		25-34	611	$53,027	602	$53,609	$582	1.1%
		35-44	569	$61,783	564	$62,122	$339	0.5%
		45-54	529	$66,197	520	$66,090	-$106	-0.2%
		55-64	415	$66,470	387	$60,893	-$5,577	-8.4%
		65-Up	27	$63,343	22	$62,632	-$711	-1.1%
Left Wyoming Public Schools	Total (2012/13 wage for this group comes from UI Wage Records Database)	Total	162	$59,844	106	$26,036	-$33,808	-56.5%
		20-24	ND	$37,511	ND	$25,068	-$12,443	-33.2%
		25-34	42	$49,442	33	$30,339	-$19,103	-38.6%
		35-44	22	$56,642	17	$34,686	-$21,956	-38.8%
		45-54	24	$63,252	15	$31,938	-$31,314	-49.5%
		55-64	64	$66,689	36	$13,345	-$53,345	-80.0%
		65-Up	ND	$67,608	ND	$67,140	-$468	-0.7%
Retained in Wyoming Public Schools	Total	Total	2,023	$61,174	2,023	$62,017	$843	1.4%
		20-24	31	$47,411	31	$49,156	$1,746	3.7%
		25-34	569	$53,291	569	$54,958	$1,667	3.1%
		35-44	547	$61,990	547	$62,975	$985	1.6%
		45-54	505	$66,337	505	$67,105	$768	1.2%
		55-64	351	$66,430	351	$65,770	-$660	-1.0%
		65-Up	20	$61,850	20	$62,181	$331	0.5%
Same District	Total	Total	1,984	$61,309	1,984	$62,191	$882	1.4%
		20-24	29	$47,664	29	$49,363	$1,698	3.6%
		25-34	547	$53,372	547	$55,123	$1,751	3.3%
		35-44	537	$62,168	537	$63,112	$944	1.5%
		45-54	501	$66,281	501	$67,151	$871	1.3%
		55-64	350	$66,381	350	$65,791	-$590	-0.9%
		65-Up	20	$61,850	20	$62,181	$331	0.5%
	Same occupation	Total	1,859	$61,414	1,859	$62,409	$994	1.6%
		20-24	26	$47,518	26	$49,307	$1,789	3.8%
		25-34	513	$53,384	513	$55,145	$1,761	3.3%
		35-44	498	$62,160	498	$63,169	$1,008	1.6%
		45-54	471	$66,385	471	$67,240	$854	1.3%
		55-64	332	$66,711	332	$66,662	-$49	-0.1%
		65-Up	19	$61,889	19	$62,441	$553	0.9%
	Different Occupation	Total	125	$59,750	125	$58,961	-$788	-1.3%
		20-24	ND	$48,930	ND	$49,843	$913	1.9%
		25-34	34	$53,180	34	$54,784	$1,604	3.0%
		35-44	39	$62,265	39	$62,384	$119	0.2%
		45-54	30	$64,636	30	$65,759	$1,123	1.7%
		55-64	18	$60,290	18	$49,723	-$10,567	-17.5%
		65-Up	ND	$61,116	ND	$57,242	-$3,874	-6.3%
Different District	Total	Total	39	$54,288	39	$53,116	-$1,172	-2.2%
		20-24	ND	$43,732	ND	$46,164	$2,432	5.6%
		25-34	22	$51,294	22	$50,871	-$423	-0.8%
		35-44	10	$52,430	10	$55,642	$3,212	6.1%
		45-54	ND	$73,342	ND	$61,283	-$12,059	-16.4%
		55-64	ND	$83,631	ND	$58,500	-$25,131	-30.0%
	Same occupation	Total	20	$55,067	20	$53,021	-$2,045	-3.7%
		20-24	ND	ND	ND	ND	ND	ND
		25-34	12	$51,067	12	$49,860	-$1,207	-2.4%
		35-44	5	$56,123	5	$57,548	$1,425	2.5%
		45-54	ND	$69,304	ND	$58,121	-$11,183	-16.1%
	Different Occupation	Total	19	$53,468	19	$53,216	-$252	-0.5%
		20-24	ND	$43,732	ND	$46,164	$2,432	5.6%
		25-34	10	$51,565	10	$52,083	$518	1.0%
		35-44	5	$48,737	5	$53,736	$4,999	10.3%
		45-54	ND	$85,458	ND	$70,770	-$14,688	-17.2%
		55-64	ND	$83,631	ND	$58,500	-$25,131	-30.0%

ACW = Average contract wage (from WDE 602).
ND = Non-disclosable due to confidentiality.
Sources: Wyoming Department of Education Contract Staffing Files (WDE 602) and Research & Planning Unemployment Insurance Wage Records.

(Text continued from page B3)

A total of 5,992 did not change either their school district or their occupation with a large proportion (96.4%) falling between the ages of 25 to 64. The category of younger individuals who stayed in the same district regardless of occupation change, on average, increased their average annual wage compared to those who changed districts. There were slight decreases in wages for categories of older individuals who stayed in the same district. These results suggest that as younger individuals continue to gain experience in a single school district their pay step may increase while older individuals are preparing to enter retirement, resulting in a decrease in average wage. Currently, R&P cannot verify whether individuals are preparing to retire (e.g., dropping certain coaching and other activities) or have entered full retirement.

Females who changed both district and occupation (N = 49) saw a total decrease in average wages of -1.6%. Four of the five age categories saw decreases in average annual wages while the category of younger females (20-24) saw a large increase (10.4%). The reason behind these differences in wage change by age category is not yet known but may be related to work/family dynamics. Further, younger females and males who remained in the same district but changed occupation showed significant wage increases, which may indicate that along with an increase in wages due to pay schedule increases, changing jobs held by older teachers who have retired has a positive effect on wage progression.

On average, teachers left employment in public schools for lower annual wages compared to Wyoming workers as a whole. Wyoming wage data is available at http://doe.state.wy.us/LMI/earnings_tables/2013/WR_Demographics2012/Industry/by_industry181.html.

Table B-1b displays the re-employment rate of individuals who left the school district by age and gender. Younger females (ages 20-34) remained employed at higher rates than older females (age 35+). As women continue to postpone the age in which they have children, these differences may be explained by the lower rates of employment at

Table B-1b: **Re-employment Rates for Teachers Who Left Wyoming Public Schools from 2011/12 to 2012/13 by Age and Gender**

	Total			Females			Males		
	Left Public Schools After 2011/12	Employed in Another Industry in 2012/13		Left Public Schools After 2011/12	Employed in Another Industry in 2012/13		Left Public Schools After 2011/12	Employed in Another Industry in 2012/13	
Age Group	N	N	%	N	N	%	N	N	%
20-24	18	17	94.4%	ND	ND		ND	ND	
25-34	141	113	80.1%	99	80	80.8%	42	33	78.6%
35-44	72	50	69.4%	50	33	66.0%	22	17	77.3%
45-54	72	47	65.3%	48	32	66.7%	24	15	62.5%
55-64	230	108	47.0%	166	72	43.4%	64	36	56.3%
65-Up	29	15	51.7%	ND	ND		ND	ND	
Total	**562**	**350**	**62.3%**	**400**	**244**	**61.0%**	**162**	**106**	**65.4%**

ND = Non-disclosable due to confidentiality.

Source: Wyoming Department of Education Contract Staffing Files (WDE 602).

Source: Research & Planning Unemployment Insurance Wage Records.

older ages. Younger women (ages 20-34) may decide that teaching is not the occupation they wish to continue and leave the district for employment in a different industry and occupation.

As seen in Chapter 3, Table 3-4b, teachers experience a decrease in wage if they move from school district employment to another industry. However, those individuals less than 54 years of age see increases in key industries (i.e., natural resources & mining and leisure & hospitality). As seen in Table B-1b, males (65.4%) were more likely to be employed after leaving public schools than females (61.0%). Males ages 35-44 were much more likely (77.3%) to be employed than females (66.0%). These differences in gender may be due to males having higher wage earning opportunities outside public schools in Wyoming's natural resources & mining industry.

Given that gender and age play a role in the rate of re-employment after leaving school districts, the occupation of the teachers leaving the school districts is of interest. For example, R&P has completed research on teaching licensing data (see Appendix A) where certain teachers holding specific endorsements can now be systematically studied to understand public school exit rates.

Change in Occupation

The first section of this appendix outlines the specific transitions (district and occupation) by gender and age group. This section addresses specific occupational transitions within and between districts. The 5,992 individuals who did not change district or occupation were analyzed at the occupational level (see **Table B-2**, page B10). Overall, these individuals experienced an increase in wages of 1.7%. All those who stayed in the same district and occupation in the 10 teacher occupations increased their average annual wage with special education teachers, secondary school (25-2054) having the largest increase (2.2%).

In terms of those who stayed in the same district but changed occupation, all but two individuals increased their average annual wage. As noted in the previous section, this result may be due to teachers increasing their step increases in pay due to experience with the same district. However, those individuals who changed occupations from secondary school to middle school and those who went from middle school to elementary school in both cases saw a slight decrease of 0.3%.

Those who changed districts but remained in the same occupation who were contracted to teach special education in elementary and middle school saw a significant increase in average annual wage (6.6% and 18.9% respectively). This result may indicate that as the need for special education teachers increases around the state, teachers will change districts for an increase in wages when positions become available. Middle and secondary school movers saw slight decreases in average annual wage (3.4% and 2.0% respectively). It should be noted that the number of individuals in the above sample was small so these conclusions should be interpreted with caution.

On average, those who changed both district and occupation from lower to higher grade levels increased their average annual wage while those who changed from a higher to lower grade levels decreased their annual wage. All special education occupations with the exception of those who moved from elementary education to kindergarten increased their annual wage regardless

of grade level. Again, the sample size was relatively small and caution should be used when interpreting results.

Thus far all analyses have involved teaching occupations only (SOC 25-2000). However, teachers often change to an occupation outside of teaching. Teachers who changed from teacher occupations to non-teaching occupations had the largest degree of variability in annual wage. Elementary and secondary school teachers who changed occupations to education administrators had the highest wage increases (31.9% and 26.7% respectively). Conversely, secondary school teachers who changed to coaches and scouts saw a 90.4% decrease in their wages. Further, special education teachers, preschool, kindergarten, and elementary school that changed to all other teachers saw a decrease of 12.0%. These results may be due to full-time teachers entering retirement but continuing to work as coaches or substitute teachers.

Conclusion

Wyoming teachers have significantly higher wages compared to the U.S. and surrounding states. Occupational and district change within the state may explain some of the variability observed in teacher wage progression. This chapter focused on the specific transitions teachers make within the labor market with gender and age playing significant roles in wage progression.

Further study is needed to ascertain consistent patterns regarding the influence of certain transitions and their effect on wages is still uncertain. A teacher who decides to remain in the same district regardless of whether they change occupations seems to allow for steady increases in wages. As mentioned earlier, this result is most likely due to step increases on a district's pay schedule. However, Wyoming school districts vary widely regarding pay schedules and the influence district experience and education have on wage progression. As evidenced from the data presented in this chapter, those teachers who changed districts experienced, on average, a decrease in average annual wage. The differing pay schedules between districts may be an explanation of these decreases.

The cost of recruitment for districts and job seekers can be significant. In order to assuage costs districts can look within their internal labor market for filling vacancies across teaching occupations. District administrators could encourage teachers who are already working in their districts to obtain the credentials needed in order to teach subjects and grade levels that are expected to incur a high recruitment cost in the future. See Appendix A of this publication for a more in-depth analysis of the labor supply of teachers in Wyoming using Professional Teaching Standard Board (PTSB) licensing data.

Future research using administrative databases to explore the specific circumstances for people who change districts or occupations is needed. For instance, if a teacher retires from full-time teaching but remains available as a substitute or coach, he or she will continue to play a role in the district's labor supply. The specific family and work characteristics that determine if and when a teacher will change occupations or change districts should be a focus of future research. Family (e.g., spouse's career, children) and personal (e.g., retirement, health) influences are key factors of a person's decision to change occupations or employers.

Table B-2: **Individuals Who Transitioned from One Teaching Occupation to Another Within Wyoming Public Schools, 2011/12 to 2012/13**

		Occupation		Total		Average Contract Wage		Wage Change	
		2011/12	2012/13	N	%	11/12	12/13	$	%
Same District	Same Occupation	Secondary School Teachers, Except Special and Career/Technical Education (25-2031)	Secondary School Teachers, Except Special and Career/Technical Education (25-2031)	1,662	27.7%	$60,534	$61,359	$824	1.4%
		Elementary School Teachers, Except Special Education (25-2021)	Elementary School Teachers, Except Special Education (25-2021)	1,633	27.3%	$56,256	$57,265	$1,008	1.8%
		Middle School Teachers, Except Special and Career/Technical Education (25-2022)	Middle School Teachers, Except Special and Career/Technical Education (25-2022)	1,075	17.9%	$59,185	$60,354	$1,169	2.0%
		Career/Technical Education Teachers, Secondary School (25-2032)	Career/Technical Education Teachers, Secondary School (25-2032)	379	6.3%	$60,726	$61,872	$1,145	1.9%
		Special Education Teachers, Secondary School (25-2054)	Special Education Teachers, Secondary School (25-2054)	299	5.0%	$58,130	$59,409	$1,278	2.2%
		Special Education Teachers, Middle School (25-2053)	Special Education Teachers, Middle School (25-2053)	297	5.0%	$58,337	$59,530	$1,192	2.0%
		Kindergarten Teachers, Except Special Education (25-2012)	Kindergarten Teachers, Except Special Education (25-2012)	290	4.8%	$54,226	$55,131	$905	1.7%
		Special Education Teachers, Preschool, Kindergarten, and Elementary School (25-2041)	Special Education Teachers, Preschool, Kindergarten, and Elementary School (25-2041)	283	4.7%	$57,265	$58,114	$849	1.5%
		Career/Technical Education Teachers, Middle School (25-2023)	Career/Technical Education Teachers, Middle School (25-2023)	61	1.0%	$61,219	$62,159	$940	1.5%
		Preschool Teachers, Except Special Education (25-2011)	Preschool Teachers, Except Special Education (25-2011)	13	0.2%	$46,974	$47,544	$570	1.2%
		Total	**Total**	**5,992**	**100.0%**	**$58,428**	**$59,431**	**$1,003**	**1.7%**
	Different Occupation	Elementary School Teachers, Except Special Education (25-2021)	Middle School Teachers, Except Special and Career/Technical Education (25-2022)	231	30.1%	$59,632	$60,635	$1,003	1.7%
		Secondary School Teachers, Except Special and Career/Technical Education (25-2031)	Middle School Teachers, Except Special and Career/Technical Education (25-2022)	56	7.3%	$60,527	$60,364	-$163	-0.3%
		Kindergarten Teachers, Except Special Education (25-2012)	Elementary School Teachers, Except Special Education (25-2021)	52	6.8%	$50,712	$52,106	$1,394	2.7%
		Kindergarten Teachers, Except Special Education (25-2012)	Middle School Teachers, Except Special and Career/Technical Education (25-2022)	52	6.8%	$57,727	$59,598	$1,870	3.2%
		Middle School Teachers, Except Special and Career/Technical Education (25-2022)	Elementary School Teachers, Except Special Education (25-2021)	34	4.4%	$53,967	$53,831	-$136	-0.3%
		Middle School Teachers, Except Special and Career/Technical Education (25-2022)	Secondary School Teachers, Except Special and Career/Technical Education (25-2031)	32	4.2%	$57,847	$60,290	$2,443	4.2%
		Elementary School Teachers, Except Special Education (25-2021)	Kindergarten Teachers, Except Special Education (25-2012)	30	3.9%	$51,192	$53,161	$1,968	3.8%
		Special Education Teachers, Preschool, Kindergarten, and Elementary School (25-2041)	Elementary School Teachers, Except Special Education (25-2021)	27	3.5%	$51,434	$53,506	$2,072	4.0%
		Special Education Teachers, Middle School (25-2053)	Special Education Teachers, Preschool, Kindergarten, and Elementary School (25-2041)	19	2.5%	$54,112	$54,931	$819	1.5%
		Special Education Teachers, Secondary School (25-2054)	Special Education Teachers, Middle School (25-2053)	15	2.0%	$61,561	$62,119	$558	0.9%
		Balance		219	28.6%				
		Total	**Total**	**767**	**100.0%**	**$57,425**	**$58,040**	**$614**	**1.1%**

ND = Non-disclosable due to confidentiality.
Source: Wyoming Department of Education Contract Files (WDE 602).

(Table continued on page B11)

(Table continued from page B10)

Table B-2: **Individuals Who Transitioned from One Teaching Occupation to Another Within Wyoming Public Schools, 2011/12 to 2012/13**

	Occupation		Total		Average Contract Wage		Wage Change	
	2011/12	2012/13	N	%	11/12	12/13	$	%
Same District – Different (Nonteaching) Occupation[a]	Elementary School Teachers, Except Special Education (25-2021)	All Other Teachers, Primary, Secondary, and Adult (25-3999)	11		$63,110	$63,302	$192	0.3%
	Elementary School Teachers, Except Special Education (25-2021)	Training and Development Specialists (13-1151)	10		$62,451	$63,889	$1,437	2.3%
	Elementary School Teachers, Except Special Education (25-2021)	Education Administrators, Elementary and Secondary School (11-9032)	6		$60,787	$80,149	$19,363	31.9%
	Secondary School Teachers, Except Special and Career/Technical Education (25-2031)	Education Administrators, Elementary and Secondary School (11-9032)	5		$61,090	$77,379	$16,289	26.7%
	Middle School Teachers, Except Special and Career/Technical Education (25-2022)	Training and Development Specialists (13-1151)	5		$60,821	$56,125	-$4,696	-7.7%
	Special Education Teachers, Secondary School (25-2054)	Educational, Career/Technical, and School Counselors (21-1012)	5		$65,965	$67,732	$1,766	2.7%
	Secondary School Teachers, Except Special and Career/Technical Education (25-2031)	Coaches and Scouts (27-2022)	ND		$49,434	$4,765	-$44,670	-90.4%
	Special Education Teachers, Preschool, Kindergarten, and Elementary School (25-2041)	All Other Teachers, Primary, Secondary, and Adult (25-3999)	ND		$52,006	$45,780	-$6,226	-12.0%
	Secondary School Teachers, Except Special and Career/Technical Education (25-2031)	Educational, Guidance, School, and Vocational Counselors (21-1012)	ND		$68,032	$65,577	-$2,455	-3.6%
	Special Education Teachers, Preschool, Kindergarten, and Elementary School (25-2041)	Educational, Guidance, School, and Vocational Counselors (21-1012)	ND		$58,251	$58,638	$387	0.7%

[a]Non-teaching occupations within the same district are a subset of different occupations within the same district and are included in the total of 767 on page B10.

ND = Non-disclosable due to confidentiality.
Source: Wyoming Department of Education Contract Files (WDE 602).

(Table continued on page B12)

(Table continued from page B11)

Table B-2: **Individuals Who Transitioned from One Teaching Occupation to Another Within Wyoming Public Schools, 2011/12 to 2012/13**

		Occupation		Total		Average Contract Wage		Wage Change	
		2011/12	2012/13	N	%	11/12	12/13	$	%
Different District	Same Occupation	Secondary School Teachers, Except Special and Career/Technical Education (25-2031)	Secondary School Teachers, Except Special and Career/Technical Education (25-2031)	24	44.4%	$55,408	$54,283	-$1,125	-2.0%
		Elementary School Teachers, Except Special Education (25-2021)	Elementary School Teachers, Except Special Education (25-2021)	18	33.3%	$48,530	$49,936	$1,407	2.9%
		Middle School Teachers, Except Special and Career/Technical Education (25-2022)	Middle School Teachers, Except Special and Career/Technical Education (25-2022)	ND	ND	$53,394	$51,567	-$1,828	-3.4%
		Kindergarten Teachers, Except Special Education (25-2012)	Kindergarten Teachers, Except Special Education (25-2012)	ND	ND	$46,250	$48,140	$1,890	4.1%
		Special Education Teachers, Middle School (25-2053)	Special Education Teachers, Middle School (25-2053)	ND	ND	$42,788	$50,854	$8,067	18.9%
		Special Education Teachers, Preschool, Kindergarten, and Elementary School (25-2041)	Special Education Teachers, Preschool, Kindergarten, and Elementary School (25-2041)	ND	ND	$61,700	$65,750	$4,050	6.6%
		Special Education Teachers, Secondary School (25-2054)	Special Education Teachers, Secondary School (25-2054)	ND	ND	$55,955	$55,600	-$355	-0.6%
		Total	**Total**	**54**	**100.0%**	**$52,211**	**$52,414**	**$203**	**0.4%**
	Different Occupation	Secondary School Teachers, Except Special and Career/Technical Education (25-2031)	Middle School Teachers, Except Special and Career/Technical Education (25-2022)	12	17.6%	$51,670	$51,098	-$572	-1.1%
		Elementary School Teachers, Except Special Education (25-2021)	Middle School Teachers, Except Special and Career/Technical Education (25-2022)	8	11.8%	$44,500	$44,794	$294	0.7%
		Middle School Teachers, Except Special and Career/Technical Education (25-2022)	Elementary School Teachers, Except Special Education (25-2021)	ND	ND	$53,061	$52,183	-$879	-1.7%
		Middle School Teachers, Except Special and Career/Technical Education (25-2022)	Secondary School Teachers, Except Special and Career/Technical Education (25-2031)	ND	ND	$51,866	$53,049	$1,184	2.3%
		Special Education Teachers, Secondary School (25-2054)	Special Education Teachers, Middle School (25-2053)	ND	ND	$56,368	$56,498	$130	0.2%
		Special Education Teachers, Secondary School (25-2054)	Special Education Teachers, Preschool, Kindergarten, and Elementary School (25-2041)	ND	ND	$50,316	$49,647	-$669	-1.3%
		Special Education Teachers, Middle School (25-2053)	Special Education Teachers, Secondary School (25-2054)	ND	ND	$46,037	$49,438	$3,402	7.4%
		Kindergarten Teachers, Except Special Education (25-2012)	Elementary School Teachers, Except Special Education (25-2021)	ND	ND	$44,900	$47,375	$2,475	5.5%
		Elementary School Teachers, Except Special Education (25-2021)	Kindergarten Teachers, Except Special Education (25-2012)	ND	ND	$56,673	$55,641	-$1,032	-1.8%
		Special Education Teachers, Middle School (25-2053)	Special Education Teachers, Preschool, Kindergarten, and Elementary School (25-2041)	ND	ND	$42,853	$44,423	$1,570	3.7%
		Balance		48	70.6%				
		Total	**Total**	**68**	**100.0%**	**$50,800**	**$50,168**	**-$632**	**-1.2%**

ND = Non-disclosable due to confidentiality.
Source: Wyoming Department of Education Contract Files (WDE 602).

Research & Planning
Wyoming DWS

Wyoming Department of Workforce Services
Research & Planning
P.O. Box 2760
Casper, WY 82601

Official Business
Penalty for Private Use $300
Return Service Requested

To: Legislative Service Office

From: Christiana Stoddard, Ph. D.

Date: October 17th, 2013

RE: Certification of Cost Pressures Report

I have reviewed the Current Status of Cost Pressures on Teacher Salaries In Wyoming, the Fall 2013 report prepared by the Wyoming Department of Workforce Services. This report continues the series of Cost Pressure initiated and reported in Fall 2011, prepared initially by myself at the request of the Legislative Service Office. I consulted with the Department of Workforce Services for the current report to insure consistency with the previous reports and analyses. DWS is transitioning to the use of proprietary data sources, so some of the data sources in the current report vary from previous reports. However, I certify that the methods and analysis of the current report and are appropriate for monitoring the cost pressures on teacher salaries in Wyoming. I concur with its findings and conclusions.

Wyoming Department of Education

Richard Crandall, Director
Hathaway Building, 2nd Floor, 2300 Capitol Avenue
Cheyenne, WY 82002
Phone: 307-777-7675 | Fax: 307-777-6234 | Website: edu.wyoming.gov

Date: October 24, 2013

To: Members, Joint Appropriations Interim Committee
Members, Joint Education Interim Committee

From: Jed Cicarelli, School Foundation Program
Wyoming Department of Education

Subject: Continued Review of Educational Resources in Wyoming, 2005-06 through 2012-13, Report Update

In accordance with W.S. 21-13-309(u), the Wyoming Department of Education (WDE) has completed the fifth annual "Continued Review of Educational Resources in Wyoming" (CRERW) report. This memo provides the Legislature with an update on the allocation of school resources in Wyoming school districts as compared to actual funding, using preliminary 2012-13 data submitted by school districts.

The CRERW report provides a comparative analysis of model generated resources and actual district staffing and expenditure data. The WDE collaborates with the Legislative Service Office, the School Finance Data Advisory Committee, school districts and the public to discuss and implement changes to the methodology and design of the CRERW report. Continuing with the interactive web report format, the current version of the report is available at the following link: https://portals.edu.wyoming.gov/Reports/Public/wde-reports-2012/finance/crerw-v2.

Report History

In 2007 and 2008, Lawrence O. Picus & Associates provided the Legislature and the WDE with a snapshot look at the use of resources across more than 300 schools in the state that required an in-person visit to all of these schools[1]. The CRERW report expands on the original analysis to provide stakeholders with a historical look at resource allocations and deployment, by model component, since the 2005 recalibration. The report contains data and information that comes almost exclusively from the WDE's information management system and provides timely and quality information for the Legislature to make informed school finance decisions.

Summary of Changes

The most recent update includes the addition of preliminary fiscal year 2012-13 district and model data. As part of the ongoing effort to improve data collection processes, the WDE has worked closely with stakeholders to refine and improve data collection and reporting methods utilized by the CRERW report.

[1] Picus, Lawrence O., et.al. Implementing School Finance Adequacy: School Level Resource Use in Wyoming Following Adequacy-Oriented Finance Reform. June 30, 2008.

The WDE is committed to the process of reformatting the existing online version of the CRERW report to provide users with additional functionality. The most recent release of the online report provides a more "user-friendly" navigation, reducing the use of hyperlinks to navigate the report.

Observations

Several attachments containing data from the CRERW report are included with this memo, providing state-level resource use comparisons by model component. The data below summarizes observations by model component along with references to the accompanying table(s).

ADM & Demographics

- Average Daily Membership (ADM), representing the primary input in the funding model, has continued to rise every year since the 2005 recalibration to a statewide total of 89,826 in 2012-13 (tableI-1).
- The total number of schools increased slightly from the previous year to a total of 351 in 2012-13, yet remains below the total of 362 in school year 2004-05 (table I-2).
- The proportion of students eligible for the federal free/reduced lunch program or designated as English Language Learners (ELL) remained relatively constant over the previous year. The percentage of students receiving special education services decreased slightly to 14.0% for the 2012-13 school year (table II-1).
- According to data from the National Center for Education Statistics[2], Wyoming experienced a moderate increase in students eligible for the free/reduced lunch program in 2010-11, consistent with other states in the region. Wyoming remains below the national level and together with South Dakota is the second lowest in the region (table II-2).

Staffing Analysis

- The funding model provided approximately 608 more FTE teachers than employed by Wyoming school districts during 2012-13 school year. While districts continue to employ fewer teachers than provided for in the funding model, the variance between reported staffing data and model generated teachers has decreased by nearly 50 FTEs from the prior year (table III-4).
- Elementary schools continue to employ fewer teachers than provided for in the model; however, staffing data reported for the 2012-13 school year shows that the overall decrease in the variance between reported teaching staff and model generated positions is primarily a result of the increase in teachers hired at the elementary level (table III-E.0).

[2] U.S. Department of Education, National Center for Education Statistics, "Digest of Education Statistics: 2012"

- Wyoming schools employed 158 fewer certified librarians than provided by the funding model. Accounting for the additional 226 non-certified media technology staff, the data suggests districts continue to use media technology staff to service the library/media centers (table III-4).
- Wyoming school districts continue to utilize far fewer certified tutors than are provided for in the funding model. Approximately 236 fewer certified tutors were employed by Wyoming schools, representing a four year trend of an increasing variance to model funded positions (Table III-4).
- Although to a lesser extent than reported for previous years, Wyoming schools continue to utilize non-certified instructional aides, primarily in elementary schools, a resource not allocated within the funding model (table III-4).
- For school year 2012-13, school districts employed approximately 43 more district secretarial/clerical staff than the funding model provides (table III-7). The decrease in reported staff for 2011-12 and 2012-13 is attributable to refinements in staff data reporting that specifically identifies staff funding sources (i.e. state versus federal funds) allowing for the exclusion of non-model funded secretarial and clerical staff

Class Sizes

During the 2010 recalibration process, members of the Select Committee on School Finance Recalibration asked for an analysis that reflects "real" experiences in Wyoming's small, medium and large districts. The concern has been that certain numbers in large districts would mask realities in small districts. Average class sizes reported in CRERW report versions prior to 2009-10 were identified as class-centric averages, rather than student-centric averages required for accurate analysis. Class-centric averages were calculated by summing the student counts in all classes and dividing by the total number of classes. Student-centric average class sizes, used in report versions 2009-10 and beyond, are calculated by summing the class size (or average class size) attended by each student and dividing by the total number of students[3]. At its core, the student-centric approach consists of identifying the observed student-to-teacher ratio experienced by each student, and then calculating the average of these observations. Class size analysis within the CRERW report utilizes the student-centric approach for grade bands as they relate to the funding model.

House Enrolled Act 98 of the 2011 general session implemented the requirement that districts maintain an average student-teacher ratio of 16:1 for all classes in kindergarten through the third grade[4]. While W.S. 21-13-307(a)(iv) requires a 16:1 ratio for grades K-3, the class size calculations contained within the CRERW report reflect class size ratios for all grades based on school configuration. Additional information and analysis specific to the K-3 grade band and W.S. 21-13-307(a)(iv) can be found at the following link:

[3] Strang, Gilbert. Calculus. Wellesley-Cambridge Press. 1991.
[4] For the 2012-13 school year, 22 school districts were granted waivers for the 16:1 requirement pursuant to W.S. 21-13-307(a)(iv).

http://edu.wyoming.gov/DataInformationAndReporting/16_1_Waiver_K_3_Student_Teacher_Ratio.aspx

The funding model provides staff resources for non-alternative schools with model ADM greater than 49 at a ratio of 16 students per teacher for grades kindergarten through five and 21 students per teacher for grades six through twelve. In cases where grade band levels have 49 or fewer model ADM, the model provides minimum teacher resources of one teacher for every seven model ADM. Average "core" class sizes in elementary, middle, high and alternative schools are listed in table IV-5.

- Elementary schools average less than 19 students across all elementary schools (table IV-1).
- Average class sizes in elementary schools have decreased slightly since 2011-12 (table IV-1). The decrease is likely a result of district efforts to meet the 16:1 mandate[5].
- Average core class sizes of middle schools decreased from 20.77 in school year 2011-12 to 20.29 for 2012-13 (table IV-5).
- Average core class sizes of high schools decreased slightly to 19.26 for 2012-13 (table IV-5).
- Small and midsize elementary schools have average class sizes lower than the 1 teacher for every 7 and 16, respectively, students provided for in the funding model. Large elementary schools have average class sizes of 18.77 students, decreasing by .40 from the previous year (table IV-1).

Salaries Analysis

- Wyoming's 2012-13 average teacher salary was virtually unchanged compared to 2011-12. Beginning with the first year of the 2005 recalibrated model, Wyoming's average district salaries continue to exceeded the average salaries provided for in the funding model (table V-I).
- Wyoming's average teacher salary of $57,920 (according to NEA estimates)[6] was higher than all of the regional states and higher than the national average (16th highest in the nation) on an unadjusted basis (table V-2). On a cost adjusted basis, Wyoming average teacher salaries are the seventh highest in the nation, down from the sixth highest in 2011-12 and second highest in 2010-11 (table V-2).
- When comparing other staff category salaries, all have increased a minimum of 28 percent from 2005-06, with the highest increase coming to business managers with over 50 percent (table V-8).

[5] W.S. 21-13-307(a)(iv)
[6] National Education Association, "Rankings & Estimates, Rankings of the States 2012 and Estimates of School Statistics 2013" December 2012.

- Comparing 2012-13 salaries to the first year of funding under the recalibrated model (2006-07), average salaries have increased 11 to 26 percent, with the highest increase in the superintendent and library media technician categories (tables V-6 and V-9).

Expenditures Analysis

- Wyoming's estimated current expenditures per enrolled student in 2012-13 were sixth highest in the nation and over $5,900 per student higher than the next highest state in the region[6] (table VI-6).
- Funding for "non-staff" categories (i.e., professional development, technology and supplies, central office and miscellaneous costs, etc.) in the funding model has continued to exceed district-reported expenditures every year since the 2005 recalibration (table VI-8).

A more in-depth look at resource use in Wyoming school districts by model component (district- or school-level) can be accessed via the interactive web report at the following link: https://portals.edu.wyoming.gov/Reports/Public/wde-reports-2012/finance/crerw-v2.

Summary of Findings

Overall, trends have remained relatively unchanged from previous versions of the CRERW report. The following is a summary of findings:

- Elementary schools employ fewer teachers than provided for in the funding model resulting in larger average class sizes than communicated throughout several rounds of professional judgment panels and suggested through research;
- Large elementary schools employ a greater number of aides than generated by the funding model;
- School districts do not employ tutors to the extent they are allocated in the funding model;
- Wyoming's average teacher salaries remain among the highest in the nation and would appear to be extremely competitive in attracting and retaining the best and brightest teachers;
- Wyoming expenditures per pupil are among the highest in the nation; and
- Funding for non-staff categories in the funding model continue to exceed district-reported expenditures.

Next Steps

The WDE will continue to work with stakeholders to indentify and implement opportunities for refinement and detail. Work will continue to develop a district summary report containing data from each of the major components of the CRERW report. Additionally, an updated version of the online report will be released in the coming months to include adjudicated 2012-13 data.

The WDE recognizes the need for reliable school finance data to drive informed policy decisions and will continue to work with stakeholders to identify and implement opportunities for improvement. The full CRERW report, updated through 2011-12, can be found on the WDE website at the following link: https://portals.edu.wyoming.gov/Reports/Public/wde-reports-2012/finance/crerw-v2.

Please contact me at 307-777-5808 or jed.cicarelli@wyo.gov if you require any additional information.

Cc: Dave Nelson, LSO
Matthew Willmarth, LSO

Table I-1: Average Daily Membership (ADM) by Type of School

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Total ADM	83,078	83,338	83,937	84,771	85,958	86,538	87,334	88,636	89,827
Percent Change	-1.0 %	0.3 %	0.7 %	1.0 %	1.4 %	0.7 %	0.9 %	1.5 %	1.3 %
Elementary	39,663	39,845	40,547	41,648	42,683	43,220	43,795	44,580	45,452
Middle / Junior High	17,885	17,959	17,801	17,532	17,378	17,559	17,393	17,375	17,501
High	22,000	21,977	21,948	21,528	21,232	20,985	21,360	21,846	22,360
K-12	461	520	509	702	904	1,059	1,185	1,191	1,196
K-8	1,108	982	1,070	1,077	1,112	1,041	1,062	1,112	1,102
Secondary	921	941	941	1,238	1,571	1,638	1,654	1,591	1,355
Alternative	1,039	1,115	1,121	1,046	1,077	1,035	886	941	862

Source: *WDE600 – WISE Attendance and Membership Report*

Table I-2: Number of Schools by Type of School

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Number of Schools	362	363	359	354	347	349	348	348	351
Elementary	198	197	191	190	188	190	190	190	193
Middle / Junior High	64	66	66	62	59	59	58	58	59
High	59	60	60	56	53	53	53	53	54
K-12	3	3	3	5	6	7	8	8	8
K-8	18	16	18	18	16	15	14	14	13
Secondary	5	5	5	7	9	9	9	9	8
Alternative	15	16	16	16	16	16	16	16	16

Source: *WDE608 - School Information Update*

Table II-1: Average Statewide School Demographics

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Percent Free & Reduced Lunch	32.0%	30.0%	30.1%	30.9%	35.0%	36.9%	37.0%	37.8%
Percent ELL	3.7%	3.6%	3.2%	2.9%	2.4%	2.9%	3.0%	3.0%
Percent Special Ed	13.9%	13.9%	13.8%	14.0%	14.2%	14.2%	14.3%	14.0%
Time Spent in Mainstream Classroom	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**
>80%	7.8%	8.0%	8.2%	8.4%	8.5%	8.7%	9.0%	9.0%
40% - 79%	4.5%	4.3%	4.0%	4.1%	4.1%	4.0%	4.0%	3.7%
<40%	1.3%	1.2%	1.2%	1.2%	1.2%	1.1%	1.0%	1.0%
% Other Placement	0.4%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%	0.3%

Source: *WDE425 – WISE Special Education Fall Snapshot*; *WDE684 – WISE Certified/Course/Student Data*

Table II-2: Number and Percentage of Public School Students Eligible for Free or Reduced-Price Lunch

State or Jurisdiction	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
United States	42.0%	42.4%	42.9%	44.6%	47.5%	48.1%
Colorado	33.1%	34.2%	34.8%	35.4%	38.4%	39.9%
Idaho	38.1%	37.6%	37.2%	39.7%	43.0%	45.0%
Montana	35.1%	35.6%	36.2%	37.0%	40.0%	41.2%
Nebraska	34.7%	36.5%	37.4%	38.5%	41.3%	42.6%
North Dakota	29.6%	30.3%	31.2%	31.6%	33.8%	31.7%
South Dakota	32.0%	30.3%	29.9%	35.3%	37.6%	37.1%
Utah	32.3%	30.9%	32.8%	31.6%	42.1%	38.2%
Wyoming	31.6%	29.7%	30.0%	31.0%	35.2%	37.1%

Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Public Elementary/Secondary School Universe Survey," 2000-01, through 2010-11.
Table 45/46: Number and percentage of public school students eligible for free or reduced-price lunch, by state: 2000-01 through 2010-11.
http://nces.ed.gov/programs/digest/d12/tables/dt12_046.asp

Table III-4: Statewide School and District Level Differences in Actual to Model Staffing

	2008-09			2009-10			2010-11			2011-12			2012-13		
	Model	**Actual**	**Diff.**	**Model**	**Actual**	**Diff.**	**Model**	**Actual**	**Diff.**	**Model**	**Actual**	**Diff.**	**Model**	**Actual**	**Diff.**
Teacher	6,430.0	5,865.0	(565.0)	6,516.3	5,933.0	(583.3)	6,576.6	5,915.0	(661.6)	6,633.6	5,977.1	(656.4)	6,707.6	6,100.1	(607.5)
Librarian	268.4	130.7	(137.7)	271.6	127.8	(143.8)	274.3	125.8	(148.5)	277.0	124.2	(152.8)	279.9	121.1	(158.7)
Media Tech Staff	130.9	389.6	258.8	130.9	396.7	265.8	130.5	398.6	268.1	132.5	368.6	236.1	134.1	360.3	226.1
Pupil Support	486.6	675.4	188.8	494.5	684.0	189.4	512.3	594.1	81.8	526.6	498.1	(28.5)	538.1	494.9	(43.2)
Aide	593.5	989.0	395.5	602.0	1,005.8	403.8	608.0	992.9	384.9	615.8	875.4	259.6	624.8	831.9	207.1
School Admin	417.0	347.0	(70.0)	412.3	352.2	(60.0)	413.6	354.2	(59.4)	415.4	360.0	(55.4)	417.2	366.8	(50.4)
Secretary and Clerical - School	666.5	597.0	(69.5)	671.9	609.5	(62.3)	677.2	631.6	(45.5)	684.7	629.8	(54.9)	693.5	621.9	(71.6)
Tutor	321.7	104.0	(217.7)	329.6	173.8	(155.8)	347.9	180.9	(167.0)	359.7	147.5	(212.2)	369.1	133.4	(235.7)
Teacher - Not of Record	0.0	83.5	83.5	0.0	88.5	88.5	0.0	95.7	95.7	0.0	79.5	79.5	0.0	76.6	76.6
Instructional Facilitators	308.2	292.6	(15.6)	270.0	276.9	6.9	260.7	290.6	29.9	259.3	279.1	19.7	263.2	238.4	(24.9)
Total	9,622.7	9,473.8	(149.0)	9,699.0	9,648.1	(50.9)	9,801.1	9,579.3	(221.8)	9,904.4	9,339.2	(565.2)	10,027.6	9,345.4	(682.2)

Source: *WDE602 – WISE School District Staff Member Collection*; *Statewide Payment Models FY2006 through FY2013*

Table III-7: Statewide District-Level Difference in Actual to Model Staffing

	2008-09			2009-10			2010-11			2011-12			2012-13		
	Model	**Actual**	**Diff.**	**Model**	**Actual**	**Diff.**	**Model**	**Actual**	**Diff.**	**Model**	**Actual**	**Diff.**	**Model**	**Actual**	**Diff.**
Central Office Admin	268.9	398.2	129.3	271.1	413.1	142.0	272.9	348.1	75.1	274.9	311.6	36.7	277.2	317.9	40.8
Sec & Clerical - District	304.5	529.9	225.4	307.4	542.5	235.1	309.7	506.3	196.6	312.1	378.4	66.3	314.8	358.3	43.6
O&M	1,473.7	1,237.2	(236.6)	1,473.0	1,285.7	(187.4)	1,482.5	1,304.3	(178.2)	1,502.9	1,305.2	(197.7)	1,507.6	1,298.8	(208.8)
Total	2,047.1	2,165.2	118.1	2,051.6	2,241.3	189.7	2,065.1	2,158.6	93.5	2,089.9	1,995.2	(94.7)	2,099.5	1,975.0	(124.4)

Source: *WDE602 – WISE School District Staff Member Collection; Statewide Payment Models FY2006 through FY2013*

Table III-E.0: Statewide Elementary Schools Staffing Differences from the Funding Model

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Number of Schools	191.0	190.0	188.0	190.0	190.0	190.0	193.0
Teacher	(437.8)	(473.7)	(493.5)	(505.3)	(558.4)	(566.2)	(501.4)
Librarian	(89.9)	(90.0)	(92.6)	(96.0)	(98.0)	(101.0)	(105.1)
Media Tech Staff	120.8	127.5	127.7	130.7	133.3	121.0	127.3
Pupil Support	104.9	147.0	149.7	151.0	79.9	11.7	8.0
Aide	337.8	326.1	317.4	327.2	307.6	247.9	212.5
School Admin	(55.3)	(54.5)	(53.2)	(49.9)	(49.6)	(47.7)	(45.1)
Secretary and Clerical - School	(62.2)	(68.5)	(68.1)	(66.8)	(65.0)	(64.4)	(67.2)
Tutor	(122.8)	(116.6)	(119.7)	(77.5)	(93.1)	(124.6)	(128.9)
Teacher - Not of Record	2.2	52.1	63.8	57.8	60.5	46.6	47.8

Source: *WDE602 – WISE School District Staff Member Collection*; *Statewide Payment Models FY2006 through FY2013*; *WDE608 - School Information Update*

Table IV-1: Average Class Size in Elementary Schools by School Size

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Elementary Schools	19.76	19.43	19.48	19.55	19.56	19.12	19.18	18.88	18.56
Small Schools (≤49 ADM)	6.25	5.66	5.43	5.79	5.56	6.35	6.19	6.52	6.29
Midsize Schools (>49-96 ADM)	15.70	14.41	13.84	15.46	13.91	13.52	13.43	12.78	15.90
Large Schools (>96 ADM)	20.16	19.80	19.85	19.88	19.89	19.41	19.46	19.17	18.77
Large Schools Q1	18.64	18.18	18.62	18.24	18.28	18.35	18.71	18.06	18.15
Large Schools Q2	19.31	18.35	18.39	19.01	18.87	18.37	18.29	17.91	17.12
Large Schools Q3	20.42	20.24	20.21	20.19	20.26	19.70	20.02	19.88	19.30
Large Schools Q4	21.09	20.90	20.93	20.85	20.86	20.26	20.08	19.87	19.59

Source: *WDE634 – Class Size; WDE638 Course Inventory; WDE684 Teacher/Course/Student Enrollment*

Table IV-5: Average Class Sizes in "Core" Classes

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Elementary Schools	19.76	19.43	19.48	19.55	19.56	19.12	19.18	18.88	18.56
Middle Schools	19.61	19.40	19.28	18.94	19.29	18.65	18.75	20.77	20.29
High Schools	20.86	20.34	19.94	19.86	19.50	18.88	19.44	19.37	19.26
Alternative Schools	12.83	12.79	11.82	11.92	15.72	9.60	8.66	8.88	9.96

Source: *WDE634 – Class Size*; *WDE638 Course Inventory*; *WDE684 Teacher/Course/Student Enrollment*

Table V-1: Comparison of District Average Teacher Salaries and Funding Model Average Salaries

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
District Average Regular Salary	$43,464	$50,892	$52,943	$54,541	$55,779	$56,048	$56,734	$56,740
Funding Model Average Salary		$45,126	$46,840	$48,854	$50,662	$50,662	$50,662	$50,662
Difference		$5,766	$6,103	$5,687	$5,117	$5,386	$6,072	$6,078
% Difference		12.8%	13.0%	11.6%	10.1%	10.6%	12.0%	12.0%

Source: *WDE602 – WISE School District Staff Member Collection*; *Statewide Payment Models FY2006 through FY2013*

Table V-2[1]: Estimated Average Teacher Salaries In Wyoming and Regional States, Adjusted by the Comparable Wage Index

State	Average Salary (Estimated 2012-13)	National Rank (Unadjusted)	CWI Adjusted	National Rank (Adjusted)
Wyoming	$57,920	16	$64,699	7
Colorado	$49,844	27	$52,597	42
Idaho	$49,734	34	$60,672	16
Montana	$49,999	35	$63,185	9
Nebraska	$48,931	32	$58,400	23
South Dakota	$39,580	51	$50,340	47
Utah	$49,393	38	$53,231	39
United States	$56,383		$56,383	

Source: National Education Association, NCES Comparable Wage Index
Summary Table G: Estimated Average Annual Salaries of Total Instructional Staff and of Classroom Teachers, 2011-12 (Revised) and 2012-13
http://www.nea.org/assets/img/content/NEA_Rankings_And_Estimates-2013_(2).pdf
Extending the NCES CWI – Bush School of Government & Public Service
http://bush.tamu.edu/research/faculty/taylor_CWI/
[1] These are estimated average teacher salaries calculated by the National Education Association (NEA). As such, actual reported average teacher salaries in Wyoming (Table V-1) differ from NEA estimates (Table V-2)

Table V-6: Comparison of District Average Superintendent Salaries and Funding Model Average Salaries

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
District Average Regular Salary	$95,663	$107,077	$115,295	$120,209	$124,261	$126,965	$130,071	$133,877
Funding Model Average Salary		$95,211	$98,829	$103,079	$106,893	$106,893	$106,893	$106,893
Difference		$11,866	$16,466	$17,130	$17,368	$20,072	$23,179	$26,984
% Difference		12.5%	16.7%	16.6%	16.3%	18.8%	21.7%	25.2%

Source: *WDE602 – WISE School District Staff Member Collection*; *Statewide Payment Models FY2006 through FY2013*

Table V-8: Comparison of District Average Business Manager Salaries and Funding Model Average Salaries

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
District Average Regular Salary	$59,187	$72,854	$77,777	$81,695	$83,009	$85,130	$89,197	$89,304
Funding Model Average Salary		$64,202	$66,642	$69,507	$72,079	$72,079	$72,079	$72,079
Difference		$8,652	$11,136	$12,188	$10,930	$13,051	$17,118	$17,225
% Difference		13.5%	16.7%	17.5%	15.2%	18.1%	23.8%	23.9%

Source: *WDE602 – WISE School District Staff Member Collection*; *Statewide Payment Models FY2006 through FY2013*

Table V-9: Comparison of District Average Library Media Tech. Salaries and Funding Model Average Salaries

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
District Average Regular Salary	$34,166	$39,071	$42,023	$44,581	$44,912	$45,490	$48,161	$49,285
Funding Model Average Salary		$38,747	$40,219	$41,949	$43,501	$43,501	$43,501	$43,501
Difference		$324	$1,804	$2,633	$1,411	$1,989	$4,660	$5,784
% Difference		0.8%	4.5%	6.3%	3.2%	4.6%	10.7%	13.3%

Source: *WDE602 – WISE School District Staff Member Collection*; *Statewide Payment Models FY2006 through FY2013*

Table V-10: Comparison of District Average Secretary/Clerical Staff Salaries and Funding Model Average Salaries

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
District Average Regular Salary	$23,859	$28,145	$29,494	$30,930	$31,962	$32,229	$32,362	$32,623
Funding Model Average Salary		$27,382	$28,423	$29,645	$30,742	$30,742	$30,742	$30,742
Difference		$763	$1,071	$1,285	$1,220	$1,487	$1,620	$1,881
% Difference		2.8%	3.8%	4.3%	4.0%	4.8%	5.3%	6.1%

Source: *WDE602 – WISE School District Staff Member Collection*; *Statewide Payment Models FY2006 through FY2012*

Table VI-6: Current Expenditures Per Pupil, Estimated

State	Current Expenditures per Pupil Enrolled (Estimated 2012-13)	National Rank (Unadjusted)
Wyoming	$16,557	6
Colorado	$10,199	29
Idaho	$8,528	45
Montana	$10,645	24
Nebraska	$9,621	35
South Dakota	$9,347	38
Utah	$7,129	50
United States	$11,068	

Source: National Education Association Rankings and Estimates
Summary Table K: Estimated Expenditures for Public Schools, 2012-13
http://www.nea.org/assets/img/content/NEA_Rankings_And_Estimates-2013_(2).pdf

Table VI-8: Differences of ***Funding Model Non-Staff Resources*** and District Expenditures

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Model Assessment	$2,853,152	$2,973,769	$3,128,016	$3,283,886	$3,318,468	$3,354,688	$3,393,682
Actual-to-Model Difference	($1,494,261)	($1,537,208)	($1,858,425)	($1,739,262)	($1,567,211)	($1,851,054)	($1,744,854)
Total Exp. as % of Model	47.6%	48.3%	40.6%	47.0%	52.8%	44.8%	48.6%
Model Central Office and Misc District Costs	$26,512,340	$27,633,151	$29,066,460	$30,514,846	$30,836,195	$31,172,759	$31,535,108
Actual-to-Model Difference	($338,889)	($971,509)	($493,548)	($2,960,001)	($1,119,351)	$692,358	($423,612)
Total Exp. as % of Model	98.7%	96.5%	98.3%	90.3%	96.4%	102.2%	98.7%
Model Operations and Maintenance	$76,773,311	$81,422,391	$83,729,142	$86,440,688	$87,918,237	$93,737,870	$94,298,032
Actual-to-Model Difference	($4,489,823)	($5,529,702)	($1,124,851)	($240,683)	$534,233	($3,490,491)	($3,050,143)
Total Exp. as % of Model	94.2%	93.2%	98.7%	99.7%	100.6%	96.3%	96.8%
Model Professional Development	$8,837,447	$9,211,050	$9,688,820	$10,171,615	$10,278,732	$10,390,920	$10,511,703
Actual-to-Model Difference	($2,056,568)	($1,032,567)	($1,289,193)	($2,058,335)	($2,735,059)	($2,900,923)	($2,513,504)
Total Exp. as % of Model	76.7%	88.8%	86.7%	79.8%	73.4%	72.1%	76.1%
Model Student Activities	$28,987,467	$29,890,778	$30,973,403	$32,035,068	$31,942,444	$31,583,616	$31,180,443
Actual-to-Model Difference	($1,339,347)	($4,857)	$1,936,234	$2,804,377	$4,132,334	$5,587,738	$6,385,098
Total Exp. as % of Model	95.4%	100.0%	106.3%	108.8%	112.9%	117.7%	120.5%
Model Technology and Supplies	$48,944,568	$51,001,449	$53,622,103	$56,275,105	$56,831,402	$57,465,252	$58,145,846
Actual-to-Model Difference	($9,255,726)	($8,841,950)	($3,072,938)	($6,805,905)	($6,060,767)	($7,145,070)	($11,545,697)
Total Exp. as % of Model	81.1%	82.7%	94.3%	87.9%	89.3%	87.6%	80.1%
Model Utilities	$29,529,553	$30,651,676	$31,969,698	$33,152,577	$33,152,577	$34,072,968	$34,087,478
Actual-to-Model Difference	$1,299,037	$1,729,702	$1,204,122	$359,969	$1,289,490	$420,361	$768,146
Total Exp. as % of Model	104.4%	105.6%	103.8%	101.1%	103.9%	101.2%	102.3%
Model Voc Ed Supplies and Equipment	$2,623,396	$2,657,875	$2,732,903	$2,848,735	$2,836,097	$2,777,962	$2,801,658
Actual-to-Model Difference	($817,604)	($928,501)	($1,099,480)	($1,140,666)	($949,856)	($1,054,848)	($1,241,102)
Total Exp. as % of Model	68.8%	65.1%	59.8%	60.0%	66.5%	62.0%	55.7%
Total Funding Model Non-Staff Resources	$225,061,234	$235,442,139	$244,910,545	$254,722,520	$257,114,152	$264,556,035	$265,953,950
Actual-to-Model Difference	($18,493,181)	($17,116,592)	($5,798,079)	($11,780,506)	($6,476,187)	($9,741,929)	($13,365,668)
Total Exp. as % of Model	91.78 %	92.73 %	97.63 %	95.38 %	97.48 %	96.32 %	94.97 %

Source: *WDE601 – Annual District Report*; *Statewide Payment Models FY2006 through FY2013*