

# Economic, Workforce, and Workforce Development Activities Analysis

## Strategic Elements of the Workforce Innovation and Opportunity Act

Presented to the Wyoming Workforce Development Council, February 15, 2018,  
by Tony Glover, Manager, and Michael Moore, Editor  
Research & Planning, Wyoming Department of Workforce Services



Research & Planning  
<http://doe.state.wy.us/LMI>

## **OUR ORGANIZATION:**

R&P is a separate, exclusively statistical entity.

## **WHAT WE DO:**

R&P collects, analyzes, and publishes timely and accurate labor market information (LMI) meeting established statistical standards.

## **OUR CUSTOMERS:**

LMI makes the labor market more efficient by providing the public and the public's representatives with the basis for informed decision making.



Research & Planning  
Wyoming DWS

# WIOA Unified Plan

Research & Planning prepared data and narrative for two sections of the Workforce Innovation and Opportunity Act (WIOA) Unified Plan:

## II. Strategic Elements

- (a) Economic, Workforce, and Workforce Development Activities Analysis
  - (1) Economic and Workforce Analysis
    - (A) Economic Analysis.**
    - (B) Workforce Analysis.**

# (A). Economic Analysis

## **What is an Economic Downturn?**

**At least 2 consecutive quarters of over-the-year decrease in:**

- Average monthly employment (number of jobs worked)
- Total Wages
- Average Weekly Wage

Based on data from the Quarterly Census of Employment and Wages (QCEW).

# (A). Economic Analysis

## **What is the QCEW?**

"A quarterly count of employment and wages reported by employers based on Unemployment Insurance (UI) tax records and edited to meet statistical standard guidelines of the U.S. Bureau of Labor Statistics."

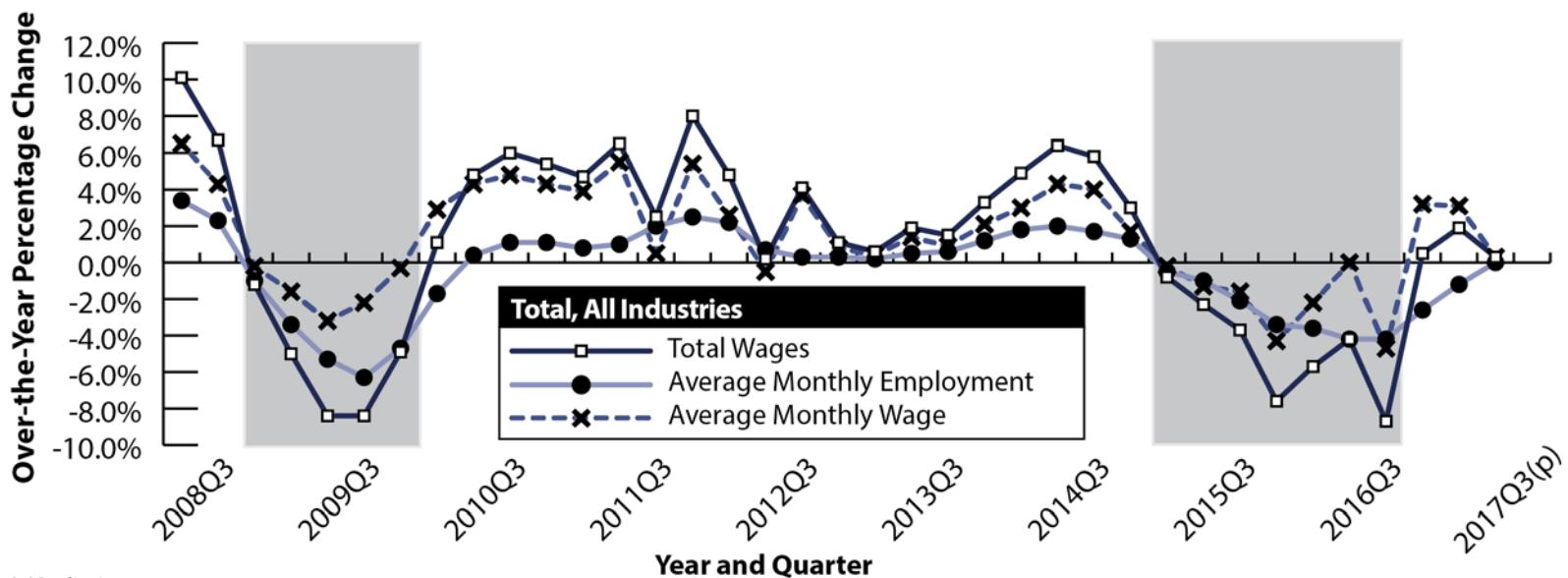
- Source: Moore, M. (2017, July). Total wages, average weekly wage increase in 2017Q1. *Wyoming Labor Force Trends*, 54(7). Retrieved February 9, 2017, from <http://doe.state.wy.us/LMI/trends/0717/0717.pdf>

Most recently published data: 2017Q2

# (A). Economic Analysis

**Two recent periods of economic downturn:**

2009Q1 to 2010Q1  
2015Q2 to 2016Q4 (?)



(p)Preliminary.

Shaded areas indicate periods of economic downturn: 2009Q1-2010Q1 and 2015Q3-2016Q4.

Source: Quarterly Census of Employment and Wages.

Prepared by M. Moore, Research & Planning, WY DWS, 2/15/17.

# (A). Economic Analysis

## Differences in Economic Downturns

### **2009Q1-2010Q1**

- Collapse of coal bed methane
- Coincided with Great Recession
- Other states' economies contracted
  - Wyoming labor force grew
  - Unemployment Insurance (UI) claims increased

### **2015Q2-2016Q4**

- Decline in the prices of and demand for coal, oil, and natural gas
- Other states' economies grew
  - Wyoming labor force decreased
  - Minimal increase in UI claims
  - Wyoming workers left the state and found work elsewhere

# (A). Economic Analysis

## **Recent Economic Activity**

- 2017Q3: Over-the-year job losses slow (0.0% change).
- 2017Q2: Hiring activity resumes (2.7% increase in total hires).
- Total hires in mining increase 155.6%.

## (A). Economic Analysis

- (i) Existing Demand Industry Sectors and Occupations.**
- (ii) Emerging Demand Industry Sectors and Occupations.**
- (iii) Employers' Employment Needs.**

These sections of WIOA were addressed using industry and occupational projections.

### **About projections:**

- Published by Research & Planning produced under a grant from the Employment & Training Administration (ETA) as part of the Workforce Information Grant.
- Short-term (two-year) projections produced each year and published in February.
- Long-term (10-year) projections produced on a two-year cycle (2014-2024 are most recent).
- Based on QCEW data.
- Based on historic trend.

# (A). Economic Analysis

## **More about projections:**

- Because of Wyoming's recent economic downturn, 2014-2024 projections show little growth.
  - Example: Wyoming's mining industry is projected to lose 6,131 jobs from 2014 to 2024, a change of -22.5%.
- Occupational projections take into account openings due to replacement need.
  - Occurs when an individual retires, dies, or otherwise leaves an occupation.
- Occupational projections in WIOA plan provide long-term projections for 530 occupations.

# (A). Economic Analysis

## **Employment and Training Opportunities**

R&P analysts examined long-term occupational projections for occupations that met 3 criteria:

- A mean hourly wage of at least \$15.00.
- At least five annual openings.
- Typical educational requirements that were beyond a high school diploma but less than a four-year bachelor's degree.
  - Apprenticeship
  - Some college, no degree
  - Postsecondary non-degree award
  - Associate's degree.

**R&P identified 32 occupations meeting these criteria,  
presented in Table 4 of WIOA plan.**

## (A). Economic Analysis

### **Employment and Training Opportunities: Electricians (SOC 47-2111)**

- Electricians “install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems.”

- Source: O\*Net Online.

- Requires apprenticeship; other requirements of hours, exam, and experience.
- Must be registered with the State Electrical Board.
- Projected 470 openings from 2014 to 2024 (47 annually).
- 10th percentile hourly wage: \$17.51. Mean hourly wage: \$27.99.

# (A). Economic Analysis

## **Employment and Training Opportunities: Dental Hygienists (SOC 29-2021)**

- Dental hygienists “clean teeth and examine oral areas, head, and neck for signs of oral disease. May educate patients on oral hygiene, take and develop x rays, or apply fluoride or sealants.”  
- Source: O\*Net Online.
- Requires associate’s degree.
- Schools with dental hygienist programs include Sheridan College, Laramie County Community College, and the University of Wyoming.
- Projected 136 openings from 2014 to 2024 (14 annually).
- 10th percentile hourly wage: \$24.94. Mean hourly wage: \$33.39.

# (A). Economic Analysis

## **Links to Resources**

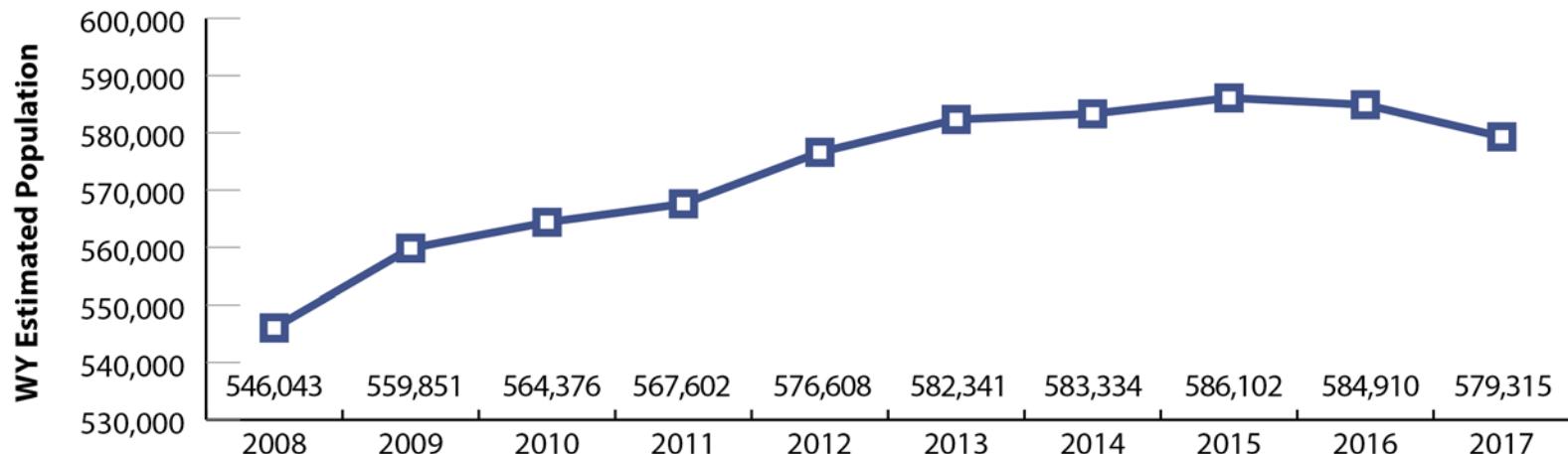
- Wyoming Industry and Occupational Projections
  - <http://doe.state.wy.us/LMI/projections.htm>
- Directory of Licensed Occupations in Wyoming 2017
  - [http://doe.state.wy.us/LMI/licensed\\_occupations.htm](http://doe.state.wy.us/LMI/licensed_occupations.htm)
- QCEW Data for Wyoming:
  - [http://doe.state.wy.us/LMI/toc\\_202.htm](http://doe.state.wy.us/LMI/toc_202.htm)
- QCEW Data for the Nation and Other States
  - <https://www.bls.gov/cew/>
- Wyoming Turnover Data
  - <http://doe.state.wy.us/LMI/turnover.htm>
- Tableau Interactive Graphics
  - <https://tinyurl.com/ybp84tdt>

## (B) Workforce Analysis

### Population Estimates

- Population decreased from 584,910 in 2016 to 579,315 in 2017, a loss of 5,595 individuals, or -1.0%.

- Source: U.S. Census Bureau.



Source: U.S. Census Bureau, Population Division.  
Prepared by M. Moore, Research & Planning, WY DWS, 1/2/18.

# (B) Workforce Analysis

## **Individuals with Barriers to Employment and Special Populations**

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

### **Poverty**

- Poverty threshold: updated annually by the U.S. Census Bureau and used for statistical purposes, such as counting the number of people living in poverty.
- 2015 poverty threshold: income of up to \$11,770 for an individual, or a family of four with an income of up to \$24,250.
- 13.5% of Wyoming residents were at or below the poverty threshold in 2015.

# (B) Workforce Analysis

## **Individuals with Barriers to Employment and Special Populations**

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

### **Veterans**

- Individuals who served in any branch of the United States military during a time of war or peace, for any length of time, at home or abroad.
- Veterans ages 17 or older are included in ACS statistics.
- In 2015, 10.8% of the state's residents were veterans.
- 17.9% of the state's veterans have some degree of disability rating.

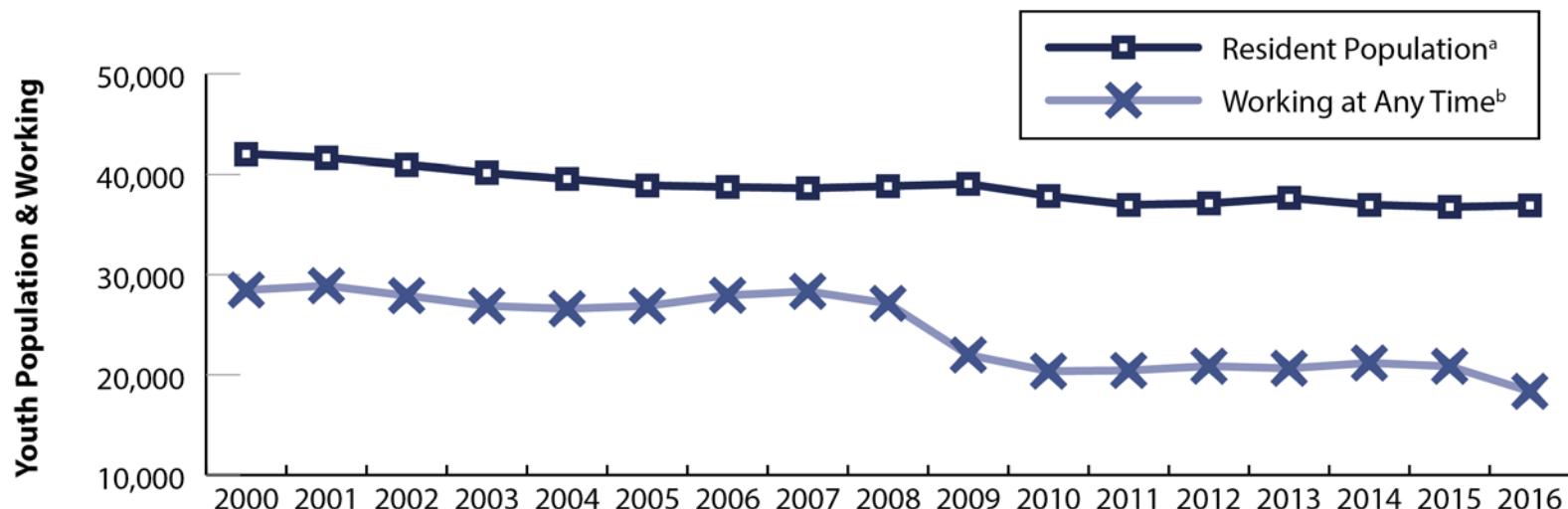
# (B) Workforce Analysis

## Individuals with Barriers to Employment and Special Populations

- Source: U.S. Census Bureau and Research & Planning, WY DWS.

### Youth (Ages 15-19)

- Youth population: 42,004 in 2000 to 36,930 in 2016 (-5,074, -12.1%).
- Youth working: 28,475 in 2000 to 18,360 in 2016 (-10,115, or -35.5%).



<sup>a</sup>Source: U.S. Census Bureau.

<sup>b</sup>Source: Wage Records.

Prepared by M. Moore, Research & Planning, WY DWS, 1/29/18.

# (B) Workforce Analysis

## **Individuals with Barriers to Employment and Special Populations**

- Source: Research & Planning, WY DWS.

### **Youth**

- Among 18-year-olds who worked in Wyoming within a given year (such as 2006), only 55.8% of those could be found working in Wyoming five years later.
- Approximately 40% of all Wyoming seniors each year enroll in a postsecondary school the fall after high school graduation.
  - Approximately 60% of Wyoming high school graduates enroll in a postsecondary school the fall after high school graduation.
- WY community college grads with academic degree:
  - Half found working in Wyoming 5 years after graduation.

# (B) Workforce Analysis

## Individuals with Barriers to Employment and Special Populations

- Source: Wyoming Department of Education.

### Youth

- From 2014/15 to 2016/17, enrollment dropped by 1,026 students (-1.1%).
- From the 2008/09 to 2015/16 school years, a total of 9,687 individuals between grades 7 and 12 dropped out of school\*.

Table 20: Total Number of Dropouts by School Year and Grade Level in Wyoming Schools, 2008/09 to 2015/16 School Years

Grade	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Total	Total %
7	13	38	33	22	19	31	34	36	226	2.3
8	31	32	28	26	38	43	31	31	260	2.7
9	131	190	141	144	181	147	199	171	1,304	13.5
10	312	468	302	254	291	293	297	289	2,506	25.9
11	284	357	284	320	369	314	333	333	2,594	26.8
12	373	401	324	394	362	397	334	312	2,897	29.9
Total	1,044	1,486	1,112	1,160	1,260	1,225	1,228	1,172	9,687	100.0

Source: Wyoming Department of Education.

Prepared by M. Moore, Research & Planning, WY DWS, 1/30/18.

\* Please see [https://edu.wyoming.gov/downloads/data/wy\\_cspr-part-1-final-report.pdf](https://edu.wyoming.gov/downloads/data/wy_cspr-part-1-final-report.pdf), p. 62

## (B) Workforce Analysis

### **(i). Employment and Unemployment**

#### **Local Area Unemployment Statistics (LAUS)**

- Provide estimates on the labor force (number of persons employed plus unemployed) and the unemployment rate.

#### **From 2014 to 2017 in Wyoming:**

- Labor force decreased by 9,795 individuals (-3.2%).
- Number employed decreased by 9,623 individuals (-3.3%).
- Number unemployed relatively unchanged (-182 individuals, or -1.4%).

**Because the labor force and the number employed decreased while the number of unemployed remained flat, Wyoming's unemployment rate remained practically unchanged from 2014 to 2017 at 4.2%.**

## (B) Workforce Analysis

### **(i). Employment and Unemployment**

#### **Labor Force Participation Rate:**

- Percentage of persons ages 16-64 eligible to participate in the labor force who are actively participating in the labor force, either working or looking for work.
- In December 2017, of the 449,802 persons in Wyoming eligible to participate in the labor force, 289,691 were working or seeking work. Dividing the total labor force (289,691) by the population eligible to participate (449,802) produces a labor force participation rate of 64.4%.
- From 2014-2017, Wyoming labor force participation rate was around 67%, compared to 63% for the U.S.

## (B) Workforce Analysis

### **(ii). Labor market trends across industries.**

- Industries identified by the North American Industry Classification System (NAICS)
- 5 industries discussed in WIOA plan:
  - Mining, including Oil & Gas (NAICS 21)
  - Construction (NAICS 23)
  - Manufacturing (NAICS 31-33)
  - Health Care & Social Assistance (NAICS 61 & 62)
  - Leisure & Hospitality (NAICS 71-72)
- These industries were selected either because they make up a substantial proportion of Wyoming employment or wages, or because they have been identified as possible growth industries by the Economically Needed Diversity Options for Wyoming (ENDOW) program.

## (B) Workforce Analysis

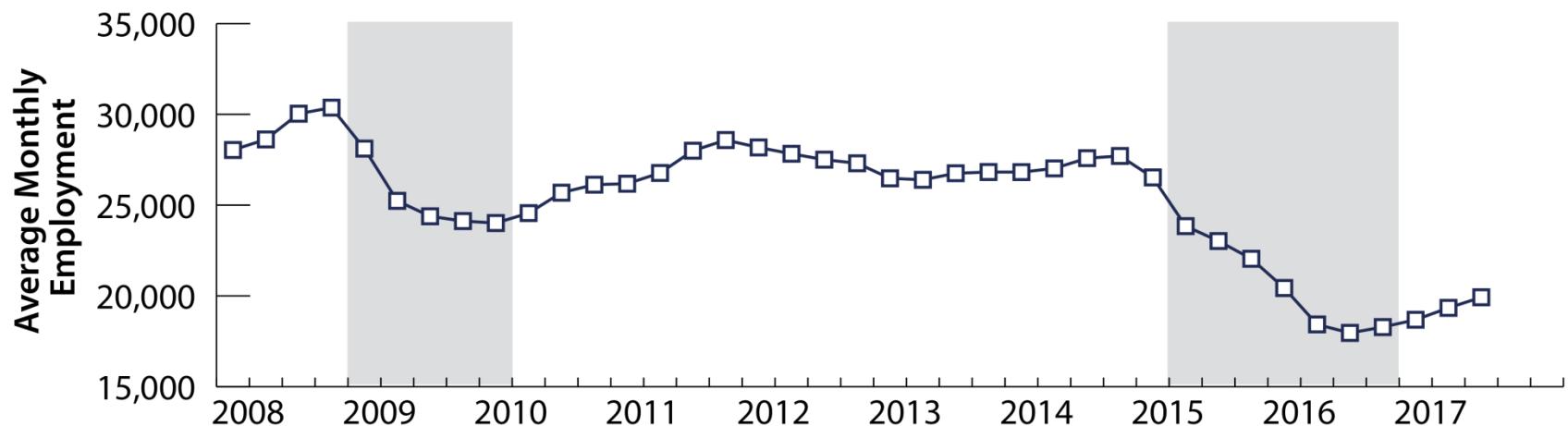
### **(ii). Labor market trends across industries.**

- Mining (NAICS 21)
  - Contributes more wages to the state's total than any other industry.
  - In 2015Q1, mining accounted for 19.0% of the state's total wages, or nearly \$1 of every \$5 in wages.
  - During the recent economic downturn mining made up 13.8% Wyoming's total wages, or 69 cents for every \$5 in wages.
  - Mining industry lost a greater proportion of jobs than any other industry during recent downturn.
  - From 2015Q1 to 2017Q3, mining lost 6,602 jobs, or -24.9% of all jobs.
  - Mining jobs increased during first two quarters of 2017.

## (B) Workforce Analysis

### (ii). Labor market trends across industries.

- Mining (NAICS 21)
  - From 2015Q1 to 2017Q3, mining lost 6,602 jobs, or -24.9% of all jobs.
  - Mining jobs increased during first two quarters of 2017.



Shaded areas indicate periods of economic downturn: 2009Q1-2010Q1 and 2015Q2-2016Q4.

Source: Quarterly Census of Employment and Wages.

## (B) Workforce Analysis

### **(iii). Education and skill levels of the workforce.**

#### **(iv). Skill gaps.**

Wyoming population ages 25 and older:

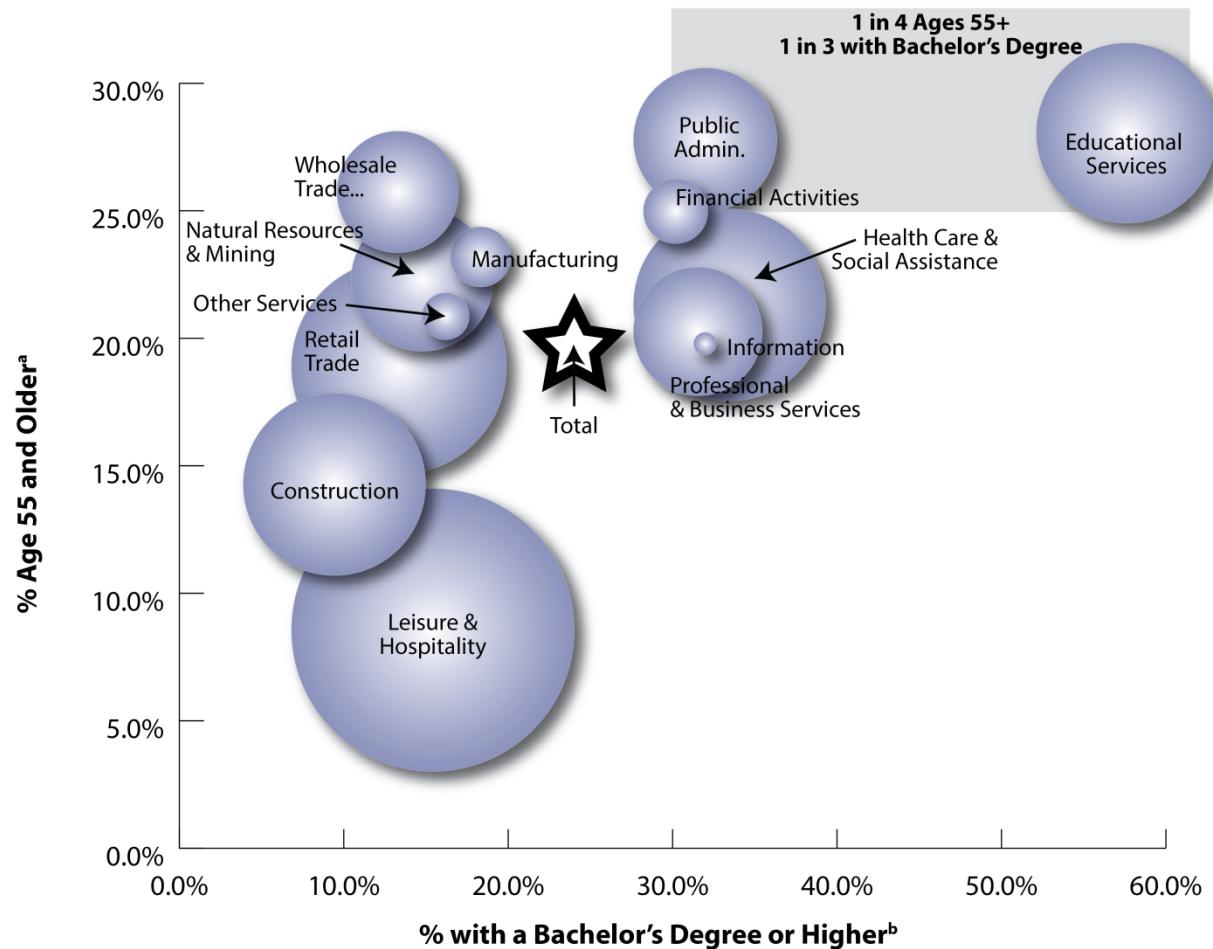
- 92.3% graduated high school
  - 86.7% national average
- 10.3% have associate's degrees
  - 8.1% national average
- 25.7% have bachelor's degree or higher
  - 29.8% national average

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

# (B) Workforce Analysis

**(iii). Education and skill levels of the workforce.**  
**(iv). Skill gaps.**

## Education by Industry



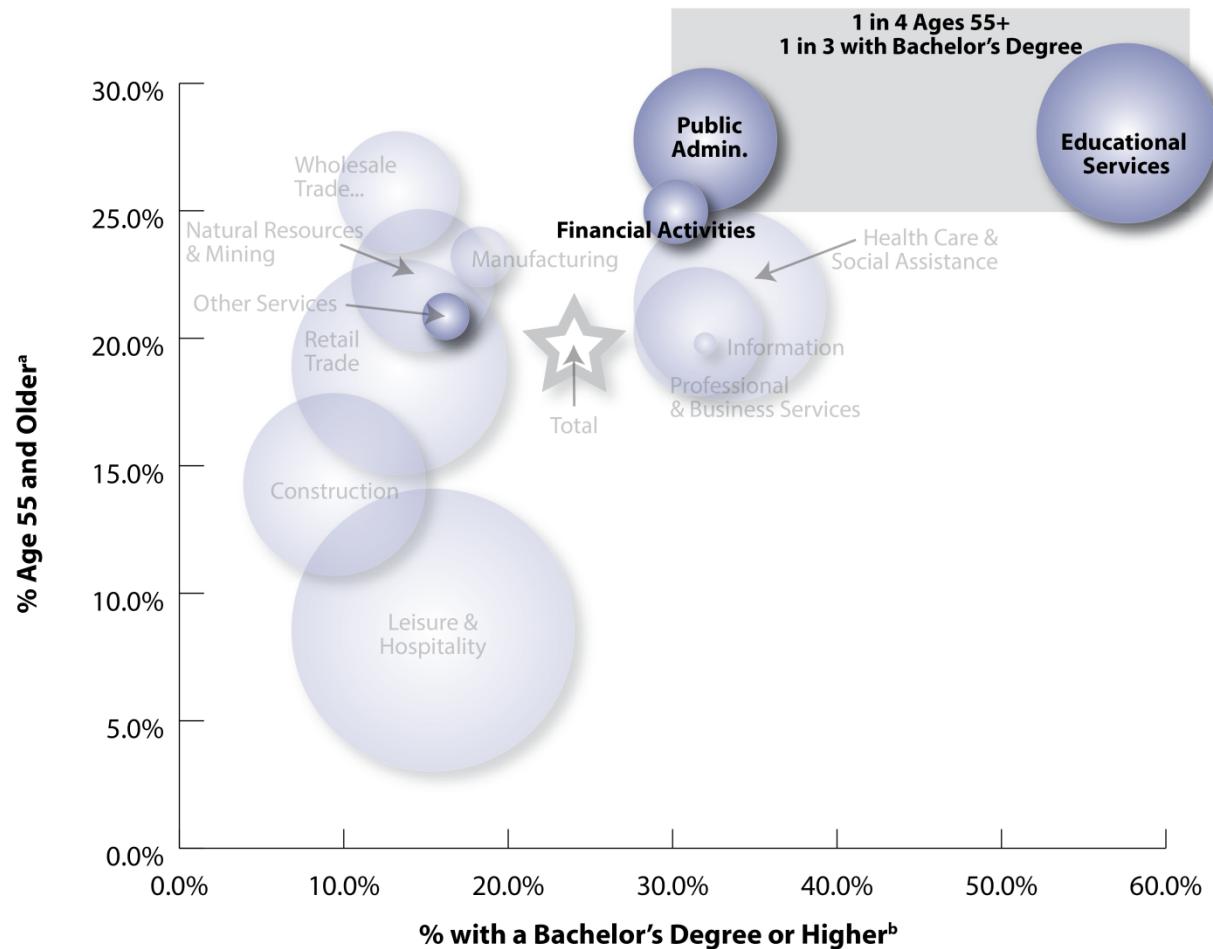
<sup>a</sup>Source: Quarterly Census of Employment and Wages.

<sup>b</sup>Source: U.S. Census Bureau, American Community Survey. 5-Year Estimates.

## (B) Workforce Analysis

**(iii). Education and skill levels of the workforce.**  
**(iv). Skill gaps.**

### Education by Industry



<sup>a</sup>Source: Quarterly Census of Employment and Wages.

<sup>b</sup>Source: U.S. Census Bureau, American Community Survey. 5-Year Estimates.

## C. Use of Unemployment Insurance (UI) Wage Record Data

Two changes:

- Process evaluation prior to a program evaluation.
  - R&P was never funded to do so.
- Leveraging Workforce Data Quality Initiative (WDQI) funds for college and university outcomes.
  - The WDQI grant expired in 2016.

# Questions?

Tony Glover, Manager  
[Tony.glover@wyo.gov](mailto:Tony.glover@wyo.gov)

Research & Planning  
Wyoming Department  
of Workforce Services  
PO Box 2760  
246 S. Center St.  
Casper, WY 82601  
(307) 473-3807



Research & Planning  
Wyoming DWS

[DWS-RESEARCHPLANNING@wyo.gov](mailto:DWS-RESEARCHPLANNING@wyo.gov)  
<http://wyomingLMI.org>

