

# Cheyenne LEADS Workforce Study:

## Building the Workforce for Tomorrow



Prepared for Cheyenne LEADS  
By Avalanche Consulting, Inc.

November 21, 2014

Cheyenne   
**LEADS**



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# Table of Contents

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Table of Contents.....	1
Acknowledgements.....	3
About the Project.....	4
Phase 1: Industry Opportunity Analysis.....	6
Introduction.....	6
Baseline Analysis.....	9
Strengths, Weaknesses, Opportunities, & Threats.....	27
Industry Opportunity Evaluation.....	29
Industry Opportunity Recommendations.....	36
Phase 2: Labor Market Analysis.....	45
Introduction.....	45
Labor Market Identification.....	48
Labor Market Profile.....	64
Occupation Cluster Analysis.....	81
Critical Occupation Clusters.....	84
Phase 3: Workforce Gap Analysis.....	93
Introduction.....	93
Occupation Forecasts.....	95

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

Critical Occupation Clusters.....98

Educational Output ..... 106

Gap Analysis..... 114

Gap Summary..... 117

Phase 4: Strategic Recommendations..... 130

    Introduction ..... 130

    Education Alignment..... 132

    Talent Recruitment..... 136

    Lifestyle Improvement..... 139

Appendix I: Occupation Cluster Definitions..... 145

Appendix II: Detailed Degree Output by Institution ..... 147

## Acknowledgements

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# About the Project

In July 2014, Cheyenne LEADS hired Avalanche Consulting to conduct this Workforce Study, a comprehensive, four-phase strategy to assist Cheyenne LEADS with development of a research- and best practice-based plan for addressing workforce development in Cheyenne and Laramie County.

## Phase 1: Industry Opportunity Analysis

After initial project set-up, the Industry Opportunity Analysis assessed local economic development competitive strengths and weaknesses and general industry trends. This phase additionally examined industries with strong opportunities for growth in Laramie County, identifying critical occupational and workforce needs of these industries. This report laid a basis for examining workforce, training, and educational gaps and opportunities in the subsequent reports.

## Phase 2: Labor Market Analysis

Based on commuter patterns, growth trends, and interviews, in Phase 2, Avalanche identified the full Labor Market from which Laramie County employers draw potential employees. After identifying the full Labor Market, Avalanche built a profile of the regional population, occupations, and overall workforce assets. This profile will serve as marketing materials for existing and potential employers and a data-driven context for understanding available workforce, prevailing workforce characteristics, and future occupational needs.

## Phase 3: Workforce Gap Analysis

In Phase 3, Avalanche compared occupation growth forecasts for Laramie County with equivalent educational output from Laramie County Community College and the University of Wyoming. This analysis identified clear gaps between educational production and employer needs, paying particular attention to critical occupations for industry opportunity development. This gap analysis determined whether the region's workforce pipeline



## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

is providing an appropriate supply of trained individuals to match forecasted employment demand and identified areas that are existing assets or could be improved.

### *Phase 4: Strategic Recommendations*

To conclude the project, Avalanche provided an outline of high-level recommendations based on our findings. These recommendations equip Cheyenne LEADS and local partners with an executable action plan to support workforce development efforts and help grow local and attract new businesses in Laramie County. Recommendations are provided in three primary components of a Workforce Strategy – Educational Alignment, Talent Recruitment, and Lifestyle Improvement.

# Phase 1: Industry Opportunity Analysis

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## Introduction

In recent years, Cheyenne and Laramie County have experienced unprecedented economic growth. Economic development success has been a community effort, with numerous individuals and organizations contributing time and effort to planning, financing, and executing numerous initiatives to increase local competitiveness. The City of Cheyenne and Laramie County were less severely impacted by the recession than the State of Wyoming and US and have been creating jobs more quickly in the current recovery. The rate of private sector job growth in Laramie County since 2010 has been double that of Wyoming and 50% stronger than the US as a whole.

As seen across the State of Wyoming, economic success has also created some of the lowest unemployment rates in the nation. Low unemployment in Cheyenne means that local residents who want work can find it, but it also makes it challenging to attract new businesses and for existing businesses to expand because of the small pool of available workers from which to draw.

Hearing concerns about workforce availability from businesses throughout Laramie County, Cheyenne LEADS hired Avalanche Consulting to conduct an in-depth analysis and develop a strategy to address identified issues. This first phase, *Industry Opportunity Analysis*, focuses on a few key questions:

- How successful has Laramie County's economy been relative to the state and nation?
- What are Laramie County's competitive strengths and weaknesses?
- Which industries are creating jobs and investment nationally, statewide, and in Laramie County?
- Which industries are currently forecasted to create the most jobs locally?
- Which industries have the potential to create even more jobs with economic development support?

This phase addresses these questions by first examining recent economic trends and conditions in Cheyenne and Laramie County in a Baseline Analysis. The phase then identifies industry opportunities in which Cheyenne has a competitive advantage and can be expected to boost job creation through targeted economic development strategy.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

Economic development organizations have limited time and resources and must focus these on industry opportunities that have the greatest potential return on investment for the community. Typically, economic development organizations focus their business development, infrastructure investments, and marketing campaigns around a select group of industries. These targets are usually primary industries, which export a majority of their products and services outside the region (see side bar on primary versus secondary industries). Generally, this means focusing on supporting primary employers who have the greatest potential to create jobs and investment locally and can be affected through proactive economic development activities.

Targeting specific industry opportunities also does not mean that other industries will be ignored or stagnate. Economic development organizations should continue to pursue any opportunities that support job creation and investment in a community, regardless of the industry. Many industries will grow naturally, based on population growth or changing demographics. Some industries, however, benefit more from economic development support and will create new jobs, raise incomes, and increase investment, which spurs growth across other sectors.

It is important to note that identification of industry opportunities is not a perfect science. Every business makes operational and locational decisions based on different factors, market trends, and individual personalities. As a result, there is no universal formula for identifying opportunities.

Instead, identification of opportunities is an iterative process that considers a mix of quantitative and qualitative conditions. On the quantitative side, Avalanche looks at utility rates, export categories, wage levels, and industry employment trends, concentrations, and forecasts. As with all datasets, industry forecasts are not always accurate, particularly at the county level. This report uses employment and forecast data produced by Economic Modeling Specialists, Inc. (EMSI), a private, national data vendor, and in some industry areas, data centers for example, their projections do not necessarily reflect the most up-to-date awareness of assets and trends on the ground in Laramie County.

Taking this into account, Avalanche qualifies forecasts and other data with national perspective and on the ground experiences, comparing trends to known assets, recent business relocations, and local testimonies. In August, the team conducted numerous interviews and focus groups in Cheyenne with businesses, leaders, non-profits, and other stakeholders. The stories heard through this process help clarify local goals and which industries are legitimate opportunities in Laramie County.

### What is a Primary Employer?

Primary employers are businesses that export goods and services outside of the local economy. These exports inject new dollars into the economy, resulting in increased wages and jobs as revenue earned by the business is spent on employee salaries and goods and services that it purchases from local suppliers. As this funding is earned, it is redistributed throughout the rest of the economy, multiplying in impact. Manufacturing and software companies are examples of primary employers.

### What is a Secondary Employer?

Secondary employers serve the local community. A majority of the goods and services created by those organizations are consumed within the community. While these goods and services are important staples of a community, the multiplier effect of spending is less than that by primary employers. Retail and construction are examples of secondary employers.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

After focus groups with local leadership, conducting a tour of the county, and reviewing initial competitiveness data, Avalanche Consulting has identified the following four industry clusters as preliminary Industry Opportunities and potential targets for Cheyenne LEADS:

- **Manufacturing**
- **Data & Information Services**
- **Energy**
- **Transportation & Logistics**

For each of these industries, Avalanche provides a profile describing the industry trends, including business site selection needs and a brief description of what makes Cheyenne and Laramie County competitive for growth in the industry.

As this study progresses into the workforce competitiveness phases, Avalanche will continue to revise this list, adding additional details or industries as necessary. Some industries such as Healthcare and Retail, which are not viewed as primary industries (they mostly serve local and regional residents), may be added to the list of opportunities but not become targets for LEADS specifically.

## Baseline Analysis

In order to understand Cheyenne and Laramie County's relative position and opportunities for industry development, this report begins with a Baseline Analysis of economic trends and competitiveness. This section answers two primary questions:

- How successful has Laramie County's economy been relative to the state and nation?
- What are Laramie County's competitive strengths and weaknesses?

To answer these questions, the consulting team examines employment trends, unemployment rates, wage levels, productivity, exports, innovation, business climate, utilities, and more. The results of this analysis and on the ground interviews are summarized in a final Strengths, Weaknesses, Opportunities, & Threats (SWOT) table at the end of this section.

Some of the **primary takeaways** from the Baseline Analysis include:

- Laramie County has a competitive business environment that is creating jobs more quickly than the US and Wyoming.
- Unemployment fell to 4.8% in July 2014, nearly the pre-recessionary level, revealing the incredibly tight labor market, with barely over 2,000 unemployed workers in the county.
- Although wages are low in most industries compared to the nation and state, the relatively low cost of living keeps them competitive. Despite this trend, housing costs were raised as a serious expense and concern by residents and businesses in interviews.
- Laramie County has high productivity per capita, demonstrating the efficiency of the workforce and strength of local production.
- The county is home to an above average number of small businesses, revealing the healthy business climate.
- Wyoming's business climate is one of the best in the nation, and Laramie County supplements this with highly competitive utility rates, unique and well-designed business parks, and extensive rail and highway infrastructure connectivity.
- Laramie County is not a national center for research and innovation, with below average patent production and limited research centers. The University of Wyoming, the state's only university, is located in neighboring Albany County and features a strong research and economic development program and highly concentrated innovation activity.
- The University of Wyoming conducts research in numerous fields; some of the largest funded areas are geological, agricultural, and environmental, but the University has strong research and commercialization programs in many fields, including mechanical engineering, complex materials, and technology. Their existing incubators in Albany and Casper Counties have been successful, and the University is now working to create a new incubator in Cheyenne.

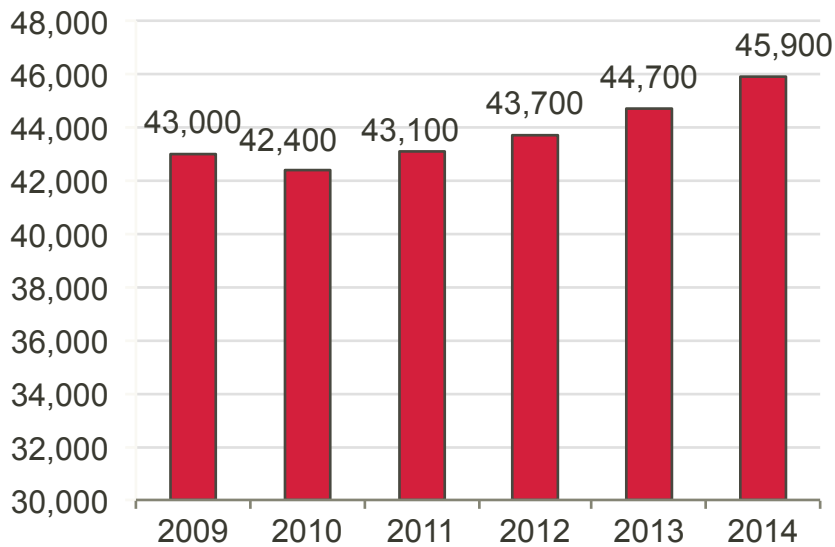
**Employment**

Total employment growth is a primary indicator of overall economic health and competitiveness. Communities want to create jobs for their residents, and companies seek locations that demonstrate their vitality during recessions as well as high-growth periods.

**Laramie County is leading the way in the economic recovery, creating jobs more quickly than the US and Wyoming averages in recent years.** Laramie County was less severely impacted by the recession than average, losing only 3.5% of jobs between 2008 and 2010, compared to 5.3% of jobs in Wyoming and 5.2% in the US. To put it in perspective, 16% of all the jobs in the State of Wyoming are in Laramie County, but only 10% of the statewide jobs losses during the recession occurred in Laramie County.

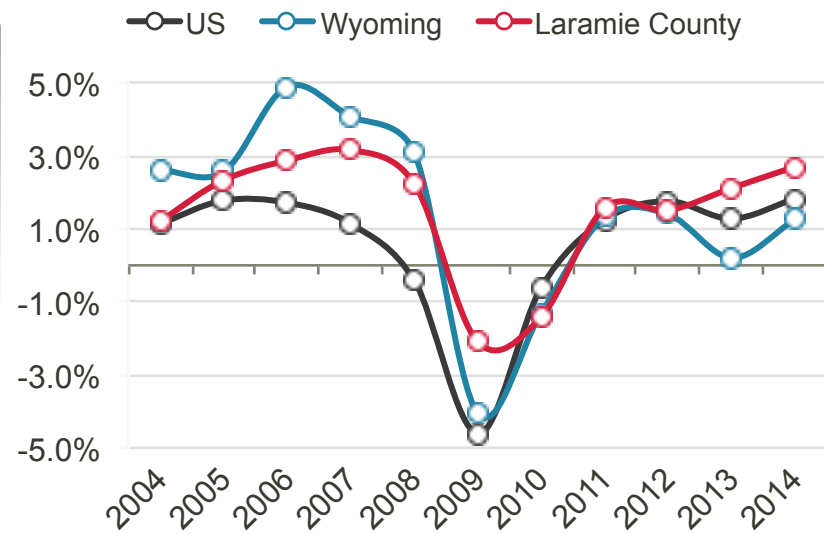
Similarly, since the recovery began in 2010, jobs have grown 8.1% in Laramie County, more than the US rate of 6.2% and nearly double the statewide rate of 4.2%. Laramie County has created 30% of all new jobs in Wyoming from 2010 to 2014. This holds true of both private and public sector jobs.

TOTAL EMPLOYMENT, LARAMIE COUNTY  
2009 - 2014



SOURCE: EMSI

EMPLOYMENT GROWTH  
2004 - 2014



SOURCE: EMSI

### Unemployment

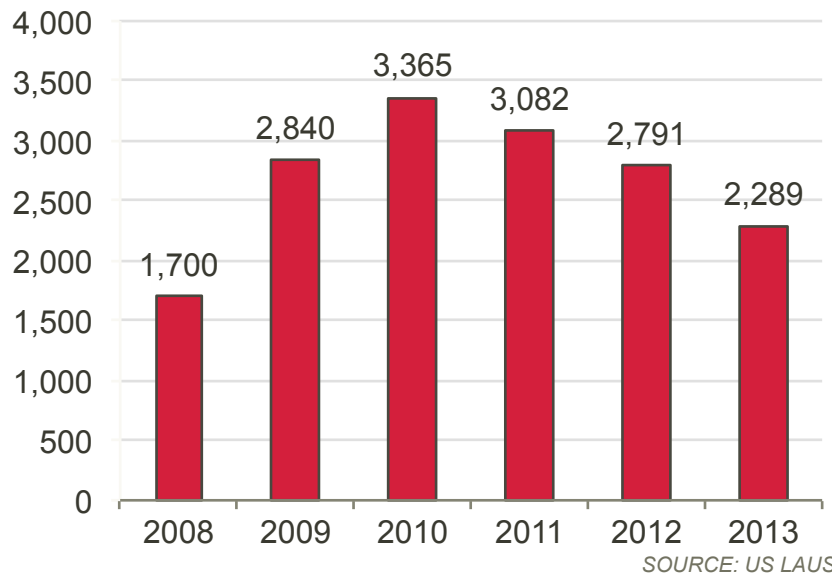
Unemployment levels are another primary indicator of economic vitality and reveal both a community’s capacity to absorb job losses and the current availability of local workers. Low unemployment rates show that a community is creating jobs for its residents, but they also mean that employers have a smaller pool of available local workers from which to hire.

Unemployment in Laramie County has remained consistently below national levels for the past decade and continues to fall steadily since the recessionary peak in 2010. **These trends reflect the strong job market in Laramie County but also the challenges that many employers face when looking for new employees.**

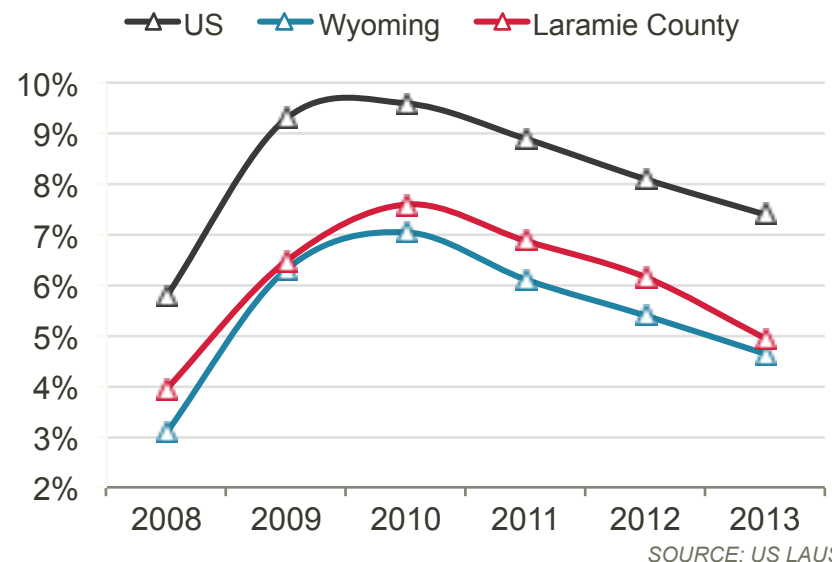
Laramie County’s unemployment rate rose to a high of 7.6% in 2010, well below the national level of 9.6% but slightly above the Wyoming rate of 7.0%. Since 2010, the unemployment rate has fallen steadily, reaching 4.8% in July 2014, compared to 6.5% nationally and 4.4% statewide. The unemployment rate in the City of Cheyenne was 4.5%.

Low unemployment levels across Wyoming indicate labor shortages are a challenge for local employers. While low unemployment is a reflection of Cheyenne’s recent economic success, it also represents **a significant threat to the region’s ability to grow its existing employers and attract new employers.**

TOTAL UNEMPLOYED, LARAMIE COUNTY  
2008 - 2013



UNEMPLOYMENT RATE  
2008 - 2013



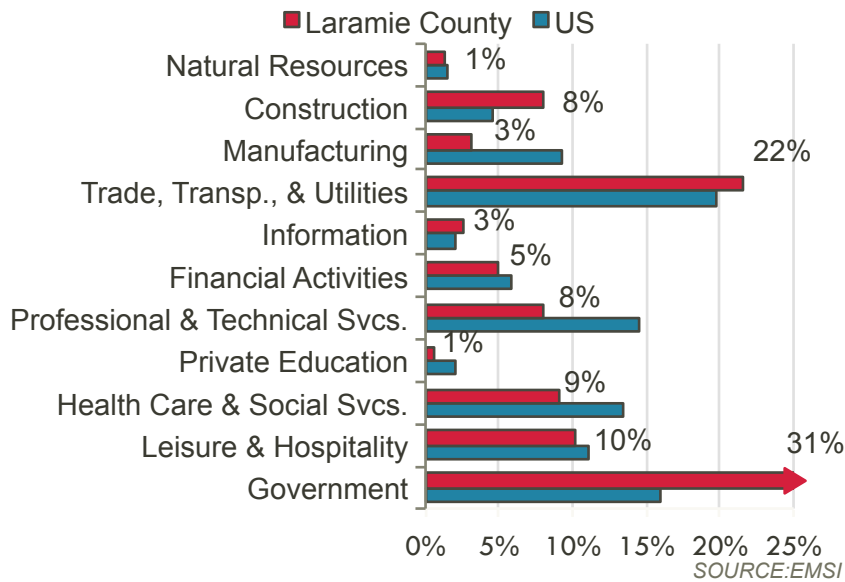
**Industry Trends**

Industry distribution and growth trends offer a quick glimpse of local economic diversity and recent success. Industry cluster trends will be discussed in greater detail later in this report. **Laramie County has a unique distribution of industry employment relative to the nation, with above average job shares in Construction; Trade, Transportation, & Utilities; Information; and Government.** Industries with a lower share than the national average include Manufacturing (3% of local jobs vs. 9% nationally), Professional & Technical Services (8% vs. 15%), and Health Care & Social Services (9% vs. 14%). The large state government and military presence locally contributes to the relatively low share of other industries.

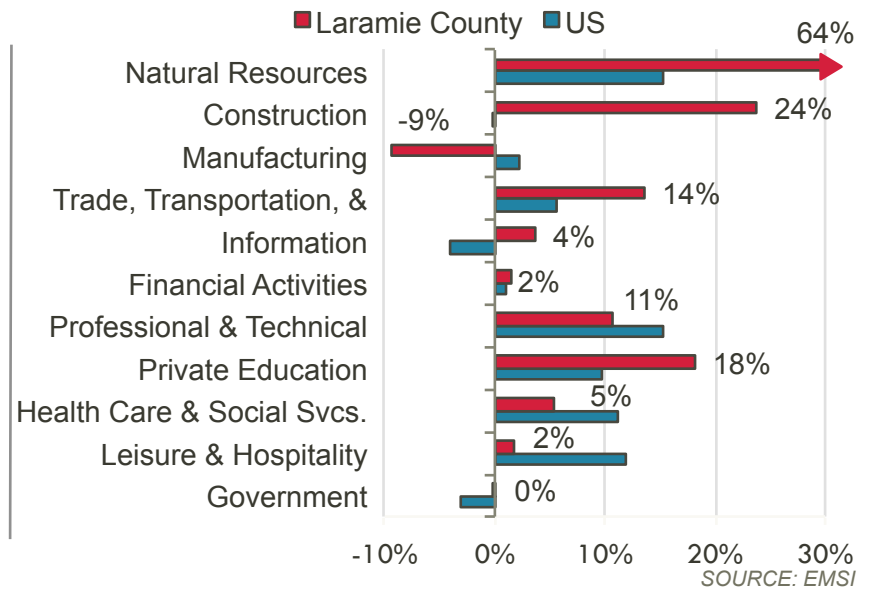
**All industries have grown locally over the past five years, often more quickly than national averages.** The fastest growing industries in Laramie County from 2009 to 2014 were Natural Resources (64% growth); Construction (24%); Private Education (18%); and Trade, Transportation, & Utilities (14%). All of these industries outpaced US growth rates.

Information, which includes data center operations, a newly important industry in Laramie County, grew 4% locally over this period, while declining 4% nationally. This is a strong reflection of local competitive strengths. Manufacturing lost 9% of local jobs from 2009 to 2014, but job losses occurred before 2012. Since then, local manufacturers have created jobs.

**SHARE OF EMPLOYMENT BY INDUSTRY**  
2014



**EMPLOYMENT GROWTH BY INDUSTRY**  
2009 - 2014



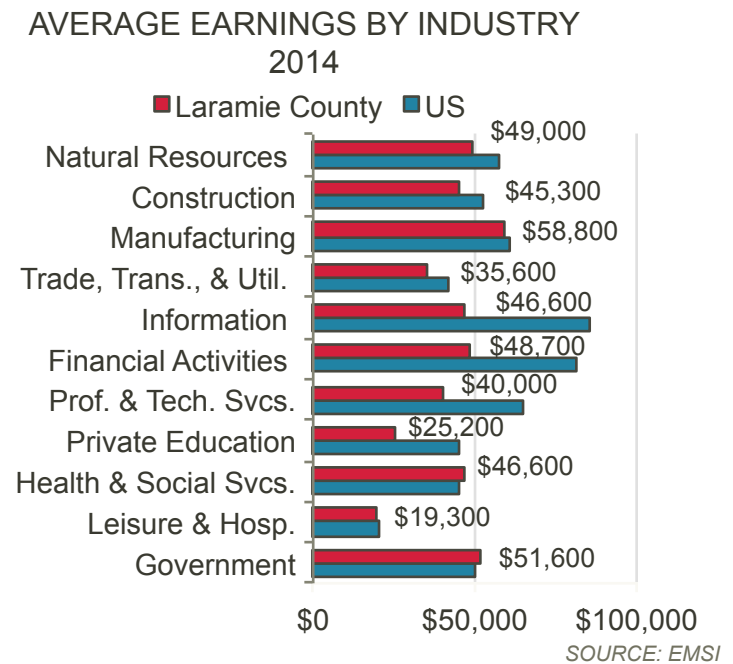
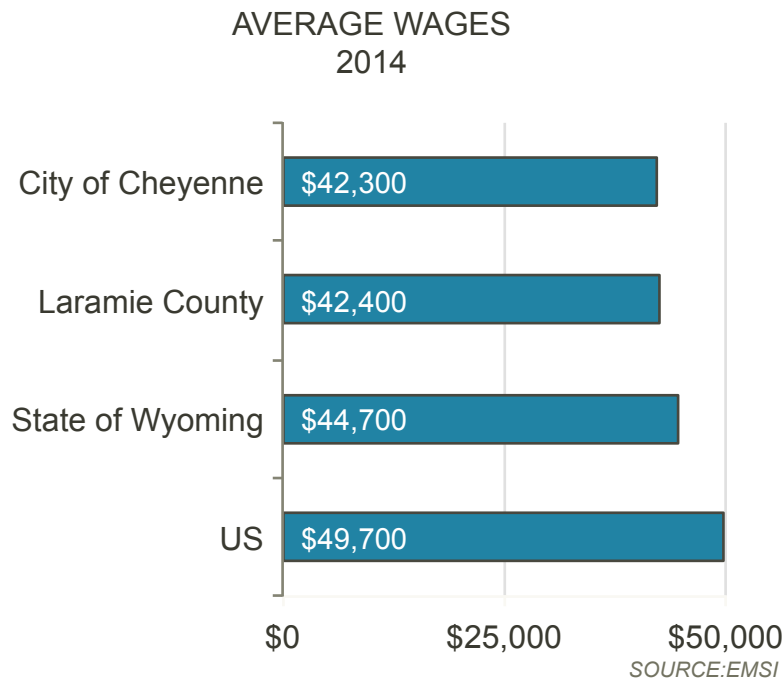
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**Wages**

Wage levels are a complex economic indicator and are influenced by multiple local factors including cost of living, industry competitiveness, and workforce availability. Wage levels affect economic development in a variety of ways. Some companies seek locations with lower wages to reduce their operating costs. In contrast, some companies may seek higher-wage locations in order to find the workforce skills they need.

**Overall wages are slightly below average in Cheyenne and Laramie County, but a few industries pay wage levels close to and above national averages.** Laramie County’s average wage for all industries is \$42,400, which is slightly below Wyoming (\$44,700) and the US (\$49,700).

The industries with the highest average wages in Laramie County are Manufacturing (\$58,800), Government (\$51,600), and Natural Resources (\$49,000). **Notably, only Government and Health & Social Services pay higher than national wages in Laramie County, likely because Cheyenne is the State capital.** The industries in Laramie County that pay significantly below national average wages include Information, Financial Services, and Private Education. All other industries pay comparable levels to national averages, but the true value of these wages is affected by local cost of living.

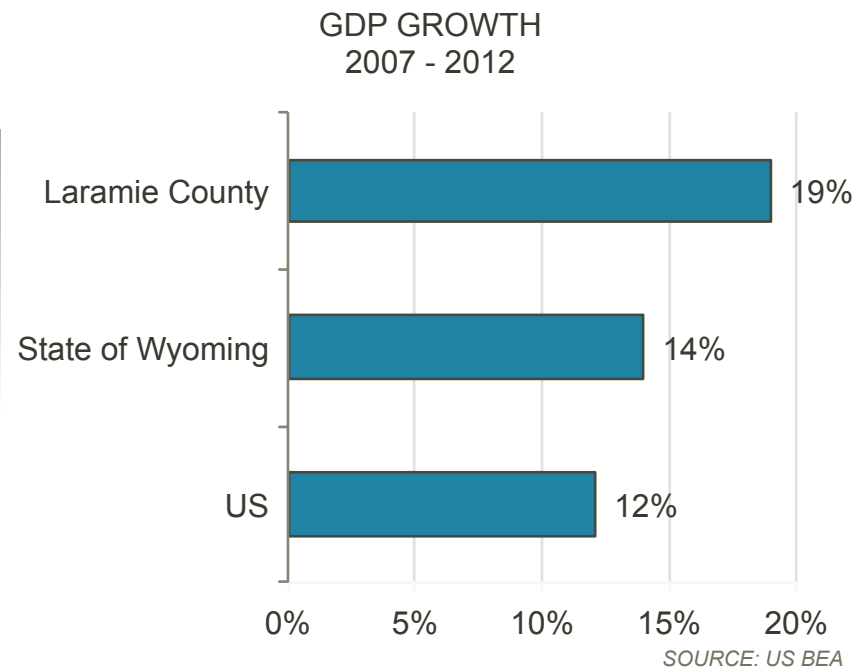
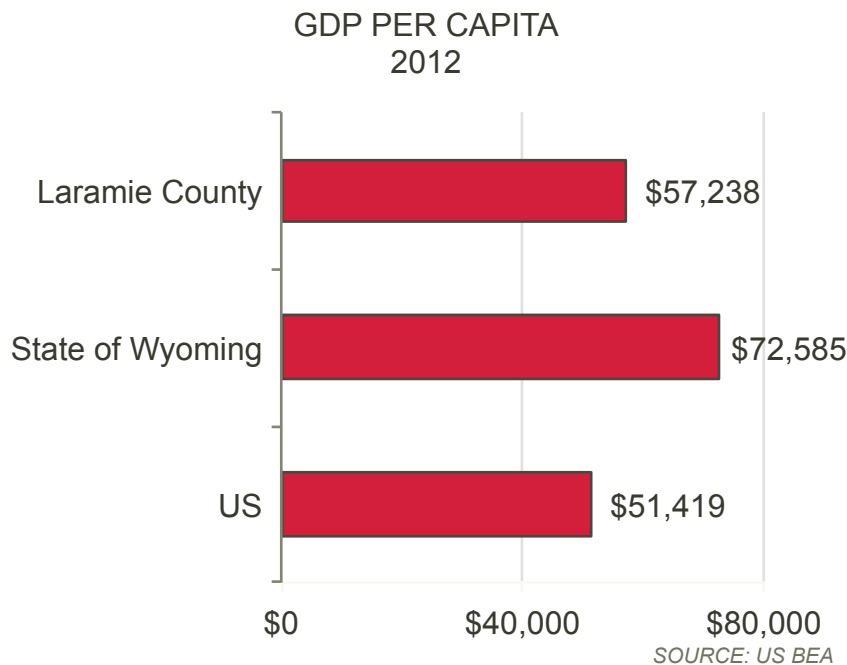


### Productivity

Gross Domestic Product (GDP) is a measure of overall productivity in a region. Examining per capita GDP allows relative comparison of regional productivity and economic strength.

**Laramie County has well above average GDP and is becoming even more productive over time.** In 2012, GDP per capita in Laramie County was \$57,200 compared to \$51,400 in the US. This shows a high degree of economic productivity generated locally per resident of the region. This is likely a combination of numerous factors, including low unemployment, high worker productivity, and local presence of oil, gas, and mining support operations. The State of Wyoming had a significantly higher GDP per capita, \$72,600, primarily due to the significant amount of natural resource extraction and processing in other Wyoming counties.

GDP is also growing more quickly in Laramie County than both the state and nation, increasing the local productive edge over time. GDP grew 19% between 2007 and 2012 in Laramie County, compared to only 14% in Wyoming and 12% nationally.



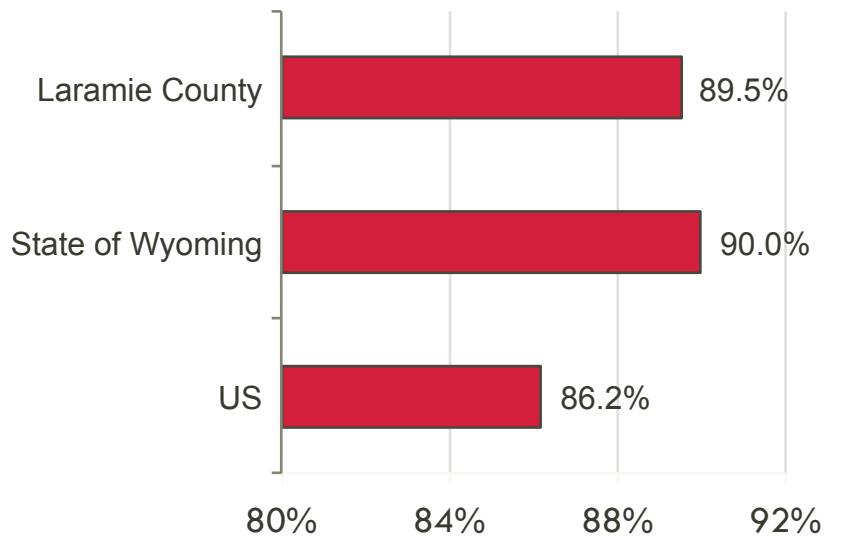
**Small Business**

Small businesses are critical to the national economy, accounting for a majority of all existing and new jobs in the country. Small businesses employ fewer than 20 employees and include a range of business types from mom and pop stores to technology startups to light manufacturing operations. According to the Small Business Administration (SBA), since 1990, small businesses in the US have added 8 million new jobs, while big businesses have eliminated 4 million. These smaller operations are truly the base of the national economy, and their local success reflects economic strength.

**Laramie County not only has an above average share of small businesses, but the number of small businesses is growing rapidly while remaining stagnant nationally and statewide.** In 2012, 2,590 of Laramie County’s businesses employed fewer than 20 people. These make up 90% of all the businesses in the county, the same as the Wyoming average, but above the US average of 86%.

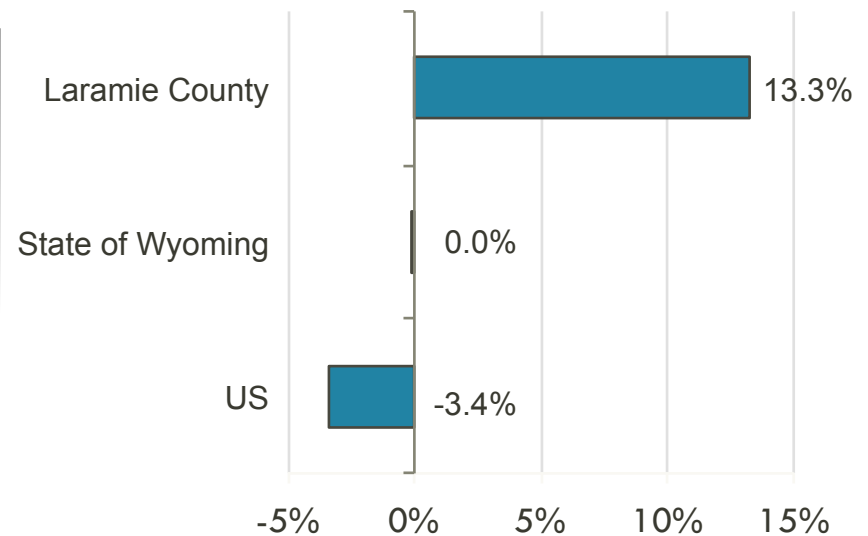
The number of small businesses in Laramie County grew 13% from 2007 to 2012, through the national recession when small businesses remained stagnant in Wyoming (0% growth) and shrank nationally (-3%).

**% SMALL BUSINESSES (20 OR FEWER EMPLOYEES)  
2012**



SOURCE: US Census Bureau, County Business Patterns

**GROWTH IN SMALL BUSINESSES  
2007 - 2012**



SOURCE: US Census Bureau, County Business Patterns

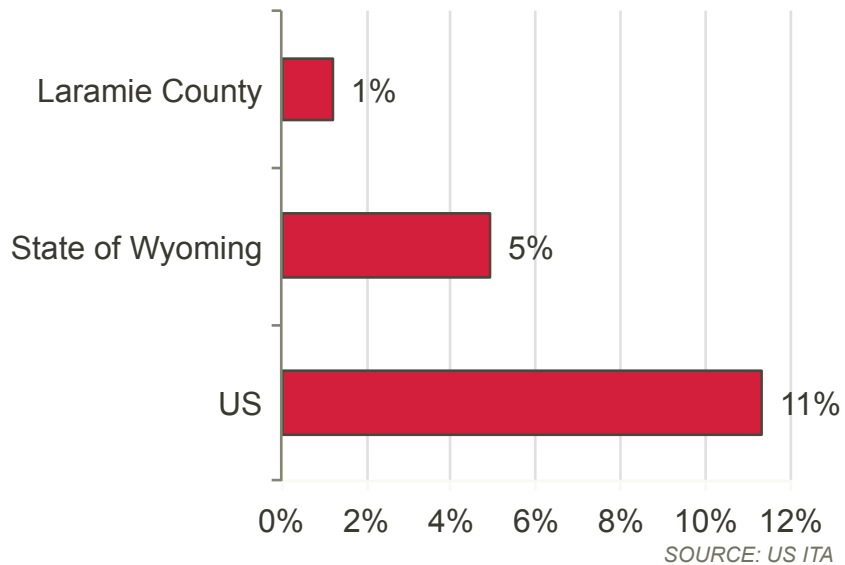
**Exports**

International exports are an important aspect of any local economy. When a community sells goods and services internationally, it draws outside dollars into the economy, growing local wealth through productivity. Export industries tend to be those in which a community has a competitive advantage, whether in natural resource extraction, manufacturing, professional services, or another field. Notably, the government attempts to track exports by point of origin and not international shipment, but this is a challenging endeavor, and export data is not perfect.

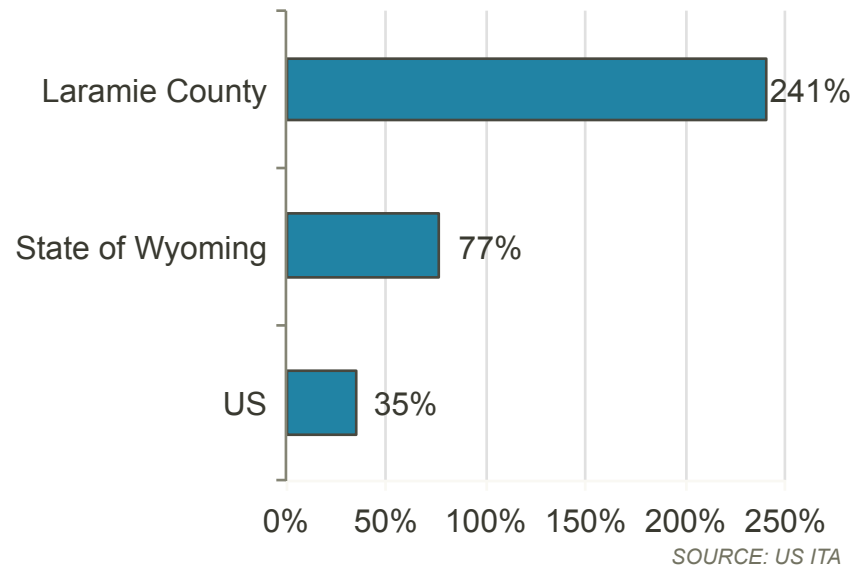
**Laramie County has a below average share of exports relative to GDP, but the value of local exports is growing exponentially faster than the nation and state.** International exports only make up 1% of Laramie County’s GDP, compared to 5% in the State of Wyoming and 11% nationally. The below average share of exports in the county is likely due primarily to Wyoming’s position as a landlocked state without seaports or major cargo distribution airports. Cheyenne has an exceptional distribution network but likely distributes many local goods domestically. State exports are higher due to natural resource extraction and export, which largely occurs outside of Laramie County.

Despite a below average share of GDP, exports in Laramie County grew 240% from 2007 to 2012, reaching a total value of \$55.6 million in 2012. This was significantly above Wyoming export growth of 77% and US export growth of 35%.

EXPORTS AS A SHARE OF GDP  
2012



EXPORT GROWTH  
2007 - 2012



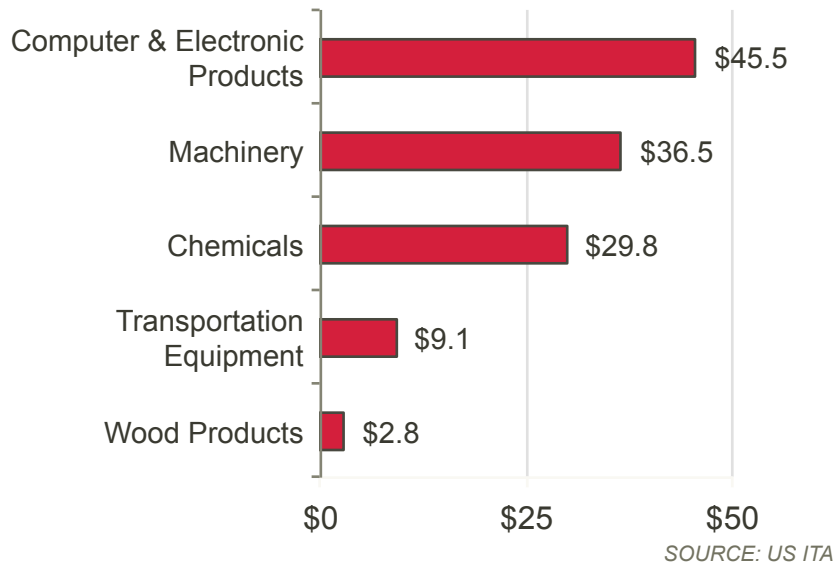
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**Laramie County has notable export strengths in manufactured goods, including Computer & Electronic Products and Machinery, in contrast to Wyoming's greater focus on natural resources.** Between 2007 and 2012, the top exports from Laramie County were Computer & Electronic Products (\$45.5 million), Machinery (\$36.5 million), Chemicals (\$29.8 million), Transportation Equipment (\$9.1 million), and Wood Products (\$2.8 million). Computer & Electronic Products is a broad category and may include operations such as Arrow Inc. and Gater Industries.

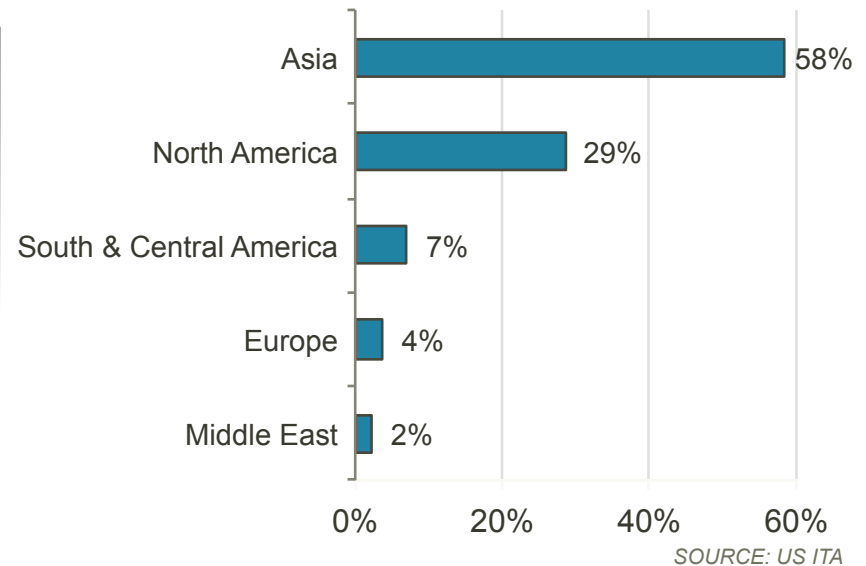
The State of Wyoming's top exports in contrast are Chemicals, Machinery, Petroleum & Coal Products, Oil & Gas, and Minerals & Ores.

From 2007 to 2012, the vast majority of Laramie County's exports went to Asia (58%) and North America (29%). These export destinations are well aligned with Cheyenne's strong logistical connectivity directly to Canada and Mexico via highway and to the Port of Seattle, which exports primarily to Asian markets.

TOP LARAMIE COUNTY EXPORT CATEGORIES  
2007 – 2012 (\$ MILLIONS)



SHARE OF LARAMIE COUNTY EXPORTS BY  
DESTINATION, 2007 – 2012



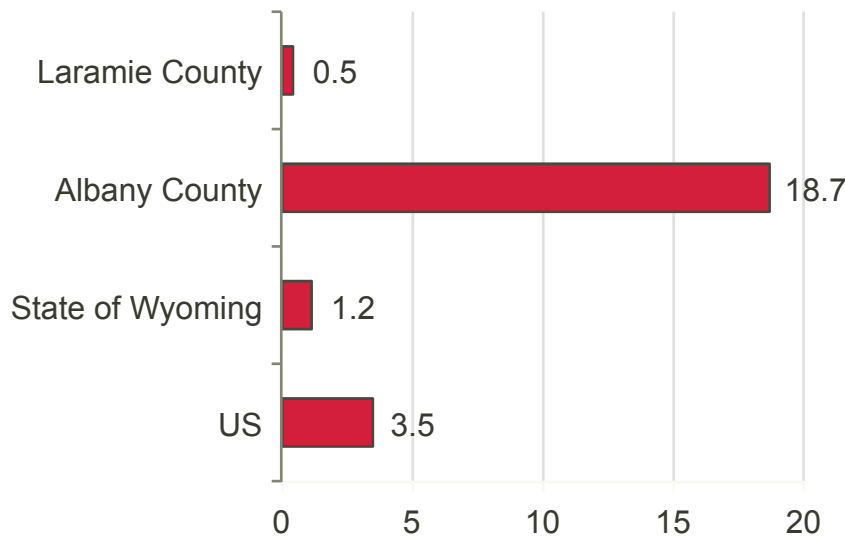
**Research & Innovation**

Research and technological innovation are some of the strongest drivers of economic growth and job creation. Large universities often foster technology commercialization and new company formation through their research activities and are a significant resource for any community. Besides research funding, measures of innovation include patent production, new company formation, venture capital investment, and small business loan activity. All of these factors can help understand a community’s capacity to support technological innovation and job creation. For Laramie County, research and innovation data was chosen and analyzed based on availability and relevance to this analysis.

Patent production is a direct measure of innovation in a local economy, revealing whether local companies and individuals are creating new products and processes in the community. The US Patent & Trademark Office publishes data on utility patent awards by residence of the inventor, not the company or individual that owns the patent. This allows analysis of where the actual inventors and creative resources are located, as opposed to the corporate headquarters. **Laramie County, and Wyoming in general, produce significantly lower patents per capita than the US average, but Albany County produces significantly more patents.**

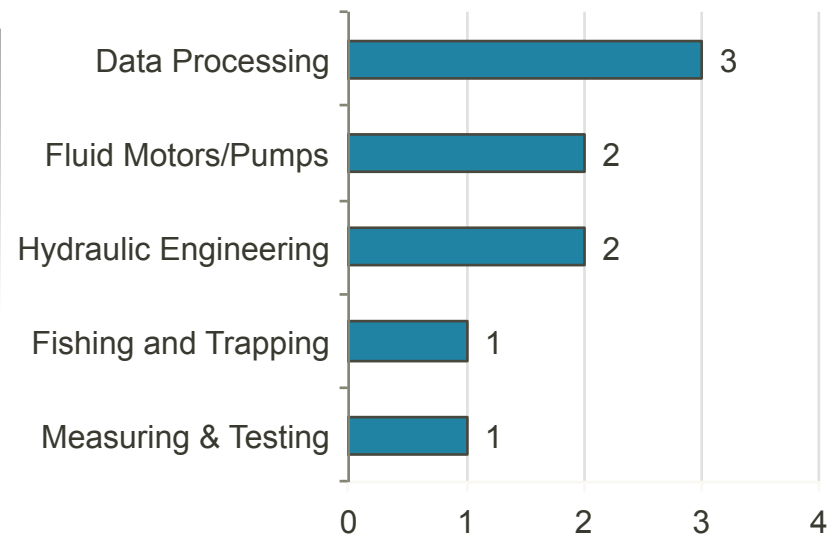
From 2006 to 2011, Laramie County produced only 0.7 patents per 10,000 residents, below the Wyoming and US average of 1.2 and 3.5 per 10,000 residents. **In contrast, Albany County produced 18.7 patents per 10,000 residents over this period.** Data by patent class is not available for

TOTAL PATENTS PER 10,000 RESIDENTS  
2006 - 2011



SOURCE: US PTO, US Census Bureau, & Avalanche

TOP LARAMIE COUNTY PATENT CLASSES  
2006 - 2011



SOURCE: US PTO & Avalanche

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

Albany County, but of the limited number of patents produced in Laramie County during this period, 30% were in **Data Processing, Fluid Motors/Pumps, and Hydraulic Engineering.**

Although Albany County had more than five times the national concentration of patent production, this remains below patent productivity seen in other university counties. Over this period, Albany County produced a total of 69 patents, with a concentration of 18.7 per 10,000 residents; in contrast, Larimer County, Colorado, the home of Colorado State University, produced 2,061 patents over this period with a concentration of 66.4. This gap is partly due to the much large private business presence in Larimer County, including many large corporations that house local research and development operations, whereas the University of Wyoming is directly responsible for most of the patent production in Albany County.

**Overall, Laramie County has not traditionally been a center for research and development, but the University of Wyoming in neighboring Albany County is a significant asset for economic development in Cheyenne.** The University offers a range of innovation and entrepreneurial programs and assets, including plans for an incubator located in Cheyenne. The university graduates thousands of students each year who then enter the workforce and can contribute to local economic growth. Research at the university produces new technologies with commercial potential, which can support local business activity and lead to new company formation.

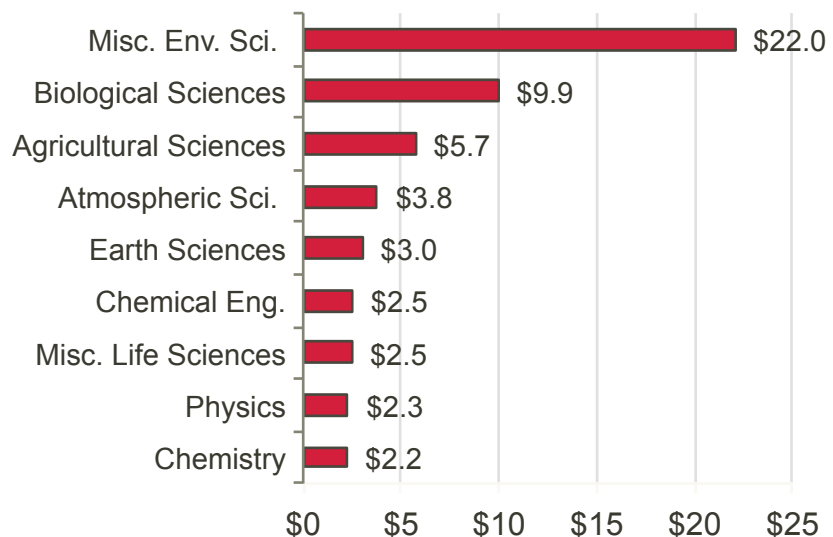
The University of Wyoming and the Wyoming Business Council partner to offer services through the Wyoming Business Resource Network (BRN), a unique statewide program that provides assistance to businesses at all stages of development. These services are rarely concentrated and shared so effectively between a state government and university. The BRN offers:

- Technical assistance through a variety of programs, including Manufacturing Works and the Wyoming Procurement Technical Assistance Center (PTAC).
- Custom research from the Wyoming Market Research Center.
- Technology transfer support through the Wyoming Research Products Center (RPC) at the University of Wyoming, which helps connect businesses with University research technologies available for commercial licensing.
- Funding opportunities for small businesses through the WY Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) programs.
- The University operates the Wyoming Small Business Development Centers (SBDC) with offices throughout the state and offer business support services and learning opportunities.
- Business incubation programs in multiple cities, including the successful Wyoming Technology Business Center, a 30,000 square-foot facility in the City of Laramie that has had remarkable success in developing early-stage technology companies and is currently full.

A recent study of the University of Wyoming's Economic Footprint found, **“As of 2012, together small businesses supported by the Wyoming SBDC's and Manufacturing Works have injected \$276,392,505 into the state's economy and 39,377 jobs have been created and retained since 1994. This has as tremendous economic impact on Wyoming.”**

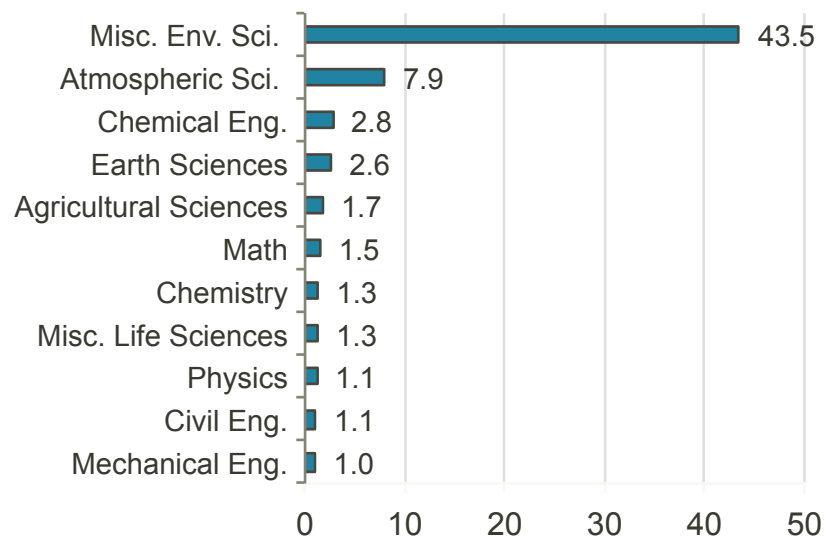
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LARGEST RESEARCH FIELDS – U. OF WY  
2012 (\$ MILLIONS)



SOURCE: US PTO, US Census Bureau, & Avalanche

MOST CONCENTRATED RESEARCH FIELDS – U. OF WY, 2012 (LQ)



SOURCE: US PTO & Avalanche

The most heavily funded research programs at the University of Wyoming are in a mix of earth sciences, life sciences, chemical engineering, physics, and other material technology related fields. In 2012, the research fields most concentrated at the University of Wyoming relative to the US average were **Miscellaneous Environmental Science** (43.5 LQ, or 43.5 times more concentrated than the US average), **Atmospheric Sciences** (7.9 LQ), **Chemical Engineering** (2.8), **Earth Sciences** (2.6), and **Agricultural Sciences** (1.7). Miscellaneous Environmental Science generally describes interdisciplinary environmental science projects and likely includes some oil and gas and mineral extraction related fields. These field descriptions are broad and do not give full justice to some of the specific research strengths at the university, which include the development of **advanced materials, technologies for industrial and environmental purposes, and software for design and other services.**

Some of the most successful companies that grew from University of Wyoming research commercialization include:

- |                            |                                          |                    |
|----------------------------|------------------------------------------|--------------------|
| • West, Inc.               | Natural Research Statistics & Ecology    | 85 Employees in WY |
| • The Blue Sky Group, Inc. | Fuel Cells and Oil & Gas Services        | 50 Employees in WY |
| • Happy Jack Software      | Custom Software, including Medical       | 22 Employees in WY |
| • UL IDES Inc.             | Search Engine & Info. For Plastics       | 19 Employees in WY |
| • Delta Nu                 | Spectrometers and Light-Imagine Products | 17 Employees in WY |

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

These and many other companies in Wyoming have spun directly from entrepreneurial support programs developed through the BRN and often administered by the University of Wyoming. Other company product areas range from bridge design software to water disinfecting technology for ships.

Research and economic development activities at the University of Wyoming are a tremendous asset to Wyoming and have increasing connectivity directly to businesses in Laramie County. **Research activities related to oil & gas services, wind turbine production, software, healthcare, chemical engineering, advanced materials, and many others have the potential for direct commercialization by companies in Laramie County.**

The strong relationship between the University and Cheyenne LEADS continues to grow and develop, presenting new opportunities for increasing collaboration between local businesses and the Business Resource Network's assets. **Plans to potentially open a University of Wyoming incubator in Cheyenne presents significant opportunities to support new business creation locally.**

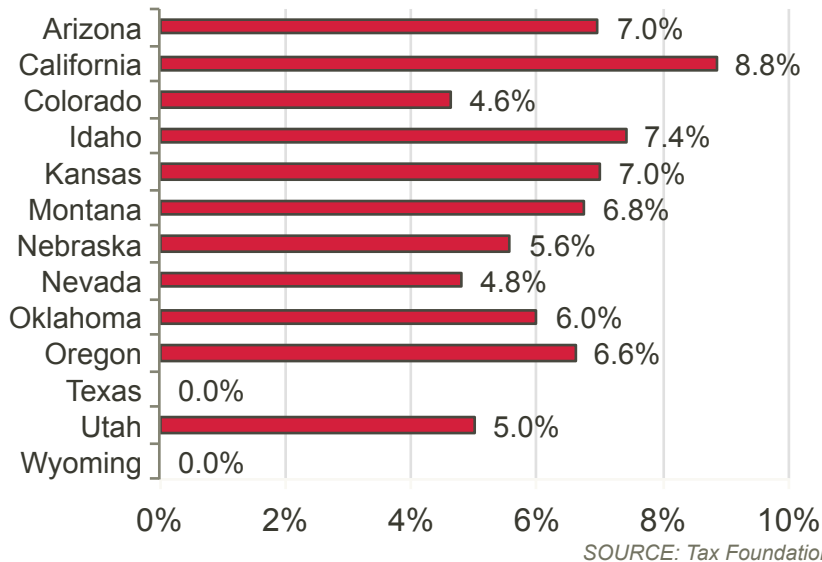
**Business Climate**

An assessment of a location’s business climate generally covers whether local taxes and regulations create undue burdens on business operations. Taxes and regulations are important public policy tools for raising revenues to provide necessary services, protecting the environment, ensuring fair competition, and other objectives. Taxes and regulations can also negatively impact business operations. Slow and cumbersome permitting processes, excessive corporate income taxes, and other regulatory elements can easily drive businesses out of a location and make it more difficult to attract new businesses.

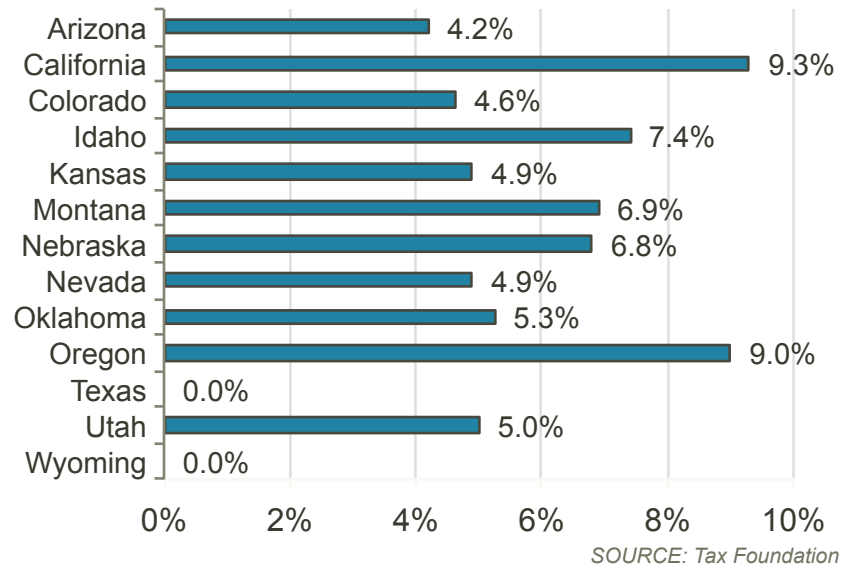
**Laramie County is fortunate to be located in the State of Wyoming, which has one of the most favorable business climates in the United States.** Wyoming is one of the few states in the US that has no corporate income tax and no personal income tax. In contrast, neighboring Colorado has a 4.6% tax rate on both corporations and individuals.

The regulatory environment is more difficult to assess. Regulatory burdens differ from industry to industry and which agency is involved. In general, interviews with members of the business community expressed positive reviews of the State of Wyoming’s regulatory environment but raised concerns about federal regulations related to workforce and the environment. **The City of Cheyenne and Laramie County are seen as business friendly, but some interviewees raised concerns that city codes may be overly restrictive of redevelopment and building renovation.**

STATE CORPORATE INCOME TAX RATES  
2012



STATE PERSONAL INCOME TAX RATES (OVER \$50K)  
2012

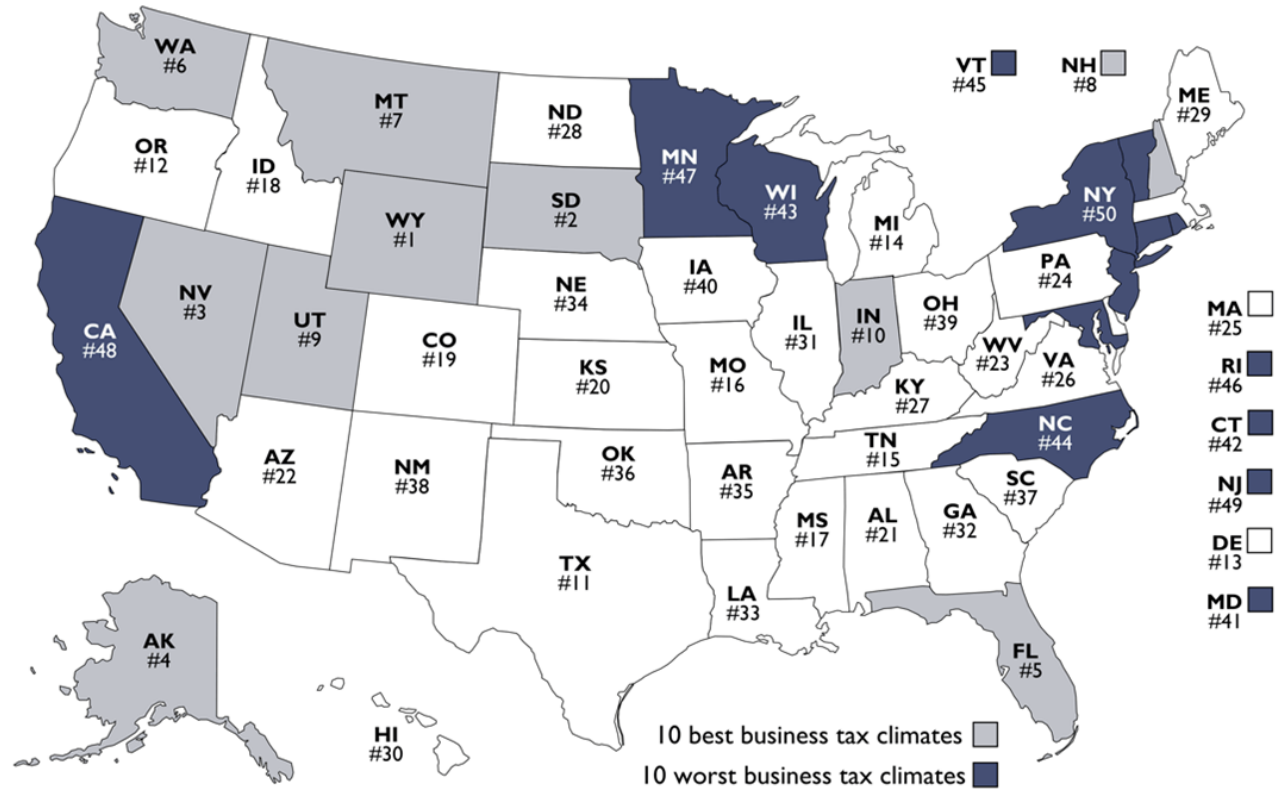


The 2014 State Business Tax Climate Index by the Tax Foundation found Wyoming to have the #1 State Business Tax Climate.

Even though both Texas and Wyoming have no corporate and personal income taxes, the overall tax environment, including franchise and other taxes, was found to be better in Wyoming.

Wyoming ranked 1<sup>st</sup> for Corporate and Individual income taxes. Notably, the state ranked 31<sup>st</sup> for Unemployment Insurance Taxes and 34<sup>th</sup> for Property Taxes.

# 2014 State Business Tax Climate Index

Note: Published October 9, 2013.  
Source: State Business Tax Climate Index

[taxfoundation.org/maps](http://taxfoundation.org/maps)

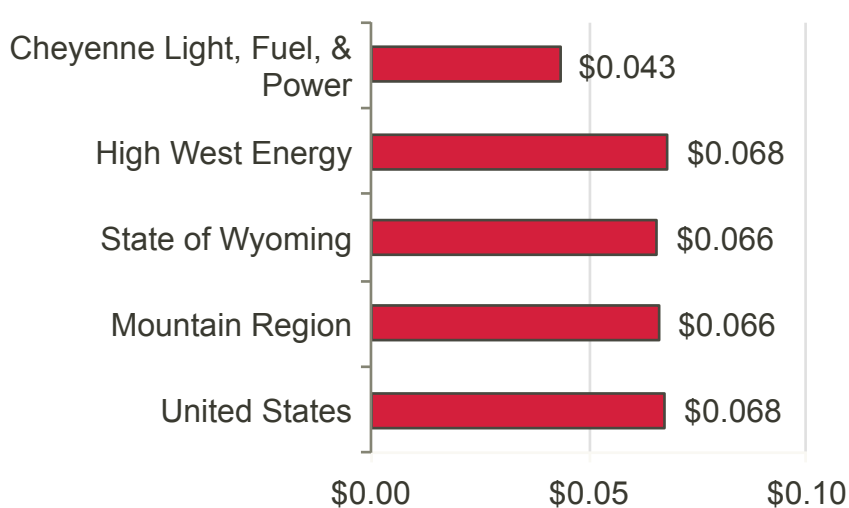
**Utilities**

Utility rates, like business climate, are an important site selection factor for many business operations, particularly in industries such as manufacturing, data centers, and other heavy power and water industries. Affordable electricity is a primary concern for these companies, but reliability and redundancy are often equally significant factors. Data centers in particular seek locations with utilities that can provide high capacity and uninterrupted service at an affordable rate.

**Local utilities currently offer highly competitive industrial electric and commercial gas rates along with reliable service, making Laramie County a highly attractive location from a utility perspective.** Most recent electric rates from Cheyenne Light, Fuel, & Power (CLFP), High West Energy, and the US Energy Information Administration (EIA) show local rates well below state, regional, and US averages. In June 2014, Cheyenne Light, Fuel, & Power had an average industrial electric rate of \$0.043 per kWh compared to \$0.068 from High West Energy, \$0.066 in the State of Wyoming and Mountain Region as a whole and \$0.068 nationally.

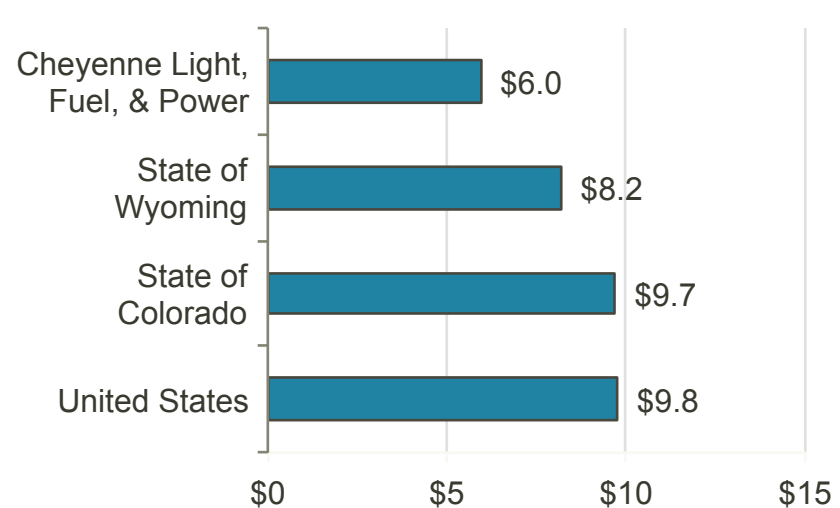
**Commercial gas rates offered by Cheyenne Light, Fuel, & Power are also well below state and national averages.** In June 2014, CLFP offered gas at highly competitive rate of \$6.0 per dekatherm, well below the Wyoming average of \$8.2 and US average of \$9.8. CLFP is going to further increase natural gas supply and reliability with the planned opening of the new Cheyenne Prairie Generating Station in 2015.

**INDUSTRIAL AVERAGE ELECTRIC RATE**  
(\$ PER KWH)  
JUNE 2014



SOURCE: Local Utilities. - US Energy Information Administration

**COMMERCIAL NATURAL GAS RATE**  
(\$ PER DEKATHERM)  
JUNE 2014



SOURCE: Cheyenne Light, Fuel, & Power. - US Energy Information Administration

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

The Wyoming Public Services Commission (PSC) recently approved rate changes for Cheyenne Light, Fuel, & Power that will go into effect on October 1, 2014. The new rates are expected to raise gas prices by as much as \$0.07 per day and electricity by \$0.36 per day. **Cheyenne Light, Fuel, & Power's highly competitive rates are currently a significant asset to Laramie County. It is currently unclear how rate increases will affect rate competitiveness.**

**Regardless of rate changes, Cheyenne Light, Fuel, & Power and High West Energy offer a strong mix of modern infrastructure, reliability, service, and rates for electricity and natural gas.**

Water and sewer rates are more difficult to collect and directly compare across national, state, and county lines, due to numerous providers and varying provisions based on meter size and volume usage. **An examination of current water and sewer rates from the City of Cheyenne Board of Public Utilities showed average residential water rates that were comparable to rates in the region and lower than those in California, Texas and other draught-prone states.** Industrial rates are more challenging to compute and compare, but interviews did not indicate that industrial water and sewer rates were non-competitive. Costs of fees for new water and sewer services were not examined in this analysis.

**The local fiber network and connectivity to cross-national fiber lines is some of the strongest in the nation.**

### Industrial Sites and Real Estate

Appropriate industrial sites, zoning, and buildings for growing industries are another critical factor in economic development. Businesses considering expanding in or relocating to a community must be able to find real property appropriate to their needs. For professional services and software firms, appropriate real estate might entail downtown Class A office space with walkable amenities. For manufacturing and distribution operations, this may mean shovel-ready industrial greenfield sites with build-to-suit options, often in industrial parks. Competitive communities often review their real estate offerings from the perspective of target industries, identify gaps in supply and demand, and develop strategies to either directly address industry needs or assist the private sector in doing so.

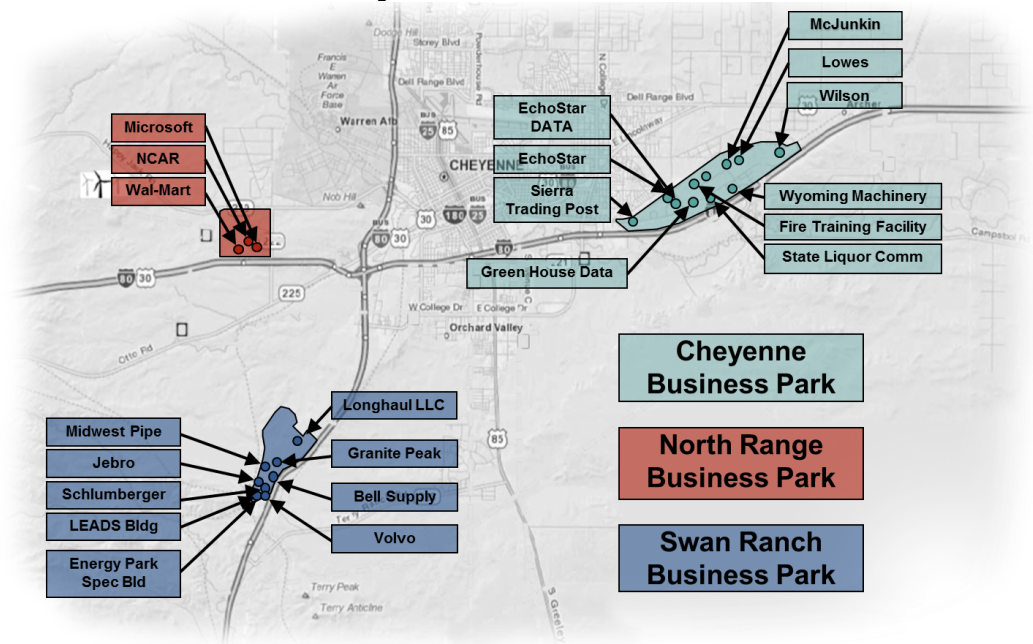
**A high availability of shovel-ready sites is one of Cheyenne’s greatest competitive strengths; many sites feature rail service, interstate highway access, and other competitive infrastructure.** The State of Wyoming offers few direct incentive tools, such as grants and tax abatements, for economic development, because the State constitution prohibits direct investment or credit to an individual or corporation. The state does, however, offer the Business Ready Community (BRC) Grant & Loan Program, which provides funding for publicly owned infrastructure and property used in economic development.

Cheyenne Business Parkway and North Range Business Park were developed entirely through local fund raising campaigns. These publicly-owned parks were financed through private contributions and community effort, not BRC programs, and demonstrate Cheyenne’s public and private commitment to investing in the community.

These industrial parks and the three private parks (Swan Ranch Business Development, Niobrara Industrial Park, and Campstool Business Park) offer unique, affordable, shovel-ready site options in the region. Few communities offer as many or as affordable options as Laramie County. **A major local strength is strong rail service, including new access to two lines at Swan Ranch.**

Despite numerous options on the industrial and commercial property front, Cheyenne conspicuously has limited Class A office space and other downtown properties that would make the community more competitive for professional services and other high-tech operations.

### Cheyenne Business Parks



## Strengths, Weaknesses, Opportunities, & Threats

The following section presents a summary of Cheyenne and Laramie County’s strengths, weaknesses, opportunities, and threats (SWOT). The SWOT Analysis draws conclusions from the Baseline Analysis above, Cheyenne LEADS staff observations, the Task Force, the consulting team’s national perspective and expertise, and extensive input from the nearly 50 regional representatives who participated in focus groups and interviews. Public and private businesses and organizations represented in these meetings included:

- A Thru Z Document Destruction
- Align
- AllState
- ANB Bank
- Arts Cheyenne
- AVI Engineering, P.C.
- Brewster Miller
- Century Link
- Chamber of Commerce
- Cheyenne Downtown Development Authority
- Cheyenne Frontier Days
- Cheyenne LEADS
- City of Cheyenne
- Coldwell Bankers – The Property Exchange
- Community First Data Services
- Delta Dental of Wyoming
- EchoStar
- Element Church
- Express Employment
- F.E. Warren AFB
- Gater Industries
- Green House Data
- Holland & Hart, LLP
- Laramie County
- Laramie County Community College
- Laramie County Library
- McGee, Hearne, & Paiz
- Microsoft Data Centers
- Northwestern Mutual
- RJBC
- Schroll Cabinets
- State of Wyoming
- United Way of Laramie County
- University of Wyoming
- Visit Cheyenne
- Walmart Distribution Center
- Willis of Wyoming
- Woodhouse Roden Nethercott, LLC
- Wyoming Business Council
- Wyoming Department of Workforce
- Wyoming Tribune Eagle

Thank you to all those who met with the consulting team and expressed their candid opinions about the community. Cheyenne is lucky to have highly engaged and passionate residents and businesses. We hope that you continue to engage in this process moving forward, because strong economic and workforce development requires partners from throughout the region.

**Cheyenne & Laramie County SWOT**

**Strengths**

- Highly competitive business environment, including tax rate, regulatory environment, utilities, and logistical connectivity
- Local job creation has been strong, and the recovery is outpacing both the state and nation
- Laramie County has a high concentration of small businesses
- Laramie County Community College is very successful
- The University of Wyoming is located in neighboring Albany County
- The State has a highly successful employee training program
- Cheyenne has a wealth of civic, arts, and professional organizations highly engaged with the local community
- Cheyenne LEADS has strong member support and success attracting companies and creating jobs
- The community is welcoming, family-friendly, and has a strong work ethic

**Challenges**

- Low unemployment and relatively small local population translates to limited workforce availability
- The local population is not as well-educated as national averages
- Recruiting and retaining younger, college graduates can be difficult
- Housing is relatively expensive and the rental market is at nearly 100% occupancy
- Although outdoor recreational options are strong and there are many family-oriented cultural centers and events, there is a perception of limited social amenities and indoor recreational options, particularly after the rec center vote
- Despite strong transportation infrastructure connectivity, local passenger air transportation is unreliable, with limited scheduled service and frequent cancellations
- Wyoming has a limited economic development incentive toolbox: land development is the primary tool used locally

**Opportunities**

- Laramie County Community College, the University of Wyoming, local high schools, and employers would benefit from a more structured relationship to communicate educational and skill needs of employers
- Improving availability of trained and ready workforce for data centers, logistics, and other operations could allow them to grow more rapidly than current conditions allow
- Rapidly expanding oil, gas, and natural resource extraction and processing operations in Wyoming create opportunities for manufacturing, service, and support businesses in Laramie County
- Marketing to workers from the broader labor shed, including Colorado could fill many gaps
- West Edge redevelopment could boost attraction and growth
- University of Wyoming Incubator in Cheyenne could boost startup growth and increase collaboration with research partners

**Threats**

- If workforce availability does not increase, many local businesses may have difficulty expanding their operations in Laramie County
- Without increased housing stock, particularly rentals and affordable housing, many workers in targeted low-skill and high-education occupations will not be able to relocate to Cheyenne
- Perception of greater amenities in Colorado will draw younger, better-educated workers and the businesses that depend on them away from Laramie County
- Limited investment in cultural amenities, infrastructure improvements, and community development, could increase the challenge of attracting talented workers

## Industry Opportunity Evaluation

With a baseline understanding of Laramie County’s competitive position and relative strengths and challenges, the following section looks at the industry related questions in more detail:

- Which industries are creating jobs and investment nationally, statewide, and in Laramie County?
- Which industries are currently forecasted to create the most jobs locally?
- Which industries have the potential to create even more jobs with economic development support?

This section first looks at industry cluster trends and forecasts in Laramie County, the State of Wyoming, and the US. As with all datasets, it is important to note that industry forecasts are not always accurate, particularly at the county level. In this report, most industry employment and forecast data are produced by EMSI, a private, national data vendor, and in some industry areas, data centers for example, their projections do not necessarily reflect the most up-to-date awareness of assets and trends on the ground in Laramie County.

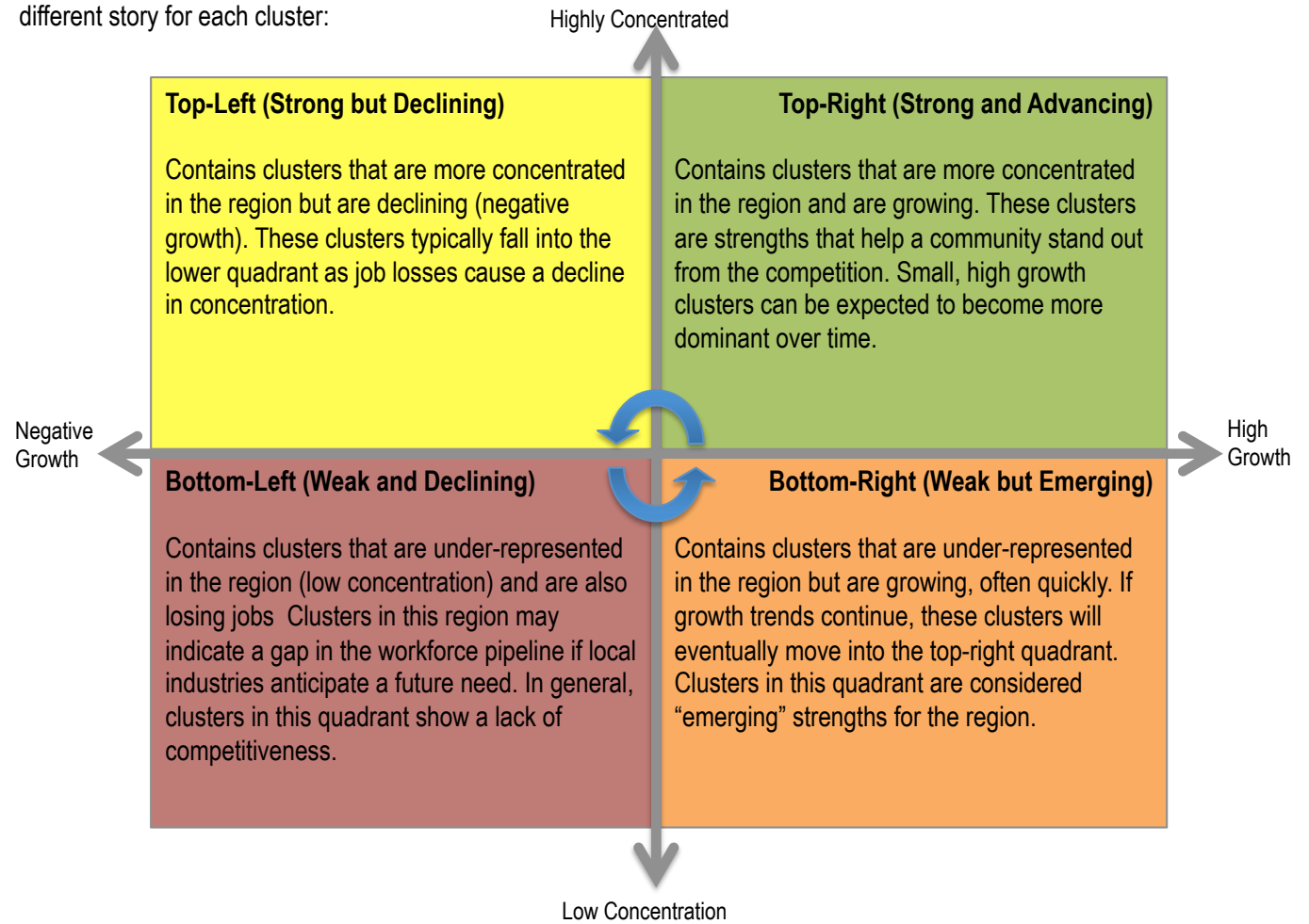
Taking this into account, when Avalanche makes Industry Opportunity recommendations in the following section, the consulting team qualifies forecasts and other data with their national perspective and on the ground experiences, comparing trends to known assets, recent business relocations, and local testimonies.

**Recent Industry Trends & Forecasts**

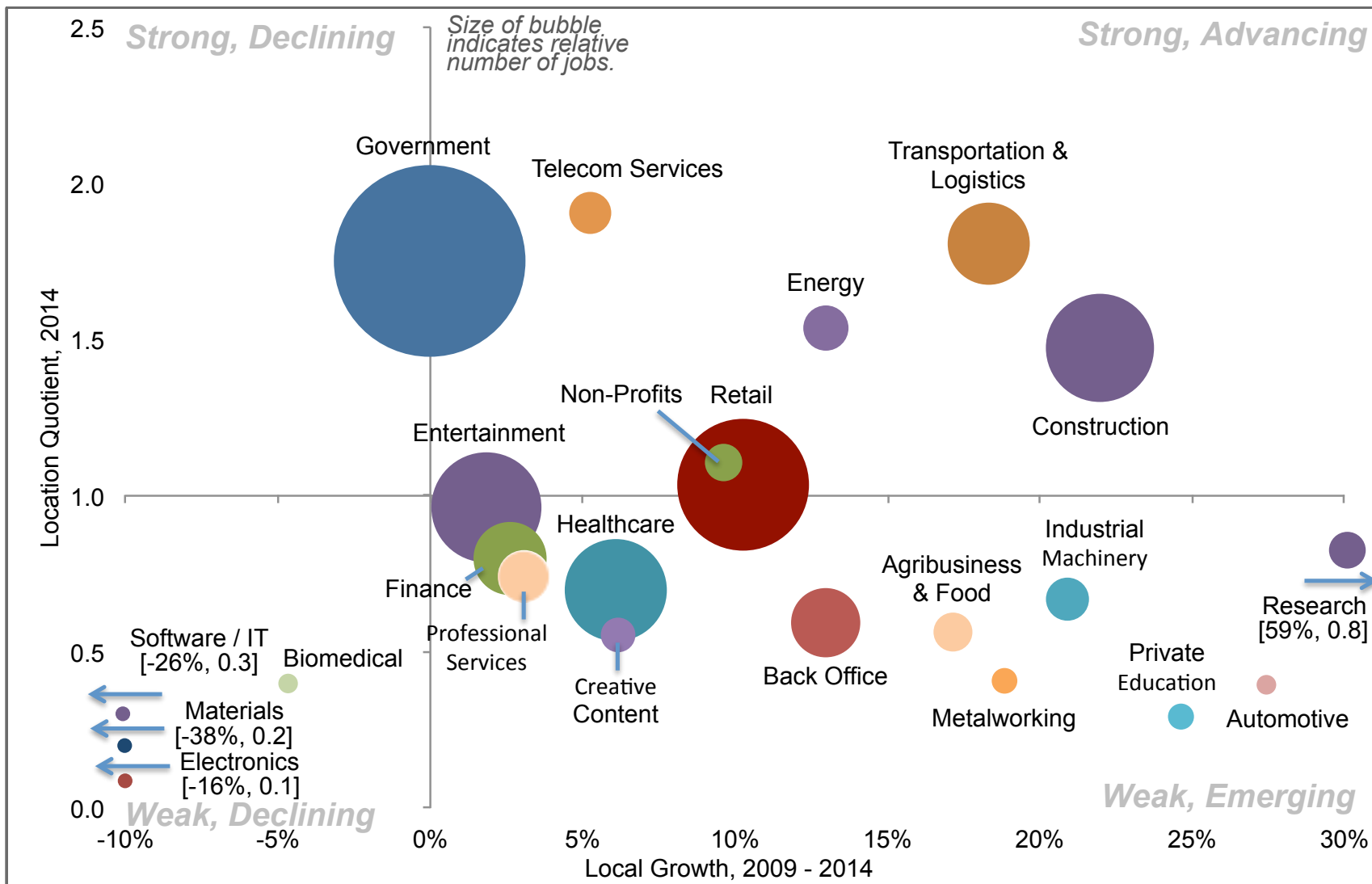
Location Quotients (LQs) compare the relative concentration of an industry in a local economy with the average concentration seen at the national level. An LQ of 1.5 indicates that the local economy has 50% more jobs per capita in that industry than witnessed at the national level. An LQ of 1.0 indicates parity, and an LQ below 1 indicates a below-average concentration. The “bubble chart” in the following section shows LQ by industry on the vertical axis. The horizontal axis shows the 5-year % growth for the industry, and the size of the bubble indicates the relative number of jobs in the industry.

The graph’s quadrants each tell a different story. While sectors in the top-right quadrant are viewed as competitive and should be priorities for talent development, sectors to the bottom-right (which are growing, but have below-average concentrations) are emerging sectors for the local area. These sectors typically require special attention such as entrepreneurial assistance or new workforce training programs.

The graph’s four quadrants each tell a different story for each cluster:



### Industry Cluster Trends - Laramie County, WY



Source: Avalanche Consulting using data from EMSI

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

Industry performance in Laramie County has outpaced the nation over the past five years. Overall employment grew 6.6% locally, compared to 5.6% nationally, and only a small handful of industry clusters lost jobs.

The largest industry clusters in Laramie County are **Government** (13,800 jobs), **Retail** (6,500), **Entertainment** (4,500), **Construction** (4,400), and **Healthcare** (3,900). These are some of the largest sectors nationally and the relatively high number of Government jobs is due to the State capital's location in Cheyenne.

The most concentrated local industries are **Telecom Services** (1.9 LQ); **Transportation & Logistics** (1.8); **Government** (1.8); **Energy** (1.5); and **Construction** (1.5).

**The significant number of clusters in the lower-right Emerging quadrant of the bubble chart is highly encouraging and reveals strong opportunities.**

Less concentrated but rapidly growing industries include **Research** (59% growth, 0.8 LQ); **Automotive** (27%, 0.4); **Industrial Machinery** (21%, 0.7); **Metalworking** (19%, 0.4); and **Agribusiness & Food** (17%, 0.6). **Back Office, Professional Services, and Finance** jobs are also growing locally, despite below average concentrations. These jobs are becoming more concentrated with time and represent opportunities for growth.

Trends that may represent threats include the continued decline in **Software / IT, Materials, Electronics, and Biomedical** clusters, which already have very low

**Industry Cluster Trends**

Laramie County, WY

Industry	2014 Jobs	2014 LQ	Past Growth, 2009 - 2014	
	Laramie Cty.	Laramie Cty.	Laramie Cty.	US
Agribusiness & Food	567	0.6	17.1%	4.3%
Apparel & Textiles	20	0.1	-4.8%	-8.3%
Automotive	144	0.4	27.4%	19.5%
Biomedical	143	0.4	-4.7%	1.0%
Back Office	1,794	0.6	13.0%	19.9%
Construction	4,380	1.5	22.0%	0.5%
Creative Content	448	0.6	6.2%	-7.8%
Education	253	0.3	24.6%	9.8%
Electronics	99	0.1	-16.1%	1.6%
Energy	766	1.5	13.0%	13.3%
Entertainment	4,541	1.0	1.8%	11.8%
Finance	2,001	0.8	2.6%	1.3%
Furniture	67	0.4	1.5%	-2.0%
Consumer Goods Mftg	34	0.1	-33.3%	-0.3%
Government	13,752	1.8	0.0%	-2.9%
Healthcare	3,905	0.7	6.1%	11.3%
Industrial Machinery	694	0.7	20.9%	6.4%
Software / Info. Tech.	239	0.3	-25.5%	22.9%
Transportation & Logistics	2,525	1.8	18.3%	8.1%
Materials	102	0.2	-37.8%	0.2%
Metalworking	246	0.4	18.8%	10.0%
Mining & Logging	49	0.7	0.0%	4.7%
Non-Profits	524	1.1	9.6%	0.9%
Professional Services	1,039	0.7	3.1%	4.4%
Research	441	0.8	58.6%	16.8%
Retail	6,500	1.0	10.3%	3.5%
Telecom Services	662	1.9	5.2%	-12.3%
<b>Total</b>	<b>45,882</b>	<b>1.0</b>	<b>6.6%</b>	<b>5.6%</b>

Source: Avalanche Consulting using EMSI Data

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

employment and concentration in Laramie County. The Software / IT industry's small size and declines are troubling considering the increased importance of this sector in the modern economy. It is important to note, however, that despite declines in the industry, Software / IT occupations, which are present throughout numerous industries, may be performing better. These trends will be discussed in greater detail in the following Labor Market Report.

### Industry Forecasts

Forecasts of industry growth are based on economic models of past local performance, global trends, population forecasts, and numerous other factors. Forecasts are more useful at the state and national level for evaluating opportunities; at the local level, they do not take into account the potential for proactive economic and workforce development efforts to improve retention and spur growth through attraction and business support.

Industry forecasts may not be perfect, but they do assist in planning for the future and attempting to assess the workforce needs of businesses. Forecast data is provided by EMSI, a nationally recognized data provider.

Many of the industries with the highest forecast growth rates in the State of Wyoming over the next five years are also forecast to grow in Laramie County and the US. The table to the right shows forecast growth rates for all three geographies, as well as net new jobs currently projected in Laramie County. Some local industries forecasted to grow as or more rapidly than the nation, include: **Research** (23% in WY and 29% in Laramie County), **Mining & Logging** (20% and 43% in), **Industrial Machinery** (20% and 16%), **Healthcare** (18% and 21%), and **Private Education** (18% and 25%). State and local growth forecasts in all these industries exceed national projections, reflecting strong competitive assets and economic trends regionally.

### Current Industry Cluster Forecasts: 2014 - 2019

Laramie County, WY

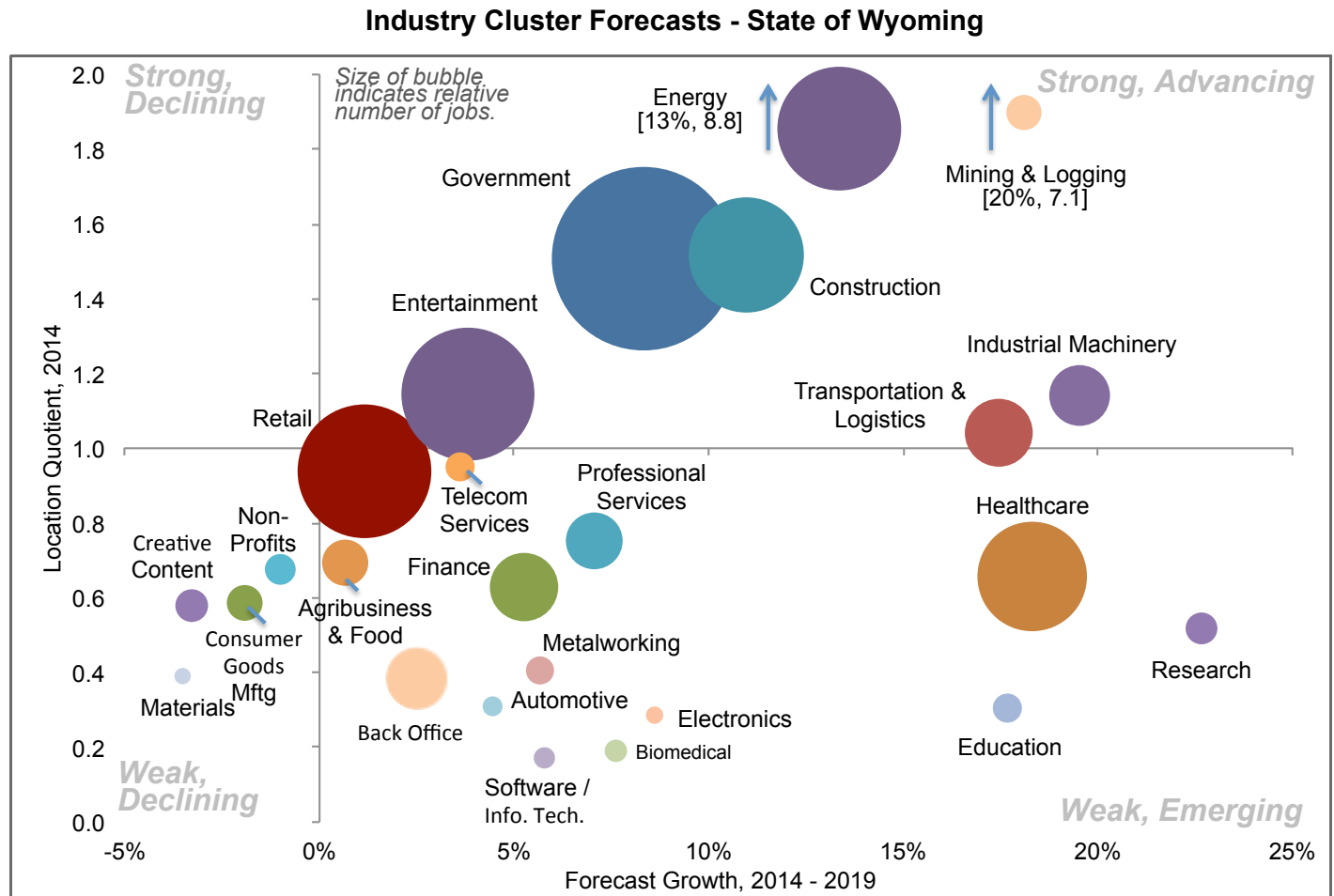
Industry	Forecast Growth		
	Wyoming	US	Laramie Cty.
Agribusiness & Food	0.7%	1.5%	10.6%
Apparel & Textiles	6.6%	-19.1%	-25.0%
Automotive	4.4%	-3.6%	20.1%
Biomedical	8.6%	5.7%	2.8%
Back Office	2.5%	7.8%	-4.8%
Construction	11.0%	5.5%	11.3%
Creative Content	-1.9%	-3.5%	1.1%
Education	17.7%	13.1%	24.5%
Electronics	7.6%	3.4%	-10.1%
Energy	12.6%	7.0%	8.5%
Entertainment	3.8%	6.5%	0.8%
Finance	5.3%	4.5%	7.1%
Furniture	-9.7%	-8.9%	-14.9%
Consumer Goods Mftg	-3.5%	-6.5%	-2.9%
Government	8.3%	3.0%	5.3%
Healthcare	18.3%	13.4%	21.1%
Industrial Machinery	19.5%	3.0%	16.4%
Software / Info. Tech.	5.8%	16.4%	-36.0%
Transportation & Logistics	17.5%	6.3%	20.8%
Materials	-3.3%	-5.2%	-29.4%
Metalworking	5.7%	0.6%	11.0%
Mining & Logging	19.7%	1.4%	42.9%
Non-Profits	-1.0%	7.1%	-9.7%
Professional Services	7.1%	7.8%	4.4%
Research	22.7%	17.6%	28.8%
Retail	1.2%	4.4%	-3.9%
Telecom Services	3.6%	-5.9%	1.2%
<b>Total</b>	<b>5.6%</b>	<b>5.9%</b>	<b>6.1%</b>

Source: Avalanche Consulting using EMSI Data

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

Industries with high national and statewide projections but negative local forecasts include: **Electronics** (8% in WY, 3% in the US, and -10% in Laramie County), **Software / IT** (6% in WY, 16% in the US, and -36% in Laramie County), and **Retail** (1% in WY, 4% in the US, and -4% in Laramie County). Software / IT is the industry that raises the greatest concerns among these, because it is one of the most rapidly growing industries in the US, but declining locally. *It is also important to remember that local forecasts are based largely on performance in recent years and may not reflect competitive assets and opportunities identified in other sections of this report.*

Industries that are forecasted to continue losing jobs across the nation, state, and county include **Furniture, Consumer Goods, Manufacturing, and Materials**. Interestingly, **Creative Content**, which includes graphic design and digital media, is forecasted to lose jobs nationally and statewide but grow slowly in Laramie County.



Source: Avalanche Consulting using data from EMSI

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

From 2014 to 2019, the State of Wyoming is currently forecasted to create 24,100 net new jobs. Approximately 12%, or 2,800, of these net new jobs will be in Laramie County. The top 10 private industries forecasted to create the most net new jobs in the Wyoming and their corresponding growth rates nationally and in Laramie County are listed in the table below. Laramie County accounts for an above average share of forecasted new statewide jobs in **Transportation & Logistics** (33% of new WY jobs), **Finance** (29%), **Research** (28%), **Healthcare** (19%), and **Construction** (17%).

Industry	Net New WY	Growth Rate			Net New Laramie Cty.	Share of WY Jobs
		WY	US	Laramie Cty.		
Healthcare	4,370	18.3%	13.4%	21.1%	824	19%
Energy	3,676	12.6%	7.0%	8.5%	65	2%
Construction	2,900	11.0%	5.5%	11.3%	497	17%
Transportation & Logistics	1,602	17.5%	6.3%	20.8%	526	33%
Industrial Machinery	1,435	19.5%	3.0%	16.4%	114	8%
Entertainment	1,343	3.8%	6.5%	0.8%	36	3%
Mining & Logging	593	19.7%	1.4%	42.9%	21	4%
Finance	489	5.3%	4.5%	7.1%	142	29%
Research	456	22.7%	17.6%	28.8%	127	28%
Professional Services	453	7.1%	7.8%	4.4%	46	10%

EMSI employment forecasts below the state level are based on models that make numerous assumptions and are often unaware of recent specific relocations and strong local competitive assets, such as new business parks or workforce training programs. For instance, in these datasets, Data Centers are included in Software / Information Technology cluster. Although they record the strong recent growth in Laramie County in this sector, they are offset by Software Programming job losses. Additionally, EMSI forecasts Data Center job losses for Laramie County over the next five years, which is in direct contrast to the known hiring and expansions occurring locally.

For these and other reasons, forecasts are an important tool but only one in the assessment toolbox. Forecasts, particularly at the state and national level, still help us understand industry trends and national perception of the local economy. But they must be qualified with additional perspectives like those provided in the Baseline Analysis and qualitative data from relocation lists and interview testimonies.

## Industry Opportunity Recommendations

After focus groups with local leadership, conducting a tour of the county, and reviewing initial competitiveness data, Avalanche Consulting has identified the following four industry clusters as preliminary Industry Opportunities and potential targets for Cheyenne LEADS:

- **Manufacturing**
- **Data & Information Services**
- **Energy**
- **Transportation & Logistics**

These Industry Opportunities represent economic areas that are growing nationally and globally and in which Cheyenne and Laramie County have direct competitive strengths and site selection assets necessary to develop. Notably, all these industries have critical workforce concerns in Laramie County that will be addressed through this strategic process.

Targeting specific industry opportunities does not mean that other industries will be ignored or stagnate. Targeting affects overall economic growth by focusing economic development activities on industries that have strong multiplier effects and in which Cheyenne is highly competitive. The heightened business activity, new jobs, new incomes, and new spending that come from investments in these industries will spur growth across other sectors.

These targeted industries will also require support and services from a wide variety of sectors, including Professional Services, Software / IT, Construction, Government, Healthcare, and many more.

Some sectors, such as Healthcare, while rapidly growing nationally, statewide, and locally, create new jobs more in response to population growth and demand for services than economic development efforts such as infrastructure investments and tax adjustments. **Nonetheless, Healthcare accounts for a significant share of jobs in the community, is growing, and has important workforce and other economic needs that must be met to retain and support local employment.** As this study progresses into the workforce competitiveness phases, we will continue to revise this Industry Opportunity list, adding additional details or industries as necessary.

The following pages include brief profiles on each of these Industry Opportunities. The profiles describe the industry trends, including business site selection and workforce needs. They include a description of what makes Cheyenne and Laramie County competitive for growth in the industry, including key assets.

## Manufacturing

Manufacturing broadly describes a range of activities that include the production of components and goods from raw materials as well as the assembly of components into finished products. Modern Manufacturing often uses new materials, such as polymers, and complex machinery and technologies, including computerized design and manufacturing systems. Manufacturing also still relies on traditional processes and products, including steel production, metalworking, and chemical manufacturing.

Manufacturing industries present in Laramie County performed well nationally in recent years. From 2009 to 2014, Manufacturing jobs grew 3.7% in the US, slower than the overall economy but much better than previous years. Metal Stamping & Products, Steel & Aluminum Manufacturing, and Plastics Manufacturing led subsector growth. Manufacturing growth has been partly driven by renewed international exports and a boom in oil and gas production domestically.

### Manufacturing Trends

Laramie County, WY

Industry	2014 Jobs	2014 LQ	Past Growth, 2009 - 2014	
	Laramie Cty.		Laramie Cty.	Laramie Cty.
Ag Chem. & Farm Prods.	175	● 4.7	10.8%	0.4%
Electronic Device Mfg.	23	○ 0.1	21.1%	-5.1%
Commercial Equip. Mfg.	157	● 1.8	7.5%	-3.5%
Engine Mfg.	14	◐ 0.4	180.0%	4.0%
Chemicals Mfg.	66	○ 0.3	100.0%	1.0%
Plastics Mfg.	31	○ 0.2	-75.4%	6.2%
Metal Stamping / Products	98	○ 0.2	5.4%	11.4%
Steel & Aluminum Mfg.	135	◐ 0.8	32.4%	9.1%
Tool Mfg.	13	◐ 0.6	8.3%	-8.1%
<b>Total</b>	<b>712</b>	◐ <b>0.5</b>	<b>2.6%</b>	<b>3.6%</b>

Source: Avalanche Consulting using EMSI Data

**Manufacturing operations generally seek locations with skilled workers and training programs; competitive electric, natural gas, and water utility rates and services; low tangible property tax rates; and strong logistical networks for distribution of components and finished products.** Manufacturing’s strong reliance on complex and changing technology means that operations frequently require retraining programs for their existing workers and seek to hire new employees with the most advanced skillsets available. These operations also often utilize expensive and energy intensive machinery. In order to keep operating costs low, Manufacturing operations therefore seek locations with competitive utility rates and low taxes on property. Lastly, manufacturing operations require strong distribution networks to bring in raw materials and components and export manufactured products to customers.

### Cheyenne & Laramie County

The Manufacturing industry is not as concentrated in Laramie County as the national average, but most sectors are growing rapidly, and the county has numerous highly competitive manufacturing assets. Laramie County has over 710 Manufacturing jobs. The largest sectors are **Agricultural Chemical & Farm Products Manufacturing** (175 jobs), **Commercial Equipment Manufacturing** (157), **Steel & Aluminum Manufacturing** (135),

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Metal Stamping / Products** (98), and **Chemicals Manufacturing** (66). The two sectors with above average local concentrations are Agricultural Chemical & Farm Product Manufacturing, which has an LQ of 4.7, and Commercial Equipment Manufacturing, which has an LQ of 1.8.

The overall Manufacturing industry grew 2.6% in Laramie County from 2009 to 2014. All sectors grew from 2009 to 2014, except Plastics Manufacturing, which lost nearly 100 jobs and contributed significantly to slowing overall industry growth. Other sectors grew significantly faster than the national rates, including **Engine Manufacturing** (180% growth), **Chemical Manufacturing** (100%), **Steel & Aluminum Manufacturing** (32%), **Electronic Device Manufacturing** (21%), **Agricultural Chemical & Farm Products Manufacturing** (11%), and **Tool Manufacturing** (8%).

**National Manufacturing sectors that are currently not present in Laramie County but are growing rapidly nationally and may present local opportunities include Agriculture & Construction Manufacturing (20% growth nationally); Automotive OEM Manufacturing (21%); and Automotive Parts Manufacturing & Wholesale (28%).**

Cheyenne and Laramie County's Manufacturing competitive assets are numerous and include:

- Numerous public and private industrial parks that offer highly competitive land prices and rail connectivity.
- Extensive highway and rail distribution connectivity across North America and to major sea and airports.
- Competitive and reliable electrical power from Cheyenne Light, Fuel, & Power.
- -
- Laramie County Community College and the Wyoming Department of Workforce Services offer strong training programs and can tailor programs specifically to employers.
- The State of Wyoming offers a highly competitive regulatory and tax environment.

Existing Manufacturing businesses in Laramie County include:

- VAE Nortrak
- Dyno Nobel
- Searing Industries
- Van Diest Supply
- Emerald Foam Control
- Grobet USA
- Schroll Cabinets

### Data & Information Services

Data & Information Services include the operation and maintenance of data centers and the provision of support and related information services. Data centers are advanced facilities that house computer systems for the storage of data. Their operations rely on telecommunications, utilities, and other supportive infrastructure. Software programming and other scientific research play an important role in information services, providing services to the management and processing of data and development of new technologies for storage and transmission.

#### Data & Information Services Trends

Laramie County, WY

Industry	2014 Jobs Laramie Cty.	2014 LQ Laramie Cty.	Past Growth, 2009 - 2014	
			Laramie Cty.	US
Data Centers	122	1.3	5.2%	9.6%
Software Sales & Prog.	117	0.2	-42.9%	24.8%
Telecommunications	662	2.3	5.2%	-12.3%
Scientific R&D	154	0.7	275.6%	3.6%
<b>Total</b>	<b>1,055</b>	<b>0.8</b>	<b>6.5%</b>	<b>10.2%</b>

Source: Avalanche Consulting using EMSI Data

The US Data & Information Services industry has grown rapidly in recent years, acting as one of the primary drivers of the economic recovery. From 2009 to 2014, the overall Data & Information Services industry grew 10% nationally, nearly twice as fast as the overall economy. The fastest growing sectors were Software Sales & Programming (25% growth), Data Centers (10%), and Scientific R&D (4%). Telecommunications actually declined over this period, losing 12% of national jobs. This was primarily due to the drop in new construction and related cable installation and expansion after the housing bust.

**Data & Information Services operations generally seek locations with affordable, reliable, and redundant electricity; strong and redundant fiber optic cable connectivity; affordable land; mild climates; and low property tax environments.** Data & Information Services operations continuously run energy-intensive machinery and computers that must be constantly cooled and require backups power supplies to ensure that service is not cut off to customers. This means that operations generally prefer locations with more mild climates that require less air conditioning. They also transfer data regularly to and from customers at rapid rates, requiring a reliable and strong fiber optic supply. **Workforce is also an important consideration for Data & Information Services operations, particularly on the software and services side, but many data center jobs are maintenance-related and do not require advanced degrees, making training and hiring easier.**

#### Cheyenne & Laramie County

**Data Centers and Telecommunications, the two most significant sectors of the Data & Information Services industry, are highly concentrated in Laramie County, but Software is much less concentrated and also losing jobs.** Data & Information Services employ nearly 1,060 people in Laramie County, with a below average concentration at 0.8 LQ. The overall industry grew 6.5% from 2009 to 2014, on par with overall job growth.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

The largest and most concentrated Data & Information Services sector in Laramie County is **Telecommunications**, which employs 662 in Laramie County with an LQ of 2.3. **Data Centers** is also highly concentrated, with an LQ of 1.3 and 122 local jobs. Both sectors are growing steadily at 5.2% over the past five years. **Software Sales & Programming** is the smallest local sector, with only 117 jobs and an LQ of 0.2. This sector was also the fastest growing nationally, at 25%, but lost 43% of jobs locally. This trend raises concerns because software and IT provide a fundamental backbone to numerous other industries.

Cheyenne and Laramie County's competitive assets include:

- A strong existing base of Data & Information Services operations with the potential for further growth.
- Competitive, reliable, and redundant power sources delivered by local utilities.
- A location with an ideal climate and a major Electronic Switching Center directly on the strongest, long-haul digital and fiber-optic cable networks, which allow for significant high data speeds and relays.
- Local telecommunications infrastructure and providers are well-established and offer competitive rates and services with the latest technology.
- Industrial parks with shovel-ready sites and affordable land.
- New training programs at Laramie County Community College directly targeted to preparing workers for jobs in the Data & Information Services industry.
- Strong output of engineering and other related graduates from the University of Wyoming in Albany County.
- A highly competitive tax and regulatory environment in the State of Wyoming.

Existing Data & Information Services businesses in Laramie County include:

- Microsoft Data Centers
- Green House Data
- EchoStar
- Optimum Communications
- CenturyLink
- Community First Data Services

## Energy

The Energy industry includes a wide range of activities related to the production of electrical power, including power generation, oil and gas production and refinement, mining of coal, and support services to these operations. Energy also includes new activities in alternative energy production, such as solar and wind, which are harder to capture using traditional NAICS codes. These alternative energy fields currently account for fewer jobs nationally than traditional energy fields but are expected to grow in the future. Currently, many alternative energy sectors, such as wind turbine manufacturing, would be a part of the Manufacturing industry.

### Energy Trends Laramie County, WY

Industry	2014 Jobs	2014 LQ	Past Growth, 2009 - 2014	
	Laramie Cty.	Laramie Cty.	Laramie Cty.	US
Electric Power Generation	132	1.0	3.9%	-3.7%
Mining Sales	12	0.3	-25.0%	6.6%
Oil & Gas	395	2.0	-22.4%	9.2%
Energy Support Services	227	1.6	773.1%	53.9%
Mining	44	1.0	-10.2%	3.4%
<b>Total</b>	<b>810</b>	<b>1.5</b>	<b>11.4%</b>	<b>13.4%</b>

Source: Avalanche Consulting using EMSI Data

The Energy industry has been growing rapidly over the past five years and is expected to continue its rapid growth in the future, as US oil and gas production expands with new technological innovations and resource discovery. From 2009 to 2014, the national Energy industry grew 13.4%, more than double overall job growth. The fastest growing sectors nationally were Energy Support Services (54% growth), Oil & Gas (9%), and Mining Sales (7%). The only sector that lost jobs over this period was Electric Power Generation, which declined 4%.

**Energy operations generally make location decisions based on proximity to oil and gas and other mining resource extraction operations, logistical connectivity, supportive regulatory environments, and the availability of skilled technical workers.** Oil & Gas and Mining operations are by their nature located directly or in close proximity to where resource extraction is occurring. Oil & Gas includes the refining and processing of energy resources, and these operations benefit from proximity to oil and gas fields. Logistical connectivity in the Energy field is based primarily on the presence of oil and gas pipelines, which are critical for moving raw and processed materials from fields to refineries and customer markets. While the presence of natural resources is critical to this industry, Energy operations also tend to grow more quickly in locations with a favorable regulatory climate related to extraction and processing of natural resources and the electrical generation. The industry also requires highly specialized skillsets, which benefit from community college training programs and university production of engineers.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

### Cheyenne & Laramie County

The Energy industry is highly concentrated in Laramie County, employing 810 locally with an LQ of 1.5. The largest Energy sectors in Laramie County are **Oil & Gas** (395 jobs), **Energy Support Services** (227), and **Electric Power Generation** (132), which includes transmission and other support jobs. All these sectors are as or more concentrated than the national average, with Oil & Gas (2.0 LQ) and Energy Support Services (1.6 LQ) being the most concentrated. The smallest and least concentrated sector locally is Mining Sales, with 12 jobs and an LQ of 0.3.

The overall Energy industry grew 11.4% in Laramie County from 2009 to 2014, but only two sectors actually created jobs over this period. **Energy Support Services** grew the fastest, with 773% local growth compared to 54% nationally. **Electric Power Generation** grew 4% over the past five years, while declining at the same rate nationally. All other Energy sectors lost jobs locally, with a 25% decline in Mining Sales and 23% in Oil & Gas.

Cheyenne and Laramie County's competitive assets include:

- Geographic proximity to oil, gas, and mining extraction operations in the State of Wyoming.
- A highly supportive regulatory environment in the State of Wyoming for Energy activities.
- A strong existing Energy industry with established infrastructure, particularly oil and gas pipelines and other distribution networks.
- Training programs for related fields at Laramie County Community College and strong production of geological, petroleum, and other related engineering graduates at the University of Wyoming in Albany County.
- A competitive business climate for support services, which include manufacturing of Energy related machinery as well as professional and technical consulting services, including environmental, engineering, and others.
- A geographic location served by multiple railroads and at the crossroads of I-80 and I-25.

Existing Energy companies in Laramie County include:

- HollyFrontier Oil
- Schlumberger
- Cheyenne Light, Fuel, & Power
- Duke Energy
- McJunkin Red Man
- Anadarko Petroleum

### Transportation & Logistics

The Transportation & Logistics industry includes a range of activities related to the transportation and distribution of goods and people. These activities include passenger and cargo air transportation, freight distribution, trucking, rail, distribution centers, warehousing, and related support activities. Transportation & Logistics is an important independent industry and also provides support to other industries, such as Manufacturing and Energy, by creating important networks for the distribution of goods and raw materials.

Transportation & Logistics has grown rapidly over the past five years, with growth occurring in all sectors nationally. The overall industry grew 8% from 2009 to 2014, with the fastest growing sectors in Rail Transportation (32% growth), Warehousing & Storage (13%), Freight Arrangement (13%), Trucking (10%), and Urban Transit (8%).

**Transportation & Logistics operations generally seek locations with strong transportation infrastructure and connectivity, affordable land, competitive tax environment, and a semi-skilled workforce.** Transportation infrastructure and connectivity is probably the most important factor for this industry and refers to passenger and cargo airports, interstate highway connectivity, rail lines and spurs, and sea ports. These assets must be up-to-date and well-connected to national and international distribution networks. Affordable land and a competitive tax environment are mostly important for distribution centers and other warehousing operations, which tend to be large physical facilities with a significant turnover of goods. These operations generally seek low inventory taxes to reduce the cost of moving goods in and out of their facilities. This industry requires many workers, frequently as drivers and machinery operators, but these jobs tend to have low skill requirements that can be met through on the job training and certificate programs.

### Cheyenne & Laramie County

The Transportation & Logistics industry is highly concentrated in Laramie County, with over 2,500 jobs and an LQ of 1.8. The largest sectors in Laramie County are **Warehousing & Storage** (1,129 jobs), **Trucking** (707), **Airline Transportation** (390), and **Postal & Courier** (176). All these sectors, except Postal & Couriers, are more concentrated than the national average, with especially high concentrations in **Warehousing & Storage** (4.6 LQ) and **Rail Transportation** (4.3 LQ), which have more than four times the national average concentration of jobs.

### Transportation & Logistics Trends

Laramie County, WY

Industry	2014 Jobs	2014 LQ	Past Growth, 2009 - 2014	
	Laramie Cty.	Laramie Cty.	Laramie Cty.	US
Airline Transportation	390	● 1.9	23.0%	0.6%
Freight Arrangement	12	○ 0.2	-14.3%	12.5%
Postal & Couriers	176	◐ 0.9	50.4%	5.0%
Rail Transportation	43	● 4.3	104.8%	32.4%
Trucking	707	◐ 1.4	38.1%	9.7%
Urban Transit	68	◐ 0.4	4.6%	7.7%
Warehousing & Storage	1,129	● 4.6	3.8%	13.3%
<b>Total</b>	<b>2,525</b>	<b>● 1.8</b>	<b>18.3%</b>	<b>8.2%</b>

Source: Avalanche Consulting using EMSI Data

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

The industry is also growing more than twice as fast locally than across the US. From 2009 to 2014, Transportation & Logistics employment grew 18% in Laramie County compared to 8% nationally. The fastest growing sectors locally were **Rail Transportation** (105% growth), **Postal & Couriers** (50%), **Trucking** (38%), and **Airline Transportation** (23%). The only sector that lost jobs over this period was Freight Arrangement, the smallest local sector, which lost 14% of jobs.

Cheyenne and Laramie County's competitive assets include:

- A geographic location served by multiple railroads and at the crossroads of I-80 and I-25.
- A local airport with growing employment and related support from the location of F.E. Warren Air Force Base and Air Wyoming National Guard facility in Cheyenne. Cheyenne also has direct highway and air connectivity to the Denver International Airport.
- Great Lakes Aviation is based in Cheyenne and offers connectivity with United Airlines and Frontier Airlines.
- Local industrial parks offer competitive, shovel-ready land for distribution center operations with direct connectivity to interstate highways and major rail networks, including Burlington Northern Santa Fe and Union Pacific Rail Roads.

Existing Transportation & Logistics companies in Laramie County include:

- Lowe's Distribution Center
- Walmart Distribution Center
- Union Pacific Railroad
- Great Lakes Aviation
- Crete Carrier Corporation
- Sierra Trading Post

## Phase 2: Labor Market Analysis

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### Introduction

Laramie County's population has grown rapidly over the past decade, outpacing the US and bringing the county population to 95,800 in 2013. From 2010 to 2013, since the recovery began, Laramie County added 3,760 new residents, growth of 4.1%. Many of these new residents have migrated into the county from across the nation, and while there has been significant growth in the retired population, the county and city workforce remain younger than the US average. The county population is growing steadily, but jobs are growing even more quickly.

Over the same three years, Laramie County created 2,240 new jobs, growth of 5.3%, and more than the number of new workers added to the local population. Accelerated job growth in the recovery is critical to replacing jobs lost during the recession, but as of today, Laramie County has replaced all 1,500 lost jobs and created an additional 700 new jobs, bringing unemployment to a recent low of 4.8%. This leaves only just above 2,000 unemployed workers available in the labor force, a limited pool from which employers draw.

**If Cheyenne and Laramie County continue to create more jobs than new workers, the existing local labor shortage will only grow worse and threatens to stifle growth of local businesses.** As the local economy becomes increasingly integrated with the Front Range, local workforce shortages force many employers to look outside of Laramie County for new workers and draw from a broader labor market.

This phase, *Labor Market Analysis*, focuses on key questions related to Cheyenne's local labor pool and broader labor market workforce dynamics. Questions addressed include:

- What are the demographic characteristics of the existing workforce living in Laramie County?
- From which neighboring counties does Cheyenne draw workers and what constitutes the Cheyenne Labor Market?
- What are the demographic characteristics of the broader Cheyenne Labor Market?
- Which occupation clusters have been growing in Laramie County?
- Which occupation clusters are critical to economic development and overall growth in Laramie County and how have they performed in recent years?

To begin addressing these questions, the first section, Labor Market Identification, looks at trends within Laramie County's existing population and workforce, including growth rates, migration patterns, and commute patterns. Through this process and consultation with Cheyenne LEADS,

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

Avalanche identified a broader regional workforce from which Cheyenne and Laramie County draw workers. This **Cheyenne Labor Market** consists of six counties in Wyoming and Colorado:

- Albany County, WY
- Goshen County, WY
- Laramie County, WY
- Platte County, WY
- Larimer County, CO
- Weld County, CO

This Cheyenne Labor Market spans a total population of over 741,800, with the population growing more than twice as quickly as the US and including two rapidly growing Front Range counties. The next section, Labor Market Profile, examines a range of demographic characteristics to help understand the differences between the local workforce in Cheyenne, Laramie County, the broader Cheyenne Labor Market, Wyoming, and the US. This analysis highlights some unique opportunities presented by both the local and regional workforce. This analysis also includes an examination of Quality of Life factors across benchmarked regions. Some of the highlighted trends include:

- Cheyenne and Laramie County have a lower share of residents with bachelor's degrees or higher, but a higher share of associate degrees than the state and nationally average.
- The Cheyenne Labor Market, however, is significantly better educated than the national average and offers a large pool of talented workers from which to draw.
- The Cheyenne Labor Market is youthful and has a Young Professional population (residents age 25 – 44) that is much better educated than Laramie County and the nation.
- Cheyenne and Laramie County have a younger than average workforce, with higher shares of both the employed and unemployed under 45 years old. Workers nearing retirement (those aged 55 to 64) comprise a lower share of Laramie County's workforce than the national average and are not overly clustered in any local industry or occupation.
- Laramie County and the Cheyenne Labor Market both have median household incomes above the national average and growing more quickly.
- Overall, Cheyenne and Laramie County have a lower cost of living than bigger cities, including Fort Collins and Denver, but housing is one of the relatively most expensive factors in the local market.
- Housing vacancy rates, both for rental and purchase, are lower than national averages in the City of Cheyenne, but availability is greater in Laramie County overall. Median home costs are comparable to other communities based on incomes, but rental rates are relatively high across the labor market. Housing stock also tends to be older in Cheyenne and Laramie County despite similar costs.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

The final section of the phase is an Occupation Cluster Analysis that first examines the trends in the largest occupation clusters in Laramie County and then more detailed sub-cluster trends in critical occupation clusters. Not all clusters are critical to economic and workforce development. For example, occupations in Personal Services are generally low-skill and have few training requirements. Others, such as Business and Political, may require advanced degrees, but they are less affected by economic development efforts. Growth in these clusters is more related to general business operations or the presence of government entities, such as the state capitol.

The critical occupation clusters identified for Laramie County and discussed in this phase are:

- Back Office
- Computer
- Engineering
- Logistics
- Manufacturing
- Mechanics
- Medical

Understanding the trends and needs of these clusters is essential to developing a strategy to address training, recruitment, and other workforce development tools for Cheyenne and Laramie County. The next phase, *Workforce Gap Analysis*, examines forecast trends in these and other clusters and contrasts them with educational output from Laramie County Community College and the University of Wyoming.

## Labor Market Identification

This section of the report looks at trends within Laramie County's existing population and workforce and identifies a broader Cheyenne Labor Market, from which Cheyenne is capable of drawing additional workers. Research in this section looks at quantitative data, such as commuter and migratory patterns. Because nationally collected data does not tell the whole story, all workforce commute data was checked against the experiences of area employers and Cheyenne LEADS.

Some of the basic questions addressed in the process of identifying the Cheyenne Labor Market include:

- Are Cheyenne and Laramie County growing and what is accounting for this growth?
- From where are people moving to Laramie County and to where are residents leaving the county?
- From and to where do people commute in Laramie County and what are their characteristics?
- From which communities can Cheyenne draw workers in a one-hour drive time?

As with all data, it is important to impart caution regarding their limitations. This analysis looks at population and migration patterns using data from both the US Census and Internal Revenue Service (IRS), which provide the ability to track the number of people moving in and out of a community, their destinations, and limited demographic characteristics about each population. Nonetheless, there are differences in data sets; even annual population estimates are prone to error and show variation between data sources.

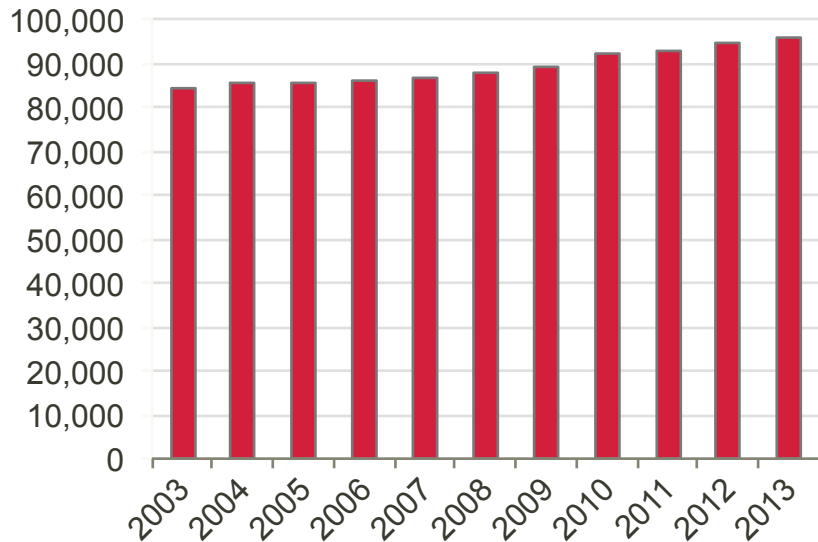
Similarly, commuter data comes from the US Census' Longitudinal Household Employment Dynamics (LEHD) survey, which is one of the few nationally comparable data sets available but also relies on personal reporting and survey modeling than can lead to errors and inconsistencies. No commuter data is better than an on-the-ground census of employees within the community, but lacking that, these estimates are the best available and provide a useful tool for understanding regional workforce trends.

**Population Growth**

Population growth is an important measure of a region’s success and potential for continued job growth. Cities and regions generally grow population rapidly when they have a combination of a robust job market, an attractive quality of life, available and affordable housing, and a youthful population with children. Many communities with large retirement communities are also seeing rapid population growth, as the national population ages and retirees seek desirable destinations to live. Cities and regions often experience slower population growth when the job market is weak, local quality of life is perceived poorly, or there are limited housing options locally. When the job market is weak, laid-off workers and young people, will frequently move to other locations in search of opportunities. Quality of life and housing availability can also dictate whether residents want to and can afford to live in a community.

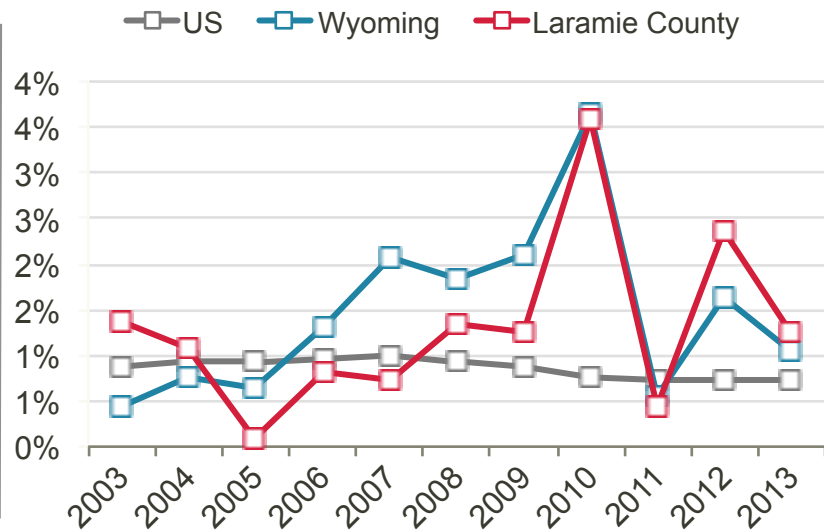
**Laramie County population grew to 95,800 residents in 2013. The county’s population is growing more rapidly than the US average but slower than the state of Wyoming.** From 2003 to 2013, Laramie County and the City of Cheyenne’s populations both grew at an average annual rate of 1.3%, compared to 1.6% in the State of Wyoming and 0.9% nationally.

TOTAL POPULATION, LARAMIE COUNTY  
2003 - 2013



SOURCE: US Census & EMSI

ANNUAL POPULATION GROWTH  
2003 - 2013



SOURCE: US Census & EMSI

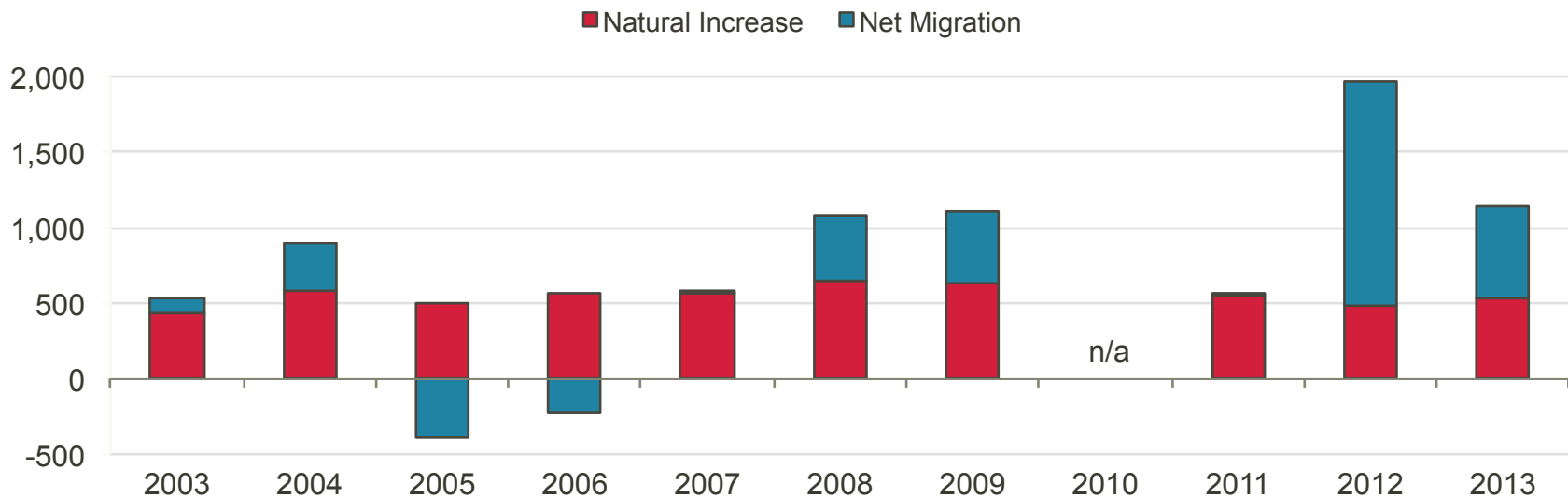
## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

Examining the dynamics of population change is important to understanding a community. Is population growth driven by natural increase (the number of births minus deaths)? Or is population growth driven by net migration (the number of people who move out of a community minus the number who move into the community)? Natural increase is fairly steady in most communities, and migration is often the strongest factor determining whether a community's population is growing, shrinking, or stabilized.

Over the past decade, approximately two-thirds of population growth in Laramie County was fueled by natural increase, but the county also had positive net in-migration of new residents, which grew even faster over the past three years. From 2003 to 2013, Laramie County averaged 546 new residents due to natural increase and 286 due to migration (this includes two years (2005-2006) in which more residents moved out than in to the county).

**In contrast, since 2010, in-migration has outpaced natural increase, demonstrating the increased attraction of living in Laramie County.** Between 2010 and 2013, Laramie County averaged 520 natural increase of residents compared to 703 through in-migration. *Data is unavailable for 2010, because of Census data collection methodology in decennial years.*

COMPONENTS OF POPULATION CHANGE - LARAMIE COUNTY,  
2003 - 2013



SOURCE: CO Dept. of Local Affairs

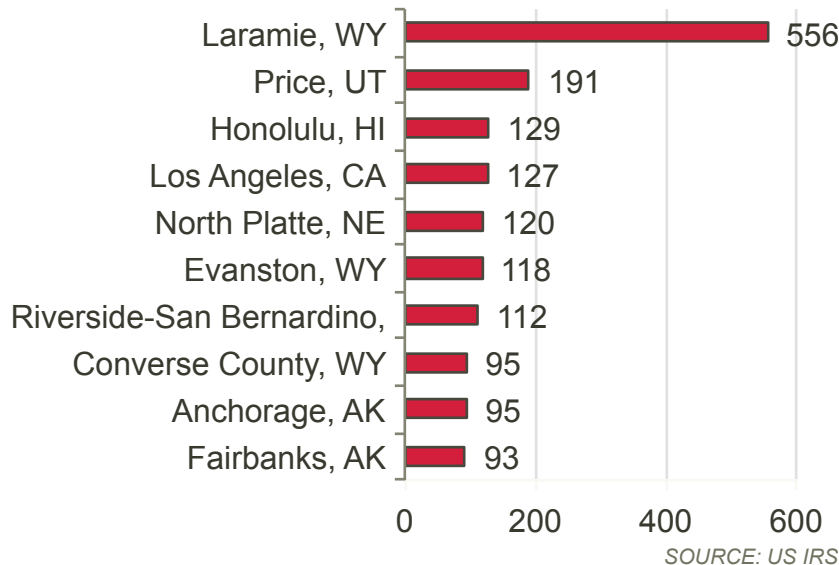
**Migration Patterns**

When looking at migration patterns, it helps to understand to where former residents now live and from where new residents arrive. These dynamics reveal locations that are strong potential sources for new workers as well as competitors that draw local residents away.

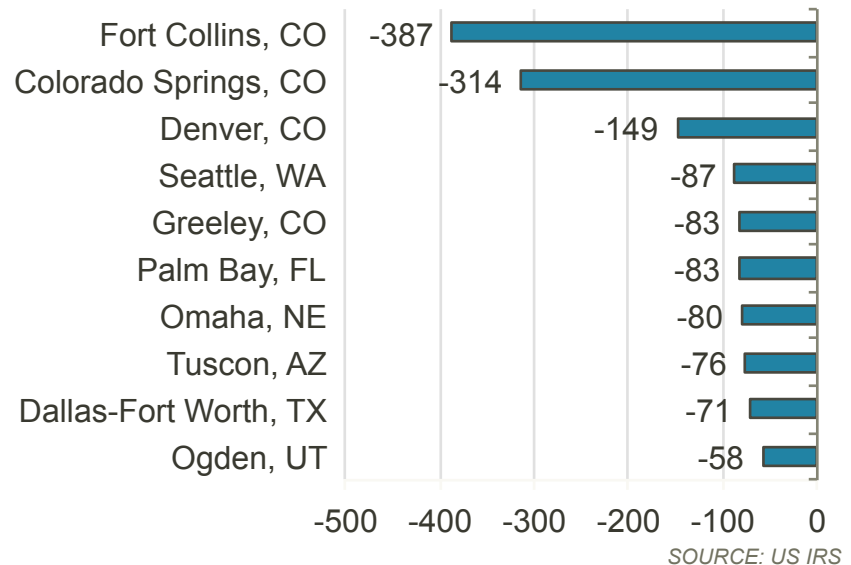
**According to Internal Revenue Service (IRS) geographic migration pattern data, in recent years, more people migrated into Laramie County than away from the county, reinforcing the Census data discussed above.** From 2006 to 2011, Laramie County had a net in-migration of 650 new residents. The largest source of net new residents over this period was the City of Laramie, home to the University of Wyoming in neighboring Albany County. The City of Laramie was a net source of 556 migrants to Laramie County. The next top sources of residents were Price, UT; Honolulu, HI; and Los Angeles, CA. In general, in-migrants to Laramie County came from other counties in Wyoming; Alaska; regional states such as Utah, Nebraska, and North Dakota; and California.

**Migrants leaving Laramie County moved primarily to locations in Colorado but also warmer climate locations such as Florida, Arizona, and Texas.** The top three destinations of out-migrations from Laramie County were the Colorado cities of Fort Collins, Colorado Springs, and Denver. Many younger residents may be migrating to Colorado due to its proximity to Laramie County and perception of a more youthful culture.

TOP 10 SOURCES OF MIGRANTS TO LARAMIE COUNTY, 2006 - 2011



TOP 10 DESTINATIONS OF MIGRANTS FROM LARAMIE COUNTY, 2006 - 2011



## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

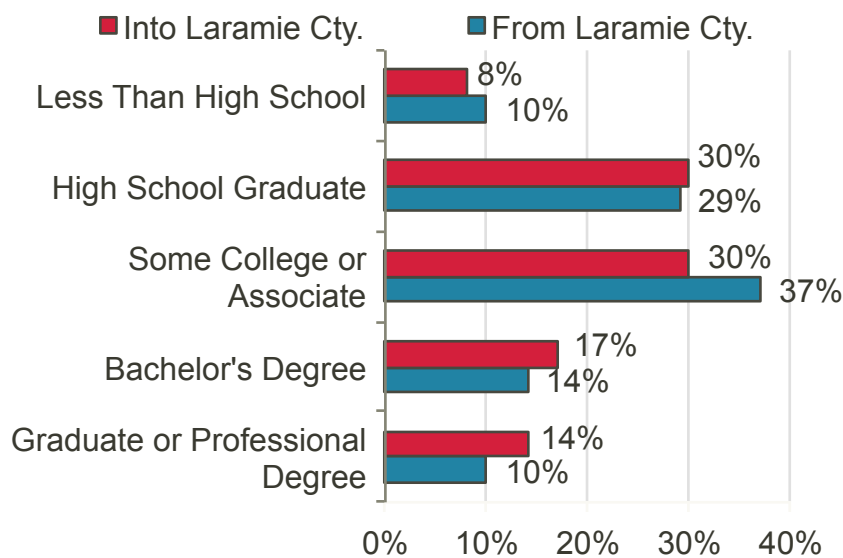
Demographic characteristics of in- and out- migrants from a community help understand whether and how the local workforce is changing with time. Important characteristics to examine are the age and education levels of departing residents and new residents.

**The demographics of migration into and out of Laramie County are fairly similar with some slight important distinctions: generally those leaving the county are less well-educated and younger than those moving into the county.** From 2007 to 2012, 34% of in-migrants to Laramie County had a bachelor's degree or higher, compared to only 24% of out-migrants. A larger share of out-migrants had associate degrees (37%) compared to in-migrants (30%).

Younger people tend to migrate more frequently, seeking job and living opportunities before they are more settled in a location with families and careers. From 2007 to 2012, the median age of in-migrants to Laramie County was 27.5, compared to a median age of 25.5 for out-migrants. It is important to note, however, that in four out of these six years, in-migrants were younger than out-migrants.

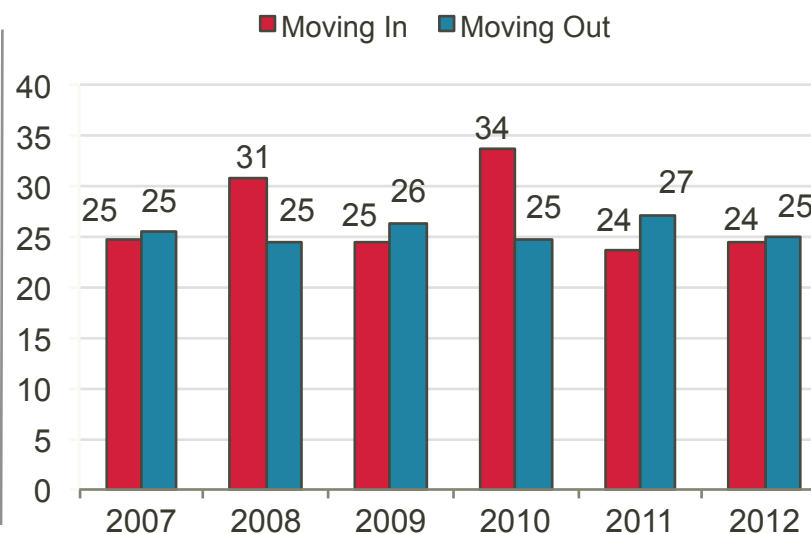
**High-education and relative youth of in-migrants to Laramie County is likely partly a result of a large share of University of Wyoming graduates moving into the county after graduation, bringing both youth and higher education.**

EDUCATION LEVELS OF MIGRANTS  
2007 - 2012



SOURCE: US Census Bureau

MEDIAN AGE OF MIGRANTS  
2007 - 2012



SOURCE: US Census Bureau

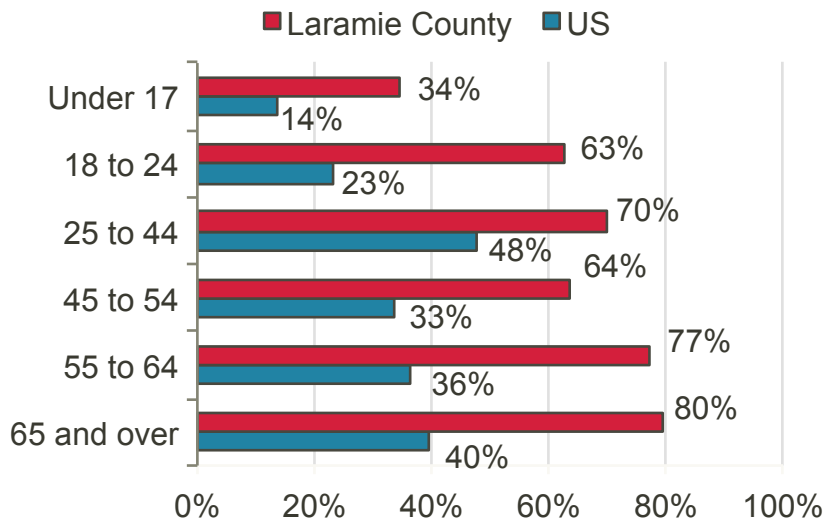
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In-migration from across the US has historically been a primary driver of population growth in both Laramie County and Wyoming, particularly among retirees. **A much higher share of Laramie County’s overall population was born in a different state than the national average.** In 2012, 27% of Americans were born in different state than the one in which they currently live, compared to 61% of Laramie County residents and 55% of Wyoming residents.

Laramie County has a higher share of residents born in a different state than the US at all age levels, but notably the share goes up increasingly with age, while nationally the share declines after age 44. In 2012, the population age group in Laramie County with the highest share born in a different state was those aged 65 and over. 80% of local residents in this age group were born in a different state, compared to a national average of 40%. Nationally, people aged 25 to 44 are the most likely to be living in a state different from their birth, generally due to career and lifestyle choices. This share declines as the population grows older, possibly due to residents moving back to their birth states to be close to family as they reach higher career milestones or retire. **These trends show that Laramie County has a both higher share of residents moving from out of state while young and staying through retirement and moving to the state specifically for retirement.**

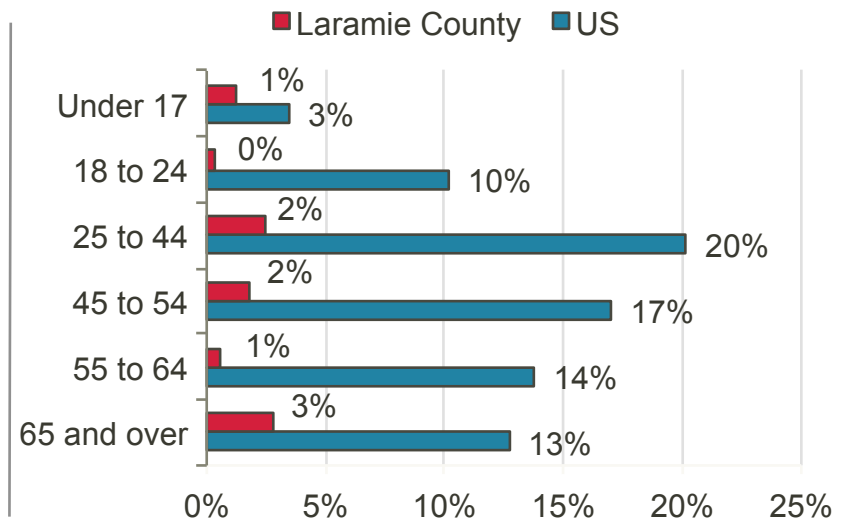
**A much smaller share of Laramie County residents were born overseas at all age levels compared to national averages.** The population group with the largest share of foreign born local residents is those 65 and older, with 3% of Laramie County residents in this group born overseas, compared to 13% nationally.

SHARE OF POPULATION BORN IN A DIFFERENT STATE BY AGE, 2012



SOURCE: US Census Bureau

SHARE OF POPULATION BORN OVERSEAS BY AGE, 2012



SOURCE: US Census Bureau

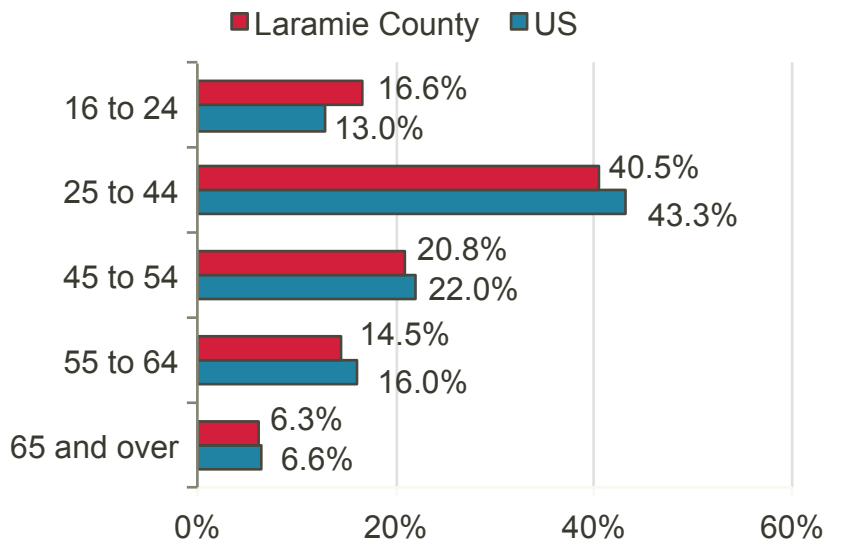
**Labor Force Demographics**

The local labor force is notably younger than US averages, with youthful workers making up a higher share of both the employed and unemployed in Laramie County. In 2012, 16.6% of Laramie County’s workforce was age 16 to 24, compared to 13.0% nationally. All other age groups in Laramie County comprised a lower share of the employed workforce than national averages. **Notably, Laramie County actually had a lower share of workers approaching retirement (55 to 64) than the national average, 14.5% locally compared to 16.0% nationally.**

In recent years, there has been a national discussion regarding the high share of the workforce approaching retirement and whether communities are prepared to replace retiring workers in all occupations and industries. **Although the Laramie County labor force is aging and many workers are nearing retirement, this is not occurring at a greater rate than seen across the nation.** With 20.8% of the local employed population over 55 years old, Laramie County must nonetheless pay attention to potential turnover as retirees exit the workforce.

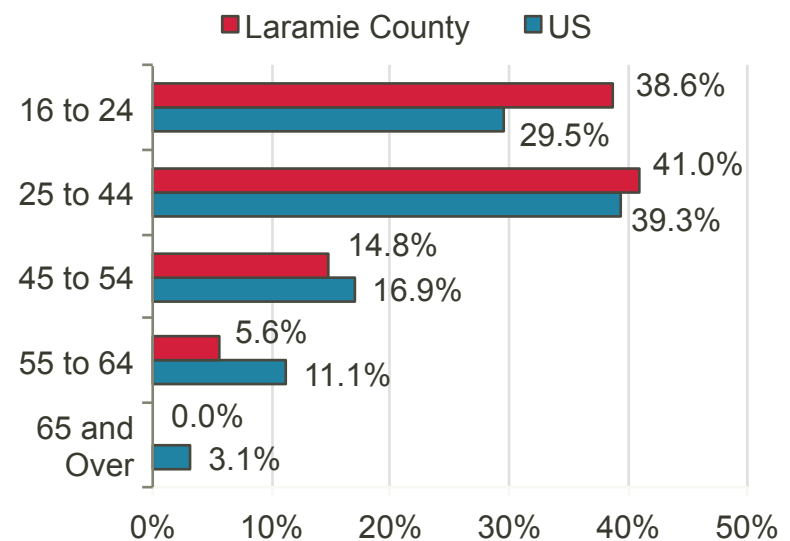
High unemployment among young people is also a concern across the US, and Laramie County has an even higher share of unemployed younger workers than the national average. In 2012, 79.6% of the unemployed in Laramie County were under 45 years old, compared to 68.8% of the nationally unemployed. Workers aged 55 to 64 comprised only 5.6% of the unemployed in Laramie County, compared to 11.1% nationally.

SHARE OF EMPLOYED BY AGE, 2012



SOURCE: US Census Bureau

SHARE OF UNEMPLOYED BY AGE, 2012



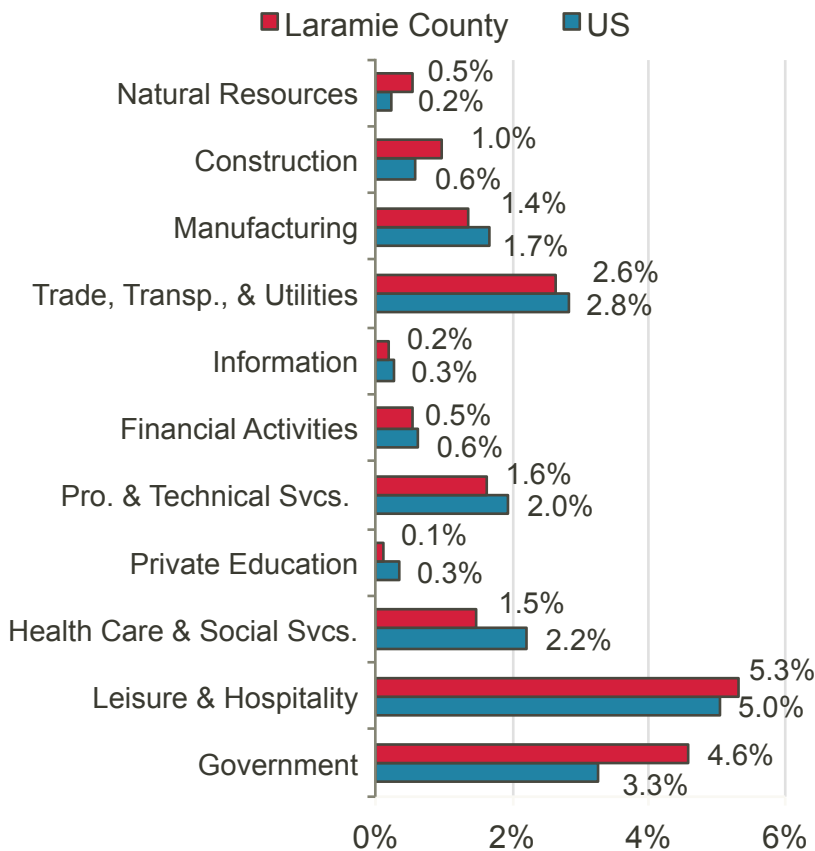
SOURCE: US Census Bureau

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Avalanche also looked at EMSI estimates of industry employment by age demographic, identifying those industries and occupations with the highest share of workers nearing retirement age. **This examination of occupation and industry trends by age showed no significant variation in Laramie County from nationally trends. No occupation or industry cluster is significantly older in Laramie County than the US average.**

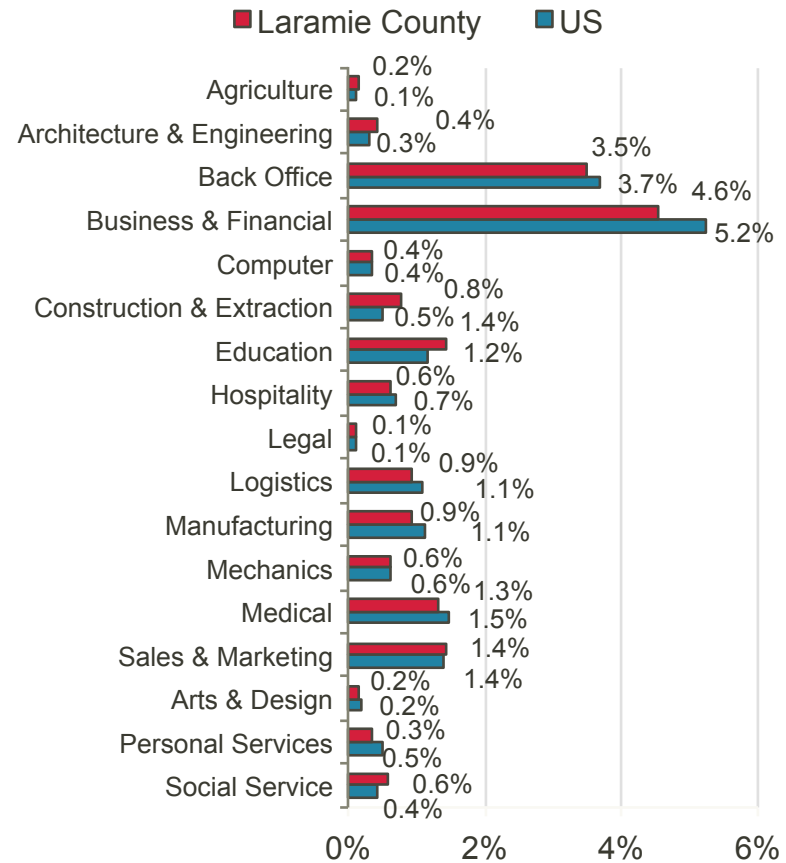
The industries with the largest share of workers in Laramie County nearing retirement are **Leisure & Hospitality** (5.3% of workers are aged 55 to 64), **Government** (4.6%), and **Trade, Transportation, & Utilities** (2.6%).

SHARE OF INDUSTRY WORKERS AGED 55 TO 64, 2014



SOURCE: EMSI

SHARE OCCUPATION WORKERS AGED 55 TO 64, 2014



SOURCE: EMSI

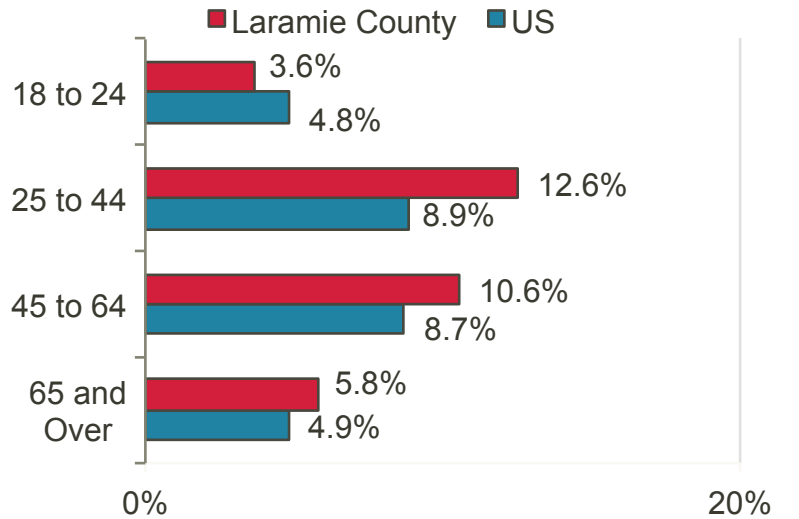
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The occupations with the largest share of workers in Laramie County nearing retirement were **Business & Financial** (4.6% of workers are aged 55 to 64), **Back Office** (3.5%), **Education** (1.4%), and **Sales & Marketing** (1.4%).

The demographic distribution of Laramie County’s educated population also generally tends to follow the overall population trends. **Laramie County has a higher share of residents with associate degrees than the national average in all age groups, except those aged 18 to 24, many of which are still in college pursuing degrees. Similarly, a below average share of Laramie County residents in all age groups have a bachelor’s degree or higher.**

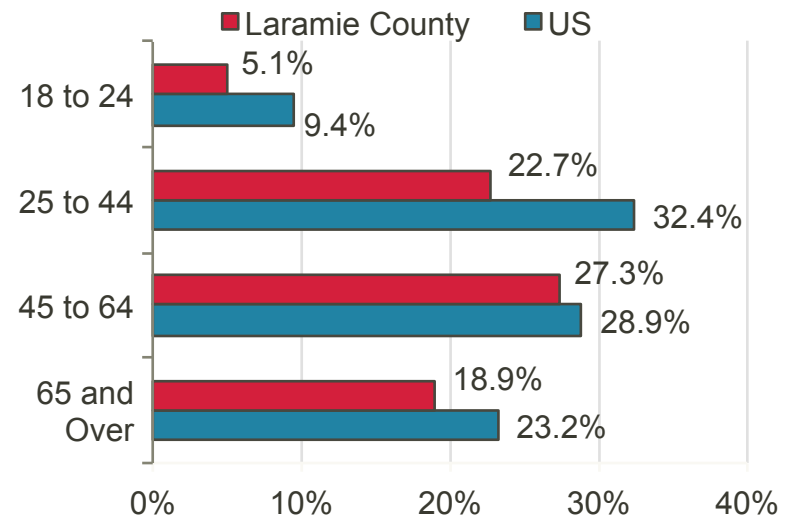
In 2012, Laramie County residents aged 25 to 44 had the highest share of associate degrees, 12.6% of the population, followed by those age 45 to 64, 10.6% of the population. Conversely, Laramie County residents aged 45 to 64 had the highest share of bachelor’s degrees and higher, 27.3% of the population, followed by those aged 25 to 44, 22.7% of which had bachelor’s degrees or higher.

% OF POPULATION WITH ASSOCIATE DEGREES BY AGE, 2012



SOURCE: US Census Bureau

% OF POPULATION WITH BACHELOR’S DEGREES AND HIGHER BY AGE, 2012



SOURCE: US Census Bureau

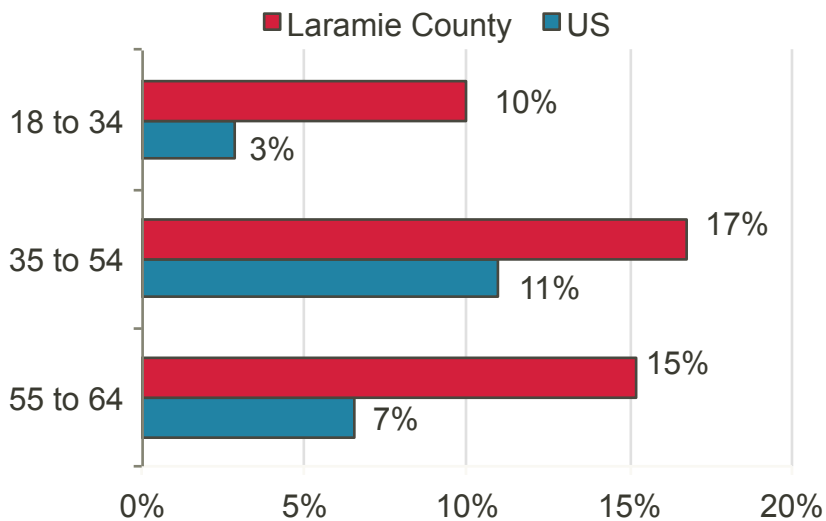
**Veteran Employment**

Many employers consider veterans strong candidates for employment due to their skillsets and perceived work ethic. The presence of an active military facility, such as F.E. Warren Air Force Base, generally leads to a higher concentration of veterans in the local population as service members leaving active duty find employment locally or return later in life because they are familiar with and like the area.

**A higher share of Laramie County workers at all age levels are veterans than national averages, providing an attractive base of workers to employers.** In 2012, 12% of Laramie County’s overall labor force was comprised of veterans, compared to 7% in Wyoming and 5% nationally. The largest share of employed veterans were aged 35 to 54: 17% of these workers, compared to 11% nationally.

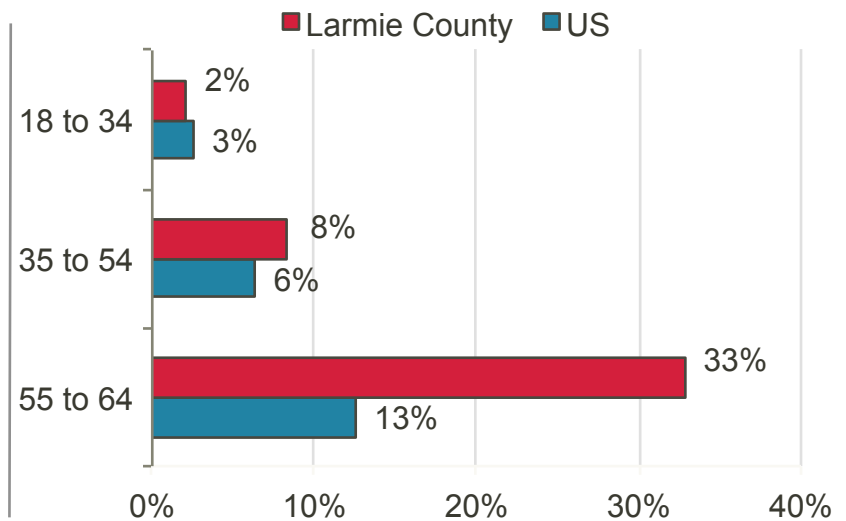
**Veterans also comprise a higher share of the unemployed in Laramie County than the national average, particularly among those aged 55 to 64.** In 2012, veterans comprised 6% of the unemployed in Laramie County and 10% of the unemployed in the City of Cheyenne, compared to 5% nationally. Laramie County had a lower overall share of the unemployed aged 55 to 64, but a higher share of this population was comprised of veterans, 33% locally compared to 13% nationally.

VETERAN SHARE OF EMPLOYED WORKERS BY AGE, 2012



SOURCE: US Census Bureau

VETERAN SHARE OF THE UNEMPLOYED BY AGE, 2012



SOURCE: US Census Bureau

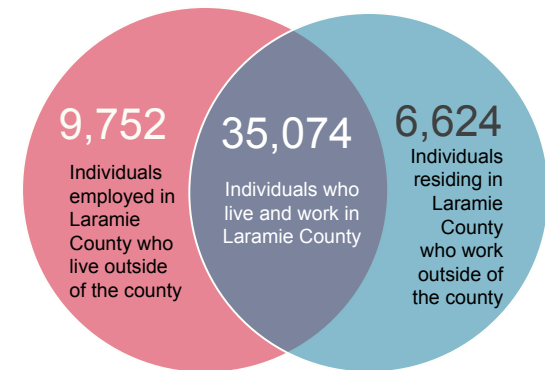
**Commute Patterns**

Not all jobs in a community are filled by local residents, and not all residents of a community work locally. To identify the full labor force available to a community, it is important to look where local workers currently reside. Commuting workers demonstrate that they are willing and able to work in a community, despite not living there. They are an important part of the available workforce. Commute data looks at Primary Jobs and does not include secondary jobs, such as retail or hospitality.

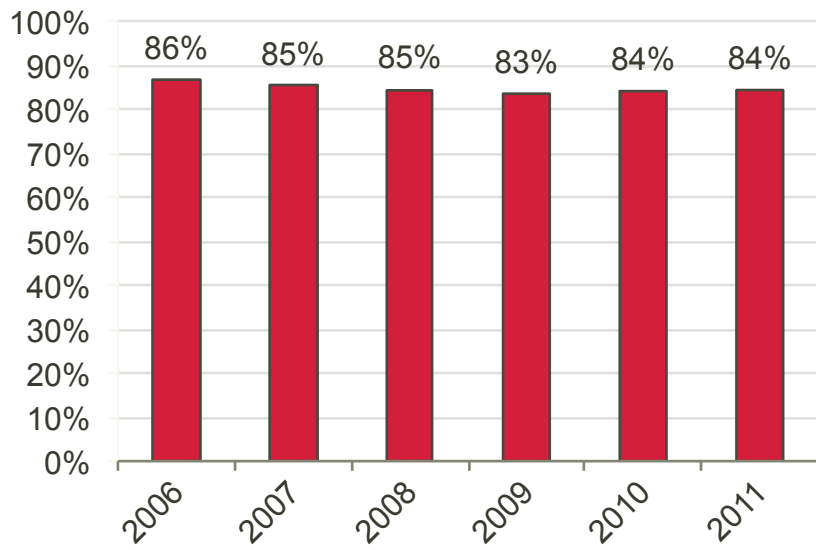
**The vast majority of Laramie County primary jobs are filled by local residents, but the number of jobs filled by non-residents has been growing with time.** In 2011, Laramie County had nearly 45,000 primary jobs, with 78% of these jobs filled by residents.

From 2006 to 2011, an average of 85% of Laramie County residents worked in the county, with the other 15% commuting to outside the county for work each day. Conversely, an average of 18% of local jobs are filled by non-residents; however, the share grew from 12% in 2006 to 22% in 2011, an important shift. **Because the share of residents working locally only changed a small amount, this indicates that non-residents of Laramie County are holding an increasing share of new jobs.**

LARAMIE COUNTY PRIMARY JOB  
COMMUTE PATTERNS  
2011

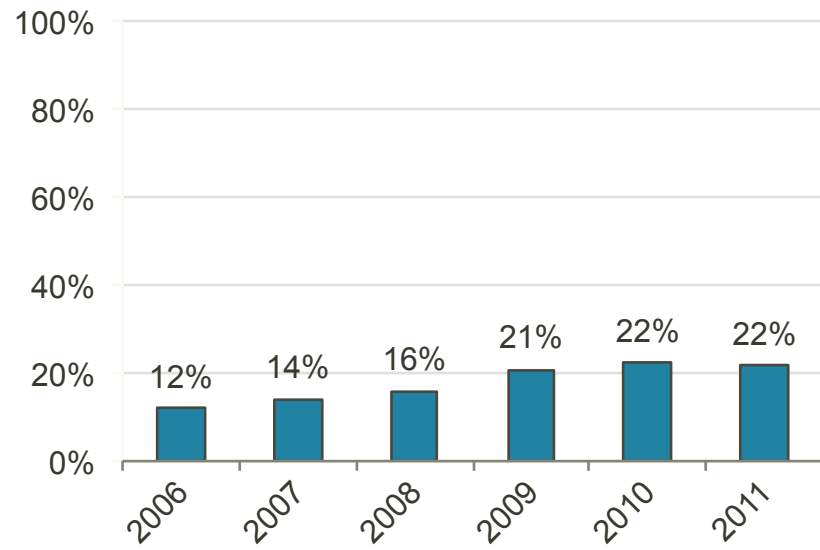


% OF RESIDENTS WORKING IN LARAMIE COUNTY  
2006 - 2011



SOURCE: US Census Bureau, LEHD

% OF PRIMARY JOBS FILLED BY NON-RESIDENTS  
2006 - 2011



SOURCE: US Census Bureau, LEHD

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

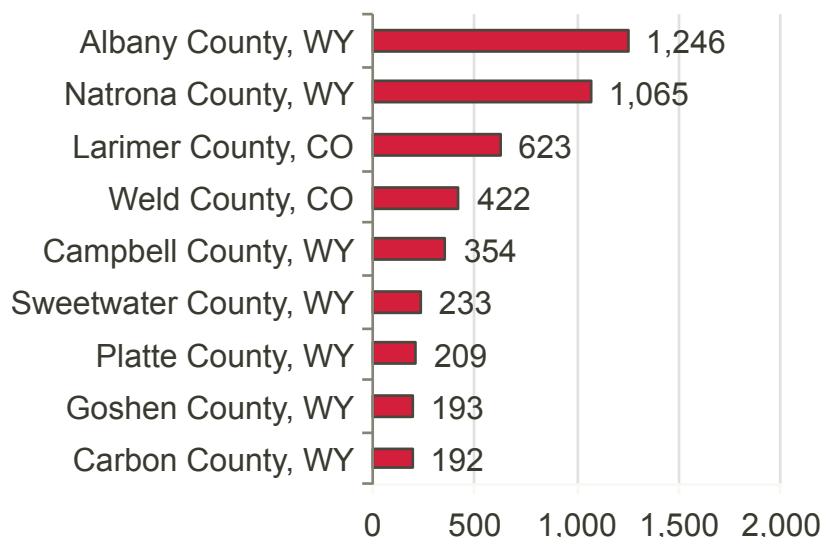
As discussed above, the majority (over 35,000) of Laramie County residents live and work locally, but hundreds of residents and workers commute in and out of the county each day. **The majority of in- and out-commuters travel to and from neighboring Wyoming counties and Larimer County and Weld County in Colorado.** Among neighboring Wyoming counties, the greatest exchange of commuting workers occurs between Albany County and Natrona County. In 2011, these two counties accounted for 29% of in-commuting workers and 35% of out-commuting workers.

The same year, 26% of workers commuting into Laramie County came from Larimer County and Weld County, in comparison, only 16% of Laramie County residents commuted to these Colorado counties. **This shows that as a whole, Laramie County is more of a destination for Northern Colorado workers than vice versa.**

In 2011, the top outside work destinations for Laramie County residents were **Albany County, WY** (1,246 out-commuters); **Natrona County, WY** (1,605); **Larimer County, CO** (623); **Weld County, CO** (422); and **Campbell County, WY** (354). The top outside home locations of Laramie County workers were **Albany County, WY** (1,695 in-commuters); **Weld County, CO** (1,460); **Natrona County, WY** (1,119); **Larimer County, CO** (1,103); and **Fremont County, WY** (454).

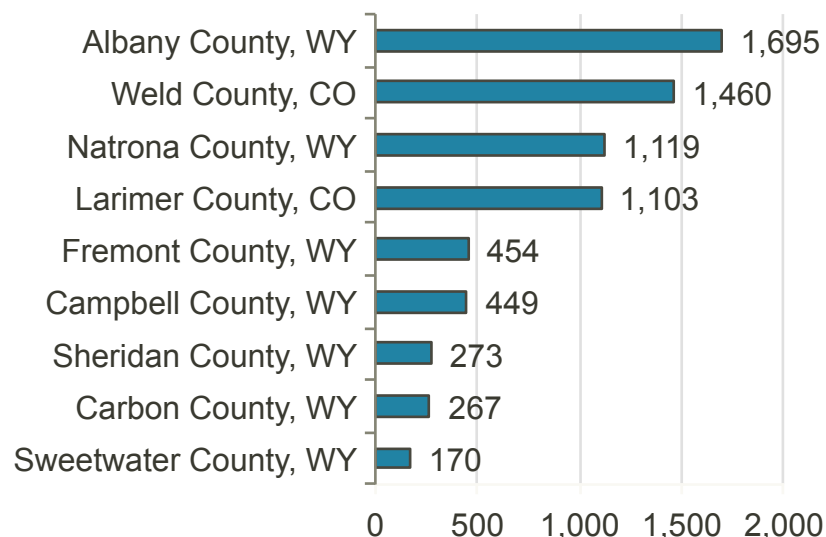
*Note: US Census LEHD commute pattern data is useful but also has limitations. Many locations are further away from Laramie County than a daily commute might warrant. Natrona, Sweetwater, Campbell, and Sheridan Counties are all over two-hours drive from Cheyenne. Some of these may actually represent daily commutes, while others are likely the result of contract work situations, temporary jobs, and mineral extraction operations.*

TOP OUTSIDE WORK LOCATIONS OF LARAMIE COUNTY RESIDENTS, 2011



SOURCE: US Census Bureau, LEHD

TOP OUTSIDE HOME LOCATIONS OF LARAMIE COUNTY WORKERS, 2011

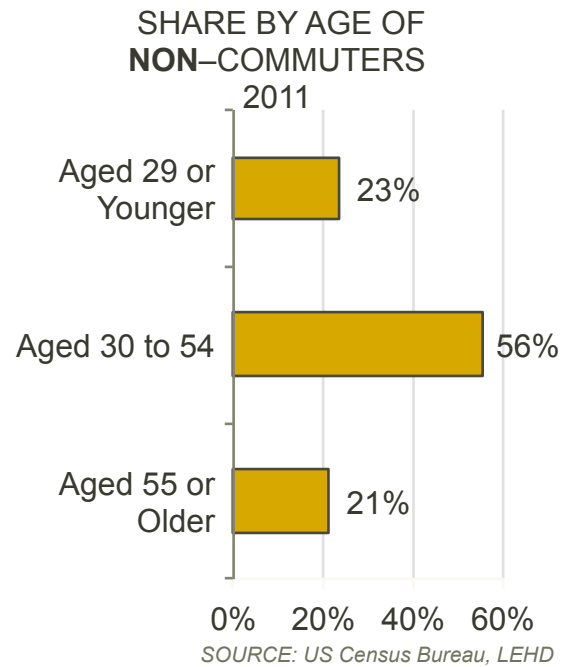
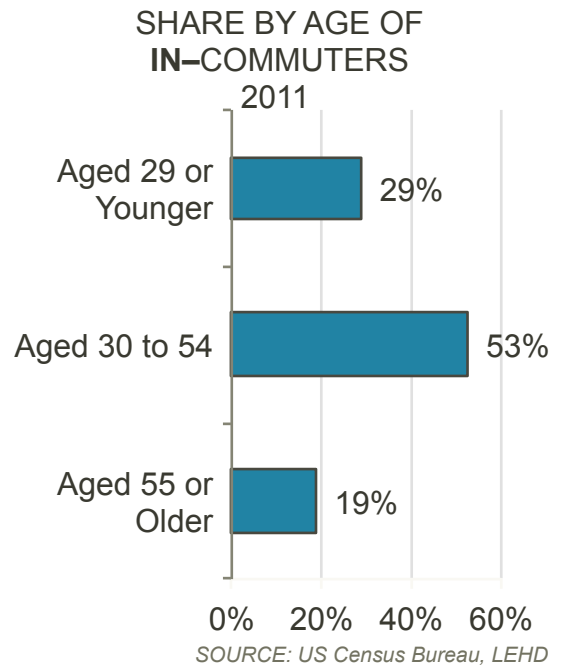
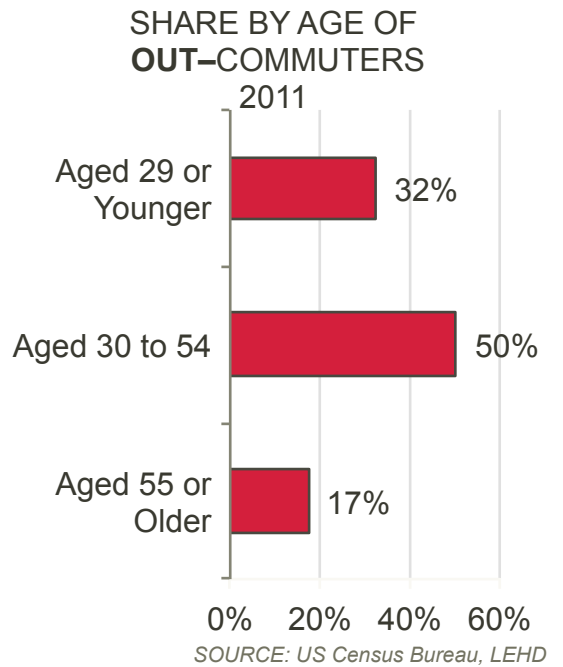


SOURCE: US Census Bureau, LEHD

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As a whole, those commuting for work, both in and out of Laramie County, tend to be slightly younger than residents who work locally. In 2011, out-commuting residents were the youngest group of commuters; with 32% less than 30 years old and 50% aged 30 to 54. In comparison, in-commuters were slightly older; with 29% under 30 and 53% aged 30 to 54. Both of these groups were younger than the non-commuting working population of Laramie County, which tends to be slightly older, with 23% under 30 years old and 56% aged 30 to 54.

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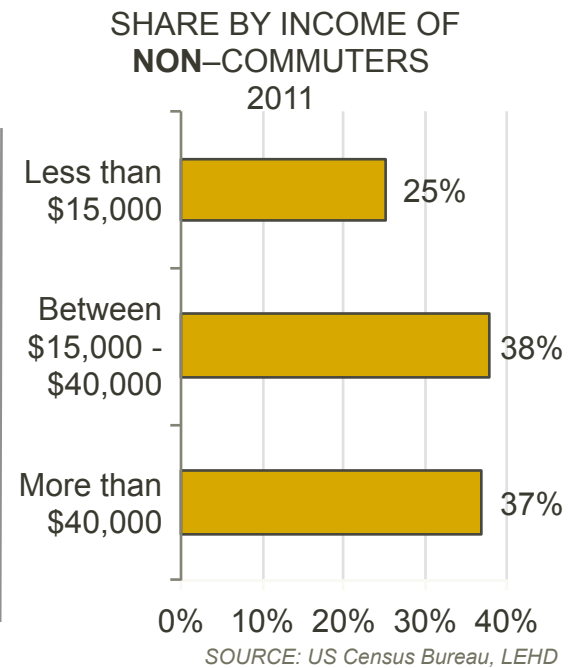
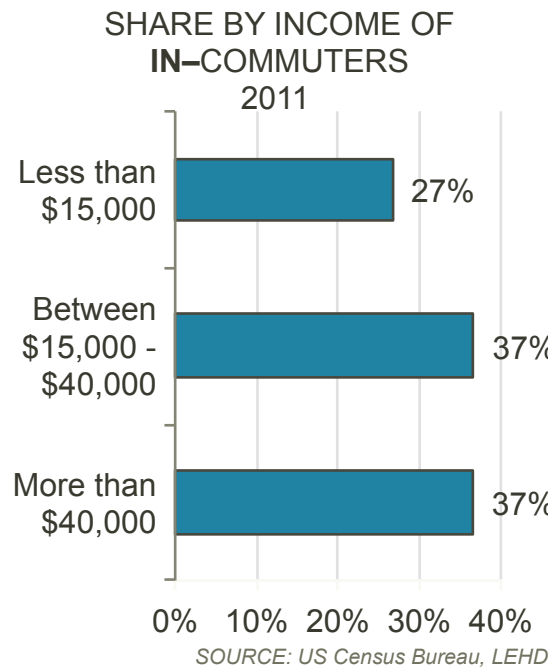
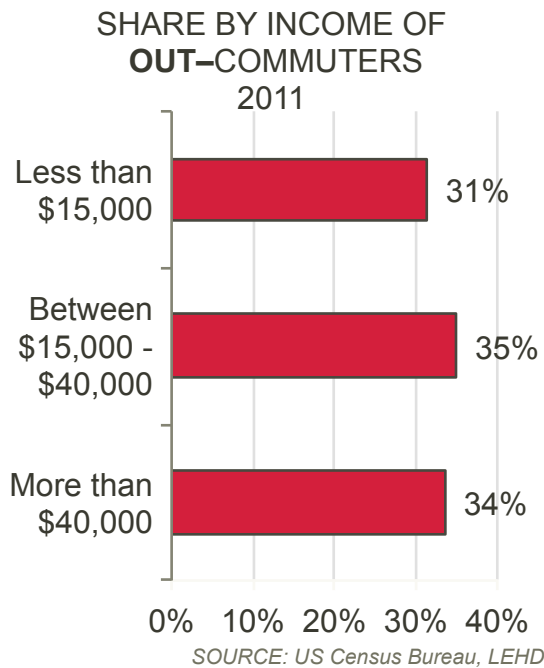


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**Similar to age trends, a higher share of those who commute both to and from Laramie County tend to have lower earnings than non-commuters.** In 2011, a higher share of out-commuting residents had lower earnings, with 31% earning less than \$15,000 annually and only 34% earning more than \$40,000.

In-commuters earned slightly higher incomes than out-commuters and were almost comparable to non-commuters. Both in-commuters and non-commuters had a 37% share earning over \$40,000, but in-commuters had a higher share (27%) earning less than \$15,000 than non-commuters (24%).

The slightly higher ages and incomes of both migrants and commuters into Laramie County indicate that the county is a more attractive location for good jobs than many surrounding counties. A higher share of commuters come into Laramie County from Northern Colorado than drive there each day. Based on data and anecdotal discussion, many of these commuters are likely young professionals who may prefer living in Northern Colorado despite good jobs in Laramie County. Similarly, those commuting out from Laramie County that are slightly younger and have lower incomes are more frequently going to neighboring Wyoming counties that often general offer fewer professional and high-paying work positions.



### Drive Time

The previous sections look at data on demographic trends, migration, and commute patterns. The final piece to examine when determining the extent of Cheyenne’s labor market is how far away the city and county are from other neighboring communities. A drive time map provides a rough estimate of the distance one can travel at average speeds from a location.

The map to the right shows a one-hour drive time from the City of Cheyenne at an average of 65 miles per hour. A one-hour drive puts Cheyenne in range of Albany County, WY; Platte County, WY; Goshen County, WY, Scotts Bluff County, NE; Banner County, NE; Kimball County, NE; Larimer County, CO; and Weld County, CO. Drive times are an estimation based on ideal conditions and may be faster than drives experienced in weather and traffic.

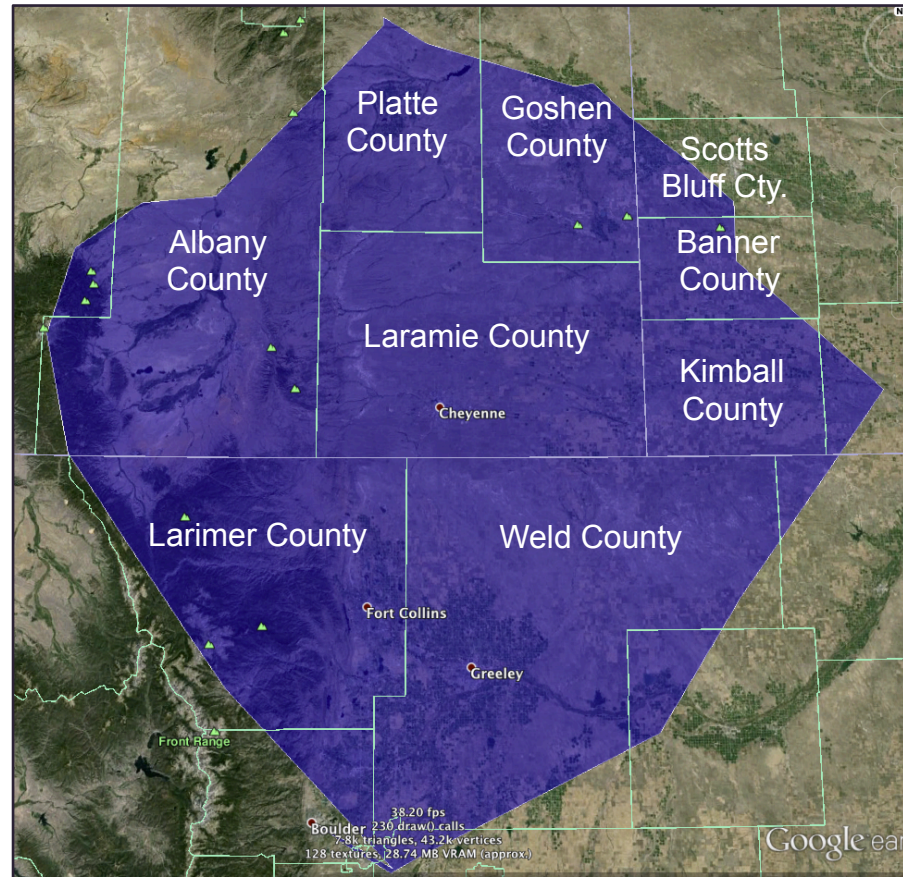
As seen in the commute pattern data, Albany County, Larimer County, and Weld County, are all significant sources of commuters to Laramie County. Platte and Goshen Counties also contribute workers to Laramie County, but these counties are much less populated and the number of commuting workers much lower.

Although three Nebraska counties are within an hour drive of Cheyenne, very few workers commute between Wyoming and Nebraska according to the available data and anecdotal discussions with Cheyenne employers and Cheyenne LEADS.

Many Wyoming counties are included in the commute data that have longer drive times, often over two-hours. As noted previously, some individuals may actually be making these daily commutes, but some of these may be the result of a company being headquartered in one location and hiring contractors in another, construction and mineral extraction operations are good examples of these.

Discussion with Cheyenne LEADS and local focus groups indicate that the one-hour commute offers a fair and realistic estimation of the normal commute patterns of workers in Laramie County.

CHEYENNE: ONE-HOUR DRIVE TIME MAP



### The Cheyenne Labor Market

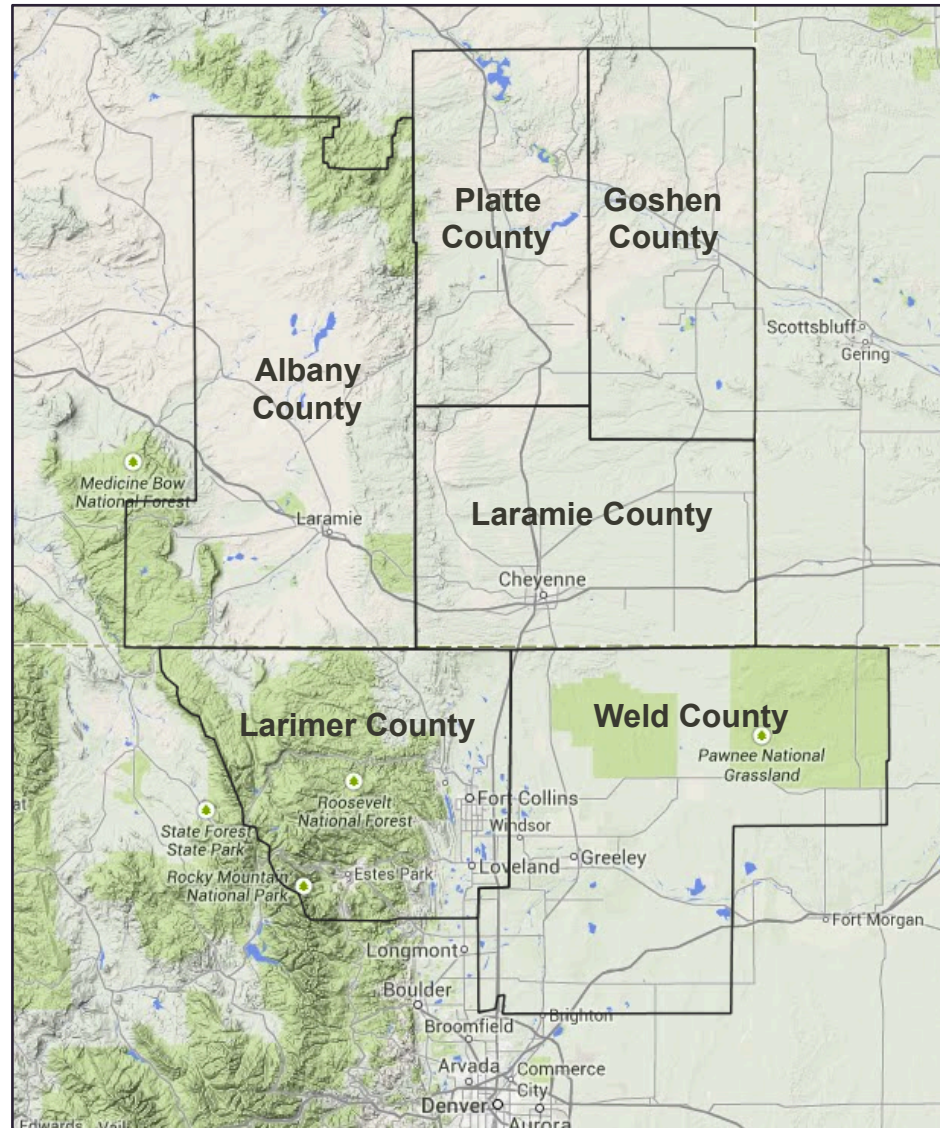
Based on consultation with Cheyenne LEADS and the analysis above, Avalanche Consulting recommends the following counties for inclusion in the official **Cheyenne Labor Market**:

- Albany County, WY
- Goshen County, WY
- Laramie County, WY
- Platte County, WY
- Larimer County, CO
- Weld County, CO

These counties are all strongly connected to Cheyenne and Laramie County. These counties are all within a one-hour drive of Cheyenne and are already significantly intertwined, with regular daily commuter traffic between each.

The following section, *Labor Market Profile*, looks at the Labor Market in more detail, comparing demographic and quality of life trends of Cheyenne and Laramie County to the broader Cheyenne Labor Market, State of Wyoming, and US.

CHEYENNE LABOR MARKET MAP

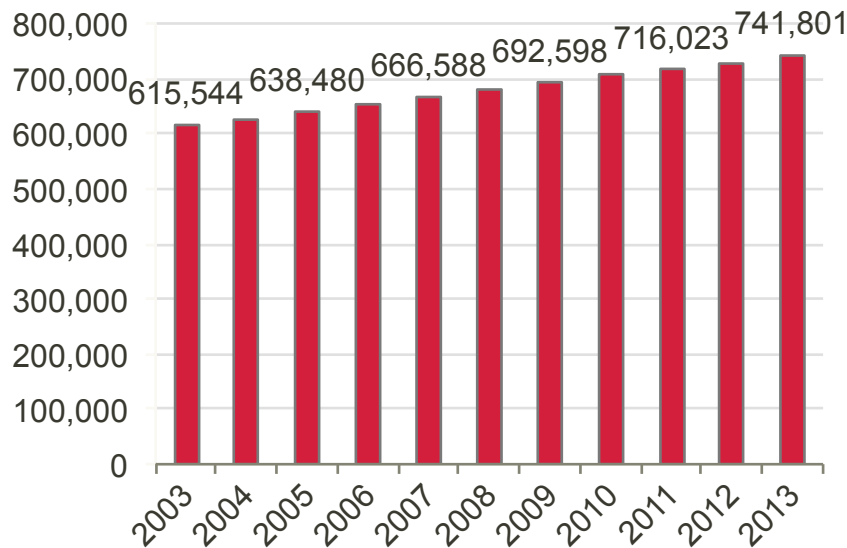


## Labor Market Profile

Cheyenne is uniquely positioned geographically at the center of a diverse labor market of six counties that runs from Northern Colorado through Southeastern Wyoming. Laramie County has a resident population of 95,800, but Cheyenne is capable of drawing from a much broader labor pool. **The full Cheyenne Labor Market has a population of over 741,800, nearly eight times larger than Laramie County and representing a unique and diverse workforce.**

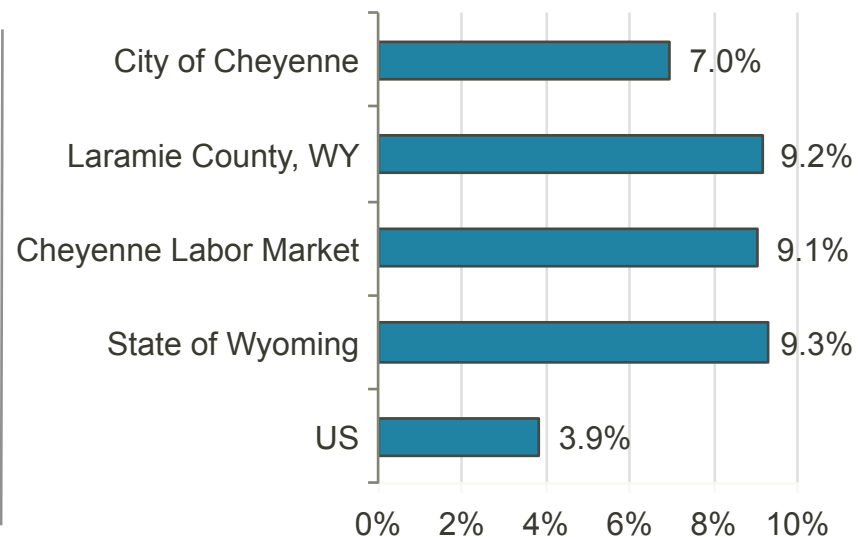
The population of the Cheyenne Labor Market, like Laramie County and the State of Wyoming, is growing more than twice as quickly as the US. From 2008 to 2013, Laramie County and the Cheyenne Labor Market’s populations both grew over 9% compared to only 4% population growth nationally. **If this rapid growth continues, the Cheyenne Labor Market will reach nearly a million people by the year 2030, adding significantly to the pool of available workers.**

TOTAL POPULATION, CHEYENNE LABOR MARKET  
2003 – 2013



SOURCE: US Census & EMSI

POPULATION GROWTH  
2008 – 2013



SOURCE: US Census Bureau

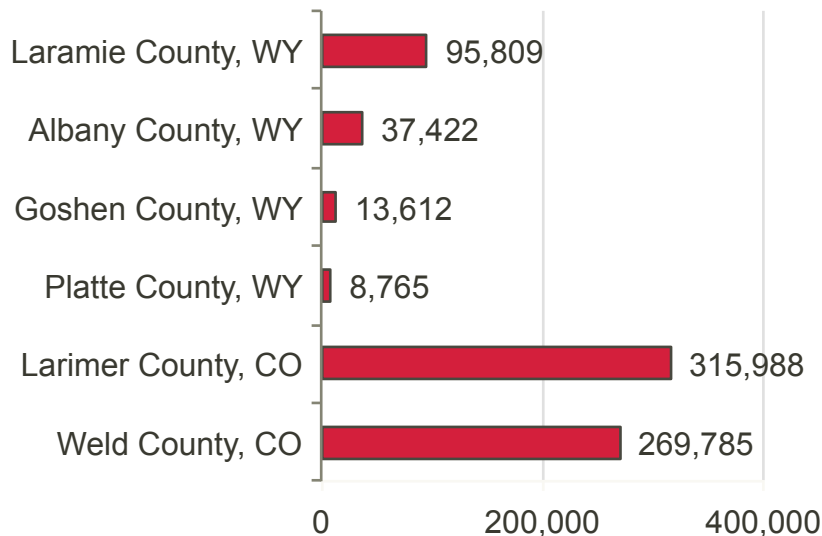
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The Front Range of the Rocky Mountains is one of the fastest growing population corridors in the US, running from Southern Colorado through Central Wyoming and holding more than 4.5 million residents. **Located in Laramie County at the northern edge of this regional corridor, Cheyenne is at the gateway between Colorado, the 22<sup>nd</sup> most populous state and the 4<sup>th</sup> fastest growing in the nation, and Wyoming, the 50<sup>th</sup> most populous but the 10<sup>th</sup> fastest growing.** This makes the Cheyenne Labor Market a highly attractive place to do business due to a large and growing labor and customer pool.

**Laramie County is the largest Wyoming county in the Labor Market, but the Northern Colorado counties comprise 80% of the Cheyenne Labor Market population.** With a population of 95,800 in 2013, Laramie County is more than twice as large as Albany County (37,400), the second largest Wyoming county in the Labor Market. In contrast, Larimer County, the home of Fort Collins, Colorado, has a population of nearly 316,000, and Weld County, the home of Greeley, Colorado, has a population of nearly 270,000.

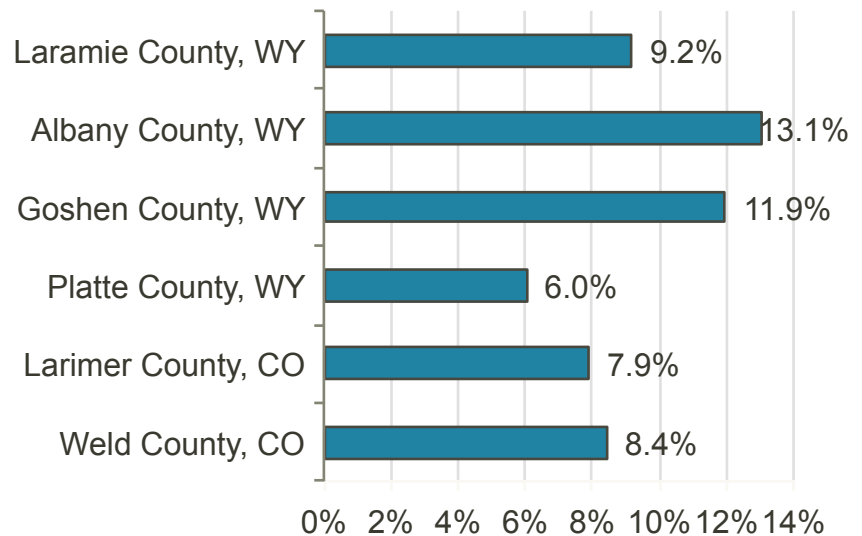
**The Wyoming county populations in the Cheyenne Labor Market are growing more quickly than the Colorado county populations.** From 2008 to 2013, Albany County was the fastest growing in the Cheyenne Labor Market with 13% total population growth. The next fastest growing populations were in Goshen County (12%), Larimer County (9%), and Weld County (8%). Platte County was the slowest growing in the labor market, but the 6% population growth in the county was still faster than national growth of 4%.

POPULATION – CHEYENNE LABOR MARKET  
2013



SOURCE: US Census & EMSI

TOTAL POPULATION GROWTH  
2008 - 2013



SOURCE: US Census & EMSI

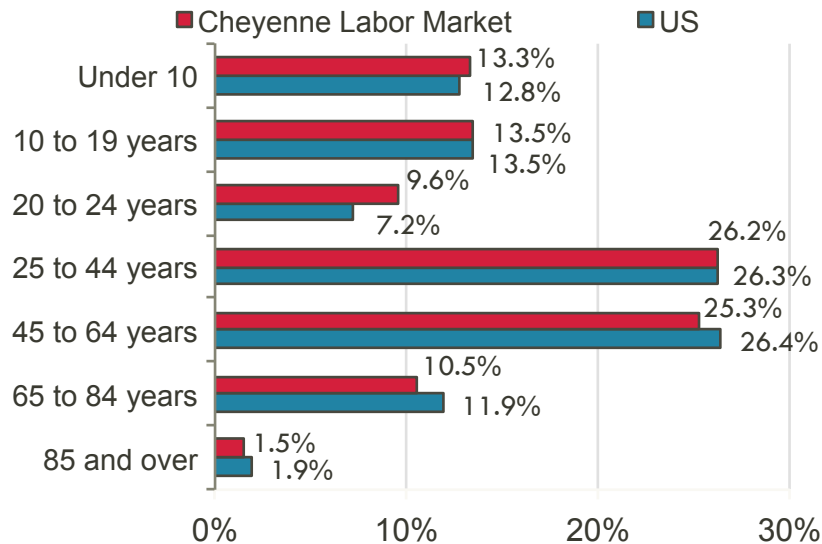
### Age Distribution

Examining age distribution in a population helps reveal current workforce dynamics and how to plan for new services and other needs of the population in the future. The entire US has been aging, with the Baby Boomer population reaching retirement age and the subsequent generations less proportionally large. This has numerous and significant implications for the US economy, including increased demand for healthcare services, decreased labor availability, rapid turnover at high-skill positions particularly in manufacturing, and many more. Understanding local age dynamics can help leadership, educators, and businesses better prepare for upcoming opportunities and challenges.

**The Cheyenne Labor Market is generally more youthful than the US as a whole, but the regional population above 65 is growing much more rapidly than the national average.** In 2012, the Cheyenne Labor Market had an above average share of 20 to 24 year olds (10% of the total population regionally compared to 7% nationally). This is likely due to the presence of three large state universities within the labor market: The University of Wyoming in Albany County, Colorado State University in Fort Collins, and the University of Northern Colorado in Greeley. The Cheyenne Labor Market also had slightly below average population shares age 45 and older.

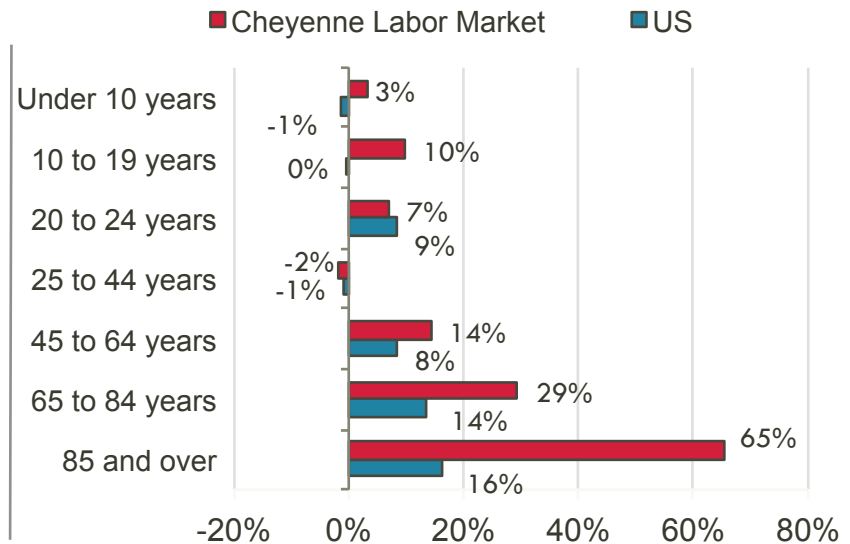
**Despite having a higher current population concentration under 45 years old, from 2007 to 2012, the fastest growing age groups in the Cheyenne Labor Market were those aged 45 and above.** These were also the fastest growing age groups nationally, but they grew more quickly

AGE DISTRIBUTION  
2012



SOURCE: US Census Bureau

GROWTH BY AGE  
2007 - 2012



SOURCE: US Census Bureau

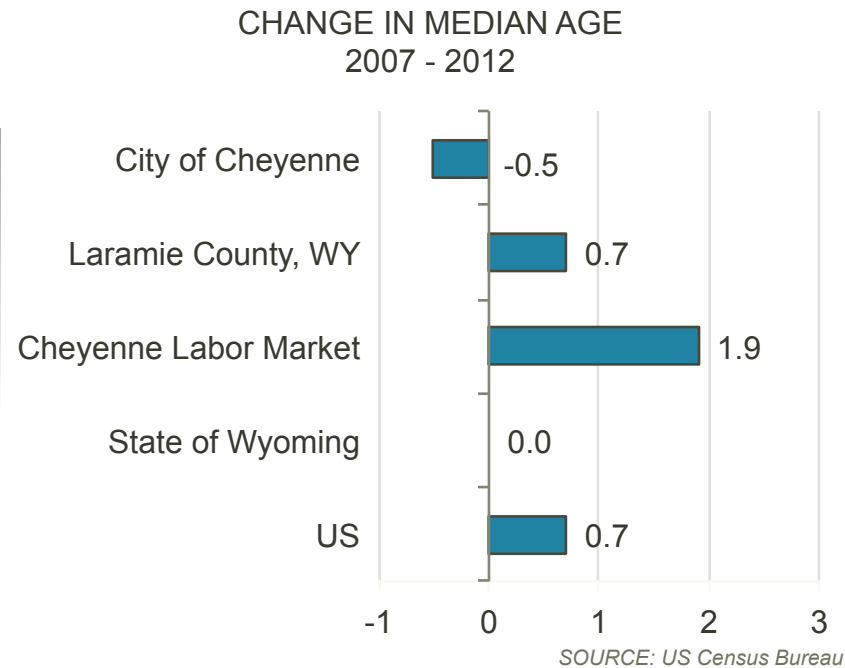
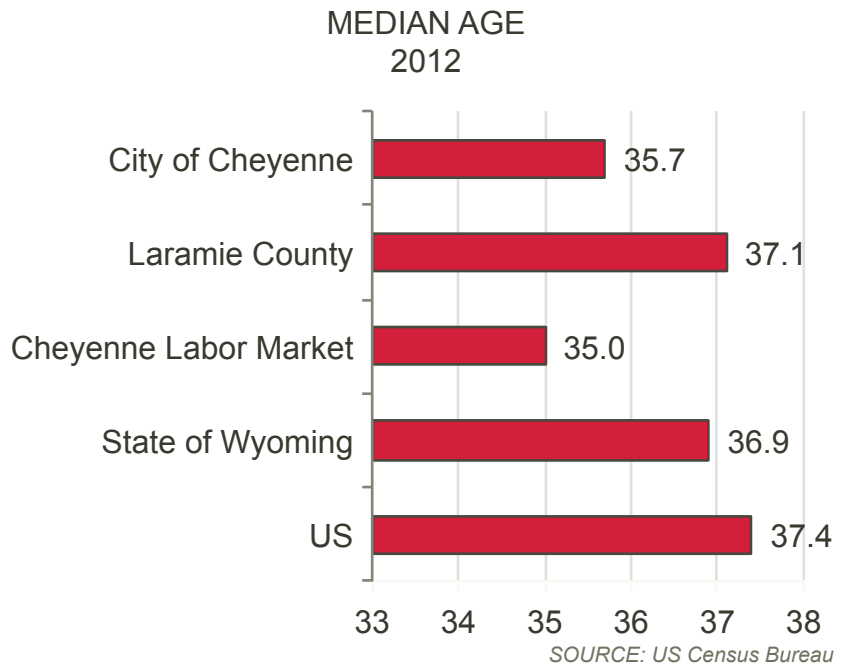
CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

in the Cheyenne Labor Market. The population 85 and over grew 65%, 65 to 84 grew 29%, and 45 to 64 grew 14% in the labor market. The only group that grew faster nationally than in the labor market was those age 20 to 24. **The only age group that shrank in the Cheyenne Labor Market was those age 25 to 44, a critical workforce demographic that also declined nationally.**

The age differences within the Cheyenne Labor Market can be seen clearly when examining median age. **The City of Cheyenne and Cheyenne Labor Market are both younger than the nation and state.** In 2012, the median age in the Cheyenne Labor Market was only 35.0, compared to 35.7 in the City of Cheyenne, 37.1 in Laramie County, 36.9 in the State of Wyoming, and 37.4 Nationally.

**In recent years, the City of Cheyenne actually grew slightly younger, but Laramie County and Cheyenne Labor Market continued to age.** From 2007 to 2012, the median age in the City of Cheyenne fell by 0.5, in contrast, it rose nationally and in Laramie County by 0.7. This represents the national aging trend described earlier and follows fairly normal patterns. It also likely indicates the more youthful nature of the City of Cheyenne, which includes Laramie County Community College, compared to Laramie County overall. Many older residents and retirees live increasingly outside of the city limits.

The Cheyenne Labor Market’s median age rose by 1.9 over this period, nearly three times greater than the US or Laramie County changes. This indicates that although Laramie County is aging rapidly, on par with the US, the populations in Northern Colorado are aging even more quickly.

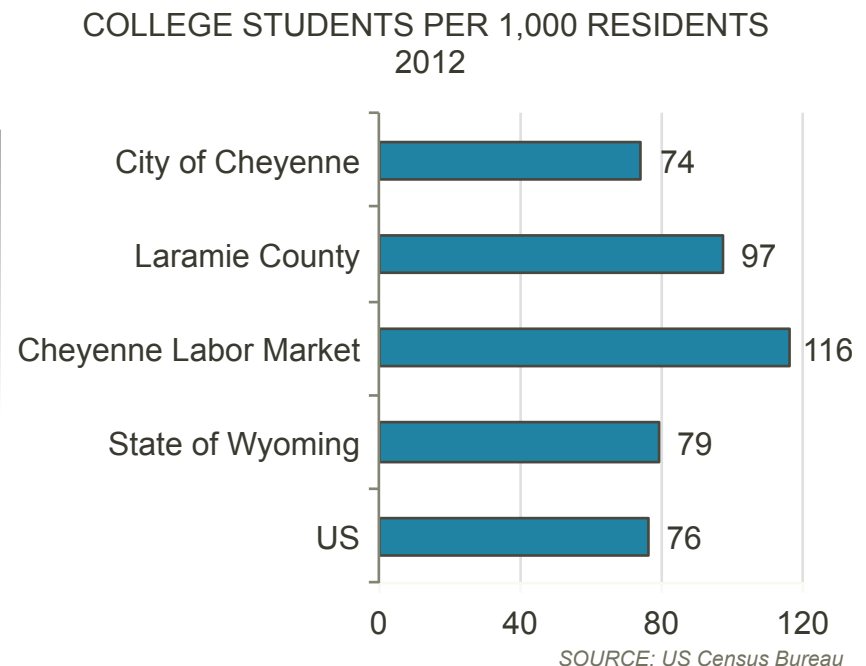
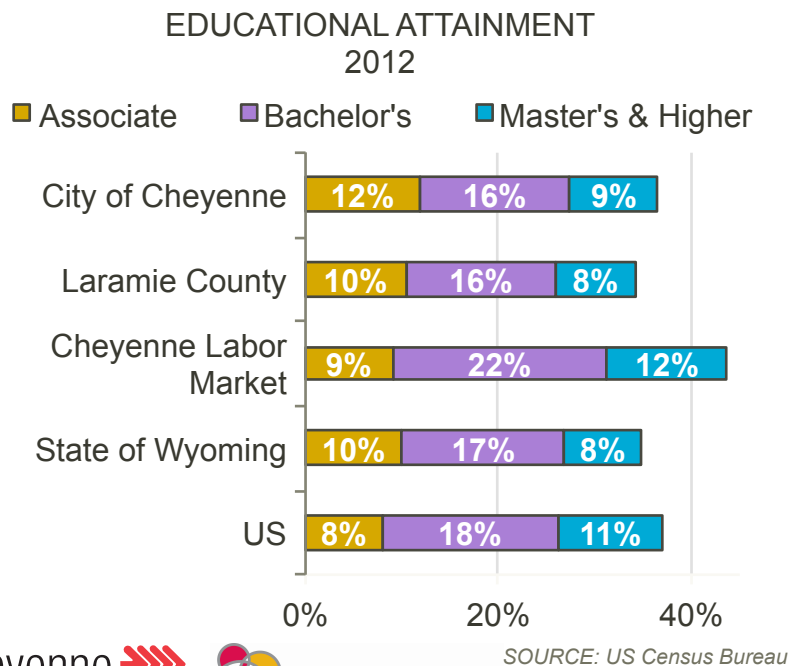


**Education**

The educational levels of a community are an important factor considered by many businesses. Professional services, engineering, medical, and other industry clusters often require a high share of employees with associate, bachelor’s master’s or higher degrees. As a result, these operations thrive in locations with a large, well-educated workforce and a high share of college students regularly entering the workforce.

**Residents of the City of Cheyenne have a lower share of bachelor’s degrees and an above average share of associate degrees, but the Cheyenne Labor Market is significantly better educated than the national and state average.** In 2012, only 25% of the City of Cheyenne’s residents had a bachelor’s degree or higher, which is above Laramie County (24%), the same as the State of Wyoming average, and below the US average of 29%. In contrast, 34% of the Cheyenne Labor Market’s population had a bachelor’s degree or higher. The City of Cheyenne had a higher share of residents with an associate degree (12%) than the US (8%). Cheyenne, Laramie County, and the State of Wyoming all had high school graduation rates well above the US average, with 93%, 92%, and 92% respectively compared to only 86% nationally.

**Laramie County Community College, the three universities in the region (University of Wyoming, Colorado State University, and University of Northern Colorado), and other post-secondary education campuses across the region contribute to a higher than average concentration of college students in the Cheyenne Labor Market.** The Cheyenne Labor Market had 116 college students for every 1,000 residents in 2012, compared to 74 in the City of Cheyenne, 97 in Laramie County, and 76 on average in the US.



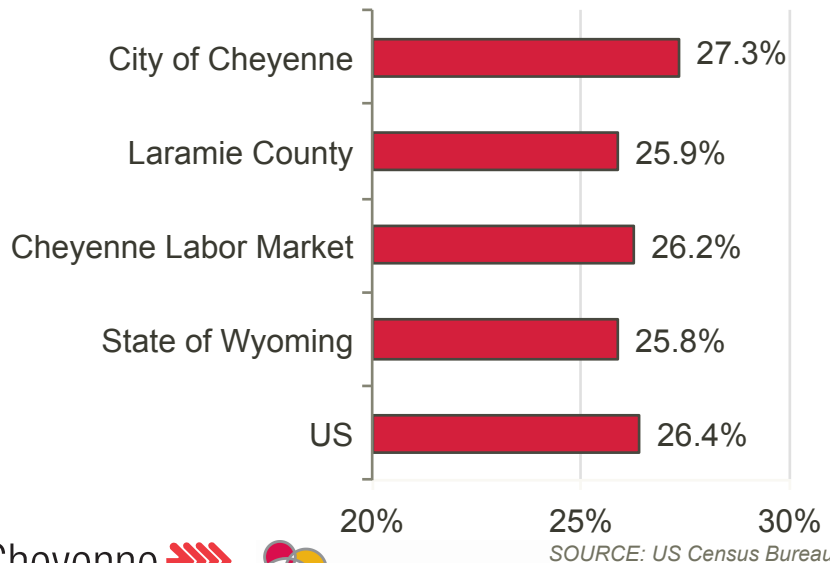
### Young Professionals

The concentration of college students in a community is a useful gauge of the workforce pipeline for the future, but many businesses look directly at a community’s concentration of residents aged 25 to 44. Considered ‘Young Professionals,’ this age cohort comprises the bulk of working population and the age of workers critical to growing businesses. Nationally and in the Cheyenne Labor Market this population has been shrinking for the past twenty years. As the share of young professionals among the total population drops nationally, many cities compete to attract these critical, younger residents, who often buy homes, have children, and invest in careers and communities.

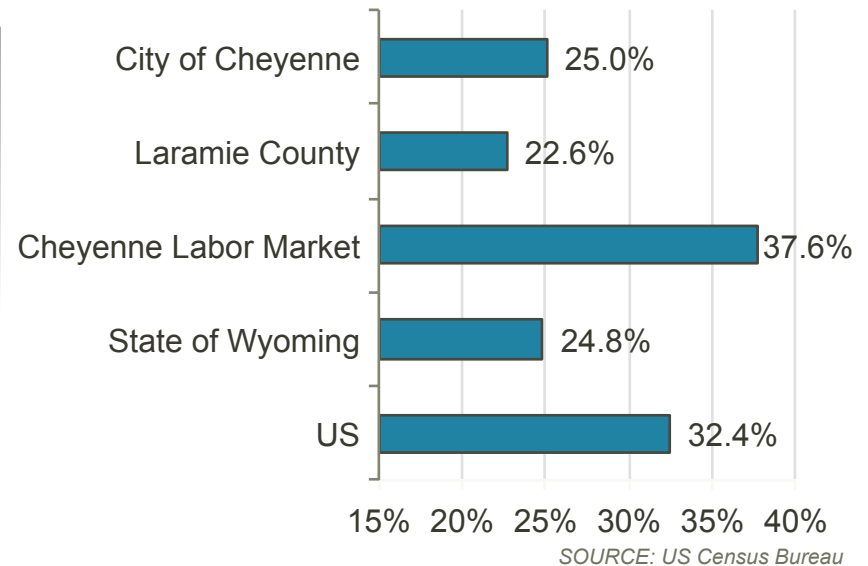
**The City of Cheyenne has a slightly above average share of Young Professionals, but Laramie County and the Cheyenne Labor Market’s young professional populations were at about the national average.** In 2012, 27% of the City of Cheyenne’s residents were aged 25 to 44, compared to 26% in Laramie County, the Cheyenne Labor Market, the State of Wyoming, and the US.

On average across the US, young professionals are better educated than the overall population: 32% of young professionals have a bachelor’s degree or higher compared to 29% of the total population. **In contrast, a lower share of young professionals in Laramie County have bachelor’s degrees or higher than the overall population: 23% of young professionals compared to 24% of the total population. The Cheyenne Labor Market, however, has a larger and much better educated young professional base than the City of Cheyenne and Laramie County alone.** In 2012, 38% of Cheyenne Labor Market young professionals had a bachelor’s degree or higher compared to 34% of the total.

% YOUNG PROFESSIONALS (AGE 25 – 44)  
2012



% YOUNG PROFESSIONALS WITH A BACHELOR’S+  
2012



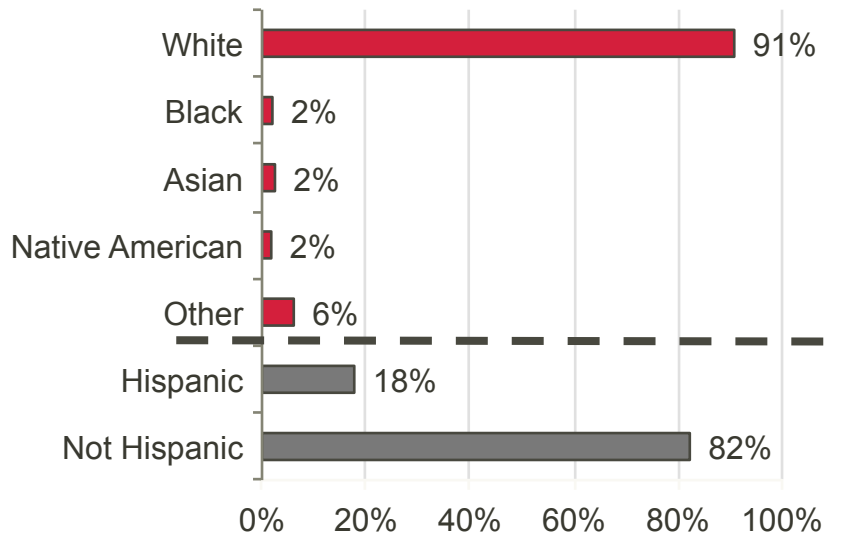
**Diversity**

Diversity is another community measurement considered important by some businesses. Numerous recent economic studies have shown that diversity in communities and organizations leads to greater innovation, creativity, and success. A population with diverse racial, ethnic, and income backgrounds offers numerous perspectives and skillsets, which contribute to overall success. Racial and ethnic diversity are also increasingly important factors when attracting new residents; young, educated professionals frequently seek diverse locations that are seen as more inclusive and offering a broad range of dining options and cultural activities.

**The City of Cheyenne, Laramie County, and the Cheyenne Labor Market are less diverse than the US but more than the State of Wyoming and becoming more diverse with time.** In 2012, the Cheyenne Labor Market was 91% white, 2% black, and 2% Asian. The region was also 18% Hispanic. The City of Cheyenne and Laramie County shared similar demographics: 89% and 92% white respectively, 4% black, 2% Asian, and 14% Hispanic. The State of Wyoming was less diverse: 94% white and only 9% Hispanic. The region has much smaller black and Asian populations than the US, but a larger Hispanic population. The US was 76% white, 14% black, 6% Asian, and 17% Hispanic.

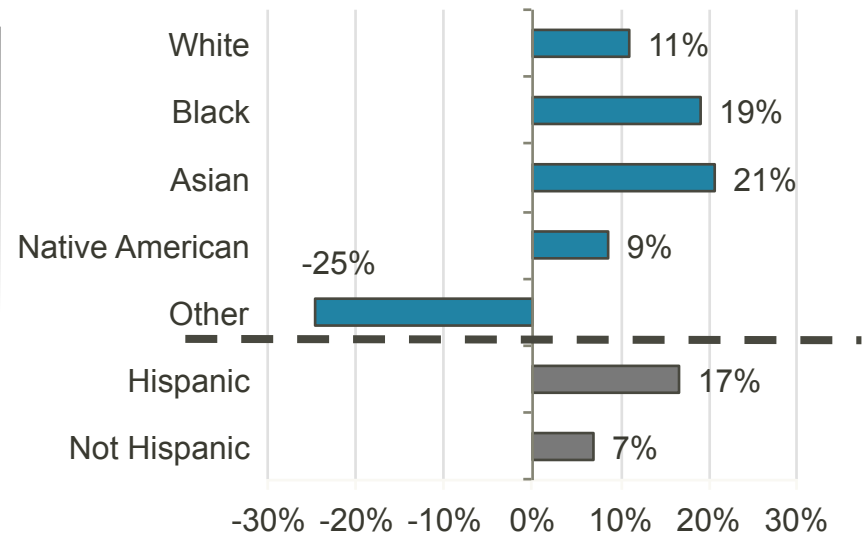
**Notably, from 2007 to 2012, both the black and Asian populations grew more quickly than white in the Cheyenne Labor Market, and the Hispanic population grew more than twice as quickly as the non-Hispanic population.**

CHEYENNE LABOR MARKET  
POPULATION BY RACE AND ETHNICITY, 2012



SOURCE: US Census Bureau

CHEYENNE LABOR MARKET  
GROWTH BY RACE & ETHNICITY, 2007 - 2012



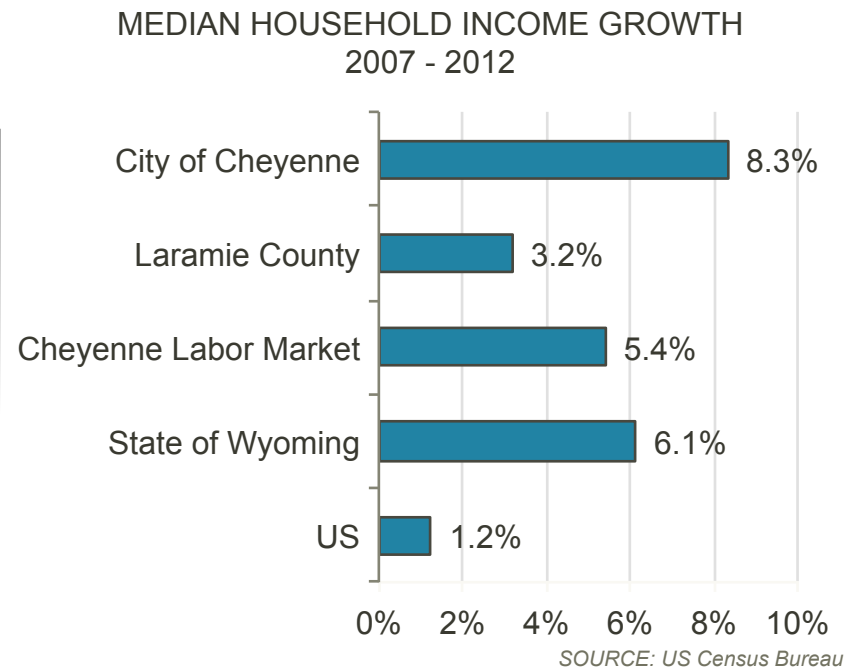
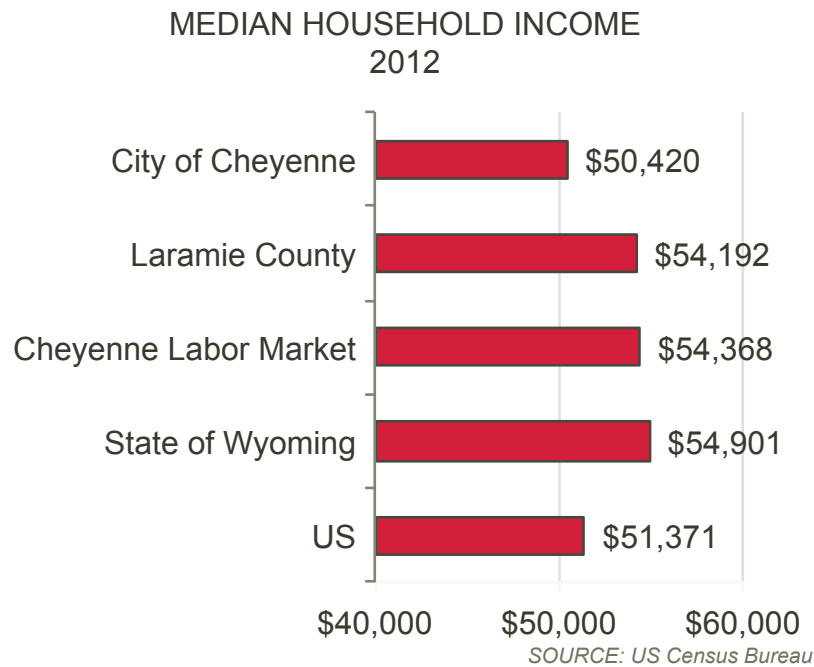
SOURCE: US Census Bureau

**Income**

Income levels, like wages discussed in the *Industry Opportunity Analysis*, are an important demographic factor considered in a community and a strong signal of overall economic health. The value of household income is not absolute. The value of income is relative to local living costs, but it is one measure of community success and can be used as a benchmark. Household income growth is a particularly important measure, indicating whether a community is becoming wealthier with time.

**The City of Cheyenne has a median household income slightly below the US level and well below Laramie County, the Cheyenne Labor Market, and State of Wyoming, all of which are comparable and higher than the US.** In 2012, the City of Cheyenne had a median household income of \$50,400, compared to \$54,200 in Laramie County, \$54,400 in the Cheyenne Labor Market, \$54,900 in the State of Wyoming, and only \$51,400 nationally.

**Notably, in recent years, while median household income barely grew in the US, the median household income in the City of Cheyenne grew faster than all other benchmarked geographies.** From 2007 to 2012, median household income grew 8.3% in the City of Cheyenne, compared to only 1.2% nationally. Laramie County’s median household income also outgrew the US but only at 3.2%, less than half the City of Cheyenne. Meanwhile, the Cheyenne Labor Market’s median household income grew 5.4%, nearly five times the US rate.



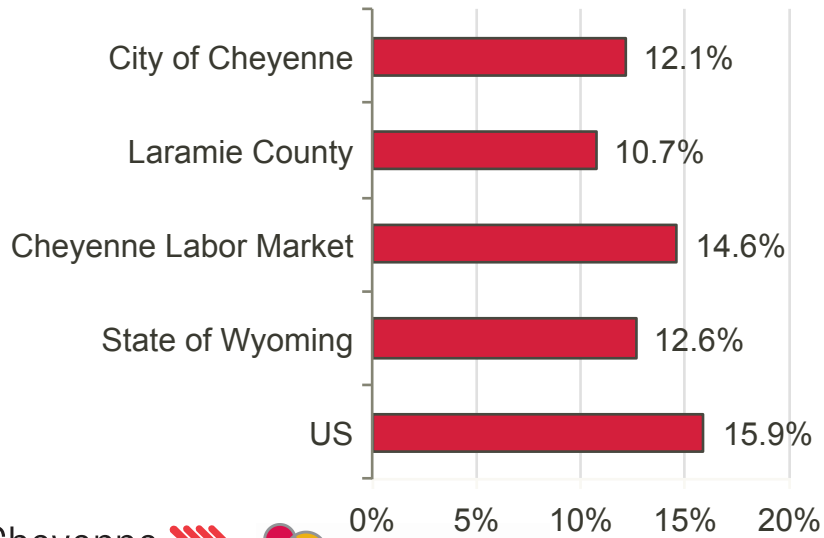
Poverty

Like income, poverty offers a quick measure of a community’s relative wealth and success and often unemployment, but like income, it is also a relative measure. Poverty levels are set nationally and do not take into account differences in relative cost of living. Instead they look at whether household incomes meet a poverty threshold set by the Office of Management and Budget. This threshold is adjusted each year to match inflation. In 2012, the threshold was \$11,720 for an individual or \$14,940 for a two-person household. Low poverty levels indicate strong economic success in a community and decreased demand for social services from local government.

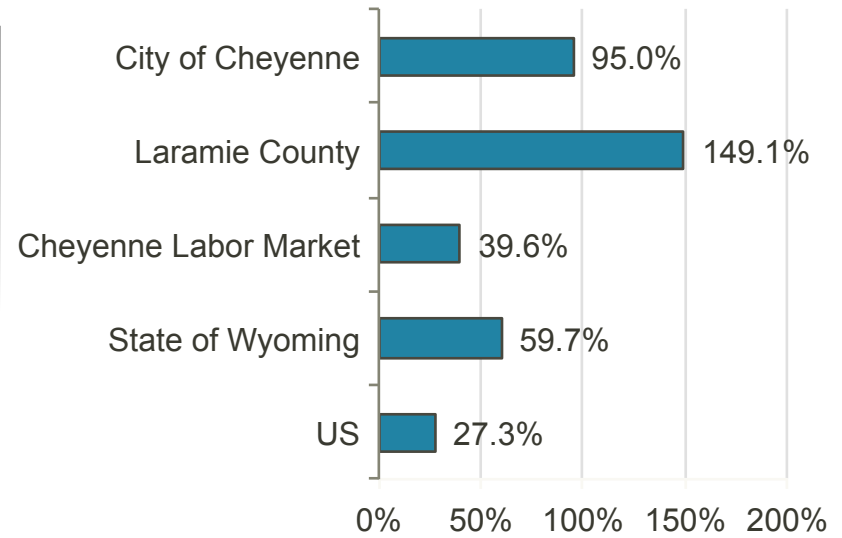
**Poverty levels in the City of Cheyenne and Laramie County are well below national, state, and labor market levels but have grown significantly in recent years.** In 2012, the overall population poverty level in the City of Cheyenne was 12%, compared to only 11% in Laramie County, 13% State of Wyoming, 15% Cheyenne Labor Market, and 16% nationally. The Cheyenne Labor Market includes the bigger cities of Fort Collins and Greeley and student populations at the many colleges and universities, which contribute to higher regional poverty levels.

These relative ‘low’ poverty levels may seem fairly high. With 11% of its population in poverty, Laramie County faces challenges delivering services to and supporting this population, particularly children in poverty. These numbers are low by national standards but reflect rapid local growth in the recent recession. In 2007, the City of Cheyenne and Laramie County had overall poverty rates of 6.8% and 4.7% respectively, approximately half of current rates. Since then, the number of people in poverty grew 95% in the City of Cheyenne and 149% in Laramie County, compared to only 27% nationally and 40% in the labor market.

% OF TOTAL POPULATION IN POVERTY  
2012



GROWTH IN POPULATION IN POVERTY  
2007 - 2012



### Measuring Quality of Life

Quality of life is one of the most difficult categories to measure in a community. It means different things to every individual and family, all of whom consider different factors such as cost of living, climate, geographic location, proximity to family, housing options, risk of crime, availability of cultural amenities, and commute times. Not everybody is looking for the same measures in each of these categories. Some individuals prefer colder climates and some the heat, while some look for family-friendly communities and others a strong dating scene.

It is important to examine and better understand the quality of life elements of the Cheyenne Labor Market, as these play a significant role in the region's ability to expand the workforce through traditional population growth and whether recruitment of specific workers is possible or requires improvements to specific quality of life metrics.

The first step in addressing a region's quality of life is to understand where a region stands on measurable metrics and through qualified interviews and focus groups. This will help identify which quality of life elements make a community unique and which could present serious challenges to future population and economic growth. Final strategic recommendations will look at ways to build on the aspects that make a community unique and address the challenges that could slow growth.

This following section examines a range of nationally available quantitative quality of life datasets. Alongside the data analysis, where possible Avalanche qualifies the sections with additional input received through interviews and other local sources.

*Note: For many quality of life indicators, data were only available at the city or county level. Avalanche was frequently unable to present data for the Cheyenne Labor Market or State of Wyoming as a whole but tried to show representative regional benchmarks wherever possible.*

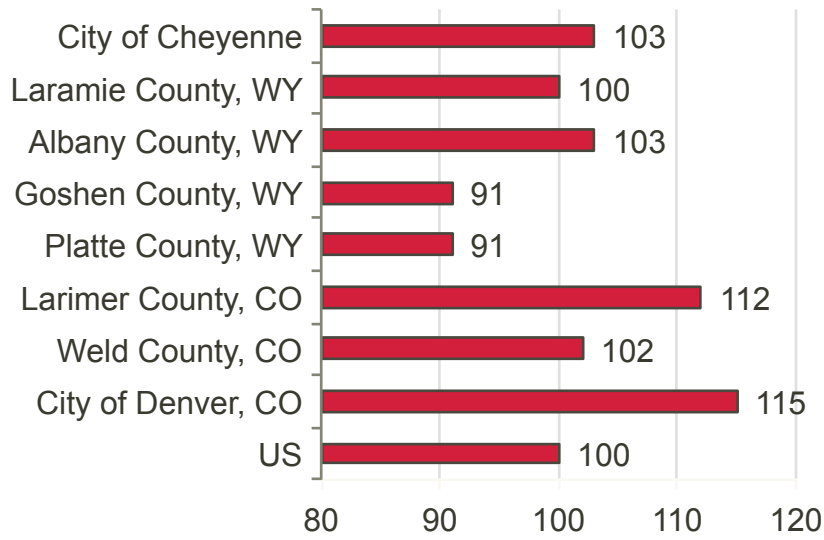
**Cost of Living**

Cost of living is a critical factor in understanding a community’s quality of life. Low cost of living may indicate that a community is more rural and less developed, with fewer regulatory costs and burdens associated with denser populations, but it can also mean fewer dining options and other indicators. High cost of living can also appear as a deterrent to new residents, but the cost is also relative to local wage levels. We see tremendous job growth in locations with both high cost of living (New York City and San Francisco) and lower cost of living (Houston and Dallas-Fort Worth). This category is more critical to understanding which factors contribute to cost of living expenses and examine these relative to local wages and growth opportunities.

Besides Goshen and Platte Counties, Laramie County has the lowest overall cost of living rating in the Cheyenne Labor Market, exactly on par with **the US average**. In 2014, Laramie County’s cost of living rating was 100 (the US index standard). The City of Cheyenne and Albany County were slightly more expensive at 103, and Larimer and Weld Counties were both higher at 112 and 102 respectively. In contrast, Denver had the highest Front Range cost of living at 115.

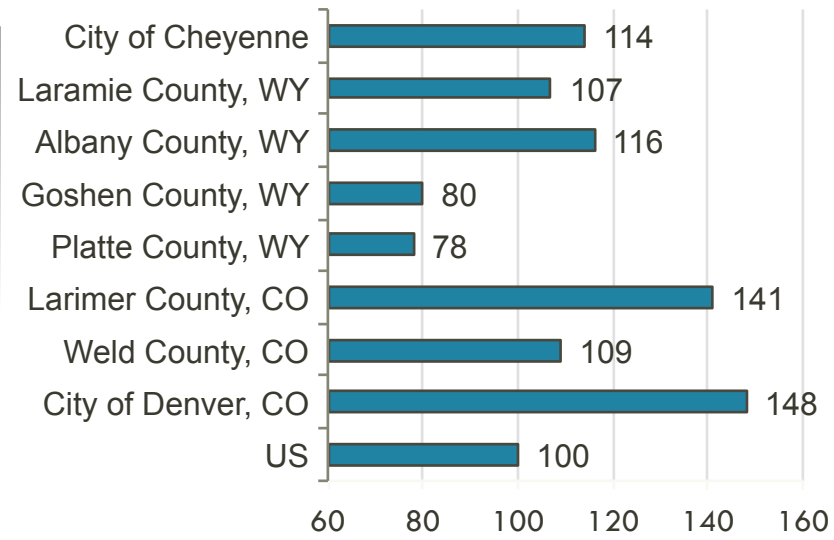
**Housing costs were the greatest contributor to cost of living across the region.** The City of Cheyenne and Laramie County had below average costs for healthcare, utilities, and transportation, but slightly above in grocery and housing ratings. Housing costs were still rated significantly below Larimer County and the City of Denver.

OVERALL COST OF LIVING RATING  
2014



SOURCE: Sperling’s Best Places

HOUSING COST RATING  
2014



SOURCE: Sperling’s Best Places

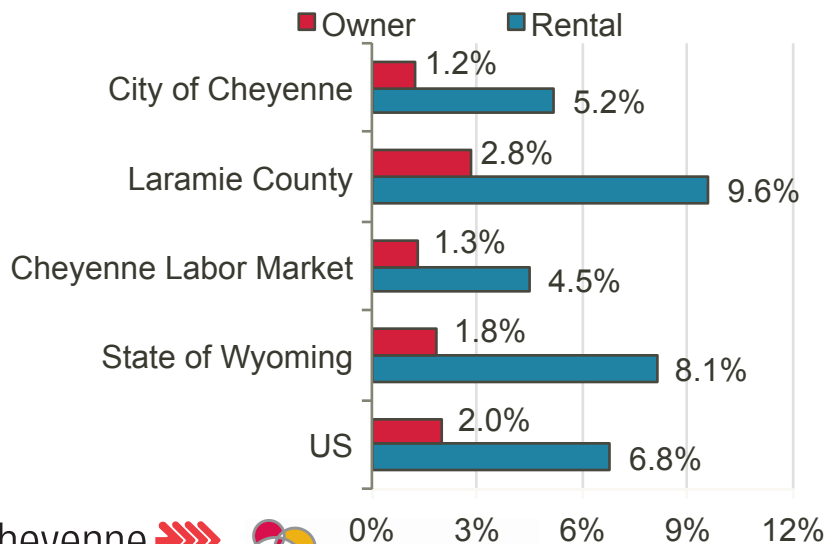
**Housing Availability and Cost**

Housing is one of the most critical areas of quality of life related to economic development. In an ideal world, community residents at all income levels would be able to find and afford housing in their community. Unfortunately, the dynamics of housing supplies, population growth, and geographies, and regulations often mean that some communities have a different share of home types available and at different costs. A limited and expensive supply of both rental and owned housing in a community can make it difficult for both younger and lower-skill workers to live locally. Some may find housing options in neighboring communities and commute in for local work. Many others will seek a completely new location where they can live in closer proximity to their work, creating a significant lost worker opportunity in the local community.

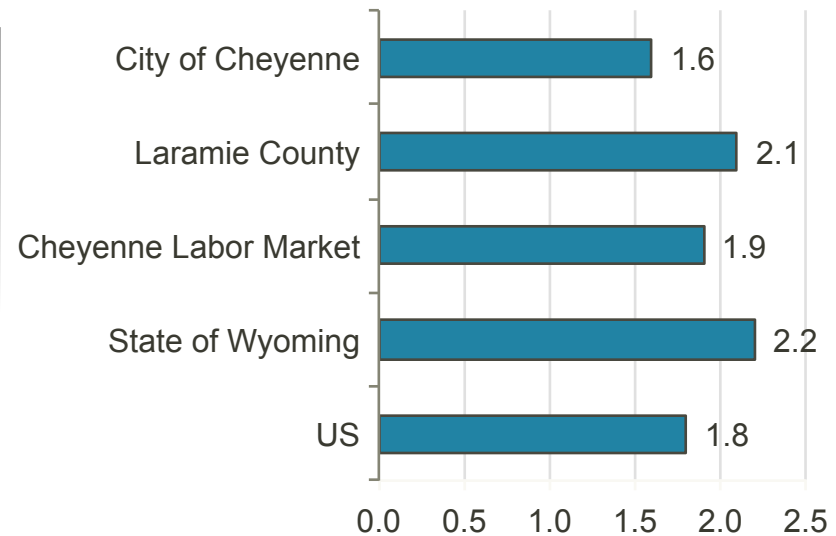
**Both the housing cost rating from Sperling’s Best Places and anecdotal stories heard throughout Laramie County indicate that housing is an issue locally, with limited supply, particularly of rentals, and high costs, especially relative to local salaries and other costs.** Avalanche examined a range of housing data available from the US Census to better understand local housing dynamics.

**The City of Cheyenne and overall Cheyenne Labor Market have below average vacancy rates for owned and rented homes, but Laramie County is above state and national averages in both categories, indicating a higher availability of supply outside the city limits.** In 2012, the City of Cheyenne and Cheyenne Labor Market had rental vacancy rates of 5.2% and 4.5% respectively, compared to 6.8% nationally, 8.1% in the State of Wyoming, and 9.6% in Laramie County. Discussion with local realtors and Cheyenne LEADS suggests 2014 vacancy rates are even lower in the local rental market.

HOUSING VACANCY RATES  
2012



RATIO OF OWNED TO RENTED HOMES  
2012



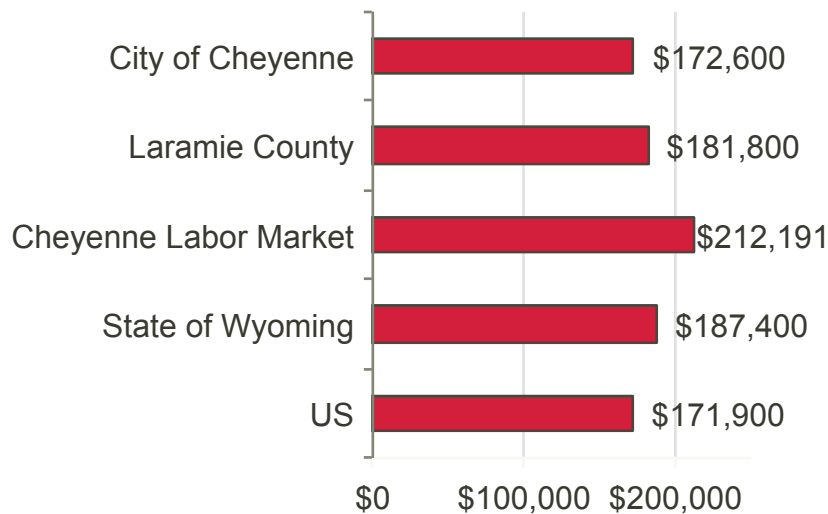
CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

Additionally, the City of Cheyenne and Cheyenne Labor Market have a lower ratio of owned to rented homes, meaning a higher percentage of homes are rented. This higher concentration of rental units and lower vacancy rates means that housing availability appears genuinely more limited in the Cheyenne Labor Market than the State of Wyoming or US in general.

Notably, **housing stock is also older in the City of Cheyenne and Laramie County than the overall labor market.** In 2012, the average age of housing in the City of Cheyenne was 50 years. Laramie County and the State of Wyoming both averaged 45 years, and the US was slightly above at 46 years. The Cheyenne Labor Market, however, which includes recent rapid growth in Colorado Counties, had an average housing age of only 40.

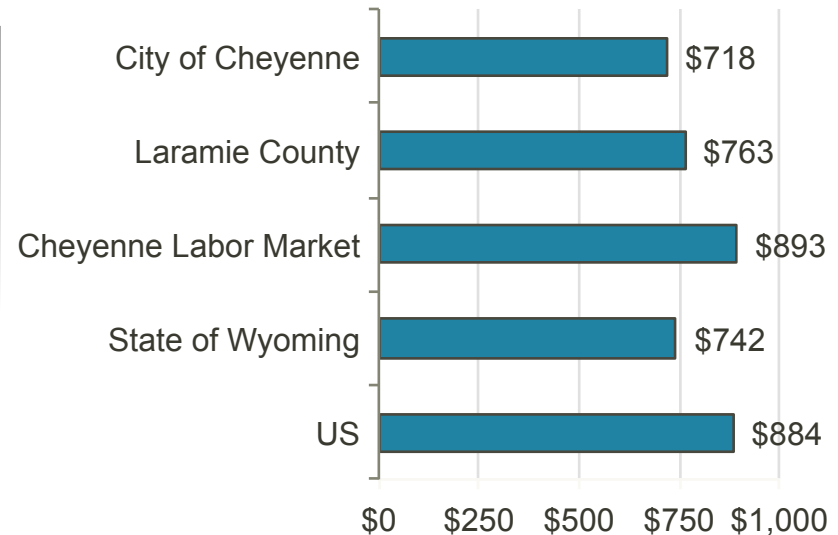
**Housing costs reported in the region are also relatively high.** The 2012 median home value in the City of Cheyenne was \$172,600, compared to \$181,800 in Laramie County, \$187,400 statewide, \$292,200 in the Cheyenne Labor Market, and \$171,900 nationally. Rents followed a similar trend, except that the City of Cheyenne, Laramie County, and the State of Wyoming all share relatively similar median monthly rents at \$718, \$763, and \$742 respectively. Like home values, the Cheyenne Labor Market has the highest median monthly rent at \$893. These absolutely higher regional prices are due to high demand and newer product in Colorado.

MEDIAN HOME VALUES  
2012



SOURCE: US Census Bureau

MEDIAN MONTHLY RENT  
2012



SOURCE: US Census Bureau

**Median home values in the City of Cheyenne and Laramie County are relatively proportional to median income levels, but rental costs are significantly higher relatively, and all costs in the broader Cheyenne Labor Market are higher than relative incomes dictate.** In 2012, median household incomes in the City of Cheyenne, Laramie County, and Cheyenne Labor Market were 92%, 99%, and 99% of the Wyoming median household income respectively. In contrast, rents were 97%, 103%, and 120% of Wyoming median rents respectively. The regional discrepancy in cost versus income is likely due largely to the high share of college students, who earn limited income but raise demand costs for housing.

Housing for students is a concern noted by Laramie County Community College representatives. On-campus housing is at capacity, and many students struggle to find available and affordable rentals in the City of Cheyenne and Laramie County. Similar stories were heard from younger professionals interviewed in the city.

*It is important to note that the discussion above addresses median **household** incomes relative to housing costs. Household incomes are more comparable to national and state averages, due to a larger average household size with multiple workers in the region than the nation as a whole. Wages for individual workers, which were examined in the previous report, are lower relatively in the region than household incomes. This means that finding housing as a single, non-family worker in Cheyenne is even more challenging than for households.*

National annual real estate surveys conducted by large developers and banks, such as Cushman Wakefield or the Wells Fargo National Housing Index, do not include the Cheyenne housing market due to its small size relative to other metropolitan areas. As a result, it is difficult to assess comparable, up-to-date, benchmark data on housing in the City of Cheyenne and Laramie County. **Developers, employers, residents, and others interviewed expressed that housing is even less available and more expensive than the above Census data indicates.**

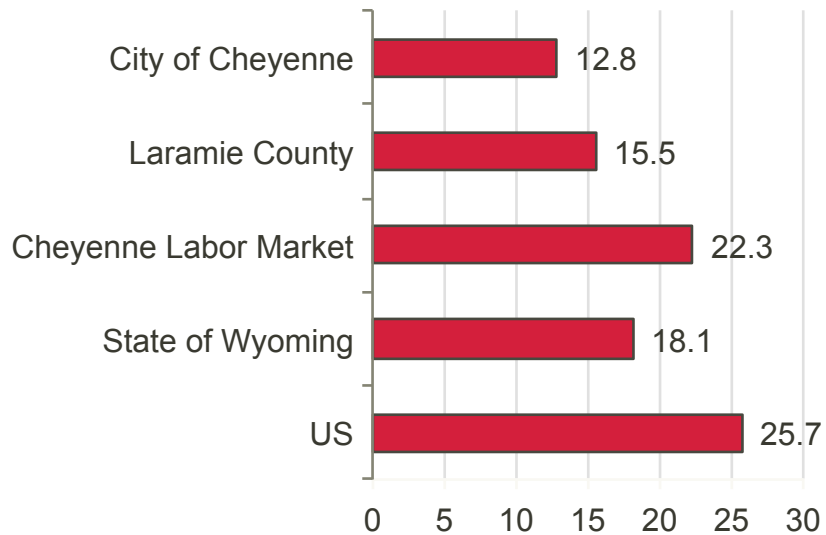
**The City of Cheyenne and Laramie County are preparing to conduct an extensive housing study that will provide more insight into the costs, availability, and other dynamics of the local market.**

**Traffic and Transportation**

The amount of traffic and transportation options used by workers in a community play a role in assessing quality of life. While many commuters prefer to drive their own vehicles, many in more urbanized geographies prefer to use public transportation options such as bus or rail. Generally speaking, workers who commute prefer whatever transportation options are most convenient, are cost effective, and require the shortest commute times.

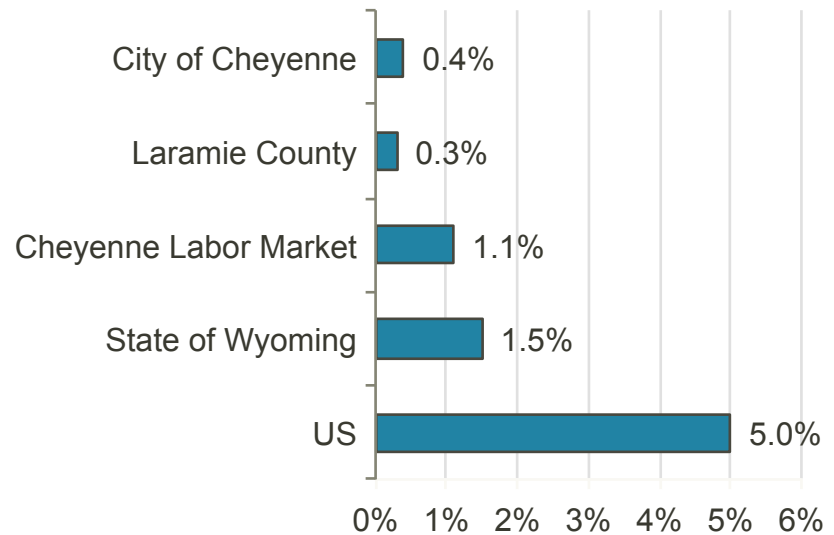
Commute times in the City of Cheyenne and Laramie County were significantly below the state and US averages. The Cheyenne Labor Market has commute times above the State of Wyoming but still below the US average. In 2012, the average commute time in the City of Cheyenne was 12.8 minutes, compared to 15.5 in Laramie County, 11.1 in the State of Wyoming, 22.3 in the Cheyenne Labor Market, and 25.7 nationally. **Overall, short drive times and lack of traffic make Cheyenne and Laramie County a highly attractive location from a commuting perspective.**

AVERAGE COMMUTE TIME (MINUTES)  
2012



SOURCE: US Census Bureau

% COMMUTERS TAKING PUBLIC TRANSPORTATION  
2012



SOURCE: US Census Bureau

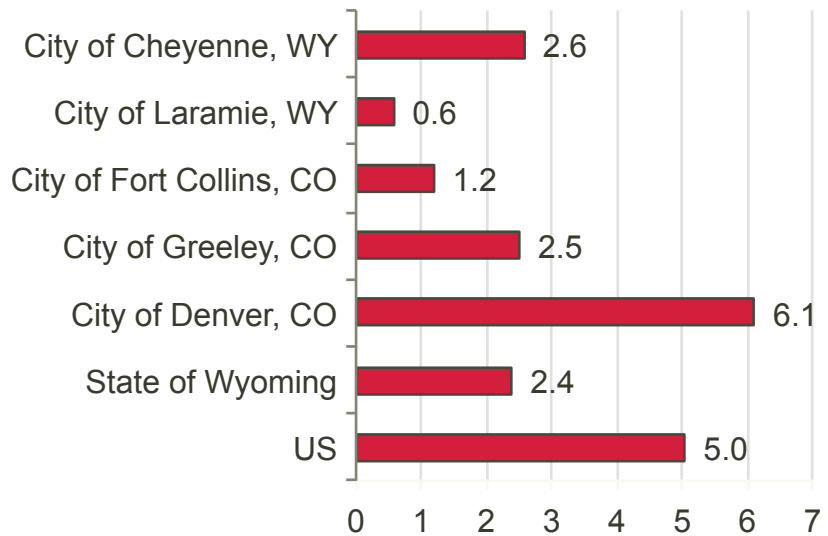
**Crime**

Violent crime rates are an important indicator of quality of life. Larger cities tend to have higher crime rates than smaller communities, but trends vary across the nation. Different workforce demographics are willing to make tradeoffs between crime rates and other cultural amenities, but families and older residents tend to seek locations with a strong sense of safety.

**Violent crime in the Cheyenne Labor Market is significantly lower than national and Denver averages, demonstrating the relative safety and quiet of the region.** From 2007 to 2012, the City of Cheyenne had an average of 2.6 homicides per 100,000 residents, on par with the state average of 2.4 and nearly half the US average of 5.0. Other cities in the Cheyenne Labor Shed had even lower rates, including the City of Laramie with 0.6 homicides per 100,000 residents and Fort Collins with 1.2 per 100,000. In sharp contrast, the City of Denver had an average homicide rate of 6.1 per 100,000, above the US average.

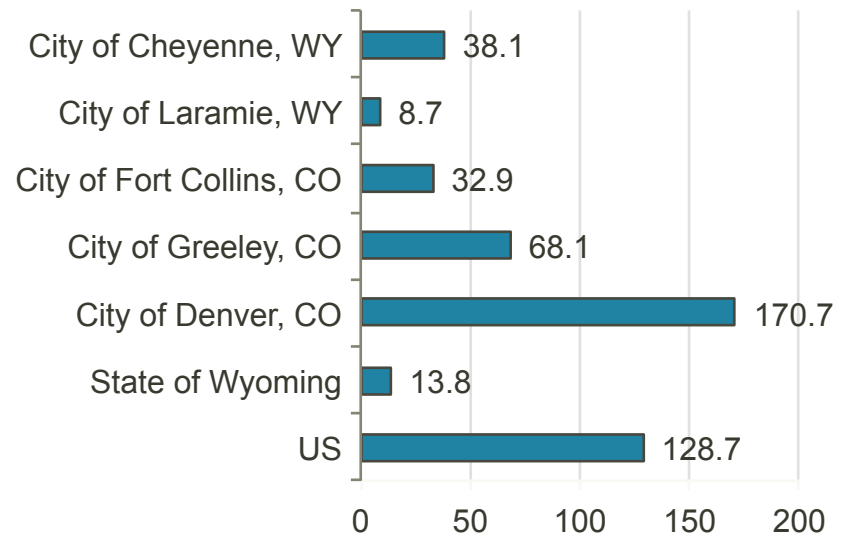
Robberies followed a similar pattern, with the City of Cheyenne averaging only 38 robberies per 100,000 residents between 2007 to 2012, above the state average of 14 but significantly below the US average of 129. Only Greeley had a higher robbery rate in the region during this period, with 68 robberies per 100,000 residents, still well below the national average. For continued contrast, the City of Denver had an average of 171 over this period, well above the US and more than four times more than the City of Cheyenne.

AVG. ANNUAL HOMICIDES PER 100,000 RESIDENTS - 2007 - 2012



SOURCE: FBI Uniform Crime Reports

AVG. ANNUAL ROBBERIES PER 100,000 RESIDENTS - 2007 - 2012



SOURCE: FBI Uniform Crime Reports

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

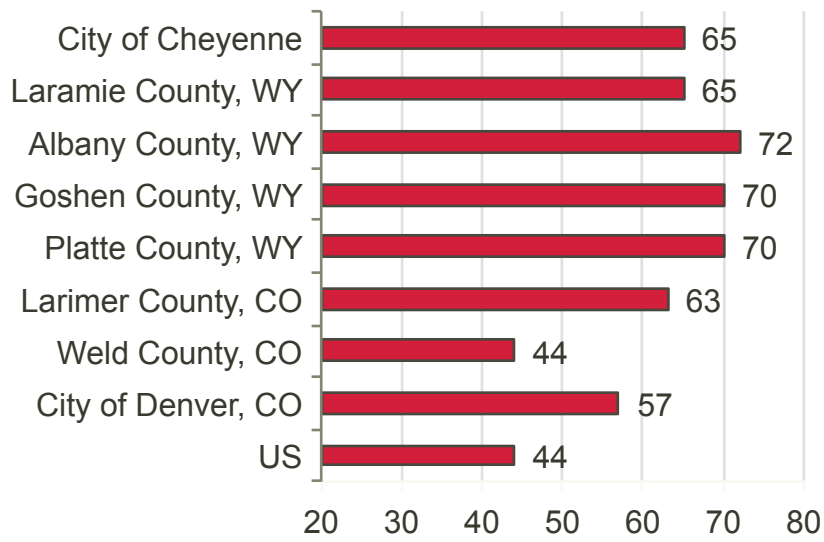
### Climate

Climate is an important factor affecting business development, as we saw in the previous report’s discussion of Data Center site selection needs, but also is a primary characteristic of quality of life. As with all quality of life factors, beauty is in the eye of the beholder. Some individuals prefer cooler climates with snow and access to mountain skiing, and some prefer hot and dry conditions and access to a beach. The Climate Comfort Index provided by Sperling’s Best Places is based primarily on humidity during hot months, which is frequent resident complaint with regards to comfort (note: a higher comfort index rating is less humid).

**Overall, the City of Cheyenne and Laramie County have relatively comfortable climates, with low humidity, seasonal but not extreme temperature changes, and a high number of sunny days. The biggest climatic complaint heard from residents and visitors regarded the fast and cold winds in Southeastern Wyoming, which are measurable and verified.**

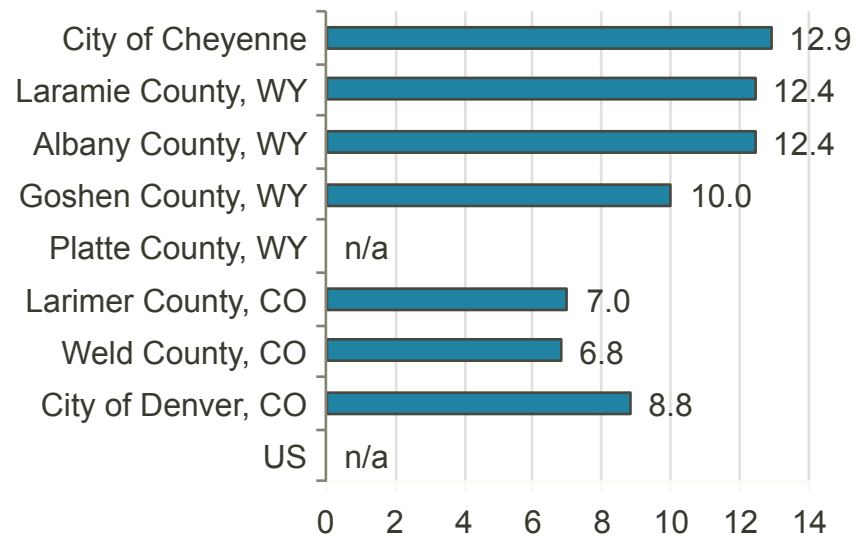
Cities across the Cheyenne Labor Market had comparable Climate Comfort Indices, all except Weld County well above the US average and the City of Denver. Average January lows and July highs were also comparable across counties in the region. The biggest difference in climate in the region was wind speed. Wind speeds in Colorado are significantly lower, nearly half of those in Southeast Wyoming Counties. The City of Cheyenne had the highest average wind speed in the Cheyenne Labor Market at 12.9 miles per hour, compared to 12.4 mph in Laramie County but only 7.0 in Larimer County, Colorado.

CLIMATE COMFORT INDEX  
2014



SOURCE: Sperling’s Best Places

AVERAGE ANNUAL WIND SPEED (MPH)  
2014



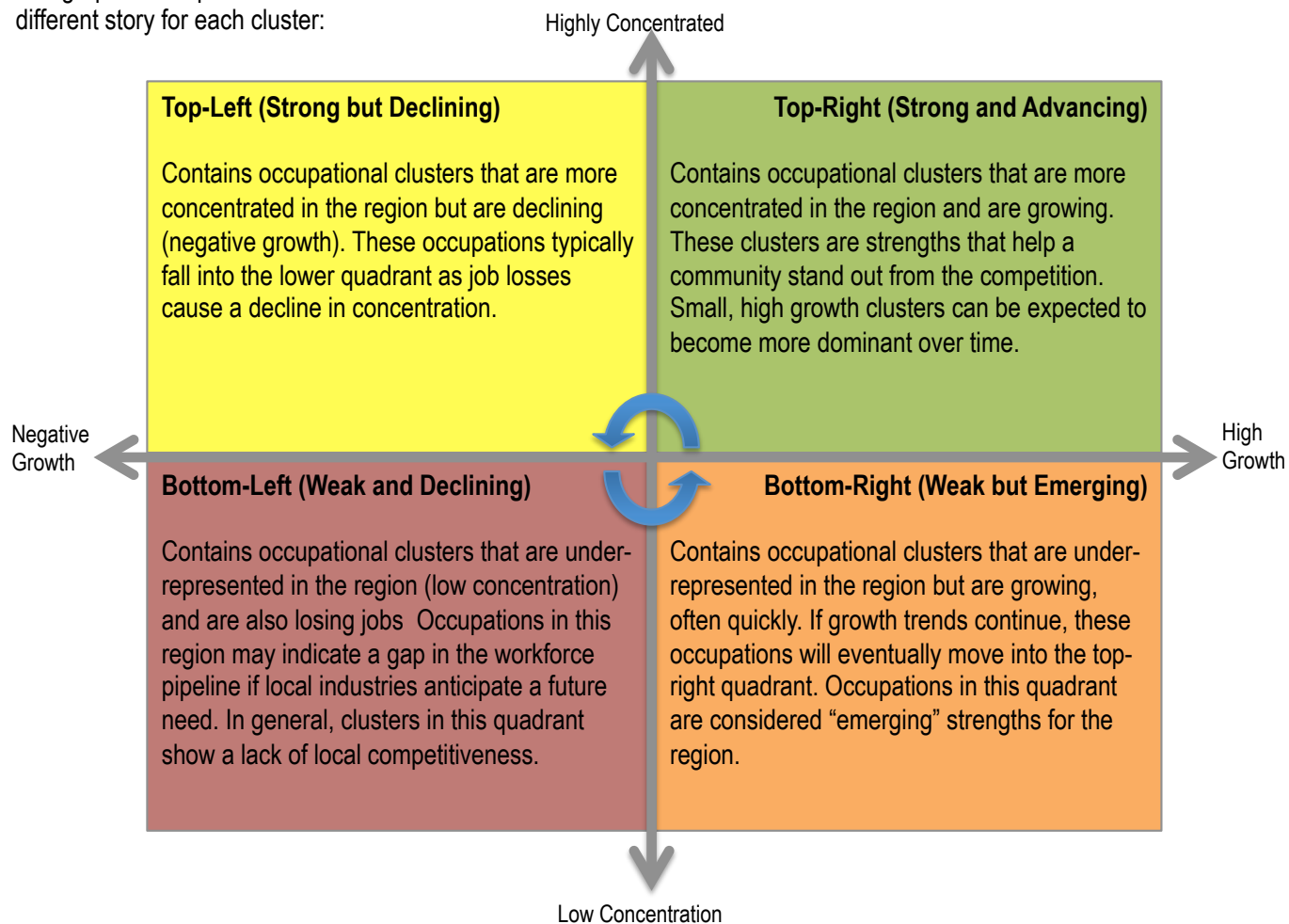
SOURCE: US NOAA

## Occupation Cluster Analysis

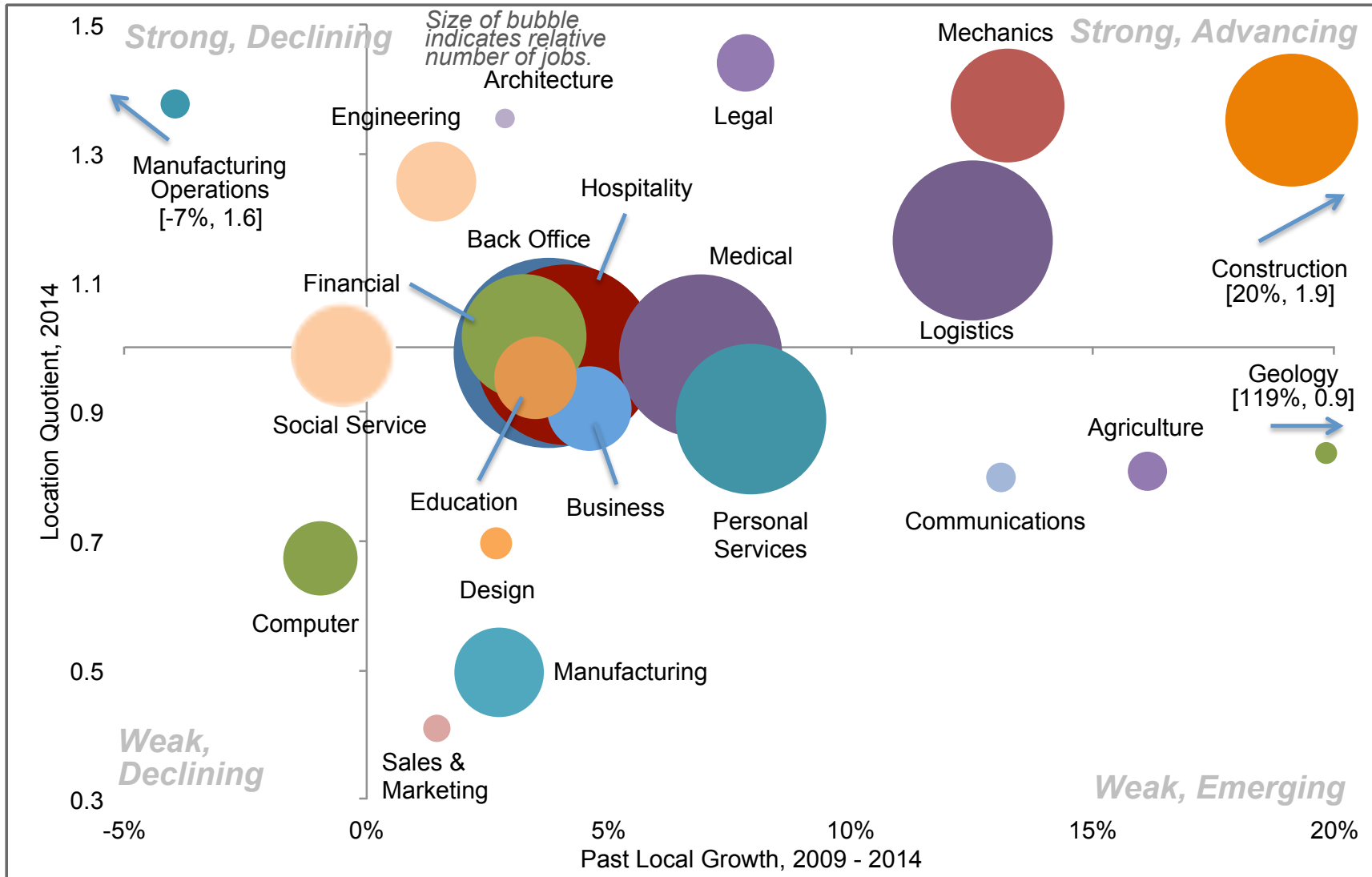
The bubble chart on the following page is similar to the Industry Cluster Bubble Chart in the *Industry Opportunity Analysis*. Location Quotients (LQs) compare the relative concentration of an occupation in a local economy with the average concentration seen at the national level. An LQ of 1.5 indicates that the local economy has 50% more jobs per capita in that occupation than witnessed at the national level. An LQ of 1.0 indicates parity, and an LQ below 1 indicates a below-average concentration. The “bubble chart” in the following section shows LQ by occupation on the vertical axis. The horizontal axis shows the 5-year % growth for the industry, and the size of the bubble indicates the relative number of occupations locally.

The graph’s quadrants each tell a different story. While occupations in the top-right quadrant are viewed as competitive and strengths, sectors to the bottom-right (which are growing, but have below-average concentrations) are emerging.

The graph’s four quadrants each tell a different story for each cluster:



### Past Performance of Occupation Clusters - Laramie County, WY



Source: Avalanche Consulting using data from EMSI

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

The largest Occupation Clusters in Laramie County are **Back Office** (6,787 jobs), **Hospitality** (6,111), **Medical** (5,005), **Logistics** (4,808), and **Personal Services** (4,256).

The most concentrated occupation clusters in Laramie County are **Construction** (1.8 LQ), **Architecture** (1.4 LQ), **Legal** (1.4 LQ), **Mechanics** (1.4 LQ), and **Engineering** (1.3 LQ).

Almost all occupation clusters grew in Laramie County from 2009 to 2014. The clusters that created the most jobs locally were **Construction** (547 net new jobs), **Logistics** (535), **Medical** (323), **Mechanics** (284), and **Back Office** (246). Local growth in all these sectors exceeded national occupation cluster growth, except Medical, which grew at a slightly slower rate than the US.

The clusters that lost jobs were **Performance** (7 jobs lost), **Social Service** (10 jobs lost), and **Computer** (10 jobs lost). In contrast, all these clusters grew nationally, particularly Computer, which was the 5<sup>th</sup> fastest growing occupation cluster nationally.

**Definitions of each occupation cluster and their skill requirements are included in Appendix I of this report.**

**Occupation Cluster Trends**

Laramie County, WY

Occupation Cluster	2014 Jobs Local	2014 LQ Laramie Cty.	Past Growth, 2009 - 2014		
			Local	Net New	US
Agriculture	288	0.8	16.1%	40	6.1%
Architecture	72	1.4	2.9%	2	-1.3%
Back Office	6,787	1.0	3.8%	246	3.5%
Business	1,342	0.9	4.6%	59	7.4%
Communications	164	0.8	13.1%	19	3.5%
Computer	1,036	0.7	-1.0%	-10	9.3%
Construction	3,224	1.8	20.4%	547	1.1%
Design	192	0.7	2.7%	5	2.7%
Education	2,921	1.0	3.3%	92	0.8%
Engineering	1,200	1.3	1.4%	17	5.2%
Financial	1,276	1.0	3.5%	43	4.3%
Geology	79	0.8	119.4%	43	37.0%
Hospitality	6,111	1.0	4.1%	242	9.6%
Legal	620	1.4	7.8%	45	1.7%
Logistics	4,808	1.2	12.5%	535	6.3%
Manufacturing	1,502	0.5	2.7%	40	5.9%
Math	59	1.3	7.3%	4	13.2%
Mechanics	2,429	1.4	13.2%	284	5.4%
Medical	5,005	1.0	6.9%	323	10.1%
Sales & Marketing	140	0.4	1.4%	2	6.7%
Performance	78	0.4	-8.2%	-7	5.4%
Political	33	0.8	0.0%	0	3.6%
Personal Services	4,256	0.9	7.9%	313	4.2%
Social Service	2,088	1.0	-0.5%	-10	1.1%
<b>Total</b>	<b>45,882</b>	<b>1.0</b>	<b>6.6%</b>	<b>2,840</b>	<b>5.6%</b>

Source: Avalanche Consulting using EMSI Data

LQ = Location Quotient: Per capita concentration of the occupation as % of US concentration

## Critical Occupation Clusters

Major occupation clusters show high-level trends in Laramie County, but for a more detailed understanding of the local workforce, it is essential to look at occupation sub-cluster and specific occupation trends and needs. Not all clusters are critical to economic and workforce development. For example, occupations in Personal Services are generally low-skill and have few training requirements. Other clusters, such as Business and Political may require advanced degrees and training, but they are less affected by economic development efforts. Growth in these clusters is more related to general business operations or the presence of government entities, such as the state capitol.

In the previous *Industry Opportunity Analysis* report, Avalanche recommended the following preliminary industry opportunities for Cheyenne LEADS economic development efforts:

- **Manufacturing**
- **Data & Information Services**
- **Energy**
- **Transportation & Logistics**

When identifying critical occupation clusters for Laramie County, Avalanche looked at a number of factors. One primary factor was the occupational needs of these industry opportunities. Avalanche also considered which occupation clusters are the largest in Laramie County, which are the most concentrated, and which are creating the most jobs. Some of these occupations are important to the local economy, such as Construction, but do not require as much workforce development and training. Clusters like these are more secondarily impacted by growth spurred through economic development, than through the direct activities of Cheyenne LEADS and other organizations.

Following this analysis, Avalanche identified the following critical occupation clusters for Laramie County:

- **Back Office**
- **Computer**
- **Engineering**
- **Logistics**
- **Manufacturing**
- **Mechanics**
- **Medical**

Understanding the trends and needs of these clusters will be essential to developing a strategy to address training, recruitment, and other workforce development tools for Cheyenne and Laramie County. Detailed sub-cluster trends in each of these clusters will be discussed on the following pages.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

### Back Office

Back Office occupations support operations in a wide range of industries, from manufacturing to logistics. They tend to represent a range of skill and training levels, from a high school degree through to advanced degrees for management, human resources, and other occupations.

The largest Back Office sub-clusters in Laramie County are **Information** (1,843 jobs), **Office Administration** (1,162), **Finances** (1,117), **Secretaries** (979), and **Management** (814). The most concentrated Back Office sub-clusters in Laramie County are **Human Resources** (1.2 LQ), **Cost Estimators** (1.2), **Trainers** (1.2), **Management** (1.1), and **Real Estate** (1.1).

Back Office occupation growth was slightly higher in Laramie County than the US, with the overall cluster growing 3.8% from 2009 to 2014, compared to 3.5% nationally. The Back Office sub-clusters that have created the most jobs in Laramie County over the past five years were **Finances** (67 new jobs), **Information** (64), **Secretaries** (50), **Management** (20), and **Real Estate** (17).

The only Back Office sub-clusters that lost jobs in Laramie County over this period were Communications (3 jobs lost), and Claims agents (2 jobs lost).

#### Back Office - Occupation Sub-Cluster Trends

Laramie County, WY

Occupation Sub-Cluster	2014 Jobs		Past Growth, 2009 - 2014		
	Local	2014 LQ Laramie Cty.	Local	Net New	US
Buyers	127	0.9	4.1%	5	5.0%
Claims Agents	100	1.0	-2.0%	-2	2.2%
Communications	40	0.9	-7.0%	-3	-4.8%
Cost estimators	185	1.2	7.6%	13	3.2%
Emergency Specialists	3	0.9	0.0%	0	-0.1%
Finances	1,117	0.9	6.4%	67	4.0%
Human Resources	254	1.2	0.4%	1	7.4%
Information	1,843	1.0	3.6%	64	4.5%
Management	814	1.1	2.5%	20	4.0%
Office Administration	1,162	0.9	1.0%	12	1.0%
Real Estate	63	1.1	37.0%	17	5.6%
Secretaries	979	1.0	5.4%	50	3.1%
Trainers	100	1.2	2.0%	2	7.7%
<b>Total</b>	<b>6,787</b>	<b>1.0</b>	<b>3.8%</b>	<b>246</b>	<b>3.5%</b>

Source: Avalanche Consulting using EMSI Data

LQ = Location Quotient: Per capita concentration of the occupation as % of US concentration

### Computer

The Computer cluster also underlies many modern industries. Most businesses require Computer services and either hire information technology specialists internally or contract with third-party information technology firms. Computer occupations are especially critical to Data Center operations, including network maintenance and support. Computer occupations generally require a minimum of a bachelor’s degree.

The largest Computer sub-clusters in Laramie County are **Computer Software** (534 jobs), **Computer Support** (433), and **Computer Hardware** (69 jobs). Computer sub-clusters are less concentrated in Laramie County than the national average, with an overall LQ of 0.7, but the most concentrated sub-cluster in Laramie County is **Computer Support**, with an LQ of 0.9, almost the same as the national average.

From 2009 to 2014, Computer occupations declined in Laramie County by 1% while growing 9.3% nationally. These represented 10 jobs lost, with 9 in Computer Software and 1 in Computer Support.

#### Computer - Occupation Sub-Cluster Trends

Laramie County, WY

Occupation Sub-Cluster	2014 Jobs	2014 LQ Laramie Cty.	Past Growth, 2009 - 2014		
	Local		Local	Net New	US
Computer Hardware	69	0.4	0.0%	0	2.1%
Computer Software	534	0.6	-1.7%	-9	11.9%
Computer Support	433	0.9	-0.2%	-1	7.7%
<b>Total</b>	<b>1,036</b>	<b>0.7</b>	<b>-1.0%</b>	<b>-10</b>	<b>9.3%</b>

Source: Avalanche Consulting using EMSI Data

LQ = Location Quotient: Per capita concentration of the occupation as % of US concentration

## Engineering

The Engineering occupation cluster supports many different industries, particularly those in Manufacturing, Energy, and Construction. Engineering occupations generally require at a minimum a bachelor’s degree and often a master’s degree or other advanced training.

The largest Engineering sub-clusters in Laramie County are **Geology & Natural Resources** (340 jobs), **Civil & Construction** (325), **Industrial** (195), **Biochem** (123), and **Management** (83).

Overall, Engineering sub-clusters are more concentrated in Laramie County than the national average, with an LQ of 1.3. The most concentrated Engineering sub-clusters in Laramie County are **Biogeo** (2.9 LQ), **Geology & Natural Resources** (2.6 LQ), **Civil & Construction** (2.2), **Bioag** (2.1), and **Management** (1.0).

Overall Engineering sub-clusters in Laramie County grew 1.4% from 2009 to 2014, slower than the US growth rate of 5.2%. The Engineering sub-clusters that created the most jobs in Laramie County over this period were **Aerospace** (8 new jobs), **Biochem** (5), **Industrial** (4), **Management** (4), and **Geology & Natural Resources** (2).

### Engineering - Occupation Sub-Cluster Trends

Laramie County, WY

Occupation Sub-Cluster	2014 Jobs		Past Growth, 2009 - 2014		
	Local	2014 LQ Laramie Cty.	Local	Net New	US
Aerospace	23	0.5	53.3%	8	1.9%
Biology	3	0.4	0.0%	0	12.5%
Bioag	53	2.1	1.9%	1	6.0%
Biochem	123	0.9	4.2%	5	4.7%
Biogeo	46	2.9	2.2%	1	6.3%
Biomedical	9	0.2	0.0%	0	5.4%
Civil & Construction	325	2.2	-2.4%	-8	1.1%
Geology & Nat. Resources	340	2.6	0.6%	2	7.9%
Industrial	195	0.6	2.1%	4	6.5%
Management	83	1.0	5.1%	4	4.2%
<b>Total</b>	<b>1,200</b>	<b>1.3</b>	<b>1.4%</b>	<b>17</b>	<b>5.2%</b>

Source: Avalanche Consulting using EMSI Data

LQ = Location Quotient: Per capita concentration of the occupation as % of US concentration

### Logistics

The Logistics cluster provides services to other industries through transportation and other services but primarily directly supports the Transportation & Logistics industry. Most Logistics occupations require minimal training, such as machinery operating licenses.

The largest Logistics sub-clusters in Laramie County are **Vehicle Drivers & Operators** (1,646), **Miscellaneous** (1,529), **Shipping** (1,152), **Managers** (276), and **Traffic Control** (107).

The Logistics cluster is more concentrated in Laramie County than the national average with an LQ of 1.2. The most concentrated Logistics sub-clusters in Laramie County are **Managers** (1.7 LQ), **Vehicle Drivers & Operators** (1.3), **Shipping** (1.2), **Miscellaneous** (1.1), and **Traffic Control** (1.0).

The Logistics occupation cluster grew almost twice as fast in Laramie County than the US from 2009 to 2014. The Logistics sub-clusters that created the most jobs in Laramie County over this period were **Vehicle Drivers & Operators** (277 new jobs), **Miscellaneous** (139), **Shipping** (38), **Managers** (34), and **Air Transportation** (17). No Logistics sub-clusters declined over this period.

#### Logistics - Occupation Sub-Cluster Trends

Laramie County, WY

Occupation Sub-Cluster	2014 Jobs	2014 LQ Laramie Cty.	Past Growth, 2009 - 2014		
	Local		Local	Net New	US
Air Transportation	62	0.8	37.8%	17	3.0%
Vehicle Drivers & Operators	1,646	1.3	20.2%	277	6.3%
Freight Agents & Couriers	21	0.4	250.0%	15	5.0%
Managers	276	1.7	14.0%	34	6.4%
Miscellaneous	1,529	1.1	10.0%	139	8.8%
Shipping	1,152	1.2	3.4%	38	2.5%
Traffic Control	107	1.0	16.3%	15	11.8%
Water Transportation	15	0.5	0.0%	0	5.7%
<b>Total</b>	<b>4,808</b>	<b>1.2</b>	<b>12.5%</b>	<b>535</b>	<b>6.3%</b>

Source: Avalanche Consulting using EMSI Data

LQ = Location Quotient: Per capita concentration of the occupation as % of US concentration

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

### Manufacturing

Manufacturing occupations are critical to a wide range of Manufacturing industry sub-sectors, from furniture to chemicals, and many require different skill and training sets. Generally, Manufacturing occupations do not require bachelor's degrees or higher and instead look for high school graduates with minimal training, associate degrees, and other certificate programs.

The largest Manufacturing sub-clusters in Laramie County are **Assembly** (393 jobs), **Machinery** (210), **Plant Workers** (194), **Textiles** (138), **Food** (114), and **Miscellaneous** (100).

The Manufacturing cluster is less concentrated in Laramie County than the national average, with an LQ of only 0.5. The only Manufacturing sub-clusters more concentrated in Laramie County than the national average are **Plant Workers** (1.9 LQ) and **Lumber and Wood** (1.1 LQ).

Manufacturing occupations grew 2.7% in Laramie County from 2009 to 2014, half the US growth rate of 5.9%. The Manufacturing sub-clusters that

#### Manufacturing - Occupation Sub-Cluster Trends

Laramie County, WY

Occupation Sub-Cluster	2014 Jobs	2014 LQ Laramie Cty.	Past Growth, 2009 - 2014		
	Local		Local	Net New	US
Chemical Processing	3	○ 0.2	0.0%	0	-0.7%
Plant Workers	194	● 1.9	-6.7%	-14	-0.2%
Assembly	393	◐ 0.5	5.1%	19	9.1%
Food	114	◑ 0.5	10.7%	11	4.0%
Industrial	16	○ 0.3	-5.9%	-1	3.7%
Inspection	69	◑ 0.4	4.5%	3	8.0%
Machinery	210	○ 0.3	5.5%	11	10.4%
Miscellaneous	103	○ 0.4	1.0%	1	9.0%
Paint	17	○ 0.3	88.9%	8	6.6%
Photography	17	◑ 0.8	30.8%	4	-2.1%
Printing	48	◑ 0.6	14.3%	6	-11.8%
Supervisors	100	◑ 0.5	-2.9%	-3	3.1%
Textiles	138	◑ 0.7	-6.1%	-9	-4.5%
Lumber and Wood	80	◑ 1.1	5.3%	4	-0.3%
<b>Total</b>	<b>1,502</b>	<b>◑ 0.5</b>	<b>2.7%</b>	<b>40</b>	<b>5.9%</b>

Source: Avalanche Consulting using EMSI Data

LQ = Location Quotient: Per capita concentration of the occupation as % of US concentration

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

created the most jobs in Laramie County over this period were **Assembly** (19 new jobs), **Food** (11), **Machinery** (11), **Paint** (8), **Printing** (6), and **Lumber and Wood** (4).

Four Manufacturing sub-clusters declined locally over this period: **Plant Workers** (14 jobs lost), **Textiles** (9), **Supervisors** (3), and **Industrial** (1).

### Mechanics

The Mechanics occupation cluster includes auto mechanics, but also supports a wide range of industries, including Transportation & Logistics, Manufacturing, and Data & Information Services through technicians and repair operators. The Mechanics cluster provides service and maintenance to machinery. Occupations generally require training and associate degrees but not advanced degrees, except in more advanced areas such as Aerospace and Computer.

The largest Mechanics sub-clusters in Laramie County are **Industrial** (1,034), **Automotive** (602), **Supervisors** (280), **Computer** (265), and **Aerospace** (150).

The Mechanics cluster is more concentrated in Laramie County than the national average, with an LQ of 1.4. The most concentrated Mechanics sub-clusters in Laramie County are **Aerospace** (3.3 LQ), **Supervisors** (1.9), **Computer** (1.5), **Automotive** (1.3), and **Industrial** (1.3).

The Mechanics cluster grew 13.2% from 2009 to 2014, more than double the US growth rate of 5.4%. The Mechanics sub-clusters that created the most jobs in Laramie County over this period were **Industrial** (128 new jobs), **Automotive** (74), **Computer** (28), **Supervisors** (28), and **Aerospace** (17). No Mechanics sub-clusters declined over this period.

#### Mechanics - Occupation Sub-Cluster Trends Laramie County, WY

Occupation Sub-Cluster	2014 Jobs Local	2014 LQ Laramie Cty.	Past Growth, 2009 - 2014		
			Local	Net New	US
Aerospace	150	● 3.3	12.8%	17	0.5%
Automotive	602	● 1.3	14.0%	74	7.9%
Computer	265	● 1.5	11.8%	28	-0.6%
Equipment	12	● 0.6	0.0%	0	9.5%
Industrial	1,034	● 1.3	14.1%	128	5.7%
Maintenance	86	● 0.7	11.7%	9	5.8%
Supervisors	280	● 1.9	11.1%	28	4.4%
<b>Total</b>	<b>2,429</b>	<b>● 1.4</b>	<b>13.2%</b>	<b>284</b>	<b>5.4%</b>

Source: Avalanche Consulting using EMSI Data

LQ = Location Quotient: Per capita concentration of the occupation as % of US concentration

## Medical

The Medical cluster entirely supports the Healthcare industry, which is one of the largest in Laramie County and rapidly growing nationally and locally. Medical occupations generally require advanced degrees, including a range of degrees for Nurses and Technicians and doctoral degrees for Doctors and Veterinarians.

The Medical sub-clusters in Laramie County are **Nurses, Aides, & Therapists** (2,953 jobs), **Technicians** (893), **Doctors** (562), **Operations** (544), and **Veterinarians** (53).

The Medical cluster is as concentrated in Laramie County as the national average, with an LQ of 1.0. The most concentrated Medical sub-clusters in Laramie County are **Operations** (1.4 LQ), **Doctors** (1.3), **Veterinarians** (1.2), and **Technicians** (1.1). Surprisingly, the largest sub-cluster; Nurses, Aides, & Therapists; is slightly less concentrated than the national average, with an LQ of 0.9

Medical occupations grew 6.9% in Laramie County from 2009 to 2014, slightly faster than the overall economy, but slower than the national growth rate of 10.1%. The Medical sub-clusters that created the most jobs in Laramie County over this period were **Nurses, Aides, & Therapists** (141 new jobs), **Technicians** (75), **Doctors** (64), and **Operations** (45). The only Medical sub-cluster that declined over this period was Veterinarians, which lost 2 jobs.

### Medical - Occupation Sub-Cluster Trends

Laramie County, WY

Occupation Sub-Cluster	2014 Jobs		2014 LQ Laramie Cty.	Past Growth, 2009 - 2014		
	Local			Local	Net New	US
Doctors	562	● 1.3	12.9%	64	6.0%	
Nurses, Aides & Therapists	2,953	● 0.9	5.0%	141	11.5%	
Operations	544	● 1.4	9.0%	45	9.3%	
Technicians	893	● 1.1	9.2%	75	7.3%	
Veterinarians	53	● 1.2	-3.6%	-2	6.6%	
<b>Total</b>	<b>5,005</b>	<b>● 1.0</b>	<b>6.9%</b>	<b>323</b>	<b>10.1%</b>	

Source: Avalanche Consulting using EMSI Data

LQ = Location Quotient: Per capita concentration of the occupation as % of US concentration

## Phase 3: Workforce Gap Analysis

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### Introduction

The previous phase, *Labor Market Analysis*, provides a detailed picture of the existing workforce in Cheyenne, Laramie County, and the broader Cheyenne Labor Market, including recent local occupation growth trends. This phase turns the focus to the future, looking at forecast occupation growth and recent educational output. These factors can be considered supply and demand: businesses create demand for workers in specific occupations, and local educational institutions supply graduates with skills and training applicable to specific occupations. **Laramie County is forecast to create nearly 3,000 jobs over the next five years, a high demand, and it is critical to understand the occupation dynamics and needs of these jobs.**

Cheyenne is fortunate to be home to a highly successful college, Laramie County Community College (LCCC), and neighbors with the University of Wyoming (UW), the only university in the entire State of Wyoming. These two institutions work closely with Cheyenne LEADS and are tremendous assets for economic development in Laramie County, particularly as partners for workforce training and education. They graduate thousands of students each year, who have the potential to take jobs in the local workforce. **Alignment of educational programs with employer needs and retention of graduates will be critical to a successful strategy.**

This phase, *Workforce Gap Analysis*, focuses on key questions related to workforce development:

- What are the occupations projected to create the most jobs in Laramie County over the next five years?
- What are the educational needs of these occupations?
- How many degrees are LCCC and UW awarding in each field every year?
- Do these degree awards match up with occupational needs and are graduates being retained locally?
- What gaps exist between workforce supply and demand?

The first section of this phase looks at occupation forecasts for Laramie County to better understand which clusters are projected to create the greatest number of net new local jobs over the next five years. As with the *Labor Market Analysis*, Avalanche first looks at broad occupation cluster trends and then specific forecasts for critical sub-clusters. Notably, the critical clusters with the greatest number of forecast new jobs are **Medical, Logistics, and Back Office.**

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

The following section, Educational Output, provides a high-level summary of recent degree award trends at both Laramie County Community College and the University of Wyoming. Like the occupation analysis in the previous phase, this section provides bubble charts and tables showing the number of degrees by field and level, the concentration of degrees relative to US averages and growth rates. Both universities have notable strengths in important fields, including **Agriculture, Health Care, Engineering, Education, and Mechanics & Repair**. Notably, **Software & Computer Science** associate degrees and certificates at LCCC are highly concentrated and growing, addressing critical needs identified through this analysis and by local employers.

The final section of this phase, Gap Analysis, directly compares this supply and demand, identifying gaps in the local workforce development pipeline. Specifically, Avalanche links each degree code at LCCC and UW to projected job openings by occupation in the county. To complete the match across degree codes and occupation codes, Avalanche created a bridging taxonomy that bundles a handful of degrees with a handful of similar occupations.

Through this process we seek to understand:

- How well does the overall output of graduates supply the local economy at projected growth rates?
- What occupations in the region require an educated worker?
- How does retention of local graduates affect this supply?
- What occupations are over-served by local graduates, and which occupations are under-served?

Classifications for detailed occupations are slightly different from the broad clusters, and some clusters have surpluses in one occupation and shortages in another, but overall most occupation clusters have a shortage of local supply in key occupations.

**The most significant notable gaps were in Back Office professionals with advanced degrees; Computer specialists in Software Development, Systems & Information Security, and Network Administrators; skilled trade Construction workers; Truck & Commercial Driver certificates; numerous Manufacturing & Mechanics/Repair occupations; and Doctors and Dentists.**

## Occupation Forecasts

Workforce development planning involves understanding both the current and upcoming needs for local businesses and residents. Immediate needs, such as training for an expanding manufacturing facility, can be met through tailored training programs in welding or other specific areas. But it is also important to understand how the local market is expected to change in the future. If some occupations are expected to grow rapidly, local educational institutions can prepare by working with local employers to understand skill needs, create new programs, and market these to potential students.

**Employment forecasts, whether by industry or occupation, are never perfect at predicting the future.** Most individuals and institutions that produce forecasts build mathematical models to analyze past employment trends in a region and predict the future based on past performance. National data vendors are often stronger at forecasting growth at the state and nationally level but are not as aware of assets and specific trends at city, county, and other local levels. Taking this into account, Avalanche qualifies forecasts and other data with our national workforce development experience and on-the-ground observations from trips and interviews.

This report primarily uses employment and forecast data produced by Economic Modeling Specialists, Inc. (EMSI), a private data vendor. In 2012, the Wyoming Department of Workforce Services (DWS) Research & Planning office prepared occupation projections for the state and sub-regions, including Laramie County. These forecasts were prepared within the State of Wyoming by in-house economists.

The EMSI and DWS forecasts are not directly comparable, because they were prepared two years apart, and the DWS projections do not include details for every occupation. Internal comparison of the two datasets does allow for loose validation and adjustment of forecasts. Generally, the DWS projections match EMSI data overall and in most occupation clusters. For example, DWS would project 6.9% overall job growth in Laramie County from 2014 to 2019, while EMSI forecasts 6.1%.

The only occupation cluster that had significant variance was **Computer**. Based on recent job losses, EMSI forecasts a 2.6% decline in Computer occupations in Laramie County over the next five years (a net loss of 27 jobs). In contrast, DWS forecasts 10.4% growth in Computer occupations locally, which would create a net 107 jobs. Because the DWS forecasts are more in line with state and national projections and reflect strong related industry assets and trends in Laramie County, Avalanche substituted the DWS forecasts for Computer occupations in this study. For all other occupation cluster forecasts, EMSI estimates were used, as they are more current.

Additionally, for each occupation cluster, Avalanche examined projected job creation if growth occurs at the Local (Laramie County) forecast rate, the State of Wyoming rate, and the US rate. This allows us to better understand the potential range of jobs that may be created in each cluster locally over the next five years.

Lastly, it is important to note that many occupation clusters are not directly correlated with industries. For example, the Data & Information Services industry does not exclusively employ Computer occupations. In fact, many of the occupations in Data & Information Services are Mechanics, with Computer Mechanics and other Maintenance sub-cluster positions critical to data center operations.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

The following pages examine occupation cluster projected growth trends in a bubble chart and tables as shown in previous reports. This includes discussion of forecast trends within the critical occupation clusters identified in the *Labor Market Analysis*.

All occupation clusters are forecast to grow in Laramie County over the next five years, except Design. **The county is projected to create nearly 3,000 new jobs over this period, with a significant share in already large local clusters.**

The occupation clusters forecast to create the most jobs in Laramie County from 2014 to 2019 include **Medical** (598 new jobs), **Construction** (404), **Logistics** (387), **Education** (369), and **Back Office** (284).

The occupation clusters forecast to have the highest percentage growth in Laramie County from 2014 to 2019 are **Geology** (42% forecast growth), **Performance** (17%), **Agriculture** (15%), **Construction** (13%), and **Education** (13%). All these industries are forecast to grow faster or at comparable rates to the State of Wyoming.

### Occupation Cluster Forecasts

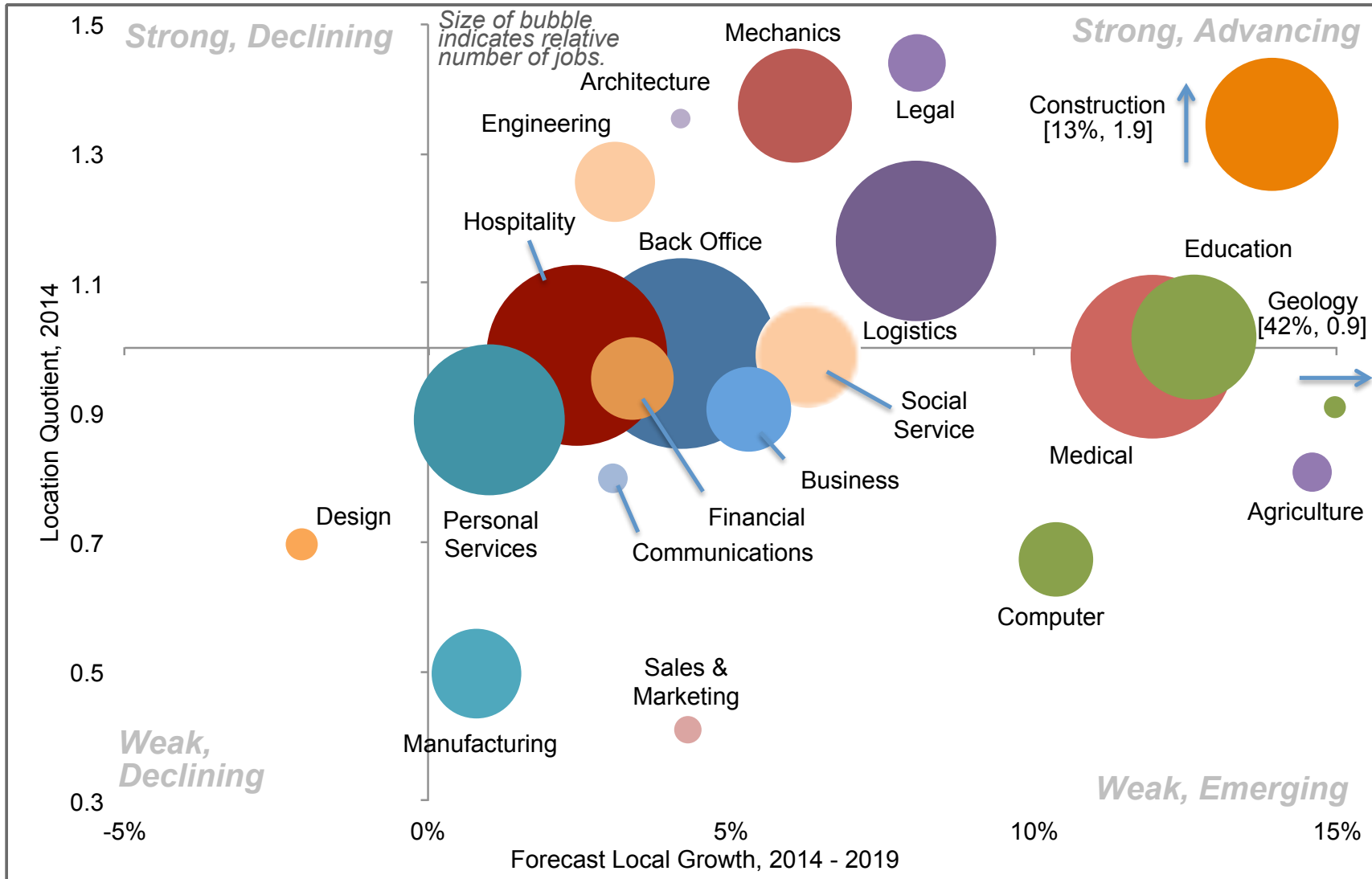
Laramie County, WY

Occupation Cluster	Forecast Growth 2014-19			Laramie Cty. Net New Growth		
	Local	WY	US	Local Rate	WY Rate	US Rate
Agriculture	15%	5%	2%	42	13	5
Architecture	4%	8%	5%	3	6	4
Back Office	4%	7%	5%	284	502	321
Business	5%	9%	7%	71	122	100
Communications	3%	5%	5%	5	8	9
Computer*	10%	9%	9%	107	92	94
Construction	13%	12%	6%	404	380	202
Design	-2%	1%	3%	-4	2	6
Education	13%	14%	7%	369	399	203
Engineering	3%	8%	5%	37	98	65
Financial	3%	8%	6%	43	96	77
Geology	42%	14%	15%	33	11	12
Hospitality	2%	5%	7%	150	279	426
Legal	8%	7%	5%	50	44	30
Logistics	8%	9%	4%	387	448	188
Manufacturing	1%	6%	-1%	12	83	-15
Math	5%	14%	13%	3	8	8
Mechanics	6%	10%	5%	147	254	116
Medical	12%	13%	12%	598	637	610
Sales & Marketing	4%	9%	6%	6	13	8
Performance	17%	9%	7%	13	7	5
Political	3%	8%	7%	1	3	2
Personal Services	1%	4%	5%	43	161	197
Social Service	6%	9%	5%	131	181	110
<b>Total</b>	<b>6%</b>	<b>9%</b>	<b>6%</b>	<b>2,935</b>	<b>3,905</b>	<b>2,715</b>

Source: Avalanche Consulting using EMSI Data

\*Wyoming Dept. of Workforce Services Forecasts Used Instead of EMSI

### Forecasted Performance of Occupation Clusters - Laramie County, WY



Source: Avalanche Consulting using data from EMSI

## Critical Occupation Clusters

The previous report, *Labor Market Analysis*, identified seven critical occupation clusters based on their support of local industry opportunities, significant presence in Laramie County, and education and training needs. The critical occupation clusters identified were:

- **Back Office**
- **Computer**
- **Engineering**
- **Logistics**
- **Manufacturing**
- **Mechanics**
- **Medical**

In the following section, for each of these critical occupation cluster, Avalanche looks at growth forecasts and provides estimates of the number of jobs that will be created in each occupation sub-cluster in Laramie County over the next five years. Because local occupation forecasts from EMSI are limited and only one factor examined, for each occupation, Avalanche provides the forecast Laramie County net job creation if growth were to occur at the local, state, and national rates.

This provides a range to understand the number of potential new jobs to be created in each occupation sub-cluster. In turn, these occupation forecasts will inform the subsequent Gap Analysis and whether local educational institutions are producing enough qualified graduates to fill these positions.

With the final strategy, Avalanche will provide a spreadsheet appendix that includes past and forecast trends for all individual occupations within each cluster and sub-cluster.

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Back Office**

Back Office occupations are forecast to grow more slowly in Laramie County over the next five years than the State of Wyoming and US but will still create nearly 300 jobs. The local Back Office cluster is forecast to grow 4% from 2014 to 2019, compared to 7% in the State of Wyoming and 5% nationally.

The Back Office sub-clusters projected to create the most jobs in Laramie County from 2014 to 2019 are **Secretaries** (61 net new jobs), **Finances** (59), **Office Administration** (42), **Information** (39), and **Management** (31).

**Back Office - Occupation Sub-Cluster Forecasts**

Laramie County, WY

Occupation Sub-Cluster	Forecast Growth 2014-19			Laramie Cty. Net New Growth		
	Local	WY	US	Local Rate	WY Rate	US Rate
Buyers	0%	9%	3%	0	12	4
Claims Agents	23%	12%	3%	23	12	3
Communications	-8%	-5%	-4%	-3	-2	-1
Cost estimators	9%	12%	6%	16	22	11
Emergency Specialists	0%	6%	5%	0	0	0
Finances	5%	7%	6%	59	79	66
Human Resources	2%	6%	5%	6	16	13
Information	2%	6%	5%	39	119	96
Management	4%	8%	6%	31	65	48
Office Administration	4%	6%	2%	42	70	24
Real Estate	11%	9%	5%	7	6	3
Secretaries	6%	10%	5%	61	96	51
Trainers	3%	7%	9%	3	7	9
<b>Total</b>	<b>4%</b>	<b>7%</b>	<b>5%</b>	<b>284</b>	<b>502</b>	<b>321</b>

Source: Avalanche Consulting using EMSI Data

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Computer**

Based on Wyoming DWS forecasts, the Computer occupation cluster is forecast to grow more quickly in Laramie County over the next five years than the US. Computer occupations are forecast to grow 10% locally from 2014 to 2019, compared to 9% in the State of Wyoming and US.

The Computer sub-clusters projected to create the most jobs in Laramie County from 2014 to 2019 are **Computer Software** (59 net new jobs), **Computer Support** (47), and **Computer Hardware** (3).

**Computer - Occupation Sub-Cluster Forecasts**

Laramie County, WY

Occupation Sub-Cluster	Forecast Growth 2014-19			Laramie Cty. Net New Growth		
	Local	WY	US	Local Rate	WY Rate	US Rate
Computer Hardware*	5%	10%	4%	3	7	3
Computer Software*	11%	11%	11%	59	58	58
Computer Support*	11%	7%	8%	47	29	34
<b>Total</b>	<b>10%</b>	<b>9%</b>	<b>9%</b>	<b>107</b>	<b>92</b>	<b>94</b>

Source: Avalanche Consulting using EMSI Data

\*Wyoming Dept. of Workforce Services Forecasts Used Instead of EMSI

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Engineering**

The Engineering occupation cluster is forecast to grow more slowly in Laramie County over the next five years than the State of Wyoming and the US. Engineering occupations are forecast to grow 3% locally from 2014 to 2019 compared to 8% in the State of Wyoming and 5% nationally. Forecasts from the Wyoming Department of Workforce Services are comparable to EMSI.

The Engineering sub-clusters projected to create the most jobs in Laramie County from 2014 to 2019 are **Geology & Natural Resources** (12 net new jobs), **Civil & Construction** (8), **Biomedical** (7), **Management** (3), **Biochem** (2), and **Industrial** (2).

**Engineering - Occupation Sub-Cluster Forecasts**

Laramie County, WY

Occupation Sub-Cluster	Forecast Growth 2014-19			Laramie Cty. Net New Growth		
	Local	WY	US	Local Rate	WY Rate	US Rate
Aerospace	4%	9%	7%	1	2	2
Biology	0%	18%	14%	0	1	0
Bioag	2%	5%	6%	1	3	3
Biochem	2%	6%	6%	2	7	7
Biogeo	2%	8%	6%	1	3	3
Biomedical	78%	24%	9%	7	2	1
Civil & Construction	2%	5%	6%	8	17	20
Geology & Nat. Resources	4%	10%	9%	12	36	32
Industrial	1%	8%	3%	2	17	5
Management	4%	10%	5%	3	8	4
<b>Total</b>	<b>3%</b>	<b>8%</b>	<b>5%</b>	<b>37</b>	<b>98</b>	<b>65</b>

Source: Avalanche Consulting using EMSI Data

### Logistics

The Logistics occupation cluster is forecast to grow twice as fast in Laramie County than the US over the next five years, but slightly slower than the State of Wyoming. Logistics occupations are forecast to grow 8% in Laramie County from 2014 to 2019, compared to 9% in the State of Wyoming and only 4% nationally.

The Logistics sub-clusters projected to create the most jobs in Laramie County from 2014 to 2019 are **Vehicle Drivers & Operators** (212 net new jobs), **Miscellaneous** (142), **Managers** (32), and **Air Transportation** (13). The only sub-cluster projected to lose jobs over this period is **Shipping**, which is forecast to decline 2%, losing 19 local jobs.

#### Logistics - Occupation Sub-Cluster Forecasts

Laramie County, WY

Occupation Sub-Cluster	Forecast Growth 2014-19			Laramie Cty. Net New Growth		
	Local	WY	US	Local Rate	WY Rate	US Rate
Air Transportation	21%	16%	2%	13	10	1
Vehicle Drivers & Operators	13%	12%	6%	212	195	93
Freight Agents & Couriers	19%	5%	3%	4	1	1
Managers	12%	11%	5%	32	31	14
Miscellaneous	9%	10%	4%	142	152	59
Shipping	-2%	1%	1%	-19	14	17
Traffic Control	3%	6%	6%	3	7	6
Water Transportation	0%	21%	7%	0	3	1
<b>Total</b>	<b>8%</b>	<b>9%</b>	<b>4%</b>	<b>387</b>	<b>448</b>	<b>188</b>

Source: Avalanche Consulting using EMSI Data

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Manufacturing**

The Manufacturing occupation cluster is forecast to grow more quickly in Laramie County over the next five years than the US but more slowly than the State of Wyoming. Manufacturing occupations are forecast to grow 1% locally from 2014 to 2019 compared to 6% in the State of Wyoming and a 1% decline nationally. Generally, despite recent job growth nationally, Manufacturing occupations have been declining for the past thirty years, as technological innovation and international competition force domestic manufacturers to be more efficient and lean with their production processes.

Many Manufacturing sub-clusters are projected to decline in Laramie County over the next five years, but growth in other sub-clusters is forecast to create net positive growth. The Manufacturing sub-clusters projected to create the most jobs in Laramie County from 2014 to 2019 are **Machinery** (24 net new jobs), **Inspection** (4), **Assembly** (2), and **Miscellaneous** (2). The occupations projected to lose the most jobs are **Lumber & Wood** (-9 net new jobs) and **Plant Workers** (-6).

State of Wyoming forecasts are much higher than Laramie County, particularly in **Assembly**, **Textiles**, and **Plant Workers**. If Laramie County Manufacturing sub-clusters grow at state rates, the overall cluster will create 83 net new jobs, compared to only 12 at local forecast rates.

**Manufacturing - Occupation Sub-Cluster Forecasts**

Laramie County, WY

Occupation Sub-Cluster	Forecast Growth 2014-19			Laramie Cty. Net New Growth		
	Local	WY	US	Local Rate	WY Rate	US Rate
Chemical Processing	0%	-6%	-3%	0	0	0
Plant Workers	-3%	3%	2%	-6	6	3
Assembly	1%	6%	-1%	2	22	-2
Food	-2%	-1%	3%	-2	-1	3
Industrial	0%	7%	-2%	0	1	0
Inspection	6%	8%	2%	4	5	1
Machinery	11%	11%	0%	24	24	-1
Miscellaneous	2%	6%	-1%	2	6	-1
Paint	6%	11%	0%	1	2	0
Photography	0%	-2%	-2%	0	0	0
Printing	0%	3%	-9%	0	1	-4
Supervisors	1%	5%	-1%	1	5	-1
Textiles	-4%	5%	-9%	-5	7	-12
Lumber and Wood	-11%	-18%	-7%	-9	-14	-6
<b>Total</b>	<b>1%</b>	<b>6%</b>	<b>-1%</b>	<b>12</b>	<b>83</b>	<b>-15</b>

Source: Avalanche Consulting using EMSI Data

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Mechanics**

The Mechanics occupation cluster is forecast to grow more quickly in Laramie County than the US over the next five years but more slowly than the State of Wyoming. Mechanics occupations are forecast to grow 6% locally from 2014 to 2019 compared to 10% in the State of Wyoming and 5% in the US.

The Mechanics sub-clusters projected to create the most jobs in Laramie County from 2014 to 2019 are **Industrial** (71 net new jobs), **Automotive** (56), **Supervisors** (11), **Maintenance** (6), and **Computer** (5). The only Mechanics sub-cluster projected to decline locally is **Aerospace**, which is forecast to lose 2 jobs in Laramie County over the next five years.

**Mechanics - Occupation Sub-Cluster Forecasts**

Laramie County, WY

Occupation Sub-Cluster	Forecast Growth 2014-19			Laramie Cty. Net New Growth		
	Local	WY	US	Local Rate	WY Rate	US Rate
Aerospace	-1%	4%	4%	-2	6	7
Automotive	9%	10%	5%	56	60	28
Computer	2%	7%	2%	5	19	5
Equipment	0%	6%	10%	0	1	1
Industrial	7%	12%	5%	71	122	56
Maintenance	7%	11%	5%	6	9	4
Supervisors	4%	8%	4%	11	23	11
<b>Total</b>	<b>6%</b>	<b>10%</b>	<b>5%</b>	<b>147</b>	<b>254</b>	<b>116</b>

Source: Avalanche Consulting using EMSI Data

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Medical**

The Medical occupation cluster is forecast to grow nearly twice as fast as the overall economy in Laramie County over the next five years. Medical occupations are forecast to grow 12% in Laramie County from 2014 to 2019 compared to 13% in the State of Wyoming and 12% in the US.

The Medical sub-clusters projected to create the most jobs in Laramie County from 2014 to 2019 are **Nurses, Aides & Therapists** (394 net new jobs), **Technicians** (85), **Operations** (60), and **Doctors** (58).

**Medical - Occupation Sub-Cluster Forecasts**

Laramie County, WY

Occupation Sub-Cluster	Forecast Growth 2014-19			Laramie Cty. Net New Growth		
	Local	WY	US	Local Rate	WY Rate	US Rate
Doctors	10%	10%	10%	58	59	55
Nurses, Aides & Therapists	13%	13%	13%	394	397	379
Operations	11%	13%	13%	60	69	69
Technicians	10%	12%	11%	85	106	97
Veterinarians	2%	6%	8%	1	3	4
<b>Total</b>	<b>12%</b>	<b>13%</b>	<b>12%</b>	<b>598</b>	<b>637</b>	<b>610</b>

Source: Avalanche Consulting using EMSI Data

## Educational Output

Industry and occupation forecasts help determine future workforce demand, and labor market analysis helps understand the current availability and characteristics of the workforce. But to estimate future workforce supply, we must examine a mix of demographic trends and educational output. Some jobs only require a high school degree and on the job training, but increasingly many occupations require post-secondary training or degrees, ranging from technical certificates to master’s and doctoral degrees. A strong measure of workforce supply is degrees awarded at local post-secondary educational institutions. Not all graduates from an educational institution find jobs and stay in the community, but local employers have the potential to connect with these graduates and find new employees with appropriate qualifications for openings.

This section provides a high-level examination of degree trends at local post-secondary educational institutions, looking at degree awards by primary field, growth trends, and relative concentration. Laramie County Community College (LCCC) is the primary educational institution serving Cheyenne and Laramie County. The University of Wyoming (UW) is located in neighboring Albany County and can be considered a local source of graduates. These two institutions are the primary source for new graduates in Cheyenne. Both LCCC and the University of Wyoming are strong partners of Cheyenne LEADS and have the potential to align programming within this strategy.

The overall Cheyenne Labor Market also includes Colorado State University and the University of Northern Colorado. These two large universities produce a significant number of graduates each year but are not considered in our analysis. They are significant assets when looking at the broader workforce pool in the region, but they are not partners with Cheyenne LEADS, and their programs will not be addressed directly in this strategy.

### Laramie County Community College

Laramie County Community College is part of Wyoming’s unique community college system, which is one of the strongest in the country and highly focused on serving local needs. LCCC was founded in 1968 and has been growing rapidly in recent years, with over 3,800 annualized full-time enrolled students in 2014. The college currently has a 271-acre campus in Cheyenne, including classrooms, science labs, and residence halls. LCCC offers a range of associate degrees, certificates and workforce training.

In 2013, LCCC awarded 571 associate degrees. The largest fields for associate degree awards were **Health Care** (169 degrees), **Liberal / Multicultural Studies** (115), **Education** (58), **Business, Finance, Economics** (39), and **Government, Social Work, Criminology** (30). The most concentrated associate degree fields (those with the highest per capita densities relative to the US) were **Agriculture** (7.2 LQ), **Education** (5.5), **Media & Communications** (2.0), **Legal** (1.8), and **Mechanics & Machine Repair** (1.6).

#### Degree Awards by Field

Laramie County Community College

Degree Primary Field	Associate Degree, 2008-2013			Certificates , 2008-2013		
	Awards	LQ	Growth	Awards	LQ	Growth
Agriculture	28	● 7.2	75.0%	n/a	n/a	n/a
Biz., Finance, Economics	39	◐ 0.6	-9.3%	0	○ 0.0	-100.0%
Construction	1	○ 0.2	-75.0%	0	○ 0.0	-100.0%
Creative Arts and Design	7	◐ 0.6	40.0%	n/a	n/a	n/a
Education	58	● 5.5	16.0%	n/a	n/a	n/a
Engineering	44	● 1.3	69.2%	4	◐ 1.2	-42.9%
Family Development	1	○ 0.1	n/a	n/a	n/a	n/a
Govt., Social Work, Crime	30	◐ 0.9	36.4%	0	○ 0.0	n/a
Health Care	169	● 1.3	9.7%	67	● 1.3	-10.7%
Legal	12	● 1.8	50.0%	3	● 4.6	n/a
Liberal / Multicult. Studies	115	◐ 0.6	55.4%	n/a	n/a	n/a
Mathematics	0	○ 0.0	-100.0%	n/a	n/a	n/a
Mechanics & Mach. Repair	20	● 1.6	233.3%	24	● 2.3	166.7%
Media & Communications	13	● 2.0	8.3%	n/a	n/a	n/a
Software & Computer Sci.	29	● 1.3	61.1%	29	● 7.5	0.0%
<b>Total</b>	<b>571</b>	◐ <b>1.0</b>	<b>27.2%</b>	<b>127</b>	◐ <b>1.0</b>	<b>3.3%</b>

Source: Avalanche Consulting using IPEDS Data

LQ = Location Quotient: Per capita concentration of the occupation as % of US concentration

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

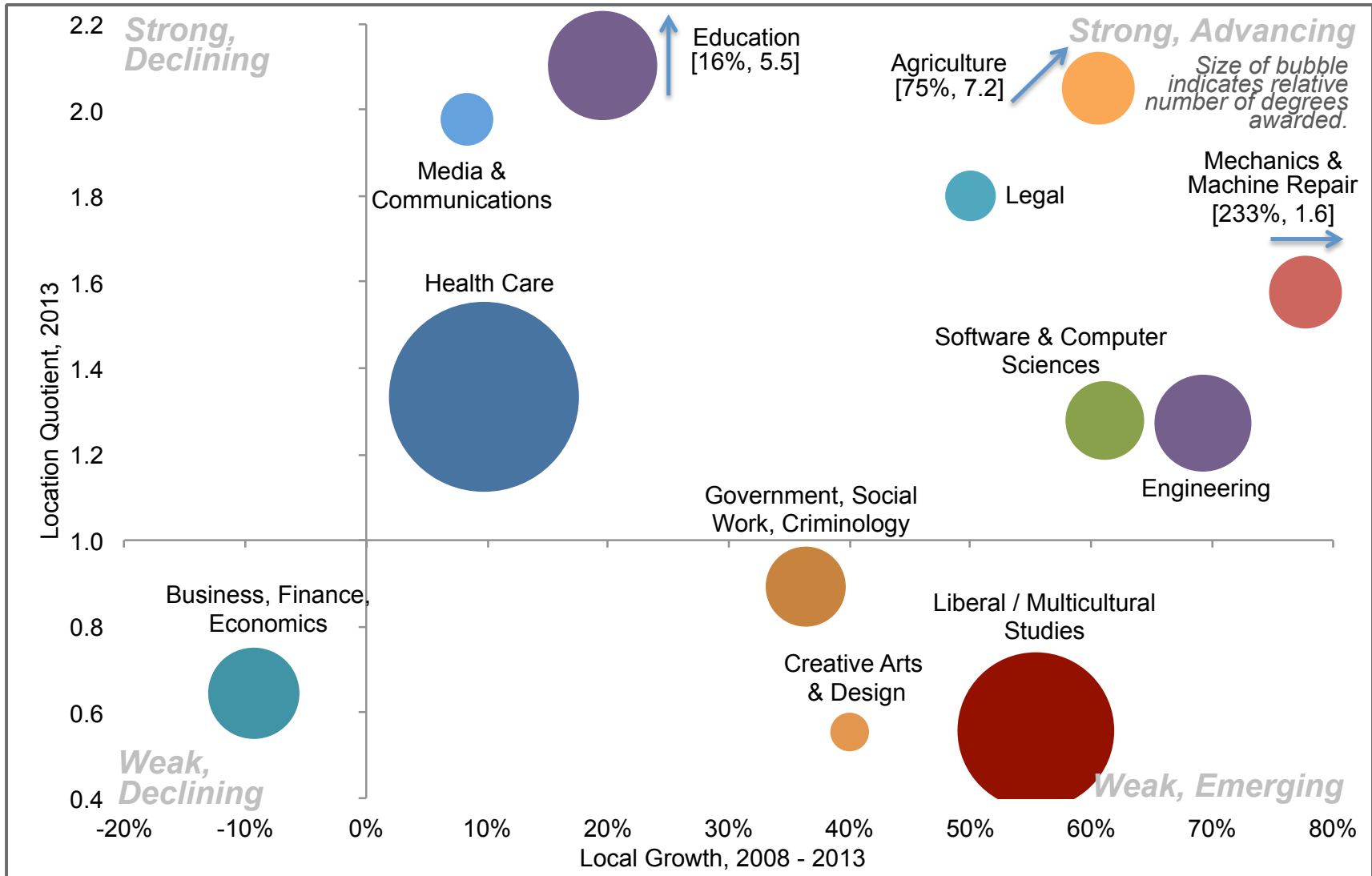
Overall associate degree awards grew 27% from 2008 to 2013 at LCCC. The fastest growing award fields were **Mechanics & Machine Repair** (233% growth), **Agriculture** (75%), **Engineering** (69%), **Software & Computer Sciences** (61%), and **Liberal / Multicultural Studies** (55%).

In 2012, LCCC also awarded 124 certificates. The largest certificate fields were **Health Care** (67 degrees), **Software & Computer Science** (29), **Mechanics & Machine Repair** (24), **Engineering** (4), and **Legal** (3).

All certificate awards at LCC were highly concentrated, **Software & Computer Science** was the most concentrated, with an LQ of 7.5, nearly eight times more concentrated than the US average. Many of these certificates are for data center network maintenance, such as Cisco certification.

Overall certificate awards grew 3% from 2008 to 2013. The highest growth occurred in Mechanics & Machine Repair certificates (167% growth). Software & Computer Sciences certificates did not grow over this period, and Health Care and Engineering certificates declined.

**Associate Degree Award Trends by Primary Field - Laramie County Community College**



Source: Avalanche Consulting using data from IPEDS

### University of Wyoming

The University of Wyoming is located in the City of Laramie in Albany County, less than an hour from Cheyenne. UW is a land-grant university and was founded in 1886. The university currently enrolls over 13,000 students from across the nation and globe and offers 200 areas of study. Most states have more than one public university, but UW is the only university in the entire state. This creates a unique position for the university, and one of their constitutional roles is to support economic development across the state.

In 2013, the University of Wyoming awarded over 2,000 bachelor’s degrees. The largest primary fields for bachelor’s degrees were **Engineering** (375 degrees), **Health Care** (353), **Education** (264), **Business, Finance, Economics** (232), and **Liberal / Multicultural Studies** (190). The most concentrated bachelor’s degree awards were in **Agriculture** (3.7 LQ), **Education** (2.2), **Engineering** (1.5), **Family Development** (1.1), and **Health Care** (1.1). Notably, **Software & Computer Science** was the second smallest degree field, with 36 awards in 2013 and an LQ of only 0.5, 50% less concentrated than the national average.

#### Degree Awards by Field University of Wyoming

Degree Primary Field	Bachelor's Degrees, 2008-2013			Master's+ Degrees, 2008-2013		
	Awards	LQ	Growth	Awards	LQ	Growth
Agriculture	148	● 3.7	-11.4%	42	● 6.6	-12.5%
Architecture	n/a	n/a	n/a	1	○ 0.2	n/a
Biz., Finance, Economics	232	● 0.6	2.7%	64	● 0.5	20.8%
Creative Arts & Design	74	● 0.7	21.3%	5	○ 0.3	66.7%
Education	264	● 2.2	5.6%	115	● 0.9	-22.8%
Engineering	375	● 1.5	42.6%	115	● 1.9	64.3%
Family Development	99	● 1.1	-7.5%	15	● 1.5	7.1%
Govt., Social Work, Crime	161	● 0.8	-6.9%	51	● 1.1	0.0%
Health Care	353	● 1.1	64.2%	86	● 0.6	-7.5%
Legal	n/a	n/a	n/a	78	● 2.0	9.9%
Liberal / Multicult. Studies	190	● 0.9	29.3%	60	● 1.9	42.9%
Mathematics	17	● 0.8	-39.3%	14	● 2.2	250.0%
Media & Communications	104	● 0.7	-17.5%	32	● 1.6	68.4%
Software & Computer Sci.	36	● 0.5	56.5%	7	○ 0.3	16.7%
<b>Total</b>	<b>2,053</b>	<b>● 1.0</b>	<b>14.9%</b>	<b>685</b>	<b>● 1.0</b>	<b>10.0%</b>

Source: Avalanche Consulting using IPEDS Data

LQ = Location Quotient: Per capita concentration of the occupation as % of US concentration

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

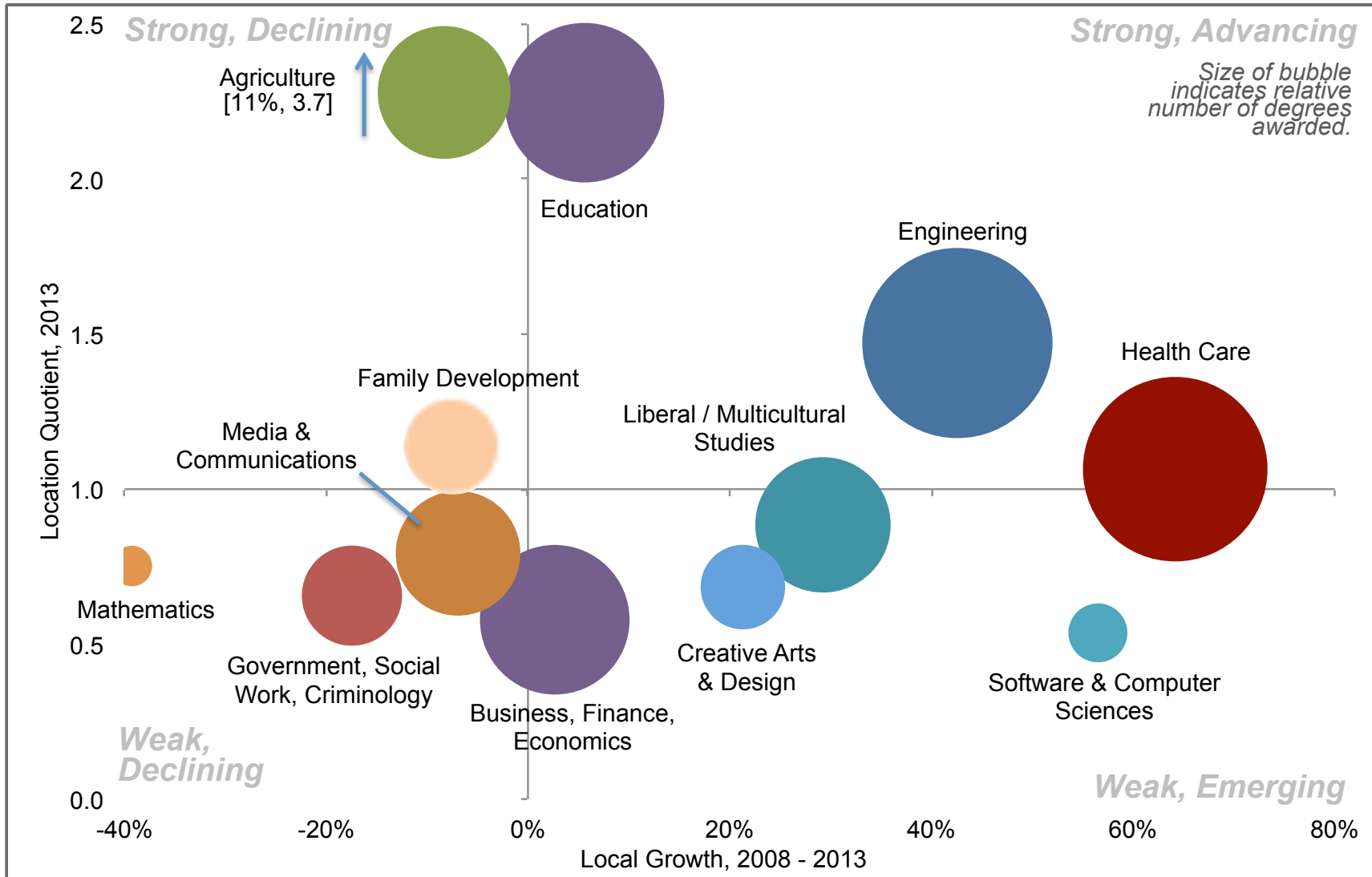
Overall bachelor's degree awards grew 25% from 2008 to 2013 at UW. The fastest growing bachelor's degree fields were **Health Care** (64% growth), **Software & Computer Sciences** (57%), **Engineering** (43%), **Liberal / Multicultural Studies** (29%), and **Creative Arts & Design** (21%).

In 2013, UW awarded 685 master's and higher degrees. The largest advanced degree fields were **Education** (155 degrees), **Engineering** (115), **Health Care** (86), **Legal** (78), and **Business, Finance, Economics** (64).

The most concentrated advanced degrees at UW were **Agriculture** (6.6LQ), **Mathematics** (2.2), **Legal** (2.0), **Engineering** (1.9), and **Liberal / Multicultural Studies** (1.9).

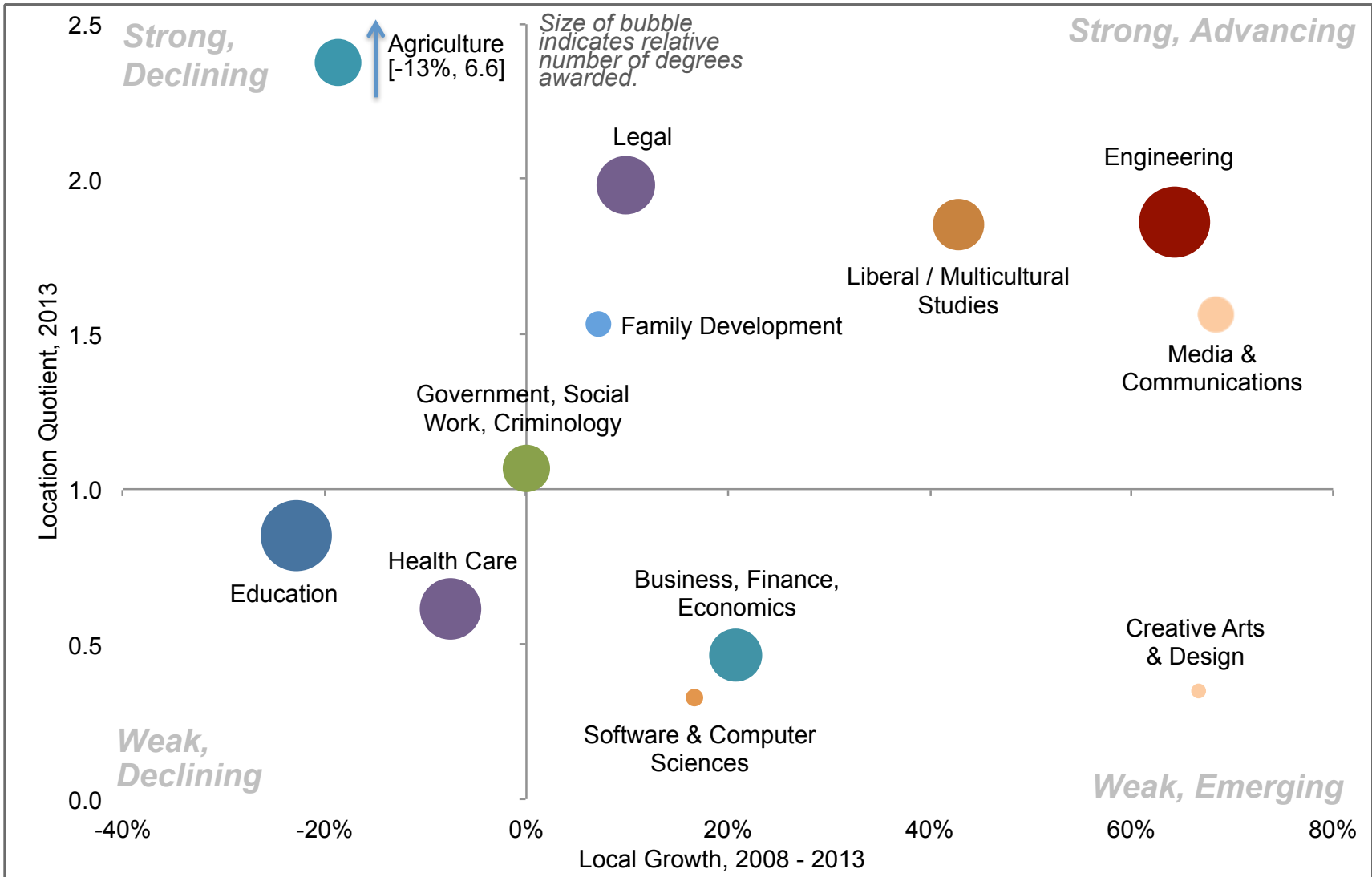
Master's and higher degrees grew 10% from 2008 to 2013 at the University of Wyoming. The fastest growing advanced degree fields were **Mathematics** (250% growth), **Media & Communications** (68%), **Creative Arts & Design** (67%), **Engineering** (64%), and **Liberal / Multicultural Studies** (43%).

**Bachelor's Degree Trends by Primary Field - University of Wyoming**



Source: Avalanche Consulting using data from IPEDS

**Master's Degree & Higher Award Trends by Primary Field - University of Wyoming**



Source: Avalanche Consulting using data from IPEDS

## Gap Analysis

The previous sections provided examinations of trends in the region's college graduate output and occupational demand at the major cluster level. In it, we compressed the individual degree codes into 15 degree clusters to see broad trends, and we also compressed hundreds of occupations into 24 occupation clusters. Now, in this section, we dive deeper into the data to understand how well the degree output of regional education institutions aligns with job creation in Laramie County.

Specifically, we link each degree code at LCCC and UW to projected job openings by occupation in the county. To complete the match across degree codes and occupation codes, Avalanche created a bridging taxonomy that bundles a handful of degrees with a handful of similar occupations (see side box). Forecasts were taken from EMSI for Laramie County and the US. But, as mentioned previously, we adjusted the Computer occupation data by using forecast data from the State of Wyoming.

Through this process we seek to understand:

- How well does the overall output of graduates supply the local economy at projected growth rates?
- What occupations in the region require an educated worker?
- How does retention of local graduates affect this supply?
- What occupations are over-served by local graduates, and which occupations are under-served?

Each of these questions is answered with each step of our process, which we explain below.

### How Does Avalanche Connect Occupation Codes to Degree Codes?

Matching a degree with an occupation has varying levels of success. Some liberal arts degrees have few to no occupation matches (e.g. a History Bachelor's degree), while other degrees are precisely designed for a single occupation. In addition, the degree's award level will affect its match with an occupation. For example, a certificate or two-year Associates degree in computer science may only qualify someone for a computer support position (15-1151: Computer User Support Specialists), while a Bachelor's in computer science is preparation for a Computer Programmer position, which requires a Bachelor's degree or higher in most cases. Unlike other supply-demand taxonomies in use today by the US Department of Labor our taxonomy extends to matching degrees and occupations at each education level (Certificates, Associates, Bachelor's, Master's and PhD). A full list of matched degrees and occupations is provided in a spreadsheet accompanying this report.

**How well does the overall output of graduates supply the local economy at projected growth rates?**

Laramie County Community College (LCCC) graduated 700 students with a Certificate or Associate’s degree in 2013. Growth at LCCC has been substantial – graduate output is 61% higher than 10 years ago. LCCC has outpaced the US average, which grew 51% over 10 years.

LCCC has grown much faster than the Laramie County employment base. LCCC graduated 11 students per 1,000 jobs in 2003 and now graduates nearly 16 students. This 41% growth in the per-job ratio may seem high, but it is actually lower than the growth seen at the US level (see table below).

<b>Degree Trends</b>	<b>2003</b>	<b>2013</b>	<b>% Growth</b>
LCCC Graduates (Certificates & Associates)	433	698	61.2%
Laramie County Jobs	39,109	44,675	14.2%
Graduates per 1000 Jobs	11.1	15.6	41.1%
US Graduates (Certificates & Associates)	1,307,386	1,977,082	51.2%
US Jobs	127,796,500	133,366,468	4.4%
Graduates per 1000 Jobs	10.2	14.8	44.9%

College graduates are an important pipeline of new workers that fill openings due to economic growth as well as retirees or displaced workers leaving the workforce. In addition, people changing careers is causing significant openings for new graduates.

The US Bureau of Labor Statistics estimates how many job openings by occupation can be expected in a given year due to two primary effects: net new job creation and “replacement” jobs. Replacement jobs are those that become available for any of the reasons listed above.

An analysis of job opening trends for Laramie County shows that about an equal number of job openings are created due to economic growth as due to replacement. Going forward, the growth rate of the county will determine whether job openings increase or decrease. Forecasts from EMSI show a slowing of the economy. But economic development prospect activity and our asset analysis suggest that the economy will continue along its current path or increase in strength. EMSI forecasts have already been revised to include higher forecast estimates for computer occupations from the State of Wyoming. Continued monitoring of the economy will be required to revise forecasts that drive the supply-demand calculations.

**How well does the output of LCCC graduates align with forecasted job openings?**

As described in this section’s introduction, Avalanche Consulting has created a custom taxonomy that bridges college degree codes with occupational codes. Called REEMS, or the Regional Employment and Education Matching System, this system combines occupations of similar characteristic and education requirements with their corresponding degrees. In most cases, the award level (associate, bachelor’s, etc.) is for a degree directly matches the average education level for an occupation, but some degrees of higher or lower award levels are included as appropriate.

We focus our analysis on LCCC, as it is the main producer of graduates in Laramie County. Associate degrees account for the majority of degrees offered (82%), with some certificate programs. In 2013, LCCC awarded 571 associate degrees and 127 certificates, for a total of 698 graduating students. Of course, not all graduates plan to stay in the region, but a majority will. Our analysis has been constructed to account for anticipated retention rates of LCCC and UW grads in Laramie County.

Many students choose LCCC as a springboard to a 4-year college degree. Nearly 100 students received a general associate degree. Over 20 students received an associate in Psychology (a master’s is the minimum to practice in any mental health occupation), and 2 students received a pre-Pharmacy associate.

According to the University of Wyoming Alumni Association, approximately 8% of UW alumni are currently living in Laramie County. For the purposes of this study, a 10% UW graduate retention rate was applied as a default.

**LCCC Graduates that Plan to Continue Their Education, 2013**

<b>REEMS</b>	<b>CIP</b>	<b>Label</b>	<b>2013 completion:</b>
NO.notmatched	24.0102A	General Studies (A)	98
MD.needmore	42.0101A	Psychology, General (A)	21
SO.needmore	45.0201A	Anthropology (A)	7
MD.needmore	51.1103A	Pre-Pharmacy Studies (A)	2
		<b>TOTAL:</b>	<b>128</b>

On the following pages, we examine the remaining 570 students that graduated with degrees that are matched to occupational demand. While graduates from LCCC primarily fill jobs that require associate degrees or certificates, we provide job openings across all education levels and include estimates for UW and high school only requirements. Final, we examine supply and demand by skill group and indicate “shortage” or “surplus” only for occupations. Significant shortages are **bolded for emphasis** in our narrative of the data.

Detailed tables of all degree output by CIP code is provided in Appendix II, as is a table of job openings for all occupations.

## Gap Summary

The following section details workforce shortage and surpluses for the Laramie County occupation clusters forecast to create the most jobs over the next five years and those critical to economic development efforts, as discussed earlier in the report. The following clusters are forecast to create 80% of all net new jobs in Laramie County over the next five years:

- **Back Office**
- **Computer**
- **Construction**
- **Education**
- **Engineering**
- **Logistics**
- **Manufacturing & Mechanics/Repair**
- **Medical**

Occupation Cluster	Shortage or Surplus 2014 - 2019
Back Office	Shortage
Computer	Shortage
Construction	Shortage
Education	Balanced
Engineering	Surplus
Logistics	Shortage
Manufacturing & Mechanics/Repair	Shortage
Medical	Shortage

Classifications for detailed occupations are slightly different from the broad clusters, and some clusters have surpluses in one occupation and shortages in another, but overall most occupation clusters have a shortage of local supply in key occupations.

**The most significant notable gaps were in Back Office professionals with advanced degrees, Computer specialists in Software Development, Systems & Information Security, and Network Administrators, skilled trade Construction workers, Truck & Commercial Driver certificates, numerous Manufacturing & Mechanics/Repair occupations, and Doctors and Dentists.**

**Strong occupation supply lines were noted in basic Back Office skills, Computer Support Specialists and other associate and certificate programs at LCCC, Elementary School Teachers, nearly all Engineering fields, and Nurses.**

The following tables compare forecast demand and recent supply from LCCC and UW in each individual occupation within these clusters.

## Back Office

Laramie County appears to have an overall shortage of graduates in Back Office related degrees, particularly those that require a bachelor's degree or higher.

Back Office and business-related occupations are required in nearly every single industry, including accounting support, administrative support, human resources, supply chain management, and many other positions. A significant share of Back Office occupations being created in Laramie County only require a high school degree and on-the-job training. Nonetheless, LCCC graduated 39 students in 2013 with degrees related to **Accounting Support** and **Executive/Administrative Assistants**, providing a strong base to fill many of these positions. Although a shortage was identified for Executive/Administrative Assistants, employees without a degree can fill many of these positions.

The remainder of Back Office occupations forecast to grow require a bachelor's degree or higher, including **Accountants**, **Miscellaneous Business**, and **Executives & Management Analysts**. The University of Wyoming graduates a surplus of students with related business degrees each year, but assuming only 10% are retained in Laramie County, these then represent a shortage of supply. **Accountants**, **Executives**, and **Financial Analysts** may be in short supply locally. **This falls in line with perspectives heard from local employers, who repeatedly expressed the challenges in recruiting and retaining skilled professionals.**

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Back Office: Supply-Demand Analysis**

Graduate Output vs. Job Demand

Description	BLS Average Level of Education	Laramie Cnty Annual Job Openings 2014-2019	LCCC Degree Output 2013	80% Retention = Shortage or Surplus	UWY Degree Output 2013	10% Retention = Shortage or Surplus
Accounting Support	HS	12.8	19	Surplus		
Administrative Support Management*	HS	17.4	*			
Data Processors	HS	4.4				
Executive/Admin. Assistants*	HS	35.0	20	Shortage		
Human Resources Support*	HS	3.4	*			
Purchasing Agents (Non-Retail)*	HS	3.4	*			
Retail & Wholesale Purchasing Agents*	HS	0.8	*			
Telephone and Switchboard Operators	HS	37.8				
Accountants & Tax Examiners	B	16.4			48	Shortage
Banking Analysts	B	2.0				
Business Misc.	B	74.0				
Executives & Management Analysts	B	30.2			186	Shortage
Financial Advisors	B	1.0				
Financial Managers & Analysts	B	9.4			53	Shortage
Human Resources Managers	B	8.4				
Insurance Agents & Appraisers	B	3.6				
Mathematical Technicians	B				17	
Real Estate Agents & Appraisers	B	2.4				
Supply Chain Managers & Analysts	B	0.6				
Mathematicians & Statisticians	M	2.4			14	

### Computer

According to interviews with local employers and leaders, Computer occupations are in high demand in Laramie County, both in support of Data Center operations and for general information technology positions across industries. Numerous employers noted that LCCC is working with local employers to develop database maintenance and other certificate programs with significant success.

Some Computer occupations require only an associate degree, including **Computer Support Specialists** and **Web Developers**. LCCC graduated 48 students with degrees related to Computer Support Specialistis in 2013, compared to only 3 forecast annual job openings, a significant surplus. However, it can be expected that some of these graduates will choose to continue their education at a 4-year university.

Many other positions often require a bachelor’s degree or higher, including **Computer Network Administrators**, **Computer Systems & Information Security Analysts**, and **Software Developers & Database Administrators**. Laramie County is forecast to create approximately 4 new jobs annually in each of these occupations over the next five years. While the University of Wyoming graduated 29 students with Software Development & Database Administration related degrees in 2013, if only 10% of these are retained in Laramie County, there will not be enough new locally supplied workers to fill these positions.

**This highlights a clear shortage of graduates for more advanced Computer occupations in Laramie County.**

#### Computer: Supply-Demand Analysis

Graduate Output vs. Job Demand

Description	BLS Average Level of Education	Laramie Cnty Annual Job Openings 2014-2019	LCCC Degree Output 2013	80% Retention = Shortage or Surplus	UWY Degree Output 2013	10% Retention = Shortage or Surplus
Computer Support Specialists	A	3.0	48	Surplus		
Web Developers	A		10	Surplus		
Computer Network Administrators	B	4.2				Shortage
Computer Syst. & Info. Security Analysts	B	4.0				Shortage
Software Dev. & Database Admins	B	4.2			29	Shortage
Computer Scientists	D				1	

### Construction

Laramie County appears to have a **shortage of graduates in Construction Trades** and a surplus in **HVAC technicians**. Although Construction occupations are forecast to create as many as 150 jobs annually in Laramie County over the next five years, most of these positions do not even require completion of high school.

Just one individual received an Associate’s in Construction Trades in 2013, while 14 individuals received an Associate’s and 3 received Certificates in HVAC/Energy Management.

Most construction jobs involve on-the-job training or short training to receive certificates. **No certificates are offered for Electricians or Construction Equipment Operators.**

In addition, company feedback during interviews indicated that Power Transmission & Telecom Line Installers and other utility workers are in short supply. Forecast data points to 4-5 positions per year, but interviews indicated that employers face extreme difficulty filling these positions locally, even though they do not generally require training beyond a high school degree.

#### Construction: Supply-Demand Analysis

Graduate Output vs. Job Demand

Description	BLS Average Level of Education	Laramie Cnty Annual Job Openings 2014-2019	LCCC Degree Output 2013	80% Retention = Shortage or Surplus	UWY Degree Output 2013	10% Retention = Shortage or Surplus
Carpet, Floor, and Tile Workers	<HS	0.8				
Concrete/Masonry	<HS	12.4				
Construction Misc.	<HS	34.0				
Construction Trades, General	<HS	9.6	1	Large Shortage		
Drywall Installers	<HS	2.0				
Roofers	<HS	1.8				
Building Inspectors	HS	4.8				
Carpenters	HS	17.0				
Construction Equipment Operators	HS	20.0				
Construction Supervisors	HS	16.8				
Electricians	HS	18.4				
Metal Building Assembly	HS	1.2				
Plumbers & Pipefitters	HS	5.8				
Power Transmiss. & Telecom Installers	HS	4.4				
HVAC	C	3.6	17	Large Surplus		
Construction Managers	B	2.4				

**Education**

Although not critical to economic development, Education is one of the largest growing occupation clusters in Laramie County over the next five year, with direct ties to the expanding local school systems. Finding, recruiting, and retaining teachers can be a challenge. Local supply of **Elementary Teachers** from LCCC and UW is strong, but the county has shortages in more specific areas, including **Library Specialists, Education Administrators, Middle/Secondary/Specialty Teachers,** and **Special Education Teachers.**

Nearly 500 students graduated from LCCC in 2013 with an associate degree in Education. Many of these students will go on to finish a 4-year degree at UW or another school, but others that seek employment may find suitable job opening in Elementary or Early Childhood education (even though the average education requirement is a bachelor’s degree). Nine students graduated with an Early Childhood Education associate degree, which matches with 12 job openings for Pre-K or Kindergarten teachers.

UW graduated 241 students with degrees relevant to Elementary Teachers and another 132 for Middle/Secondary/Specialty Teachers. These represent more than enough to fill demands in Laramie County, but if only 10% of these UW graduates are retained locally, there will only be 13.2 qualified graduates matching to 53.8 openings for **Middle/Secondary/Specialty Teachers.**

**Education: Supply-Demand Analysis**

LCCC Graduate Output vs. Job Demand

Description	BLS Average Level of Education	Laramie Cnty Annual Job Openings 2014-2019	LCCC Degree Output 2013	80% Retention = Shortage or Surplus	UWY Degree Output 2013	10% Retention = Shortage or Surplus
Child Care Workers	HS	18.6			1	
Self-enrichment/Life Coach	HS	2.2				
Library Specialists	C	5.2		Shortage		
Early Childhood / Pre-K / K Teachers	A	12.2	9	Balanced		
Adult Remedial/GED Teachers	B	0.4				
Education Administrators	B	9.0			7	Shortage
Elementary Teachers	B	23.8	49	Need more Ed	241	Balanced
Librarians	B	3.2				
Middle/Secondary/Specialty Teachers	B	53.8			132	Shortage
Museum Curators & Technicians	B	1.0				
Special Education Teachers	B	8.6				Shortage
College Teachers	D				7	
Historians	M				4	

## Engineering

Engineering is one of the critical occupation clusters identified in the previous report and supports a range of industries, including Manufacturing, Energy, and more. Many Engineering occupations require a bachelor's degree or higher. Thankfully, Engineering is one of the University of Wyoming's largest and most concentrated degree fields. **Even taking into account retention, the University of Wyoming outputs a surplus of qualified engineers to fill almost all projected openings in Laramie County over the next five years.**

UW produces a surplus of graduates for demand in **Biological Technicians, Chemical Engineers, Chemists, Mechanical Engineers, Zoologists, and Medical Scientists**. Degree output is more balanced for **Civil Engineers** and **Environmental Scientists & Engineers**. One potential shortage is **Petroleum & Geological Technicians**. These positions may require only a high school degree, but needs vary. While UW produced 40 bachelor's degrees related to this field in 2013, if only 4 are retained in Laramie County, this will still be short of the forecast 7 new jobs.

LCCC contributes to Engineering workforce supply through associate degrees that lead towards **Biological Technicians** with further education, maintaining the surplus of supply in this occupation. LCCC also awarded 9 certificates for **Computer Installers & Repairers** in 2013. Many of these graduates directly support growing Data Center and other IT operations in Laramie County, even though forecast data does not capture the high demand for newly expanding employers in the region.

Oil and gas derrick and rig operators fall under **Petroleum & Geological Technicians**, which generally only require a high school education or less but increasingly look for related certificate programs and other training. Laramie County is forecast to create an average of just over 7 new Petroleum & Geological Technician jobs annually over the next five years. **LCCC offers a certificate program in Petroleum Process Technology for students interested in oil and gas extraction production and other related occupations, which when combined with related degree production at UW, should provide a balanced supply of workers in this field.**

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Engineering: Supply-Demand Analysis**

Graduate Output vs. Job Demand

Description	BLS Average Level of Education	Laramie Cnty Annual Job Openings 2014-2019	LCCC Degree Output 2013	80% Retention = Shortage or Surplus	UWY Degree Output 2013	10% Retention = Shortage or Surplus
Petroleum & Geological Technicians	<HS	7.2			40	Balanced
Facility Operations	HS	4.6				
Surveying and Mapping Technicians	HS	0.2			13	Surplus
Waste Treatment Technicians	HS	0.2				
Agricultural & Food Scientists	A				71	Surplus
Architec. & Civil Drafters & Technicians	A	1.6				
Electrical/Electronics Techs. & Drafters	A	0.2	5	Surplus		
Environmental Science Technicians	A	1.2				
Industrial Engineering Technicians	A	0.8				
Mechanical Drafters	A		8	Surplus		
Science Technicians	A	1.2				
Telecom Technicians	A	3.0				
Computer Installers & Repairers	C		9	Surplus		
Electrical & Electronics Repairers	C	1.2				
Atmospheric Scientists & Meteorologists	B	0.2			11	Surplus
Biological Technicians	B	1.2	40	Surplus	31	Surplus
Cartographers & Surveyors	B	1.4				
Chemical Engineers	B				43	Surplus
Chemists	B	1.0			21	Surplus
Civil Engineers	B	5.8			61	Balanced
Computer Hardware Engineers	B				7	
Electrical and Electronics Engineers	B	1.4			29	
Engineering Managers	B	1.2				
Environmental Scientists & Engineers	B	7.4			64	Balanced
Industrial Engineers	B	0.6				
Mechanical Engineers	B	2.4			82	Surplus
Microbiologists	B	1.0			16	
Physical Scientists, Other	B				11	
Zoologists and Wildlife Biologists	B	1.2			58	Surplus
Animal Scientists	D				7	
Biochemists and Biophysicists	D				17	
Medical Scientists	D	1.6			37	Surplus
Physicists	D				8	

### Logistics

Logistics is one of the largest growing occupation clusters in Laramie County in recent years and is forecast to continue its rapid growth, supporting the strong Transportation & Logistics industry in the county. The majority of Logistics occupations only require a high school degree or less and willingness for on-the-job training to gain many of the necessary skill sets. The only major occupation that requires outside training is Truck & Commercial Drivers, who generally require certificates. **Laramie County is forecast to create 66 Truck & Commercial Driver positions each year over the next five, but currently LCCC awards no certificates for this occupation, highlighting a significant shortage.** Private commercial driving schools may supply some of these certificates.

Laramie County is also forecast to create 3 new Airline Pilot positions annually over the next five years but lacks a pilot school or other local supply of pilots. This may represent an opportunity for programming at LCCC. Discussions with Great Lakes Airlines indicate that the entire nation is facing a shortage of pilots, as many current commercial airline pilots approach retirement and training programs are in short supply.

#### Logistics: Supply-Demand Analysis

Graduate Output vs. Job Demand

Description	BLS Average Level of Education	Laramie Cnty Annual Job Openings 2014-2019	LCCC Degree Output 2013	80% Retention = Shortage or Surplus	UWY Degree Output 2013	10% Retention = Shortage or Surplus
Excavation Tractor Operators	<HS	14.0				
Packers & Material Movers	<HS	49.0				
Transportation Misc.	<HS	30.4				
Airline Flight Attendants	HS	1.0				
Logistics Clerks	HS	7.8				
Transportation & Logistics Managers	HS	11.4				
Transportation Inspectors	HS	1.2				
Truck & Commercial Drivers	C	66.2		Shortage		
Airline Pilots	B	3.0				Shortage

### Manufacturing & Mechanics/Repair

Manufacturing & Mechanics/Repair occupations are critical to economic development efforts in Laramie County, supporting the Manufacturing, Data & Information Services, Logistics, and Energy industries in particular, as well as basic services such as automobile repair. **Currently, Laramie County has a shortage of graduate supply in almost all Manufacturing & Mechanics/Repair positions, including Auto Mechanics, General Assemblers, Machinists, Industrial Machinery Maintenance, Precision Equipment Repair, Welders, Heavy Vehicle Mechanics, Aerospace Technicians, and more.**

LCCC graduated only 18 students with Manufacturing & Mechanics/Repair degrees in 2013, compared to 95 forecast annual job openings over the next five years. LCCC awarded a surplus of degrees (5) in Auto Body Repair, but only 6 in **Auto Mechanics** (compared to 8.4 forecast openings) and 7 certificates for **Heavy Vehicle Mechanics** (compared to 11.8 forecast openings). The new welding program at LCCC should serve to address 5.6 annual openings for **Welders**. Other high growth occupations, such as Industrial Machinery Maintenance and Precision Equipment Repair had no local training production. **Many of these jobs only require a high school degree with on-the-job or basic training required, but this could present challenges to industry growth in the near future.**

#### Manufacturing & Mechanics/Repair: Supply-Demand Analysis

Graduate Output vs. Job Demand

Description	BLS Average Level of Education	Laramie Cnty Annual Job Openings 2014-2019	LCCC Degree Output 2013	80% Retention = Shortage or Surplus	UWY Degree Output 2013	10% Retention = Shortage or Surplus
Production Misc.	<HS	26.0				
Auto Body Repair	HS	2.0	5	Surplus		
Auto Mechanics	HS	8.4	6	Shortage		
General Assemblers and Fabricators	HS	5.6		Shortage		
General Machinist	HS	0.8		Shortage		
Industrial Machinery Maintenance	HS	10.2		Shortage		
Industrial Production Technicians	HS	0.6		Shortage		
Precision Equipment Repair	HS	16.8		Shortage		
Real Estate & Facilities Managers	HS	2.2				
Welders	HS	5.6		Shortage		
Woodworkers & Furniture Makers	HS	0.4				
Heavy Vehicle Mechanics (not Aero)	C	11.8	7	Shortage		
Printing Operator	C	1.0		Shortage		
Aero. Assemblers, Tech. & Mechanics	A	3.6		Shortage		

## Medical

The Medical occupation cluster is forecast to create the most jobs in Laramie County over the next five years. **Local supply of Nurses is in surplus of projected demand, but the county has a shortage of supply from LCCC and UW in many Medical occupations, including Medical Assistants, Medical Records & Health Information, Doctors, and a range of Technicians.** Based on conversations with Cheyenne LEADS and local health employers, many of these more advanced degree positions, particularly Doctors, may be challenging to recruit and supply in Laramie County.

Laramie County is forecast to create over 40 Medical jobs that only require a high school degree and on-the-job training, such as Home Health Aides and Medical Secretaries. These positions should be less challenging to fill, but still difficult due to low unemployment in the region. Other positions that generally require certificates, such as Medical Assistants and Nursing Aides are in shorter supply. LCCC only awarded 13 Medical certificates in 2013: 5 for **Emergency Medical Technicians and Paramedics**, which are balanced to forecast demand, and 8 for **Surgical Technologists**, which are in surplus of forecast demand.

**LCCC awards a surplus of degrees for Dental Hygienists, Radiological Technicians, Physical Therapist Assistants, and Registered Nurses.** UW also awarded 216 degrees for Registered Nurses in 2013. This strong supply of nursing degrees appears to be in surplus of demand for Registered Nurses (29.6 jobs annually), and with proper continued training and education should fill other needs such as Nurse Anesthetists (1.4 jobs annually) and Nurse Practitioners (2.4 annually).

UW only provides a limited supply of degrees related to other necessary Medical occupations. UW graduates a surplus of Audiologists (57 degrees compared to 0.2 openings) and a balanced share of Pharmacists (40 degrees awarded, with 10% retained to match 4.2 annual job openings).

**By far the largest shortages are in Doctors, Surgeons, & Psychiatrists; Psychologists; and Dentists & Orthodontists.** Laramie County is forecast to create 9.6 openings for Doctors, Surgeons, & Psychiatrists each year over the next five but produces none of these positions locally. All doctor employees will need to be recruited from outside the region. UW graduated 11 Psychologists in 2013 but is forecast to create 3.6 jobs annually; with 10% estimated retention, this will not be enough graduates to fill the need. Dentists & Orthodontists are only forecast to create 2 new openings annually, but like Doctors, there is no local supply.

The University of Wyoming does not have a medical school but partners with the University of Washington through the Washington, Wyoming, Alaska, Montana & Idaho (WWAMI program) to train Wyoming residents as physicians to serve the region. UW also offers their Family Medicine Residency program, which places medical students in residency positions at the Cheyenne Regional Medical Center, Veteran's Administration Medical Center, and local physician offices. It can be challenging to recruit doctors to Wyoming in general. **These programs at UW help address the pressing need for doctors in Wyoming and regional rural communities, but they do not provide a direct, local supply of physicians.**

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Medical: Supply-Demand Analysis**

Graduate Output vs. Job Demand

Description	BLS Average Level of Education	Laramie Cnty Annual Job Openings 2014-2019	LCCC Degree Output 2013	80% Retention = Shortage or Surplus	UWY Degree Output 2013	10% Retention = Shortage or Surplus
Animal Trainers & Caretakers	<HS	1.6				
Home Health Aides	<HS	28.0				
Fitness Trainers & Aerobics Instructors	HS	1.2	1	Balanced		
Healthcare Support Workers, All Other	HS	2.8				
Medical Equipment Specialists	HS	0.8				
Medical Secretaries	HS	10.4				
Pharmacy Technicians	HS	2.8				
Psychiatric Aides	HS	0.4				
Dental Assistants	C	6.0				
EMTs & Paramedics	C	4.2	5	Balanced		
Lic. Practical & Lic. Vocational Nurses	C	7.2				
Massage Therapists	C	1.8		Shortage		
Medical Assistants	C	9.0		Shortage		
Medical Records and Health Information	C	3.2		Shortage		
Nursing Aide	C	16.6		Shortage		
Ophthalmic Medical Technicians	C	1.0				
Phlebotomists	C	1.6				
Psychiatric Technicians	C	0.2				
Surgical Technologists	C	0.8	8	Surplus		
Dental Hygienists	A	3.6	17	Surplus	20	Surplus
Diagnostic Medical Sonographers	A	0.4	7	Surplus		
Medical & Clinical Laboratory Techs.	A	4.0				
Nuclear Medicine / Radiologic Techs.	A	3.2	11	Surplus		
Occupational Therapy Assistants	A	0.4				
Physical Therapist Assistants	A	1.4	14	Surplus		
Registered Nurses	A	29.6	84	Surplus	216	Surplus
Speciality Therapists	A	1.4				
Veterinary Technologists & Technicians	A	1.4				

**Medical: Supply-Demand Analysis**

Graduate Output vs. Job Demand

Description	BLS Average Level of Education	Laramie Cnty Annual Job Openings 2014-2019	LCCC Degree Output 2013	80% Retention = Shortage or Surplus	UWY Degree Output 2013	10% Retention = Shortage or Surplus
Athletic Trainers	B				75	Surplus
Medical & Clinical Lab. Technologists	B	2.6				Shortage
Medical and Health Services Managers	B	9.2				Shortage
Nutritionists	B	1.2				Shortage
Occ. Health & Safety Specialists	B	1.2				Shortage
Recreation Workers	B	2.2				Shortage
Therapists, All Other	B	0.2				
Nurse Anesthetists	M	1.4				
Nurse Practitioners	M	2.4				
Occupational Therapists	M	2.0				
Physician Assistants	M	2.4				
Speech Therapists	M	2.0				
Audiologists	D	0.2			57	Surplus
Chiropractors	D	0.6				
Dentists & Othodontists	D	2.0				Shortage
Doctors, Surgeons & Psychiatrists	D	9.6				Large Shortage
Optometrists	D	1.0				
Pharmacists	D	4.2			40	Balanced
Physical Therapists	D	2.8				
Psychologists	D	3.6			11	Shortage
Veterinarians	D	1.0				

## Phase 4: Strategic Recommendations

### Introduction

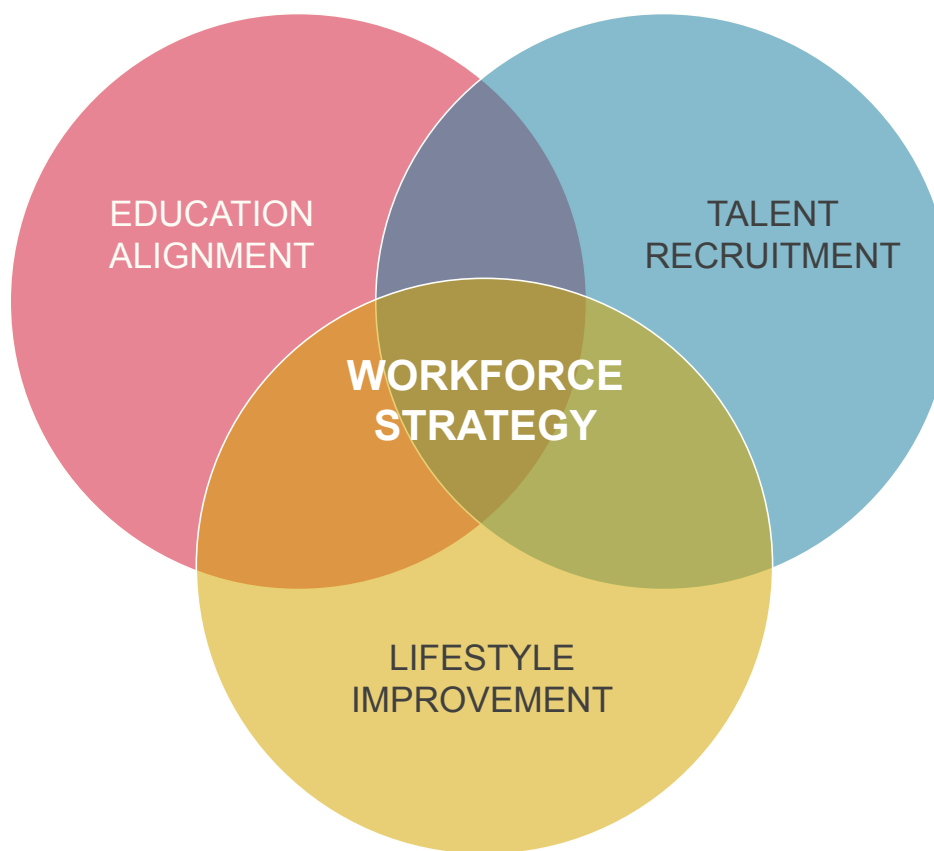
The first three phases in this Workforce Study examine a wide-range of industry, workforce, and educational trends in Cheyenne and Laramie County. They identify local strengths and opportunities for workforce and economic development. They also identify challenges to workforce development, including gaps between forecast occupation growth and local educational supply from Laramie County Community College and the University of Wyoming. This phase summarizes the important findings of the strategy in order to develop recommendations for a Workforce Strategy.

Workforce development involves more than simply education and training of the existing residents in a community. A comprehensive Workforce Strategy has three primary components: **Education Alignment**, **Talent Recruitment**, and **Lifestyle Improvement**.

The following phase examines each of these components, describing why they are important for workforce development in Cheyenne and Laramie County, what assets support their development, and what barriers exist to improvement. Within each component, Avalanche provides specific recommendations for Cheyenne LEADS, including action items, implementation partner organizations, and metrics of success.

Questions that are addressed in this phase include:

- How can local educational programs be better aligned to match occupational demand?
- Where will future workers come from, and what can be done to attract new, talented residents?
- What quality of life assets in Cheyenne and Laramie County boost workforce retention and recruitment?
- How can the community be improved to support population and workforce growth?



## Role of Cheyenne LEADS

As the local economic development organization, Cheyenne LEADS plays a significant role in business development in Laramie County. Cheyenne LEADS actively develops business parks and infrastructure for local businesses and also acts as an important liaison between the private-sector business community, educational institutions, and local, state, and federal government.

Development of a skilled workforce is increasingly critical to modern economic development, and Cheyenne LEADS has an important role to play in this process. As the local economic development organization, Cheyenne LEADS is well positioned to facilitate, support, and encourage improvements to Education Alignment, Talent Recruitment, and Lifestyle Amenities in Cheyenne and Laramie County.

Addressing workforce needs in Laramie County will require the direct action of numerous organizations, including Laramie County Community College, the University of Wyoming, Laramie County School District, the City of Cheyenne, Laramie County government, Greater Cheyenne Chamber of Commerce, Visit Cheyenne, private-sector employers, Wyoming Department of Workforce Services, Cheyenne Downtown Development Authority, and many more.

Cheyenne LEADS has strong relationships with all of these organizations and will play a critical role in the process of workforce development. Cheyenne LEADS can best operate as a convener – bringing the appropriate individuals and organizations to the table, educating the community why each workforce initiative is critical for businesses and residents, and keeping the strategy in the forefront of public awareness.

The following goals and recommendations include actionable items for a range of implementation organizations but describe how Cheyenne LEADS can support each effort without diverting from its traditional economic development role and primary goal of bringing progress and prosperity to the entire Laramie County community.

## Education Alignment

### Goal:

**Students at Laramie County Community College, the University of Wyoming, and local high schools graduate with degrees, training, and skills that align with the occupational needs of Laramie County employers.**

Cheyenne and Laramie County employers are creating jobs more quickly than the US and Wyoming average rates, but many employers have expressed difficulty finding new employees with degrees, skills, and training appropriate to their industry needs. Local post-secondary educational institutions can help address some of this employer demand by providing courses and training programs in fields that prepare students for rapidly growing career opportunities.

Laramie County Community College (LCCC) is a tremendous educational and economic development asset within the county, and the University of Wyoming (UW), located in neighboring Albany County, also serves as a regional educational asset, with 10% of UW alumni currently living in Laramie County. These two institutions currently provide strong training programs that support a wide range of in-demand occupations, but as the *Workforce Gap Analysis* noted, Laramie County has educational supply gaps in numerous critical occupation clusters, including Computers, Transportation & Logistics, and Manufacturing & Mechanics.

Aligning educational programming with employer needs requires multiple strategic initiatives. Regular meetings between employers and educators help ensure that educational programs are up-to-date with current employer needs, but if students are unaware of programs or associated career opportunities, they may not pursue degrees or training in these fields. Immediate, high-demand skill needs may be met through tailored training courses and other programs funded through the State of Wyoming's Workforce Training Fund. As a result, education alignment strategies must address a combination of programming, marketing, and connecting.

Avalanche recommends that following strategic initiatives to address Education Alignment in Cheyenne and Laramie County:

### Recommendations:

**Create a Talent Demand Working Group to discuss current and forecast employer skill needs, training capacities, and educational programs.**

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

- This strategy identifies gaps between forecast occupation growth and educational supply in 2014, but education programs and employer needs are continuously changing and may be dramatically different a year from now. Establishing a working group that meets on a quarterly basis ensures that educators, employers, and coordinators remain flexible and aware of changing workforce dynamics.
- Additionally, the strategy looks at data trends on occupations and education, but these require validation and description of specific needs and capacities from the employers and educators on the ground. The working group provides a forum for dialogue between all related organizations and a clear venue for local stakeholders to raise concerns and opportunities.
- The Talent Demand Working Group should include representatives from Laramie County Community College, the University of Wyoming, local private sector employers, Cheyenne LEADS, Wyoming Department of Workforce Services, and other relevant organizations.
- Cheyenne LEADS has strong connectivity to local employers through its current economic development role and can best support these efforts as a facilitator: reaching out to local employers and educators, explaining the importance of this initiative, and helping bring them to the table. Employer engagement will be one of the greater challenges in this process. Consider conducting an annual survey of employer workforce needs.
- Employers in targeted industry opportunities and those with critical occupations should be included in this working group. Cheyenne LEADS should reach out to employers in the following industries for inclusion: Manufacturing, Data & Information Services, Energy, Transportation & Logistics, Professional Services, and Healthcare.
- The UW computer science program should be examined in conjunction with employer conversations in this process. There appears to be significant opportunity for greater connectivity between this program and local technology employers.

### **Create a communications campaign to raise awareness of high-growth career opportunities in the region, particularly in STEM occupations, among adult residents of Laramie County and students at local high schools, LCCC, and UW**

- Parents, students, and the general public are often unaware of career opportunities in STEM fields, particularly related to manufacturing, maintenance, and other mechanical operations. Over the past fifty years as enrollment in four-year college degree programs has boomed, blue-collar occupations have often been portrayed negatively in the media and developed a reputation as tedious, dangerous, low-pay, or backup alternatives to a successful career.
- Modern manufacturing and other blue-collar occupations have changed significantly over this period. Today, these occupations are safe, involving clean technology, and require complex skill sets. They also often require less education, pay higher salaries, and offer greater long-term stability than occupations four-year college degree paths.
- Professional development and lifelong learning programs are important for working and unemployed adults in the community looking to change careers, find a new career, or advance their skillsets. Many adults and employers are unaware of funding and programs available to assist with professional development, retraining, and other lifelong learning.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

- Marketing and education are two ways to raise awareness of these opportunities to parents, students, and working adults. Career opportunities and educational programs can be marketed on billboards, buses, radio, TV, print media, and other advertisements where funding is available. Education can occur through media articles, school meetings, and other forums. Efforts to raise awareness should be focused on the community in general, but also specifically targeted to students at LCCC and UW.

### **Connect students at LCCC, UW, and local high schools to employers through expanded opportunities for internships, apprenticeships, mentoring programs, and other forums.**

- The participation of local companies is critical to educating local students in relevant skills and occupations. Graduating students will be more likely to find jobs and stay in Laramie County if they engage in internships or mentoring programs.
- Internship programs will also teach employers about the skills available from LCCC, UW, and high school students. This will assist them identifying educational needs and help address their workforce shortages.
- Some local employers are also unaware of relevant programs at LCCC and UW and experience difficulties finding employees, forcing them to look outside of the community for workers.
- Bringing local students and employers together through internships, apprenticeships, mentoring programs, career fairs, and other programs will help address this disconnect.
- With strong connectivity to LCCC, UW, local high schools, and primary employers, Cheyenne LEADS can play an essential role in facilitating the collaboration between educators and employers.

### **Develop immediate training programs to fill any critical workforce shortages identified by local employers.**

- Some employers have noted immediate, critical workforce shortages, particularly in technology fields related to data center operations, as well as some basic manufacturing fields. Local data center employers plan to grow rapidly in the next few years but face serious shortages of workers with proper training in operations, maintenance, and information technology. Some of these employers are working with LCCC to develop new certification programs, an incredibly important step in this process.
- The WY Department of Workforce Services is a strong partner in the region, but many employers are unaware of available programs through their Workforce Development Training Fund. This fund offers Business Training Grants for existing and new positions and is a significant resource for local employers, particularly with immediate training needs.
- Immediate needs identified in this strategy included database network specialists, utility line workers, and other computer specialists. Cheyenne LEADS can solicit input from local partners to identify additional workforce needs and raise awareness of available programs.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

### Implementation Partners:

- Cheyenne LEADS
- Laramie County Community College
- University of Wyoming
- Laramie County School District
- Local employers
- Greater Cheyenne Chamber of Commerce
- Wyoming Department of Workforce Services

### Metrics of Success:

- Increased enrollment in LCCC and UW educational programs linked to critical occupation clusters.
- Increased total post-secondary education enrollment.
- Increased overall population educational attainment levels.
- Employment growth in critical occupation clusters, particularly Manufacturing, Data & Information Services, Energy, and Transportation & Logistics.
- Increased employer satisfaction with workforce employer, identified through surveys and conversations.
- Increased high school and college student participation in internship and other programs with local employers.
- Increased media awareness, mentions, and advertising related to career opportunities and educational programs.

## Talent Recruitment

### Goal:

**Cheyenne and Laramie County attract and retain skilled workers in key, high-demand occupations.**

Aligning educational programming with occupational needs is vital to Cheyenne’s workforce and economic development efforts, but if graduates of LCCC and UW programs leave the region and work elsewhere, employers may still face labor shortages. Some critical occupations require recruitment of talented workers from outside of Laramie County, because they require additional experience or local educational institutions cannot offer appropriate programming. Critical occupations that may require recruitment from outside of Cheyenne and Laramie County include medical doctors, mid-level managers, professional services, and experienced technology workers.

Medical occupations highlight the importance of talent recruitment. As a regional training center, LCCC produces a surplus of nurses, medical technicians, and assistants each year, but Laramie County is forecast to create 10 new openings for Doctors, Surgeons, & Psychiatrists annually over the next five years with no local supply. Wyoming does not have a medical school, but UW partners with the University of Washington to provide medical training for Wyoming residents and helps bring physicians to Cheyenne through the UW Family Medicine program. Building on these programs, the Cheyenne Regional Medical Center, Cheyenne VA Medical Center, and other healthcare employers will need to look outside of Laramie County to fill growing demand for new doctors, surgeons, and other advanced medical positions.

Other critical occupations may not have the educational requirements of doctors but instead need experienced employees to fill managerial and technical roles. LCCC and UW may graduate students with degrees and training in these occupations, but employers require workers with over five to ten years work experience post-graduation. Local workers can fill some of these positions as they advance their careers, but rapid growth industries, such as Data & Information Services, often have immediate demand for experienced workers and must recruit from outside the region.

Cheyenne LEADS and other local organizations can help support these efforts through talent recruitment and retention initiatives. These efforts include raising outside awareness of local career opportunities, promoting local quality of life assets, and creating a physical and cultural environment that is supportive of new residents.

Avalanche recommends that following strategic initiatives to address Talent Recruitment in Cheyenne and Laramie County:

**Recommendations:**

**Develop a clear marketing message and package for recruitment of individuals in skilled occupations to Cheyenne and Laramie County.**

- Many employers and individuals in the community feel unprepared when attempting to recruit talented individuals to Laramie County. Prospective recruits frequently have questions about the community that employers cannot answer, and overall, employers expressed a desire for a clear marketing message regarding the strengths and opportunities of life in Laramie County.
- Stakeholders interviewed in Laramie County also expressed a need to educate local citizens internally about the quality of life and economic opportunities present locally so that everybody is telling the same story. Delivering a consistent message to those considering relocation to Cheyenne and Laramie County is incredibly important.
- In conjunction with Visit Cheyenne and other local organizations, Cheyenne LEADS can build a cross-platform marketing message that consistently answers the question, Why Cheyenne?
- When considering a job opening in Cheyenne, many potential recruits will look to web materials before even contacting an employer or other local representative. An updated and clear marketing message for the community and package of materials, including the website, will make it easier for employers to deliver a consistent message to these potential recruits.
- The existing “Living Here” section of Cheyenne LEAD’s website begins to address this question, and Visit Cheyenne’s website offers information about numerous events, businesses, and other activities throughout the community. These websites and other materials, such as brochures and mailings, can be better integrated with a consistent, countywide branding and marketing campaign. This effort should attempt to explain to visitors the range of opportunities available in Cheyenne, including quality of life amenities, cost of living, education and career opportunities, and more.
- Signature events such as Cheyenne Frontier Days provide important opportunities for the city and county to show outsiders the strong local quality of life and opportunities available throughout the community. External marketing materials for events must carry a consistent and positive message about the community to assist recruitment and encourage growth. Cheyenne LEADS, Visit Cheyenne, the Greater Cheyenne Chamber of Commerce, and other organizations can work together to ensure alignment of messaging.

**Work with the University of Wyoming and Laramie County Community College to identify out-of-state alumni in critical occupations and facilitate employer recruitment of these individuals.**

- LCCC and UW are significant local resources, and so are their alumni networks. During interviews, employers noted that individuals born and raised in Wyoming but currently working out-of-state are often easier to recruit to Cheyenne. Many of these individuals left the state to find early employment or seek more youthful communities, but as their careers develop and they build families, they often seek opportunities to return home.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

- Where available, LCCC and UW should work with Cheyenne LEADS and the Greater Cheyenne Chamber of Commerce to identify alumni in critical occupations and industries who live outside the State of Wyoming. Local employers seeking skilled workers can then make calls and send mailings to these out-of-state alumni informing them about job openings and career opportunities in Cheyenne and Laramie County.

### **Work with the Cheyenne Professional Network, young professionals, and other stakeholders to promote youth engagement, to provide recommendations and messaging ideas, and to meet with potential recruits.**

- Young Professionals already living in Cheyenne and Laramie County are the best source for information regarding opportunities and selling points of the community for young people. Cheyenne LEADS should ask the Cheyenne Professional Network and other youth organizations and stakeholders to provide recommendations for brand and message development and amenity improvements to assist recruitment.
- Local employers should also ask representatives from the Cheyenne Professional Network and other youth leaders to meet with potential recruits. They can best explain the benefits of living in Cheyenne and opportunities available to talented Young Professionals, including numerous avenues for volunteering and community engagement.
- This also provides an opportunity to continue engagement of existing youth leadership in the development of Cheyenne’s future.

### **Implementation Partners:**

- Laramie County Community College
- University of Wyoming
- Local employers
- Greater Cheyenne Chamber of Commerce
- Cheyenne Professional Network
- Cheyenne LEADS

### **Metrics:**

- Development and implementation of a consistent marketing campaign across community websites and print materials.
- Growth in the population of Young Professionals, particularly those with a bachelor’s degree or higher.
- Successful recruitment of talented individuals in key occupations identified in this strategy and conversations with employers, including doctors and software developers.

## Lifestyle Improvement

### Goal:

**Cheyenne and Laramie County offer a range of lifestyle amenities and housing opportunities that attract and retain a diverse workforce, from low-income workers to high-skill professionals.**

The population currently living in Cheyenne and Laramie County supplies the majority of the local workforce, but unemployment continues to drop, diminishing the pool of available workers from which employers hire new employees. As the supply of local workers becomes more limited, employers are increasingly looking outside of the county to find new employees when expanding their operations. The share of local jobs filled by non-residents of Laramie County nearly doubled in recent years, growing from 12% in 2006 to 22% in 2011. Cheyenne is fortunate to draw workers from a large and diverse overall Labor Market that includes Fort Collins and Greeley in Colorado, but ideally many employers would like to hire local residents.

Employing Laramie County residents has numerous benefits for employers and the community. Local employees spend their earnings in the county: buying and renting homes, purchasing groceries, paying taxes, and sending their children to local schools. Local employees also have shorter commutes and are more readily available for employers if unexpected needs arise.

Laramie County has experienced strong population growth in recent years, adding nearly 3,300 workers to the total labor force in the five-year period from 2008 to 2013, many moving into the county from other parts of Wyoming and the US. The county is forecast to create another 3,000 net new jobs over the next five years. Laramie County needs to continue its strong population growth and maintain nearly full employment in order to fill all these jobs with local workers. Some of these jobs are low-skill, requiring only a high school degree, but, as noted in the previous section, other jobs, such as doctors and computer specialists, will require advanced training and recruiting new workers from outside the region.

Despite a high quality of life and steady growth in recent years, Cheyenne and Laramie County face challenges when attracting new residents. Limited availability and relatively high costs of housing raise concerns for attracting and retaining new residents, particularly those at low-income levels and recent college graduates. Growth may also be slowed by perceptions that Cheyenne has limited social and recreational amenities, particularly for young, single adults. These perceptions are accentuated in contrast to other communities in the Labor Market, such as Fort Collins, which are much younger and offer more dining, shopping, and other entertainment options for people of all ages.

Interviews with local employers and stakeholders repeatedly noted concerns related to growing the local population. Through LCCC, UW, private-sector schools, state grants, and other programs, training needs for many occupations can be met within Laramie County, but growing and retaining the resident population is a serious issue facing the community. One interviewed stakeholder summed the issue up well: “If people were here and had a place to live, the programs are here to train them. But it is *getting the workforce to train* that is the biggest challenge.”

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

To help ensure that the population of Laramie County continues to grow and attract low- and high-skill workers, Cheyenne LEADS and other local organizations should support efforts to improve lifestyle amenities in the city and county.

Cheyenne is a unique community, and these efforts are not intended to change its image or character. Instead, they focus primarily on addressing issues of affordability and increasing the diversity of lifestyle offerings available in the community while retaining the local history and business-friendly environment.

Avalanche recommends that following strategic initiatives to address Lifestyle Amenities in Cheyenne and Laramie County:

### Recommendations:

#### **Facilitate a survey of Laramie County residents and employees to identify quality of life goals and needs.**

- Development of lifestyle amenities, including housing and recreational opportunities, should be driven by the private sector, but the public sector plays an important role in guiding this process through infrastructure development, building guidelines and regulations, zoning, and other policies.
- Local stakeholders noted in interviews that the city and county government are highly responsive when the Cheyenne and Laramie County population expresses their desires. Stakeholders perceived, however, that a minority of the population puts more pressure on the government because they are more present and vocal at council meetings and in the media.
- To ensure that city and county policies are promoting the desires of the entire population and not just a vocal minority, Cheyenne LEADS should facilitate a survey of the overall population to identify their quality of life goals and desires. By conducting a survey, local leadership can make policy decisions based on good data and evidence regarding the desires of the local population.
- A quality of life survey should ask residents about their desires with regards to housing growth, lifestyle amenities such as the recreation center, redevelopment of downtown Cheyenne, the West Edge project, and other important community development issues.
- Conducting and marketing this survey also provides an opportunity to educate the local community about the importance of bringing in new residents. Some local residents believe that development and growth will increase taxes and regulations, but there is a strong argument that supporting lifestyle amenities and population growth supports businesses and conservative goals. New residents support local businesses, increase the tax base, and address critical workforce needs.
- In order to promote improvements to lifestyle amenities, the local population must hear a consistent business and workforce related message regarding the need for these improvements. A survey will help ensure that any efforts to address quality of life are aligned with the goals of residents and backed by actual data.

**Support the City of Cheyenne’s efforts to conduct a countywide housing study and implement recommendations to address housing needs.**

- Housing availability and affordability, particularly in the rental market, were major concerns raised by stakeholders in Cheyenne.
- The City of Cheyenne is preparing to conduct a housing study in upcoming months. This study will help better understand the exact housing gaps and needs in the community. Cheyenne LEADS should support this study and ensure that actionable recommendations are developed and pursued upon its completion.
- The City and County have additional upcoming opportunities to explore issues of development of housing and quality of life amenities. The new Unified Development Code, Plan Cheyenne, the West Edge Project, and other public sector policies can encourage private-sector housing and commercial asset development.
- Cheyenne LEADS has an important role in this process as a vocal advocate for improvements to the housing market and lifestyle amenities, explaining the business need for new housing in workforce recruitment and retention.

**Explore and support opportunities to redevelop downtown, such as adding streetscape improvements and changing regulations to encourage redevelopment of existing structures.**

- City of Cheyenne and Laramie County regulations have a significant effect on lifestyle amenities. Rules related to historical preservation, zoning, and development fees directly affect the ability of private sector developers to construct new housing and redevelop existing properties both downtown and throughout the county.
- Cheyenne has a unique and historical downtown, but many downtown buildings have significant vacancy rates and are outdated for both business and residential needs. These buildings present significant opportunities to bring in new commercial businesses, including restaurants, bars, music venues, and shopping on their ground floors. With appropriate regulatory guidance, the upper floors of many buildings could be turned into lofts and condominiums for young professionals and empty nesters.
- There are already exciting changes occurring downtown, including the chop house and new hotel, but existing regulations make it challenging to redevelop existing buildings. Cheyenne LEADS should encourage the City to consider regulatory changes that allow for redevelopment of downtown buildings while still preserving the unique historical character of the city.
- The City can also encourage and support downtown redevelopment through simple streetscape and infrastructure improvements. Cities across the country have had tremendous success encouraging private commercial and residential downtown revitalization through basic streetscape improvements, including new lighting, sidewalk reconstruction, parking, façade improvements, and other strategies.
- The Cheyenne Downtown Development Authority (DDA) already works on many of these issues. Cheyenne LEADS should support the efforts of the DDA and City by rallying the business community to vocally support improvements and regulatory changes. Regulatory changes are not arbitrary or purely cosmetic but enhance the local quality of life and help workforce and economic development efforts.

**Continue to support and encourage private sector development in the West Edge Project.**

- The West Edge Project presents significant opportunities for new commercial and residential development adjacent to downtown. Cheyenne LEADS should support necessary public policies to complete this project and help encourage private sector development by highlighting opportunities for businesses.

**Support and market community events to citizens and develop new cultural amenities, such as non-chain restaurants, indoor recreational options, boutique shopping, and performing arts spaces.**

- Cheyenne and Laramie County are home to numerous arts and culture organizations and host a range of events, from Frontier Days to Fridays on the Plaza. Although there are many things to do in the community, interviews revealed that many cultural organization activities are not centrally coordinated and outsiders and some residents are unaware of many events and opportunities. Increased internal and external awareness of cultural events, such as concerts and art shows, in Cheyenne and Laramie County will help improve a common misperception that there are few things to do locally.
- Visit Cheyenne provides a calendar of events on their website and list of attractions, but there is an opportunity for greater coordination and marketing of local cultural organizations, businesses, and events.
- Cheyenne LEADS should encourage Visit Cheyenne, Arts Cheyenne, the Cheyenne Arts Guild, and numerous other cultural organizations to meet regularly, maintain a comprehensive and up-to-date list of events and attractions, and actively market these assets to both residents and outsiders.
- Both residents and non-residents of Cheyenne interviewed during the strategic process also noted a limited supply of non-chain restaurants and shopping options in Laramie County. Many residents travel to Northern Colorado when dining out or shopping for clothing, accessories, and other non-grocery merchandise. The lack of an indoor recreational center and other indoor activity options was also frequently noted as a serious concern in the community, an issue particularly for families looking to entertain children during winter months.
- Although the recent recreation center bond was controversial did not pass, this likely will need to remain an objective supported by the business community. Without increased cultural amenities such as non-chain restaurants, indoor recreation options, shopping, and performing arts spaces, Cheyenne will likely continue to face challenges recruiting and retaining both workers and businesses. Many of these amenities will be developed by the private sector with the proper building regulations and resident demand, but some, such as the recreation center, will require a strong community education and awareness campaign.
- Cheyenne LEADS should also support the DDA's efforts to build an Artspace facility in Cheyenne. Artspace is a national, non-profit organization that develops affordable creative space for artists and other businesses. They are currently exploring an opportunity to develop a facility in Cheyenne. Development of an Artspace facility in downtown Cheyenne would provide a new, vibrant cultural asset in the community, bring national attention to Cheyenne's significant cultural arts community, and help revitalize downtown.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

### Implementation Partners:

- City of Cheyenne
- Laramie County
- Cheyenne Downtown Development Authority
- Cheyenne LEADS
- Visit Cheyenne
- Greater Cheyenne Chamber of Commerce
- Cheyenne Arts Guild
- Arts Cheyenne
- Cheyenne Frontier Days
- Other cultural and events organizations

### Metrics:

- Completion of a quality of life goals and needs survey of Laramie County residents.
- Increased availability and improved affordability of rental housing in Cheyenne and Laramie County.
- Development of new building guidelines and zoning that allow ease restriction on redevelopment of downtown.
- Construction of an Artspace facility in downtown Cheyenne.
- Continued implementation of the West Edge Project.
- Continued opening of new commercial businesses in downtown Cheyenne, including local, non-chain restaurants, shops, and entertainment venues.
- Continued population growth at or above 1.8% annually, the average annual rate from 2008 to 2013.
- Continued employment growth at or above 1.9% annually, the average annual rate from 2009 to 2014.
- Continued expansion of local business operations.
- Continued attraction of new businesses and investment.
- Increased startup and other new business formation.
- Increased annual visitors and overnight stays in Cheyenne.

## STRATEGIC RECOMMENDATIONS

### EDUCATION ALIGNMENT

**GOAL:** *Students at Laramie County Community College, the University of Wyoming, and local high schools graduate with degrees, training, and skills that align with occupational needs of Laramie County employers.*

- Create a Talent Demand Working Group to discuss current and forecast employer skill needs, training capacities, and educational programs.
- Create a communications campaign to raise awareness of high-growth career opportunities in the region, particularly in STEM occupations, among adult residents of Laramie County and students at local high schools, LCCC, and UW.
- Connect students at LCCC, UW, and local high schools to employers through expanded opportunities for internships, apprenticeships, mentoring programs, and other forums.
- Develop immediate training programs to fill any critical workforce shortages identified by local employers.

### TALENT RECRUITMENT

**GOAL:** *Cheyenne and Laramie County attract and retain skilled workers in key, high-demand occupations.*

- Develop a clear marketing message and package for recruitment of individuals in skilled occupations to Cheyenne and Laramie County.
- Work with the University of Wyoming and Laramie County Community College to identify out-of-state alumni in critical occupations and facilitate employer recruitment of these individuals.
- Work with the Cheyenne Professional Network, young professionals, and other stakeholders to promote youth engagement, to provide recommendations and messaging ideas, and to meet with potential recruits.

### LIFESTYLE IMPROVEMENT

**GOAL:** *Cheyenne and Laramie County offer a range of lifestyle amenities and housing opportunities that attract and retain a diverse workforce, from low-income workers to high-skill professionals.*

- Facilitate a survey of Laramie County residents and employees to identify quality of life goals and needs.
- Support the City of Cheyenne's efforts to conduct a countywide housing study; implement recommendations to address needs.
- Explore and support opportunities to redevelop downtown, such as adding streetscape improvements and changing regulations to encourage redevelopment of existing structures.
- Continue to support and encourage private sector development in the West Edge Project.
- Support and market community events to citizens and develop new cultural amenities, such as non-chain restaurants, indoor recreational options, boutique shopping, and performing arts spaces.

## Appendix I: Occupation Cluster Definitions

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**Agriculture:** Includes farm, fishing, and forestry labor, as well as farm management and agricultural production occupations. Most Agriculture occupations do not require any post-secondary educational attainment.

**Architecture:** Includes residential, commercial, industrial, and landscape architects. Architecture occupations require a bachelor's degree.

**Back Office:** Encompasses a variety of business support occupations, including clerks, human resource professionals, and office administration staff in a variety of industries. Most Back Office occupations require at least a high school diploma and a significant number require a bachelor's degree.

**Business:** Includes chief executives, managers, and analysts. Virtually all Business occupations require at least bachelor's degree and several occupations require a master's degree.

**Communications:** Includes advertising and public relations occupations, as well supporting writers, editors, and analysts. Nearly all Communications occupations require a Bachelor's degree.

**Computer:** Encompasses electrical engineers, hardware engineers, network support specialists, software and web-based developers, and related computer programmers and security analysts. The majority of Computer occupations require a bachelor's degree.

**Construction:** Includes construction managers and laborers, equipment operations, and specialized trade contractors. Most construction occupations require a high school diploma and an apprenticeship or some on-the-job training.

**Design:** Includes artists and animators, graphic and industrial designers, and audiovisual production professionals. Educational requirements within the Design cluster vary widely.

**Education:** Includes teachers, related administrators, and library science professionals. Virtually all Education occupations require a bachelor's degree and a significant number require a master's degree.

**Engineering:** Includes virtually all engineers, with the exception of those directly related to computers. The majority of engineering occupations require a bachelor's degree.

**Financial:** Includes financial advisors and analysts, accountants, loan officers, and real estate professionals. Most Financial occupations require a bachelor's degree.

**Geology:** Includes operators of oil, gas, and mining equipment. The majority of Geology occupations require a high school diploma, with remaining occupations only requiring on-the-job training.

## CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Hospitality:** Includes food related occupations such as cooks and wait staff, as well as laborers and maintenance workers in industries such as gaming and lodging. Hospitality occupations typically require a high school diploma or some on-the-job training.

**Legal:** Includes lawyers, judges, paralegals and related support staff. Educational requirements within the Legal cluster vary widely.

**Logistics:** Includes air passenger and cargo workers, drivers, laborers in the shipping and rail industries, and transportation-related machine operators. Most Logistics occupations do not require a post-secondary education.

**Manufacturing:** Includes assembly workers, machinists, and equipment operators in a variety of production-oriented industries. Also includes operators of large-scale chemical, gas, nuclear, and water systems. Most Manufacturing occupations require a high school diploma.

**Math:** A narrow occupation cluster involving actuaries, mathematicians, and statisticians. Math occupations require at least a bachelor's degree.

**Mechanics:** Includes technicians and repair personnel for a host of industries, including automotive, aircraft, telecommunications, electrical, and electronic products. Most Mechanics occupations do not require a post-secondary education.

**Medical:** Includes doctors, nurses, aids and attendants, equipment technicians, and therapists (both physical and psychological). Medical occupations also include veterinarians as well as dentists and related workers. Educational requirements within the Medical cluster vary widely.

**Performance:** Includes occupations involved with athletic, dance, musical, televised, and theatrical performances. Performance occupations typically require at least a high school diploma.

**Personal Services:** Includes personal appearance professionals, childcare providers, and retail salespersons, clerks, and cashiers. Most Personal Service occupations require either a high school diploma or postsecondary non-degree award.

**Political:** Includes occupations typically related to public policy, including urban planners, geographers, and political scientists. The majority of Political occupations require a master's degree.

**Sales & Marketing:** Includes sales and marketing managers. These positions typically require a bachelor's degree.

**Social Service:** Include public safety workers such as firefighters and police officers as well as postal workers and religious officials. Social Service occupations typically require at least a high school diploma.

## Appendix II: Detailed Degree Output by Institution

### Degree Output at LCCC by CIP Code and REEMS Code, 2013

REEMS Group	Description	CIP-Level	Description	2013 degrees
AG.breeders	Animal Breeders	01.0507A	Equestrian/Equine Studies (A)	18
AG.farmmgr	Farm and Greenhouse Managers	01.0000A	Agriculture, General (A)	6
AG.farmmgr	Farm and Greenhouse Managers	01.0106A	Agricultural Business Technology (A)	1
AG.farmmgr	Farm and Greenhouse Managers	01.0301A	Agricultural Production Operations, General (A)	1
AG.foresttech	Forest and Conservation Technicians	03.0601A	Wildlife, Fish and Wildlands Science and Management (A)	2
Bl.acctasst	Accounting Support	45.0601A	Economics, General (A)	3
Bl.acctasst	Accounting Support	52.0301A	Accounting (A)	16
Bl.execasst	Executive/Admin. Assistants	52.0101A	Business/Commerce, General (A)	2
Bl.execasst	Executive/Admin. Assistants	52.0201A	Business Administration and Management, General (A)	18
CN.hvac	HVAC	15.0503A	Energy Management and Systems Technology/Technician (A)	12
CN.hvac	HVAC	15.0503C	Energy Management and Systems Technology/Technician (C)	1
CN.hvac	HVAC	47.0201A	Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Te	2
CN.hvac	HVAC	47.0201C	Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Te	2
CN.tradesgen	Construction Trades, General	46.0000A	Construction Trades, General (A)	1
CO.editwrite	Writers, Editors & Journalists	23.0101A	English Language and Literature, General (A)	3
CO.editwrite	Writers, Editors & Journalists	24.0103A	Humanities/Humanistic Studies (A)	5
CO.interpret	Interpreters and Translators	16.0905A	Spanish Language and Literature (A)	1
CO.prspecialist	Public Relations Specialists	09.0101A	Speech Communication and Rhetoric (A)	4
CO.prspecialist	Public Relations Specialists	09.0102A	Mass Communication/Media Studies (A)	5
DE.artist	Artists	50.0701A	Art/Art Studies, General (A)	4
DE.deskpub	Desktop Publishers & Digital Communication	09.0702A	Digital Communication and Media/Multimedia (A)	1
DE.music	Musicians & Music Directors	50.0901A	Music, General (A)	3
ED.teacherchild	Early Childhood / Pre-K / K Teachers	13.1210A	Early Childhood Education and Teaching (A)	9
ED.teacherelem	Elementary Teachers	13.0101A	Education, General (A)	49
EN.biologtech	Biological Technicians	26.0101A	Biology/Biological Sciences, General (A)	3
EN.biologtech	Biological Technicians	30.0101A	Biological and Physical Sciences (A)	37
EN.eetech	Electrical / Electronics Technicians & Drafters	14.0101A	Engineering, General (A)	5
EN.itinstall	Computer Installers & Repairers	47.0104C	Computer Installation and Repair Technology/Technician (C)	9
EN.mechdraft	Mechanical Drafters	15.1301A	Drafting and Design Technology/Technician, General (A)	4
EN.mechdraft	Mechanical Drafters	15.1301C	Drafting and Design Technology/Technician, General (C)	4
LE.lawssect	Law Secretaries, Clerks & Reporters	22.0302C	Legal Assistant/Paralegal (C)	3
LE.paralegal	Paralegals and Legal Assistants	22.0001A	Pre-Law Studies (A)	5
LE.paralegal	Paralegals and Legal Assistants	22.0302A	Legal Assistant/Paralegal (A)	7

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Degree Output at LCCC by CIP Code and REEMS Code, 2013**

<b>REEMS Group</b>	<b>Description</b>	<b>CIP-Level</b>	<b>Description</b>	<b>2013 degrees</b>
MD.denthyg	Dental Hygienists	51.0602A	Dental Hygiene/Hygienist (A)	17
MD.emt	Emergency Medical Technicians and Paramedics	51.0904A	Emergency Medical Technology/Technician (EMT Paramedic) (A)	5
MD.fittrain	Fitness Trainers and Aerobics Instructors	31.0505A	Kinesiology and Exercise Science (A)	1
MD.needmore	Need more education	42.0101A	Psychology, General (A)	21
MD.needmore	Need more education	51.1103A	Pre-Pharmacy Studies (A)	2
MD.needmore	Need More Education to Get a Job	51.3801C	Registered Nursing/Registered Nurse (C)	67
MD.phytherapass	Physical Therapist Assistants	51.0806A	Physical Therapy Technician/Assistant (A)	14
MD.radiologtechno	Nuclear Medicine / Radiologic Technologists	51.0911A	Radiologic Technology/Science - Radiographer (A)	11
MD.regnurs	Registered Nurses	51.3801A	Registered Nursing/Registered Nurse (A)	84
MD.sonograph	Diagnostic Medical Sonographers	51.0910A	Diagnostic Medical Sonography/Sonographer and Ultrasound Technician (A)	7
MD.surgtechno	Surgical Technologists	51.0909A	Surgical Technology/Technologist (A)	8
NO.notmatched	No matched occupation group	24.0102A	General Studies (A)	98
NO.notmatched	No matched occupation group	54.0101A	History, General (A)	2
PR.auto	Auto Mechanics	47.0604A	Automobile/Automotive Mechanics Technology/Technician (A)	2
PR.auto	Auto Mechanics	47.0604C	Automobile/Automotive Mechanics Technology/Technician (C)	4
PR.autobody	Auto Body Repair	47.0603A	Autobody/Collision and Repair Technology/Technician (A)	2
PR.autobody	Auto Body Repair	47.0603C	Autobody/Collision and Repair Technology/Technician (C)	3
PR.autoheavy	Heavy Vehicle Mechanics (not Aero)	47.0605A	Diesel Mechanics Technology/Technician (A)	2
PR.autoheavy	Heavy Vehicle Mechanics (not Aero)	47.0605C	Diesel Mechanics Technology/Technician (C)	5
SF.compsupp	Computer Support Specialists	11.0101A	Computer and Information Sciences, General (A)	1
SF.compsupp	Computer Support Specialists	11.0201A	Computer Programming/Programmer, General (A)	21
SF.compsupp	Computer Support Specialists	11.0201C	Computer Programming/Programmer, General (C)	11
SF.compsupp	Computer Support Specialists	11.0203A	Computer Programming, Vendor/Product Certification (A)	1
SF.compsupp	Computer Support Specialists	11.0203C	Computer Programming, Vendor/Product Certification (C)	1
SF.compsupp	Computer Support Specialists	11.0501A	Computer Systems Analysis/Analyst (A)	3
SF.compsupp	Computer Support Specialists	11.0501C	Computer Systems Analysis/Analyst (C)	6
SF.compsupp	Computer Support Specialists	11.0701A	Computer Science (A)	3
SF.compsupp	Computer Support Specialists	11.9999C	Computer and Information Sciences and Support Services, Other (C)	1
SF.webdev	Web Developers	11.0801C	Web Page, Digital/Multimedia and Information Resources Design (C)	10
SO.fire	Fire Fighters	43.0203A	Fire Science/Fire-fighting (A)	6
SO.needmore	Need More Education to Get a Job	45.0201A	Anthropology (A)	7
SO.needmore	Need more education	45.1001A	Political Science and Government, General (A)	1
SO.protect	Law Enforcement & Protective Services	43.0102A	Corrections (A)	3
SO.protect	Law Enforcement & Protective Services	43.0103A	Criminal Justice/Law Enforcement Administration (A)	7
SO.socsci	Social Science Research Assistants	45.1101A	Sociology (A)	5
SO.socsvc	Social Services	44.0000A	Human Services, General (A)	8
SO.socsvc	Social Services	45.0101A	Social Sciences, General (A)	2

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Degree Output at Univ. WY by Degree Code and REEMS Code, 2013**

<b>REEMS Group</b>	<b>Description</b>	<b>CIP-Level</b>	<b>Description</b>	<b>2013 degrees</b>
AG.farmmgr	Farm and Greenhouse Managers	01.0102B	Agribusiness/Agricultural Business Operations (B)	21
AG.foresttech	Forest and Conservation Technicians	30.1801M	Natural Sciences (M)	19
BI.account	Accountants & Tax Examiners	52.0301B	Accounting (B)	39
BI.bizexecanalyst	Executives & Management Analysts	44.0401M	Public Administration (M)	30
BI.finance	Financial Managers & Analysts	52.0601B	Business/Managerial Economics (B)	14
BI.mathstat	Mathematicians & Statisticians	27.0101D	Mathematics, General (D)	4
BI.mathtech	Mathematical Technicians	27.0101B	Mathematics, General (B)	16
CO.editwrite	Editors & Writers	01.0802B	Agricultural Communication/Journalism (B)	8
CO.interpret	Interpreters and Translators	16.0402B	Russian Language and Literature (B)	2
CO.mktgmgr	Marketing Managers	52.1401B	Marketing/Marketing Management, General (B)	35
DE.artdir	Art Directors	50.0701B	Art/Art Studies, General (B)	31
DE.music	Musicians & Music Directors	50.0901B	Music, General (B)	7
DE.theat	Actors	50.0501B	Drama and Dramatics/Theatre Arts, General (B)	31
ED.childcare	Child Care Workers	19.0708C	Child Care and Support Services Management (C)	1
ED.eduadmin	Education Administrators	13.0401PB	Educational Leadership and Administration, General (PB)	6
ED.histor	Historians	54.0101M	History, General (M)	4
ED.needmore		05.0102B	American/United States Studies/Civilization (B)	1
ED.teacher7-12	Middle/Secondary/Specialty Teachers	05.0102M	American/United States Studies/Civilization (M)	3
ED.teachercollege	College Teachers	38.0101M	Philosophy (M)	3
ED.teacherelem	Elementary Teachers	13.0101D	Education, General (D)	13
EN.agsci	Agricultural & Food Scientists	01.1102D	Agronomy and Crop Science (D)	3
EN.ansci	Animal Scientists	01.0901D	Animal Sciences, General (D)	2
EN.atmos	Atmospheric Scientists & Meteorologists	40.0401D	Atmospheric Sciences and Meteorology, General (D)	3
EN.biochemphysc	Biochemists and Biophysicists	26.0204B	Molecular Biology (B)	11
EN.biologtech	Biological Technicians	26.0101B	Biology/Biological Sciences, General (B)	31
EN.chem	Chemists	40.0501B	Chemistry, General (B)	14
EN.chemeng	Chemical Engineers	14.0701B	Chemical Engineering (B)	37
EN.civileng	Civil Engineers	14.0801B	Civil Engineering, General (B)	49
EN.compeng	Computer Hardware Engineers	14.0901B	Computer Engineering, General (B)	7

CHEYENNE LEADS WORKFORCE STUDY – BUILDING THE WORKFORCE FOR TOMORROW

**Degree Output at Univ. WY by Degree Code and REEMS Code, 2013**

<b>REEMS Group</b>	<b>Description</b>	<b>CIP-Level</b>	<b>Description</b>	<b>2013 degrees</b>
EN.electeng	Electrical and Electronics Engineers	14.1001B	Electrical and Electronics Engineering (B)	18
EN.envirosci	Environmental Scientists & Engineers	03.0101PB	Natural Resources/Conservation, General (PB)	4
EN.mecheng	Mechanical Engineers	14.1901B	Mechanical Engineering (B)	45
EN.medsci	Medical Scientists	26.0406D	Cell/Cellular and Molecular Biology (D)	9
EN.microbiol	Microbiologists	26.0102D	Biomedical Sciences, General (D)	1
EN.petroeng	Petroleum & Geological Engineers	14.2501B	Petroleum Engineering (B)	34
EN.physics	Physicists	40.0299B	Astronomy and Astrophysics, Other (B)	1
EN.physsciother	Physical Scientists, All Other	40.0101B	Physical Sciences (B)	3
EN.surveytech	Surveying and Mapping Technicians	15.1102C	Surveying Technology/Surveying (C)	13
EN.zoobiolog	Zoologists and Wildlife Biologists	26.0701B	Zoology/Animal Biology (B)	10
LE.lawyer	Lawyers & Judges	22.0101D	Law (D)	78
MD.athletrain	Athletic Trainers	31.0505B	Kinesiology and Exercise Science (B)	62
MD.audio	Audiologists	51.0204B	Audiology/Audiologist and Speech-Language Pathology/Pathologist (B)	33
MD.denthyg	Dental Hygienists	51.0602B	Dental Hygiene/Hygienist (B)	20
MD.needmore	Need more education	42.0101B	Psychology, General (B)	94
MD.pharm	Pharmacists	51.2001D	Pharmacy (D)	40
MD.psychol	Psychologists	42.0101D	Psychology, General (D)	6
MD.regnurs	Registered Nurses	51.3801B	Registered Nursing/Registered Nurse (B)	205
NO.notmatched	No matched occupation group	30.2001B	International/Global Studies (B)	40
SF.compprog	Software Developers & Database Adm	11.0701B	Computer Science (B)	23
SF.compsci	Computer Scientists	11.0701D	Computer Science (D)	1
SO.anthropol	Anthropologists	45.0201M	Anthropology (M)	4
SO.needmore	Need More Education to Get a Job	45.0201B	Anthropology (B)	23
SO.polsci	Political Scientists	45.1001B	Political Science and Government, General (B)	32
SO.protect	Law Enforcement & Protective Service	43.0104B	Criminal Justice/Safety Studies (B)	85
SO.regplanner	Urban and Regional Planners	04.0301M	City/Urban, Community and Regional Planning (M)	1
SO.religion	Religious Figures	38.0201B	Religion/Religious Studies (B)	4
SO.schoolcouns	School Counselors	13.1101D	Counselor Education/School Counseling and Guidance Services (D)	4
SO.sociolog	Sociologists	45.0101B	Social Sciences, General (B)	33
SO.socsvc	Social Services	19.0101B	Family and Consumer Sciences/Human Sciences, General (B)	37