Campbell County, Wyoming
Higher Education Market Analysis
Final Report (Phase III)

December 2017

Lone Tree Academics LLC

innovation economics
shaping change - creating growth

entangled.solutions

Agenda / Contents

01

Introduction

Introduction

This market study provides a rigorous economic, workforce, and community analysis of present and future labor market needs and skills gaps using sophisticated labor market information and community consultation methods.

It focuses on identifying opportunities for the Campbell County region to expand higher educational offerings for the benefit of students, employers, and community stakeholders in alignment with workforce growth opportunities in the local-regional economy.

Project Phasing

1 DEFINE ✓	**3 RESEARCH** ✓	**5 WRITE** ✓	**7 SUPPORT** ✓
Objectives Budget Deliverables * Proposal	Stakeholder interviews Market data Current/Future programs * Research Summary	Recommendations Stakeholder summary Supporting materials * Draft Market Study	Implementation advice Vendor connections Insight * Go Forward Road Map

Scan	Focus	Act

KICK OFF ✓	**DEVELOP** ✓	**DELIVER** ✓
Background review Project timeline Introductions **2** * Workplan	Gap analysis Program options Focus on partner options **4** * Concept Plan	Feedback-based iteration Delivery debrief Project review **6** * Final Market Study

Phase I	Phase II	Phase III

Market Study Goals — In Brief

Phases I & II

- Identify **potential educational champions** to provide leadership in developing key products or assets.

- Establish current and projected future **patterns of employer demand** for knowledge, skills, occupations, and required qualifications.

- Use state-of-the-art analysis of **regional labor market and workforce trend data** to distinguish established and emerging growth industries as a basis for aligning educational priorities to current realities and needs.

- Evaluate **current educational and training products** for job market alignment, accessibility, acceptance, and value for business, industry, and community stakeholders to identify gaps and expansion potential.

Phase III

- Translate what **business, industry, and educational professionals already know** and think, to qualify both demand for future programs and products as well as supply-side capacity.

- Identify and vet **potential partners** to assist with the funding and delivery of new or enhanced educational and training products or programs.

- Design an **industry-centric investment and funding model** to allow for the development and ongoing offering of the identified programs.

Project Sponsors

Campbell County, Wyoming, the Board of County Commissioners

University of Wyoming

Northeast Wyoming Economic Development Coalition

Gillette College/Northeast Wyoming Community College

Board of Cooperative Educational Services (BOCES)

Delivery Team

Dr. Doug Gilbert (Lone Tree Academics LLC) has previously completed substantial Higher Education work in Wyoming. His involvement in Higher Education includes serving as a faculty member and administrator for more than 25 years, as well as acting as general counsel for a Higher Education investor. Projects in Higher Education have included the development and implementation of an international private university concept to deliver affordable Higher Education to less developed countries. He also has assisted Peregrine Academic Services in Gillette with several projects.

Dr. Phil McCready (Innovation Economics) is a researcher, data analyst, and development economist who has worked in economic development and in Higher Education. He also is an adjunct professor teaching research methods. As a development economist, he specializes in strategies for technology led economic development, small business, and enterprise development. He has significant experience in research, data analytics, complex projects, strategic planning, presenting, and teaching in his field of expertise. His completed projects have been done for the Denver South EDG, Denver health corridor, and Rapid City, SD.

Jasmin Schiener (Entangled Solutions) provides program/project management, support for data analysis, and identification of potential partners/funding sources for potential solutions. Entangled Solutions is an education innovation agency based in San Francisco, California, with customers ranging from foundations and private companies to elite institutions and university consortiums. Jasmin earned a law degree at Bucerius Law School in Germany and is experienced in program development, market analysis, M&A, healthcare education, and the creation of sustainable operations infrastructure for highly regulated education entities.
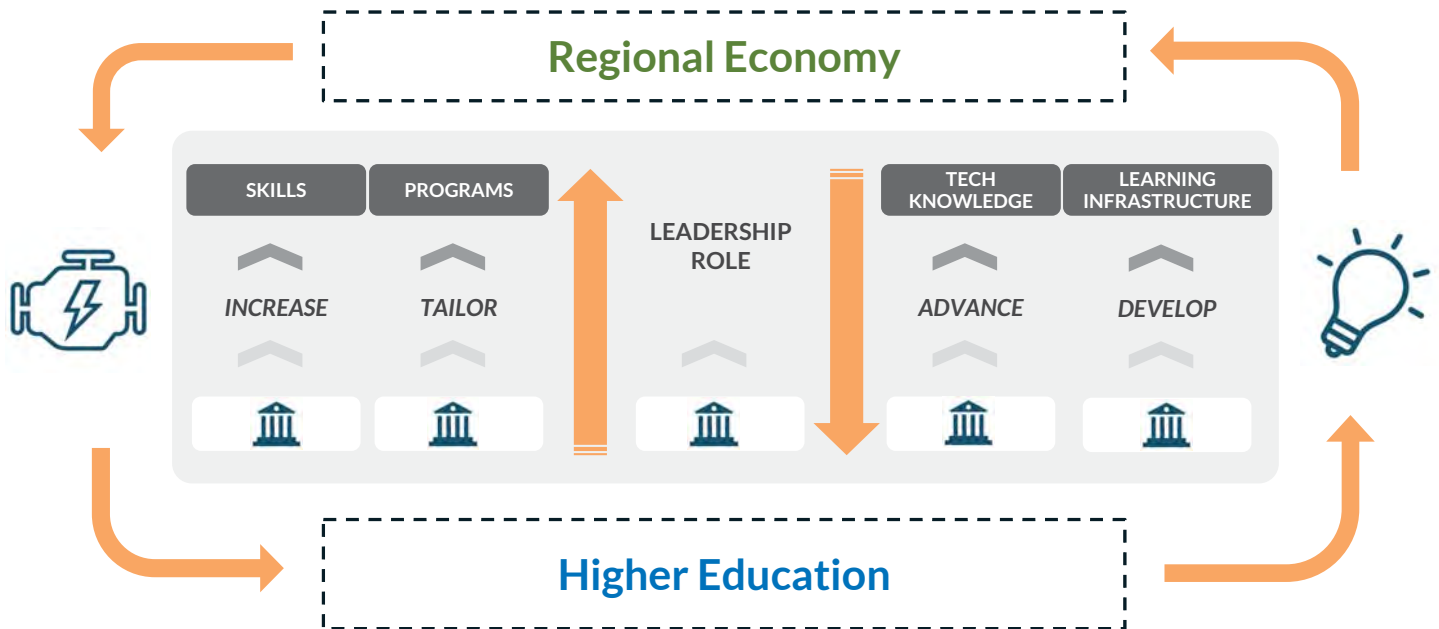
02
Economic Development & Higher Education

Impact of Higher Education in Regional Economic Development

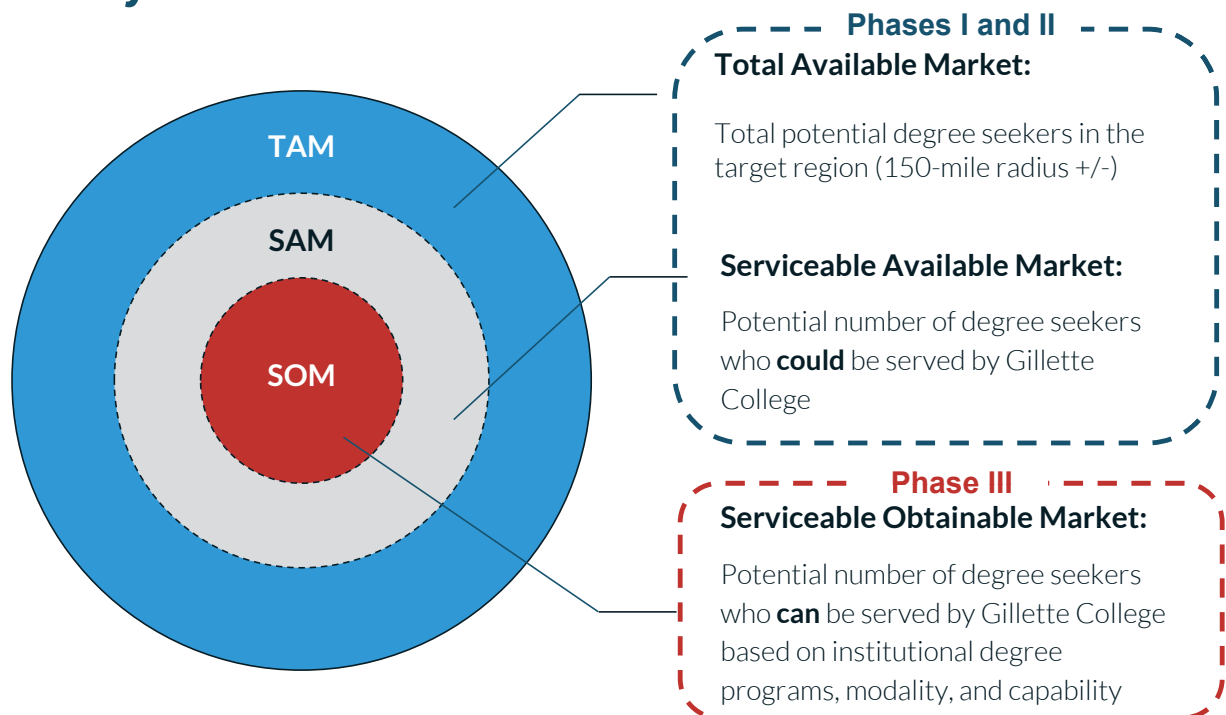Higher Education is uniquely placed to understand the needs of the local economy to help:

- **Increase** skills and knowledge to create a quality workforce to attract outside firms.
- **Tailor** programs to help local firms or sectors succeed.
- **Lead regional leadership** role in initiatives and partnerships.
- **Advance** understanding of technologies impacting local industries.
- **Develop** infrastructure to promote applied learning in strategic facilities, e.g., from broadband to hospitality.

How Higher Education Can Support Economic Development

Regional Economy

SKILLS	PROGRAMS		TECH KNOWLEDGE	LEARNING INFRASTRUCTURE
INCREASE	TAILOR	LEADERSHIP ROLE	ADVANCE	DEVELOP

Higher Education

Supply Analysis Refinement

TAM

SAM

SOM

Phases I and II

Total Available Market:

Total potential degree seekers in the target region (150-mile radius +/-)

Serviceable Available Market:

Potential number of degree seekers who **could** be served by Gillette College

Phase III

Serviceable Obtainable Market:

Potential number of degree seekers who **can** be served by Gillette College based on institutional degree programs, modality, and capability

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Snapshot Competitive Landscape

- **19 schools** (including University of Wyoming and Gillette College) are located within the analyzed region.

- **Graduation rates are extremely low** with only two providers -- University of Wyoming and South Dakota School of Mines and Technology -- attaining 50%.

- **Student population** in the area is 40,852.

- Eight colleges mainly award **degrees** in General Studies and Business, seven schools mainly in Education and Healthcare, and only one university (South Dakota School of Mines and Technology) is highly focused on STEM disciplines.

19 institutions		
8 universities	8 community colleges	3 other
1. University of Wyoming 2. Black Hills University 3. Montana State University - Billings 4. South Dakota School of Mines & Technology 5. Chadron State College 6. National American University-Rapid City 7. Rocky Mountain College 8. National American University-Ellsworth AFB Extension	1. Gillette / NWCCD 2. Casper College 3. Eastern Wyoming College 4. Northwest College 5. Western Dakota Technical Institute 6. Miles Community College 7. Little Big Horn College 8. Chief Dull Knife College	1. Bold Beauty Academy 2. Black Hills Beauty College 3. Headlines Academy Inc.

*Source: Entangled Solutions analysis, College Navigator, IPEDS — *Details in appendix*

Market Definition and Key Characteristics

- Vibrant mining community located in the northeast Wyoming rural sphere

- Bridges the interface of three metropolitan regions within a two-hour drive time

- Major coal, oil, and natural gas energy-producing region known as the Powder River Basin

- Network of road, airport, and high volume freight rail connectivity

- Top producing coal region in the nation using large-scale mechanized surface mining

- Extensive network of natural gas pipelines, both interstate, and intrastate

150-mile market radius

Metropolitan Sphere
- A (Level 1)
- B (Level 2)
- C (Level 3)

Rural-Metro Interface
- D (Level 1)
- E (Level 2)
- F (Level 3)

Rural Sphere
- G
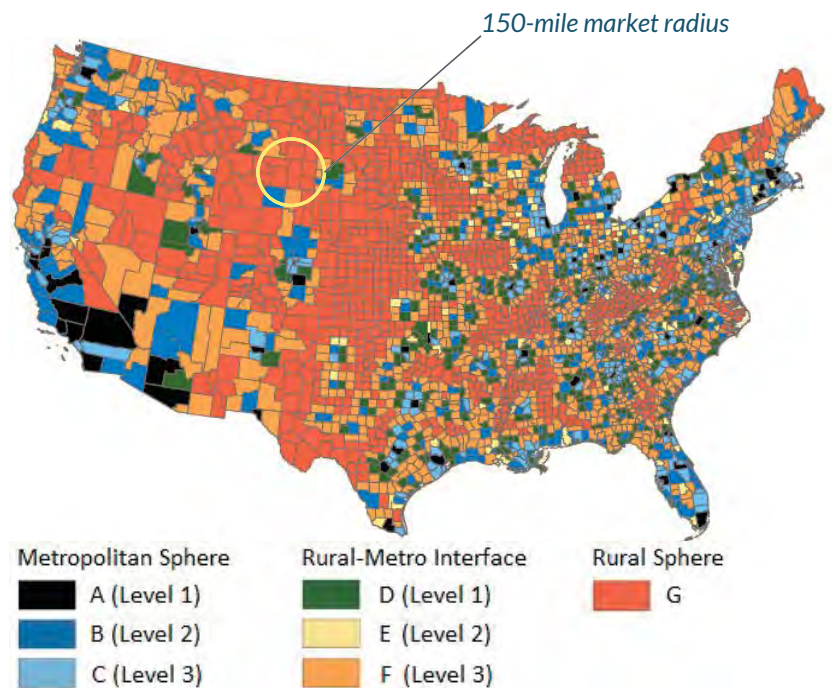
03
Final Research Market Data Findings

Context of Research Findings - Campbell County Influence Area

Influence area - Set at a 150 mile radius based on stakeholder input and direction

Available Educational Offerings (Supply of degrees)

- Estimates the level of competing offerings available to residents of the Campbell County Influence Area (150 mile radius)
- Based on 15 "Educational Clusters", which comprise multiple types of related degree programs

Labor Market Demand (Supply of employment positions)

- Estimates the level of potential employment opportunities *requiring higher education* available to residents of the Campbell County
- Based on traditional labor market data (U.S. Department of Labor) and real time data (Burning Glass)

Gap (Supply vs. Demand)

- Estimates the over- or under-supply of *higher education qualified* graduates for potential employment opportunities *requiring higher education*

03 a
Research Findings: Supply Data

Question to be answered:
What degree programs compete against Gillette College?

Matching Supply and Demand via a National Career Clusters Framework

Career Cluster	Description
Agriculture, Food, & Natural Resources	Includes Educational Programs such as "Agricultural/Farm Supplies Retailing and Wholesaling" and Occupations such as "Purchasing Agents & Buyers, Farm Products"
Architecture and Construction	Includes Educational Programs such as "Architecture (BArch, BA/BS, MArch, MA/MS, PhD)" and Occupations such as "Engineering Managers"
Arts, Audio/Video Technology, & Communications	Includes Educational Programs such as "Audiovisual Communications Technologies/Technicians, Other" and Occupations such as "Media & Communication Workers, All Other"
Business, Management, & Administration	Includes Educational Programs such as "Public Relations/Image Management" and Occupations such as "Advertising & Promotions Managers"
Education and Training	Includes Educational Programs such as "Educational Leadership and Administration, General" and Occupations such as "Education Administrators, Preschool & Child Care Center/Program"
Finance	Includes Educational Programs such as "Finance, General" and Occupations such as "Financial Managers"
Government and Public Administration	Includes Educational Programs such as "Political Communication" and Occupations such as "Public Relations Specialists"
Health Services	Includes Educational Programs such as "Psychology, General" and Occupations such as "Clinical, Counseling, & School Psychologists"
Law, Public Safety, and Corrections	Includes Educational Programs such as "Corrections" and Occupations such as "Psychology Teachers, Postsecondary"
Manufacturing	Includes Educational Programs such as "Machine Tool Technology/Machinist" and Occupations such as "Rolling Machine Setters, Operators, & Tenders, Metal & Plastic"
Marketing Sales and Service	Includes Educational Programs such as "Marketing/Marketing Management, General" and Occupations such as "Advertising & Promotions Managers"
Science, Technology, Engineering and Math	Includes Educational Programs such as "Engineering, General" and Occupations such as "Engineering Managers"
Transportation, Distribution and Logistics	Includes Educational Programs such as "Aeronautical/Aerospace Engineering Technology/Technician" and Occupations such as "Occupational Health & Safety Specialists & Technicians"

Source: The National Career Clusters Framework, 2017

Supply Analysis — Total Educational Program Conferrals

In order to identify the gap in a meaningful way, it is necessary to group all educational program offerings:

Career Cluster	Conferrals based on CIP-Code*

Career Cluster labels:
- Agriculture, Food and Natural Resources
- Architecture and Construction
- Arts, Audio/Video Technology and Communications
- Business, Management and Administration
- Education and Training
- Finance
- Government and Public Administration
- Health Sciences
- Hospitality and Tourism
- Human Services
- Law, Public Safety, Corrections
- Manufacturing
- Marketing Sales and Service
- Science, Technology, Engineering and Mathematics
- Transportation, Distribution, and Logistics

CIP = Classification of Instructional Programs, standard educational program classification developed by NCES.

Note: Conferrals awarded in 2016; award levels include Associate's degree and above. Source: IPEDS, 2017

Relevant Market Multiplier

In order to find the size of the relevant market for Gillette College, we have to consider that not all graduates of the educational programs stay in the region.

Potential student supply depends on the prevailing out-of-state migration patterns. When analyzing and confirming an accurate picture of the Higher Education landscape and corresponding graduate supply, it is imperative to account for varying capture rates.

? How many graduates move
- from non-Wyoming colleges to Wyoming?
- from colleges in Wyoming to other states?

Source: "The Great Out-of-State Migration: Where Students Go," The New York Times, 2016, Nick Strayer

Basis of Market Multiplier for Competitor Institutions

Use of migration rates at census regional level to identify adjustments to the number of graduates for competitor universities.

Using regional data, the study examines the out-of-state migration behavior of college graduates who attended in-state institutions in the United States.

TABLE 2. Detailed Descriptive Statistics at Census Regional Level

Migration Rate	Mean	Minimum	Maximum
All States	23.3%	10.2%	61.5%
Northeast	26.1%	13.3%	60.0%
Midwest	28.7%	20.0%	45.7%
South	21.7%	10.8%	61.5%
West	15.2%	10.2%	35.7%

Source: *"The Determinants of Out-Migration Among In-State College Students in the United States,"*
Research in Higher Education, 2011, Volume 52, Number 2, Page 107, Terry T. Ishitani

**By applying the capture rate, the number of graduates was adjusted
to reflect a more accurate picture of the Serviceable Accessible Market (SAM).**

Educational Supply — Market Multiplier Adjustments

Radius (miles)	Metropolitan and Nonmetropolitan Counties	Market Multiplier	State	Notes
0-100	Campbell WY, Crook WY, Weston WY, Johnson WY, Sheridan V	84.8%	Wyoming	84.8% of graduates of Institutions in WY stay within the state after graduation
100-150	Natrona WY	84.8%	Wyoming	84.8% of graduates of Institutions in WY stay within the state after graduation
100-150	Converse WY, Niobrara WY	84.8%	Wyoming	84.8% of graduates of Institutions in WY stay within the state after graduation
100-150	Lawrence SD, Butte SD, Fall River SD, Harding SD	28.7%	South Dakota	28.7% of graduates of Institutions in SD have the potential to migrate outside SD (e.g., to WY) after graduation
100-150 plus	Powder River MT, Carter MT, Custer MT, Rosebud MT	15.2%	Montana	15.2% of graduates of Institutions in MT have the potential to migrate outside MT (e.g., to WY) after graduation
150 plus	Big Horn MT	15.2%	Montana	15.2% of graduates of Institutions in MT have the potential to migrate outside MT (e.g., to WY) after graduation
150 plus	Washakie WY, Big Horn WY, Hot Springs WY	84.8%	Wyoming	84.8% of graduates of Institutions in WY stay within the state after graduation
150 plus	Custer SD, Meade SD, Pennington SD	28.7%	South Dakota	28.7% of graduates of Institutions in SD have the potential to migrate outside SD (e.g., to WY) after graduation
150 plus	Chadron NE	28.7%	Nebraska	28.7% of graduates of Institutions in NE have the potential to migrate outside NE (e.g., to WY) after graduation
150 plus	Torrington WY	84.8%	Wyoming	84.8% of graduates of Institutions in WY stay within the state after graduation

Montana
- Miles Community College
- Rocky Mountain College
- Chief Dull Knife College
- Montana State University - Billings
- Bold Beauty Academy
- Little Big Horn College

South Dakota
- Western Dakota Technical Institute
- National American University - Ellsworth AFB Extension
- Black Hills State University
- South Dakota School of Mines and Technology
- National American University - Rapid City
- Black Hills Beauty College
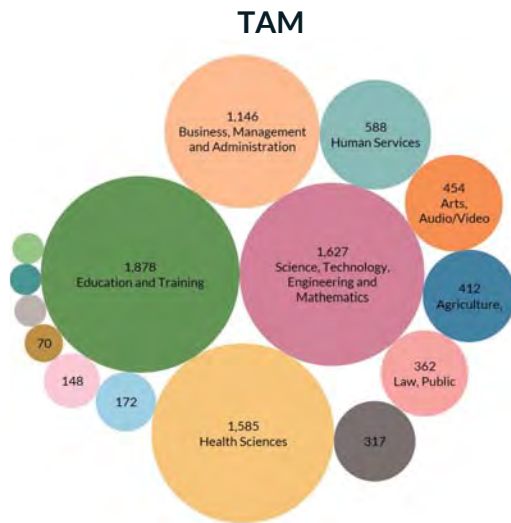- Headlines Academy Inc.

Wyoming
- NWCCD - Gillette College
- Casper College
- Northwest College
- University of Wyoming
- Eastern Wyoming College

Nebraska
- Chadron State College

# Educational Conferrals by Occupational Cluster (2016)

TAM

SAM

In the degree market (conferrals), the majority were awarded in the following fields:

- Education,
- STEM,
- Health Sciences, and
- Business.

The smallest educational supply is generated for:

- Finance,
- Hospitality,
- Marketing,
- Government, and
- Transportation.

TAM = Total Available Market: Total potential degree seekers in the target region (150 mile radius ±) Conferrals awarded in 2016; award levels included Associate's degree and above.
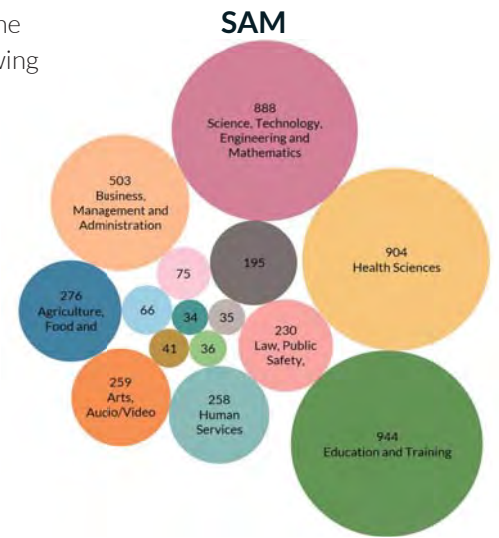
SAM = Serviceable Available Market: Potential number of degree seekers who could be served by Gillette College Conferrals awarded in 2016; award levels included Associate's degree and above.

Note: Conferrals awarded in 2016; award levels include Associate's degree and above. Source: IPEDS, 2017

Largest Occupational Clusters 2012-2016 (SAM)

- Largest **growing** educational offerings: Health Sciences, STEM, Business, Human Services, and Manufacturing

- Largest **declining** educational offerings: Education and Training, Law, Public Safety, and Agriculture

Career Cluster	2012	2013	2014	2015	2016	CAGR, %
Education and Training	1,031	976	978	1,000	944	⬇ -1.7%
Health Sciences	861	814	862	896	904	⬆ 1.0%
Science, Technology, Engineering and Mathematics	791	838	863	849	888	⬆ 2.3%
Business, Management and Administration	411	455	447	438	503	⬆ 4.1%
Arts, Audio/Video Technology and Communications	273	292	284	273	259	⬇ -1.0%
Law, Public Safety, Corrections	263	248	227	239	230	⬇ -2.6%
Agriculture, Food and Natural Resources	219	221	236	244	276	⬆ 4.7%
Human Services	245	231	226	222	258	⬆ 1.0%
Manufacturing	195	223	183	185	195	0.0%

Note: Conferrals awarded in 2016; award levels include Associate's degree and above.

Source: IPEDS, Entangled Solutions Analysis , 2017

Smallest Occupational Clusters 2012-2016 (SAM)

- Lowest **growing** educational offerings are: Finance, Marketing Sales and Service, Architecture, and Transportation
- Lowest **declining** educational offerings are: Government Public Administration and Hospitality
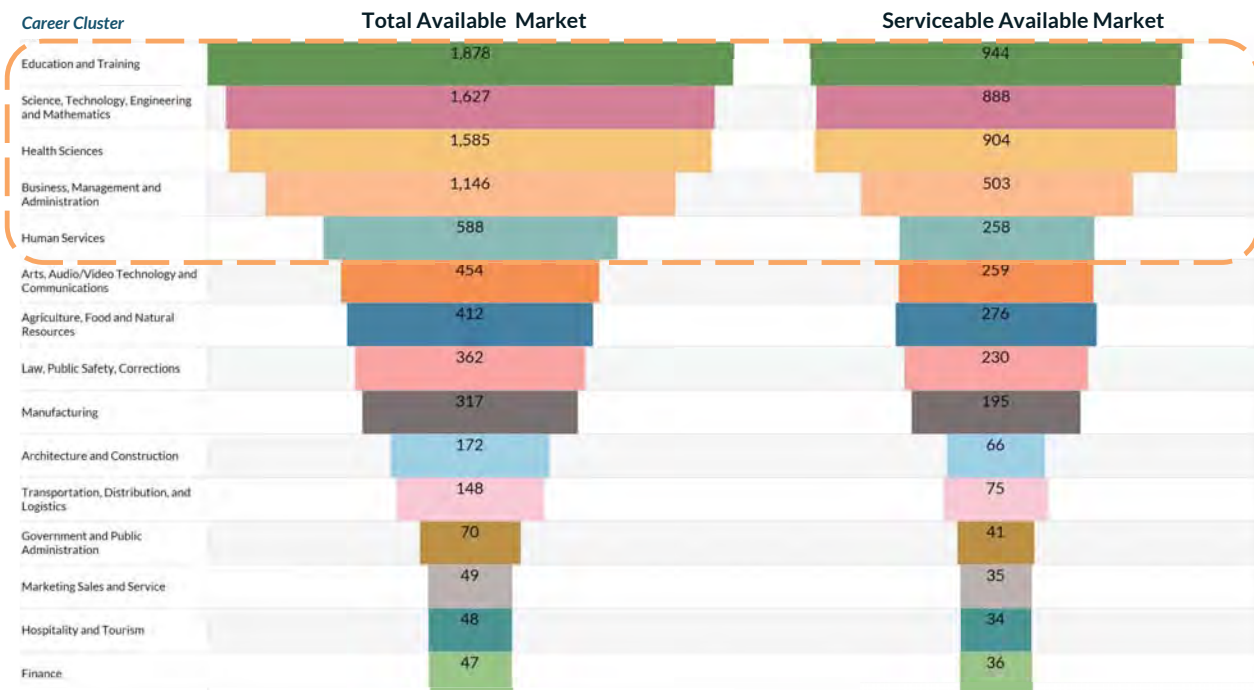
Career Cluster	2012	2013	2014	2015	2016	CAGR %
Transportation, Distribution, and Logistics	66	108	103	88	75	⬆ 2.6%
Architecture and Construction	57	80	64	46	66	⬆ 3.0%
Government and Public Administration	54	57	35	46	41	⬇ -5.4%
Hospitality and Tourism	41	37	39	40	34	⬇ -3.7%
Finance	30	27	32	32	36	⬆ 3.7%
Marketing Sales and Service	29	32	16	24	35	⬆ 3.8%
	2012	2013	2014	2015	2016	

Note: Conferrals awarded in 2016; award levels include Associate's degree and above.

Source: IPEDS, Entangled Solutions Analysis , 2017

Educational Offerings — TAM / SAM Comparison

Career Cluster	Total Available Market	Serviceable Available Market
Education and Training	1,878	944
Science, Technology, Engineering and Mathematics	1,627	888
Health Sciences	1,585	904
Business, Management and Administration	1,146	503
Human Services	588	258
Arts, Audio/Video Technology and Communications	454	259
Agriculture, Food and Natural Resources	412	276
Law, Public Safety, Corrections	362	230
Manufacturing	317	195
Architecture and Construction	172	66
Transportation, Distribution, and Logistics	148	75
Government and Public Administration	70	41
Marketing Sales and Service	49	35
Hospitality and Tourism	48	34
Finance	47	36

Note: Conferrals awarded in 2016; award levels include Associate's degree and above.

Source: IPEDS, Entangled Solutions Analysis , 2017

Current State Analysis: Degree Conferrals

Total relevant supply is based on

- **The number of conferrals**

- **Adjusted for geographic reach of institutions**

Supply
(SAM ← TAM) - Distance methodology
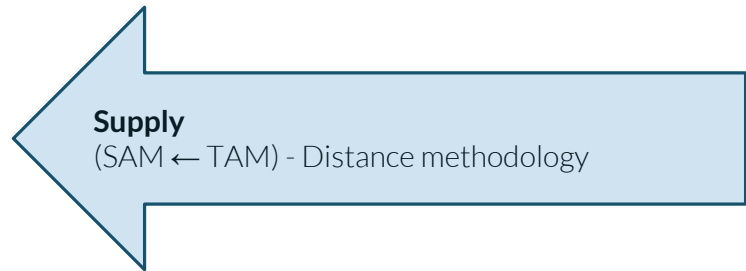
Key Research Findings - Available Programs (Supply)

Largest number of degrees in program clusters
- Education and training
- Science, technology, engineering, and math
- Health sciences
- Business, management, and administration
- Human services

Key supply implications
- *Education and training:* High supply in a cluster with concerns about undersupply
- *Science, technology, engineering, and math:* Questions may arise about match of STEM skills to needs of Campbell County Market
- *Health sciences:* Implications for continued need due to national trends and demographics
- *Business, management, and administration:* Questions may arise about match of skills to needs of Campbell County Market
- *Human services:* Represents a wide variety of degree programs

03 b

Research Findings: Demand Data

Question to be answered:
How many and what types of jobs are available in the areas served by Gillette College?

Sources of Labor Market Information

There are two sources of labor market information (LMI) to project demand for occupations/skills in the study:

- **Traditional LMI** via the U.S. Bureau of Labor Statistics' Occupational Employment Statistics (OES), using five years of historical data to track trends by Standard Occupational Classification (SOC) codes.
    - **SOC codes** are a national system of classifying occupations to provide insight on the skills, knowledge, and workforce that defines the study region.

- **Real-Time LMI** via Burning Glass Technologies that extracts, mines, and codes millions of job postings from close to 40,000 online sources daily. The data was pulled from June 2015 to May/June 2017 to generate up-to-date insight on the local job market, company job openings, and specific underserved skills by SOC job category.

Labor Market Project Method

Traditional LMI
Occupational growth:
- Rates of annual change in the total numbers of workers in each occupation.

Occupational separations:
- Rates of workers who leave an occupation and find employment in a different occupation (transfers).
- Rates of workers who leave the labor force entirely, e.g. retirees etc. (labor force exits).

Real-Time LMI
Occupational job postings:
- Online job postings from the region over the prior two years by SOC job category.
- Period from July 1, 2015 to July 31, 2017.

SOC_Occupation	2016 BLS/OES Employment	Annual Job Openings from Growth, 2012-16	Annual Occupational Separations, 2012-16	Estimated Annual Openings, 2012-16	Posted Jobs 2016-2017	Posted Jobs 2015-2016	AVERAGE GROSS DEMAND
29-1141: Registered Nurses	7820	323	399	721	4911	4073	2607

Occupational Cluster Analysis

Why do Occupational Clusters matter?

- The global integration of markets has eliminated many regional competitive advantages.

- In today's low cost, competitive environment where technology quickly jumps borders, a region's best way to differentiate itself is brainpower.

- The shift of business to more knowledge-based markets are putting workforce skills at a premium.

Analysis Methodology

- Clusters were defined to confirm that educational conferrals match labor market data.

- Demand Equation = [(Net new openings + replacement + Burning Glass Employer Demand) - non-degree jobs].

Growth in Jobs by Occupational Category, 2012-2016

Source: BLS Occupational Employment Statistics by metropolitan and nonmetropolitan region (2012-2016)

Demand Analysis: Health Sciences, SOC Codes

Fastest Growing Occupations in the Health Sciences Cluster requiring an Associate's or Bachelor's Degree

Occupation	2016, Employment	2012, Employment	Change, 2012-2016	CAGR, 2012-2016
29-1141: Registered Nurses	7,820	6,530	1,290	3.7%
11-9111: Medical and Health Services Managers	860	650	210	5.8%
21-1015: Rehabilitation Counselors	250	134	116	13.3%
29-2081: Opticians, Dispensing	310	196	114	9.6%
29-2071: Medical Records and Health Information Technicians	690	620	70	2.2%
Other	3,689	3,779	-89	-0.5%

Source: BLS Occupational Employment Statistics by metropolitan and nonmetropolitan region (2012-2016)

Demand Analysis: Business, Management & Administration, SOC Codes

Fast Growing Occupations in the Business, Management, and Administration Cluster requiring an Associate's or Bachelor's Degree

Occupation	2016, Employment	2012, Employment	Change, 2012-2016	CAGR, 2012-2016
43-6011: Executive Secretaries and Executive Administrative Assistants	1180	1010	170	3.2%
27-3031: Public Relations Specialists	500	380	120	5.6%
13-1161: Market Research Analysts and Marketing Specialists	270	205	65	5.7%
13-2031: Budget Analysts	50	10	40	38.0%
11-3051: Industrial Production Managers	160	157	3	0.4%
Other	1200	1430	-230	-3.4%

Source: BLS Occupational Employment Statistics by metropolitan and nonmetropolitan region (2012-2016)

Demand Analysis: Finance, SOC Codes

Fast Growing Occupations in the Finance Cluster Requiring an Associate's or Bachelor's Degree

Occupation	2016, Employment	2012, Employment	Change, 2012-2016	CAGR, 2012-2016
41-4012: Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	3280	2540	740	5.2%
13-2072: Loan Officers	1140	980	160	3.1%
13-1041: Compliance Officers	840	690	150	4.0%
41-3031: Securities, Commodities, and Financial Services Sales Agents	270	190	80	7.3%
13-2052: Personal Financial Advisors	170	120	50	7.2%
13-1031: Claims Adjusters, Examiners, and Investigators	70	110	-40	-8.6%

Source: BLS Occupational Employment Statistics by metropolitan and nonmetropolitan region (2012-2016)

Demand Analysis: Education and Training, SOC Codes

Fast Growing Occupations in the Education and Training Cluster requiring an Associate's or Bachelor's Degree

Occupation	2016, Employment	2012, Employment	Change, 2012-2016	CAGR, 2012-2016
25-2054: Special Education Teachers, Secondary School	590	370	220	9.8%
25-2021: Elementary School Teachers, Except Special Education	4,170	3,980	190	0.9%
25-2031: Secondary School Teachers, Except Special and Career/Technical Education	3,320	3,190	130	0.8%
21-1012: Educational, Guidance, School, and Vocational Counselors	860	755	105	2.6%
25-3011: Adult Basic and Secondary Education and Literacy Teachers and Instructors	200	100	100	14.9%
Other	6,080	5,688	392	-5%

Source: BLS Occupational Employment Statistics by metropolitan and nonmetropolitan region (2012-2016)

Demand Analysis: Science, Technology, Engineering & Math, SOC Codes

Fast Growing Occupations in the Science, Technology, Engineering, and Mathematics Cluster requiring an Associate's or Bachelor's Degree

Occupation	2016, Employment	2012, Employment	Change, 2012-2016	CAGR, 2012-2016
17-2051: Civil Engineers	1.110	730	380	8.7%
15-1132: Software Developers, Applications	370	199	171	13.2%
15-1151: Computer User Support Specialists	780	630	150	4.4%
15-1142: Network and Computer Systems Administrators	770	620	150	4.4%
15-1152: Computer Network Support Specialists	320	240	80	5.9%
Other	1.570	1.465	105	1.4%

Source: BLS Occupational Employment Statistics by metropolitan and nonmetropolitan region (2012-2016)

Summary of Method for Labor Market Trends

Labor market demand

- **Trends**

- **Gaps - supply or oversupply**

- **Competitive intensity of program offerings**

Demand
[(Net new openings + replacement + Burning Glass Employer Demand) - non-degree jobs]

Key Research Findings - Employment growth (Demand)

Largest estimated employment opportunity matched to educational clusters

- Health science
- Finance
- Education and training
- Science, technology, engineering, and math
- Business, management, and administration

Key supply implications

- *Health science*: Significant degree production not sufficient for growth potential
- *Finance:* Related skill set to business and management
- *Education and training:* Area of shortage and high employee turnover
- *Science, technology, engineering, and math:* Potential high impact of certification trend
- *Business, management, and administration:* Diverse, general skills area

03 c
Research Findings: Gap Analysis

Question to be answered:
Based on the gap between labor market needs and educational supply in occupational groups, what types of programs are viable in the market area?

Gap Analysis

What is the "gap"?

The over-/under-supply of

Educational program graduates going into the workforce

versus

Occupations available for the corresponding degrees.

Demand
[(Net new openings + replacement + Burning Glass Employer Demand) - non-degree jobs]

GAP

Supply
(SAM ← TAM) - Distance methodology
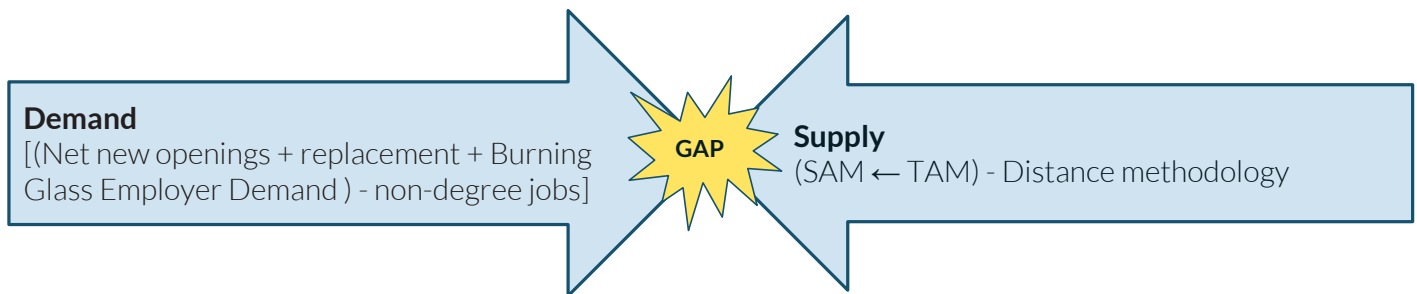
Gap — Labor Market vs. Degrees Conferred (2016)

- Largest **Current Gap** is in Health Sciences, Business Management, Agriculture and Human Services

Cluster Title	Average In-area Gross Jobs	In-area Graduates
Health Sciences	3,758	904
Business, Management and Administration	787	503
Agriculture, Food and Natural Resources	685	276
Human Services	400	258
Marketing Sales and Service	373	35
Finance	260	36
Education and Training	256	944
Manufacturing	254	195
Hospitality and Tourism	211	34
Architecture and Construction	163	66
Transportation, Distribution, and Logistics	108	75
Law, Public Safety, Corrections	85	230
Science, Technology, Engineering and Mathematics	83	888
Arts, Audio/Video Technology and Communic...	70	259
Government and Public Administration	2	41

Note: Gap = Gross Demand (Occupations) - Educational Supply (Conferrals)

Workforce Gap: Undersupply and Oversupply (2026)
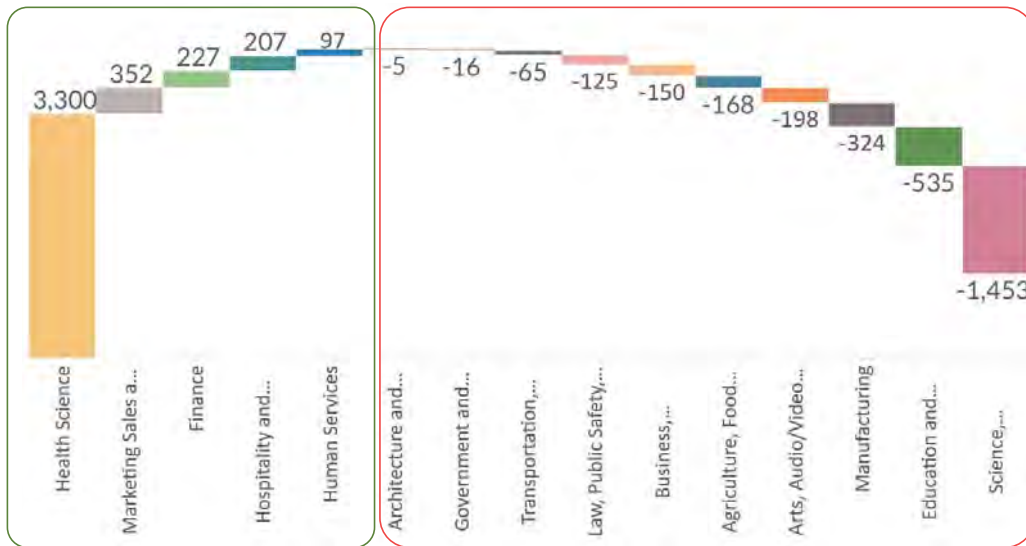
Largest **Undersupply** between Educational Supply and Labor Market Demand in

- Health Sciences,
- Marketing Sales and Service,
- Finance,
- Hospitality and Tourism...

There is an **Oversupply** in

- *STEM*
- *Education and Training*
- Manufacturing...

These education programs produce qualified graduates in a sector that lacks work opportunities,

Net Gap =
Labor Demand (Occupations) - Educational Supply (Conferrals)

43

Projected Gap Size by Cluster (2026) - Undersupply
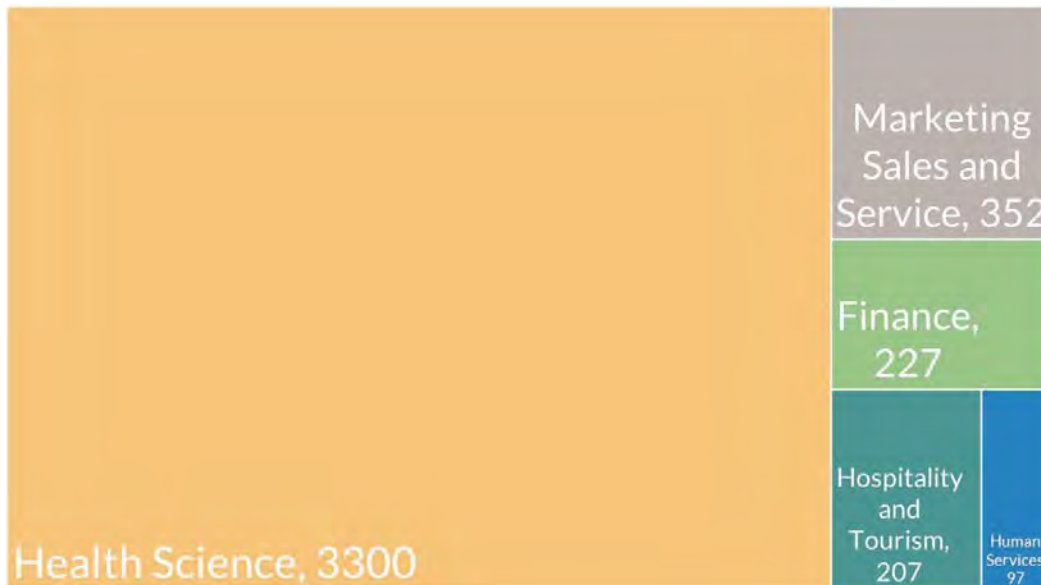
Undersupply in Health Sciences, Marketing Sales and Service, Finance, Hospitality and Tourism.

Note: Gap = Gross Demand (Occupations) - Educational Supply (Conferrals)

44

Projected Gap Size by Cluster (2026) - Oversupply

Science, Technology, Engineering and Mathematics,-1453

Education and Training,-535

Manufacturing, -324

Arts, Audio/Video Technology and Communications, -198

Agriculture, Food and Natural Resources, -168

Business Management and Administration, -150

Law, Public Safety, Corrections, -125

Transportation, Distribution, and Logistics, 65

Oversupply

Oversupply in STEM, and Education and Training: These are educational programs, with insufficient estimated jobs within the region.

Note: Gap = Gross Demand (Occupations) - Educational Supply (Conferrals)

45

Projected Gap by Program — Health Sciences

Descriptive Program	Gap (2016)	Gap Projected (2026)
Nursing	2,654	3,124
Medical Records	58	75
Medical Services Management	54	72
Emergency Medical Technology	40	51
Medical Radiologic Technology	44	49
Occupational Therapy Assisting	17	39
Medical Laboratory Technician	17	33
Respiratory Therapy	21	24
Other	-3	22
Medical Office and Clerical	13	16
Surgical Technology	10	16
Optical Technology	-2	-2
Massage	-14	-4
Miscellaneous Health Services	-10	-4
Pharmacy	-33	-16
Dental Hygiene	-19	-33
Veterinary Assisting/Technology	-18	-33
Speech Pathology/Audiology	-42	-42
LPN	18	-90
Psychology	-163	-163

In 2026, there will not be enough **Health Sciences** graduates in:

- Nursing,
- Medical Records,
- Medical Services Management,
- Emergency Medical Technology

In 2026, there will be more **Health Sciences** graduates than jobs available in:

- Psychology,
- LPN,
- Speech Pathology,
- Veterinary Assisting

Gap = Gross Demand - Educational Supply
= Occupations - Conferrals

46

Projected Gap by Program — STEM

Descriptive Program	Gap (2016)	Gap Projected (2026)
Computer Systems	26	23
Other	1	2
Computer Engineering	-3	-2
Physics/Astronomy	-13	-3
Materials Engineering	-6	-6
Electrical/Electronic Engineering	-30	-13
Industrial Engineering	-13	-13
Anthropology and Archeology	-25	-15
Geography	-19	-19
Chemistry	-20	-20
Civil Engineering	-61	-38
Atmospheric/Space Science	-7	-61
Earth Science	-52	-73
Chemical Engineering	-49	-129
Mechanical Engineering	-78	-197
Biological/Life Science	-149	-251
Petroleum Engineering	-58	-275

In 2026, there will not be enough **STEM** graduates in:

- Computer Systems

In 2026, there will be more **STEM** graduates than jobs available in:

- Petroleum Engineering,
- Bio-/Life Science,
- Mechanical Engineering,
- Chemical Engineering

Gap = Gross Demand - Educational Supply
= Occupations - Conferrals

Projected Gap by Program — Education & Training

Descriptive Program	Gap (2016)	Gap Projected (2026)
Preschool Education	26	38
Other	-5	8
Health, Physical Education and Fitness	-5	-4
Instructional Design	-20	-20
Secondary and Vocational Education	-80	-20
Educational Administration	-33	-81
Elementary Education	-194	-153

In 2026, there will not be enough **Education** graduates in:

- Preschool Education

In 2026, there will be more **Education** graduates than jobs available in:

- Elementary Education
- Educational Administration
- Secondary and Vocational Education

Gap = Gross Demand - Educational Supply
= Occupations - Conferrals

Projected Gap by Program — Business, Management & Administration

Descriptive Program	Gap (2016)	Gap Projected (2026)
Secretarial	123	124
Bookkeeping	120	111
Human Resources Management	17	18
Other	2	4
Accounting	-91	-172
Economics	-33	-286
Business Management and Administration	-255	-320

In 2026, there will not be enough **Management** graduates in:

- Secretarial
- Bookkeeping
- HR Management

In 2026, there will be more **Management** graduates than jobs available in:

- Business Management
- Economics
- Accounting

*Gap = Gross Demand - Educational Supply
= Occupations - Conferrals*

Projected Gap by Program — Construction, Hospitality

Cluster	Descriptive Program	Gap (2016)	Gap Projected (2026)
Architecture and Construction	Electrical	41	30
	Construction and Heavy Equipment Operation	22	23
	Other	6	6
	Building and Construction Inspection	-2	-2
	Drafting	-23	-85
Hospitality and Tourism	Chef	46	66
	Other	2	3

In 2026, there will not be enough **Construction** graduates in:

- Secretarial
- Construction & Heavy Equipment

In 2026, there will be more **Construction** graduates than jobs available in:

- Building and Construction Inspection
- Drafting

In 2026, there will not be enough **Hospitality and Tourism** graduates for **Chef** jobs.

*Gap = Gross Demand - Educational Supply
= Occupations - Conferrals*

Projected Gap by Program — Arts & Communications, Government, Marketing, Transportation

Cluster	Descriptive Program	Gap (2016)	Gap Projected (2026)
Arts, Audio/Video Technology and Communications	Other	1	1
	Miscellaneous Arts Programs	-1	-1
	Photography	-21	-11
	Music	-22	-12
	Arts and Crafts	-36	-14
	Design	1	-32
	Digital Graphics	-6	-34
	Dramatic Arts (Theater/Film)	-25	-35
	Communications, Journalism and Broadcasting	-96	-86
Finance	Finance and Financial Management Services	-24	-34
Government and Public Administ..	Other	0	0
	Political Science	-30	-17
Marketing Sale..	Marketing Management and Research	-35	-45
Transportation, Distribution, and Logistics	Other	-3	0
	Automobile Mechanics	-2	0
	Diesel Engine Repair	-54	-165

In 2026, there will be more **Arts, Audio/Video Technology** graduates than jobs available in:

- Communications, Journalism
- Dramatic Arts
- Digital Graphics
- Design

- In 2026, there will be more **Finance** graduates than jobs available in **Finance & Financial Management**

- In 2026, there will be more **Government and Public Administration** graduates than jobs available in **Political Science**

- In 2026, there will be more **Marketing Sales and Service** graduates than jobs available in **Marketing Management and Research**

- In 2026, there will be more **Transportation, Distribution, and Logistics** graduates than jobs available in **Diesel Engine Repair**

Gap = Gross Demand - Educational Supply
= Occupations - Conferrals

Gap Analysis - In Summary

Demand
Net new openings
+ Replacement
+ Burning Glass Employer Demand
- Non-degree jobs

GAP

Supply
(SAM ← TAM) - Distance methodology
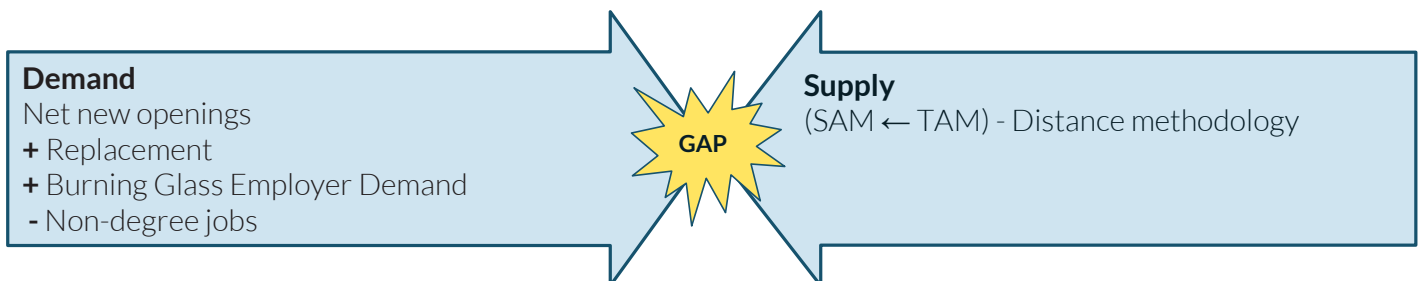
Key Research Findings - Projected Gap by Program Cluster

Largest estimated *under* supply of degreed graduates over next 10 years
- Health sciences: ~3,300
- Marketing, sales, and service ~350
- Finance ~227
- Hospitality & Tourism ~207

Largest estimated *over* supply of degreed graduates over next 10 years
- Science, technology, engineering, and math ~1,453
- Education and training ~535

Key Research Findings - Implications of Gap by Cluster

Largest estimated *under* supply of degreed graduates over next 10 years
- *Health sciences:* Appears to be area of clear opportunity
- *Marketing, sales, & service:* Supports growth of sophisticated companies in area
- *Finance:* Focus on appropriate skills for a rural area
- *Hospitality & Tourism*: Appears to be area of consistent opportunity in Wyoming but limited in Campbell County.

Largest estimated *over* supply of degreed graduates over next 10 years
- *Science, technology, engineering, and math:* Highest potential to shift to under supply based on economic development strategies
- *Education and training:* Paradox with undersupply of teachers, high turnover, potential population growth, and bachelor's degree requirement

04
Program Priorities Analysis

Question to be answered:
What are the most viable programs based on desirability and ability to execute for each set of stakeholders?

Developing Solutions that fit Campbell County

State	% High School Graduate	Rank	% Bachelor's Degree	Rank	% Advanced Degree	Rank
Montana	92.80%	1	29.50%	20	9.50%	32
Wyoming	92.30%	3	25.70%	40	8.60%	40
South Dakota	90.90%	13	27.00%	33	8.00%	43
Colorado	90.70%	14	38.10%	2	14.00%	7
Nebraska	90.70%	14	29.30%	21	9.70%	30

Wyoming is different from neighboring states in the mix of occupations and educational attainment

- High level of high school graduation,
- But lower level of bachelor's attainment.

Moving into Phase III, solutions developed need to fit the situation of Wyoming.

Methodology

The desirability and ability to address score ranks the possibility to implement the most attractive programs.

Desirability

Size of the sector: objective rating based on labor market data.

Growth rates: objective rating based on economic development data.

Fit to economic development strategy: rating assessed based on regional economic development strategy.

Location quotient: objective rating based on region's industrial specialization relative to larger geographic unit.

Automation risk: rating assessed based on expert opinion and risk tolerance research.

Economic impact / multiplier: objective rating based on effect particular cluster will have on additional local economic activity.

Ability to address

Funding: rating based on interviews with institutional leadership confirming strategy of regional education institutions.

Organizational Capacity: rating based on interviews with institutional leadership confirming strategy of regional education institutions.

State / Institution restrictions: objective rating based on state and institutional development policy.

Steps in developing the Program Priority Matrix

1. **Development of desirability score**
   - Use of economics data for all but fit to economic development strategy
   - Scoring of clusters based on economic development strategy reached with consultation with Energy Capital
2. **Development of ability to address score**
   - Funding scored based on available options
   - Organizational capability based on Gillette College + partners perceived capability
   - Estimation of potential restrictions based on rating from stakeholders
3. **Circle size**
   - Determined by the size of available educational offerings
4. **Quadrants**
   - Based on typical models for strategic direction

Model is dynamic and can be updated based on refined inputs

Generic Strategies of Priority Matrix

1. **Execute on Growth**
   - Evidence of strong growth and ability to execute
   - Focus on delivering added resources to ensure quality growth
2. **Redirect Resources**
   - Need to differentiate how to address opportunities
   - Increase resources to some areas and decrease to others
3. **De-emphasize**
   - Indicates areas of potential over-emphasis
   - Carefully manage present and future commitments
4. **Find resources**
   - Areas of need that are not clearly contemplated in present actions
   - Find resources for intelligent experimentation and growth

Suggested Program Priorities

The bubble size represents the Educational Supply. (Conferrals, 2016)

Source: IPEDS, Stakeholder Input Analysis, 2017
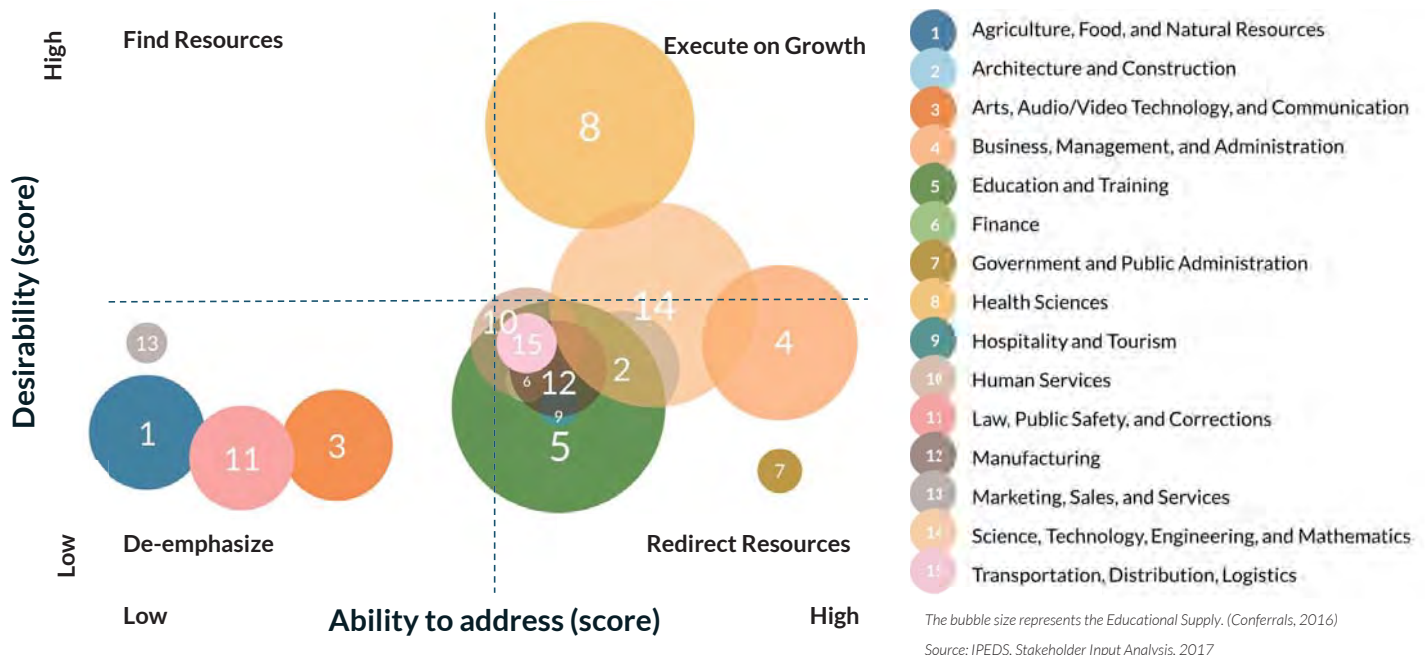
Program Priority Matrix Key Implications

1. **Execute on Growth**
   - Health Sciences

2. **Redirect Resources**
   - STEM
   - Business, Management, and Administration
   - Human Services
   - Education and Training
3. **De-emphasize**
   - Agricultural, Food, and Natural Resources
   - Arts, AV, and Communication
   - Law, Public Safety, and Corrections
   - Marketing, Sales, and Service
   - Finance

Key Actions suggested by Program Priority Matrix

1. **Execute on Growth**
   - Health Sciences - *None*

2. **Redirect Resources**
   - STEM - *Selective focus*
   - Business, Management, and Administration - *Selective focus + finance, marketing*
   - Human Services - *Selective focus*
   - Education and Training - *Selective focus to address high need / high turnover paradox*
3. **De-emphasize**
   - Agricultural, Food, and Natural resources - *None*
   - Arts, AV, and Communication- *None*
   - Law, Public Safety, and Corrections- *None*
   - Marketing, Sales, and Service - *Serve through business administration*
   - Finance - *Serve through business administration*

Temperature Check
Stakeholder Conversations and Survey

- **Stakeholder conversations**
  - Conducted 1:1 interviews and conversations with key leaders and stakeholders in Gillette and Laramie
  - Purpose was to develop clear understanding of context
- **Stakeholder survey**
  - Structured survey on workforce needs and support of higher education
  - 60 community leaders surveyed / 63% return rate
- **Key themes / conclusions**
  - **Nearly 50%** of the responses note consider the rate of change in the local workforce as average, while over a **25%** see it as moderately fast changing and growing
  - Greater need seen for bachelor's qualifications by most respondents
  - Strong support for offering 4-year programs locally

Summary of Key Survey Results 1/2

A survey of 60 business leaders in the region, with a 63% response rate.

The representative respondent has been operating in Northeast Wyoming for over 20 years (69%) and has 11-50 employees (42%). In addition, 78% of respondents are considering Gillette, Northeast Wyoming, or the State of Wyoming as their business' primary geographic market.

The largest represented industry among all respondents is Professional Services with 35%, followed by 11% in Energy and Mining, and 9% in Construction.

Major highlights of the survey include:

- **47%** of survey respondents identify lack of training or lack of education as the key source of skills gaps in Northeast Wyoming

- **Just under 40%** of respondents cite 4-year bachelor's degrees as the most needed degree to support future job creation and growth over the next three years

- **39%** of respondents identify the regions growth / change as fast or moderately fast

Summary of Key Survey Results 2/2

What do you think is the key source of skills gaps in Northeast Wyoming?

Uncertain 29.5%

Lack of education 20.5%

Lack of training 27.3%

Less interest in 22.7%

What skillset is most needed in order to support future job creation and growth over the next three years?

- Transportation, Distribution, and Logistics
- Science, Technology, Engineering and Mathematics
- Manufacturing Career
- Law, Public Safety, Corrections and Security
- Human Services
- Health Sciences
- Education and Training
- Business, Management and Administration
- Arts, Audio/Video Technology and Communications
- Agriculture, Food and Natural Resource

Future Skill Needed Summary

Grouping 1	**Grouping 2**	**Grouping 3**
Education and Training; Health Sciences; Science, Technology, Engineering and Mathematics	Business, Management and Administration; Human Services; Law, Public Safety, Corrections and Security	Agriculture, Food and Natural Resource; Arts, Audio/Video Technology and Communications; Manufacturing Career; Transportation, Distribution, and Logistics

n = 38

n = 43

n = 38

05

Pathways to Growth: Three Roadmaps

Three Potential Future Pathways to Growth

I. Program Adaption / Expansion	II. Enabling New Offerings	III. Leveraging Economic Development
A. Adapting / Expanding GC Programs **B.** Match Facilities and Support Services to Program Expansion	**A.** New credential models **B.** Funding approaches	Leveraging promising economic clusters ○ Energy Services ○ Health Services ○ Business Services ○ Logistics Services

Three Potential Future Pathways to Growth

I. Program Adaption / Expansion	II. Enabling New Offerings	III. Leveraging Economic Development
A. Adapting / Expanding GC Programs B. Match Facilities and Support Services to Program Expansion	A. New credential models B. Funding approaches	Leveraging promising economic clusters ○ Energy Services ○ Health Services ○ Business Services ○ Logistics Services

I.A. Program Expansion / Adaptation--Key Enablers

Statewide Partnering

Key Partnerships

Forge partnerships with higher education institutions, state government agencies, and businesses to tighten student skill-sets and enhance employability in the region.

Develop Learning Pathways

Lean towards partnerships where apprenticeships, internships, short term training programs, and bootcamps can help make learning more relevant and potentially function as a pipeline for future employment. Hone in on programs or partnerships that offer high quality, career-focused learning opportunities.

Workforce Skills

Develop partnerships in the fastest growing occupational sectors, with a focus primarily on developing future-oriented (2026) workforce skills. A heightened skill alignment between education and workforce will help close the labor gap while also increasing investment in the region.

I.A. Program Expansion / Adaptation
Health Sciences

Context
- **Program Priority Matrix:** *Execute on Growth*
- **Supply/Demand Gap 2026 Estimate:** *3,300 under supply of graduates per year*
- **Specific Considerations**
  - *Most potential jobs are in nursing and nursing related areas*
  - *Current high completion, placement and NCLEX pass rates*
  - *Degree levels are mixed with strong demand at associate's to bachelor's level*
  - *Certificates will play a growing role*
  - *Challenges exist in ensuring adequate practicum slots or developing substitutes*

Suggested Actions
- **Explore needed skills and degree mix and levels more deeply with healthcare providers**
- **Develop approaches for branch programs for ADN/LPN to BSN**
- **Need for scholarship funding sources**

I.A. Program Expansion / Adaptation
STEM

Context
- **Program Priority Matrix:** *Redirect resources*
- **Supply/Demand Gap 2026 Estimate:** *1,453 over supply of graduates per year*
- **Specific Considerations**
  - *Key element in economic development strategies, e.g. advanced carbon uses*
  - *Aggregate over supply levels may consist of a mix of under and over supplied technical specialities*
  - *Faculty availability may be an issue*
  - *Degree levels and mixes need additional exploration*

Suggested Actions
- **Build on College of Engineering and Applied Sciences partnership with UW**
- **Explore blended/online options to mitigate faculty availability**

I.A. Program Expansion / Adaptation
Business, Mgmt, Admin (+ Finance + Marketing)

Context
- **Program Priority Matrix:** *Redirect resources*
- **Supply/Demand Gap 2026 Estimate:** *150 under supply of graduates per year*
- **Specific Considerations**
  - *More specialized skills are likely to expand while others shrink*
  - *Can serve finance and marketing through business programs*
  - *Business disciplines are compatible with blended / online modalities*
  - *2 + 2 programs are common pathways for bachelor's*

Suggested Actions
- **Ensure that business programs are transferrable (e.g. specialized accreditation)**
- **Blended or online support locations, e.g. video enabled classrooms and tutorial services in Gillette**
- **Tailor curriculum to include support of small business and startups**

I.A. Program Expansion / Adaptation
Human Services

Context
- **Program Priority Matrix:** *Redirect resources*
- **Supply/Demand Gap 2026 Estimate:** *97 under supply of graduates per year*
- **Specific Considerations**
  - *Challenges to maintain program size due to highly diverse occupations with small numbers*
  - *Needed education for many aspects can come through business programs*
  - *Tendency towards bachelor's requirements in many governmental positions*

Suggested Actions
- **Leverage business curriculum when possible to meet needs**
- **Consider targeted partnerships with 4-year programs**
- **Potential to use pure online programs with local student support**

I.A. Program Expansion / Adaptation
Education and Training

Context
- **Program Priority Matrix:** *Redirect resources*
- **Supply/Demand Gap 2026 Estimate:** *535 over supply of graduates per year*
- **Specific Considerations**
  - *Occupation tends to have high turnover and migration of people*
  - *Employment levels cyclical and often related to funding issues*
  - *Minimum qualification is bachelor's degree*
  - *Student teaching supervision has been an issue*

Suggested Actions
- **Partnered program (possibly blended/online) for upper division and student teaching**
- **Employ more flexible models for student teaching supervision to allow local delivery**

Three Potential Future Pathways to Growth (New)

I. Program Adaption / Expansion	**II. Enabling New Offerings**	*III. Leveraging Economic Development*
A. Adapting / Expanding GC Programs *B. Match Facilities and Support Services to Program Expansion*	**A. New credential models** **B. Funding approaches**	*Leveraging promising economic clusters* ○ *Energy Services* ○ *Health Services* ○ *Business Services* ○ *Logistics Services*

II.A. New Credential Models

Apprenticeships	Entrepreneurship Enablement / Job Co-Creation	Alternative Credentialing / Certification
Lower entry barriers to working in new fields by creating programs that allow students and displaced workers to learn on the job	Support motivated workers to create new businesses, improving self-employment and job creation rates alongside regional economics	Use non-traditional methods, e.g. stackable certificates, to measure progress in training and education to give students of all ages increased access to obtaining new skills and degrees
Extend Current GC Process	*Build Economic Dev. Partnering*	*Influence state authorization*

Gillette College Potential Roles

II.A. New Credential Pathways

Apprenticeships

Adopting an apprenticeship model, especially in partnership with employers, would create a strong outcome for displaced workers in their ability to quickly obtain new skills while being employed.

There are a number of organizations offering apprenticeship programs where students emphasize experiential learning before or during their education.

Programs like Uncollege and Echoing Green give students the opportunity to develop on-the-job skills alongside the guidance of more traditional academic classwork and support.

Separately, trade schools continue to be an important player in workforce education. According to Genevieve Stevens, interim dean for instruction at Houston Community College's central campus, told the Houston Chronicle. "We started focusing on academic instruction, but left behind the notion of workforce education. However, in a two-year institution that costs less, the average work-force student can come out of that program with skills to gain immediate employment."

What this could look like:

Develop partnerships with corporations based in the region looking to develop a talent pipeline. By offering the opportunity for an apprenticeship alongside a short-term training program or a traditional degree, students will be better prepared for employment with the skills they need to be effective in jobs that are in high-demand.

II.A. New Credential Pathways

Entrepreneurship Enablement

Wyoming should focus on supporting small business formation in order to capitalize on the training gap and associated opportunity to employ more displaced workers.

Three potential areas of focus:
- Small business formation support
- High-growth technology startup ecosystem
- University technology commercialization through spinouts

Supporting small business formation is the option that provides the largest benefit for employment and economic development, especially in the short term. 46.2% of private sector employment is at firms less than 250 employees, and comprise 41.2% of private sector payroll.

Small businesses also accounted for 63.3% of net new jobs from the third quarter of 1992 until the third quarter of 2013.

> **What this could look like:**
>
> Partnering with the Wyoming branch of the Small Business Association (SBA) to create a program supporting displaced workers to start new small businesses.
>
> Common areas of difficulty in small business entrepreneurship that require support include:
> - Business and financial planning
> - Understanding startup costs
> - Legal work, including registration and filing for licenses
> - Ongoing business management
> - Acquiring customers through marketing and sales

II.A. New Credential Pathways

Alternative Credentialing

A system for alternative credentialing would lead to a strong point of access to training for workers who are overloaded with current work hour requirements, or displaced workers who are in emotional duress.

Online degree programs like Coursera and edX are democratizing access to education, but the verification that a student took and passed a class has given rise to many new forms of credentials. Some of these include:
- Digital Badges
- Stackable Certificates
- Nanodegrees

Another practice that is growing in popularity is Credit for Prior Learning (CPL) students receive college credit for demonstrated competency and mastery through experiential learning, which include work and life experiences, independent studies, and licensures and certifications.

Employers, in turn, are placing an increase emphasis on other forms of credentials outside of traditional degrees, giving these alternatives the opportunity to result in higher job placements.

> **What this could look like:**
>
> In the context of new program creation, stackable certificates could be awarded for the completion of short-term or flexible coursework like bootcamps or online coursework.
>
> According to John C. Hart, a professor of computer science at the University of Illinois, a "stackable credential is particularly suitable for non-traditional students balancing their education with other responsibilities like full-time jobs."
>
> "Students can step out and step back in as necessary," Hart says. - US News and World Report

II.A. Benefits—New Credential Pathways

| Improved accessibility for students | Reduction in education costs | Targeted Skill development with applied learning | Enables balancing education with employment |

The region may consider reorienting higher education focus towards *more flexible, non-traditional alternatives* to skill development.

Non-traditional alternatives like **apprenticeships** and **stackable certificates** are well suited to enable Campbell County's educated workforce and displaced workers towards improved skill development and employability.

I.B. Facilities and Support Services Considerations

Facilities strategy needs to match program adaptation and expansion

Facility and Support Considerations	Programs Clusters Served				
	Health Sciences	Education	STEM	Business	Human Services
Modernize Infrastructure: update facilities to stay ahead of innovation curve	Enhanced lab facilities and simulation technology		Modernize lab facilities and technology	Video enabled classrooms	
Expand Facilities: create more open floor space to accommodate regional growth	Expand geographical presence with branch programs		Expand open work space	Create blended or online support locations	Expand open work space
Technology-forward: adopt new technology and software infrastructure.	Explore degree mix / online education opportunities	Deliver blended/online education options	Deliver blended/online education options		Develop online education programs

I.B. Facilities and Support Services Considerations

Gillette College Facilities Focus

Modernize Infrastructure

Focus on facility improvement in *Healthcare*, *Business* and *STEM* programs. With the potential for an undersupply of ~664 degreed graduates, Business department should focus on investing in modernized video enabled classrooms that better facilitates exchanges of information and ideas.
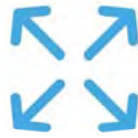
Expand Facility

Special focus should be given to *Health Sciences*, *STEM*, *Business*, and *Human Services* by expanding the different program's open work space. The development of more square footage and multi-functional instructional spaces will help accommodate future growth and prepare Campbell County for the global market.

Technology Forward

High-quality, technology-forward, online degree and blended learning programs will improve Gillette College's ability to address high impact clusters for future labor market needs and **businesses**.

II.B. Landscape of Non-Tuition Program Funding Sources [infographic]

NON-TRADITIONAL SOURCES	TRADITIONAL SOURCES	WORKFORCE PROGRAMS
Educational "Venture Capital"	Federal, State, or City Grants	Workforce retraining programs
Corporate Partnerships	Philanthropic contributions from Private Foundations, Businesses, or Individuals	Multi-institution workforce programs
Non-tuition program based revenue	In-Kind Support	Other workforce related grants
Education program based funding		**Workforce based funding**

II.B--Funding New Educational Offerings

Nontraditional Higher Education Sources

Edu Venture Capital

Pursue educational venture capital funding that gives higher education institutions the flexibility to pursue innovation with mutually beneficial partnerships in higher education. Option used by **CSU-Global** in Colorado and **Purdue-Kaplan** in Indiana.

Corporate Partnerships

Seeking out investors with vested interest in returns and non-philanthropic corporate partnerships will help establish new forward-thinking education models.

Non-Tuition Based Revenue

Discover new revenue generating opportunities outside tuition stream by looking towards activities related to alumni and innovation hubs.

II.B--Funding New Educational Offerings

Traditional, Non-tuition Higher Education Sources

Federal, State, and City Grants

Fund new online educational offerings, state-of-the-art labs, and resource centers by tapping further into federal, state, and city grants.

Philanthropic Contributions

Look more deeply into traditional philanthropic contributions from private foundations, businesses, and individuals.

In-Kind Support

Explore philanthropic, non-cash services and donations from the local/state/national community for new products and services to help sustain Gillette County's new direction.

II.B--Funding New Workforce Offerings

Workforce-based Sources

Workforce Retraining Programs

Fund high-impact workforce retraining programs through partnerships with industry leaders and federally funded grants. Goldwind and Casper College along with Workforce West Virginia have developed successful retraining programs.

Multi-Institutional Workforce Programs

High cost of workforce development can be mitigated with multi-institutional, and mutually beneficial, support. Salesforce and Indiana, Goldwind Americas, along with Starbucks and Arizona State have developed programs that meets shared needs of school and corporate partner.

Other Workforce Related Grants

Explore grants opportunities, particularly in the Department of Labor, to help expand education and training opportunities

Examples: Academic Partnerships Opportunities

There are varying levels of partnership opportunities in the Campbell County region that will contribute to the development of the local workforce while also raising visibility within respective departments.

Local, State, and National Level

A key part of the strategy is to discover like-minded organizations and businesses at the local, state, and national level who can act as thought or action partners in the development of innovative educational programs.

Local Non-Profit to Corporate

Spearheading partnerships, from local non-profit to corporate, will help Campbell Country region create targeted skill training through cutting edge technology to minimize income disruption and build talent funnels.

Examples: Partnerships Opportunities

Highlights

Depending on the main industry and vocational focuses chosen for development, there are a variety of opportunities for partnerships

Partnerships can include
- **Action Partners** who will help build programming, and
- **Thought Partners** who will aid in development of cutting edge practices

Corporate Partnerships

Building a program with relevant industry companies to build a talent funnel with training on campus. Focus on short courses or on-the-job training to minimize income disruption and flexibility of movement into new roles.

Alternatively, create a center that incorporates sponsored research, job training, and cutting edge technology using corporate funding specifically training for jobs that are forecasted to have large skill gaps. An example of this is the ATAC at Great Bay CC.

Existing Program Expansion

Someone who can help expand awareness about the BRAND Nursing program and other healthcare to cover that labor gap.

Bootcamps

Partner with an established bootcamp provider to create a unique offering around targeted skill training areas.

Examples: Potential Partner Institutions

Highlights

Considering the relevant opportunities, here are some examples of high-impact local organizations that could be pursued as potential partners

Goldwind Works

Goldwind partnered with Casper College (also in the UW network) to create a two-week retraining program focused on wind certifications. The training, including meals and transportation, is paid for in full by Goldwind.

The program provide participants with basic technical and safety qualifications and certifications to assist in obtaining wind turbine technician internships and full-time positions.

This is directly aligned with the UW Center for Energy Economics and Public Policy's findings to support the state's wind development effort.

WY Workforce

Through the Workforce Innovation & Opportunity Act, Wyoming Workforce is targeting the following industries for training and job placement:

- Healthcare/Healthcare Technology
- Construction/Trades
- Transportation/CDL Licenses
- Environmental Technology
- Administrative Office Technology

The goal of a partnership would be to create an all-in-one combination of a workforce hub and targeted training programs, where local workers can access everything they need while filing these specific skills gaps.

Example: Statewide Programming Case Study: WorkForceWV

Highlights

As one of the other major coal production states, West Virginia has successfully leveraged federal funding for retraining of coal workers

Many partners offering courses that are eligible for reimbursement coverage under the grant provisions

Opportunity to work with higher education institutions across the state as well as state government to design programming specific for this purpose

Federally Funded Retraining [1]

WorkForce West Virginia is a state government agency funded through the U.S. Department of Labor that oversees the state unemployment insurance program as well as a network of workforce development services designed to provide West Virginia's citizens and employers the opportunity to compete in today's competitive global economy.

WorkForce WV centralizes job opportunities, unemployment compensation, training, tax incentives and labor market information, all available at 13 comprehensive career centers throughout the state.

Statistics

- $1.8M in funding covered over 1000 retrained workers.[2]
- Latest grant of $7.6M in 2016[3]
- 206 Institutions offering retraining program courses eligible for coverage.[4]
- Coverage of up to $5,400 per person

Process for Students

As listed on the WorkForceWV website:
- Step #1: Get your high school diploma or equivalent
- Step #2: Identify your skills, assessments, and learn job-etiquette
- Step #3: Earn a certificate, degree or license
- Step #4: Polish your job-seeking skills
- Step #5: Find and secure a stable, well-paying job

Sources:
1: WorkforceWV.org 2: WVCommerce.org 3: Preston County News 4: Public.WorkforceWV.org

Examples: Most Relevant Non-Traditional Funding Models

Edu Venture Capital

Opportunities in higher education innovation and education technology are drawing venture capital support. Several universities have been able to utilize the money, especially in new company creation and technology commercialization.

Corporate Partnerships

Both corporations and higher education institutions stand to benefit from strong partnerships. Funding is available for mutually beneficial courses as well as specific support from new companies in the energy industry.

Bootcamps

Bootcamps have been successfully implemented by independent organizations and higher education institutions, offering a fast, career-focused way to gain new skills.

Edu Venture Capital

Highlights

Venture Capital funding is available because of opportunities for innovation in higher education, personalized EdTech, and the unbundling of college degrees

Two types of successful models: funding from institution set aside for special projects with an application workflow, commercialization-focused funds with university affiliation and standard VC-structure

1
Special Projects Fund

The Colorado State University System created a $1.5M Venture Capital Fund in 2013[1]. With the proceeds, they were able to fund major initiatives such as[2]:

- **Colorado Policy Analytics and Learning Scale, a new venture from CSU-Global Campus for $330,000**
- Enterprise Student Partnership Program, a new venture from CSU in Fort Collins for $496,465
- CSU Local Government Collaborative, a new venture from CSU in Fort Collins for $250,000

2
Venture Creation

Venture Capital funds at are leading institutions are primarily focused on venture creation and technology commercialization. The creation of Venture Capital funds by higher education institutions is not unusual, but the focus is different.

University-backed Examples:
- OSU Venture Development Fund[3]
- Venture Center at UMN Office for Technology Commercialization[4]

University-affiliated Examples:
- Icon Venture Partners (University of Minnesota)[5]
- MentorTech Ventures (University of Pennsylvania)[6]

Sources:
1: CSUSystem.edu 2: ColoState.edu 3: OregonState.edu 4: UMN.edu 5: IconVP.com 6: MentorTechVentures.com

Corporate Partnerships

Highlights

Opportunities to leverage outside funding to create programming that meets shared needs of corporate partner and home institution

Sustainable energy companies are actively pursuing retraining options

Secondary benefit of giving students access to potential employers after program completion

Recommendation

Seek out strategic educational partnerships with manufacturers, enterprise software companies, and food/drink/cloth chains to help bridge the skill gap

1
Salesforce and Indiana[1]

- Indiana Governor Eric Holcomb and Indianapolis Mayor Joe Hogsett to join Salesforce Chairman and CEO Marc Benioff for press conference
- Salesforce Tower supports company's commitment to add 800 new jobs over five years
- Salesforce advances workforce development in Indiana with 500 local apprenticeships by 2020
- Ohana floor to be open to Salesforce employees, customers, partners and the community

3
Goldwind Americas

- Chinese wind-turbine manufacturer, Goldwind, announced a free training program for former coal workers.[3]
- Adapting coal-mining skills to wind farming seemed a natural fit because ex-miners possess the type of experience needed to work in difficult conditions required to maintain a wind farm. "If we can tap into that market and also help out folks that might be experiencing some challenges in the workforce today, I think that it can be a win-win situation," David Halligan, chief executive of Goldwind Americas.[4]

2
Starbucks and Arizona State[2]

- Starbucks is doubling the size of its program to provide employees with tuition support for Arizona State University's online programs. The changes will now cover the first two years of a degree program, not just the last two years,
- company will now reimburse students after each semester

4
Chrysler and Strayer[5]

- All dealership employees could be entitled to free online or campus tuition at Strayer University for the Associate's, bachelor's and master's programs.
- No money would have to come from employees as Individual dealerships will have to pay part of the cost for employee participate.
- Introduced to fight rapid turnover in dealerships that currently hurts many dealerships.

Sources:
1: Salesforce.com Investor Materials, 2: InsideHigherEd.com,3: NYTimes,
4: Quartz, 5:InsideHigherEd.com

Bootcamps

Highlights

Bootcamps are a proven model for fast skills training with career outcomes

Model has been used mainly for coding but is now a saturated market

High costs for students can be mitigated with institutional support

There is an opportunity to adapt the model in the context of retraining

Industry partnerships create direct pathways to careers for participants

Recommendation
Look more closely at the bootcamp landscape and discover bootcamps either developed by private companies or universities.

1
General Assembly

- Funding Model: Students pay $15k for 10-13 week courses[1], and the organization has raised $120M from a variety of investors.[2]
- Size: 20 campuses and over 40,000 graduates worldwide.[3]
- Partners: Many sponsoring partners including Google, Microsoft Ventures, McKinsey, American Express, Pearson, and the NYC Economic Development Corporation

3
LevelEDU at Northeastern University[7]

- Started with a data analytics bootcamp in 2014 with plans to expand to other focus areas
- Student pay $8k for 12 week course, lower cost because of institutional backing and existing partnerships with potential employers

2
Galvanize

- Funding Model: Students pay $16-21k for 12-24 week courses[6]. Galvanize has received 73.2M venture funding from venture capitalists and debt financing institutions.[5]
- Size: 728 Students graduated and were ready for employment in 2016.
- Success: 86% Placement rate of graduates within 6 months, with an average salary of about $85k. (2014 - 2016, focus is Web Development and Data Science)
- Partners: Galvanize has a corporate membership program that offers employee recruitment and retention, technology consultation, and meeting space, among other benefits.[8]

Sources:
1: GeneralAssemb.ly 2: Crunchbase: General Assembly 3: LinkedIn: General Assembly 4: Galvanize.com 5: Crunchbase: Galvanize 6: LinkedIn: Galvanize 7: LevelEdu.com 8: Galvanize.com

Examples: Most Relevant Traditional Funding Models

Philanthropy

While philanthropy is a core component of higher education funding, new methods of fundraising for specific causes and scholarships have been effective in recent case studies, especially when leveraging new digital engagement tools.

Philanthropy

Highlights

Affinity-based fundraising campaigns have been successful for other institutions

Establishing a campaign with clear messaging around the potential outcomes of retraining programs

Employ digital fundraising methodologies to increase general alumni engagement

Additional highly targeted effort toward prominent alumni, energy industry leaders in WY

Recommendation
Create charitable giving opportunities that engage the local community along with impactful donors. Pursue donor-focused digital fundraising technology with media that spark alumni's feelings of connection to their university.

1
SUNY[1]

SUNY campuses are tapping local communities and their unique extended donor bases to help support initiatives that provide more student scholarships, which in turn create a meaningful connection between donor and student.

As SUNY strives to maintain affordability for its students and their parents, it is impactful donors that have the ability to raise the margin of excellence. Private investment, now more than ever, is the key to securing SUNY's financial future and ensuring the highest quality education for its students.

2
University of Northern Iowa

The University of Northern Iowa sees 80% increase in average gift In digital fundraising pilot[2]

- Average pledge of $115 more than the control group
- 43% higher response rate
- 237% increase in dollar-per-record rate

3
Engaging Young Alumni

Achieve Inc., a fundraising consultancy, developed a report on effective engagement of young alumni.[3] Key takeaways:
- Young alumni give to individuals and causes, not organizations
- Young alumni need to feel connected to the university community
- Young alumni are more likely to give when they have options

Sources:
1: CCSFundraising.com 2: RuffaloNL.com 3: AchieveAgency.com

Qualifying the Workforce

Highlights

As discussed in earlier slides, Higher Education is uniquely placed to understand the needs of the local region to directly aid with skills training and economic development

With the overarching goal of deploying educational resources to increase employment and improve regional economics, it is important to consider the national and local trends around degrees.

National Trends

Degrees have traditionally been been the way of training graduates to successfully transition into occupations of all clusters.

MOOCs and other trending delivery methods in past years, like the unbundling of college degrees, are democratizing access given the rise of nontraditional students and increasing tuition costs.

Northeast Wyoming Trends

Wyoming has a high level of high school graduation, but lower level of bachelor's attainment.

Main target areas that overlap between State goals and identified occupational clusters in this report:
- Healthcare services
- Business and financial services
- Transportation and logistics
- Energy services and manufacturing

The Need for Alternatives to Traditional Degrees

Highlights

Beyond the immediate needs for retraining workers from the coal industry, it is important to consider the increasing need for skills retraining and upskilling due to market forces such as automation in the coming decades.

In the modern age, moderate to highly skilled workers need to learn new technologies every three to five years, instead of once every ten to twenty years.

Traditional Options

- 4-yr degree
    - Traditional
    - Co-op program
    - Work colleges
- 2-yr degree / technical college (trade schools)
- Start a business
- Apprenticeship / fellowship
- Join the military
- Work that does not require a degree
- For non-traditional workers: retraining programs

Challenges of Retraining

"It can take enormous intellectual and emotional efforts to pursue retraining, especially for people who have been rattled by sudden job loss or depressed by declining career prospects." - Ruth Graham, New York Times (2017)

"Not every learner has the time — or resources — to earn a traditional, credit-based degree. With alternative credentialing, students can take the knowledge they've gained from non-degree coursework to improve their skills and employability." - Pearson, 2017

Sources:
1: Ruth Graham NYT 2: Pearson

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Three Potential Future Pathways to Growth

I. Program Adaption / Expansion	II. Enabling New Offerings	III. Leveraging Economic Development
A. Adapting / Expanding GC Programs **B.** Match Facilities and Support Services to Program Expansion	**A.** New credential models **B.** Funding approaches	**Leveraging promising economic clusters** ○ Energy Services ○ Health Services ○ Business Services ○ Logistics Services

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Pathway III--Growing a New Economy together with Higher Education

Potential High-strength Sector Strategies to Pair with Education

01
Energy Service Hub

02
Health Service Hub

03
Business Technology Hub

04
Western Logistics Services Hub

Driving The Transition

Healthcare, Business and Financial services, Transportation and Logistics, Energy Services and Manufacturing are the highest growth sectors in the job market. Campbell County can invest in specific infrastructure and educational offerings to drive job market alignment.

Key Findings: Healthcare Business and Financial

- The Healthcare sector should incorporate new technology to expand the presence of nursing and primary care services. Special focus should be placed on reducing barriers of entry in the profession, improving access to student financial resources, and developing online education.

- Business and financial services should prioritize the development of management, sales, marketing, customer support, and web services skills by incorporating new technology and infrastructure in the workplace. High-speed broadband, customizable workforce training, and modern office facilities will all drive new employment opportunities.

CAMPBELL COUNTY: IDENTIFICATION OF HIGH-STRENGTH SECTORS

Trends in Employer Demand by Job Postings (2014-2017)

Research has identified four high-strength sectors underpinning regional jobs and growth opportunities:

1. Energy services and manufacturing
2. Healthcare services
3. Business and financial services
4. Transportation and logistics

Over 32,000 Job Postings in Four High-level Clusters

Occupational Categories	Job Postings, July 2016-2017	Job Postings Growth (%/Yr), 2014-2017	Location Quotient, 2016-2017	LQ Growth (%), 2014-2017
1. Healthcare				
Health Care: Nurses and Specialized Care Delivery	7,618	115.1%	1.81	31.2%
Health Care: Therapists, Technicians and Aides	1,758	7.1%	1.27	-13.0%
Health Care: Medical Practitioners and Scientists	971	77.2%	1.52	29.5%
Health Care: Therapy, Counseling and Rehabilitation	661	18.2%	1.42	2.7%
Health Care: Life and Medical Scientists	209	21.5%	1.12	2.6%
2. Busin. & Financial S.				
Managerial, Sales, Marketing and Human Resources	4,865	61.8%	1.19	54.1%
Sales, Agents, Brokers and Customer Relations, Support	3,040	7.6%	1.04	-0.1%
Managers and First-line Supervisors	2,205	-14.5%	0.86	-24.6%
Financial, Legal and Inspection Services, Support	1,240	-19.1%	0.63	-25.4%
Finance, Legal, and Real Estate	682	-8.9%	0.48	-5.0%
Information Management and Computing	470	-33.6%	0.16	-18.9%
Media, Web Development and Programming	249	11.2%	0.44	31.4%
Mathematics, Statistics, Data Analysis and Accounting	239	-36.8%	0.27	-30.3%
3. Transpt.				
Transportation Equipment Operators	2,674	14.9%	0.94	-34.6%
Transportation, Logistics and Dispatch, Support	805	-33.1%	1.00	-43.0%
Safety, Security and Emergency	624	5.8%	1.25	-16.9%
Transportation, Logistics and Planning	119	6.3%	0.39	5.8%
4. Energy & Manuf.				
Mechanics and Repair Technicians	1,428	-38.0%	1.27	-44.9%
STEM and Applied Science Technicians	607	-5.5%	1.18	-13.5%
Engineering, Architecture and Related Disciplines	466	-37.0%	0.45	-36.5%
Production, General	356	-44.5%	1.34	-49.8%
Facility, Plant and Large Equipment Operators and Technicians	346	-37.0%	1.76	-38.7%
Construction Trades (AA/BA Plus)	261	-31.7%	2.05	-43.6%
Natural Sciences and Environmental Management	207	-18.8%	1.47	-7.3%
Machinists and Skilled Operators and Tenders	173	-32.9%	1.38	-36.8%
Production Operators and Tenders	93	0.0%	0.62	-21.8%
Grand Total	**32,366**	**13.3%**	**1.00**	**0.0%**

Source: Burning Glass Labor Market Insight (July 2014 - July 2017) 105

1. ENERGY SERVICES HUB

KEY SKILLS: CONSTRUCTION, MANUFACTURING, ENGINEERING & STEM

Diversified Energy Infrastructure
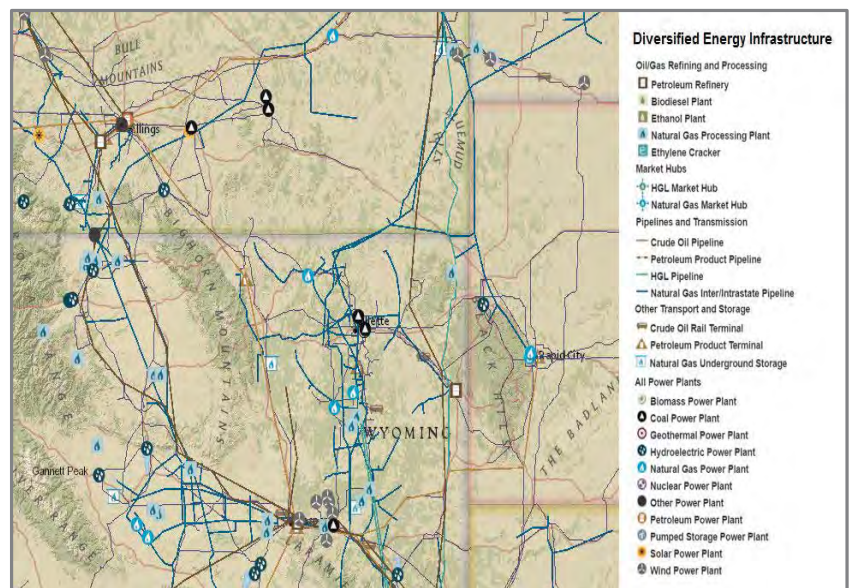
The Energy Services Hub is a center of diversified energy service providers supported by full-service logistics, "shovel ready" sites, workforce training, and innovation support. The ultimate aim of the initiative is to cluster regional services providers to construct, fabricate, maintain and repair facilities. Servicing capabilities will deepen across facility types, including pipelines, chemical, petrochemical, and oil and gas facilities, coal mining, coal and hydroelectric power generation and transmission facilities, as well as ethylene processing, wind power, and solar power generation plants. The diversity of energy services will offer some measure of resilience against negative market trends in any one market segment. New opportunities to innovate could emerge by sharing knowledge across sector domains. Workforce reskilling and new education programs could reinforce business attraction to strengthen the specialization of the cluster further.

1,470 Industrial, Engineering & STEM Job Postings

Occupational Categories	Job Postings, July 2016-2017	Job Postings Growth (%/Yr), 2014-2017	Location Quotient, 2016-2017	LQ Growth (%), 2014-2017
Other Industrial, Engineering & STEM	265	-44.6%	0.09	-88.5%
Medical and Clinical Laboratory Technicians	229	64.5%	1.53	82.7%
Welders, Cutters, and Welder Fitters	111	-9.5%	2.33	-15.0%
Market Research Analysts and Marketing Specialists	110	0.5%	0.45	-11.0%
Construction Managers	96	-3.8%	0.91	-24.6%
Manufacturing Production Technicians	65	-2.9%	1.30	-13.2%
Mechanical Engineers	65	-32.3%	0.49	-56.3%
Civil Engineers	64	-8.4%	0.78	-16.4%
Cost Estimators	35	-5.1%	0.61	-29.5%
Electronics Engineering Technicians	35	-36.2%	0.79	-68.9%
Power Plant Operators	35	-9.3%	3.13	-22.7%
Electrical Engineers	27	-25.9%	0.22	-49.4%
Occupational Health and Safety Specialists	26	-25.9%	0.76	-48.0%
Vocational Education Teachers, Postsecondary	24	-24.5%	0.64	-42.5%
Machinists	22	-33.1%	0.58	-65.4%
Medical Equipment Repairers	21	100.0%	1.80	175.0%
Industrial Engineers	19	13.3%	0.33	41.0%
Architectural and Engineering Managers	18	-30.4%	0.17	-60.0%
Industrial Production Managers	17	-7.5%	0.45	-10.1%
Mechanical Drafters	16	-38.1%	0.65	-72.1%
Quality Control Analysts	16	-30.0%	0.30	-60.4%
Grand Total	**1,471**	**-13.1%**	**0.60**	**-21.2%**

Technical & Trade Specialization of the Region

Occupational Categories	Job Postings, July 2016-2017	Job Postings Growth (%/Yr), 2014-2017	Location Quotient, 2016-2017	LQ Growth (%), 2014-2017
Electricians	122	-14.5%	1.53	-36.0%
Telecommunications Equipment Installers and Repairers, Except	97	-2.0%	2.99	-2.6%
Bus and Truck Mechanics and Diesel Engine Specialists	90	-5.9%	1.04	-32.6%
Industrial Machinery Mechanics	77	-16.8%	2.57	-35.9%
Aircraft Mechanics and Service Technicians	43	115.4%	2.89	232.1%
Mobile Heavy Equipment Mechanics, Except Engines	42	-20.4%	2.06	-39.5%
Electrical Power-Line Installers and Repairers	35	-26.4%	2.48	-25.7%
Control and Valve Installers and Repairers, Except Mechanical Do	13	-26.8%	1.81	-56.3%
Automotive Master Mechanics	11	-22.5%	0.58	-36.3%
Wind Turbine Service Technicians	10	0.0%	3.47	-21.3%
Electrical and Electronics Repairers, Commercial and Industrial E	9	-32.0%	0.98	-73.1%
Electric Motor, Power Tool, and Related Repairers	5	-34.4%	0.59	-69.3%
Solar Photovoltaic Installers	5	-50.0%	1.74	-100.0%
Telecommunications Line Installers and Repairers	5	-22.2%	0.32	-56.2%
Computer, Automated Teller, and Office Machine Repairers	4	50.0%	1.11	178.8%
Electronic Equipment Installers and Repairers, Motor Vehicles	4	-50.0%	1.37	-100.0%
Electrical and Electronics Repairers, Powerhouse, Substation, an	2	-30.0%	1.15	-70.0%
Medical Appliance Technicians	2	-50.0%	0.69	-100.0%
Grand Total	**576**	**-12.5%**	**1.62**	**-29.2%**

Targeting Growth in Emerging Wyoming Industries

- Green jobs is a small but growing sector
- Wind turbine servicing is projected for strong growth

Top Titles in Green Jobs (2014-2017)

1. Maintenance Technician
2. Biological Science Technician
3. Operations Technician
4. Civil Engineer
5. Field Service Technician
6. Mechanic
8. Wind Turbine Technician
7. Environmental Engineer
9. Wildlife Biologist
10. Biologist

150-MILE AREA   WYOMING

Source: Burning Glass Labor Market Insight (July 2014 - July 2017)

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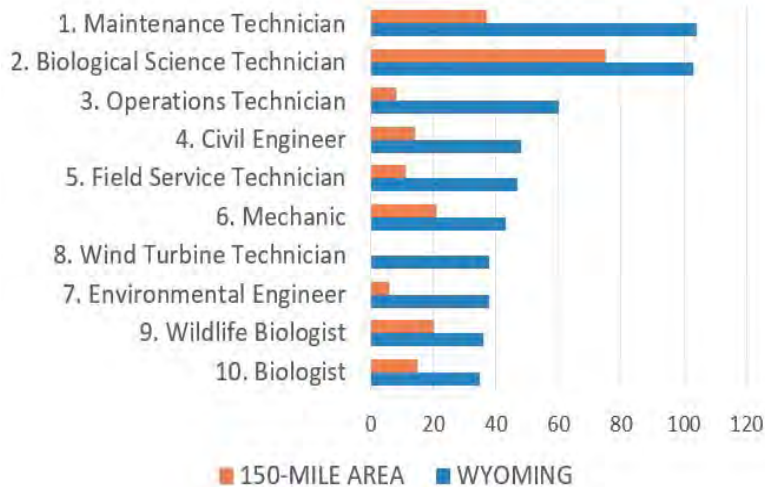
2. HEALTH SERVICES HUB

PRIORITY SKILLS: NURSING, PRIMARY & ALLIED HEALTHCARE

Health Professional Shortage Areas and Rural Health Clinics (inset)
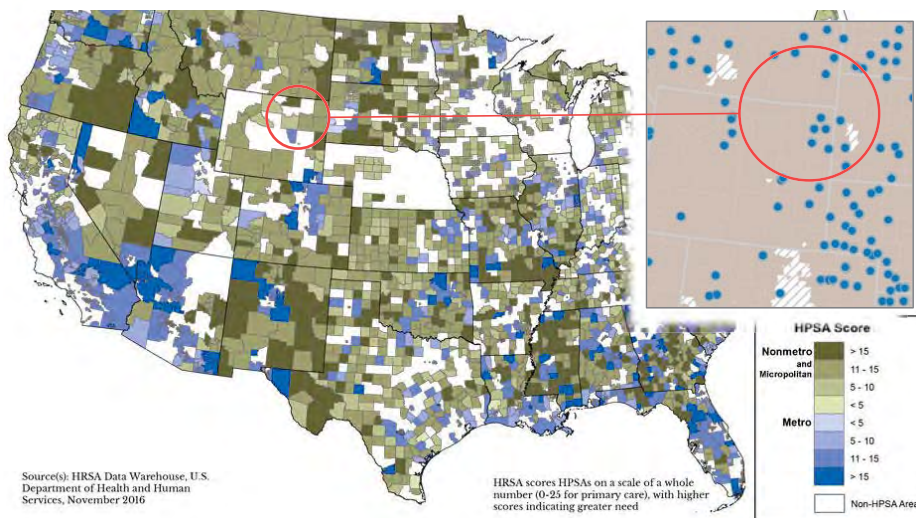
Source(s): HRSA Data Warehouse, U.S. Department of Health and Human Services, November 2016

HRSA scores HPSAs on a scale of a whole number (0-25 for primary care), with higher scores indicating greater need

HPSA Score

Nonmetro and Micropolitan: > 15, 11 - 15, 5 - 10, < 5

Metro: < 5, 5 - 10, 11 - 15, > 15

Non-HPSA Area

Medical Educational District - Leverage technology to expand the presence of nursing and primary care services and education in response to chronic health service and staff shortages. North Dakota, South Dakota, and Colorado face chronic nursing shortages, especially for experienced and specialized nurses. Explore opportunities to use state and federal grants to expand education and training to strengthen the digital capabilities of healthcare. Target opportunities to deliver education online, ease barriers to nursing enrollment, improve access to student financing, and extend geographic reach via clinical partner sites. Explore retraining opportunities for older workers using accelerated programs. Explore partnering with the VA and others to extend telehealth presence around Campbell County Memorial Hospital.

6,500 Job Postings in the Top Nursing Specializations

Robust employer demand for staff from July 2014 to July 2017 makes **Nursing and Specialized Care Delivery** the top occupation for employment growth and knowledge/skills development

Occupational Categories	Job Postings, July 2016-2017	Job Postings Growth (%/Yr), 2014-2017	Location Quotient, 2016-2017	LQ Growth (%), 2014-2017
Registered Nurses	4,911	95.7%	1.92	61.3%
Critical Care Nurses	691	209.8%	2.33	137.8%
Licensed Practical and Licensed Vocational	459	6.3%	1.57	-2.6%
Nurse Practitioners	191	7.2%	0.86	4.2%
Emergency Medical Technicians and	159	27.2%	1.88	-10.5%
Nurse Anesthetists	92	159.1%	3.48	7.3%
Grand Total	**6,503**	**84.2%**	**2.01**	**32.9%**

Source: Burning Glass Labor Market Insight (July 2014 - July 2017)

2,180 Job Postings in Allied Healthcare

Demand for **Allied Healthcare** staff is forming a valuable second tier of diversity in employment

Occupational Categories	Job Postings, July 2016-2017	Job Postings Growth (%/Yr), 2014-2017	Location Quotient, 2016-2017	LQ Growth (%), 2014-2017
Medical & Health Services Managers	607	24.9%	1.27	41.4%
Physical Therapists	547	9.1%	2.00	2.2%
Medical & Clinical Laboratory Technicians	229	64.5%	1.53	82.7%
Surgical Technologists	160	83.3%	2.48	72.3%
Pharmacists	152	6.7%	1.37	-2.5%
Cardiovascular Technologists & Technicians	132	170.0%	2.46	174.6%
Pharmacy Technicians	131	10.6%	1.01	-9.2%
Dietitians and Nutritionists	83	8.5%	1.68	-27.3%
Radiologic Technologists	81	16.4%	1.46	-5.4%
Medical Transcriptionists	55	48.2%	1.37	-41.2%
Grand Total	**2,177**	**44.2%**	**1.66**	**28.8%**

Source: Burning Glass Labor Market Insight (July 2014 - July 2017)

3. BUSINESS TECHNOLOGY HUB

PRIORITY SKILLS: MANAGEMENT, SALES, MARKETING, CUSTOMER SUPPORT, WEB SERVICES

Growing Demand for Middle Skills in Western States (2014-2017)

- 1. Registered Nurses
- 2. Heavy and Tractor-Trailer...
- 3. Sales Representatives,...
- 4. First-Line Supervisors of Retail...
- 5. Maintenance and Repair...
- 6. Licensed Practical and...
- 7. Insurance Sales Agents
- 8. Secretaries and Administrative...
- 9. Human Resources Specialists
- 10. Sales Managers

■ 150-mile Area
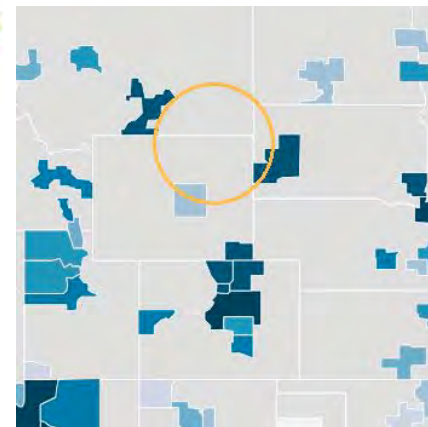
Business Technology Park - A strategy to expand the presence of businesses with needs for technology-capable staff to deliver sophisticated business support functions in sales, marketing, finance, insurance and miscellaneous aspects of operational support. Empowered with high-speed broadband, customizable workforce training, and modern office facilities, the ultimate aim of the project is to facilitate the clustering of technology-enabled enterprise. The Business Technology Park aims to provide new employment opportunities by supporting firms to extend market reach regionally, nationally and globally with the support of higher education and startup initiatives to accelerate learning in aspects of business technology, finance, and trade to support this vision.

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5,100 Business Support Services Job Postings

Demand driving occupational specialisation in the **Business & Management Systems** cluster

Occupational Categories	Job Postings, July 2016-2017	Job Postings Growth (%/Yr), 2014-2017	Location Quotient, 2016-2017	LQ Growth (%), 2014-2017
Sales Reps., Wholesale & Manuf., Except Tech. & Scientific Products	2,135	26.1%	1.56	48.3%
Customer Service Representatives	1,137	28.3%	1.29	46.6%
Sales Reps., Wholesale & Manuf., Technical & Scientific Products	266	114.2%	1.96	253.9%
Human Resources Specialists	206	-7.8%	0.48	-16.4%
Sales Managers	194	-10.7%	0.51	-19.0%
Compensation, Benefits, and Job Analysis Specialists	189	343.8%	1.83	425.9%
Computer User Support Specialists	119	-10.9%	0.46	-19.3%
Market Research Analysts and Marketing Specialists	110	0.5%	0.45	-11.0%
Software Developers, Applications	100	-9.0%	0.09	4.0%
Sales Representatives, Services, All Other	95	12.5%	1.48	-1.7%
Web Developers	85	658.3%	0.36	1929.6%
Management Analysts	84	-19.3%	0.23	-23.9%
Data Entry Keyers	72	37.8%	0.67	11.5%
Information Technology Project Managers	71	38.8%	0.32	149.6%
Computer Systems Analysts	64	-18.6%	0.24	-17.8%
Social and Community Service Managers	54	-9.7%	1.23	0.2%
Network and Computer Systems Administrators	51	-23.4%	0.28	-30.9%
Human Resources Managers	50	5.6%	0.50	27.6%
Public Relations and Fundraising Managers	44	38.0%	0.52	114.5%
Grand Total	**5,126**	**62.9%**	**0.76**	**151.1%**

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2,900 Finance, Legal & Insurance Job Postings

Occupational Categories	Job Postings, July 2016-2017	Job Postings Growth (%/Yr), 2014-2017	Location Quotient, 2016-2017	LQ Growth (%), 2014-2017
Insurance Sales Agents	875	212.0%	4.08	245.7%
Secretaries & Admin. Assistants, Except Legal, Medical, & Exec.	337	-16.7%	0.66	-32.7%
Personal Financial Advisors	274	97.3%	2.15	99.4%
Other Financial & Legal	219	-25.5%	0.35	-45.9%
Sales Agents, Financial Services	214	27.5%	1.36	49.0%
Bookkeeping, Accounting, & Auditing Clerks	153	-19.3%	0.42	-43.5%
Medical Records & Health Information Technicians	152	-3.9%	0.79	-13.0%
Loan Officers	101	13.9%	0.96	18.7%
Medical Secretaries	93	-9.6%	0.78	-21.5%
Accountants	86	-1.7%	0.23	-5.0%
Financial Managers, Branch or Department	67	-24.8%	0.32	-42.8%
Property, Real Estate, & Community Association Managers	63	-12.5%	0.84	-22.9%
Human Resources Assistants, Except Payroll & Timekeeping	60	65.4%	1.42	145.7%
Medical Transcriptionists	55	48.2%	1.37	-41.2%
Lawyers	51	5.4%	0.50	55.9%
Executive Secretaries & Executive Administrative Assistants	39	-8.5%	0.42	-11.9%
Auditors	34	-27.6%	0.35	-36.7%
Legal Secretaries	30	25.0%	1.12	58.8%
Paralegals & Legal Assistants	27	-7.8%	0.34	-18.1%
Grand Total	2,930	7.7%	0.82	14.9%

4. WESTERN LOGISTICS SERVICES HUB

PRIORITY SKILLS: TRANSPORTATION, LOGISTICS & DATA COMMUNICATIONS

BSNF intermodal Map
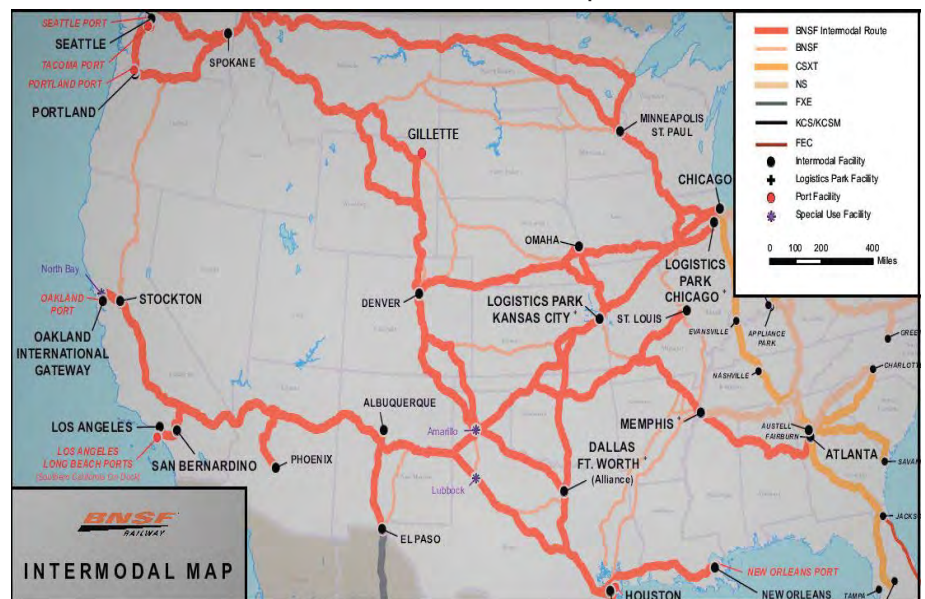
Gillette Inland Port (GIP) could host both producers and logistics providers offering efficient and complete logistics services, involving the use of information and communications technology and intermodal freight and air cargo transport operations. With infrastructure and utility availability, appropriate environmental, zoning, entitlement and permitting, rail serviceability and proximate interstate access, GIP represents a "shovel ready" location supported by workforce training and modern communications.

2,700 Transportation, Logistics & Security Job Postings

Occupational Categories	Job Postings, July 2016-2017	Job Postings Growth (%/Yr), 2014-2017	Location Quotient, 2016-2017	LQ Growth (%), 2014-2017
Heavy and Tractor-Trailer Truck Drivers	2,283	10.8%	0.94	-16.3%
Other Transportation, Logistics and Security Jobs	78	-16.1%	0.61	-27.4%
Immigration and Customs Inspectors	40	1950%	5.45	1046.5%
Police Patrol Officers	39	-11.8%	1.70	-22.2%
Municipal Firefighters	34	20.8%	7.50	60.6%
Transportation Security Screeners	33	0.0%	4.40	-26.3%
Purchasing Managers	28	183%	0.82	344.9%
Purchasing Agents, Except Wholesale, Retail, and Farm Products	26	-15.8%	0.26	-28.9%
Loss Prevention Managers	25	46.2%	3.13	93.8%
Probation Officers and Correctional Treatment Specialists	18	19.2%	4.63	83.1%
Commercial Pilots	17	35.0%	4.56	42.4%
Cargo and Freight Agents	15	75.0%	0.86	38.0%
Correctional Officers and Jailers	15	-32.1%	1.30	-53.7%
Emergency Management Directors	14	0.0%	1.13	0.1%
Logisticians	14	3.8%	0.48	14.0%
Storage and Distribution Managers	14	-22.0%	0.38	-31.4%
Logistics Managers	10	200%	0.38	277.3%
Tank Car, Truck, and Ship Loaders	9	-50.0%	2.54	-100.0%
Air Traffic Controllers	8	-10.0%	1.76	-29.5%
Intelligence Analysts	8	83.3%	0.62	139.2%
Grand Total	**2,728**	**7.0%**	**0.94**	**-4.8%**

Key Findings: Transportation and Logistics, Energy Services and Manufacturing

- Transportation and Logistic field should prioritize logistics and data communication skills. These skills will be leveraged in a promising opportunity in the Gillette Inland Port, where producers and logistics providers can offer services to intermodal freight and air cargo. The success of the project depends on modern workforce training and communication.

- Key skills in the Energy Services and Manufacturing are construction, manufacturing, engineering and STEM. An initiative named The Energy Service Hub will bring together service providers to construct, fabricate, maintain, and repair facilities, thereby diversifying current energy services. The project's success depends on the reskilling of the workforce and the development of new educational programs.

ENABLING INFRASTRUCTURE

HIGH PLAINS BROADBAND

WHY IT MATTERS: 21ST CENTURY DATA COMMUNICATIONS HELP FIRMS COMPETE EFFECTIVELY

Broadband Access in the Rural West
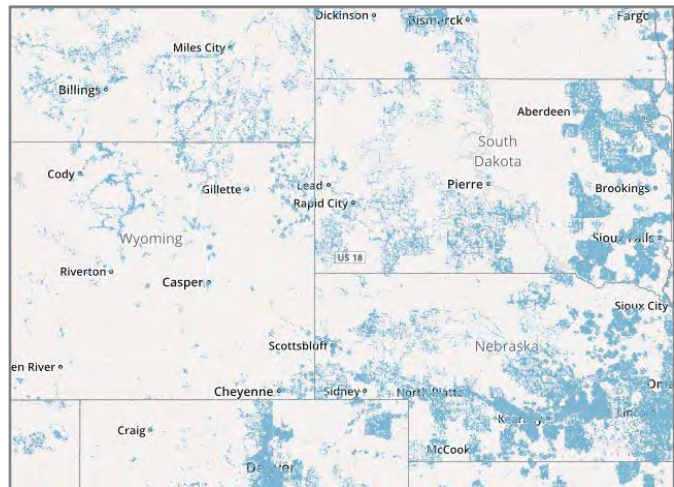
Boosting 4G/5G Development. Research current models for spurring rural broadband to achieve community-wide high-speed connectivity. Focus very high bandwidth opportunities toward targeted business, educational and healthcare locations in support of strategic development goals. Favor approaches seeking partnership with technology and telecommunication companies that can integrate with startup hub efforts. Support South Dakota Senator John Thune's efforts as Chairman of the Senate Committee on Commerce, Science, and Transportation to accelerate 5G development as a means to foster rural economic development.

ECONOMIC CORRIDOR LINK

WHY IT MATTERS: BETTER LINKS TO METRO REGIONS WILL DRIVE ECONOMIC GROWTH

Ports-To-Plains Alliance Corridor Map
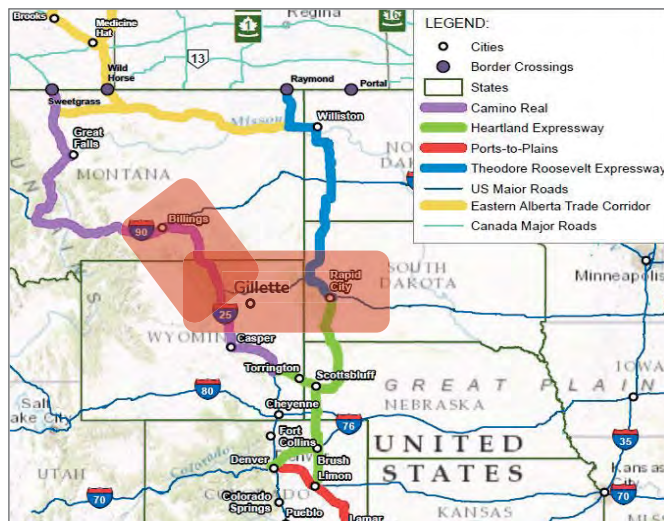
The **High Priority Corridor Link** proposes to connect Billings, Gillette and Rapid City as an initiative to advance economic cooperation. The Link will create an interstate highway-based economic corridor building on the 'Port to Plains' network. Two federally designated high priority corridors would be connected, namely (a) the Camino Real Corridor linking I-90 and I-25 and (b) the Theodore Roosevelt Expressway from Rapid City, South Dakota, north on US Route 85 to Williston, North Dakota. Forging a joint marketing collaboration with corridor cities like Rapid City and Billings could further amplify the attraction of the area to companies considering expansion or relocation.

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INNOVATION INFRASTRUCTURE

WHY IT MATTERS: CREATING AN INNOVATION ECOSYSTEM WILL DRIVE NEW BUSINESS FORMATION

As regions nationwide compete to build their innovation ecosystems, it becomes imperative to develop the right strategic partnerships, startup support systems, accelerators, and funding activity to create momentum for growth tailored to the study region. There are various ways to design systems of innovation that could work for Northeastern Wyoming and some that would fail. The asymmetry between large companies, small rural communities, and startups regarding resources and decision making structures and timing can make it difficult to forge mutually beneficial collaborations. It is essential to conduct in-depth research up front to define, ideate and prototype projects that are high-impact and feasible based on the unique assets and opportunities of a Digital Road initiative applied to Northeastern Wyoming.

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Survey Detailed Analysis

Summary of Key Survey Results 1/2

A survey of 60 business leaders in the region, with a 63% response rate.

The representative respondent has been operating in Northeast Wyoming for over 20 years (69%) and has 11-50 employees (42%). In addition, 78% of respondents are considering Gillette, Northeast Wyoming, or the State of Wyoming as their business' primary geographic market.

The largest represented industry among all respondents is Professional Services with 35%, followed by 11% in Energy and Mining, and 9% in Construction.

Major highlights of the survey include:

- **47%** of survey respondents identify lack of training or lack of education as the key source of skills gaps in Northeast Wyoming

- **Just under 40%** of respondents cite 4-year bachelor's degrees as the most needed degree to support future job creation and growth over the next three years

- **39%** of respondents identify the regions growth / change as fast or moderately fast

Summary of Key Survey Results 2/2

What do you think is the key source of skills gaps in Northeast Wyoming?

Uncertain 29.5%

Lack of education 20.5%

Lack of training 27.3%

Less interest in 22.7%

What skillset is most needed in order to support future job creation and growth over the next three years?

- Transportation, Distribution, and Logistics
- Science, Technology, Engineering and Mathematics
- Manufacturing Career
- Law, Public Safety, Corrections and Security
- Human Services
- Health Sciences
- Education and Training
- Business, Management and Administration
- Arts, Audio/Video Technology and Communications
- Agriculture, Food and Natural Resource

Future Skill Needed Summary

Grouping 1

Education and Training; Health Sciences; Science, Technology, Engineering and Mathematics
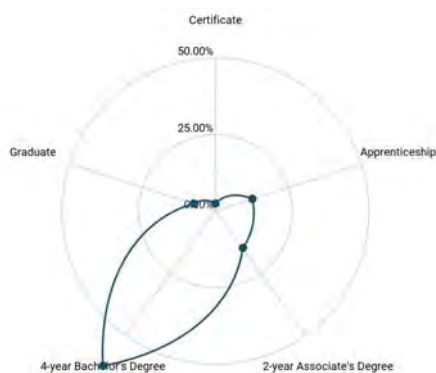
n = 38

Grouping 2

Business, Management and Administration; Human Services; Law, Public Safety, Corrections and Security
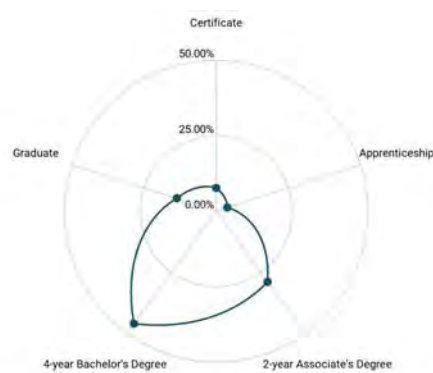
n = 43

Grouping 3

Agriculture, Food and Natural Resource; Arts, Audio/Video Technology and Communications; Manufacturing Career; Transportation, Distribution, and Logistics

n = 38

Summary of Survey Results 2/2

Approximately a quarter of businesses believe that colleges and universities in Northeast Wyoming should prioritize Business, Management, and Administration in order to address the current skills gaps.

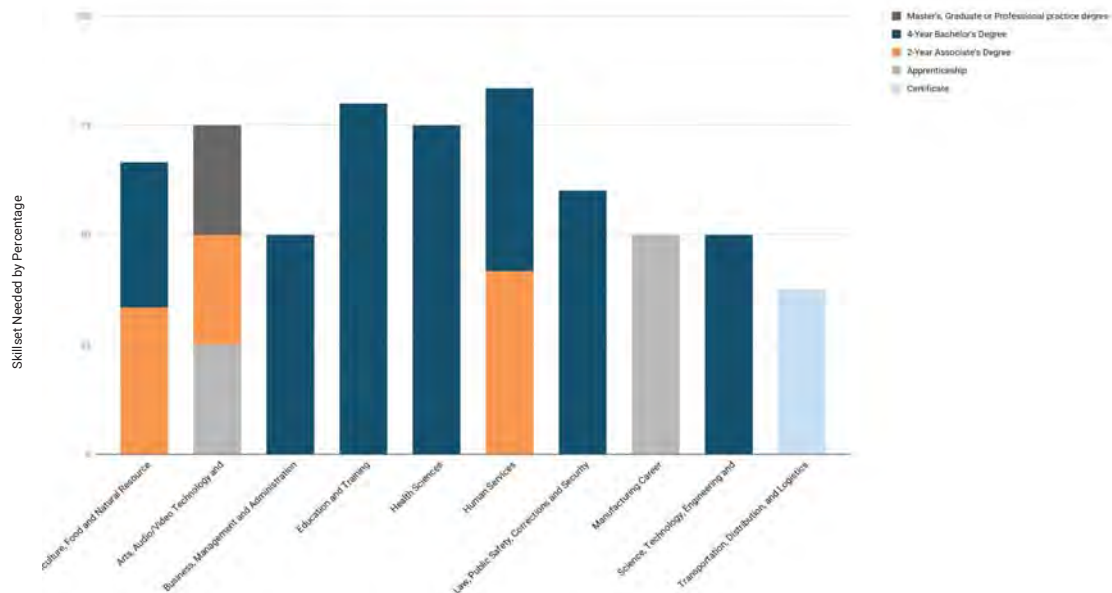One-third of the respondents in the Agriculture, Food and Natural Resource industry believe that colleges and universities in Northeast Wyoming will most likely need either a 2-year Associate's degree or 4-year bachelor's degree in order to propel future job creation and growth over the next three to five years.

The Arts, Audio/Video Technology and Communication field believes that its' workforce will most likely need a 2-year Associate's degree to spark future job creation and growth.
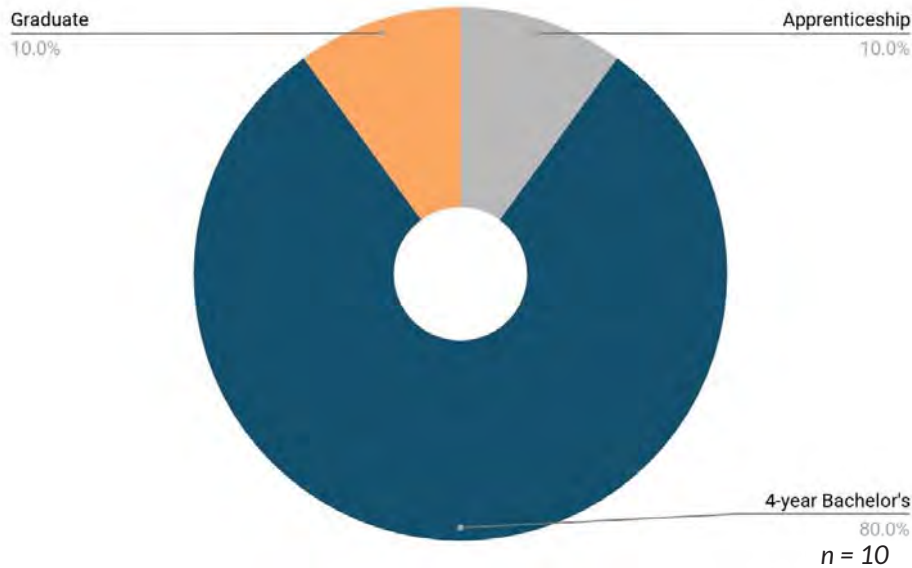
Nearly half of the Business, Management and Administration field believes that a 4-year bachelor's degree will most likely be needed in order to support future job creation and growth over the next three to five years.
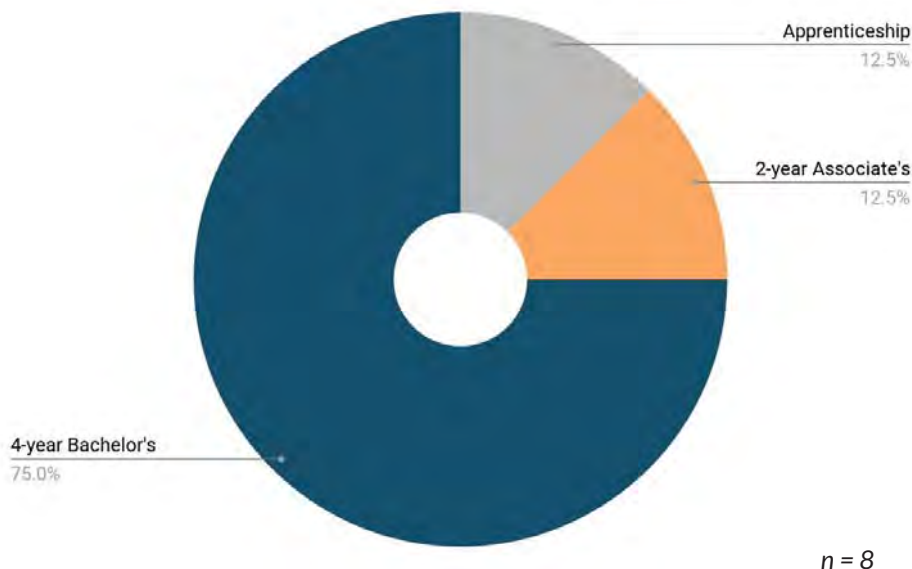
A clear majority of the Education and Training field believes that a 4-year bachelor's degree will most likely be needed in order to support future job creation and growth over the next three to five years.
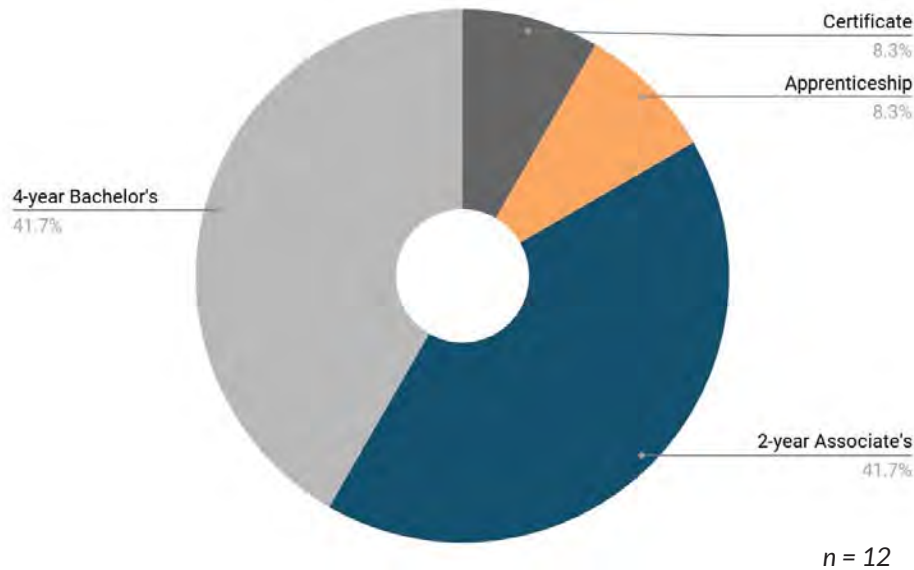
Three quarters of the Health Science field believes that a 4-year Bachelor's degree will most likely be needed in order to support future job creation and growth over the next three to five years.

Summary of Survey Results

The Human Services field believe that either a 4-year bachelor's degree or a 2-year Associate's degree will most likely be needed in order to support future job creation and growth over the next three to five years.
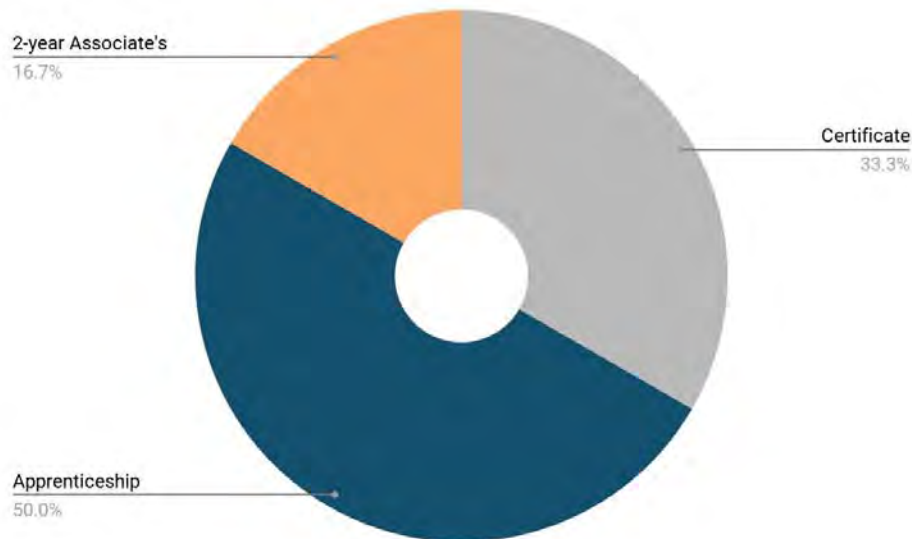
Over half of the Law, Public Safety, Corrections and Security field believes that its' workforce will most likely need a 4-year bachelor's degrees in order to support future job creation and growth over the next three to five years.

Precisely fifty percent of the Manufacturing field believes that its' workforce will most likely need an apprenticeship in order to support future job creation and growth over the next three to five years.

Exactly fifty percent the Science, Technology, Engineering and Mathematics field believes its' workforce will most likely need a 4-year bachelor's degree in order to support future job creation and growth over the next three to five years.

Nearly forty percent of the Transportation, Distribution, and Logistics field believes its' workforce will most likely need a certificate in order to support future job creation and growth over the next three to five years. Apprenticeships are close behind, constituting over one-third of the respondents votes.

Detailed Survey Statistics

99
Viewed

38
Completed

22
Drop Out

60
Started

63.33%
Completion Rate

5 mins
Avg. Time
Taken

Business Characteristics Summary

The predominant characteristics of the respondent's businesses:

Characteristic	Percentage
Have been operating **20+ years** in Northeast Wyoming.	68.89%
Have **11-50 employees**	42.22%
Primarily conduct business in: **professional services**	26.67%
Primary geographic market: **Northeast Wyoming**	35.56 %
Consider the rate of change for workforce need as: **average**	40.91%
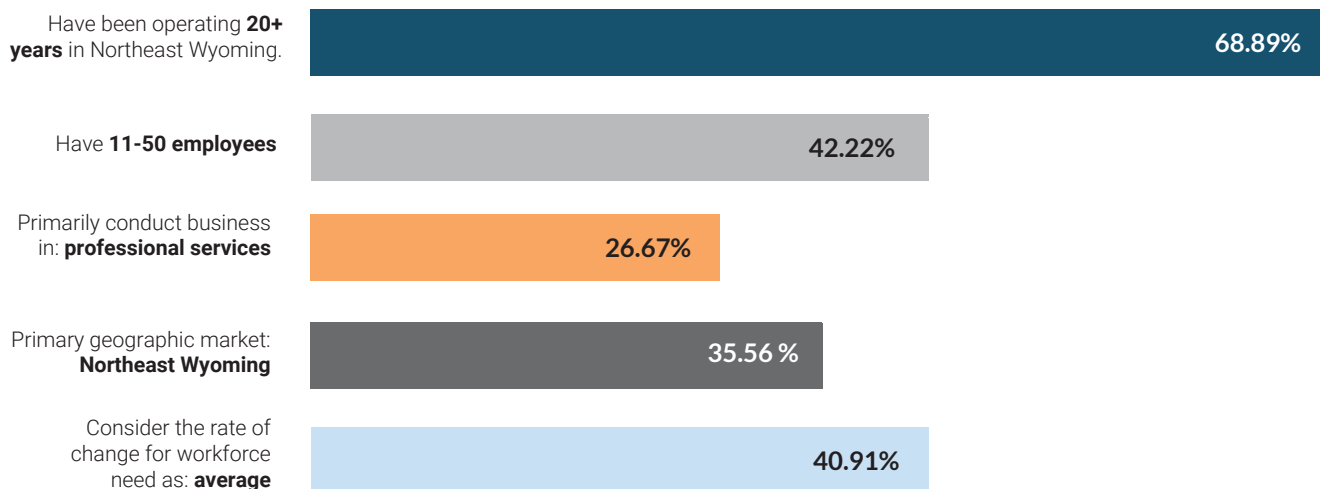
Business Characteristics

How long has your business/organization been operating in Northeast Wyoming?

1 - 5 years
8.9%

6 - 10 years
8.9%

11 - 20 years
13.3%

>20 years
68.9%

n = 45
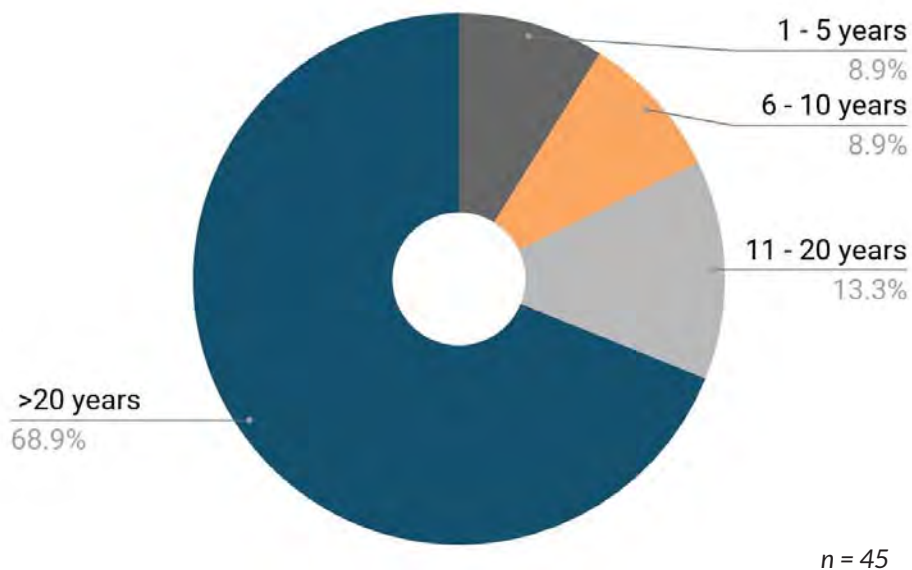
Almost **three quarters** of businesses and organizations have been operating in Northeast Wyoming for **more than 20 years.**

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Business Characteristics

How many people does your business/organization employ in Northeast Wyoming?

1001-5000
4.4%

201-1000
8.9%

51-200
15.6%

1-10
28.9%

11-50
42.2%

n = 45
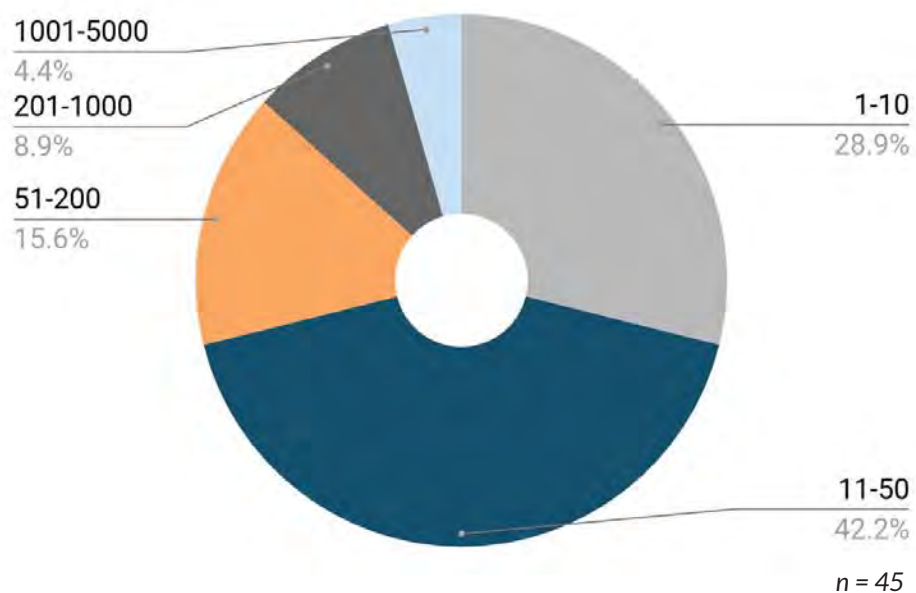
A **significant majority** of businesses and organizations in Northeast Wyoming have **under 50 employees**.

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Business Characteristics

Please select the primary industry or sector that best describes your business/organization.

Other*
11.1%

Transportation/Utilitie
4.4%

Energy/Mining
11.1%

Construction
8.9%

Manufacturing
6.7%
Technology
4.4%

Professional services
35.6%

Healthcare
4.4%
Finance
6.7%
Engineering
6.7%

n = 45
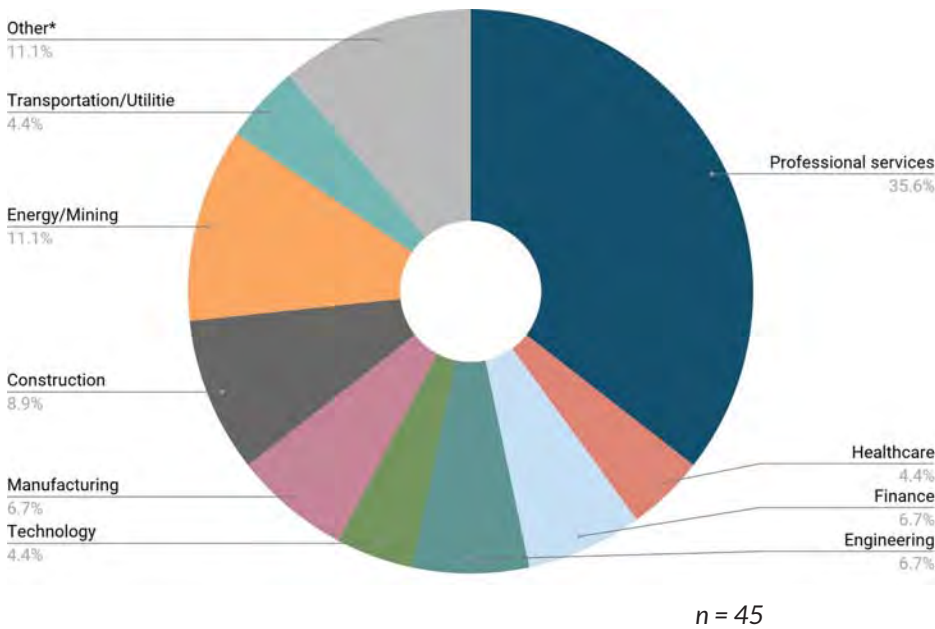
More than a quarter of businesses and organizations in the Gillette area primarily conduct business in the professional services.

Business Characteristics

What is your business/organization's primary geographic market?

International
8.9%

National
13.3%

Statewide
22.2%

Local Gillette
20.0%

Northeast
35.6%

n = 45
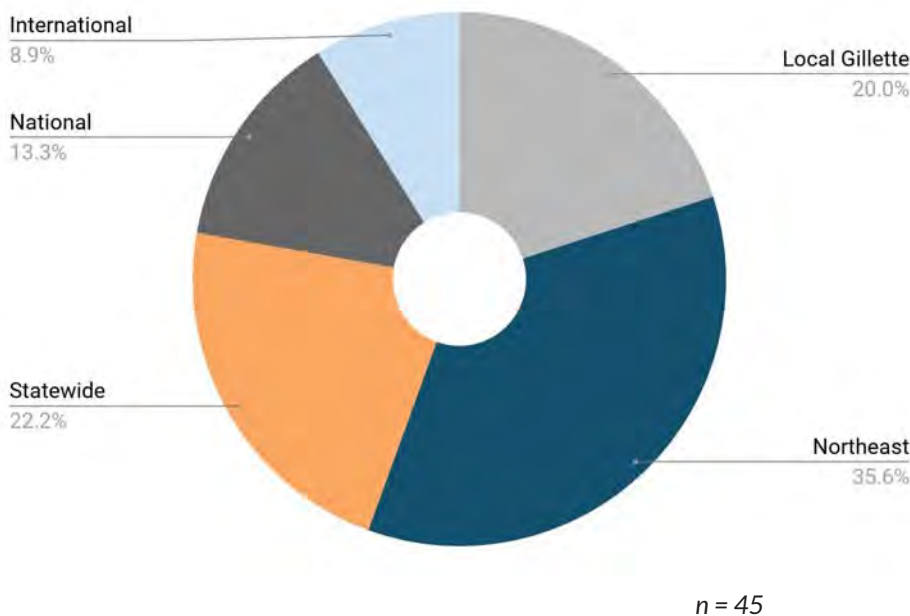
Northeast Wyoming is the **primary** geographic market for the businesses and organizations in the Gillette area. The City of Gillette and the State of Wyoming constitute **nearly a quarter** of the primary geographic market, respectively.

Business Characteristics

What do you consider as the rate of change for workforce needs in your business/local industry?

Slow changing/growing
11.4%

Moderately slow changing/growing
6.1%

Average
40.9%

Fast changing/growing
4.5%

Moderately fast changing/growing
34.1%

n = 44
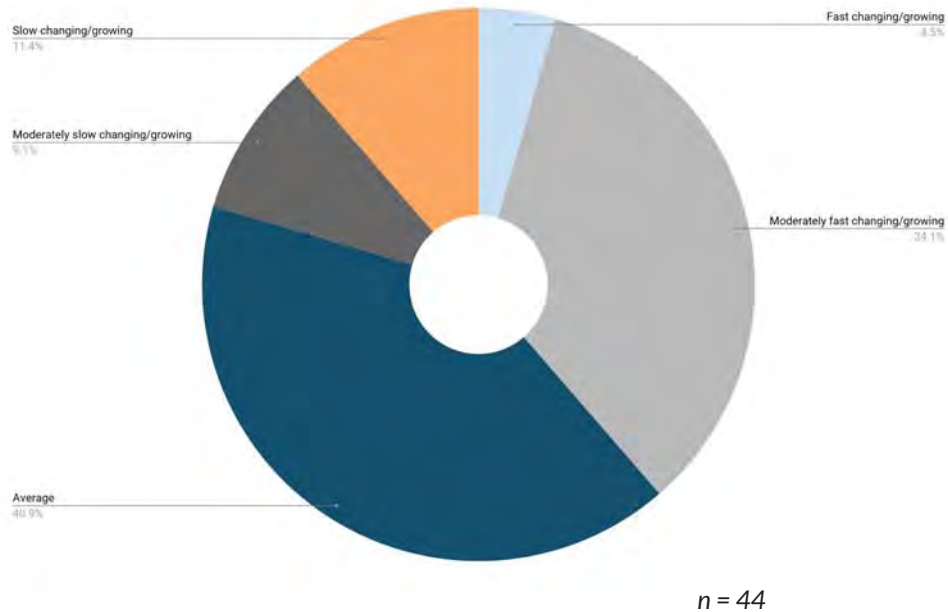
Nearly half of the businesses and organizations in Gillette consider the rate of change in the local workforce as average, while **over a quarter** see it as moderately fast changing and growing.

Current Skills Gap Summary

The predominant characteristics of the respondent's views on industry skills gaps:

Key source of skills gaps: **training**	27.30 %
Key source of skills gaps: **uncertain**	29.50 %
Able to recruit and retain adequate employees	40.90 %
Not able to recruit and retain adequate employees	43.20%
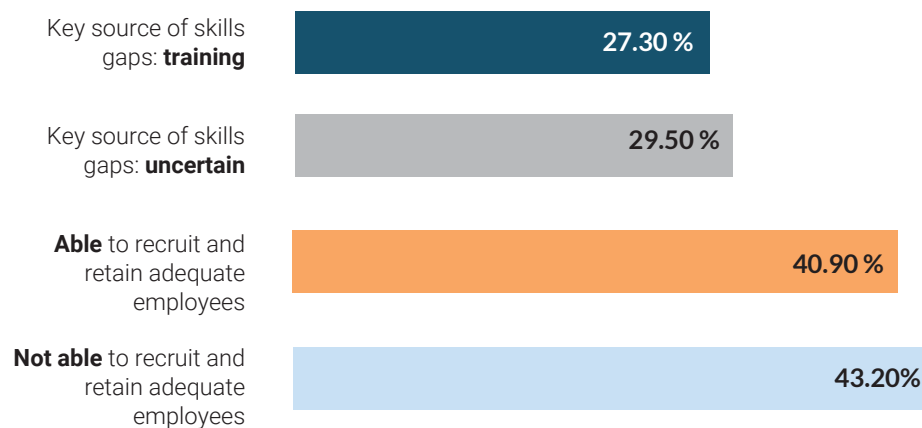
Current Skills Gaps

Is your business/local industry able to recruit and retain adequate employees to capitalize on opportunities for job creation and growth in Northeast Wyoming?

Uncertain
15.9%

Yes
40.9%

No
43.2%

n = 44
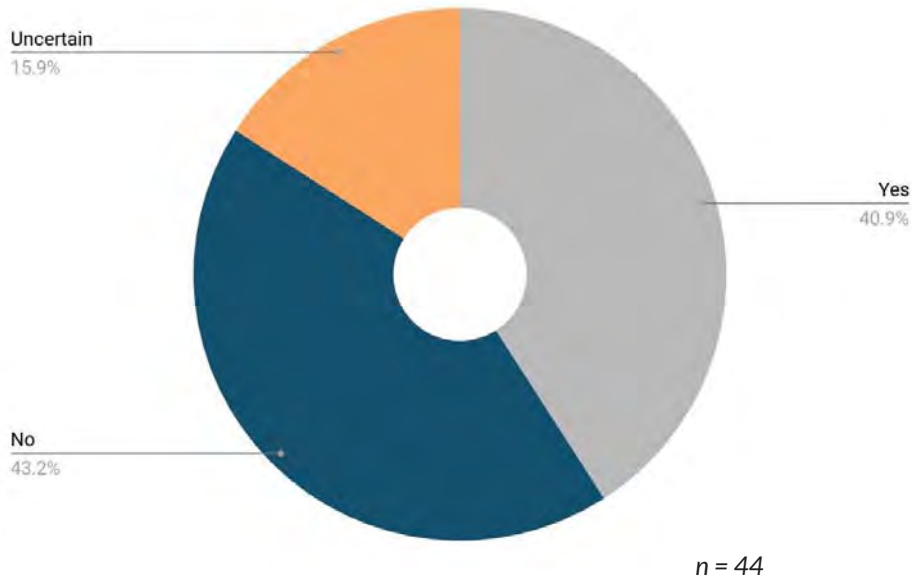
A **slight majority** of businesses and local industry in Gillette are unable to recruit and retain adequate employees.

Current Skills Gaps

What do you think is the key source of skills gaps in Northeast Wyoming?

Lack of education
20.5%

Uncertain
29.5%

Lack of training
27.3%

Less interest in
22.7%

n = 44
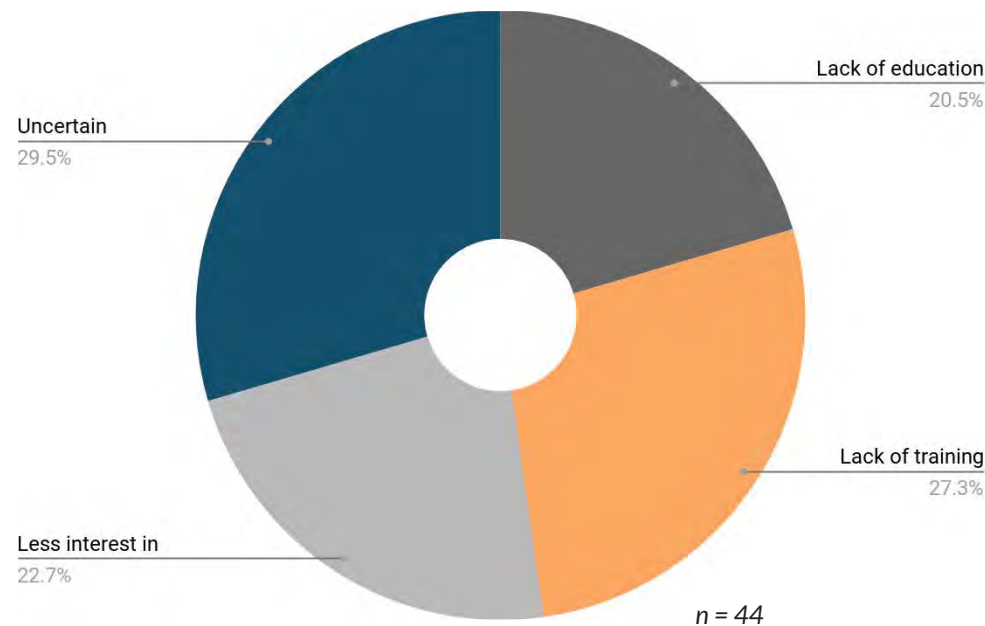
A **majority** of businesses and organizations in the Gillette area are uncertain of the skills gaps source.

Over a quarter of respondents see a lack of training as the key source of the skills gaps.

Business Ecosystem

Please choose up to five occupational fields that your business/local industry relates to:
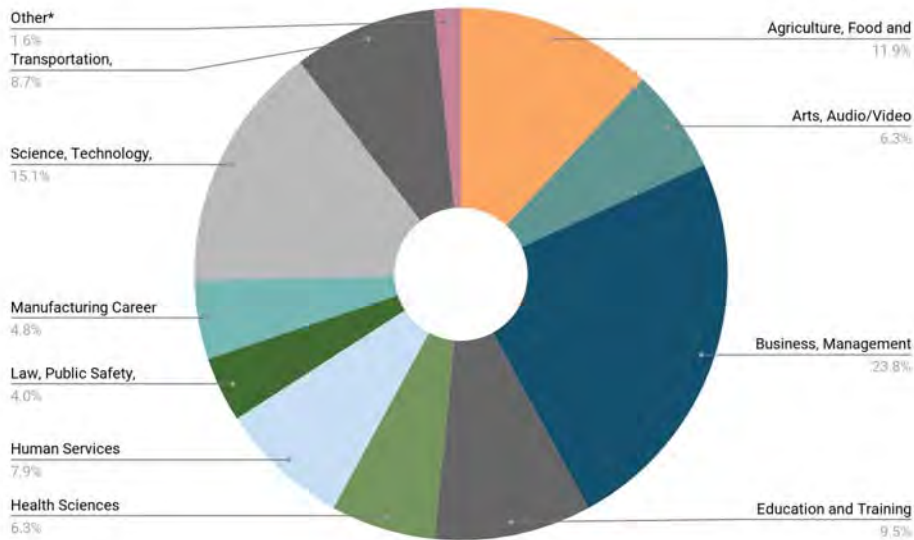
Other*
1.6%
Transportation,
8.7%

Science, Technology,
15.1%

Manufacturing Career
4.8%

Law, Public Safety,
4.0%

Human Services
7.9%

Health Sciences
6.3%

Agriculture, Food and
11.9%

Arts, Audio/Video
6.3%

Business, Management
23.8%

Education and Training
9.5%

Approximately a **quarter** of businesses believe that colleges and universities in Northeast Wyoming should prioritize Business, Management, and Administration in order to address the current skills gaps.

Future Skills Summary (1/2)

Nearly 40% of respondents believe the workforce will need a 4-year bachelor's degree in order to support future job creation and growth over the next three years.

Skillset Needed by Percentage

Legend:
- Transportation, Distribution, and Logistics
- Science, Technology, Engineering and Mathematics
- Manufacturing Career
- Law, Public Safety, Corrections and Security
- Human Services
- Health Sciences
- Education and Training
- Business, Management and Administration
- Arts, Audio/Video Technology and Communications
- Agriculture, Food and Natural Resource

X-axis: Certificate | Apprenticeship | 2-Year Associate's Degree | 4-Year Bachelor's Degree | Master's, Graduate or Professional practice degree

Future Skills Summary (2/2)

90% of respondents believe the workforce will either need a graduate, 4-year bachelor's degree or 2-year Associate's degree in order to support future job creation and growth over the next three years.

Future Skills Needed

Agriculture, Food and Natural Resource
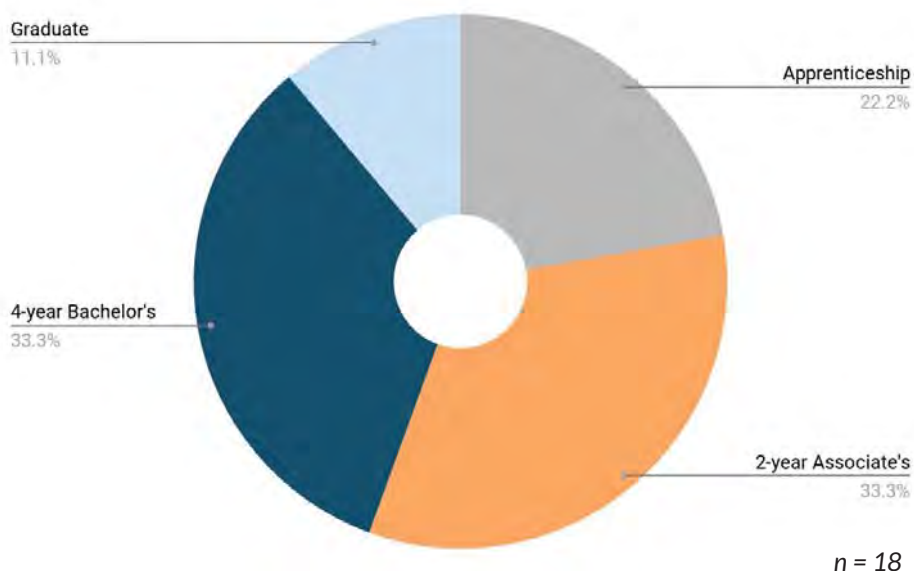
n = 18

One-third of the respondents in the Agriculture, Food and Natural Resource industry believe that colleges and universities in Northeast Wyoming will most likely need either a 2-year Associate's degree or 4-year bachelor's degree in order to propel future job creation and growth over the next three to five years

Future Skills Needed

Arts, Audio/Video Technology and Communications
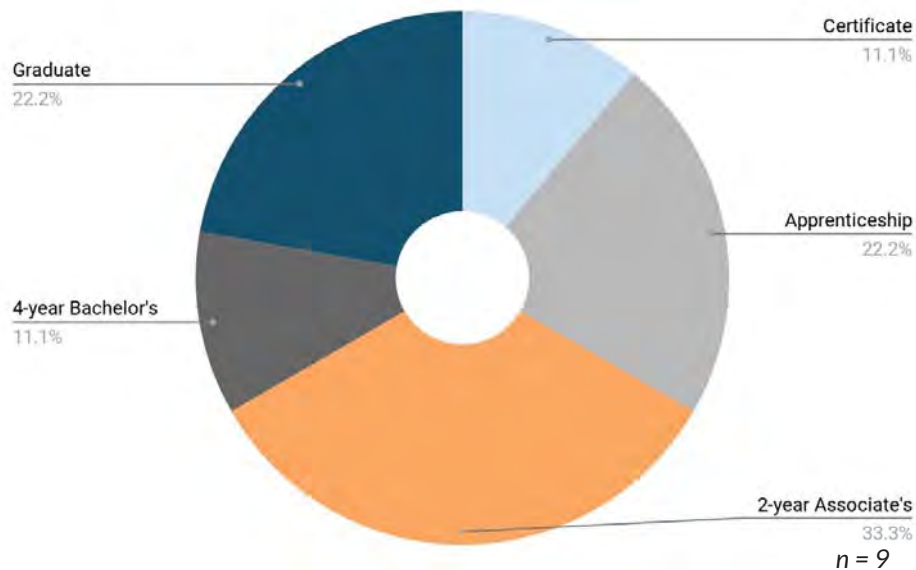
Certificate
11.1%

Graduate
22.2%

Apprenticeship
22.2%

4-year Bachelor's
11.1%

2-year Associate's
33.3%

n = 9

The Arts, Audio/Video Technology and Communication field believes that its' workforce **will most likely need** a 2-year Associate's degree to spark future job creation and growth.

Future Skills Needed

Business, Management and Administration
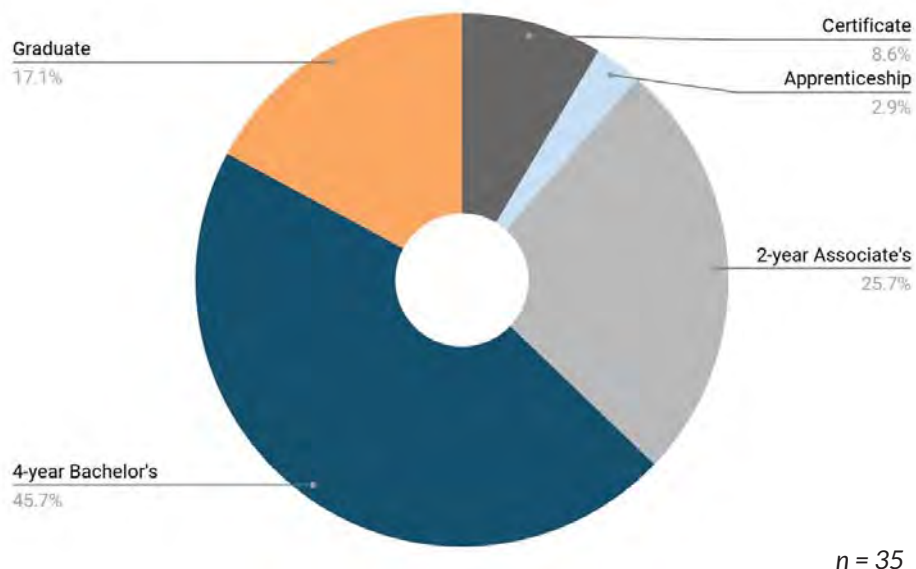
Graduate
17.1%

Certificate
8.6%

Apprenticeship
2.9%

2-year Associate's
25.7%

4-year Bachelor's
45.7%

n = 35

Nearly half of the Business, Management and Administration field believes that a 4-year bachelor's degree will most likely be needed in order to support future job creation and growth over the next three to five years.

Future Skills Needed

Education and Training

Graduate
10.0%

Apprenticeship
10.0%

4-year Bachelor's
80.0%

n = 10

A **clear majority** of the Education and Training field believes that a 4-year bachelor's degree will most likely be needed in order to support future job creation and growth over the next three to five years.

Future Skills Needed

Health Sciences

Apprenticeship
12.5%

2-year Associate's
12.5%

4-year Bachelor's
75.0%

n = 8

Three quarters of the Health Science field believes that a 4-year Bachelor's degree will most likely be needed in order to support future job creation and growth over the next three to five years.

Future Skills Needed

Human Services

Certificate
8.3%

Apprenticeship
8.3%

4-year Bachelor's
41.7%

2-year Associate's
41.7%

n = 12

The Human Services field believe that either a 4-year bachelor's degree or a 2-year Associate's degree **will most likely** be needed in order to support future job creation and growth over the next three to five years.

Future Skills Needed

Law, Public Safety, Corrections and Security
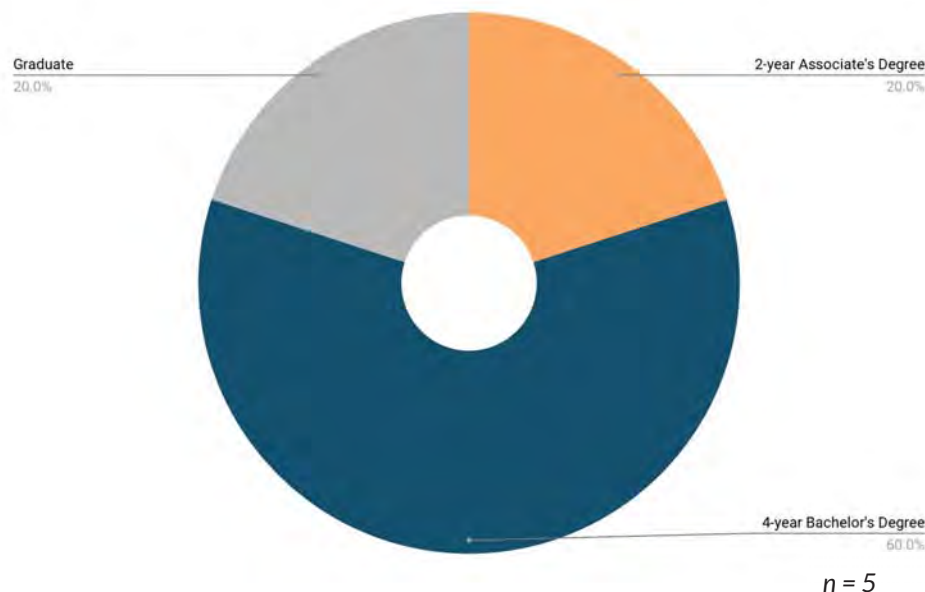
Graduate
20.0%

2-year Associate's Degree
20.0%

4-year Bachelor's Degree
60.0%

n = 5

Over half of the Law, Public Safety, Corrections and Security field believes that its' workforce will most likely need a 4-year bachelor's degrees in order to support future job creation and growth over the next three to five years.

Future Skills Needed

Manufacturing Career

2-year Associate's
16.7%

Certificate
33.3%

Apprenticeship
50.0%

n = 6

Precisely fifty percent of the Manufacturing field believes that its' workforce will most likely need an apprenticeship in order to support future job creation and growth over the next three to five years.

Future Skills Needed

Science, Technology, Engineering and Mathematics

Graduate
9.1%

Certificate
4.5%

Apprenticeship
13.6%

2-year Associate's
22.7%

4-year Bachelor's
50.0%
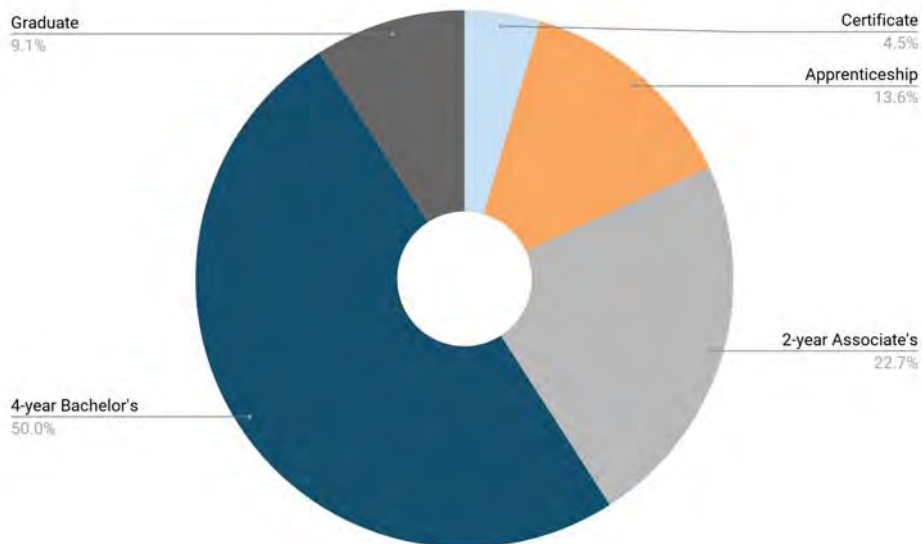
n = 22

Exactly fifty percent the Science, Technology, Engineering and Mathematics field believes its' workforce will most likely need a 4-year bachelor's degree in order to support future job creation and growth over the next three to five years.

Future Skills Needed

Transportation, Distribution, and Logistics
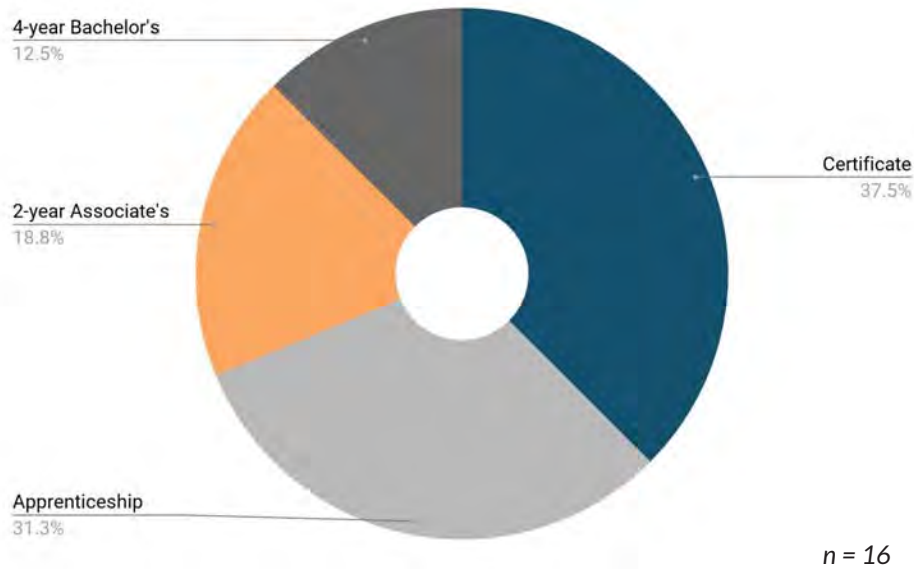
- **4-year Bachelor's** 12.5%
- **2-year Associate's** 18.8%
- **Apprenticeship** 31.3%
- **Certificate** 37.5%

n = 16

Nearly forty percent of the Transportation, Distribution, and Logistics field believes its' workforce will most likely need a certificate in order to support future job creation and growth over the next three to five years. Apprenticeships are close behind, constituting over **one-third** of the respondents votes.

Future Skill Needed Overview

Agriculture, Food and Natural Resource
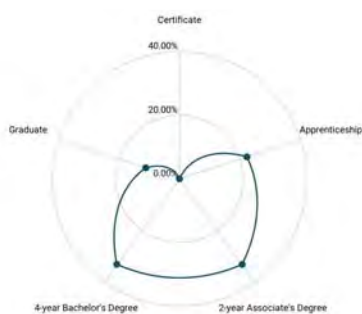
Arts, Audio/Video Technology and Communications

Business, Management and Administration

Future Skill Needed Overview

Education and Training
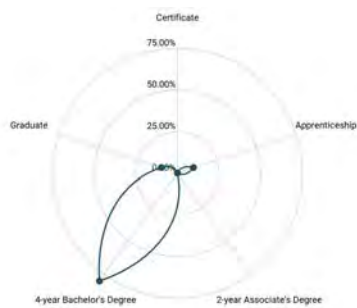
Health Sciences
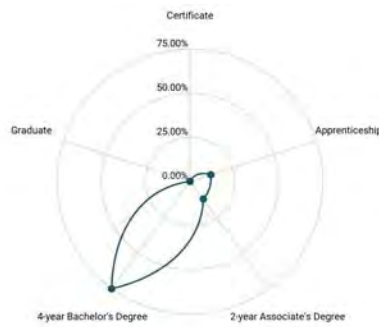
Human Services
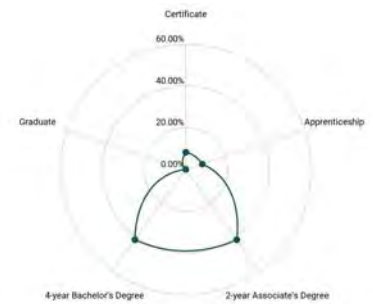
Future Skill Needed Overview

Law, Public Safety, Corrections and Security
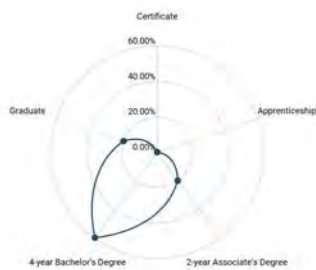
Manufacturing Career
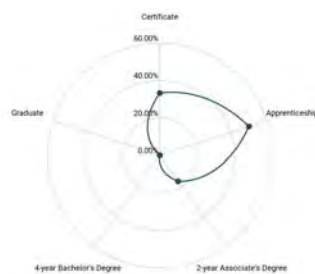
Science, Technology, Engineering and Mathematics
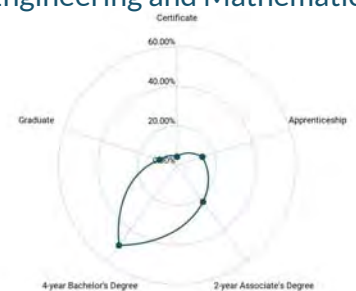
Transportation, Distribution, and Logistics

Suggestions for Colleges and Universities

"We as a company have donated money to our local college for their machine tooling program. It would be nice to see students take on an apprenticeship with our company so it is a win win for both. We are struggling to find employees to work in our Rebuild Shop and our Field Service Groups, ie. machinist, welders, mechanics."

Anita Black, Material's Manager at Joy Global

"Hospitality is the second largest employer in WY yet there are no current programs in our state, except culinary. We need to have programs to make awareness of all the career opportunities."

Anonymous

"More robust IT training."

P.J. Burns
Peregrine Leadership Institute

"Area high schools should encourage students to attend trade schools as well as 4-year institutions. "

Anonymous

Contact Information (1/3)

Name	Phone	Email Address	Industry
Veronica Taylor	(307) 660-6452	vftaylor@gmail.com	Campbell County Health
Anita Black	(307) 685-7325	anita.black@joyglobal.com	Material Manager
Robert Henning	(307) 682-5723	rhenning@cccgov.net	Rockpile Museum
Toni Bell	(307) 229-3523	tbell@abovethelinecpas.com	Transportation Services
Matt Avery	(307) 680-1428	mdavery@collinscom.net	Manufacturing (D&M Saddlery)
Chris Boswell	(307) 214-6934	chris.boswell@uwyo.edu	Education (University of Wyoming)

Contact Information (2/3)

Name	Phone	Email Address	Industry
P.J. Burns	(307) 685-1555	burns@peregrineleadership.com	Education (Peregrine Leadership Institute)
Susan McKay	(307) 682-5862	susan@susanmckaycpa.com	Professional (Susan McKay CPA LLC)
Brenda Schladweiler	(307) 686-0800	bschladweiler@bksenvironmental.com	Professional Environmental Services (bksenvironmental.com
Erika Christensen	(307) 658-1295	erika@mcllc.net	Construction (The MC Family of Companies LLC)
Kevin Couch	(307) 682-5161	kevin.couch@anbbank.com	Business, Management, and Administration (ANB Bank)

Contact Information (3/3)

Name	Phone	Email Address	Industry
Allen Robinson	(307) 680-6260	arobinson@coopgillette.com	Agriculture (Allen Robinson Farmers Cooperative)
Mark Christensen	(307) 685-1295	macchristensen@mcllc.net	Construction (The MC Family of Companies LLC)
Arlyn	(307) 682-3009	Arlyn@prhvac.com	Construction (Heating and Air Conditioning)
Josh McGrath	(307) 686-9200	josh@erapriority.com	Professional Services (ERA Priority Real Estate)
Brent Byrd	(307) 685-8837	bbyrd@ccihq.net	IT (Collin's Communications Inc.)
Mary	(307) 686-0040	mary@visitgillettewright.com	Communications/Hospitality (Gillette Visiting Center)

07

APPENDIX

Appendix Table of Content

a.	Gillette College Competitors	
b.	Academic Programs and Occupational Data	
c.	Methodology	
d.	Program Priority Matrix Development and Scoring Methodology	

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Gillette College Competitor Appendix

Overview of the Educational Landscape

An analysis of educational offerings within the target range of 180 miles radius around Gillette, WY, offers more insight on the circle of institutions providing Higher Education to the region.

The analyzed 19 institutions cumulatively provide a rather saturated supply for General Studies /Liberal Arts majors, while in-demand programs in Business- Healthcare- or STEM-field do not produce enough graduates to serve the needs of the evolving, regional workforce.

As it is crucial to determine relevant specializations within these majors, we conducted a deeper, more granular gap analysis to pinpoint the specific in-demand programs that need to evolve as part of the educational landscape in Campbell County.

We want to highlight that additional measures are required in tackling graduation rates which are significantly lower than national average for many institutions in the region (59% for 4-year universities and 30.9% for 2-year institutions).
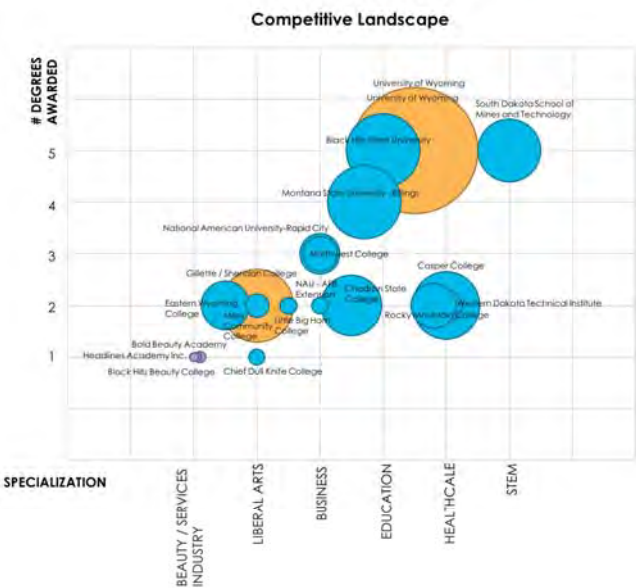
Source: Entangled Solutions analysis, College Navigator, IPEDS

Analyzed Educational Institutions

#	University / College	total # of students	miles range
1	University of Wyoming	12,648	198.4
2	Black Hills State University	4,395	82.4
3	Montana State University - Billings	4,362	178.3
4	Gillette / NWCCD	4,307	80.1
5	Casper College	3,680	108.3
6	South Dakota School of Mines and Technology	3,230	114.8
7	Chadron State College	2,977	162.3
8	Eastern Wyoming College	1,937	164.9
9	Northwest College	1,656	164.0
10	National American University-Rapid City	1,298	114.8
11	Rocky Mountain College	1,000	182.5
12	Western Dakota Technical Institute	836	113.5
13	Miles Community College	481	147.6
14	Little Big Horn College	248	134.4
15	National American University-Ellsworth AFB Extension	235	120.8
16	Chief Dull Knife College	218	102.3
17	Bold Beauty Academy	125	178.3
18	Black Hills Beauty College	85	114.8
19	Headlines Academy Inc.	77	114.8
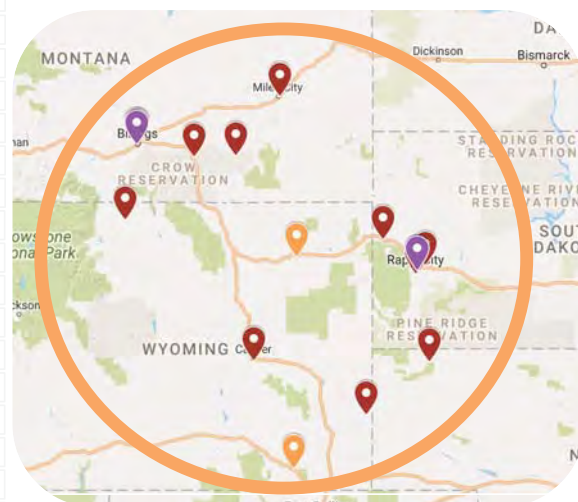
Source: IPEDS, College Navigator, Google Maps

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Fast Facts

- **19 schools** (including University of Wyoming and Gillette College) are located within the analyzed region.

- **Graduation rates are extremely low** with only two providers, University of Wyoming and South Dakota School of Mines and Technology, attaining 50%.

- **Student population** in the area is 40,852.

- Eight colleges mainly award **degrees** in General Studies and Business, seven schools in Education and Healthcare, and only one university (South Dakota School of Mines and Technology) is highly focused on STEM disciplines.

19 institutions		
8 universities	8 community colleges	3 other
1. University of Wyoming 2. Black Hills University 3. Montana State University - Billings 4. South Dakota School of Mines & Technology 5. Chadron State College 6. National American University-Rapid City 7. Rocky Mountain College 8. National American University-Ellsworth AFB Extension	1. Gillette / NWCCD 2. Casper College 3. Eastern Wyoming College 4. Northwest College 5. Western Dakota Technical Institute 6. Miles Community College 7. Little Big Horn College 8. Chief Dull Knife College	1. Bold Beauty Academy 2. Black Hills Beauty College 3. Headlines Academy Inc.

Source: Entangled Solutions analysis, College Navigator, IPEDS

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Black Hills State University

Black Hills State University is a four-year, public, liberal arts university. The institution provides a broad variety of programs, however in 2015 most degrees awarded were in the Education sector. It has a second campus, BHSU-RC, recently established in Rapid City.

Type

4-year, Public

Total # of students

4,395

Location

Spearfish, SD 57799

Graduation rate

36%

Education
Business, Management, Marketing, And...
Biological And Biomedical Sciences
Parks, Recreation, Leisure, And Fitness S...
Psychology
Communication, Journalism, And Relate...
Liberal Arts And Sciences, General Studi...
Engineering Technologies And Engineeri...
Public Administration And Social Service...
Social Sciences
Visual And Performing Arts
History
English Language And Literature/Letters
Area, Ethnic, Cultural, Gender, And Group...
Multi/Interdisciplinary Studies
4 more

177 121 52 52 40 38 28 25 24 22 19 17

Certificate (bel... 4.3%
Associate's deg... 7.1%
Master's degree 13.3%
Bachelor's degr... 75.0%

28 46 86 487

Source: College Navigator, official university website

165

Montana State University - Billings

MSU Billings has the third largest population in the Montana State University System. Offers more online courses than any other institution in Montana (24 online programs). The five colleges are Arts and Sciences, Business, Allied Health professions, Education and City College.

Type

4-year, Public

Total # of students

4,362

Location

Billings, MT 59101

Graduation rate

24%

Education
Business, Management, Marketing, And...
Health Professions And Related Programs
Liberal Arts And Sciences, General Studi...
Psychology
Homeland Security, Law Enforcement, Fi...
Precision Production
Communication, Journalism, And Relate...
Engineering Technologies And Engineeri...
Multi/Interdisciplinary Studies
Computer And Information Sciences An...
Parks, Recreation, Leisure, And Fitness S...
Mechanic And Repair Technologies/Tec...
Social Sciences
Biological And Biomedical Sciences
9 more

226 196 177 151 47 40 36 34 30 28

Certificate (bel... 3.5%
Master's degree 13.6%
Associate's deg... 30.8%
Bachelor's degr... 52.1%

39 152 582 344

Source: College Navigator, official university website

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Casper College

Casper College is the second largest community college in the region after Gillette/NWCCD. Most degrees awarded in 2015 were in the Healthcare field. Through the partnerships with various institutions, including the University of Wyoming, Franklin University, University of Mary, Rush University, Western Governors University and the University of North Dakota, students may also pursue Bachelor, Master and Doctorate degrees.

Type

2-year, Public

Total # of students

3,680

Location

Casper, WY 82601

Graduation rate

32%
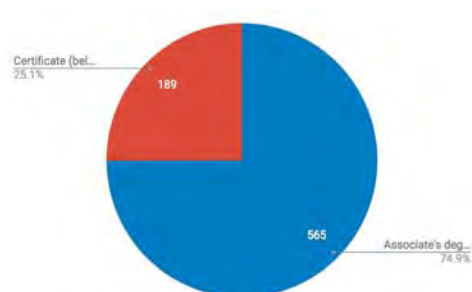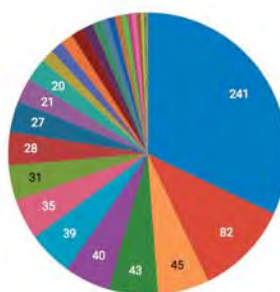
Source: College Navigator, official university website

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South Dakota School of Mines and Technology

This organization is the only university in the area that specializes in STEM education. 98% of students of the most recent graduating class are going on to graduate school or have secured employment at an average starting salary of $63,000+ at notable employers such as Google, Microsoft, Medtronic, NASA, SpaceX, Keurig, etc.

Type

4-year, Public

Total # of students

3,230

Location

Rapid City, SD 57701

Graduation rate

51%
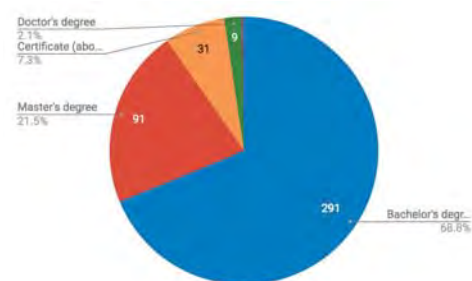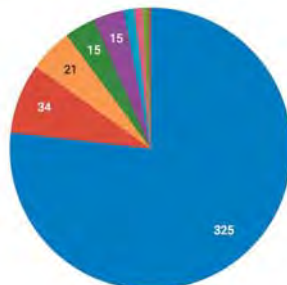
Source: College Navigator, official university website

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Chadron State College

Chadron State experiences several consecutive years of enrollment growth. The curriculum has grown to offer programs and courses in 52 majors and endorsements and eight master's degree programs. The six bachelor's degree programs attracting the most students are business administration, education, psychology, biology-health sciences, rangeland management and justice studies.

Type

4-year, Public

Total # of students

2,977

Location

Chadron, NE 69337

Graduation rate

43%
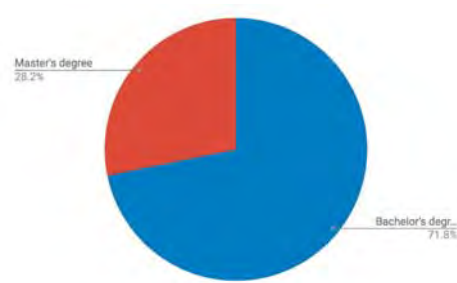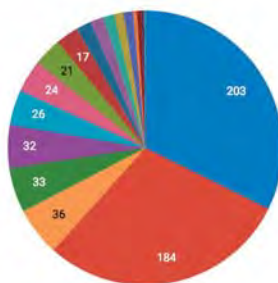
Source: College Navigator, official university website

Eastern Wyoming College

Eastern Wyoming College is a community college in Torrington, Wyoming. The college also has outreach centers serving Platte, Niobrara, Converse, Weston and Crook counties. Most degrees awarded are in Liberal Arts or in Precision Production (mostly certificates).

Type

2-year, Public

Total # of students

1,937

Location

Torrington, WY 82240

Graduation rate

33%
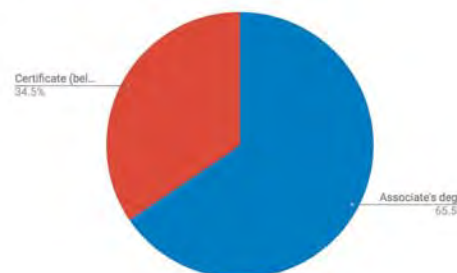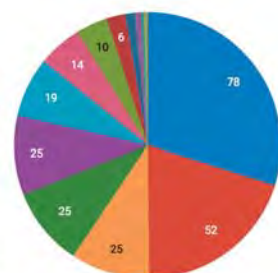
Source: College Navigator, official university website

Northwest College

Among other majors, Northwest College offers an Associate's Degree in Nursing. NWC and University of Wyoming have more than 20 program transfer agreements currently in place that allow students to transfer at the junior level.

Type

2-year, Public

Total # of students

1,656

Location

Powell, WY 82435

Graduation rate

37%
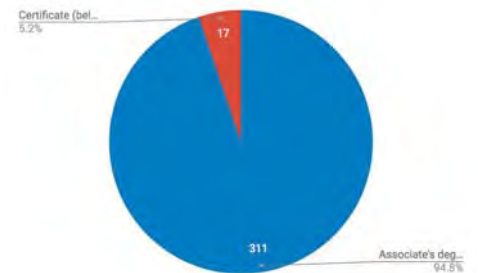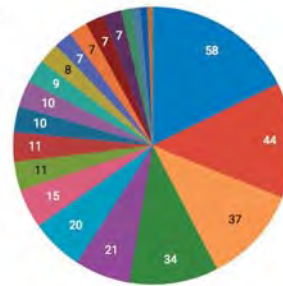
Source: College Navigator, official university website

171

National American University-Rapid City

This multi-state institution offers programs online, on-campus, and in hybrid formats. At the Rapid City campus NAU operates three colleges: The College of Business, Accounting and Technology, the College of Health and Sciences, and the College of Legal Studies.

Type

4-year, Private for-profit

Total # of students

1,298

Location

Rapid City, SD 57701

Graduation rate

19%
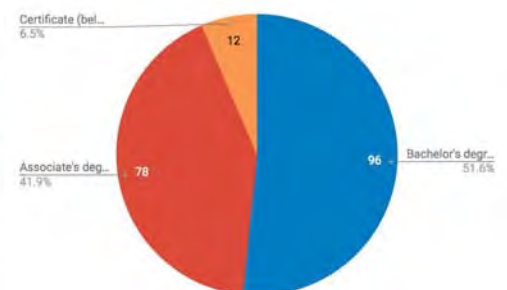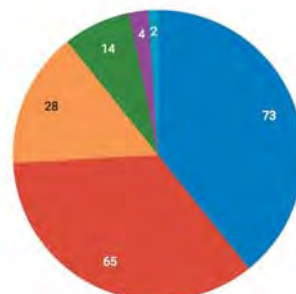
Source: College Navigator, official university website

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Rocky Mountain College

RMC is a private comprehensive college offering 50 liberal arts- and professionally oriented- majors in 24 undergraduate disciplines. Some of RMC's less traditional academic offerings include aviation programs, equestrian programs, and physician assistant programs.

Type

4-year, Private not-for-profit

Total # of students

1,000

Location

Billings, MT 59102

Graduation rate

48%

Source: College Navigator, official university website

Western Dakota Technical Institute

The institute aims to only offer educational programs in growing fields and industries, including Business and Computers, Construction and Manufacturing, Energy and Environmental Technologies, Health Sciences, Legal and Public Services, and Transportation Technologies.

Type

2-year, Public

Total # of students

836

Location

Rapid City, SD 57703

Graduation rate

33%

Source: College Navigator, official university website

Miles Community College

Miles Community College has awarded the majority of its degrees in Liberal Arts. MCC highlights its open door-admission policy and offers credit programs to prepare students for transfer, as well as career and technical programs to prepare students to enter the workforce.

Type

2-year, Public

Total # of students

481

Location

Miles City, MT 59301

Graduation rate

42%

- Liberal Arts And Sciences, General Studies And Humanities
- Health Professions And Related Programs
- Business, Management, Marketing, And Related Support Services
- Transportation And Materials Moving
- Agriculture, Agriculture Operations, And Related Sci...
- Mechanic And Repair Technologies/Technicians
- Computer And Information Sciences And Support Servi...

Certificate (bel... 17.1%

Associate's deg... 82.9%
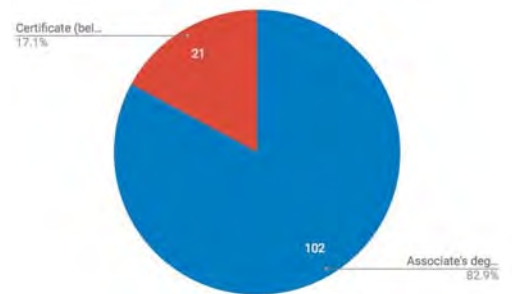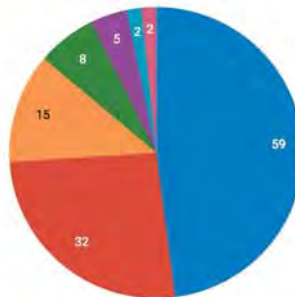
Little Big Horn College

The majority of the students enrolled in Little Big Horn College are members of the Crow Tribe of Indians. The college is committed to the preservation, perpetuation and protection of Crow culture and language. The schools offers Associate of Arts and Associate of Science degrees instructing via traditional and distance education.

Type

2-year, Public

Total # of students

248

Location

Crow Agency, MT 59022

Graduation rate

20%

- Business, Management, Marketing, And Related Sup...
- Liberal Arts And Sciences, General Studies And Human...
- Health Professions And Related Programs
- Public Administration And Social Service Professions
- Education
- Natural Resources And Conservation
- Agriculture, Agriculture Operations, And Related Sci...
- Personal And Culinary Servi...
- Engineering
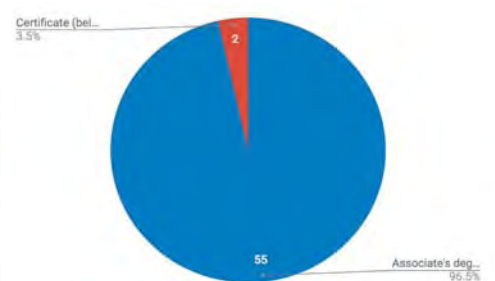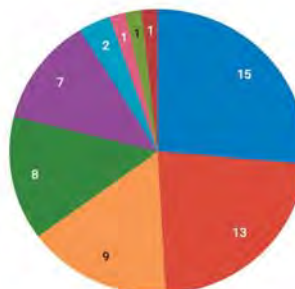
Certificate (bel... 3.5%

Associate's deg... 96.5%

National American University - Ellsworth AFB Extension

National American University

This NAU campus focuses on providing education for active-duty, reserve, National Guard, and retired military personnel, as well as military families, veterans receiving VA benefits, DOD employees and their dependents, and base contractors.

Type

4-year, Private for-profit
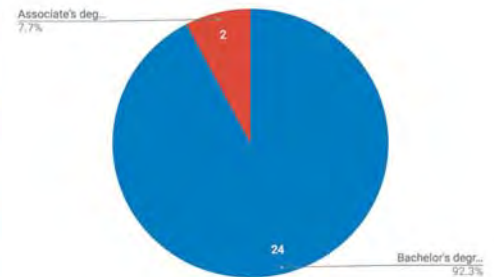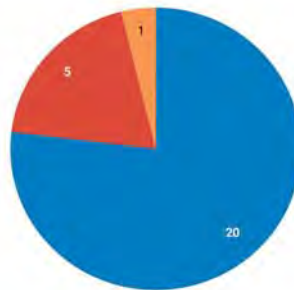
Total # of students

235

Location

Ellsworth AFB, SD 57706

Graduation rate

25%

- Business, Management, Marketing, And Related Support Services
- Computer And Information Sciences And Support Services
- Homeland Security, Law Enforcement, Firefighting And Related Protective Services

Associate's deg... 7.7%

Bachelor's degr... 92.3%

Source: College Navigator, official university website

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Chief Dull Knife College

Chief Dull Knife College is a small, community based, land grant, and tribally controlled community college established to provide quality educational opportunities to residents of the Northern Cheyenne Reservation and surrounding communities.

Type

2-year, Public

Total # of students

218

Location

Lame Deer, MT 59043

Graduation rate

15%

- Liberal Arts And Sciences, General Studies And Humanities
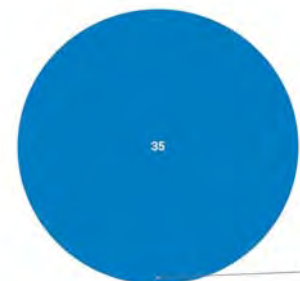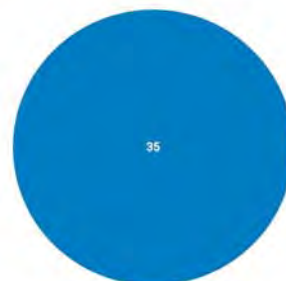
Associate's deg... 100.0%

Source: College Navigator, official university website

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Bold Beauty Academy

Students of Bold Beauty Academy gain know-how and hands-on training necessary to succeed in the beauty industry. They learn both the fundamentals and advanced techniques and master everything from haircutting, hair styling, and hair coloring to marketing and business skills.

Type
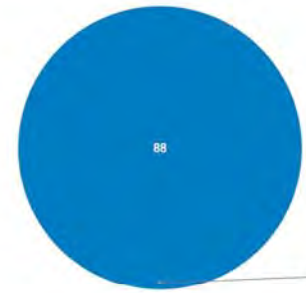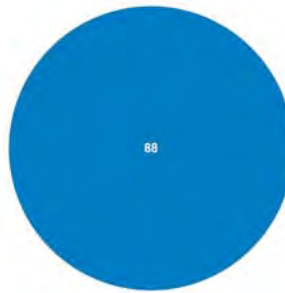
2-year, Private for-profit

Total # of students

125

Location

Billings, MT 59101

Graduation rate

73%

● Personal And Culinary Services

88

88

Certificate (bel...
100.0%

Black Hills Beauty College

Black Hills Beauty College is a private cosmetology school that offers courses in cosmetology, esthetics, massage and nail technology. In addition, advanced classes are available in business education, sales and personal development.

Type

2-year, Private for-profit

Total # of students

85

Location

Rapid City, SD 57701

Graduation rate

58%

● Personal And Culinary Services

34

34

Certificate (bel...
100.0%

Headlines Academy Inc.

Headlines Academy is a full service school of beauty with certified courses in cosmetology, esthetics, massage therapy, and nail technology.

Type

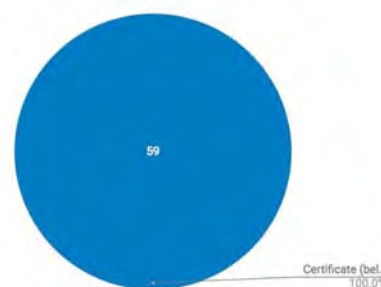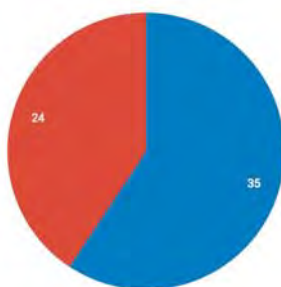2-year, Private for-profit

Total # of students

77

Location

Rapid City, SD 57701

Graduation rate

63%

- ● Personal And Culinary Services
- ● Health Professions And Related Programs

24
35

59
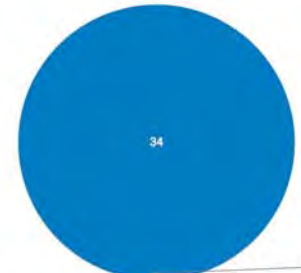
Certificate (bel...
100.0%

Source: College Navigator, official university website

07 b

Academic Programs and Occupational Data Appendix

Data Appendix

Please find the full set of raw data by clicking on these hyperlinks. .

SOC & CIP To Program of Study

Employment data (SOC Codes)

SOC & CIP To Career Cluster

Institutional Programs data (CIP Codes)

"CCO - Phase II" folder

07 c
Methodology Appendix

SOC-CIP-Cluster Crosswalk Methodology

1. Download Employment data
from the BLS.gov website (SOC2010)

2. Download Classification
of Instructional Programs data (CIP 2010)

3. Download Crosswalks

- SOC & CIP to Program of Study (EDEPS)

- SOC & CIP to Career Cluster (The National Career Clusters Framework)

SOC-CIP-Cluster Crosswalk Methodology

Step 1 : Download Employment data (SOC2010)

Download data

- visit Bureau of Labor Statistics website

- select "Data Tools" to get to Employment Projections section

- download Employment data

Start using the data

- visit The Integrated Postsecondary Education Data System website

- within the Survey Data section select "Custom data files" option
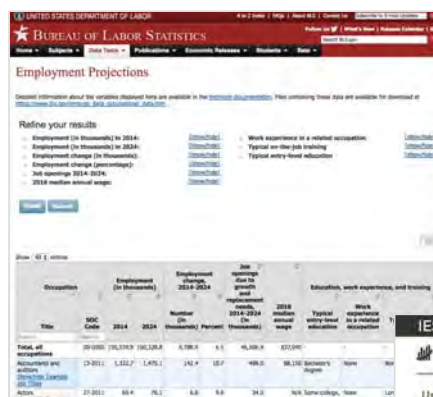
SOC-CIP-Cluster Crosswalk Methodology

Select data release

- choose "Use provisional release data" to obtain the latest data available (2015-16 at the moment of writing)

- click "Continue"

Select Institutions

- Use comma-separated UnitIDs of the institutions

- Select institutions within 150mi radius from the Gillette College [1]

- click "Select"

College Navigator website allows to obtain a list of institutions within the radius of the specified location

---

SOC-CIP-Cluster Crosswalk Methodology

Step 2 : Download Classification of Instructional Programs data (CIP 2010)

Select Variables

- Year: *2015*

- Variables:
  Completions → Awards/degrees conferred by program (CIP) ... → Completions, awards and degrees by 6-digit cipcode

- *Select Qualifying Variable(s)* (next slide)

- Press "Continue"

SOC-CIP-Cluster Crosswalk Methodology

Select Qualifying Variables

- First or Second Major: *first*

- CIP Codes - 2010 Classification: *select all 6-digit* programs

- Select from the list of variables: *Grand total*

189

SOC-CIP-Cluster Crosswalk Methodology

Step 2 : Download Classification of Instructional Programs data (CIP 2010)

Output

- Do you want to include imputational variables: *no*

- Choose the preferred format to download the data

Output

Use

- SOC & CIP to Program of Study (EDEPS)

- SOC & CIP to Career Cluster (The National Career Clusters Framework) crosswalks

Identify the Occupations and the corresponding Instructional Programs and Career Clusters.

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SOC-CIP Crosswalk Methodology

Prerequisites:

Make sure the following files are readily available prior to performing the crosswalk:

- ✓ **Employment data**
  (SOC2010 codes, 150mi distance)
- ✓ **Institutional Programs data**
  (CIP2010 codes, 150mi distance)
- ✓ Use the **SOC & CIP to Program of Study** (EDEPS) and **SOC & CIP to Career Cluster** (The National Career Clusters Framework) mappings to identify the Occupations and the corresponding Instructional Programs within Career Clusters.
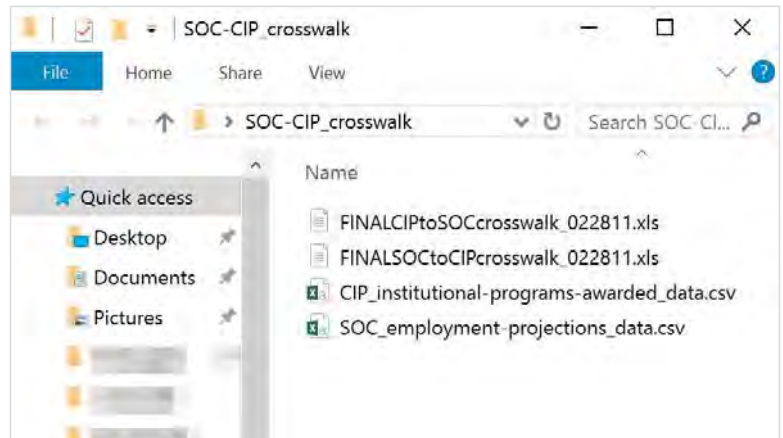
Methodology — Crosswalk

Step 1:
Use the official "SOC Code to Program of Study" and "CIP Code to Program of Study" mappings to identify the Occupations, Instructional Programs and the corresponding Program of Study

Step 2:
Use the crosswalk which maps Skill-Based Occupation Clusters to CIP & SOC codes

SOC2010 Code	SOC2010 Title	Program of Study
11-1011	Chief Executives	Management

CIP2010 Code	CIP2010 Title	Program of Study
44.0401	Public Administration.	Management

Source: Economic Development and Employer Planning System (EDEPS), The National Career Clusters Framework

Methodology – Crosswalk

Step 3:

Create a crosswalk table by joining multiple tables:

- Employment data (SOC2010 codes, 150mi distance)

- Institutional Programs data (CIP2010 codes, 150mi distance)

- SOC & CIP to Program of Study (EDEPS)

- SOC & CIP to Career Cluster (The National Career Clusters Framework)

Employment data (SOC Codes)

SOC & CIP To Program of Study

SOC & CIP To Career Cluster

Institutional Programs data (CIP Codes)

Final Crosswalk

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Program Priority Matrix Development & Scoring Methodology
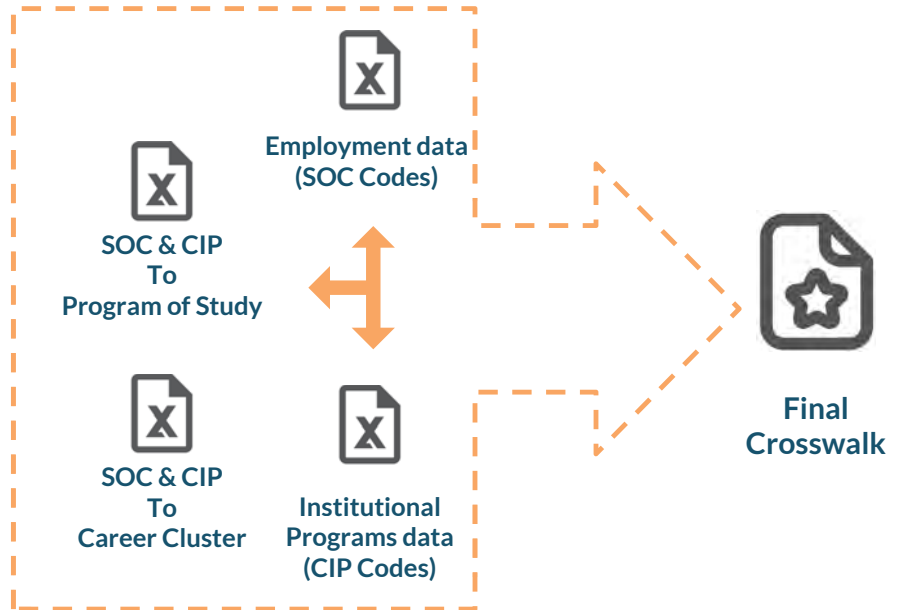
Scoring Methodology

1. Define Scoring Factors
to evaluate program priorities: *Desirability, Ability to Address*.

2. Set Scales and Weights for the Scoring Factors
including *Rating Scale, Importance Weighting* of each.

3. Measure Scores
using combination of Objective (labor market & economic development) and Subjective (expert opinion) data.

4. Determine Program Priorities
based on the aggregated score of factors.

Scoring Methodology

1. Define Prioritization Factors

Desirability

- Size of the sector (# of Occupations)
- Growth rates (% Growth in Occupations)
- Fit to economic development strategy
- Automation Risk Tolerance
- Economic Impact / Multiplier

Ability to Address

- Funding
- Organizational capacity
- State / Institutional restrictions

Source: BLS, Entangled Solutions Analysis, 2017

Scoring Methodology

2. Set Scales and Weights for the Scoring Factors

Desirability

	Rating Scale	Importance Weighting
Size of the sector	1..10	1
Growth rates	1..10	1
Fit to economic development strategy	1..10	1
Automation Risk Tolerance	1..10	1
Economic Impact / Multiplier	1..10	1

Ability to Address

	Rating Scale	Importance Weighting
Funding	1..10	1
Organizational capacity	1..10	1
State / Institutional restrictions	1..10	1

Scoring Methodology

2. Set Scales and Weights for the Scoring Factors

Desirability	Rating Scale	Importance Weighting
Size of the sector	1 — 10	1
Growth rates	1 — 10	1
Fit to economic development strategy	1 — 10	1
Automation Risk Tolerance	1 — 10	1
Economic Impact / Multiplier	1 — 10	1

Ability to Address	Rating Scale	Importance Weighting
Funding	1 — 10	1
Organizational Capacity	1 — 10	1
State / Institutional Restrictions	1 — 10	1

Scoring Methodology

3. Measure Scores

Desirability

- **Size of the sector (# of Occupations)**
  Occupations available for the corresponding degrees in 2016. Number of Job Occupations within the Serviceable Available Market (SAM). Expressed as a rating on a scale from 1 (low) to 10 (high). Date range: Jan-Dec 2016

- **Growth rates (% Growth in Occupations)**
  Projected growth in occupations (2026 compared to 2016) for the corresponding degrees. Expressed as a rating on a scale from 1 (low) to 10 (high). Date range: Jan-Dec 2026

- **Fit to economic development strategy**

- **Automation Risk Tolerance**
  Risk of automation for the cluster. Expressed as a scale from 1 (low risk tolerance) to 10 (high risk tolerance). Date range: 2016-2026

- **Economic Impact / Multiplier**

Ability to Address

- Funding

- Organizational capacity

- State / Institutional restrictions

- Objective — factors based on labor market & economic development data
- Subjective — factors based on expert opinions and responses data

Source: BLS, Entangled Solutions Analysis, 2017

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Scoring Methodology

4. Determine Program Priorities

Aggregate the Scores

- for the importance factors
- across all the industries

Prioritize programs

- according to the aggregated score

Health Sciences

Desirability (score)	Rating	Importance Weighting Factor	TOTAL
Size of the sector (Demand)	8	1	8
Growth rates (Demand)	9	1	9
Fit to economic development strategy	5	1	5
Automation Risk Tolerance	7	1	7
Economic Impact / Multiplier	10	1	10
		Average	7.8

Ability to Address (score)	Rating	Importance Weighting Factor	TOTAL
Funding	7	1	7
Organizational capacity	7	1	7
State / Institutional restrictions	5	1	5
		Average	6.3

Next Step - Program Priorities

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Gap Analysis — Clarifications around Methodology

We performed a crosswalk to identify the **Gap** between the **Instructional Programs** and the **Occupations** where more workforce is needed.

Crosswalk Data

The following data was analyzed:

1. **Classification of Instructional Programs data** (CIP 2010)
   - **Instructional Programs** (with the CIP codes)
   - within 150mi from the Gillette College
   - # of Degrees awarded (conferrals) in 2016, includes:
     - Certificate (above/below the baccalaureate level)
     - Associate's degree
     - Bachelor's degree
   - (referred to as "Supply")
2. **Employment data** (SOC2010)
   - **Occupations** (with the SOC codes)
   - within 150mi from the Gillette College
   - # of people "Employed"
     - Employed in the Region (2015)
     - National Employment Projections (2026)
     - Job Postings (in 2015)
   - (referred to as "Demand")

Crosswalk Goals

The main goal of the crosswalk was to:

1. **Identify the Gap**
   - **Undersupply**
     What are the **Occupations** with the growing Employment, yet not enough graduates for the corresponding **Instructional Programs**?

   - **Oversupply**
     What are the **Occupations** with low Employment, yet many graduates for the corresponding **Instructional Programs**?

Performing the Crosswalk

1. SOC & CIP to Program of Study
2. SOC & CIP to Career Cluster
3. Analyze Supply-Demand differences
   a. High-level: Career Cluster
   b. Details: Program of Study within the Career Cluster

Sources for Program Funding and Partnerships

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