Max Backlund Senior Research Associate

Michael Hogue Senior Research Statistician

Economic Challenges and Opportunities in Utah's Coal Country

The Gardner Institute's 40-year population and employment planning projections illustrate how scheduled power plant closures and declining coal production is likely to affect the region. This report can help to plan for the coming decades as economic circumstances change for Carbon and Emery counties.

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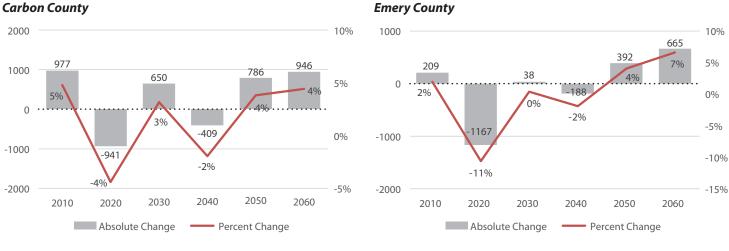
Economic Challenges and Opportunities in Utah's Coal Country

Analysis in Brief

Carbon and Emery counties face changing economic circumstances as market forces drive declining coal production and the scheduled closures of the Huntington and Hunter power plants in 2036 and 2042.ⁱ The Gardner Institute's long-term population and employment planning projections highlight these and other challenges facing the region. This report also identifies opportunities for growth and provides some suggested recommendations to encourage prosperity.

Key Findings

- Population growth in Carbon and Emery counties is based on migration – Both Carbon and Emery counties have lost population in recent years due to net out-migration and job losses. Carbon and Emery counties are expected to experience population decline in the 2030s, driven both by out migration and low natural increase. However, starting in 2040, positive net migration is expected to create new growth in the county. The 65 and older population for both counties is projected to increase while the under 18 population is projected to decline. Accordingly, the median age is projected to rise from 37.5 in 2020 to 47.0 in 2060.
- Employment is projected to decline and then begin to recover– As employment declines in the natural resources and utilities sectors there will be large effects on the local economy. Greater economic diversity will help to maintain employment levels closer to existing levels in 2020. Without policy interventions, larger employment declines are projected through the year 2060.
- Shared Challenges Carbon and Emery counties face six likely economic and demographic challenges in the coming decades:
 - a. Declining employment from the natural resources and utilities sectors.
 - b. Concentration of manufacturing growth in northern Utah counties.
 - c. Peaking projected employment growth, particularly in manufacturing, in 2040.
 - d. Declining fertility rates.
 - e. Increasing out-migration of young population.
 - f. Net in-migration of retirement-aged population.

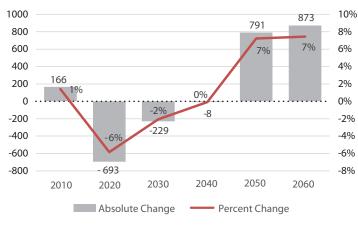


Historical and Projected Decadal Population Change, 2010–2060

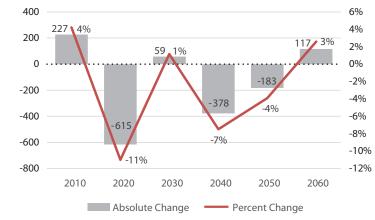
Source: Kem C. Gardner Policy Institute, 2020–2060 Projections

Historical and Projected Decadal Employment Change, 2010–2060









Source: Kem C. Gardner Policy Institute, 2020-2060 Projections

Potential Strategies

A range of potential strategies will help Carbon and Emery counties in future years:.

- 1. Create a set of connected 5-, 10- and 20-year economic development strategies. Projected economic and demographic growth shows the importance of prompt action in the face of the scheduled power plant closures in 2036 and 2042. These dates are useful guidelines, but changing market forces have caused some power plants to close earlier than scheduled. Additionally, employment in manufacturing and similar industries is projected to peak in 2040.
- 2. Connect federal, state, regional, and local resources. The U.S. Economic Development Administration emphasizes a regional strategy in the guidelines for the Comprehensive Economic Development Strategy and through the grant application process for its various programs.ⁱⁱ
- 3. Increase economic diversity. Carbon and Emery are among the least economically diverse counties in the state. Carbon is the 24th most diverse of Utah's 29 counties, and Emery is the 28th. Projected industry growth through 2060 includes higher concentrations of tourism-related employment in accommodations and food services, and arts, entertainment and recreation. County leaders are also investing in energy and manufacturing diversification.

- 4. Encourage educational attainment. According to research from the Brookings Institution, educational attainment is the strongest indicator of increased county vitality.ⁱⁱⁱ Carbon ranks 24th and Emery ranks 25th among Utah's 29 counties, with 17.1% and 16.3% of the population holding a bachelor's degree or higher—below the state average of 34.0%.^{iv}
- 5. Embrace Cross-Regional Partnerships. A cross-regional partnership for the state's central rural counties that includes a broad set of community and issue experts, could bring increased funding to address these shared challenges.
 - a. Potential Conveners. A convening entity, like the Southeastern Utah Association of Local Governments, the Governor's Office of Economic Opportunity, or the Utah Association of Counties, could help to prioritize issues, align resources, and bring essential stakeholders to the table.

i. Pacificorp, "2021 Integrated Resource Plan," September 1, 2021.

ii. U.S. Economic Development Administration. (2020). Comprehensive Economic Development Strategy Guidelines. Retrieved from https://www.eda.gov/ceds/

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Introduction

Using state and local data, this report provides an analysis of economic development challenges and opportunities for two of Utah's coal counties, Carbon and Emery. These two counties form a regional economy, with a shared commuter shed, shared industries, and consumer spending patterns.¹ Together, these counties face challenges with changing economic circumstances from declining coal production and the future closures of power plants.

This report references both the Gardner Institute's 40-year population and employment planning projections for Utah and projected employment and wage scenarios for Carbon and Emery counties. These projections show that scheduled power plant closures and declining coal production will greatly affect the region, particularly in 2036 with the first scheduled power plant closure. The natural resources economy has defined Carbon and Emery, but as economic circumstances change for these counties they can embrace broader connections to neighboring counties that share common challenges and opportunities. Projection scenarios with greater economic diversity consistently outperform the baseline projections that account for no intervention.

It is possible that the Huntington and Hunter plants will close even sooner due to rapidly changing energy markets. PacifiCorp and other electric utilities across the West have accelerated retirement dates of various coal plants in recent years because of market forces. For example, PacifiCorp is a partial owner of the Hayden Generating Station, located in northwestern Colorado, and Xcel Energy, the majority owner of the plant, recently announced plans to retire Hayden Unit 2 by the end of 2027 and Unit 1 in 2028. The prior anticipated retirement dates for those units were 2036 and 2030, respectively.²

Population and Employment Projections for Utah

The Gardner Institute provides statewide population and employment projections for the next 40 years for Utah and its counties. These projections are considered planning projections, meant to guide decisionmakers about possible future scenarios.

Utah's population is projected to grow over the next 40 years from 3,284,823 in 2020 to 5,450,598 in 2060, an increase of 2,165,773. High-growth counties include Utah, Salt Lake, Davis, and Weber, and surrounding ring counties, Tooele and Wasatch. Washington and Iron counties in the southwest continue to be growth centers. Total employment is projected to grow from 2,105,359 in 2020 to 3,448,350 in 2060.³

The top five projected growth counties account for 82.7% of the projected population growth, including Utah County with 31.1%, Salt Lake with 22.3%, Washington with 13.0%, Davis with 10.0%, and Weber with 6.2%. Population growth for Carbon and Emery counties combined is projected at 3,269, or 0.1% of the total population growth for the state, bringing their combined 2060 population to 33,153.

Population growth is distributed more evenly than employment growth among the four most urbanized counties, Salt Lake, Utah, Davis, and Weber counties. Utah County is the leading projected population growth center, with a 190,075 lead over neighboring Salt Lake County. However, employment growth in Utah County trails Salt Lake County by 199,029 projected new jobs. Salt Lake has the lowest population growth-to-employment growth ratio in the state, at 0.9:1. Utah County's ratio is 1.9:1, while Weber and Davis are 2.2:1 and 1.9:1, respectively. Neighboring counties Tooele and Wasatch have ratios of 4.3:1 and 3.9:1. Population growth centers are not necessarily the highest employment growth centers (see Figure 1).

Population Growth in Carbon County

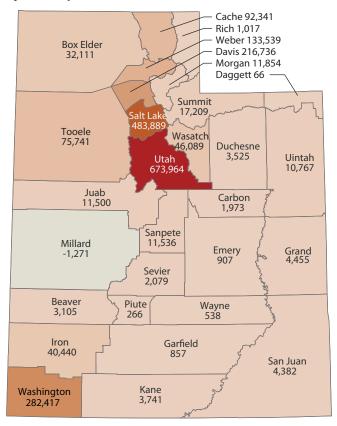
Carbon County recorded a 2020 Census population of 20,412, the 15th smallest county in Utah. It has lost population in eight of the past 10 years due to net out-migration and job losses, declining by 991 residents. Carbon County is expected to experience population loss in the 2030s, driven both by net migration and natural increase. However, starting in 2040, positive net migration is expected to create new growth in the county. The 65 and older population is projected to increase from 17.5% of the population in 2020 to 28.0% in 2060. The share of the population under 18 is projected to decline, from 25.6% in 2020 to 18.1% in 2060. Accordingly, the median age is projected to rise from 37.5 in 2020 to 47.0 in 2060.

Population Growth in Emery County

Emery County recorded a 2020 Census population of 9,825, the ninth smallest in Utah. Between 2010 and 2020, Emery County declined by 1,151 residents, driven by out migration. Emery County's population is projected to grow from 9,824 on July 1, 2020 to 10,731 in 2060. Similar to Carbon County, Emery will likely experience population loss in the 2030s driven by net out-migration. Starting in 2040, positive net in-migration will contribute to growth in the county. Emery County's population ages over the projection horizon. The share of the total population age 65 and older is projected to increase from 17.6% in 2020 to 26.3% in 2060. The share of the population under 18 is projected to decline, from 29.1% in 2020 to 17.4% in 2060. The median age is projected to rise from 36.4 in 2020 to 48.9 in 2060.

Figure 1: Projected Population and Employment Change by County, 2020–2060

Projected Population Growth



Source: Kem C. Gardner Policy Institute, 2020-2060 State and County Projections

Fertility Rates and Migration Patterns

In 2021, the estimated total fertility rate (TFR) for both Carbon and Emery counties is 1.90. By 2060, the projected TFR is estimated to decline to 1.79. Statewide, the TFR will also likely decline from an estimated 2.05 in 2021 to 1.93 in 2060. This declining fertility rate, compounded with out-migration through 2040, raises the median age and lowers the average household size. By 2045, net migration will likely be the primary means of

Table 1: Projected Population Changes, 2020–2060 Carbon County

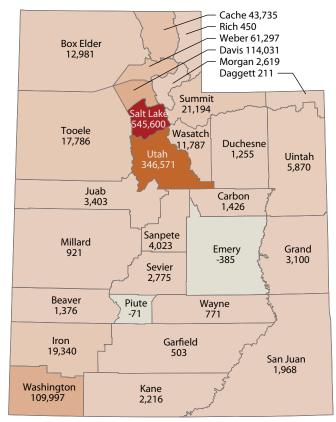
	Total Population	Absolute Growth	Median Age	People Per Household
2020	20,449	-101	37.5	2.5
2030	20,098	-351	41.1	2.4
2040	20,689	591	43.7	2.3
2050	21,475	786	43.9	2.2
2060	22,422	947	47.0	2.2

Emery County

	Total Population	Absolute Growth	Median Age	People Per Household
2020	9,824	-397	36.4	2.8
2030	9,862	38	39.9	2.6
2040	9,674	-188	42.7	2.4
2050	10,066	692	44.7	2.3
2060	10,731	665	48.9	2.2

Source: Kem C. Gardner Policy Institute, 2020-2060 Projections

Projected Employment Growth



population growth for the two counties, particularly retirementage migrants. By 2060, the projected median age is projected to rise to 47.0 years in Carbon and 48.9 in Emery. The persons per household is expected to fall to 2.2 in both Carbon and Emery counties (see Table 1).

Many rural communities have seen and are continuing to see high rates of out-migration, specifically by younger adults. Carbon and Emery counties are experiencing some of the highest out-migration rates in the state, along with neighboring rural counties. These growth projections are also affected by the growth of population centers like Salt Lake, Utah, and Washington counties, which are projected to increase their young adult populations as employment continues to urbanize.

Employment Growth in Carbon and Emery Counties

With declining coal production and scheduled power plant closures in Carbon and Emery counties, employment growth is projected to slow in Carbon and decline in Emery. The population growth-to-employment growth ratio for the two counties is 2.9:1. Projected growth industries for Carbon are related to the tourism industry, including accommodation and food services, and arts, entertainment and recreation. Emery's leading growth industries include finance and insurance and health care and social services.

Employment Scenarios for Carbon and Emery Counties: A Closer Look at the Next 20 Years

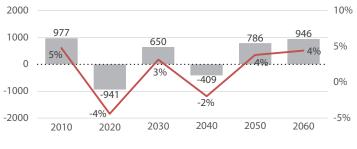
The next 20 years are critical for the future of Carbon and Emery counties. As employment declines in the natural resources and utilities sectors there will be large effects on the local economy. Greater economic diversity will help to maintain employment levels closer to existing levels in 2020. Without policy interventions, the baseline economy shows larger employment declines through the year 2060.

Figure 2 shows projected employment scenarios for Carbon and Emery counties. The "High" line accounts for ideal economic circumstances where the scheduled power plant closures are delayed, the "Baseline" accounts for normal economic circumstances where the plant closures occur on schedule, and the "Accelerated Closure" line accounts for plant closures earlier than scheduled. The "Diversified" line includes greater economic diversity starting in the year 2020.

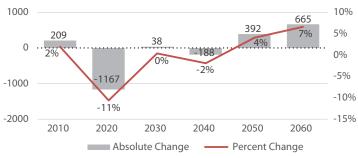
Even with projected improvements to economic diversity, the economy will likely suffer job losses and decreasing wages, compared with current economic conditions, represented by the High line. However, addressing economic diversity can improve conditions over the Baseline or Accelerated Closure scenarios, most notably as the first scheduled plant closure nears in 2036.

Figure 2: Historical and Projected Decadal Population Change, 2010–2060

Carbon County







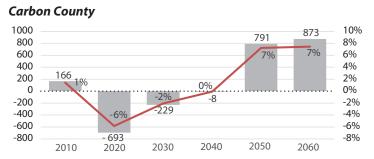
Source: Kem C. Gardner Policy Institute, 2020–2060 Projections

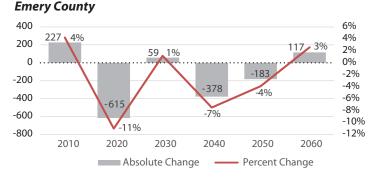
As with employment growth, the year 2036 is an important year for projected wage growth, as the first scheduled power plant closure occurs. These projections are based on the total wages paid in the economies of Carbon and Emery counties, following the same High, Baseline, Accelerated Closure and Diversified scenarios as the employment projections. Similar results emerge, with an overall decrease from the High scenario, which represents the continuation of current economic circumstances by delaying the scheduled power plant closures. The Diversified scenario consistently improves upon the Baseline through the year 2060.

The year 2036 is especially important for projected wages in both the goods-producing and services industries. It marks an important distinction between the baseline projections and projections based on increased economic diversity.

These projected employment and wage scenarios emphasize the importance of prompt action to diversify the economy. The Diversified scenario significantly improves upon the Baseline, which is the expected course of action without economic intervention. The Baseline scenario includes declining natural resources employment and the closure of both the Hunter and Huntington power plants as currently scheduled in the Pacificorp 2021 Integrated Resource Management Plan.⁴

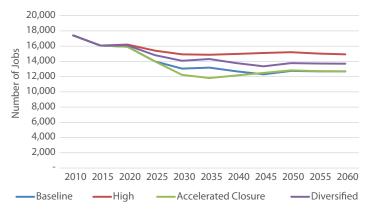
Figure 3: Historical and Projected Decadal Employment Change, 2010–2060





Source: Kem C. Gardner Policy Institute, 2020–2060 Projections

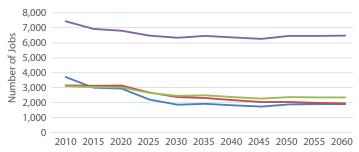
Figure 4: Employment Projections for Carbon and Emery Counties, 2020–2060



Source: Kem C. Gardner Policy Institute

Figure 5: Baseline and Diversified Employment Projections by Industry for Carbon and Emery Counties, 2010–2060

Baseline Employment



Greater Economic Diversity

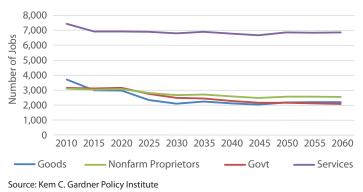
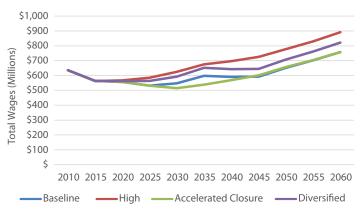


Table 2: Employment Change by Select Industry inCarbon County, 2020–2060

Industry	2020 Employment	Projected 2060 Employment	Projected Employment Change
Mining	891	394	-497
Utilities	75	32	-43
Trans./Warehousing	480	455	-25

Source: Kem C. Gardner Policy Institute, 2020-2060 State and County Projections

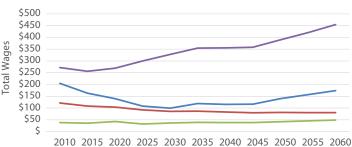
Figure 6: Wage Projections for Carbon and Emery Counties, 2010–2060



Source: Kem C. Gardner Policy Institute

Figure 7: Baseline and Diversified Wage Projections by Industry for Carbon and Emery Counties, 2010–2060





Greater Economic Diversity

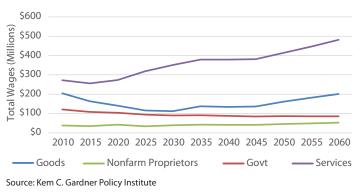


Table 3: Employment Change by Select Industry in Emery County, 2020–2060

Industry	2020 Employment	Projected 2060 Employment	Projected Employment Change
Mining	259	206	-53
Utilities	305	51	-254
Trans./Warehousing	84	41	-43

Source: Kem C. Gardner Policy Institute, 2020-2060 State and County Projections

Table 4: Projected Growth for Manufacturing Employment, Top 10 Counties, 2020–2060

Rank	County	2020 Manufacturing Employment	2040 Manufacturing Employment	2060 Manufacturing Employment	Projected Employment Growth	Share of Projected Growth
1	Salt Lake	60,922	73,631	73,428	12,506	31.73%
2	Utah	22,352	27,749	30,015	7,663	19.44%
3	Weber	14,571	19,349	19,396	4,825	12.24%
4	Davis	15,028	17,803	17,043	2,015	5.11%
5	Cache	12,708	16,272	16,728	4,020	10.20%
6	Box Elder	5,994	8,042	7,625	1,631	4.14%
7	Washington	4,114	6,286	6,953	2,839	7.20%
8	Iron	2,095	2,601	2,484	389	0.99%
9	Tooele	1,398	2,057	2,292	894	2.27%
10	Sanpete	1,347	1,556	1,416	69	0.18%
Top 101	Total	140,529	175,271	177,380	36,851	93.50%

Source: Kem C. Garner Policy Institute, 2020-2060 State and County Projections

Declining Natural Resources Employment

In Carbon County, projected employment shows losses for mining, utilities, and transportation and warehousing (see Table 2). In Emery County, similar employment trends are likely, with decreases in mining, utilities, and transportation and warehousing (see Table 3).

Impact of Growth of Manufacturing Employment for Carbon and Emery Counties

Projected manufacturing growth includes an expected increase of 39,411 new jobs statewide, from 145,994 in 2020 to 185,405 in 2060. This growth is concentrated in Utah's northern counties, with more than 88% of the projected growth in Salt Lake, Utah, Weber, Davis, Cache, Box Elder, and Tooele counties

(see Table 3). With Washington County, these eight counties account for 95% of manufacturing employment growth.

This concentrated growth is a challenge for efforts to increase economic diversity in Carbon and Emery counties, which are projected to grow their manufacturing employment by 35 jobs over the next 40 years.

Ten of central Utah's rural counties, including Carbon and Emery, account for just over 1% of the projected growth in manufacturing employment, or about 533 new jobs. Most of the relevant growth is projected for Juab County, with an expected 374 new manufacturing jobs. Additionally, 92% of the manufacturing employment growth for the 40-year period occurs before 2040. Manufacturing employment for the central rural counties is higher in 2040, with 3,204 jobs, than it is in 2060, with 3,178.⁵

Potential Strategies

Several strategies are worthy of future consideration by Carbon and Emery counties:

Create a set of Connected 5-, 10- and 20-Year Plans-A set of connected plans focused on 5-, 10- and 20year time horizons can address long-term initiatives around increasing economic diversity and educational attainment. The success of an economic development plan depends on how well a plan addresses the existing human, financial, and physical advantages and constraints to create opportunities for both employers and residents.^{6,7} Competitive advantages for rural Utah communities can include operational factors affected by high growth rates in Wasatch Front counties. These might include air quality, workforce retention rates, specialized site requirements, and lower operating costs associated with wages, real estate and utility rates. **2** Connect Federal, State, and Local Resources– The U.S. Economic Development Administration emphasizes a regional strategy in the guidelines for the Comprehensive Economic Development Strategy and through the grant application process for its various programs.⁸

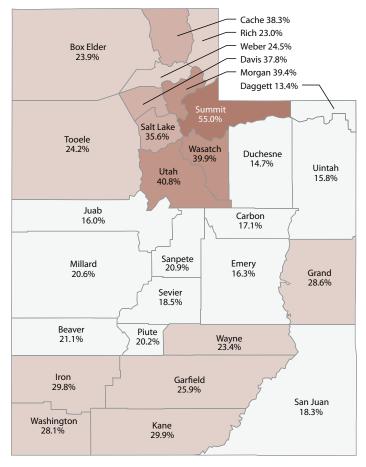
3 Increase Economic Diversity– The Brookings Institution's *Geography of Prosperity* cites the importance of economic diversity by noting the improved resiliency of local economies and the lower risk for workers who can find a wider array of employment opportunities.⁹ Increasing economic diversity has been a core tenet of the Utah Coal Country Strike Team's efforts to raise incomes and improve economic well-being.¹⁰ Carbon and Emery counties are among the least economically diverse counties in the state. Carbon County is the 24th most diverse of Utah's 29 counties, and Emery County is the 28th. Projected industry growth through 2060 includes higher concentrations of tourism-related employment in accommodations and food services, and arts,

Table 5: Economic Diversity by Hachman Index for Utah Counties, 2020

County	Hachman Index	County	Hachman Index
State of Utah	96.5	Wayne	48.6
Salt Lake	93.9	Rich	47.0
Weber	88.9	Grand	46.1
Davis	85.7	Kane	44.6
Utah	82.0	Sevier	42.2
Washington	82.0	Garfield	40.4
Iron	80.2	Summit	38.9
Tooele	79.1	Daggett	36.8
Cache	75.1	Millard	30.8
Wasatch	67.1	Carbon	30.0
Juab	67.1	Piute	25.2
Sanpete	62.9	Uintah	23.3
Box Elder	59.4	Beaver	20.4
Morgan	53.4	Emery	20.3
San Juan	50.4	Duchesne	14.0

Source: Kem C. Gardner Policy Institute analysis of U.S. Bureau of Labor Statistics data

Figure 8: Share of Population with a Bachelor's Degree or Higher by County, 2019





entertainment and recreation. There is additional opportunity in attracting remote workers to the region. Pivoting the current energy sector and investing in energy research and technology, along with manufacturing, is underway and can assist with the projected employment losses including a decrease of more than 550 mining jobs, and almost 300 jobs in the utilities sector.

4 Invest in Educational Attainment– By the share of the population with a bachelor's degree or higher, Carbon ranks 24th and Emery ranks 25th among Utah's 29 counties, with 17.1% and 16.3% of the population – below the state average of 34.0% (see Figure 7).¹¹ Besides Uintah County, Carbon is the lowest-scoring county that has an institution of higher education, with Utah State University Eastern.

The Utah Coal Country Strike Team prioritized scholarship funds for certificate- and degree-seeking students. The proposed Advanced Manufacturing Innovation Center also addresses education by partnering with Utah State University Eastern to provide opportunities for training or retraining earlyand mid-career workers.

The Brookings Institution finds that rural counties with greater educational attainment score more than four times higher on the Brookings Vitality Index, the largest determining factor of any that the Brookings index measures. This study found two important trends that appear over time: first, counties with low educational attainment can catch up to the mid-ranking counties; and second, it becomes increasingly difficult to catch up to high-attainment areas because they typically become more high-attaining over time.¹² In other words, it is easier for a county to go from below-average to average than it is to go from average to above-average.

5 Support Cross-Regional Partnerships– Cross-regional partnerships can help to coordinate with state, regional and local resources, including a role for research universities that provide expertise in relevant fields. This could include the pursuit of additional funding, especially the U.S. Economic Development Administration's (EDA's) Build Back Better funding. The Build Back Better funding is funneled through various programs, including a Regional Challenge and the Coal Communities Commitment.¹³ The EDA has long recognized that a regional approach is a key strategy for capacity building and economic resiliency.¹⁴

The rural associations of governments, including the economic development districts they house, could help to prioritize issues, align resources, and bring essential stakeholders to the table. Carbon and Emery are not alone in addressing economic diversity, educational attainment, and other community initiatives. These opportunities and challenges are shared by their rural neighboring counties, including fellow SEUALG members, San Juan and Grand.

Conclusion

Using state and local data, this report provides an analysis of the Gardner Institute's long-term planning projections for Utah's coal counties, Carbon and Emery. This report includes 40-year population and employment projections showing that scheduled power plant closures and declining coal production will greatly affect the region. These economic changes bring new opportunities to both counties. Working together, these counties can address their competitive advantages and their role in the state economy over the coming years.

Case Study for Diversification

Merit3D: A vision for advanced manufacturing in southeast Utah

Spencer Loveless, a business leader and entrepreneur, started Merit3D in response to the changing needs of his company, Dustless Technologies—a longtime manufacturer in Carbon County. Merit3D is an additive manufacturing operation that uses advanced technology in 3D printing to meet the needs of customers across Utah and the United States. Advanced manufacturing could lead to hundreds if not thousands of jobs, creating a competitive advantage for central and southeastern Utah.

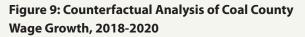
Local business leaders at Dustless Technologies, Merit3D, and other industry partners are working with state and local leaders, including Utah State University Eastern, on a new Advanced Manufacturing Innovation Center. This center provides training, resources and research to improve and produce products. The curriculum is developed by industry and university partners to provide training and retraining for students and workers in the area. However, navigating the many state, regional and local government departments presents a challenge for pursuing support, resources and awareness for the effort.

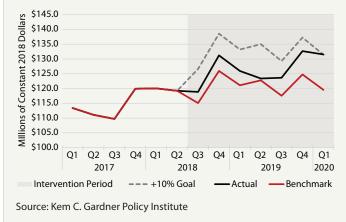
Case Study for Partnerships

Utah Coal Country Strike Team

In 2018 the Utah Coal Country Strike Team, representing the University of Utah, was a finalist in the American Dream Ideas Challenge, a national competition sponsored by Schmidt Futures to fund projects that would raise incomes by 10%. Through this competition, the Strike Team secured more than \$750,000, matched by more than \$1.5 million in state and local funds for four initiatives: workforce training, housing revitalization, tourism infrastructure and economic development incentives in Carbon and Emery counties.

The Strike Team has assembled a highly focused, multidisciplinary team of elected officials, public policy experts, and business and community leaders to expand economic opportunity in the face of declining coal production and looming power plant closures. At the beginning of 2020 the Strike Team achieved its 10% income increase goal, as measured by a custom counterfactual model.





Endnotes

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