

WHERE HOUSING IS HEADED

HOW WILL TODAY'S IMBALANCES
BE RESOLVED?



ABOUT THE BUREAU OF BUSINESS AND ECONOMIC RESEARCH

The Bureau of Business and Economic Research is the main research unit of the College of Business at the University of Montana. Established in 1948, its mission is to inform Montanans about the economic climate in which they live and work. In addition to conducting its economic outlook seminar across the state at the beginning of each year, BBER researchers are engaged in a wide range of applied research projects that deal with different aspects of the state economy, including survey research, economic analysis, health care research, forecasting, wood product research and energy research. Contact us at (406) 243-5113 or bbermail@business.umt.edu if we can be of any help to you or your business.

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DATES & LOCATIONS

Great Falls
January 25, 2022
Hilton Garden Inn

Helena
January 26, 2022
Delta Hotels Helena Colonial

Missoula
January 28, 2022
Hilton Garden Inn

Billings
February 1, 2022
Big Horn Resort

Bozeman
February 2, 2022
The Commons

Butte
February 3, 2022
NorthWestern Energy

Kalispell
February 8, 2022
Hilton Garden Inn

Lewistown
March 15, 2022
Central Montana Head Start

Havre
March 16, 2022
MSU Northern Hensler Auditorium

WELCOME TO THE 2022 ECONOMIC OUTLOOK SEMINAR

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Bureau of Business and Economic Research
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WHERE HOUSING IS HEADED

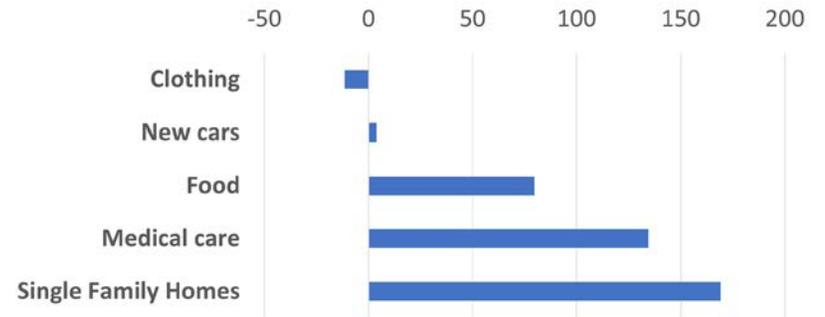


HOW WILL TODAY'S IMBALANCES BE RESOLVED?

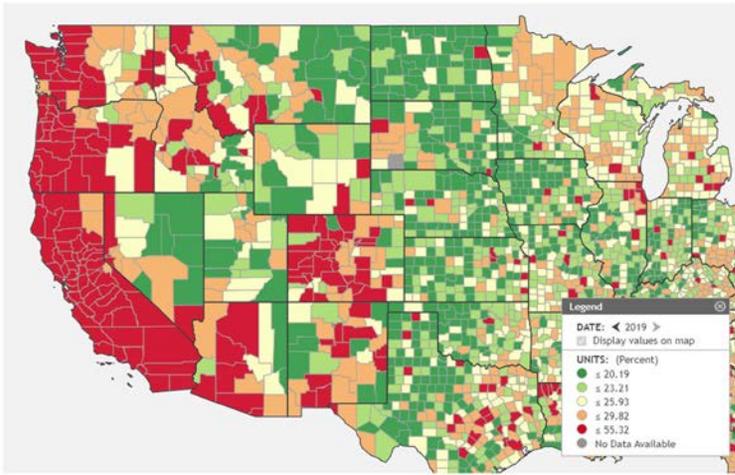
2022 ECONOMIC OUTLOOK SEMINAR WWW.ECONOMICOUTLOOKSEMINAR.COM

Why Are We Talking About Housing?

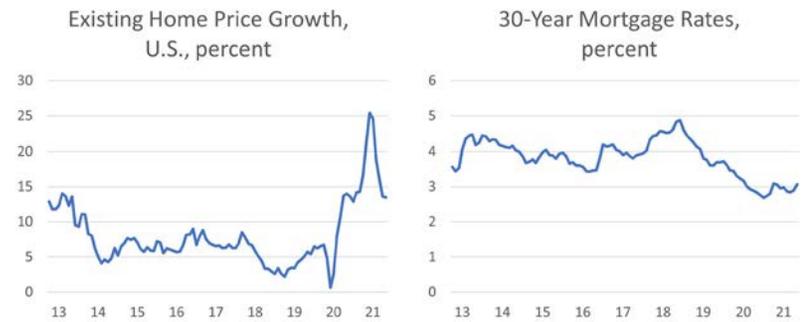
Percent Change in Selected Consumer Items since 1995



Median Housing Costs as a Percent of Median Household Income, 2019



Home Price Growth and Mortgage Rates

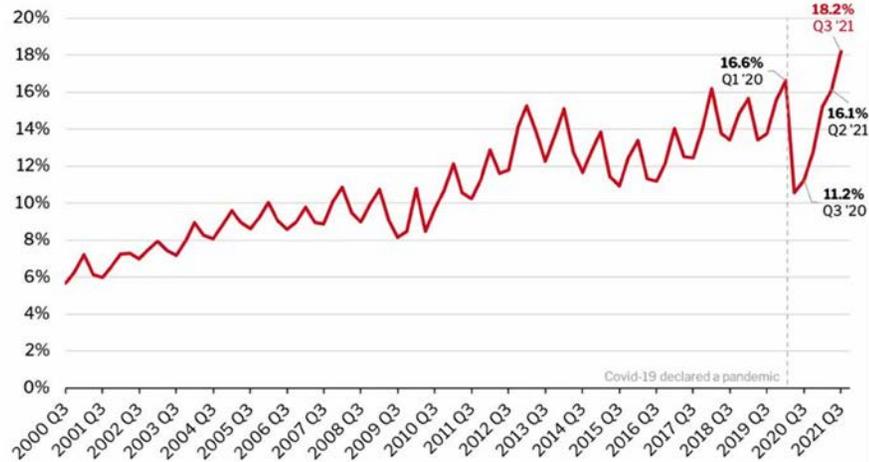


Source: Redfin

Source: Freddie Mac

Investor Market Share Hits Record, Surpassing Pre-Pandemic Levels

Share of purchased U.S. homes bought by investors



Source: Redfin analysis of county records

REDFIN

“High” Housing Prices Matter

- “High” prices = prices pushed higher by regulatory constraints or other inefficiencies
- Even if markets were efficient, the price might be too high for many households
- Not enough money left over for other essentials
- Increase sprawl, commuting costs, congestion
- Reduce labor availability for lower and medium paying jobs
- Limit population mobility and economic growth
- Stops the real estate wealth accumulation that has been an equalizing force in the economy

The Crossfire of Housing Policy

- | | |
|---|---|
| <ul style="list-style-type: none"> • Mortgage interest deduction • Mortgage revenue bonds • Mortgage credit certificates • Capital gains treatment for sales of primary residences • Savings and Loan Associations • FHA insurance • Fannie Mae and Freddie Mac mortgage guarantees • Quota for Fannie and Freddie for targeted populations • Support for institutions like FHLB’s • 30-year fixed rate mortgage with no pre-payment penalty • FHA and VA loan programs • HUD Section 502 low-rate mortgages to low-income households | <ul style="list-style-type: none"> • Infrastructure requirements • Minimum parking • Building codes • Wetlands regulations • Subdivision requirements • Exactions • Height restrictions • Caps on numbers of units • Population growth limits • Urban boundaries or green zones • Restrictions on rezoning • Super majority, voter, or multiple jurisdictional approvals • Minimum lot size requirements • Delays in local government decision-making |
|---|---|

“Only when the tide goes out do you discover who’s been swimming naked”

- Warren Buffett

Pandemic surge in demand has exposed the impact of chronic underbuilding in Montana’s fastest growing regions that has been playing out for almost 20 years.

Local regulation of housing exists because it is popular, even if its result is a housing affordability crisis.

The question is: what is the end game for Montana’s housing markets?

WHERE HOUSING IS HEADED



HOW WILL TODAY'S IMBALANCES BE RESOLVED?

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The Economic Outlook for the U.S. and Montana

Patrick M. Barkey, Director
Bureau of Business and Economic Research
University of Montana



Montana Economic Outlook

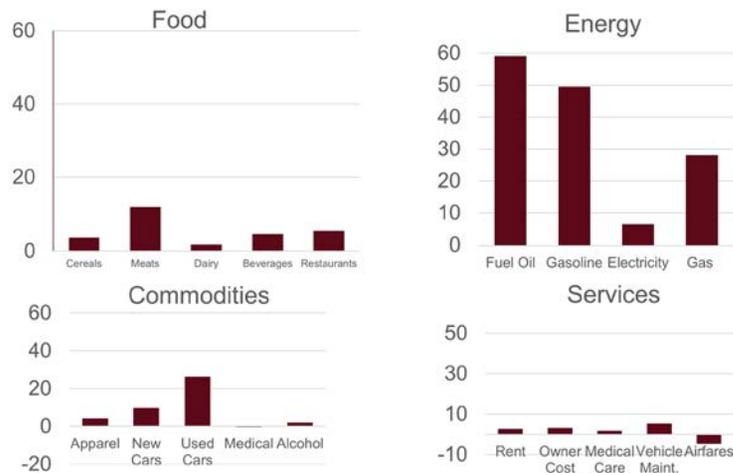
The Challenge of Rebalancing the Economy

- Central bank wakes up to an overheated economy with inflation out of the box and tight markets everywhere
- Strong income gains fueling strong demand
- International trade flows continue to be disrupted by politics as well as shortages
- Is the climate for energy investment improving?
- Imbalances was the story of 2021
- Familiar problems (labor and housing) re-emerge, but a new problem may eclipse them both



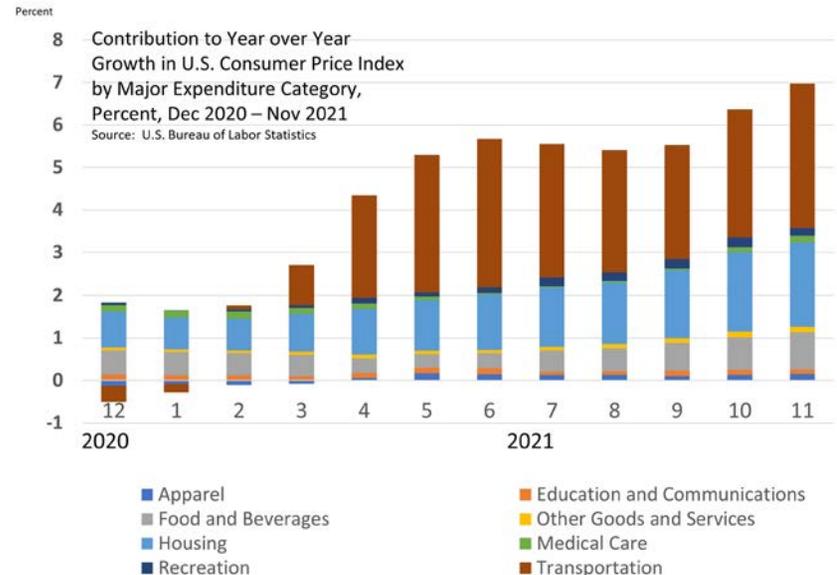
Montana Economic Outlook

Inflation Since October 2020, percent



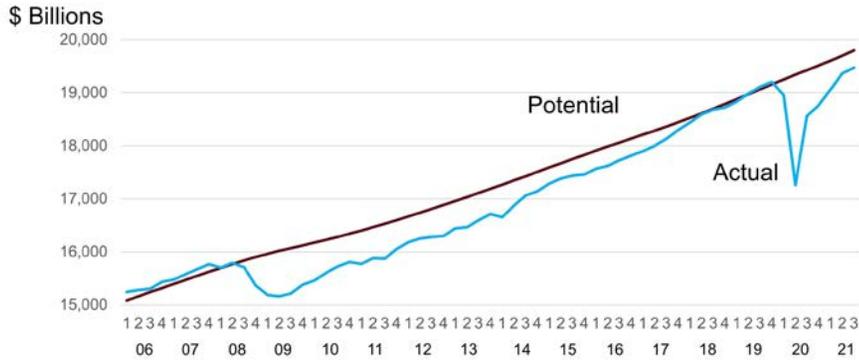
Montana Economic Outlook

Transportation and Housing Costs Driving Inflation



Tracking the Output Gap in the U.S. Economy

Potential vs. Actual Gross Domestic Product, 2006-21



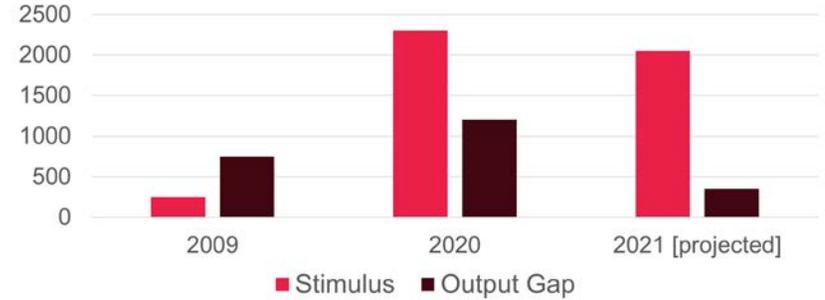
Source: U.S. Congressional Budget Office and U.S. Bureau of Economic Analysis



Montana Economic Outlook

Realized Output Gap vs. Fiscal Stimulus

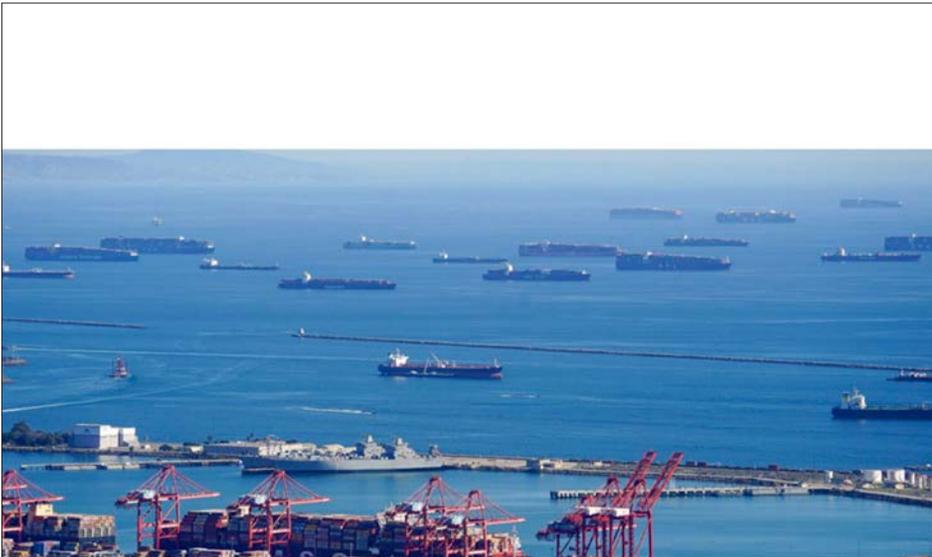
Billions of Inflation-Corrected Dollars



Source: CBO "Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output in 2014" and "An Update to the Budget Outlook, 2020 to 2030."

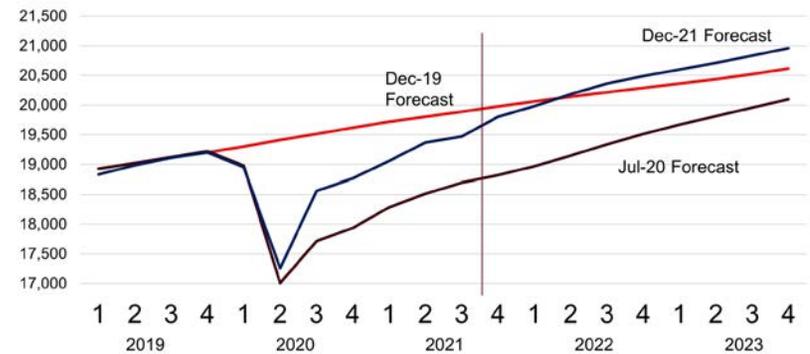


Montana Economic Outlook



Real GDP, U.S., Actual and Forecast

Billions of Dollars

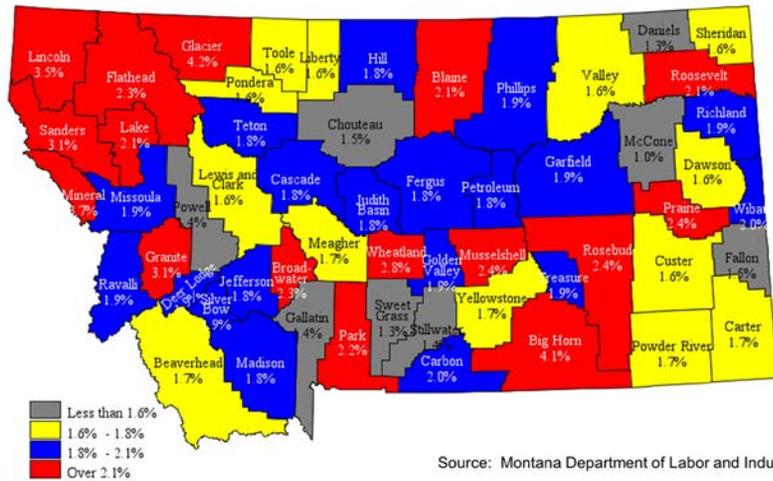


Source: IHS Markit



Montana Economic Outlook

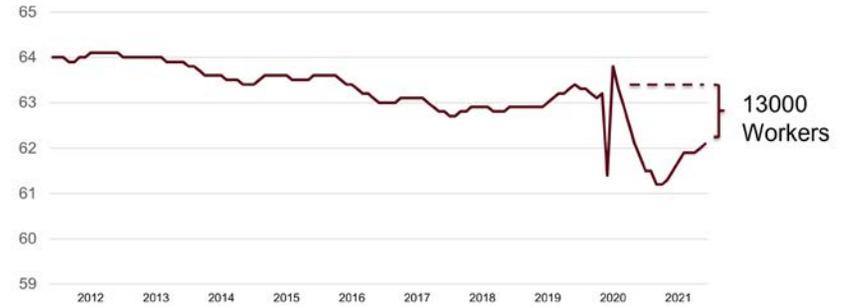
Unemployment Rates, November 2021



Montana Economic Outlook

Unemployment Rates Do Not Include Labor Force Dropouts

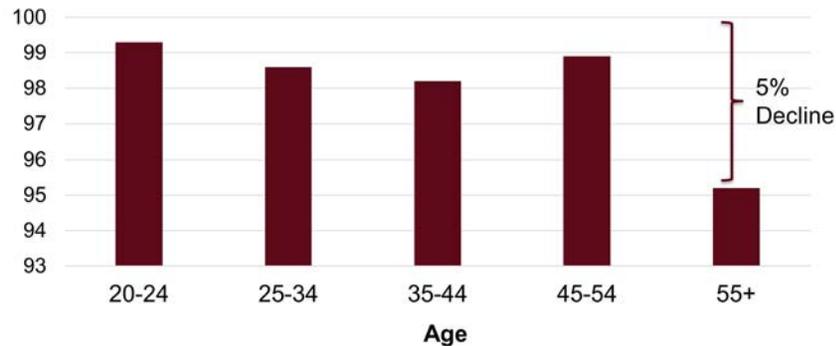
Labor Force Participation Rate, Montana, Percent



Montana Economic Outlook

Labor Market Dropouts More Prevalent Among Older Workers

November 2021 Labor Force Participation Rate As Percent of Pre-Pandemic Rate, By Age, U.S.

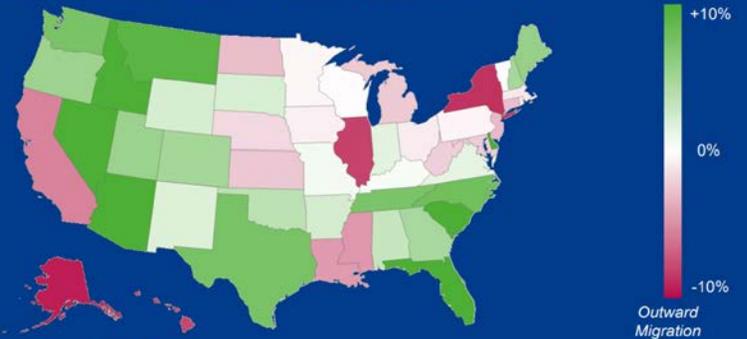


Montana Economic Outlook

Shifts out of urban areas drove changing demand for goods

2020 Net Migration Rate of U.S. States

Total domestic and international migration in 2020 as a % of 2019 population



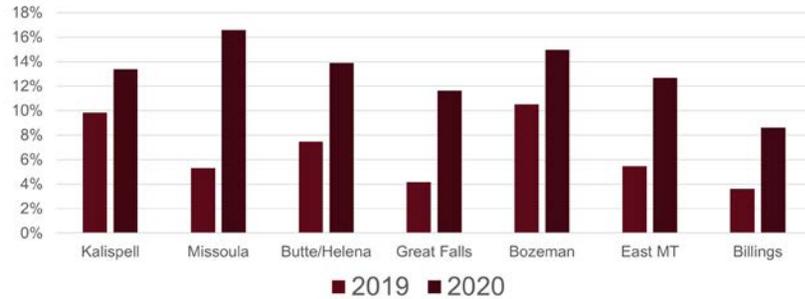
Source: KPMG Economics, U.S. Census Bureau, Haver Analytics



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2020 Was A Year to Work From Home

Percent of Workforce Working from Home, 2019-2020



Source: U.S. Census 1-Year ACS PUMS

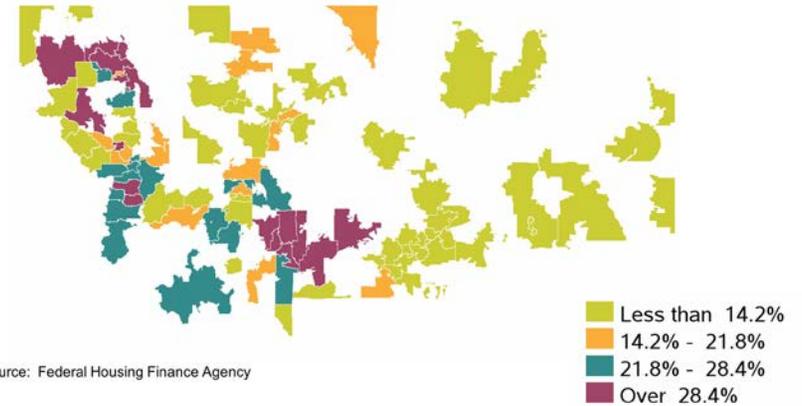


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Housing Price Growth Strongest in the West

Housing Price Index by Zip Code, Percent Growth, 2016-20



Source: Federal Housing Finance Agency



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Montana Economic Outlook

The U.S. Economic Outlook

- Omicron outbreak not expected to derail growth
- Slightly slower, but still above trend growth in 2022
- Removal of stimulus is a head wind
- Interest rates will go up, but from a very low starting point
- Pent-up spending of consumers is spent
- As supply chain pressures ease, inflation will abate
- Inflation pressure from labor markets is the wild card



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Montana Economic Outlook

The Montana Economy Had a Great Year

- Strong gains in income, re-opening of services economy produced significant gains
- A big year for visitor spending
- Population immigration – fact or fiction?
- Commodity price surges helped some industries more than others
- Energy and agriculture will not want to repeat 2021



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Montana Economic Outlook

A Huge Year for State Tax Revenues

General fund revenue: FY 2021 actual collections exceeded HJ 2 estimate by \$401.9 million (\$ Millions)

Revenue Source	Actual FY 2020	HJ 2* FY 2021	Actual FY 2021	HJ 2 % Change	Actual % Change	Act.-HJ 2 \$ Diff.	Act./HJ 2 % Diff.	% Diff. Illustrated
Largest Seven Sources								
Individual Income Tax	\$1,435.2	\$1,505.4	\$1,765.4	4.9%	23.0%	\$260.0	17.3%	
Property Tax	308.6	313.4	310.7	1.6%	0.7%	(2.7)	-0.9%	
Corporation Tax	187.4	149.4	266.5	-20.2%	42.2%	117.1	78.4%	
Vehicle Taxes & Fees	108.5	109.3	117.8	0.8%	8.6%	8.5	7.7%	
Oil & Natural Gas Taxes	38.4	40.4	39.5	5.2%	3.0%	(0.8)	-2.0%	
Insurance Tax	82.5	88.4	87.3	7.2%	5.8%	(1.2)	-1.3%	
Video Gaming Tax	57.4	60.3	74.9	5.0%	30.4%	14.6	24.2%	

Source: Montana Legislative Fiscal Division



Montana Economic Outlook

Real Earnings Growth by Sector, Montana, 2019-20

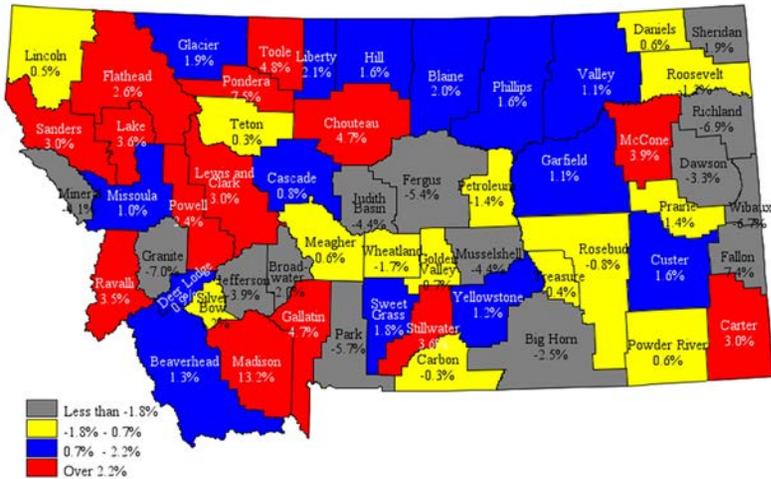


Source: U.S. Bureau of Economic Analysis



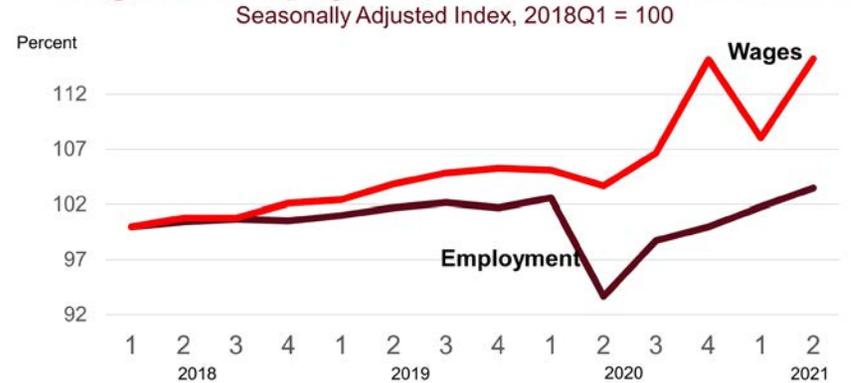
Montana Economic Outlook

Nonfarm Earnings Growth, 2020



Source: U.S. Bureau of Economic Analysis

Wages and Employment, Montana, 2018Q1 – 2021Q2

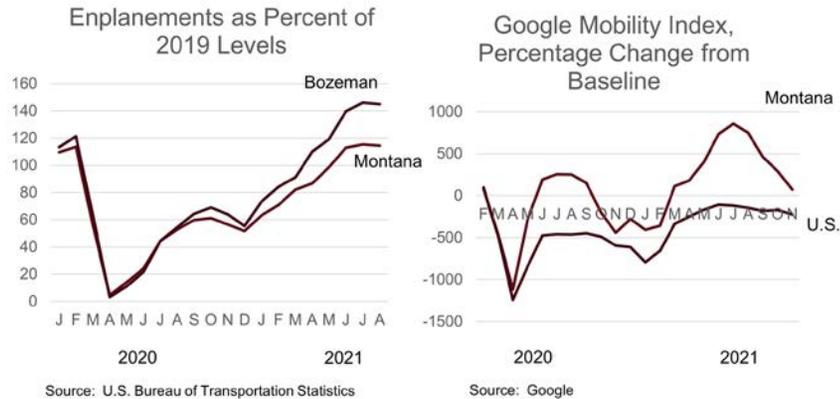


Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

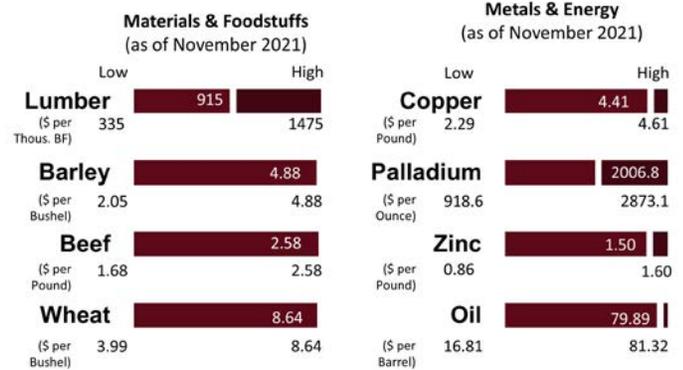


Montana Economic Outlook

Travel and Tourism Indicators Look Strong



Commodity Prices Running Very Hot



Montana's Economic Recovery

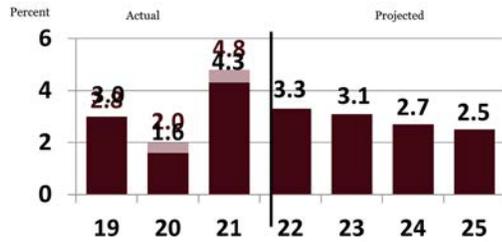
Employment, Real Wages and Salary and Real Income Growth, Actual and Forecast, Percent



Outlook for Montana's Key Industries

- Strong consumer spending, strong commodity prices bode well for many key Montana industries
- Arrival of new Federal spending in 2023 and beyond will be an additional boost
- Drought could have lasting impacts on ag producers
- High-flying parts of the state are having growing pains
- Economy remains vulnerable to disruptions

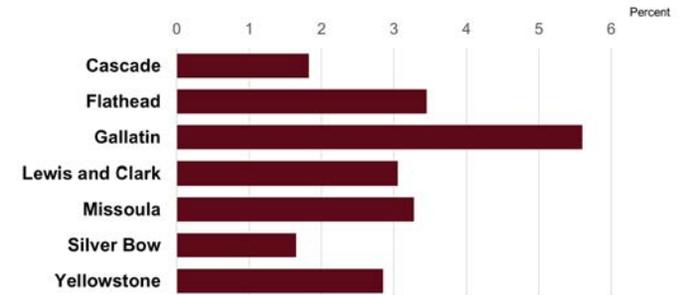
**Growth in Nonfarm Earnings,
Montana, 2019-2025**



Source: BBER and U.S. Bureau of Economic Analysis

Gallatin County Expected to Pace Growth

Average Growth in Nonfarm Earnings, 2022-25, Percent per Year



Source: Bureau of Business and Economic Research

Travel and Tourism

Navigating the pandemic -- year two

JEREMY L. SAGE, Ph.D.
ECONOMIST & INTERIM DIRECTOR
INSTITUTE FOR TOURISM AND RECREATION RESEARCH

ASSOCIATE RESEARCH PROFESSOR
DEPARTMENT OF GEOGRAPHY

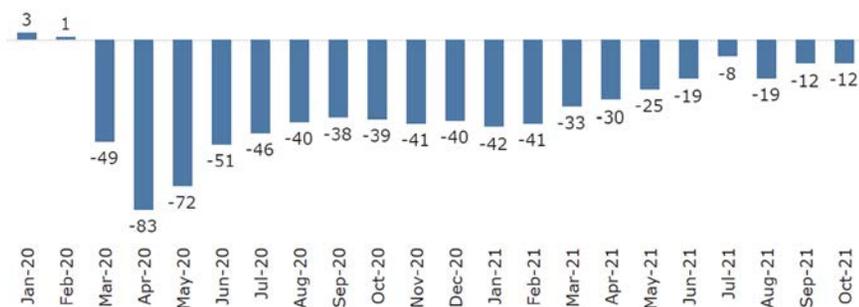
FRANKE COLLEGE OF FORESTRY AND CONSERVATION
In the aboriginal territories of the Salish and Kalispel people

U.S. Travel & Hospitality

Travel, tourism, and allied industries have been some of the hardest hit industries in the U.S. and worldwide

U.S. Travel & Hospitality Current Insights

Travel Spending (% change vs. 2019)
United States



U.S. Travel & Hospitality Current Insights

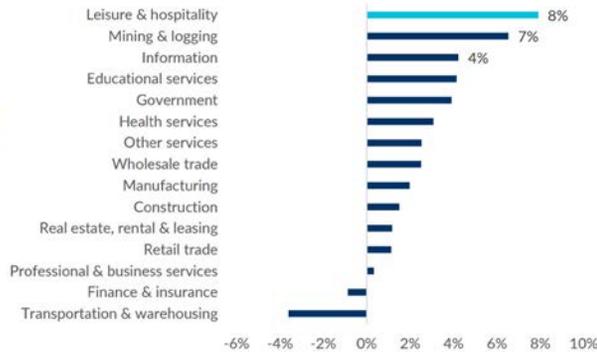
	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21
Auto Trips (Arrivalist)	-27%	-23%	-18%	-21%	-16%	-3%	-2%	-8%	2%	-16%	1%	3%
Air Passengers (TSA)	-62%	-62%	-60%	-57%	-48%	-41%	-33%	-26%	-20%	-23%	-24%	-21%
Overseas Arrivals (NTTO)	-90%	-88%	-87%	-91%	-87%	-87%	-81%	-77%	-78%	-76%	-79%	-78%
Hotel Demand (STR)	-36%	-34%	-29%	-27%	-20%	-15%	-13%	-9%	-4%	-10%	-7%	-7%
Short-term Rental Demand (AIRDNA)	-17%	-26%	-17%	-8%	-7%	0%	8%	7%	3%	-2%	4%	12%

Auto trips and Short Term Rentals outperforming the other travel indicators.

U.S. Travel & Hospitality Work Force

Share of jobs lost in major industries
% of industry jobs still lost from Feb. 2020-Nov. 2021

As of November, 2021, L&H jobs remain 8% below February 2020 levels



Source: U.S. Travel Association and Tourism Economics; BLS

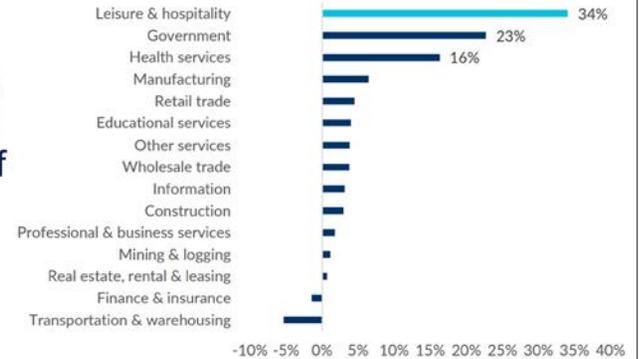
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Travel & Tourism

U.S. Travel & Hospitality Work Force

Share of total US employment loss by industry
% of all US jobs still lost from Feb. 2020-Nov. 2021

As of November, 2021, L&H jobs represent 34% of job losses



Source: U.S. Travel Association and Tourism Economics; BLS

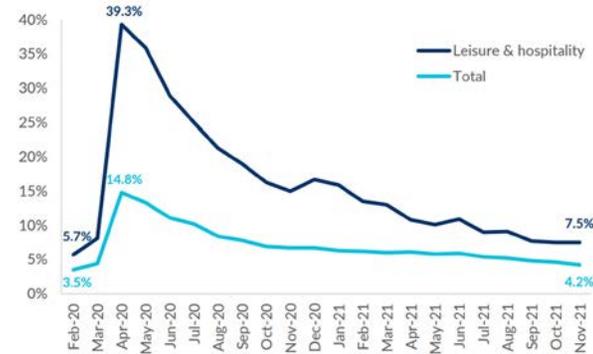
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U.S. Travel & Hospitality Work Force

Unemployment rate
%

As of November, 2021, L&H unemployment remains well above totals



Source: U.S. Travel Association and Tourism Economics; BLS

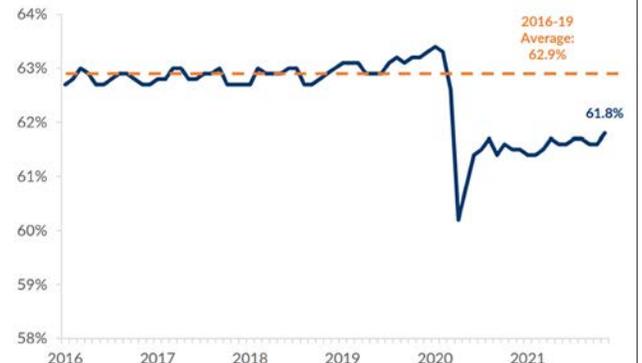
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U.S. Travel & Hospitality Work Force

Labor force participation rate
Share of labor force as a percent of working age population

Labor participation remains below previous averages



Source: U.S. Travel Association and Tourism Economics; BLS

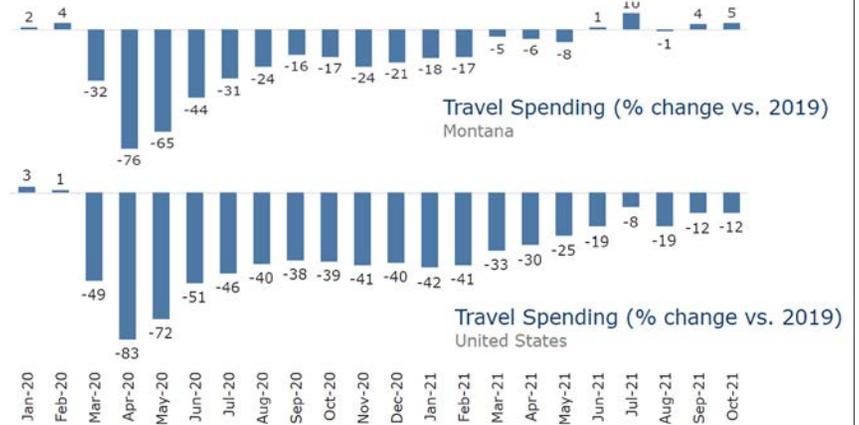
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Montana Travel

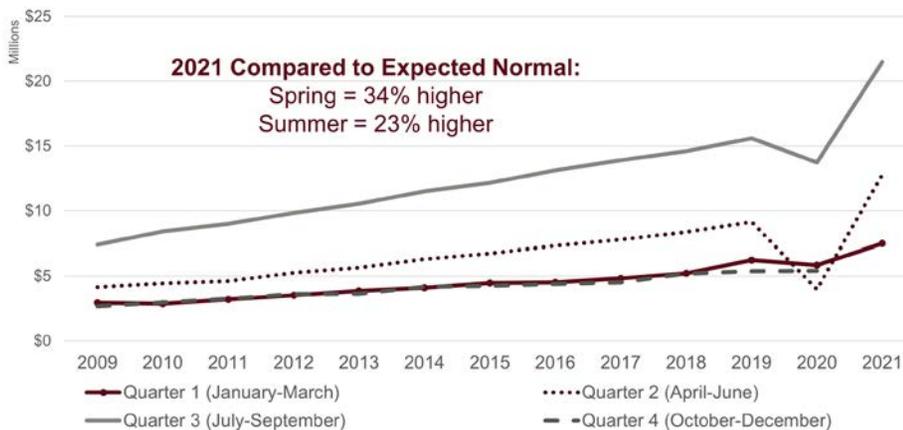
Following national trends?
Or finding its own way?

Montana Travel



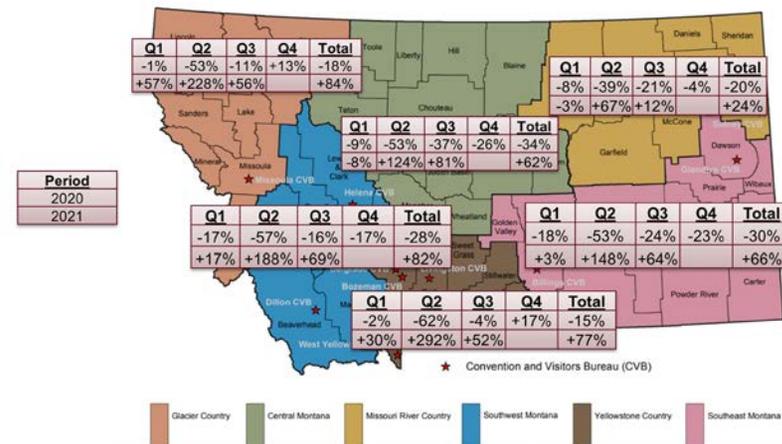
Source: U.S. Travel Association and Tourism Economics

Lodging Facility Use Tax Collection (Bed Tax)



Source: Montana Department of Commerce

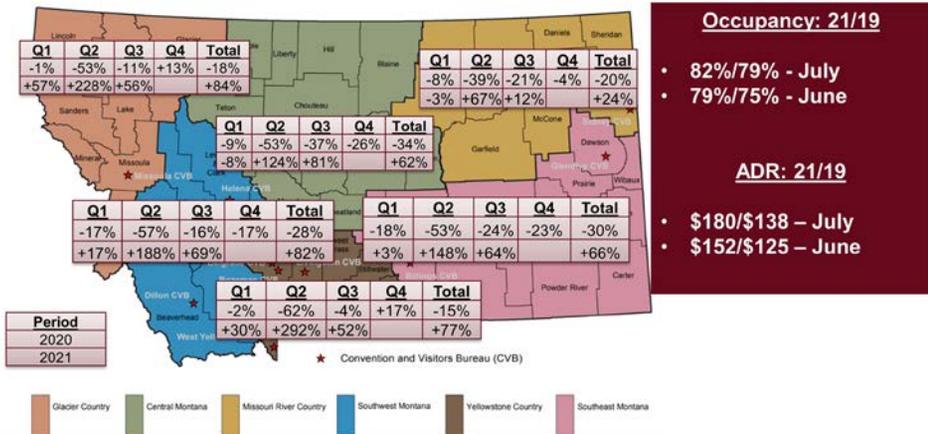
Lodging Facility Use Tax Collection Quarterly Changes 2020 & 2021



Source: Montana Department of Commerce

Lodging Facility Use Tax Collection

Quarterly Changes 2020 & 2021

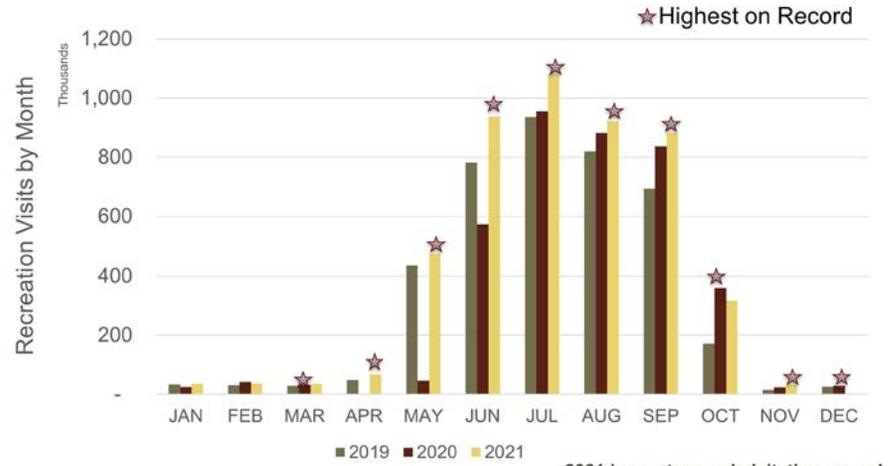


Source: Montana Department of Commerce

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Travel & Tourism

Yellowstone Recreation Visits

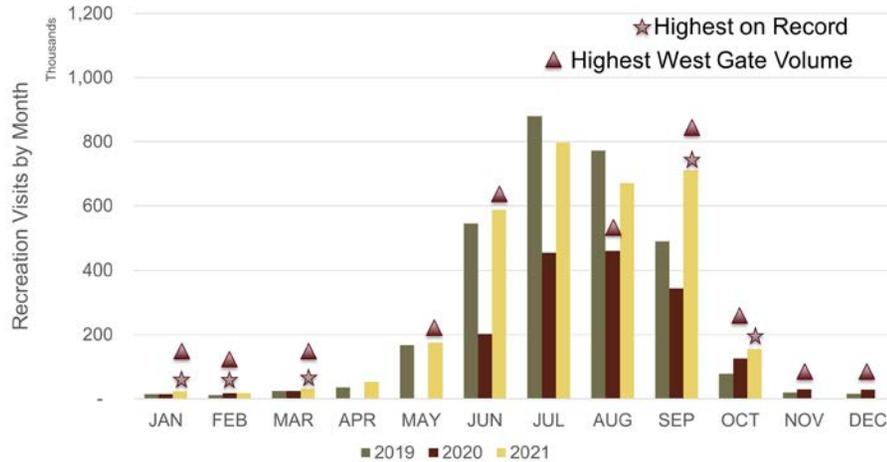


Source: National Park Service

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Travel & Tourism

Glacier Recreation Visits



Source: National Park Service

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Montana Perceptions on Labor in Tourism & Recreation

- Surveyed more than 400 business owners, managers, and partners in travel and tourism throughout Montana.



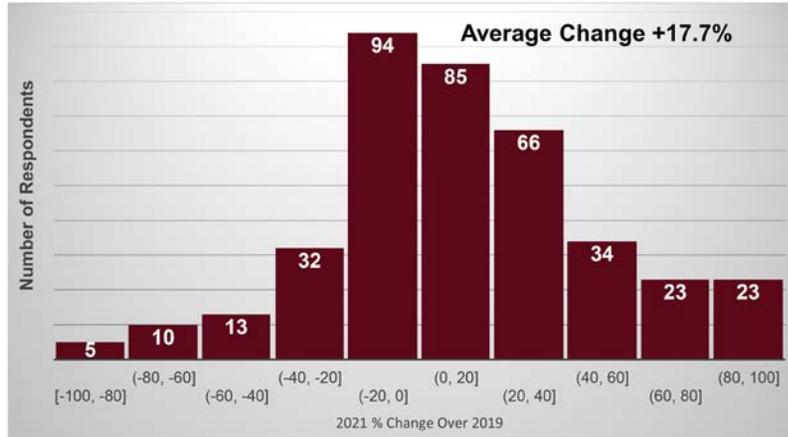
Employees	Respondents
1 to 4	210
5 to 9	62
10 to 19	61
20 to 49	37
50 to 99	26
More than 99	21

Source: Institute for Tourism and Recreation Research

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Montana Tourism & Recreation - Labor



Question: How did your 2021 customer volume compare to 2019

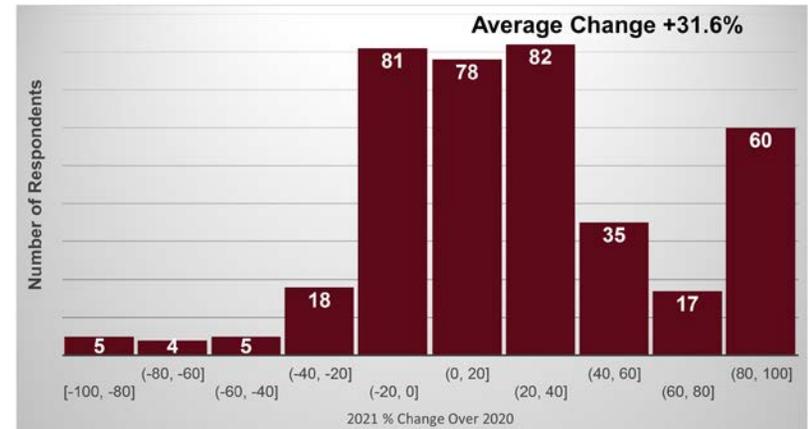
Source: Institute for Tourism and Recreation Research

Average Sales Change +20.7%

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Montana Tourism & Recreation - Labor



Question: How did your 2021 customer volume compare to 2020

Source: Institute for Tourism and Recreation Research

Average Sales Change +35.7%

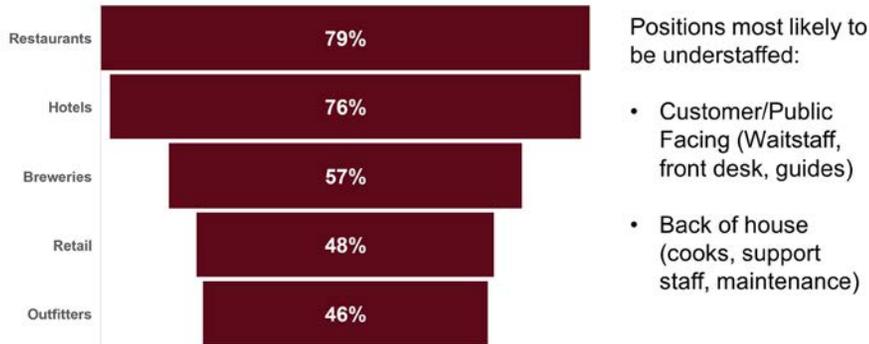
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Montana Tourism & Recreation - Labor

Question: Would you consider your business/agency to be currently understaffed?

Percent affirming they are understaffed



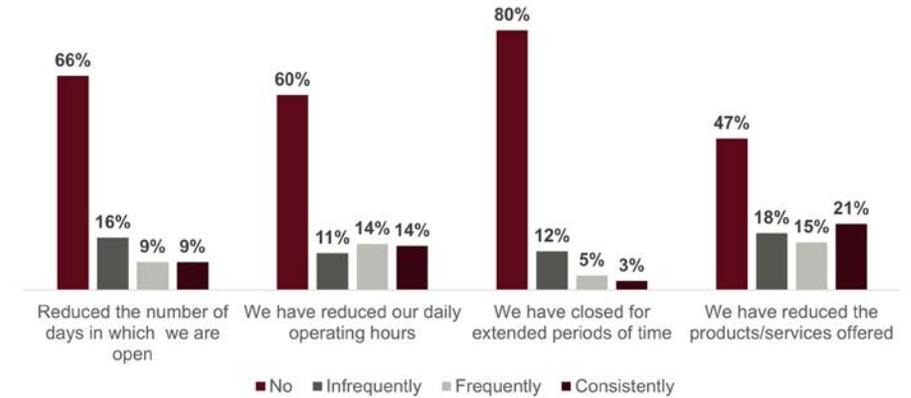
Source: Institute for Tourism and Recreation Research

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Montana Tourism & Recreation - Labor

Question: As a result of being understaffed, what actions have been taken at your business/agency in 2021?



Source: Institute for Tourism and Recreation Research

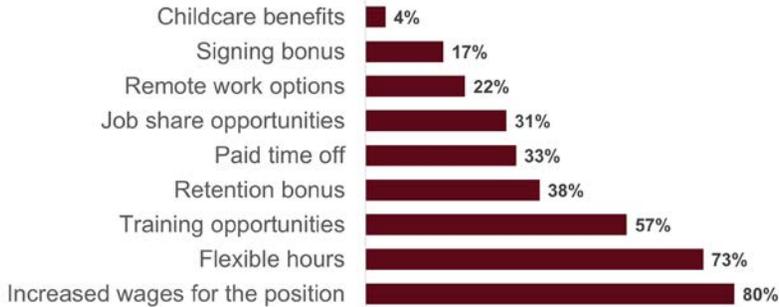
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Montana Tourism & Recreation - Labor

Question: As a result of being understaffed, what actions have been taken at your business/agency to entice potential applicants?

Percent affirming they have instituted the practice

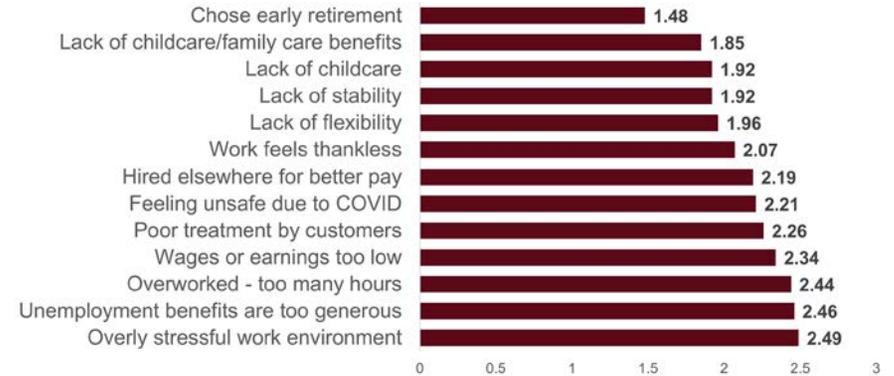


Source: Institute for Tourism and Recreation Research

Montana Tourism & Recreation - Labor

Question: In your opinion, please rate how important the following attributes are to former employees who chose leave (or not return after furlough/layoff) your business

Rated on a scale of Not at all important (1) to Extremely Important (5)



Source: Institute for Tourism and Recreation Research

Montana Tourism & Recreation - Labor

Question: Since the start of the pandemic, have you left (or do you have coworkers that have left) the service and hospitality industry? If so, why?

"Honestly, COVID just made the decision to leave the service industry 'valid' and socially acceptable. Service industry workers left because not only were they being treated as sub-human, paid little nothing, given no support, pushed to their limits, but there was also a pandemic exacerbating the situation workers were already in. The last straw was COVID and the complete disregard for workers health and the belittling by corporations of any concerns workers had for their own wellbeing. The idea of leaving has always been in their mind, but COVID made it easier/gives a real reason to leave a soul crushing job."

Source: UM Student Project: Parks Tourism & Recreation Management - Mikala Itrich, Philip Buttschardt, William Thomas, Victoria Bloomgren, Rebekah Ficek

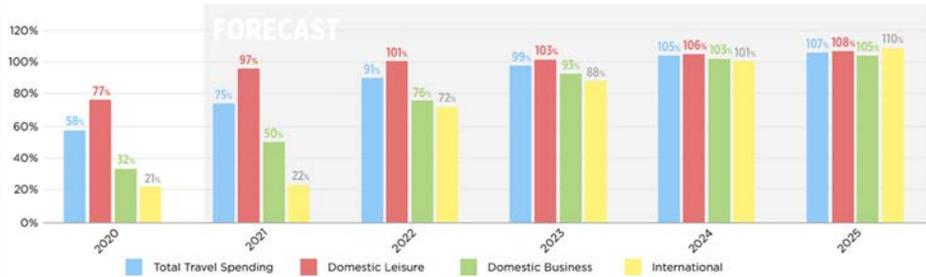
Montana Tourism & Recreation - Labor

Question: Since the start of the pandemic, have you left (or do you have coworkers that have left) the service and hospitality industry? If so, why?

- "Wages had stayed the same even though there was more work. Inconsistent hours with lower pay."
- "Did not want the chance of being exposed to so many people in a day. Immune-compromised people felt unable to continue their jobs. Feeling unsafe."
- "Increased hostility in customer interactions. Undervalued by employers and customers. Degrading nature of hospitality work. Abusive environment. Rude customers."
- "Understaffing left employees feeling helpless. Stress increased without enough employees."
- "It was easier to receive more money under unemployment than it was to stay in a negative workplace."
- "Less security in the workplace. Slow business. Higher expectations."
- "Other employees, as well as our boss, took their stress out on us, increasing our stress."

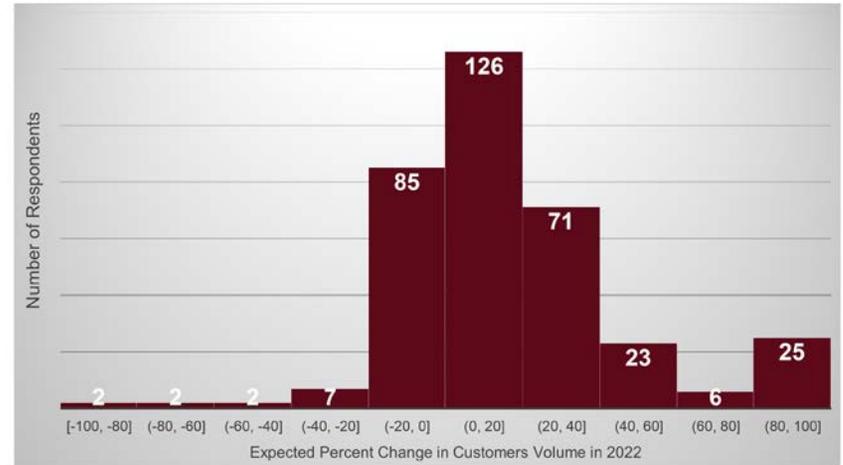
Source: UM Student Project: Parks Tourism & Recreation Management - Mikala Itrich, Philip Buttschardt, William Thomas, Victoria Bloomgren, Rebekah Ficek

Moving Forward



Source: US Travel Association

Montana Tourism & Recreation – 2022 Outlook



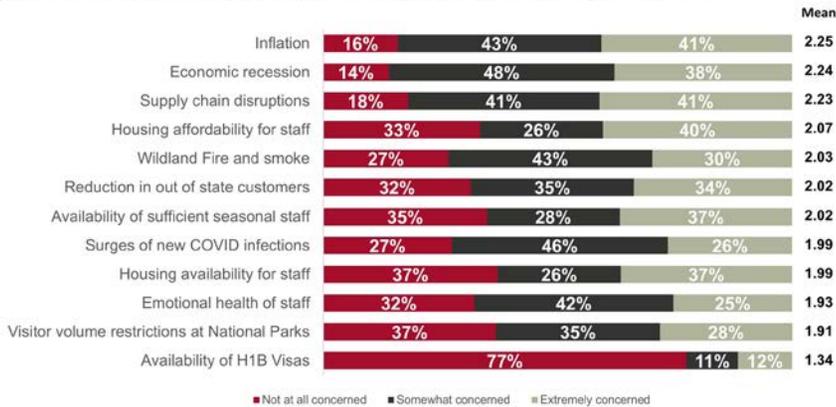
Question: How do you expect your 2022 customer volume to compare to 2021

Source: Institute for Tourism and Recreation Research

Montana Tourism & Recreation – 2022 Outlook

Question: Looking to 2022, how concerned are you about the following, as they may impact your business/agency:

(1) Not at all concerned, (2) Somewhat Concerned, (3) Extremely Concerned



Source: Institute for Tourism and Recreation Research

Thank You

For all information from the Institute for Tourism and Recreation Research, please see:

itr.uvm.edu

jeremy.sage@umontana.edu

Get Started with our NEW Tableau-based Interactive Data by selecting a button or link below.

ITRR produces annual estimates of total travel-related spending by nonresidents in Montana. These estimates are used to evaluate the total contribution of nonresident travel spending to Montana's economy. To view these estimates, click on a year in the list below. Historical estimates can be found by searching ITRR's publications in ScholarWorks.

[2020 Nonresident Visitation, Expenditures & Economic Impact Estimates](#)

[2019 Economic Contribution of Nonresident Travel Spending in Montana Travel Regions and Counties](#)

2021 Year in Review

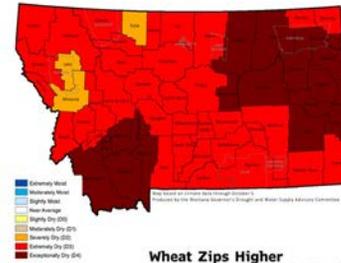
Kate Binzen Fuller

Joel Schumacher

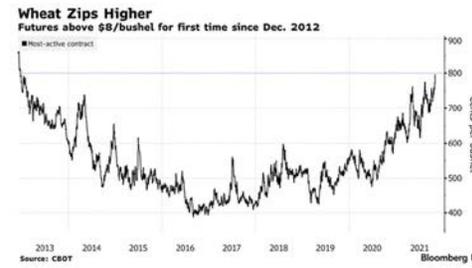
with George Haynes and Hannah Wing
 Department of Agricultural Economics & Economics
 MSU Extension

2021 in Montana Agriculture

Montana Drought Status by County - Oct. 8, 2021

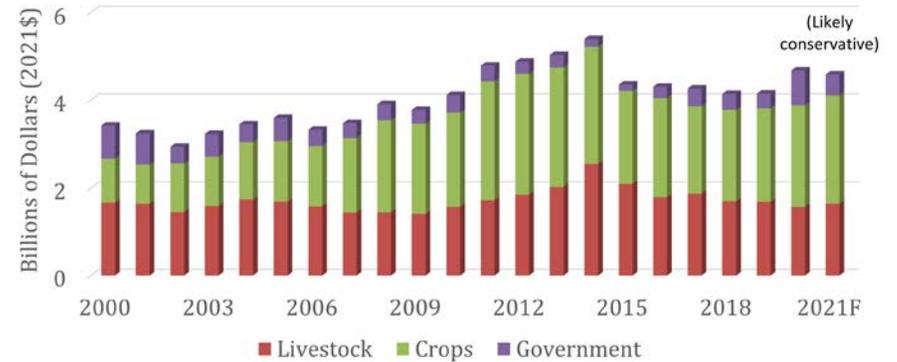


VS.



RECEIPTS

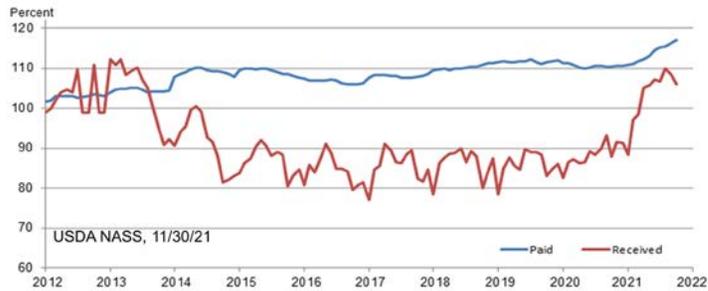
Montana Agricultural Cash Receipts 1995-2021F



Some caveats

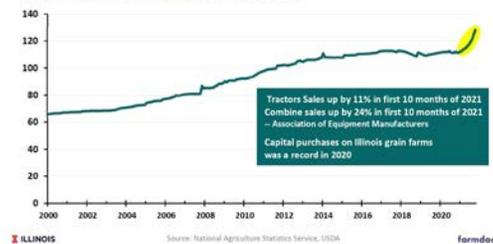
- Many numbers we use to forecast cash receipts are still uncertain
- Cash receipts do not measure input or other costs

Crop Farm Received and Paid Indexes,
All Items by Month –
United States: 2011=100

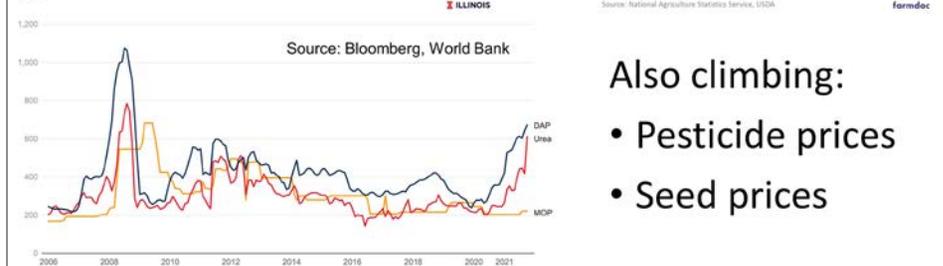


Costs have increased substantially

Index of Price Paid for Tractors



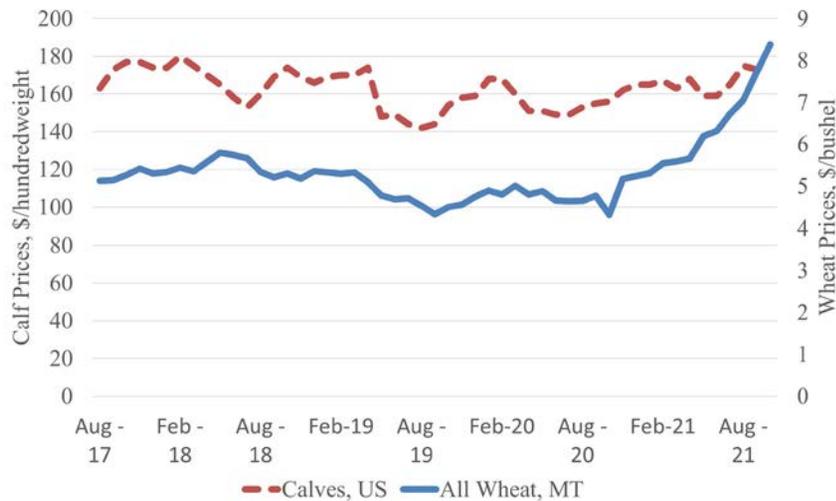
Fertilizer prices
US\$/mt



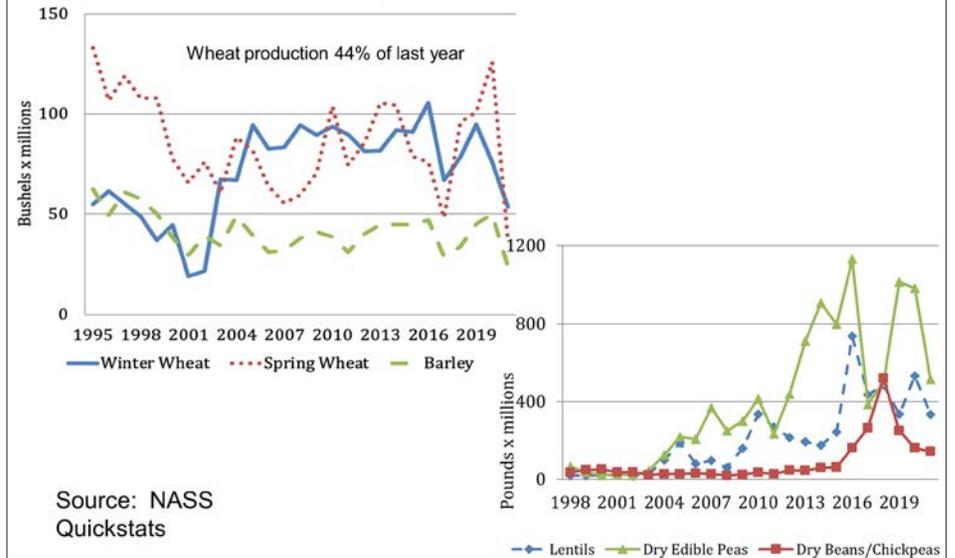
Also climbing:

- Pesticide prices
- Seed prices

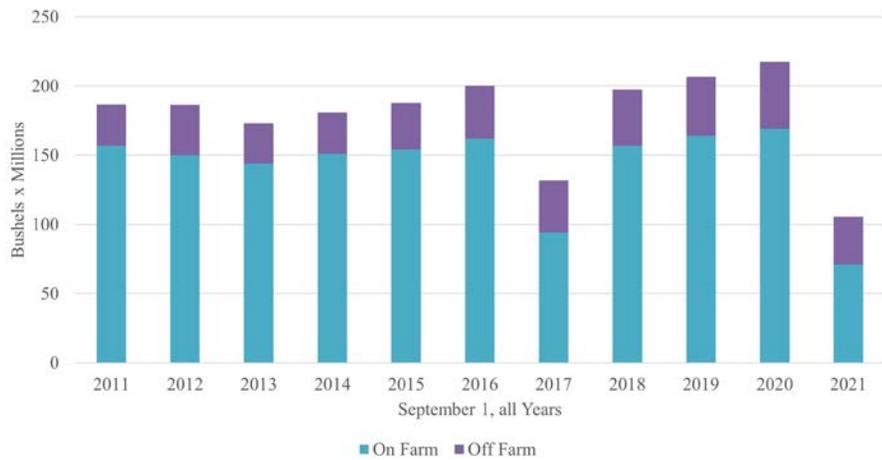
Prices: upward trends



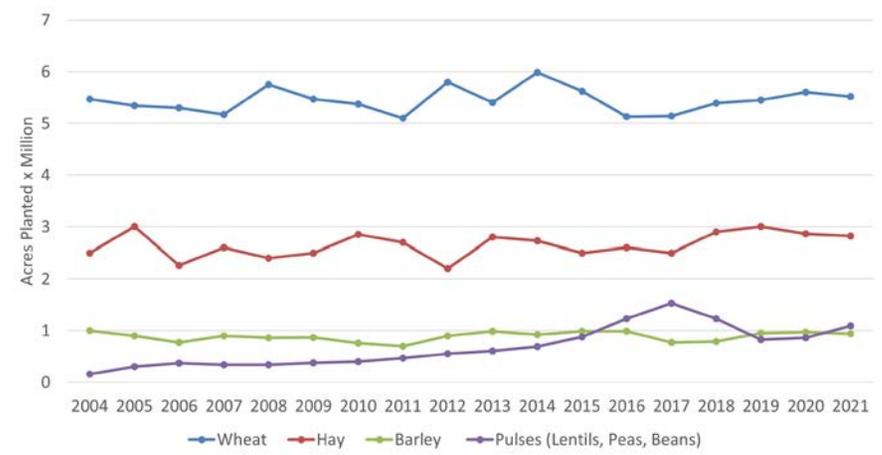
Crop Production



Montana Stored Wheat



Montana Major Crop Acreage



Source: NASS Quickstats, MDA

~5K hemp (permitted) acres

Livestock

Northern Drought Hits Forages, Herds

Dry Conditions Across Northern Plains Cause Pastures to Wither, Producers to Cull Cows

6/16/2021 | 5:20 AM CDT
By Russ Quinn, DTN Staff Reporter
Connect with Russ:
@RussQuinnDTN



Cow-calf producers in the Northern Plains have seen drought limit forage production, which has led them to reduce their herd size. Some producers have even had to haul water to pastures and rangeland. (DTN photo by Jim Patricio)

OMAHA (DTN) — The worsening Northern Plains drought is having a devastating effect on cow-calf producers as very little forage is now available because of the parched conditions. In response, producers in parts of Montana and North Dakota have already begun culling cows.

Longer term, the drought could also have a negative effect on the supply of all feedstuffs for cattle producers in the region. If feedstuffs can be found, high prices could keep some from purchasing the needed feed.

WORSENING NORTHERN PLAINS DROUGHT

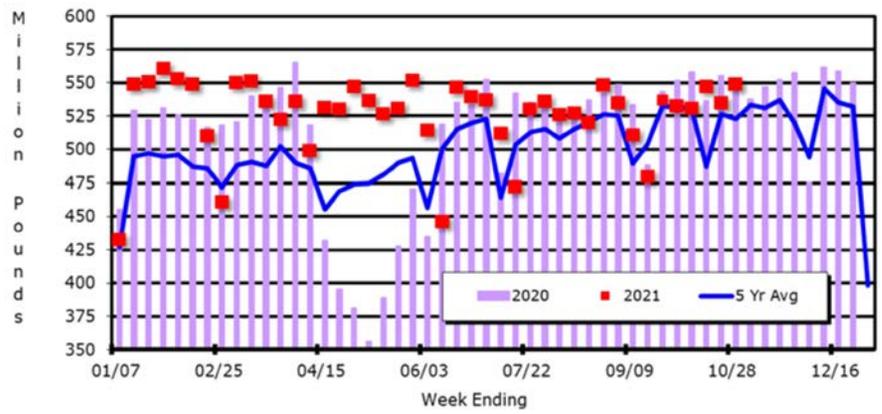
The severe drought gripping the Northern Plains has been significant across the region, said DTN Ag Meteorologist John Baranick. The drought has gradually worsened during the last three to four months with D4 or exceptional drought — the highest category of drought — developing over a large portion of North Dakota.

Rain last week was significant but only in isolated areas.

- Drought had many repercussions
 - Selling calves earlier, lighter weights, Midwest market not ready
 - Feed costs
 - Some herd liquidation/reduction
 - Effects will not all show up this year
- Supply chain issues
 - Transportation limits demand
 - Wide price spreads at auction

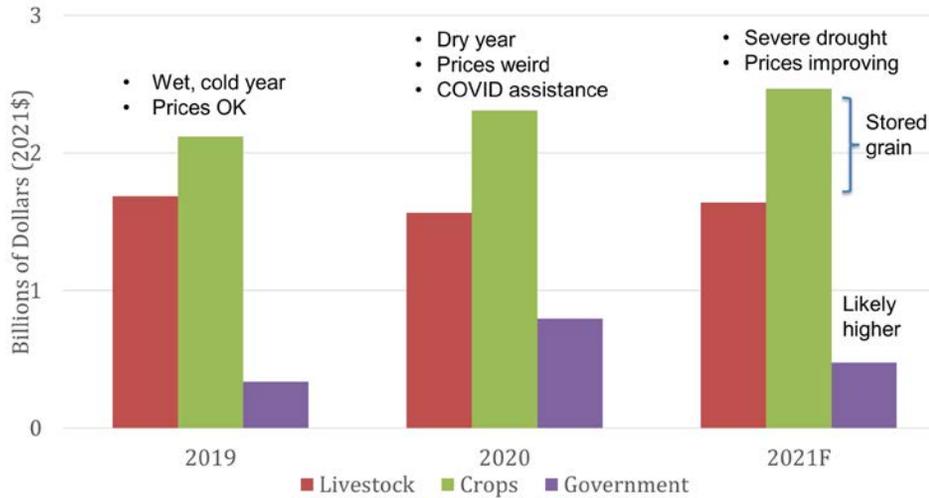
Beef processing, 2021

(U.S. total, federally inspected plants)



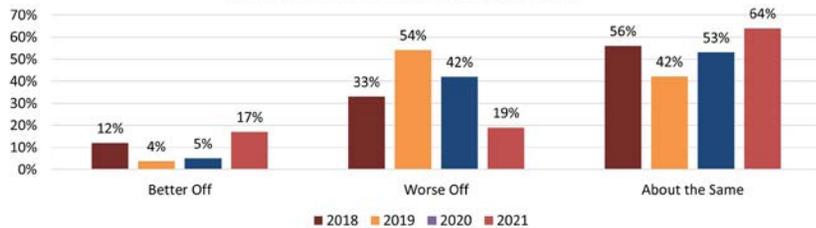
Source: USDA, Kansas State AgManager

Did Montana have a good year? Not really

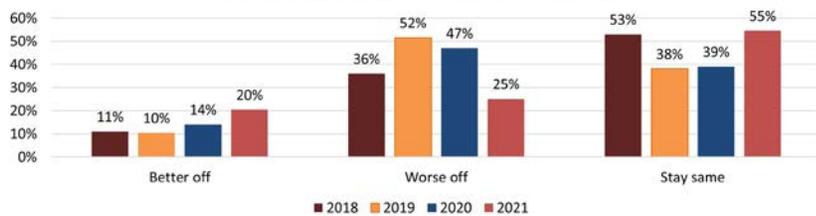


SENTIMENT

Would you say that your farm operation today is better off, worse off, or about the same compared to a year ago?

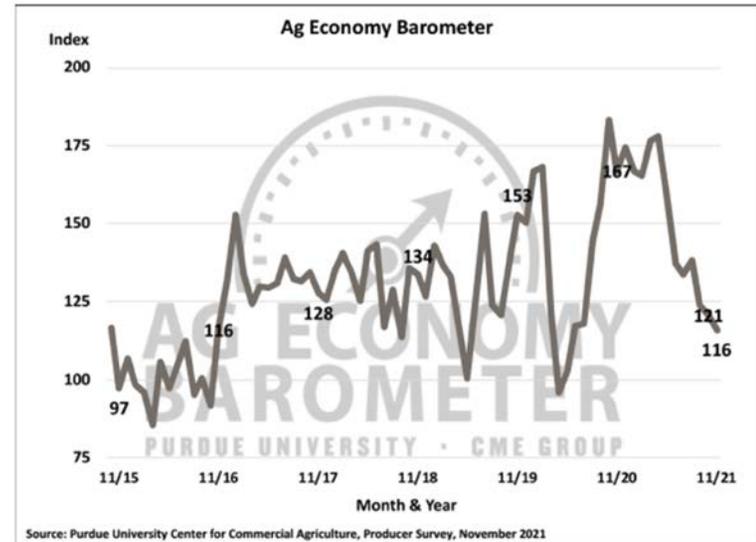


Do you think that a year from now your farm operation will be better off financially, worse off, or will stay the same as now?



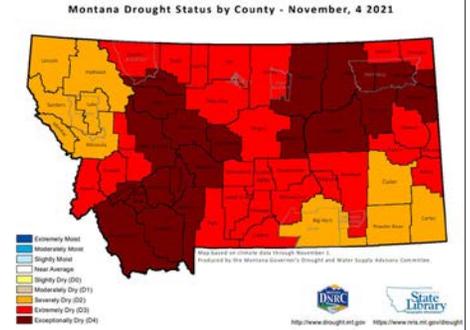
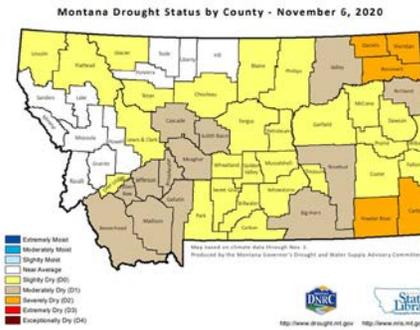
*Source: 2018-2020 from MWBC Variety Surveys. 2021 from NASS.

November Ag Economy Barometer

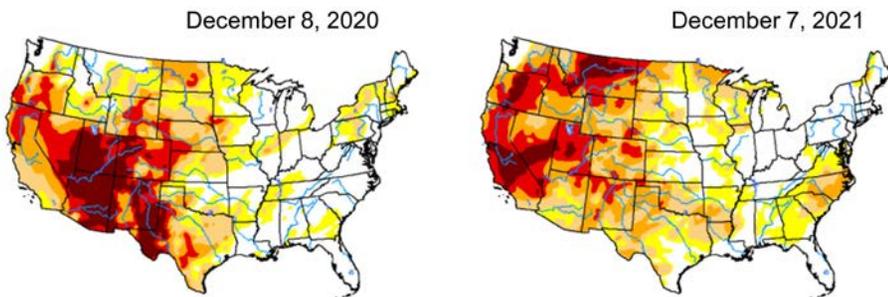


PRODUCTION CONDITIONS

Drought Maps

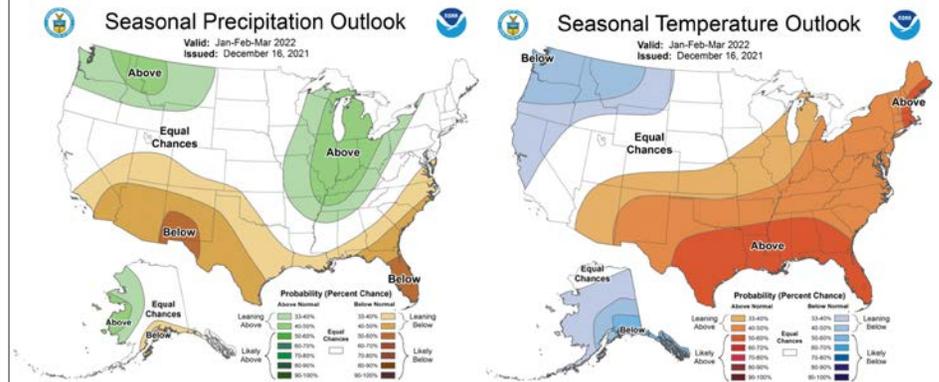


Nationally, drought regions have shifted



Source: US Drought Monitor

Domestic Production Forecast: Winter



Predictions from 12/17/21 Source: NOAA: www.cpc.ncep.noaa.gov/products/predictions/long_range/

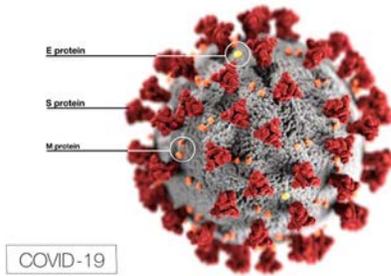
Questions?

kate.fuller@montana.edu

jschumacher@montana.edu

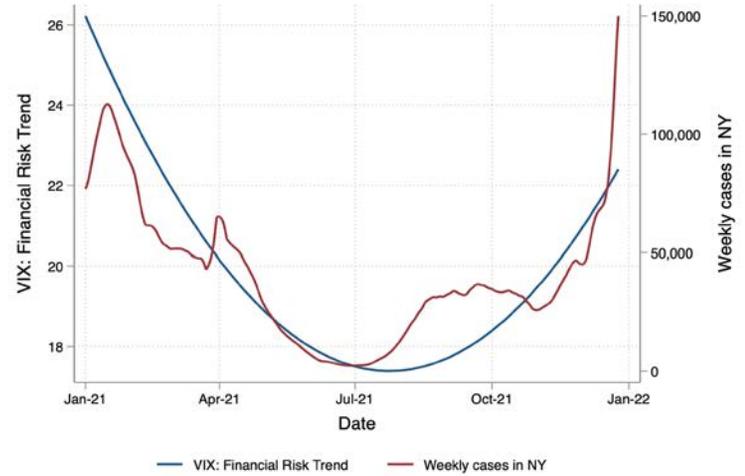
Health Care

Dr. Robert Sonora
Associate Director | Director Health Research
Bureau of Business and Economic Research
Senior Research Professor
University of Montana



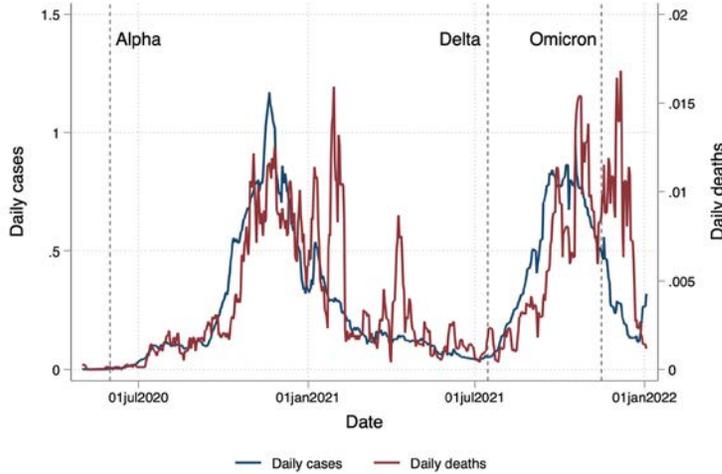
Health Care

Financial market impact: the VIX index and new weekly cases in NY



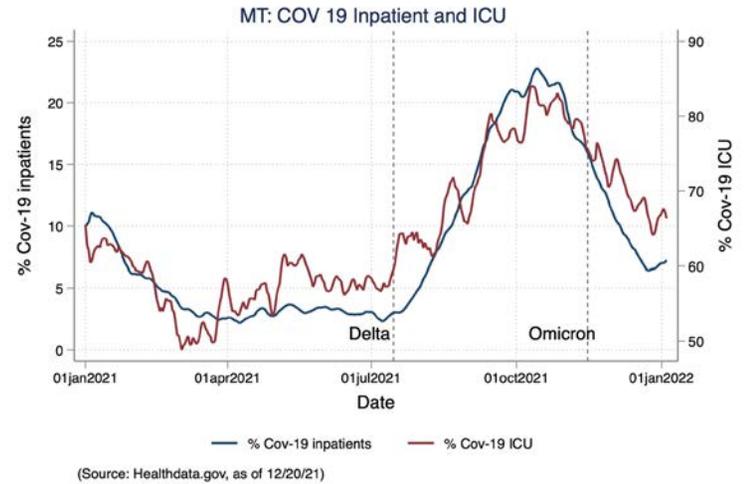
Health Care

COVID in Montana



Health Care

COVID in Montana: Hospitalization

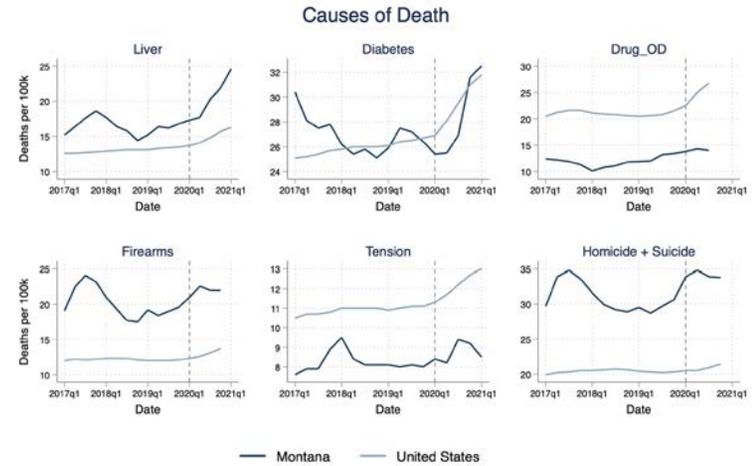


Health Care

Repercussions of COVID

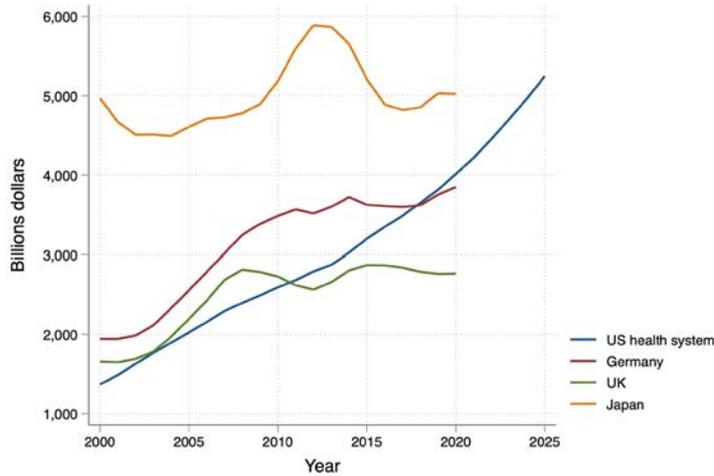
- Mental health declining: anxiety, depression, PTSD
- Alcohol and drug use on the rise
- Homicide/Suicide
- Fewer hospital visits for non-COVID medical needs
- Long term effects: lasting impact on healthcare system
 - Organ damage
 - Lung, artery and blood vessel
 - Fatigue
 - ????

Secondary impacts in MT

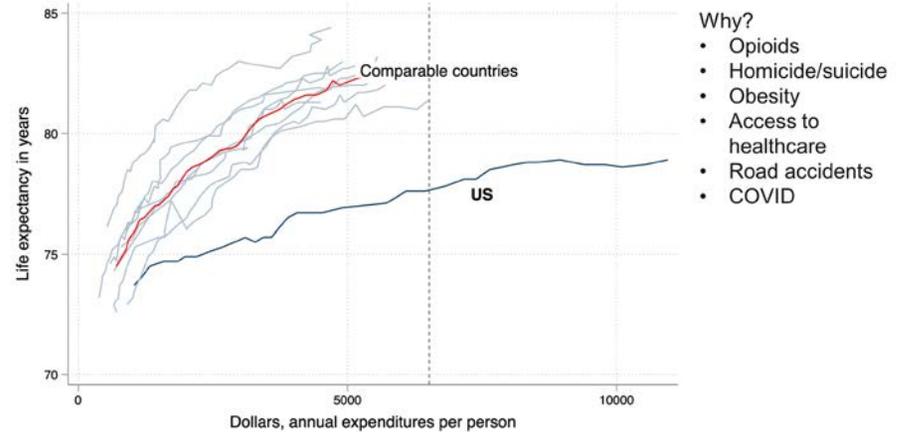


(Source CDC. Horizontal line: beginning of Covid)

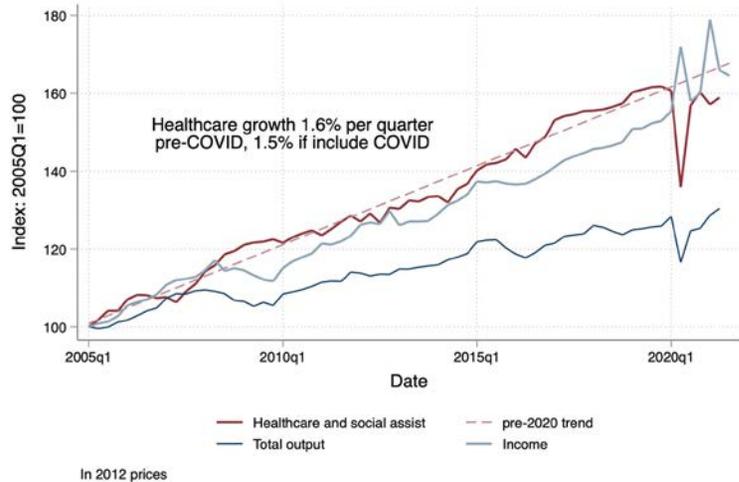
“A-Medic-a” is growing: in 2020 4th largest global economy



US Expenditure and Life Expectancy



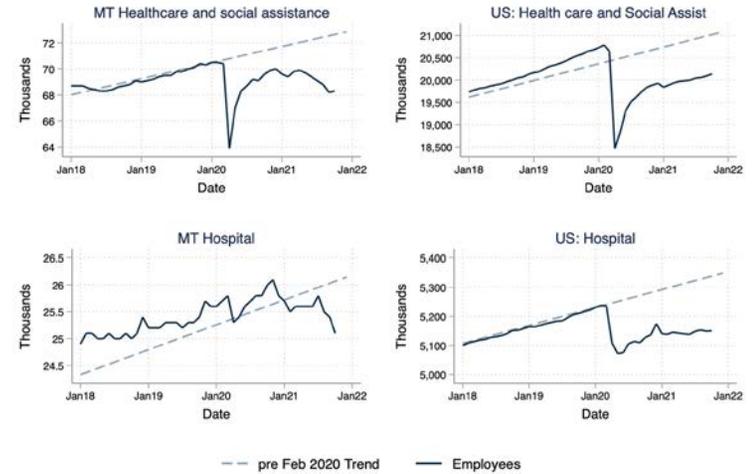
MT: Health Care, Real GSP, Population



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Health Care

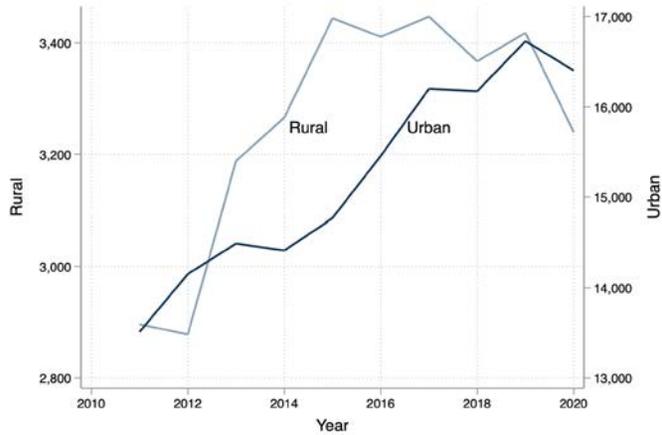
Employment in Montana vs US



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Health Care

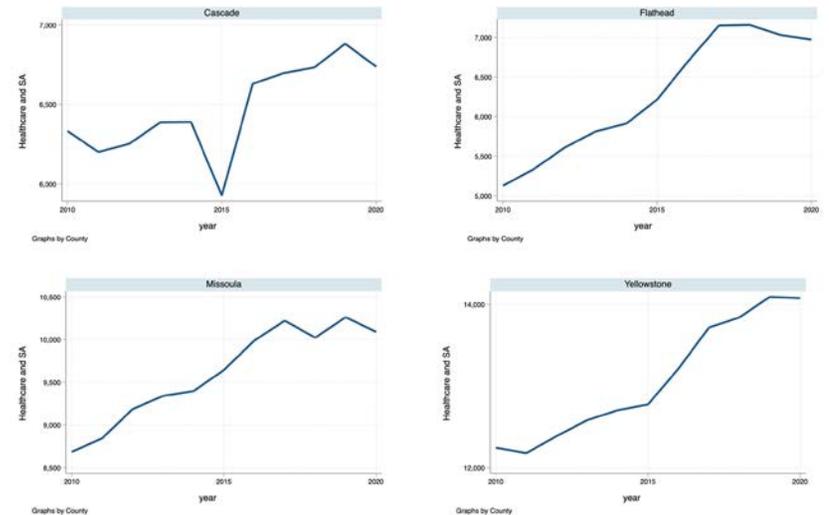
Montana: urban vs rural healthcare employment



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Health Care

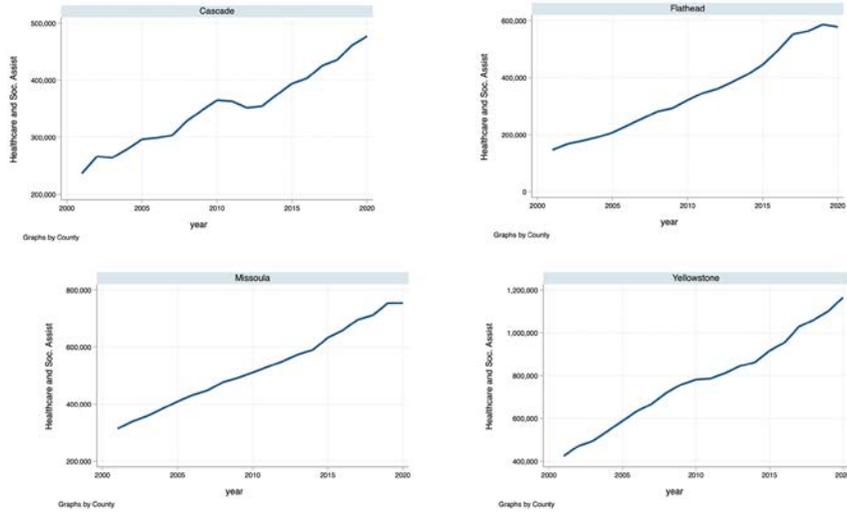
Employment: Four largest hospital counties



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Health Care

Income: Four largest hospital counties (thousands \$s)



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Health Care

KFF: Unvaccinated cost to US healthcare system

Preventable COVID-related hospitalization costs for unvaccinated people in the U.S., June-August 2021

	June 2021	July 2021	August 2021	Total
New hospital admissions of adult patients with confirmed COVID-19	60,000	125,000	345,000	530,000
Estimated share of adults hospitalized with COVID-19 who were unvaccinated	86%	86%	86%	86%
Estimated number of unvaccinated adults hospitalized for COVID-19	51,000	108,000	297,000	456,000
Estimated share of hospitalizations primarily for COVID-19	75%	75%	75%	75%
Estimated number of unvaccinated adults hospitalized primarily for COVID-19	39,000	81,000	222,000	342,000
Estimated share of unvaccinated hospitalizations for COVID-19 that were preventable	84%	84%	84%	84%
Estimated number of preventable COVID-19 hospitalizations	32,000	68,000	187,000	287,000
Approximate cost per COVID-related hospital admission	\$20,000	\$20,000	\$20,000	\$20,000
Estimated preventable cost for unvaccinated COVID-related adult hospitalizations	\$0.6 Billion	\$1.4 Billion	\$3.7 Billion	\$5.7 Billion

Note: Numbers may not sum due to rounding.

Source: KFF Analysis of CDC, CMS, and HHS Protect data

Peterson KFF
Health System Tracker

Estimated cost to healthcare system between June-August: \$5.7 billion



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UNIVERSITY OF MONTANA

Health Care

Direct healthcare costs to Montana

- July-November, 42,000 Montanans hospitalized for COVID-19

Adult admissions with confirmed COVID-19	42,000
Estimated number of unvaccinated adults	36,120
Estimated number of unvaccinated hospitalizations primarily for COVID	27,090
Estimated number of preventable hospitalizations	22,756
Average cost per COVID related hospitalization (national average)	\$20,000
Estimated cost of preventable for unvaccinated hospitalizations	\$35 million

Adjusted for length of stay



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Health Care

Thank You

robert.sonora@mso.umt.edu
www.bber.umt.edu



BUREAU OF BUSINESS AND ECONOMIC RESEARCH
UNIVERSITY OF MONTANA

Health Care

Montana's Wood Products Industry: Current Conditions and It's Fickle Relationship with U.S. Housing

Montana Economic Outlook Seminar

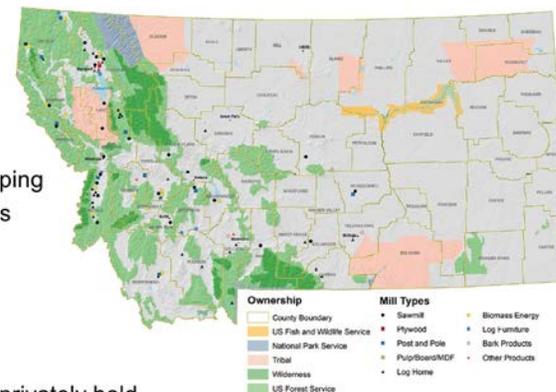
Todd A. Morgan, CF
Director of Forest Industry Research
Bureau of Business and Economic Research



Montana's Forest Industry

Montana's Primary Wood Products Facilities

- ~ 90 facilities
- 20+ sawmills
- Plywood, MDF, particleboard
- Log homes, post & pole, chipping
- Pellets, bark, fuels-for-schools

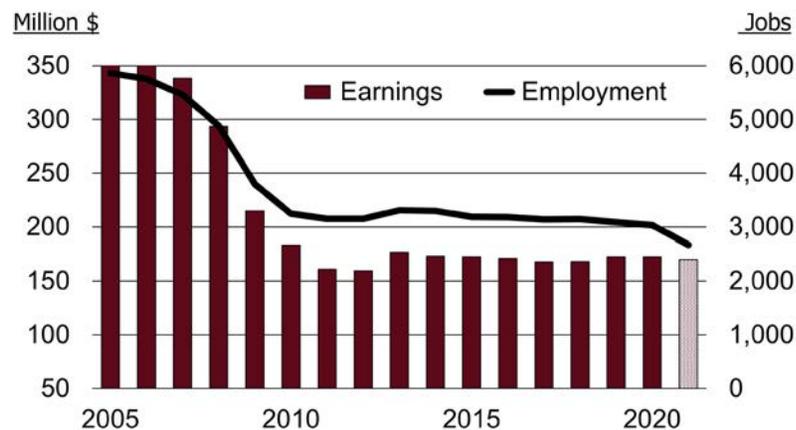


- Mostly small, privately held
- Most don't own forest land
- Nearly all rely on some timber from public lands



Montana's Forest Industry

Montana Wood & Paper Manufacturing



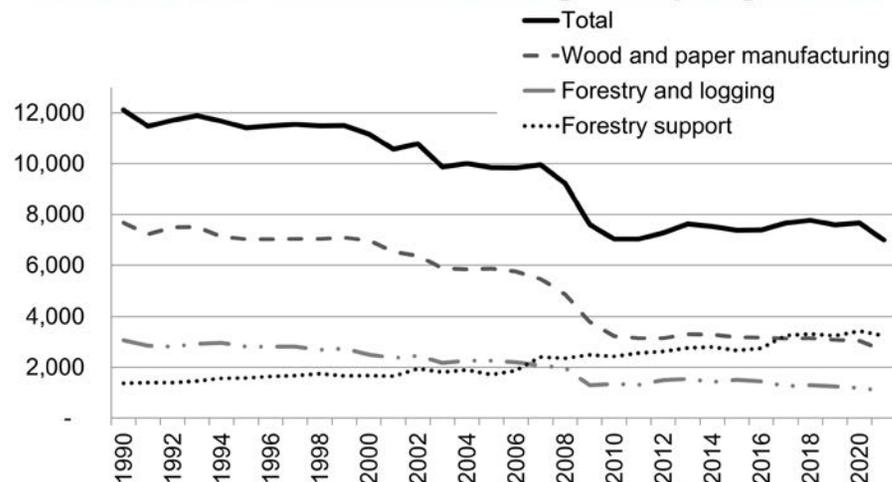
Sources: Bureau of Economic Analysis, Western Wood Products Association, BBER.

*2021 Estimated.



Montana's Forest Industry

Montana Forest Industry Employment



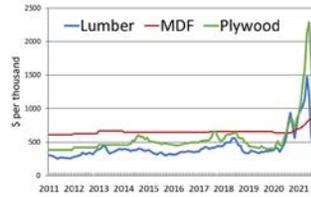
Sources: BEA, BLS-QCEW, BBER.

*2021 Estimated.



Montana's Forest Industry

Montana Forest Industry (Private Sector)



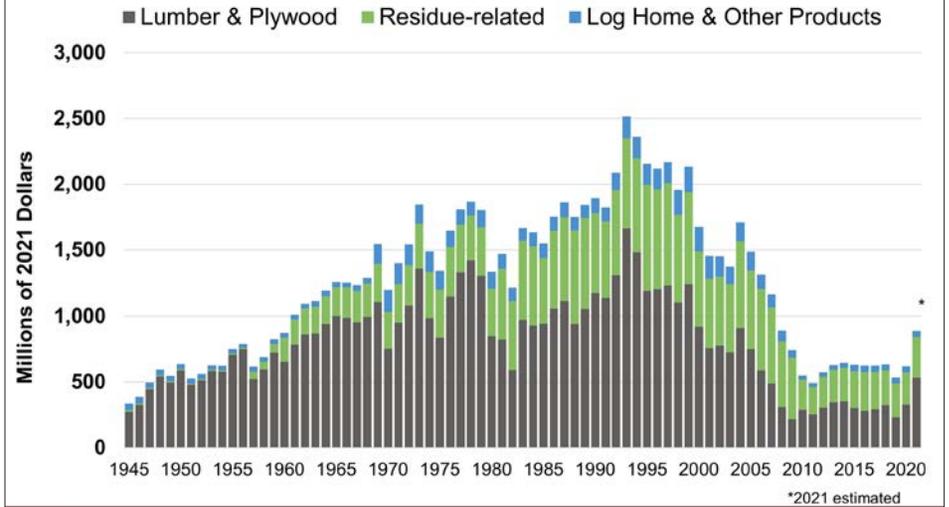
	2004	2010	2021	2021 estimates:
Workers (mills & forest)	10,006	7,030	6,973	
Earnings (millions)	\$550	\$323	\$391	Sales are higher because of prices, not quantities.
Primary sales (millions)	\$1,708	\$546	\$888	Employment & worker earnings estimated to be lower than 2020.
Lumber production (MMBF)	985	503	437	

Sources: Bureau of Economic Analysis, Western Wood Products Association, Random Lengths, BBER.



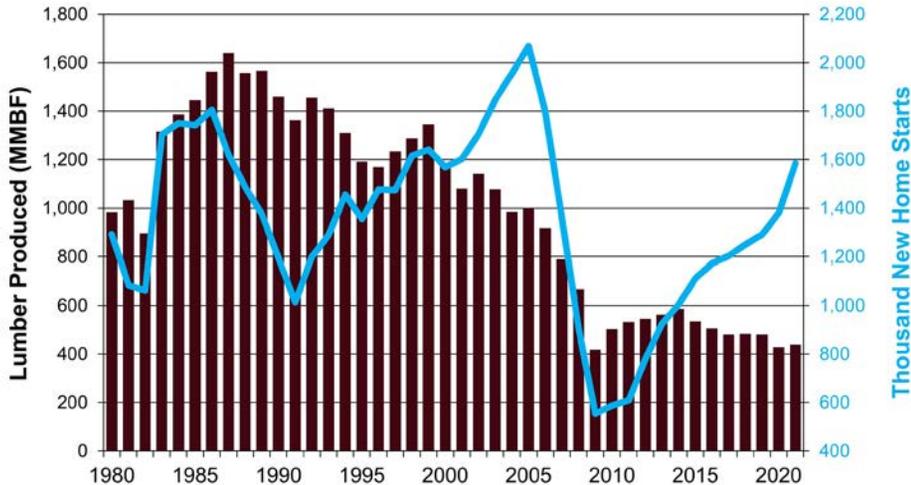
Montana's Forest Industry

Montana Wood Products Sales



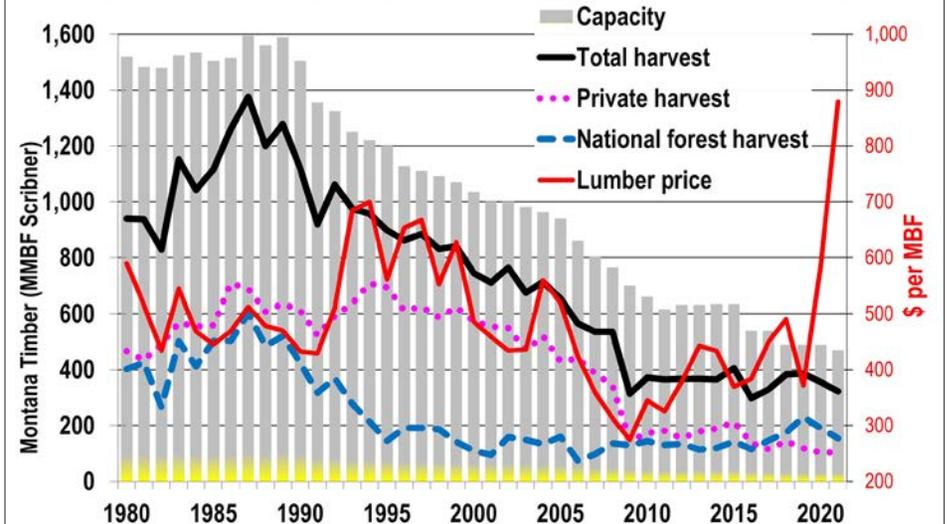
Montana's Forest Industry

MT Lumber Production & US New Home Starts



Montana's Forest Industry

Montana Timber Capacity, Harvest & Lumber Price 1980-2021



Montana's Forest Industry

U.S. Housing & Montana Wood Products

The Five Ls impacting housing supply & costs

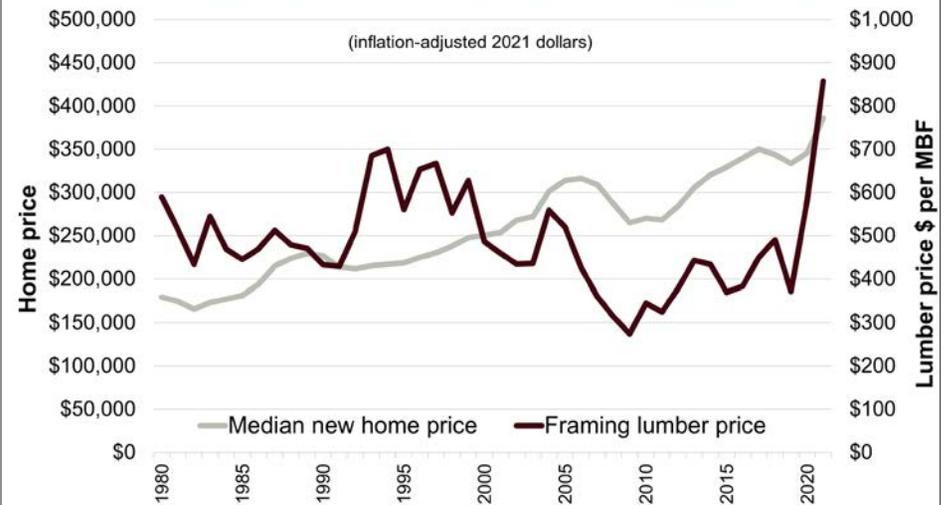
- Labor
- Land
- Laws
- Lending
- Lumber

Source: National Association of Homebuilders.



Montana's Forest Industry

Median U.S. New Home & Lumber Prices, 1980-2021

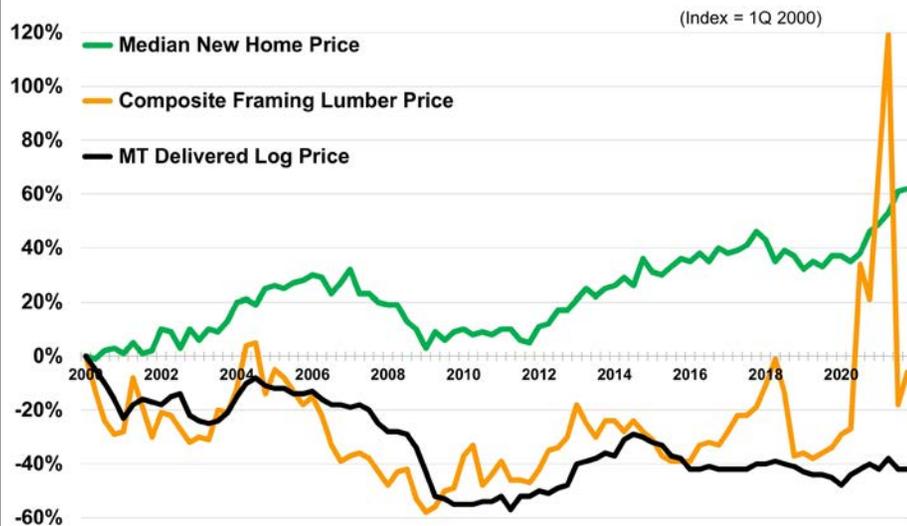


Sources: US Census Bureau and Random Lengths.



Montana's Forest Industry

U.S. New Home, Lumber and Montana Log Prices



Montana's Forest Industry

U.S. Housing & Montana Wood Products

- Costs of nearly all inputs (5 L's) to new homes have been rising for years.
- Wood material costs were definitely higher in 2021, and a larger share of new home cost.
- Higher home and wood product prices did not necessarily benefit forest/timber owners or loggers to the same extent as mills.
- Wood product prices are down considerably from their 2021 highs, and are expected to remain volatile in 2022.



Montana's Forest Industry

Thank you!



todd.morgan@business.umt.edu

www.BBER.umt.edu/FIR



Montana's Forest Industry

The Economic Outlook for Cascade County

Patrick M. Barkey, Director
Bureau of Business and Economic Research
University of Montana



Cascade Outlook

Cascade County Profile

Indicator	Value	State Rank
Total Population, 2020	84,414	5
Percent change since 2010	3.8%	23
Median age	38.3	48
Percent Aged 65 or Older	18.3%	
Percent with Bachelors Degree or Higher (Age 25+)	25.7%	21
Percent without Health Insurance Coverage, 2018	9.3%	46

Source: U.S. Census Bureau



Cascade Outlook

Cascade County Profile

Indicator	Value	State Rank
Earnings per Job, 2020	\$54,573	16
Construction	\$64,697	14
Manufacturing	\$67,612	3
Retail Trade	\$36,441	14
Transportation and Warehousing	\$60,366	17
Information	\$55,796	13

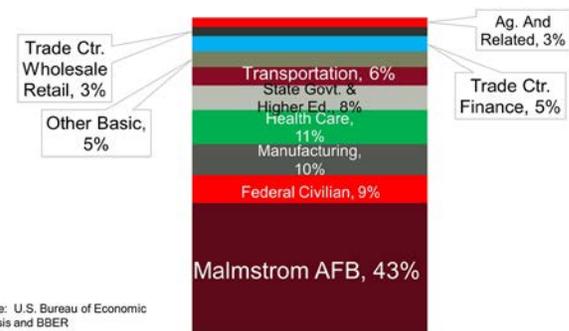
Source: U.S. Bureau of Economic Analysis



Cascade Outlook

Drivers of Economic Activity

Percent Share of Income in Basic Industries, Cascade County

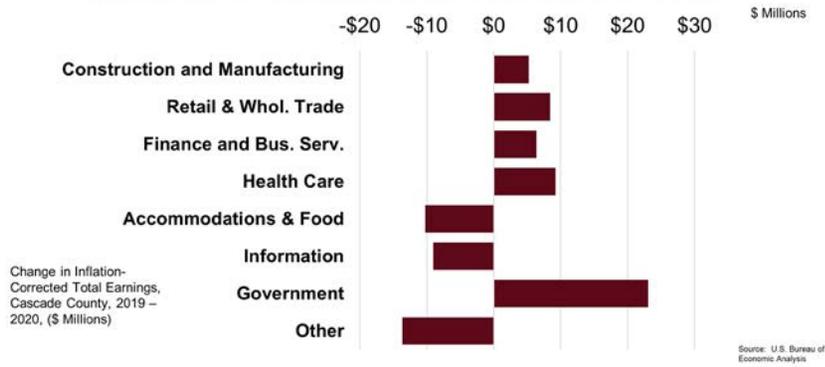


Source: U.S. Bureau of Economic Analysis and BBER

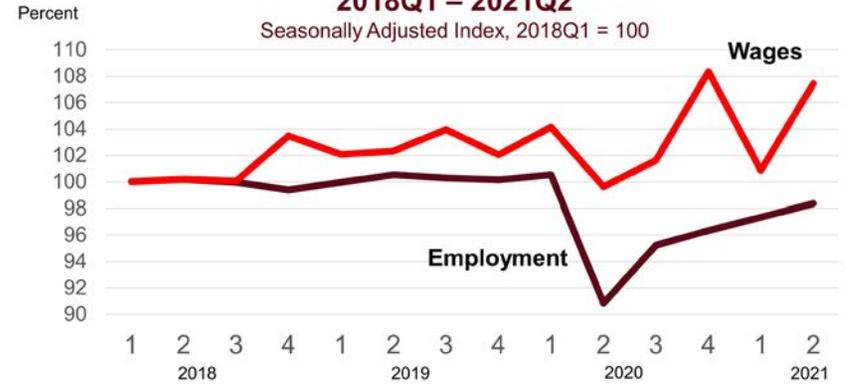


Cascade Outlook

Malmstrom Gains Helped Stabilize Growth



Wages and Employment, Cascade County, 2018Q1 – 2021Q2



Cascade County's Recession Experience

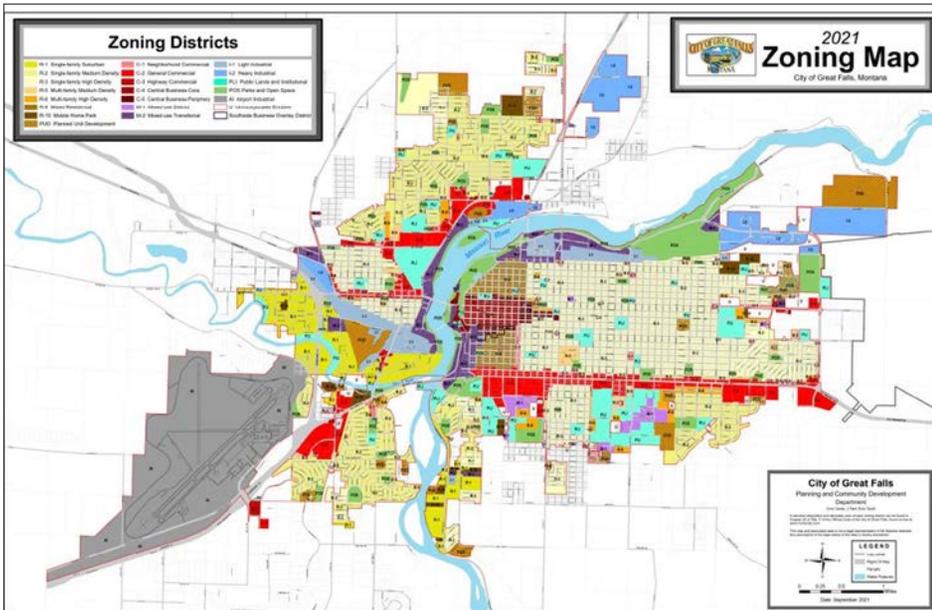
Employment, Wages and Salary and Income Growth, Actual and Forecast, Percent



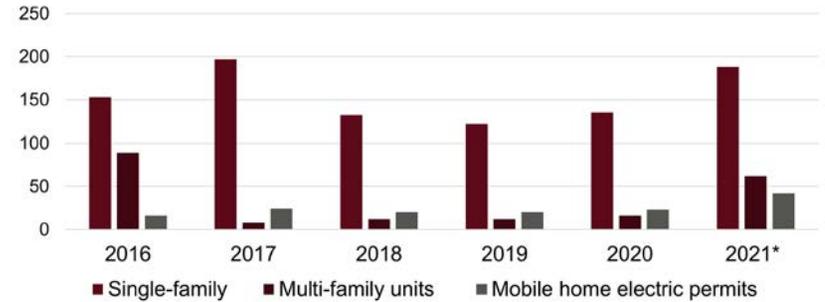
Real Estate Markets Were Hot

Cascade County Market Statistics for Single Family Homes





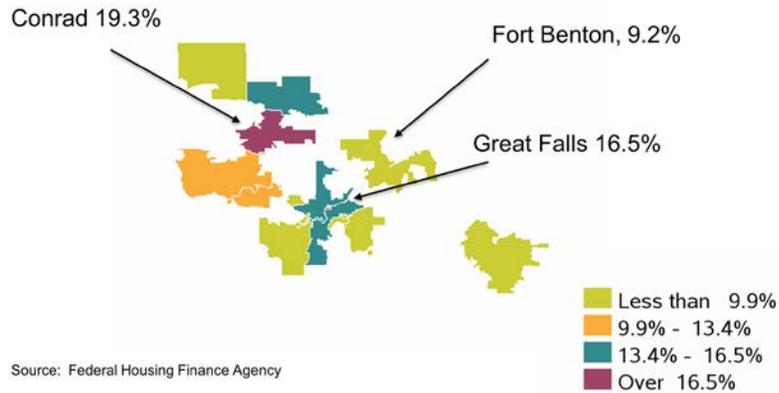
Housing Starts, Cascade County



*2021 data include starts through November only

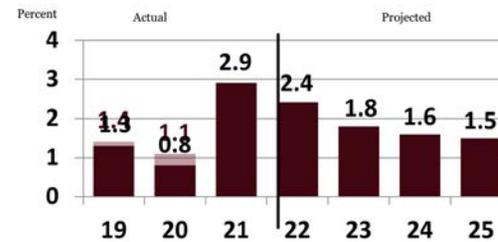
Source: U.S. Census Bureau and Montana Dept. of Labor and Industry

Housing Price Growth, 2016-2020



Source: Federal Housing Finance Agency

Growth in Nonfarm Earnings, Cascade County, 2019-2025



Source: BBER and U.S. Bureau of Economic Analysis

The Economic Outlook for Fergus County

Patrick M. Barkey, Director
Bureau of Business and Economic Research
University of Montana



Fergus Outlook

Fergus County Profile

Indicator	Value	State Rank
Total Population, 2020	11,050	19
Percent change since 2010	-1.2%	43
Median age	45.3	31
Percent Aged 65 or Older	23.2%	
Percent with Bachelors Degree or Higher (Age 25+)	29.1%	14
Percent without Health Insurance Coverage, 2018	12.7%	20

Source: U.S. Census Bureau



Fergus Outlook

Fergus County Profile

Indicator	Value	State Rank
Earnings per Job, 2020	\$43,396	38
Construction	\$76,919	6
Manufacturing	\$55,667	10
Retail Trade	\$30,502	28
Proprietors Income	\$24,416	44
Information	\$32,500	29

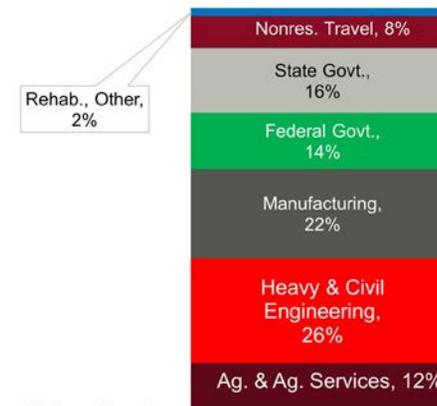
Source: U.S. Bureau of Economic Analysis



Fergus Outlook

Drivers of Economic Activity

Percent Share of Income in Basic Industries, Fergus County

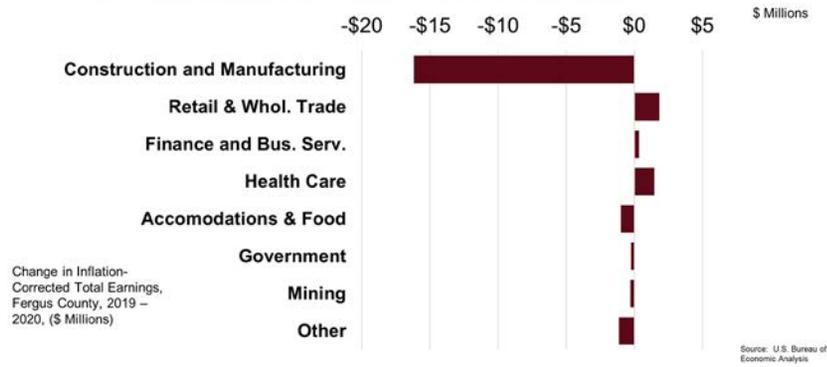


Source: U.S. Bureau of Economic Analysis and BBER



Fergus Outlook

Construction Declines Masked Mixed Growth

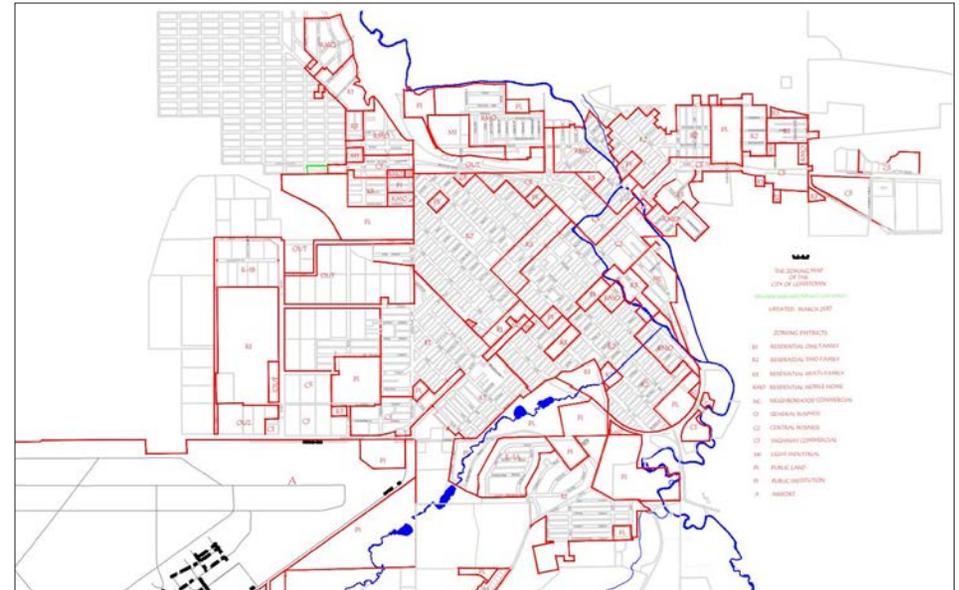
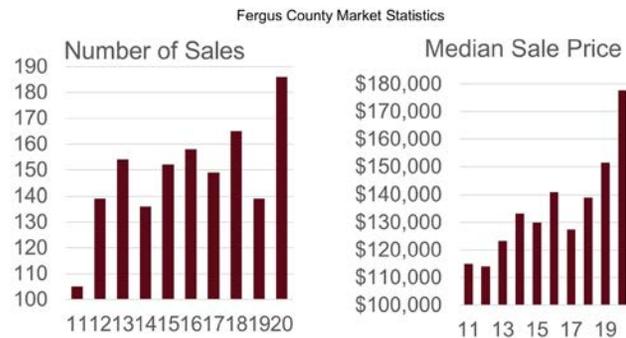


Fergus County's Recession Experience

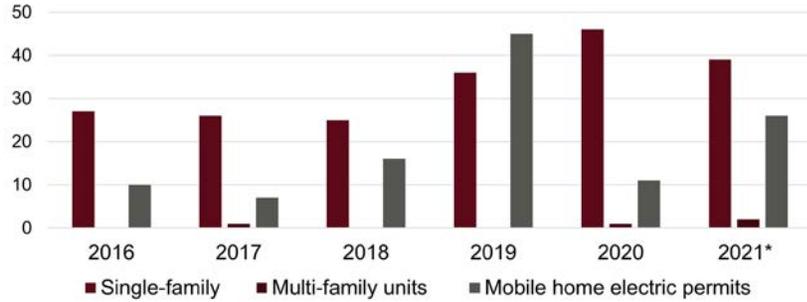
Employment, Wages and Salary and Income Growth, Actual and Forecast, Percent



Markets Looking Healthier



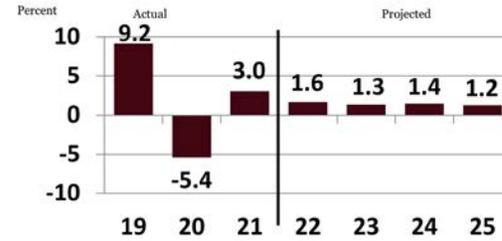
Housing Starts, Fergus County



*2021 data include starts through November only

Source: U.S. Census Bureau and Montana Dept. of Labor and Industry

Growth in Nonfarm Earnings, Fergus County, 2019-2025



Source: BBER and U.S. Bureau of Economic Analysis

The Economic Outlook for Flathead County

Patrick M. Barkey, Director
Bureau of Business and Economic Research
University of Montana



Flathead Outlook

Flathead County Profile

Indicator	Value	State Rank
Total Population, 2020	104,357	4
Percent change since 2010	14.8%	5
Median age	42.2	37
Percent Aged 65 or Older	12.2%	
Percent with Bachelors Degree or Higher (Age 25+)	31.0%	10
Percent without Health Insurance Coverage, 2018	9.8%	42

Source: U.S. Census Bureau



Flathead Outlook

Gallatin County Profile

Indicator	Value	State Rank
Earnings per Job, 2020	\$48,310	29
Construction	\$51,677	23
Manufacturing	\$61,060	6
Retail Trade	\$37,331	12
Mining	\$39,598	18
Information	\$63,386	9

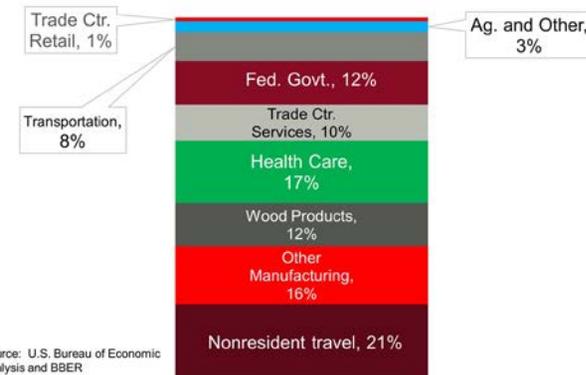
Source: U.S. Bureau of Economic Analysis



Flathead Outlook

Drivers of Economic Activity

Percent Share of Income in Basic Industries, Flathead County

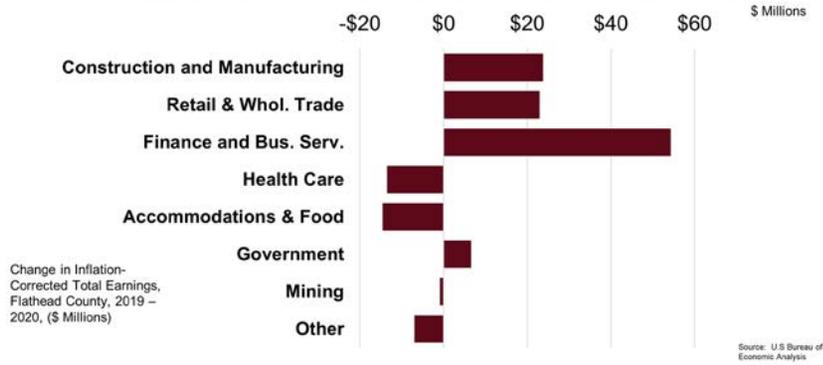


Source: U.S. Bureau of Economic Analysis and BBER



Flathead Outlook

Housing and Finance Propelled Growth in 2020



Flathead Outlook

Wages and Employment, Flathead County, 2018Q1 – 2021Q2

Seasonally Adjusted Index, 2018Q1 = 100



Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages



Flathead Outlook

Flathead County's Recession Experience

Employment, Wages and Salary and Income Growth, Actual and Forecast, Percent



Source: IHS Markit

Housing Prices Surged in 2021

Flathead County Market Statistics for Single Family Homes

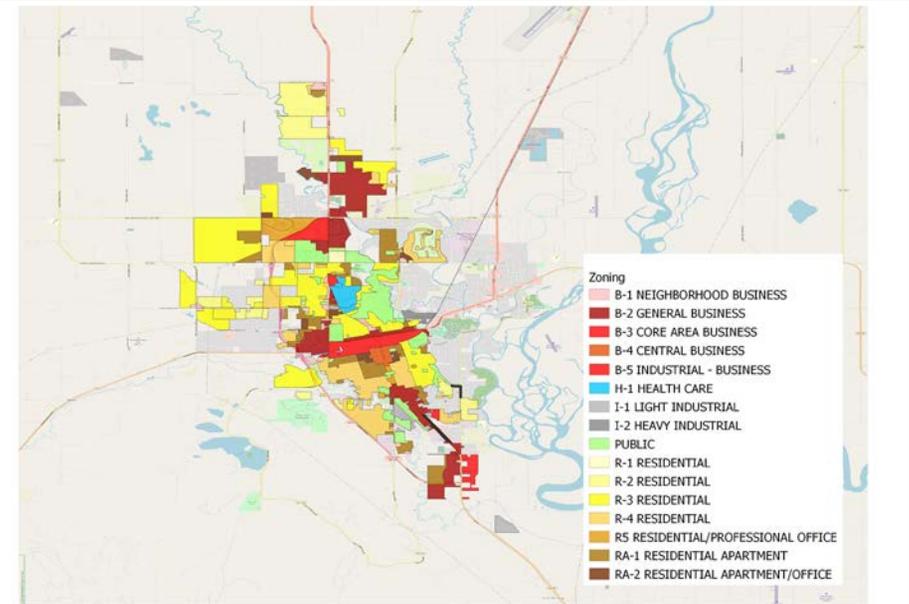
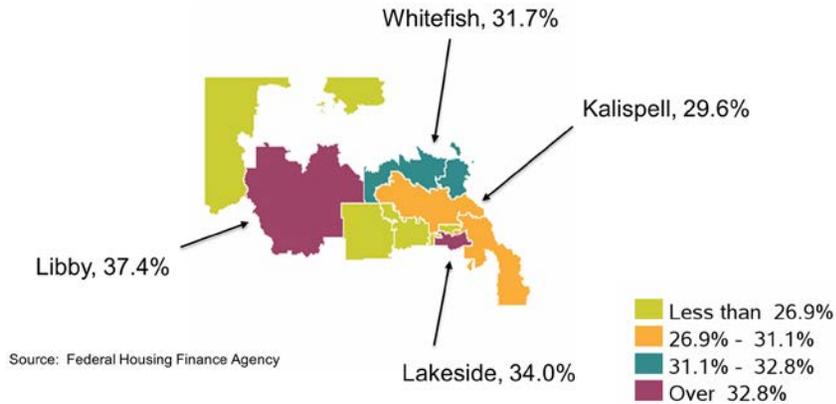


Source: Montana Regional MLS.

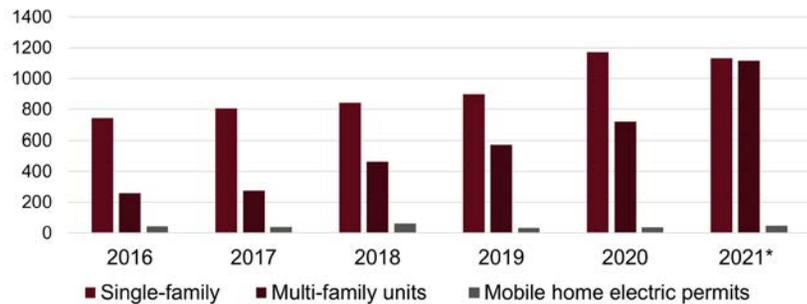


Flathead Outlook

Housing Price Growth, 2016-2020



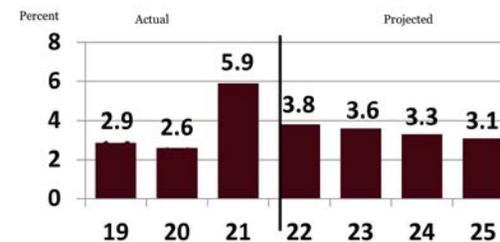
Housing Starts, Flathead County



*2021 data include starts through November only

Source: U.S. Census Bureau and Montana Dept. of Labor and Industry

Growth in Nonfarm Earnings, Flathead County, 2019-2025



Source: BBER and U.S. Bureau of Economic Analysis

The Economic Outlook for Gallatin County

Patrick M. Barkey, Director
Bureau of Business and Economic Research
University of Montana



Gallatin Outlook

Gallatin County Profile

Indicator	Value	State Rank
Total Population, 2020	114,434	2
Percent change since 2010	32.9%	1
Median age	33.4	53
Percent Aged 65 or Older	12.2%	
Percent with Bachelors Degree or Higher (Age 25+)	50.1%	1
Percent without Health Insurance Coverage, 2018	8.6%	52

Source: U.S. Census Bureau



Gallatin Outlook

Gallatin County Profile

Indicator	Value	State Rank
Earnings per Job, 2020	\$54,983	15
Construction	\$74,992	7
Manufacturing	\$61,377	5
Retail Trade	\$60,357	2
Forestry, Fishing and Related	\$30,340	7
Information	\$74,761	4

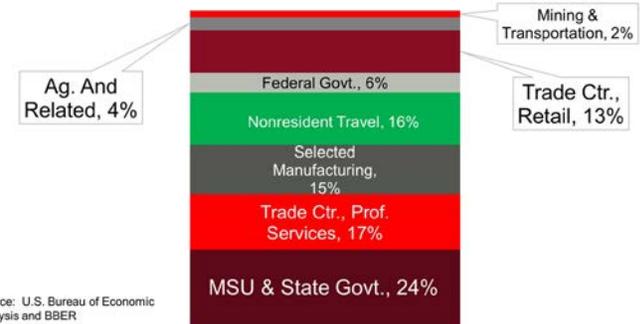
Source: U.S. Bureau of Economic Analysis



Gallatin Outlook

Drivers of Economic Activity

Percent Share of Income in Basic Industries, Gallatin County

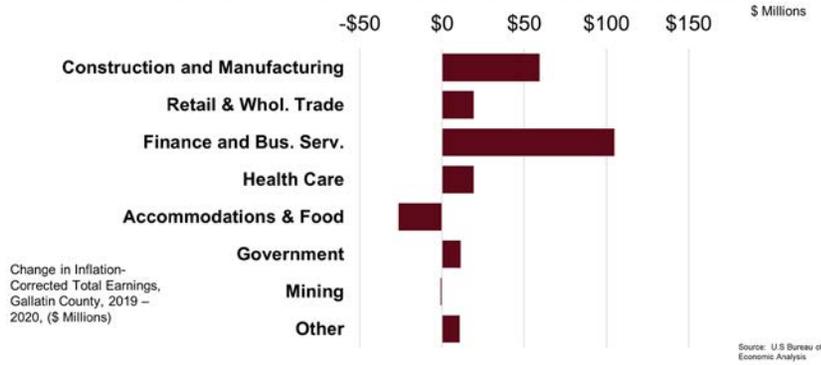


Source: U.S. Bureau of Economic Analysis and BBER



Gallatin Outlook

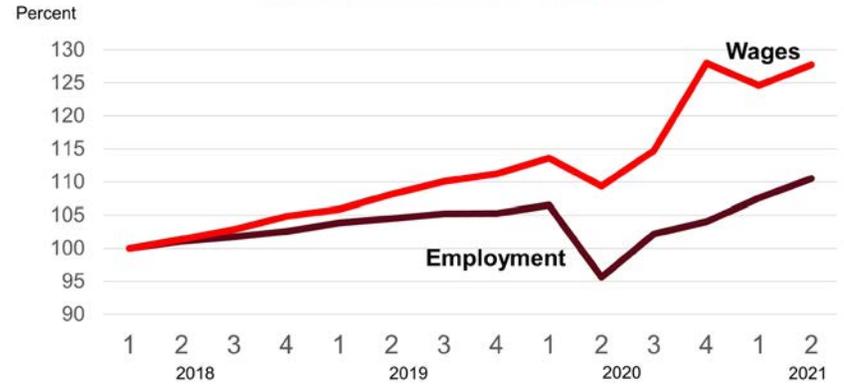
Ascent Vision Sale Turbo Charged Tech Growth



Gallatin Outlook

Wages and Employment, Gallatin County, 2018Q1 – 2021Q2

Seasonally Adjusted Index, 2018Q1 = 100



Gallatin Outlook

Gallatin County's Recession Experience

Employment, Wages and Salary and Income Growth, Actual and Forecast, Percent



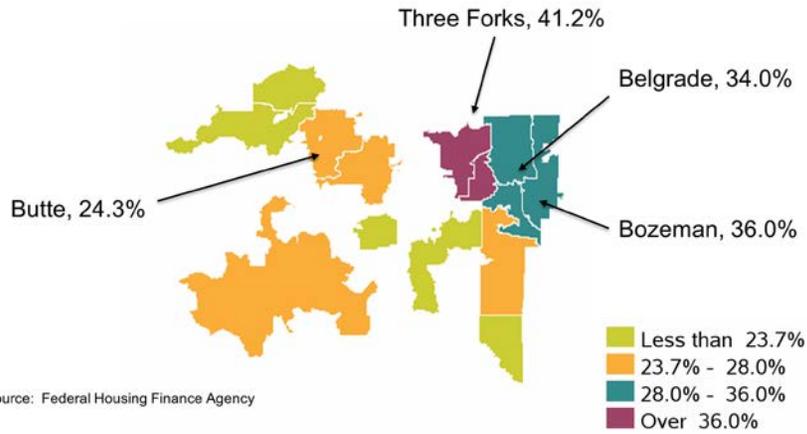
Home Prices Surged in 2021

Gallatin County Market Statistics for Single Family Homes



Gallatin Outlook

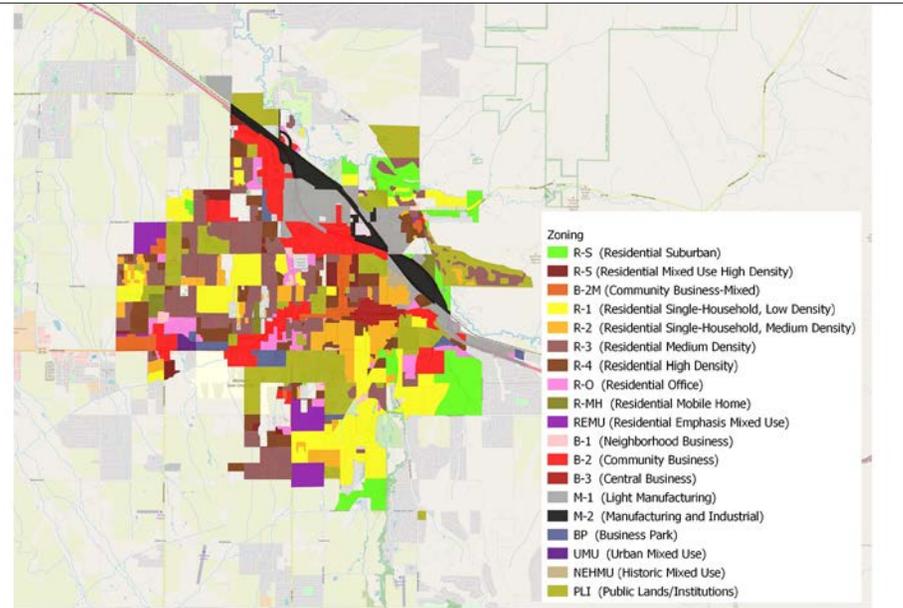
Housing Price Growth, 2016-2020



Source: Federal Housing Finance Agency

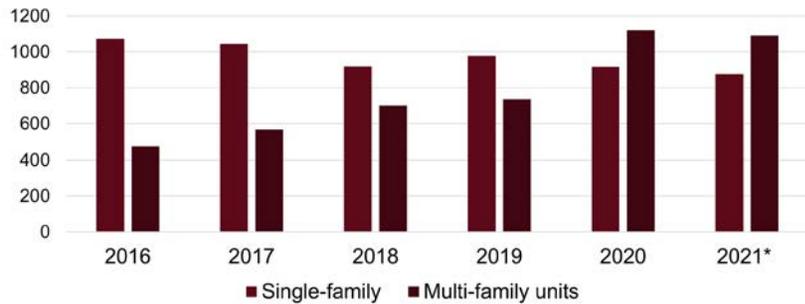


Gallatin Outlook



Gallatin Outlook

Housing Starts, Gallatin County

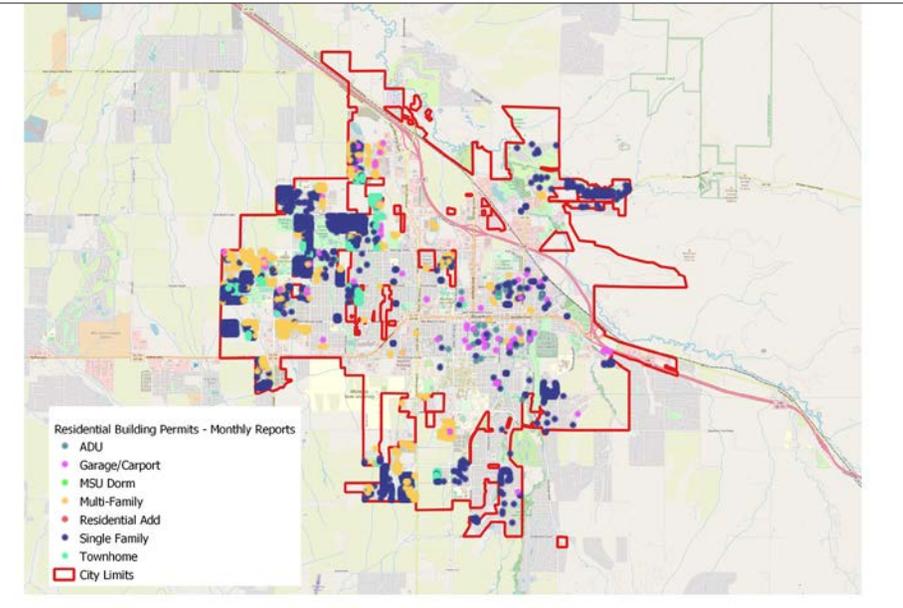


*2021 data include starts through November only

Source: U.S. Census Bureau and Montana Dept. of Labor and Industry

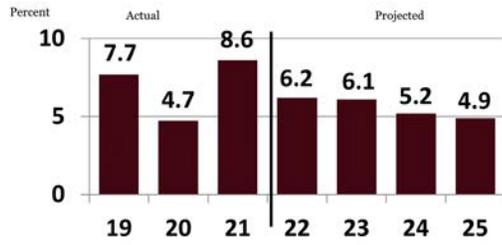


Gallatin Outlook



Gallatin Outlook

Growth in Nonfarm Earnings,
Gallatin County, 2019-2025



Source: BBER and U.S. Bureau of Economic Analysis

The Economic Outlook for Hill County

Patrick M. Barkey, Director
Bureau of Business and Economic Research
University of Montana



Hill Outlook

Hill County Profile

Indicator	Value	State Rank
Total Population, 2020	16,309	12
Percent change since 2010	1.32%	34(↓10)
Median age	34.3	51
Percent Aged 65 or Older	14.5%	
Percent with Bachelors Degree or Higher (Age 25+)	25.4%	22
Percent without Health Insurance Coverage, 2018	12.1%	25

Source: U.S. Census Bureau



Hill Outlook

Hill County Profile

Indicator	Value	State Rank
Earnings per Job, 2020	\$53,173	17
Construction	\$54,798	20
Manufacturing	\$24,681	28
Retail Trade	\$34,415	17
Information	\$75,354	3
Transportation and Warehousing	\$-	-

Source: U.S. Bureau of Economic Analysis



Hill Outlook

Drivers of Economic Activity

Percent Share of Income in Basic Industries, Hill County

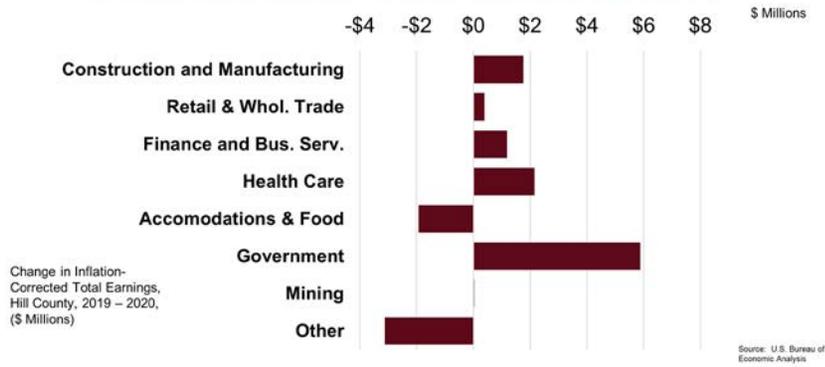


Source: U.S. Bureau of Economic Analysis and BBER



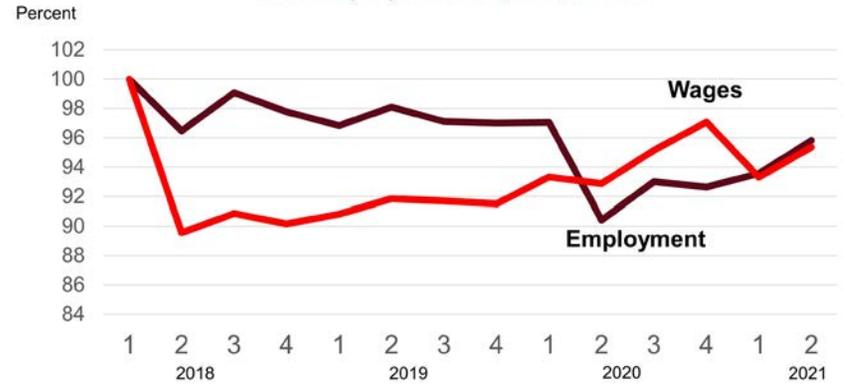
Hill Outlook

Federal Spending Helped Stabilize Growth



Wages and Employment, Hill County, 2018Q1 – 2021Q2

Seasonally Adjusted Index, 2018Q1 = 100



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Hill Outlook



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UNIVERSITY OF MONTANA

Hill Outlook

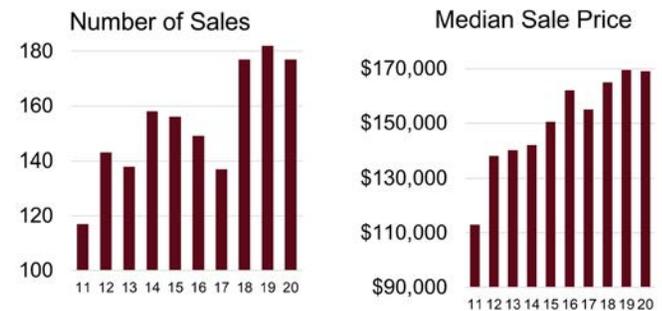
Hill County's Recession Experience

Employment, Wages and Salary and Income Growth, Actual and Forecast, Percent



Real Estate Markets Were Stable

Hill County Market Statistics



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Hill Outlook

The Economic Outlook for Lewis and Clark County

Patrick M. Barkey, Director
Bureau of Business and Economic Research
University of Montana



Lewis and Clark Outlook

Lewis and Clark County Profile

Indicator	Value	State Rank
Total Population, 2020	70973	6
Percent change since 2010	11.95%	7
Median age	40.8	42
Percent Aged 65 or Older	18.0%	
Percent with Bachelors Degree or Higher (Age 25+)	40.1%	3
Percent without Health Insurance Coverage, 2018	7.9%	54

Source: U.S. Census Bureau



Lewis and Clark Outlook

Lewis and Clark County Profile

Indicator	Value	State Rank
Earnings per Job, 2020	\$55,941	12
Construction	\$64,698	13
Manufacturing	\$60,192	7
Retail Trade	\$34,185	19
Transportation and Warehousing	-	-
Information	\$66,936	8

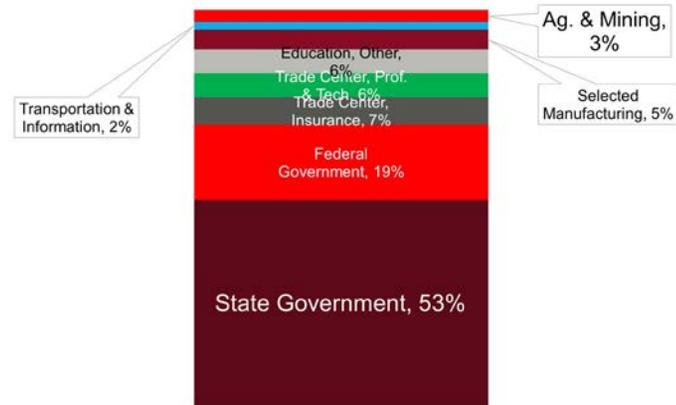
Source: U.S. Bureau of Economic Analysis



Lewis and Clark Outlook

Drivers of Economic Activity

Percent Share of Income in Basic Industries, Lewis and Clark County

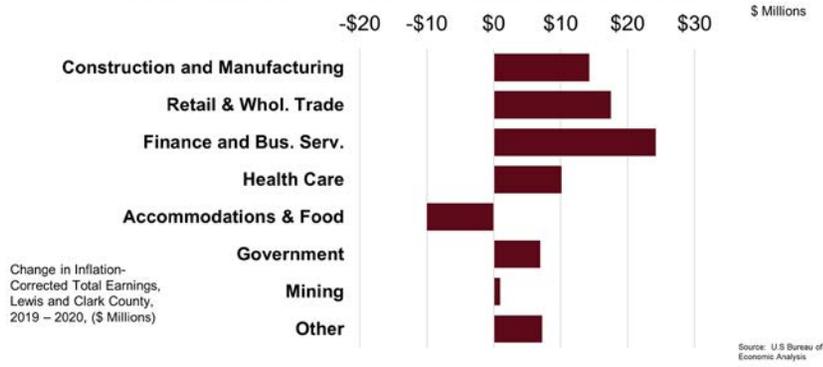


Source: U.S. Bureau of Economic Analysis and BBER



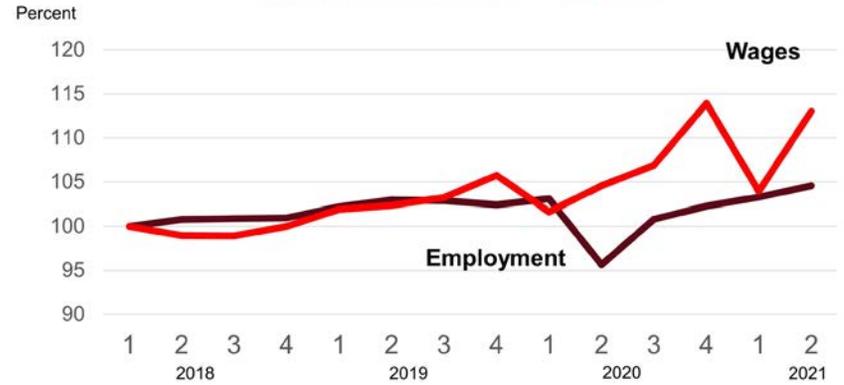
Lewis and Clark Outlook

Housing and Finance Propelled Growth



Wages and Employment, Lewis and Clark County, 2018Q1 – 2021Q2

Seasonally Adjusted Index, 2018Q1 = 100



Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Lewis and Clark County's Recession Experience

Employment, Wages and Salary and Income Growth, Actual and Forecast, Percent



Source: IHS Markit

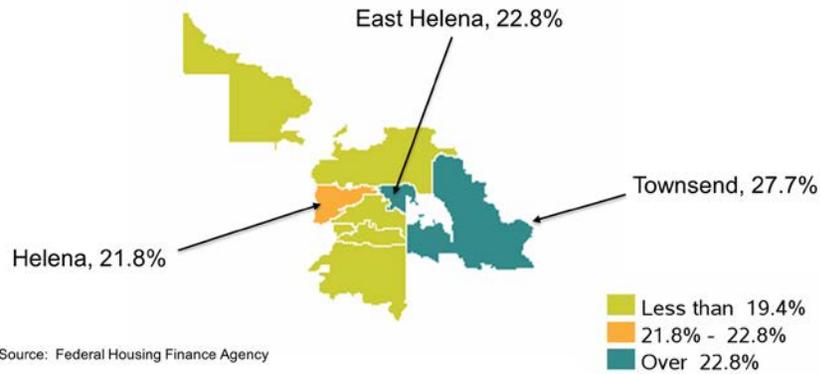
Home Prices Surged in 2021

Lewis & Clark County Market Statistics for Single Family Homes

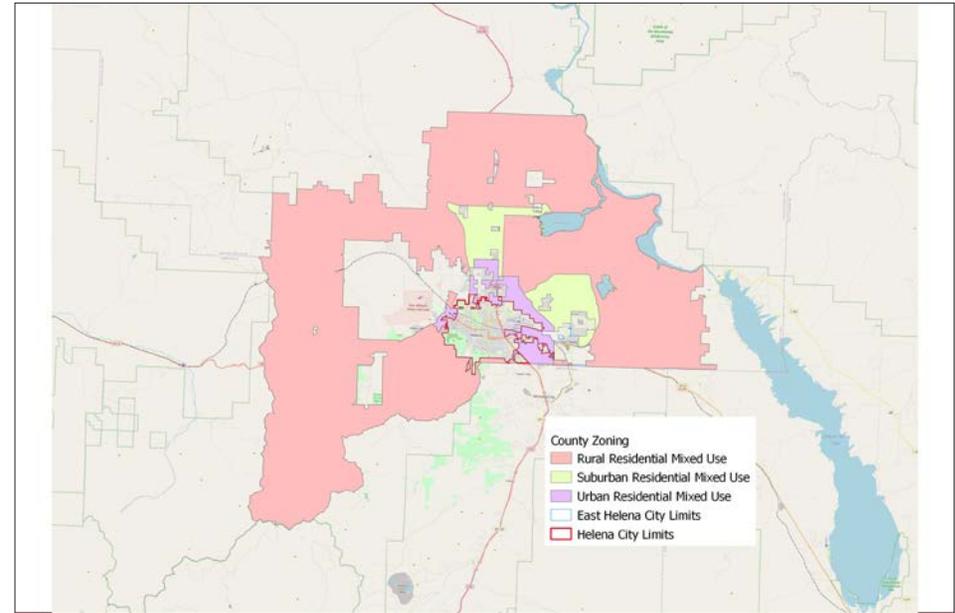


Source: Montana Regional MLS.

Housing Price Growth, 2016-2020

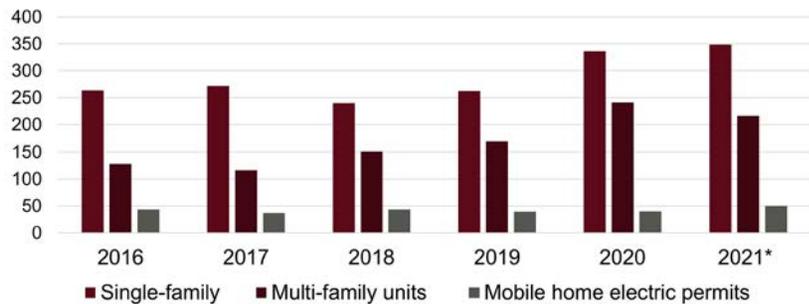


Lewis and Clark Outlook



Lewis and Clark Outlook

Housing Starts, Lewis and Clark County



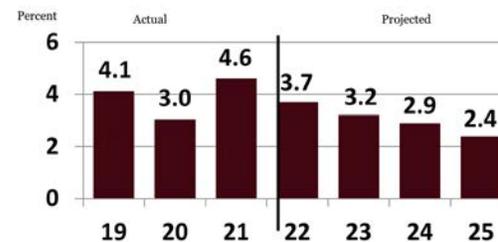
*2021 data include starts through November only

Source: U.S. Census Bureau and Montana Dept. of Labor and Industry



Lewis and Clark Outlook

Growth in Nonfarm Earnings, Lewis and Clark County, 2019-2025



Source: BBER and U.S. Bureau of Economic Analysis



Lewis and Clark Outlook

The Economic Outlook for Missoula and Ravalli Counties

Patrick M. Barkey, Director
Bureau of Business and Economic Research
University of Montana



Missoula Outlook

Missoula County Profile

Indicator	Value	State Rank
Total Population, 2020	117,922	3
Percent change since 2010	11.9%	7
Median age	36.0	50
Percent Aged 65 or Older	15.0%	
Percent with Bachelors Degree or Higher (Age 25+)	43.0%	2
Percent without Health Insurance Coverage, 2018	9.0%	49

Source: U.S. Census Bureau, Decennial Census 2010, 2020



Missoula Outlook

Missoula County Profile

Indicator	Value	State Rank
Earnings per Job, 2020	\$51,752	19
Construction	\$66,647	11
Manufacturing	\$49,789	11
Retail Trade	\$40,308	10
Forestry, Fishing and related	\$53,390	1
Information	67,382	7

Source: U.S. Bureau of Economic Analysis



Missoula Outlook

Ravalli County Profile

Indicator	Value	State Rank
Total Population, 2020	44,174	7
Percent change since 2010	9.9%	10
Median age	49.1	15
Percent Aged 65 or Older	25.1%	
Percent with Bachelors Degree or Higher (Age 25+)	27.8%	17
Percent without Health Insurance Coverage, 2018	14.2%	15

Source: U.S. Census Bureau, Decennial Census 2010, 2020



Missoula Outlook

Ravalli County Profile

Indicator	Value	State Rank
Earnings per Job, 2020	\$38,783	46
Construction	\$45,890	30
Manufacturing	\$37,097	17
Retail Trade	\$28,192	34
Information	\$33,075	28
Forestry, fishing, related activities, and other	\$26,476	9

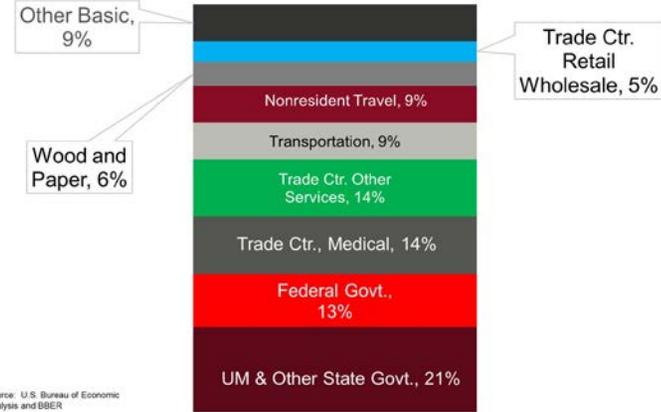
Source: U.S. Bureau of Economic Analysis



Missoula Outlook

Drivers of Economic Activity

Percent Share of Income in Basic Industries, Missoula County



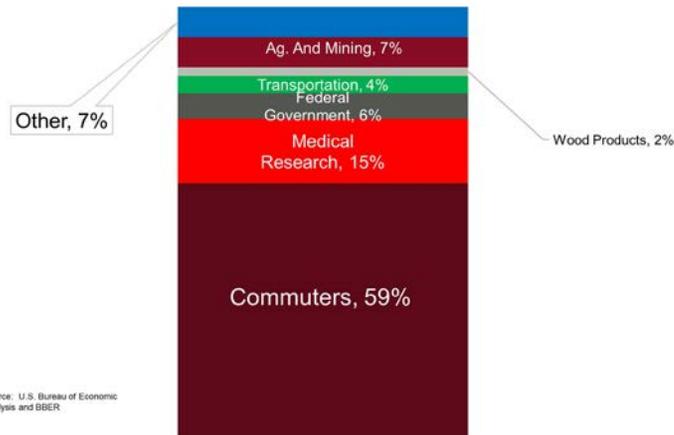
Source: U.S. Bureau of Economic Analysis and BBER



Missoula Outlook

Drivers of Economic Activity

Percent Share of Income in Basic Industries, Ravalli County



Source: U.S. Bureau of Economic Analysis and BBER



Missoula Outlook

Government Growth Was a Stabilizing Force



Change in Inflation-Corrected Total Earnings, Missoula County, 2019 – 2020, (\$ Millions)

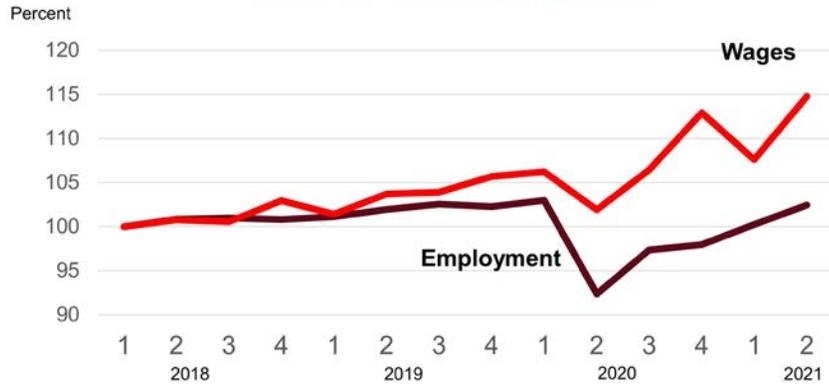
Source: U.S. Bureau of Economic Analysis



Missoula Outlook

Wages and Employment, Missoula County, 2018Q1 – 2021Q2

Seasonally Adjusted Index, 2018Q1 = 100



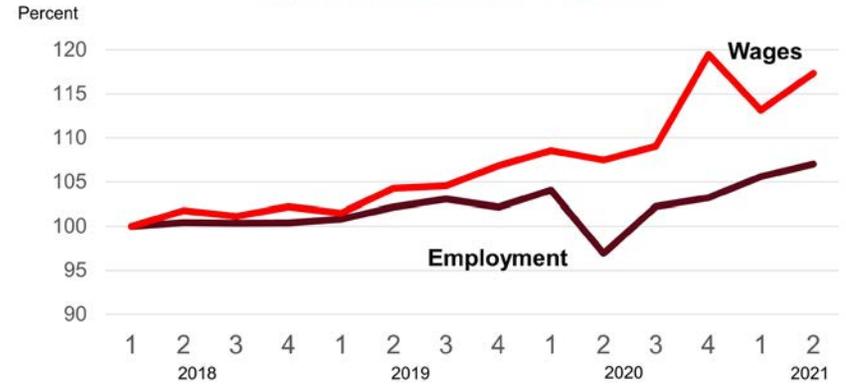
Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages



Missoula Outlook

Wages and Employment, Ravalli County, 2018Q1 – 2021Q2

Seasonally Adjusted Index, 2018Q1 = 100



Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages



Missoula Outlook

Missoula County's Recession Experience

Employment, Wages and Salary and Income Growth, Actual and Forecast, Percent



Source: IHS Markit

Ravalli County's Recession Experience

Employment, Wages and Salary and Income Growth, Actual and Forecast, Percent



Source: IHS Markit

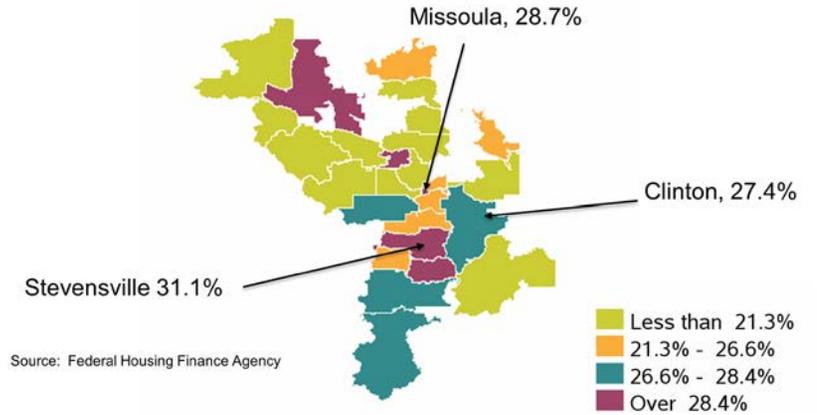
Home Prices Surged in 2021

Missoula County Market Statistics for Single Family Homes

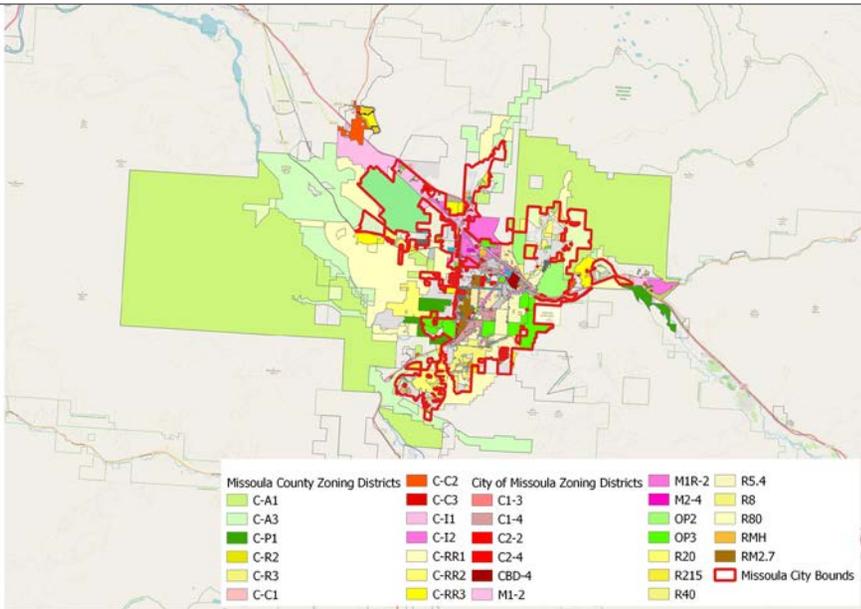


Source: Montana Regional MLS.

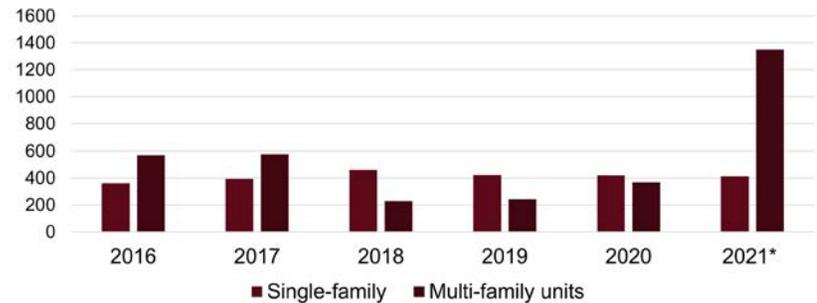
Housing Price Growth, 2016-2020



Source: Federal Housing Finance Agency



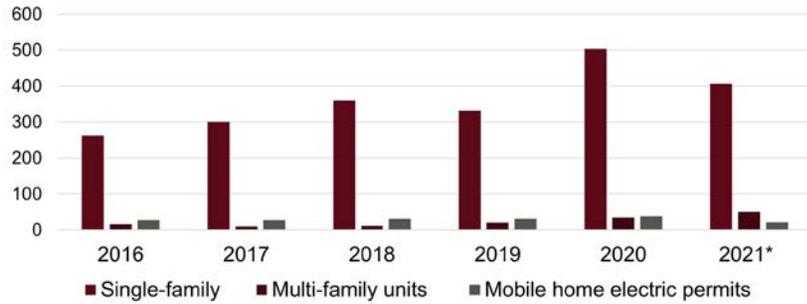
Housing Starts, Missoula County



*2021 data include starts through November only

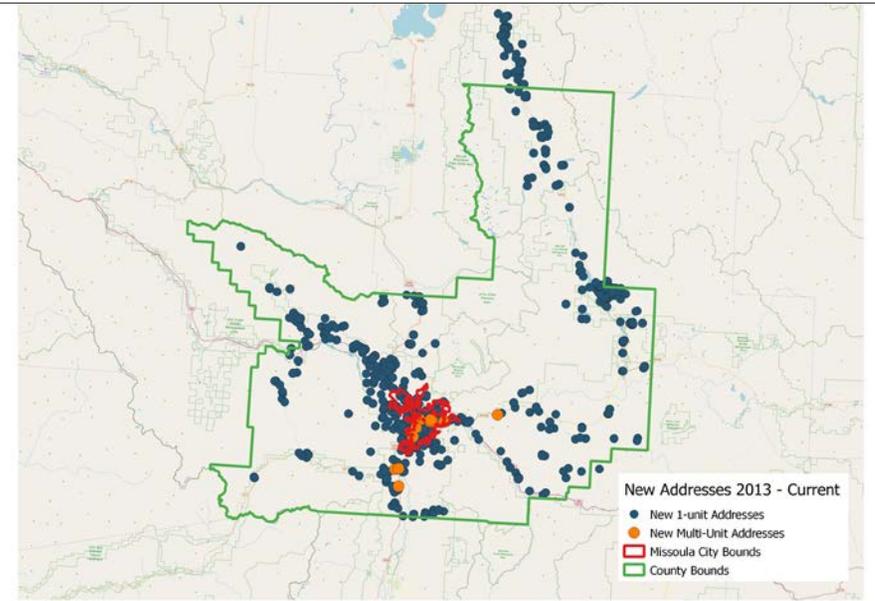
Source: U.S. Census Bureau and Montana Dept. of Labor and Industry

Housing Starts, Ravalli County



*2021 data include starts through November only

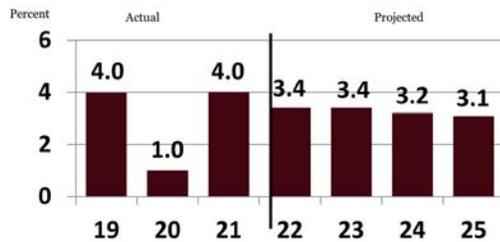
Source: U.S. Census Bureau and Montana Dept. of Labor and Industry



New Addresses 2013 - Current

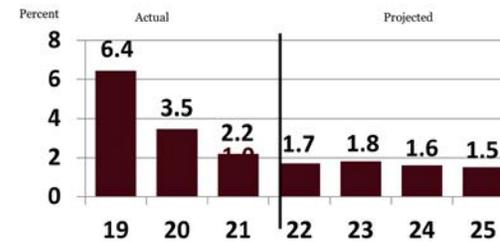
- New 1-unit Addresses
- New Multi-Unit Addresses
- ▭ Missoula City Bounds
- ▭ County Bounds

Growth in Nonfarm Earnings, Missoula County, 2019-2025



Source: BBER and U.S. Bureau of Economic Analysis

Growth in Nonfarm Earnings, Ravalli County, 2019-2025



Source: BBER and U.S. Bureau of Economic Analysis

The Economic Outlook for Silver Bow County

Patrick M. Barkey, Director
Bureau of Business and Economic Research
University of Montana



Silver Bow Outlook

Silver Bow County Profile

Indicator	Value	State Rank
Total Population, 2020	35,133	8
Percent change since 2010	2.1%	27
Median age	40.0	44
Percent Aged 65 or Older	18.7%	
Percent with Bachelors Degree or Higher (Age 25+)	27.2%	18
Percent without Health Insurance Coverage, 2018	9.4%	45

Source: U.S. Census Bureau



Silver Bow Outlook

Silver Bow County Profile

Indicator	Value	State Rank
Earnings per Job, 2020	\$56,202	10
Construction	\$-	-
Manufacturing	\$79,379	2
Retail Trade	\$51,207	3
Proprietors Income	\$51,909	7
Information	\$43,705	20

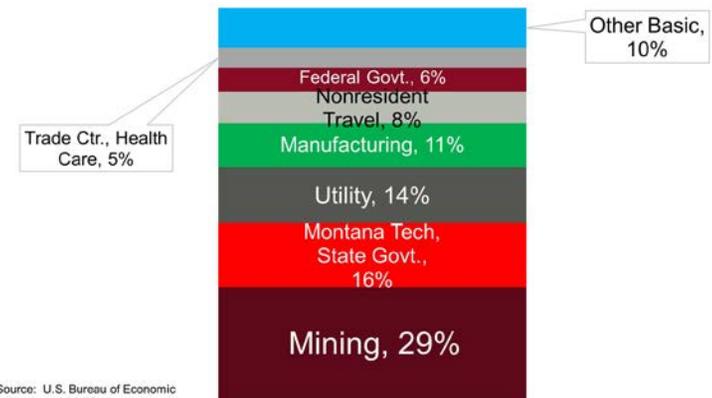
Source: U.S. Bureau of Economic Analysis



Silver Bow Outlook

Drivers of Economic Activity

Percent Share of Income in Basic Industries, Silver Bow County

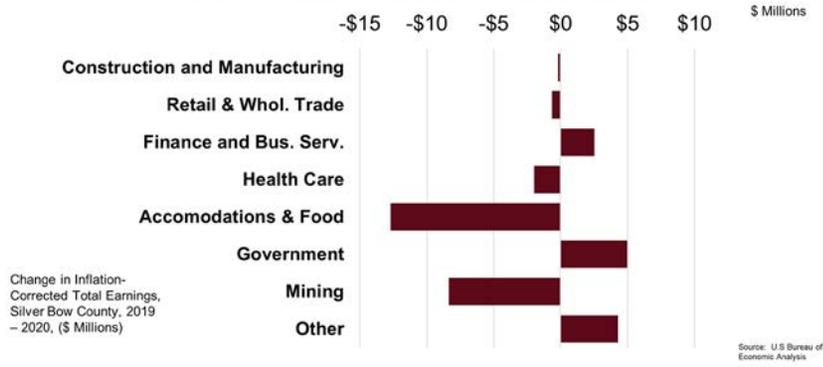


Source: U.S. Bureau of Economic Analysis and BBER



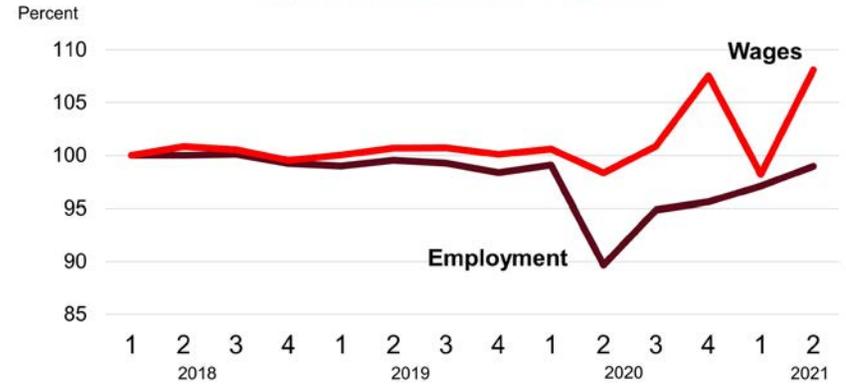
Silver Bow Outlook

Tough Year for Visitor Spending



Wages and Employment, Silver Bow County, 2018Q1 - 2021Q2

Seasonally Adjusted Index, 2018Q1 = 100



Silver Bow County's Recession Experience

Employment, Wages and Salary and Income Growth, Actual and Forecast, Percent

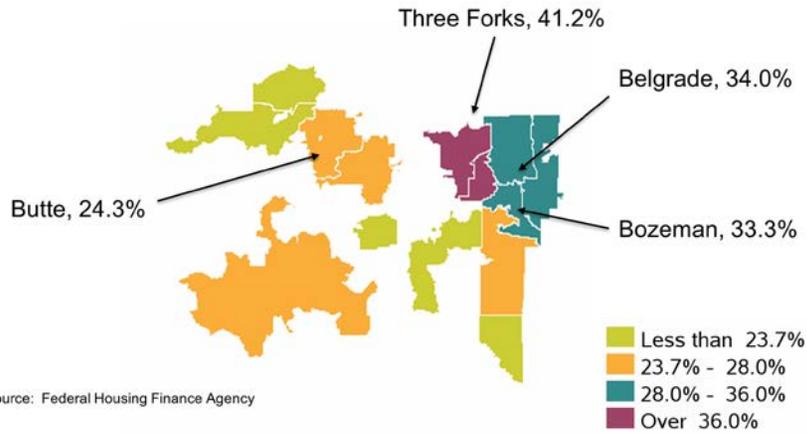


Markets Looking Healthier

Silver Bow County Market Statistics



Housing Price Growth, 2016-2020

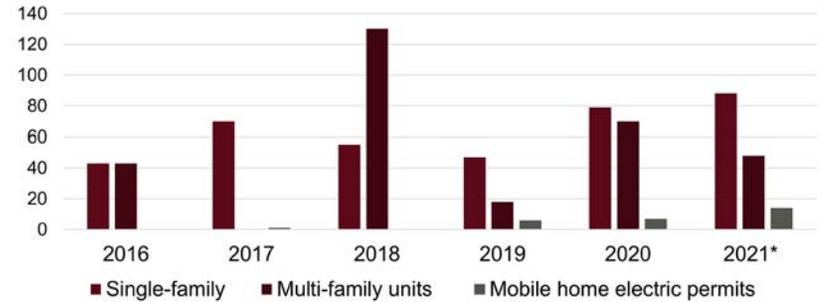


Source: Federal Housing Finance Agency



Silver Bow Outlook

Housing Starts, Silver Bow County



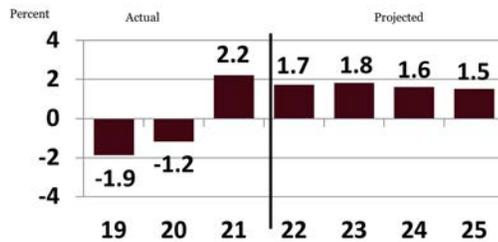
*2021 data include starts through November only

Source: U.S. Census Bureau and Montana Dept. of Labor and Industry



Silver Bow Outlook

Growth in Nonfarm Earnings, Silver Bow County, 2019-2025



Source: BBER and U.S. Bureau of Economic Analysis



Silver Bow Outlook

The Economic Outlook for Yellowstone County

Patrick M. Barkey, Director
Bureau of Business and Economic Research
University of Montana



Yellowstone Outlook

Yellowstone County Profile

Indicator	Value	State Rank
Total Population, 2020	164,731	1
Percent change since 2010	9.0%	8
Median age	38.4	47
Percent Aged 65 or Older	16.5%	
Percent with Bachelors Degree or Higher (Age 25+)	32.1%	7
Percent without Health Insurance Coverage, 2018	8.1%	53

Source: U.S. Census Bureau



Yellowstone Outlook

Yellowstone County Profile

Indicator	Value	State Rank
Earnings per Job, 2020	\$59,095	8
Construction	\$65,978	12
Manufacturing	\$97,469	1
Retail Trade	\$37,145	13
Transportation and Warehousing	\$66,611	12
Information	\$62,397	10

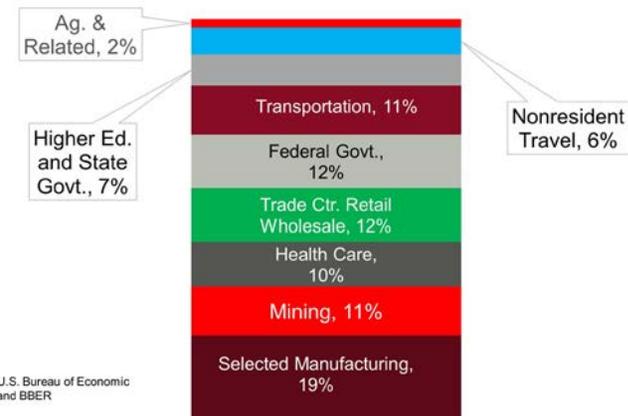
Source: U.S. Bureau of Economic Analysis



Yellowstone Outlook

Drivers of Economic Activity

Percent Share of Income in Basic Industries, Yellowstone County

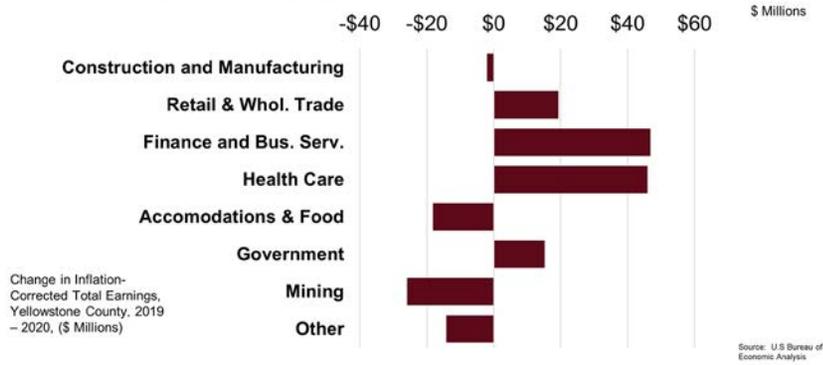


Source: U.S. Bureau of Economic Analysis and BBER



Yellowstone Outlook

Rebound in Goods Economy Helped Billings



Yellowstone Outlook

Wages and Employment, Yellowstone County, 2018Q1 – 2021Q2

Seasonally Adjusted Index, 2018Q1 = 100



Yellowstone Outlook

Yellowstone County's Recession Experience

Employment, Wages and Salary and Income Growth, Actual and Forecast, Percent



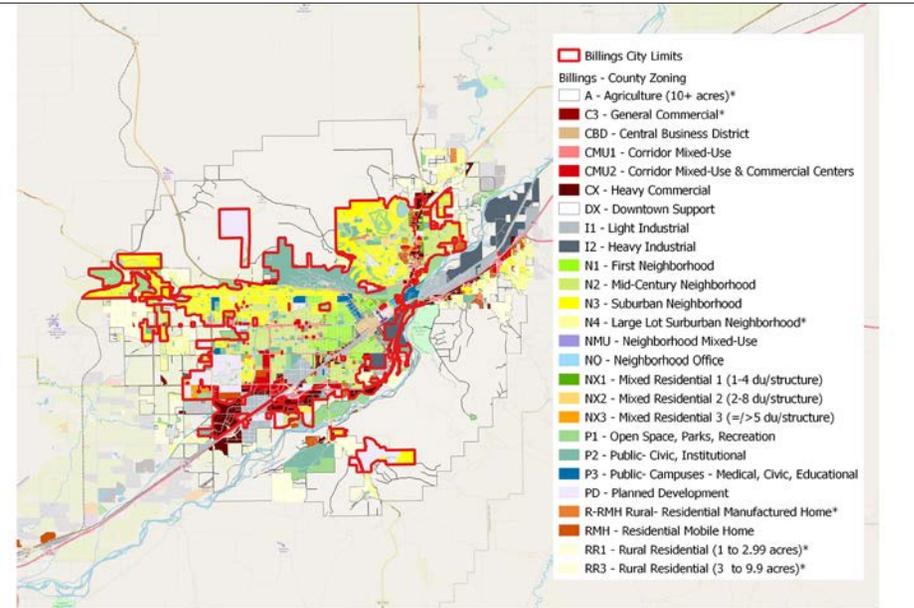
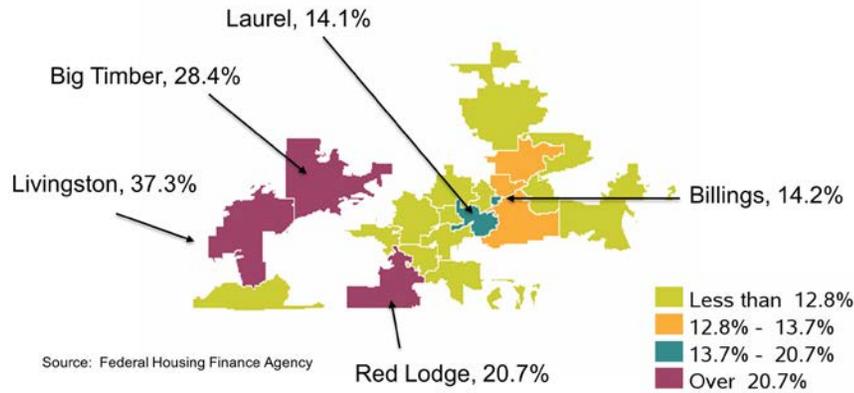
Home Prices Surged in 2021

Yellowstone County Market Statistics

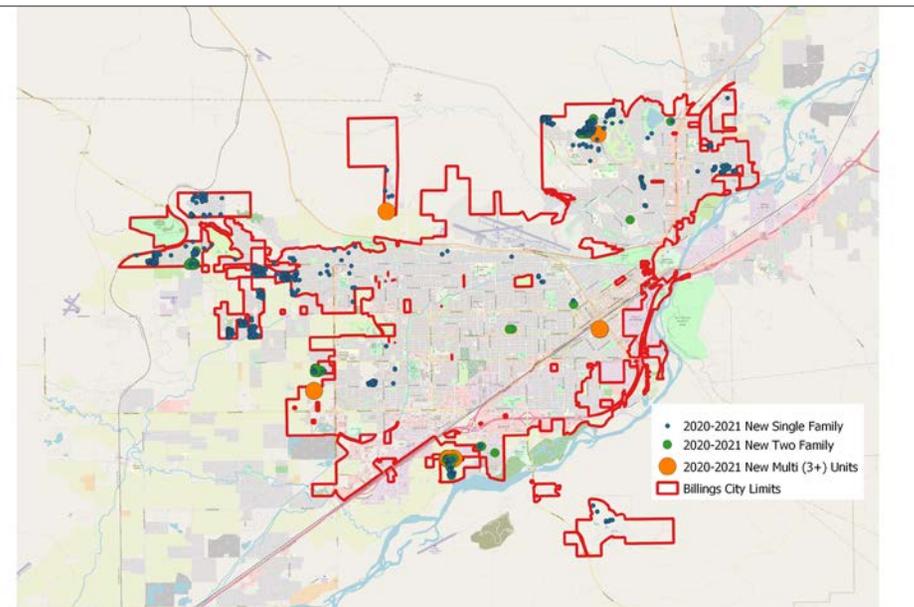
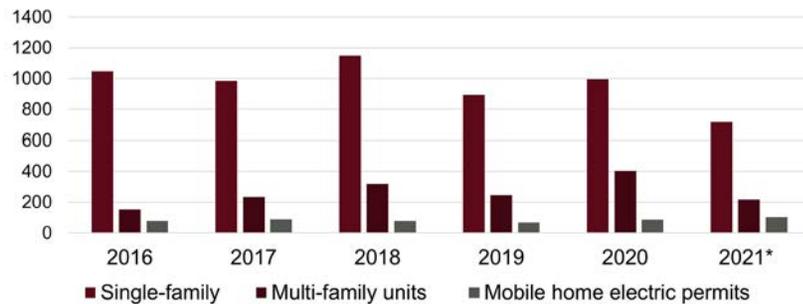


Yellowstone Outlook

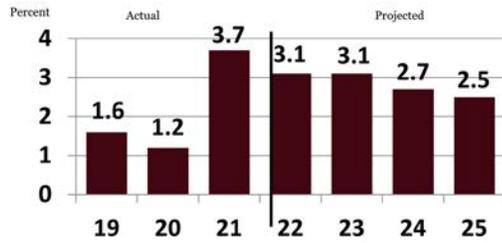
Housing Price Growth, 2016-2020



Housing Starts, Yellowstone County



Growth in Nonfarm Earnings,
Yellowstone County, 2019-2025



Source: BBER and U.S. Bureau of Economic Analysis

High-tech & Startups

Christina Henderson,
Executive Director



MTHighTech.org

2022 Outlook for Montana High-tech

- Industry growth and job creation continues
- Technology adoption, remote work minimize impacts of pandemic
- Housing and workforce shortages create headwinds



Surveying Montana high-tech firms since 2014.

What is high-tech?

Make or sell high-tech products

Professional services related to tech

E-commerce

Advanced manufacturing



Montana's high-tech sector 2021



More than \$2.9 billion in annual revenue



Growing 7x the Montana economy



Pays 2x the median wage, \$73,000+



600+ firms

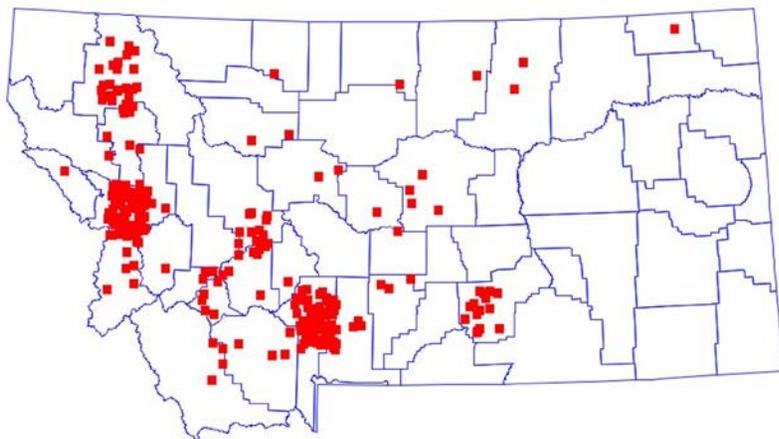
Source: Montana High Tech Industry Survey, 2021, UM BBER

Top Montana High-Tech Business Types, 2021

- Software, SaaS, 25%
- Professional Services, 10%
- Consulting, 9%
- Manufacturing, 7%
- Marketing, 6%
- Biotechnology, 6%
- Financial Services, Payment Processing, 5%
- Telecommunications, 5%
- Digital Media, Publishing, 5%
- Construction, 3%

Source: Montana High Tech Industry Survey, 2021, UM BBER

Locations of High-Tech & Manufacturing Firms 2021



A SPERIDIAN COMPANY

Helix Business Solutions, Dillon

- IT Consulting firm serving global clients
- Acquired by Speridian Technologies in February 2021
- Will continue to create jobs in MT



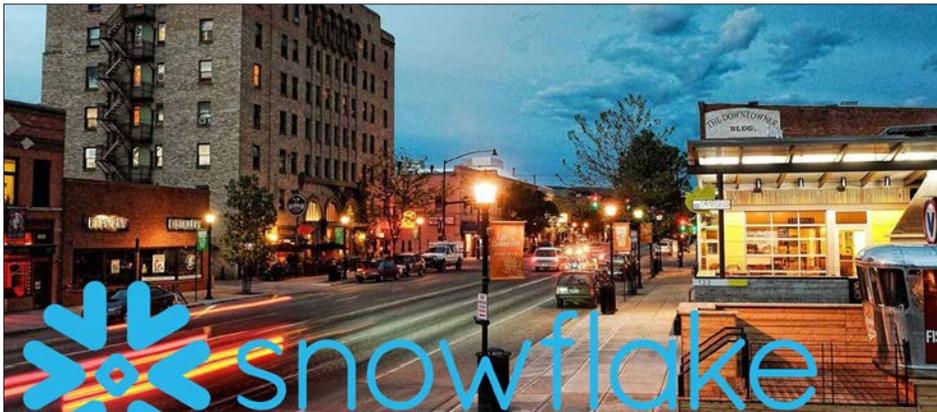
**Skyfish,
Stevensville**

- Autonomous work drone company
- Raised \$20 million Series Seed round in June 2021
- Plans to double workforce in the next year



**Neuro-ID,
Whitefish**

- Provides behavioral analytics for online businesses
- Closed \$35 million Series B round in November 2021
- Hopes to have 100+ employees this year



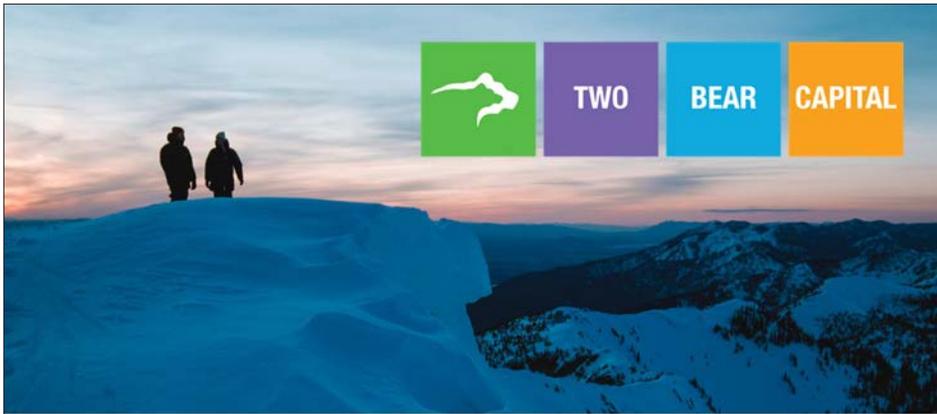
**Snowflake,
Bozeman**

- Cloud-based data warehousing company
- Raised nearly \$3.4 billion in 2020 in the largest software IPO to date
- Moved corporate HQ from California to Bozeman in May 2021



**Next Frontier
Capital,
Bozeman**

- Closed \$80 million fund III in April 2021
- Funded 35+ companies since 2015
- Invested \$29.1 million in 20 Montana companies



Two Bear Capital, Whitefish

- Invested about \$75 million since 2019
- 14 companies so far with a special interest in biotech and bioinformatics
- MT companies FYR Diagnostics, Truwl, Inimmune, and Verafi

Three Challenges



Housing



Workforce



Education



1. Housing

- Housing shortages limit ability to relocate workers
- Housing costs rising for existing workforce
- Both urban and rural communities impacted



2. Workforce

- Increased competition for workers
- More time and money invested to attract talent
- Companies struggle to find candidates with the right skills in Montana

3. Education

Tech industry is unfamiliar to many Montanans

Expand statewide access to tech career pathways and skills

Include rural and tribal communities

High Tech Career Pathways



IT & Computing



STEM



Business



Finance



Manufacturing



Marketing



Architecture & Construction

Emerging Roles - Job Clusters of Tomorrow

1. Cloud Computing	2. Software Engineering
3. Data and AI	4. Product Development
5. Marketing	6. Sales
7. Content Production	8. People and Culture

Source: World Economic Forum, The Future of Jobs 2020/LinkedIn Economic Graph



ATG, A Cognizant Company, Missoula

What They Do: Technology Consulting
Career Pathways: Business, IT/Computing
Job Titles: 2. Software Engineering Intern, 3. Data Engineer 8. Principal Recruiter | **Entry Level:** Aim Higher Consultant Trainee > Salesforce Administrator; Salesforce Developer; Salesforce Architect

Salesforce Career Pathways



On average, jobs with Salesforce skills pay around \$80,000 per year

Source: <https://trailhead.salesforce.com>



Foundant Technologies, Bozeman

What They Do: SaaS – Grant Management

Career Pathways: IT & Computing, Business, Marketing

Job Titles: 1. Senior Software Engineer (Platform), 2. Senior Software Engineer (.NET), 4. Product Owner, Client Services, 5. Marketing Business Analyst, 6. Client Success Manager | **Entry Level:** Client Services Intern

Customer Success Career Pathways



Endpoint Utility Corp, Kalispell

What They Do: IT Services

Career Pathway: IT/Computing

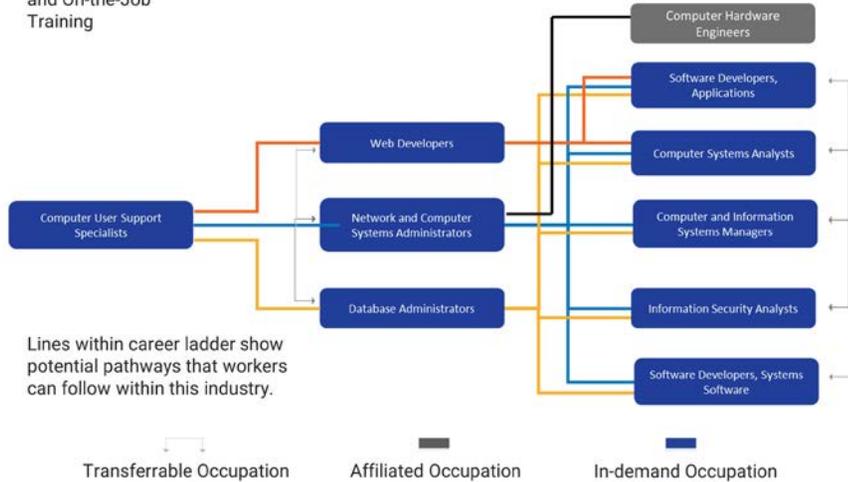
Job Titles: **Entry Level:** Computer User Support Specialist

IT Services Career Ladder

Entry Level
High School Diploma
and On-the-Job
Training

Mid Career
Bachelor's +

Advanced
Bachelor's +



Source: <https://oklahomaworks.gov>



Applied
Materials,
Kalispell

What They Do: Semiconductor and display manufacturing equipment

Career Pathways: Computing/IT, STEM, Manufacturing, Business

Job Titles: 2. Software Engineer – Machine Learning, 3. Business Intelligence Analyst, 4. Technical Project/Program Management, 8. Recruiter | STEM: Mechanical Engineer, Engineering Technician; Chemist | Manufacturing: Welder; CNC Laser Operator



PFL Tech,
Livingston and
Bozeman

What They Do: Marketing Technology

Career Pathways: Marketing, IT & Computing, Business, Manufacturing

Job Titles: 1. Kubernetes Engineer, 2. Senior Software Developer, 6. Customer Success Manager | Manufacturing: Finishing Operator



Zoot Enterprises,
Bozeman and
Billings

What They Do: SaaS - Financial Services & Healthcare

Career Pathways: IT/Computing, Business, Finance

Job Titles: 2. Software Engineer, 4. Capabilities Business Analyst, 5. Creative Marketing Manager – Digital, 6. Strategic Account Manager, 8. Human Resources Coordinator



**Workiva,
Bozeman and
Missoula**

What They Do: SaaS – Compliance and Reporting
Career Pathways: IT & Computing, Business, Marketing
Job Titles: 1. DevOps Engineer, 2. User Interface (UI) Designer, 3. Senior Data Scientist, 4. Technical Product Manager, 5. Senior Digital Media Manager, 6. Senior Onboarding Project Manager, 7. Senior Content Marketing Specialist



**onX, Missoula
and Bozeman**

What They Do: Digital outdoor navigation
Career Pathways: IT & Computing, Business, Marketing
Job Titles: 2. Quality Assurance Engineer, 3. Business Intelligence Analyst, 4. Product Owner, 5. Head of Growth Marketing, 6. Senior Business Development Manager, 7. Senior Content Manager 8. Program Manager, Talent Engagement



**NorthWestern
Energy, Butte
and Statewide**

What They Do: Utility - electricity, natural gas
Career Pathways: Architecture & Construction, Business, IT & Computing
Job Titles: 2. DevOps Technologist 3. Data Engineering Technologist

Christina Henderson
Executive Director

director@mthightech.org

 @MontanaHighTech



**MONTANA
HIGH TECH
BUSINESS ALLIANCE**

<https://jobs.mthightech.org>

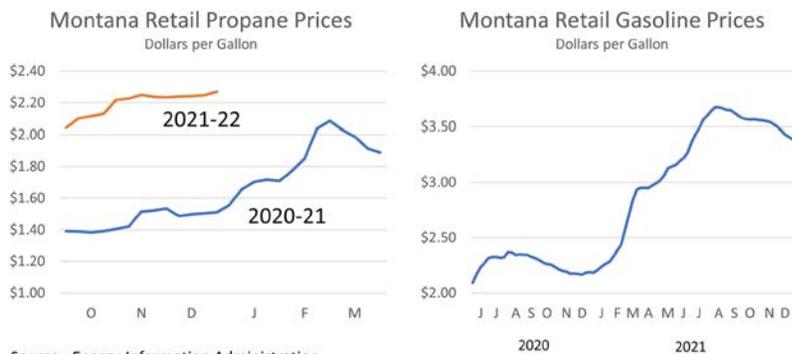
The Outlook for Energy Industries in Montana

Patrick M. Barkey, Director
Bureau of Business and Economic Research
University of Montana

An Eventful Year for Energy

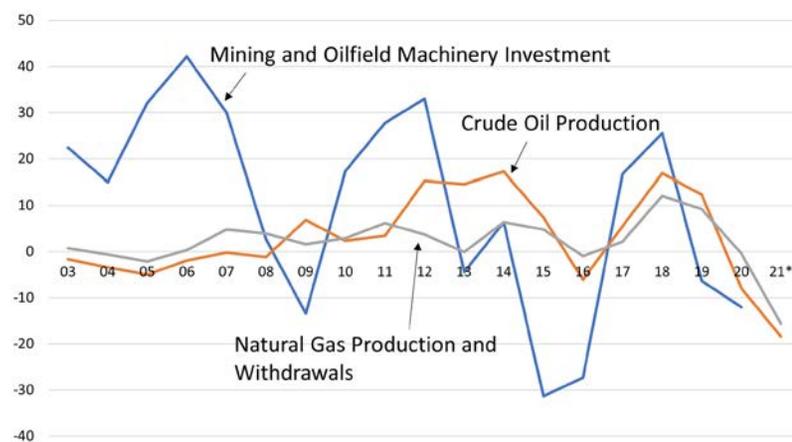
- The story in the news: energy prices roared ahead in 2021
- The story not in the news: coal experienced a mild, but surprising, rebound in 2021
- The story that should be in the news: is Montana electricity prepared for the new decade?

Energy Price Increases Have Hurt Montanans

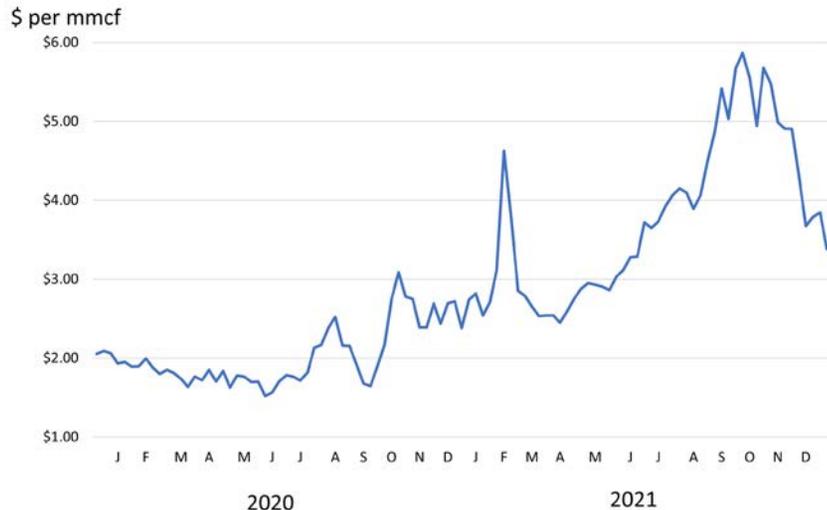


Climate for Oil and Gas Investment has Worsened

Percent Growth in Investment in Mining and Oil Equipment, Crude Oil Production and Natural Gas Withdrawals, U.S., 2003-2021



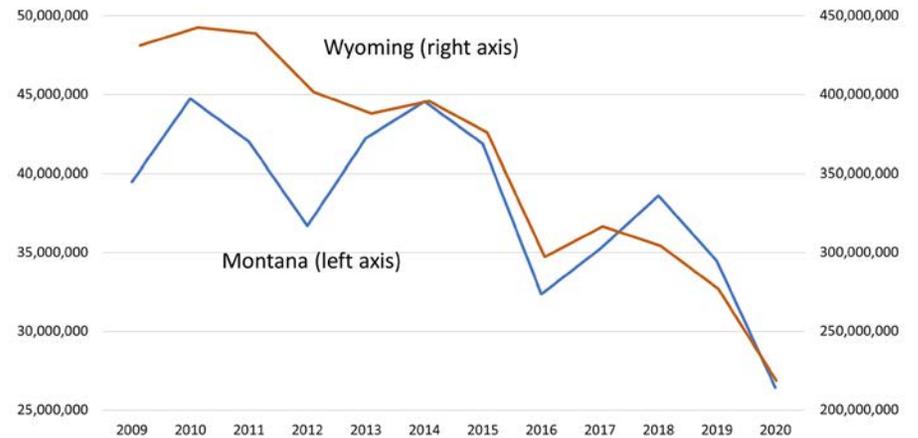
Surge in Natural Gas Prices Has Eased Recently



Source: U.S. Energy Information Administration

Powder River Basin Coal's Decline Accelerated in 2020

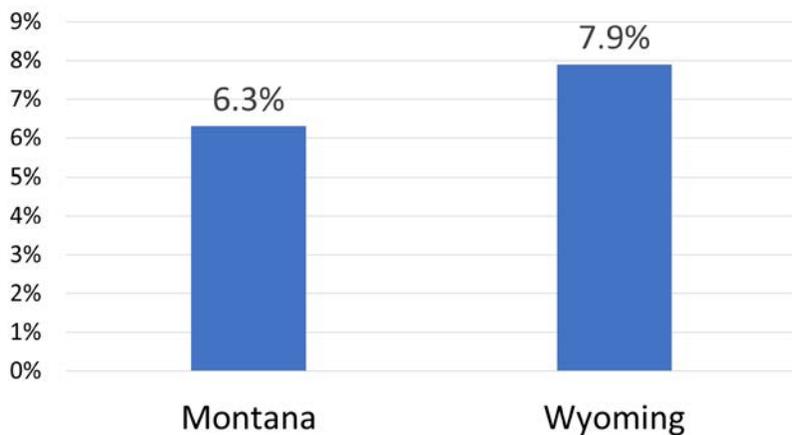
Montana and Wyoming Coal Production, short tons, 2009-20



Source: Energy Information Administration

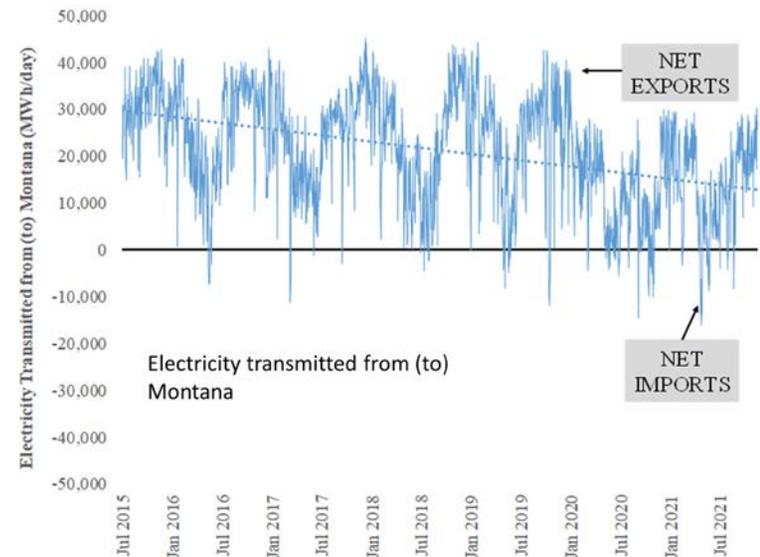
2021 Has Seen a Mild Rebound in Coal Production

Percentage change in coal production, 2020-21 through Dec 25



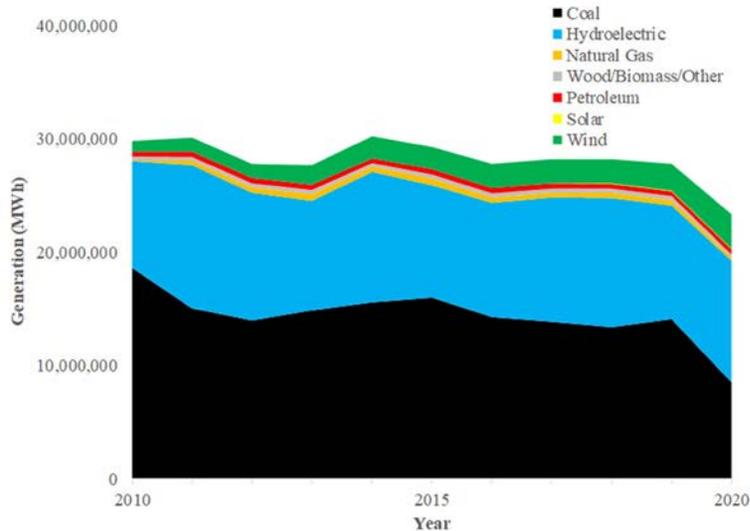
Source: Energy Information Administration

Montana Imports Electricity More Often

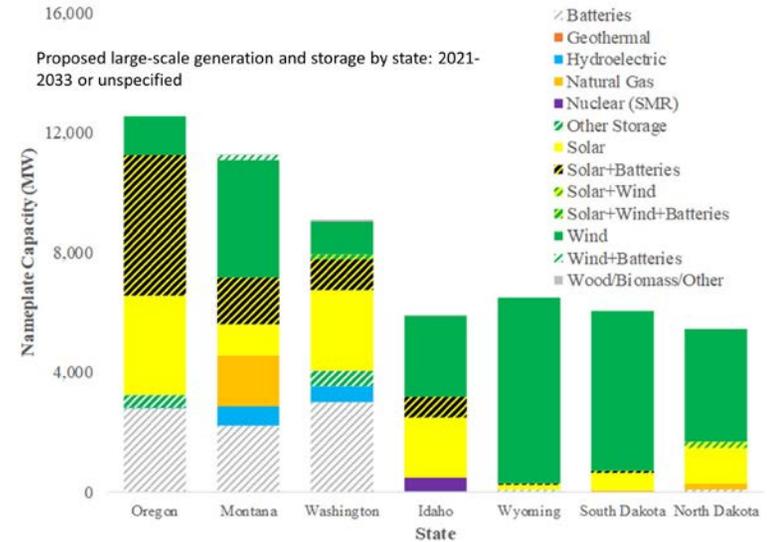


Source: U.S. Energy Information Administration

Coal Retirements Have Reduced Montana Generation



Plans for Replacement Generation Look Aggressive



But ...

93 percent of proposed generation projects are withdrawn

Projects are dominated by technologies that are unproven at utility scale (solar and battery)



No one works a *tool belt* better.

Small business works bigger here.

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- > LOANS
- > MERCHANT SERVICES
- > TREASURY SOLUTIONS
- > WEALTH MANAGEMENT

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Built for you.

firstinterstate.com

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01686-SF-2112

The state-of-the-art Benefis Women's and Children's Center is

now open

for preventative and routine care for the women and children of our community.



Benefis
WOMEN'S AND
CHILDREN'S CENTER

Benefis.org/WomensAndChildrens



Sibanye-Stillwater is a global precious metals mining group with a significant presence in South Africa and Montana. It is the world's largest producer of platinum group metals (PGMs), primarily platinum and palladium. PGMs are a critical component of catalytic converters found in almost all of the 97 million cars and trucks produced globally every year (pre-COVID-19). PGMs are also used extensively in jewelry production.

US PGM OPERATIONS

Sibanye-Stillwater is engaged in the development, extraction and processing of PGMs from a geological formation in south-central Montana known as the J-M Reef, which is the only known significant source of PGMs in the US and the highest-grade PGM deposit known in the world. Sibanye-Stillwater is also one of the world's largest global recyclers of PGMs derived from spent catalytic converters. The majority of the company's PGMs are used in catalytic converters to reduce vehicle air emissions.

STILLWATER AND EAST BOULDER MINES

	Leading low-cost PGM producer
	603,066 ounces mined in 2020
	14.2 million total ounces PGMs produced historically
	26.9 million ounces proven and probable reserves (78% palladium and 22% platinum)

COLUMBUS METALLURGICAL COMPLEX

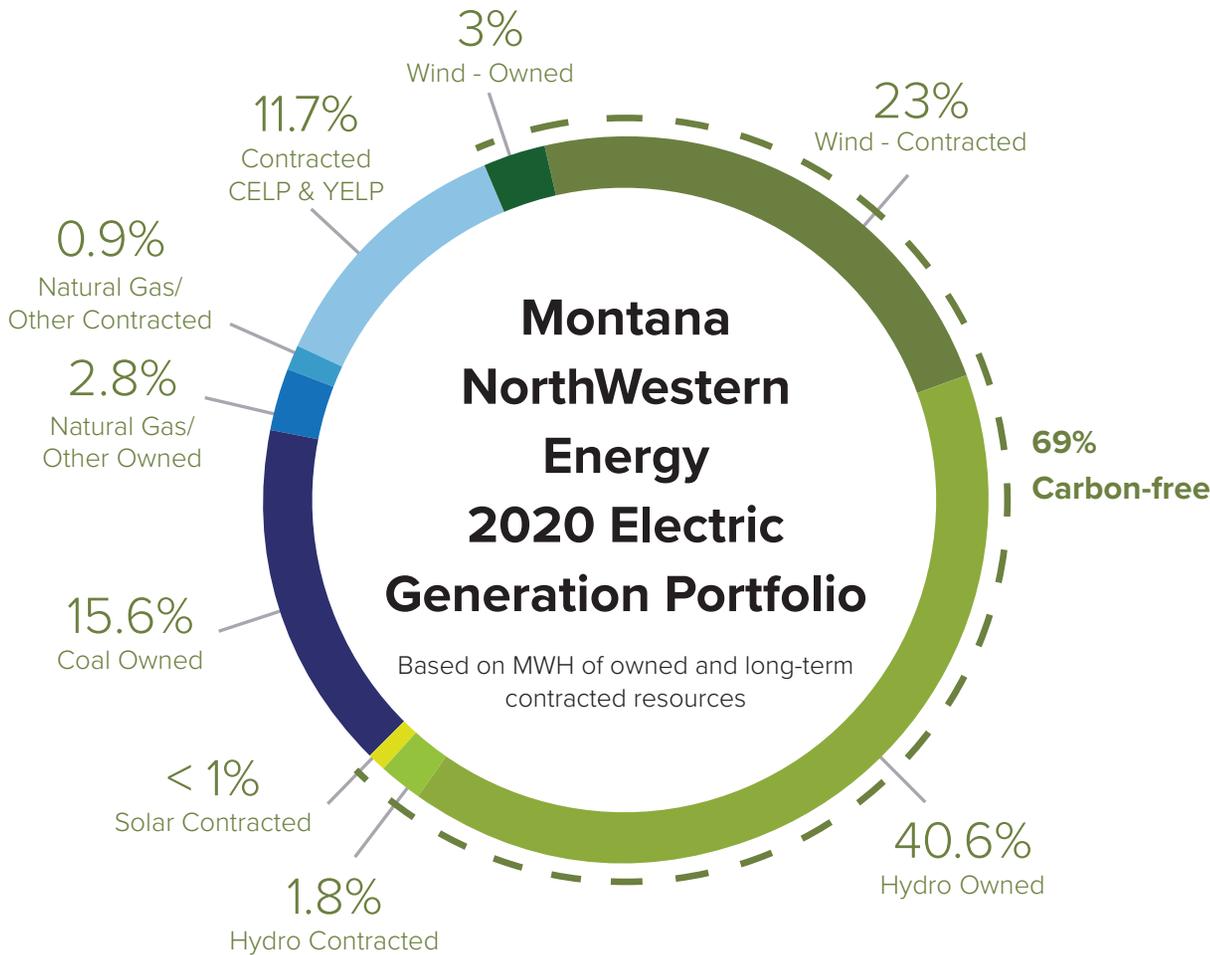
	Includes smelter, base metal refinery and analytical laboratory
	840,170 ounces recycled in 2020
	1.41 million ounces processed in 2020
	Consistently less than 5% of operating permit air emissions limits at the smelter

COMMUNITY LEADER

At Sibanye-Stillwater, we believe our mining improves lives and we are committed to our purpose of creating superior value for all of our stakeholders.

	1,881 Montana employees
	\$31 million local taxes in 2020
	\$212 million annual payroll costs
	\$49 million in annual employee taxes
	\$399 million in total annual purchases
	\$85,000 awarded in scholarships
	\$400,000 in charitable contributions annually with 50% to community projects, 15% education, 31% emergency services and 4% environmental projects.

www.sibanyestillwater.com



northwesternenergy.com/energymix

Our Commitment to Clean Energy

At NorthWestern, we understand that almost everything we do to produce and deliver energy to our customers impacts the environment. We are committed to providing cost-effective, reliable and stably priced energy while being good stewards of natural resources.

Our Montana Electric Generation Portfolio

Our 100% clean hydro system is the backbone of our electric generation in Montana. We own 10 hydroelectric generating facilities in Montana, which supplied 40% of our electric generation in 2020. Wind and solar bring us to nearly 70% carbon-free generation.

Our Balanced and Diverse Energy Mix

At NorthWestern Energy, our goal is to provide our customers reliable energy at the lowest long-term cost. We do this through a balanced mix of safe, reliable, affordable and clean energy. Our electric portfolio is built on the carbon-free hydro system, along with wind, coal, gas and solar.

Hydropower

42% of our electricity for our Montana customers comes from 100% clean hydroelectricity.

Innovating Our Energy Future

We are committed to providing responsible, sustainable energy to meet our customers' needs, while protecting, and even enhancing, the natural environment. And we are always looking for ways to improve the way we generate energy and serve our customers.



Scan the QR code with your phone's camera to learn more about Bright magazine or to subscribe. Bright is a quarterly magazine featuring the amazing people and work at NorthWestern Energy.



Delivering a Bright Future



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